FCC SAR TEST REPORT

FCC ID	:	HD5-CT40L1N
Equipment	:	DOLPHIN CT40
Brand Name	:	Honeywell
Model Name	:	CT40-L1N
Applicant	:	Honeywell International Inc. Honeywell Safety and Productivity Solutions 9680 Old Bailes Rd. Fort Mill, SC 29707 United States
Manufacturer	:	Honeywell International Inc. Honeywell Safety and Productivity Solutions 9680 Old Bailes Rd. Fort Mill, SC 29707 United States
Standard	:	FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013

The product was received on Jun. 03, 2018 and testing was started from Oct. 15, 2018 and completed on Nov. 05, 2018. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

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

Cona Huang

Approved by: Cona Huang / Deputy Manager

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History of this test report

Report No.	Version	Description	Issued Date
FA850409	01	Initial issue of report	Nov. 14, 2018

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Honeywell International Inc., Honeywell Safety and Productivity Solutions, DOLPHIN CT40, CT40-L1N, 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)	Product Specific (Separation 0mm)	
		1g SAR (W/kg)			10g SAR (W/kg)	
Licensed	GSM850	0.39	0.51	0.75		1.52
	GSM1900	0.07	0.60	1.06		
	WCDMA V	0.58	0.65	0.99		
	WCDMA IV	0.16	0.73	1.24	2.95	
	WCDMA II	0.14	0.80	1.35	3.41	
	CDMA2000 BC0	0.45	0.43	0.71		
	CDMA2000 BC10	0.40	0.49	0.77		
	CDMA2000 BC1	0.10	0.89	1.20	3.48	
	LTE Band 12 / 17	0.41	0.51	0.57		
	LTE Band 13	0.36	0.51	0.61		
	LTE Band 5	0.45	0.51	0.57		
	LTE Band 26	0.38	0.43	0.55		
	LTE Band 4	0.21	0.92	1.37	3.56	
	LTE Band 25	0.13	0.87	1.29	3.54	
	LTE Band 2	0.13	0.92	1.32	3.62	
	LTE Band 7	0.18	0.90	1.29	3.61	
	LTE Band 38 / 41	0.13	0.72	1.42	3.11	
DTS	2.4GHz WLAN	0.31	0.07	0.09		1.51
NII	5GHz WLAN	0.37	0.08	0.27	0.36	1.52
DSS	Bluetooth	0.15	0.02	0.05		1.47
Date of Testing:		2018/10/15 ~ 2018/11/05				

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

Reviewed by: Jason Wang
Report Producer: Wan Liu

2. Guidance Applied

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

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

3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	DOLPHIN CT40
Brand Name	Honeywell
Model Name	CT40-L1N
FCC ID	HD5-CT40L1N
IMEI Code	990011960017498
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz CDMA2000 BC0: 824.7 MHz ~ 848.31 MHz CDMA 2000 BC1: 1851.25 MHz ~ 1908.75 MHz CDMA 2000 BC10: 817.9 MHz ~ 823.1 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 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 ~ 5700MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	GSM/GPRS/EGPRS AMR / RMC 12.2Kbps HSDPA HSUPA HSPA+(16QAM uplink is not supported) DC-HSDPA CDMA2000 : 1xRTT/1xEv-Do(Rel.0)/1xEv-Do(Rev.A) LTE: QPSK, 16QAM, 64QAM WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth EDR/LE NFC:ASK
HW Version	V1.0
SW Version	OS.01.010-HON.01.102
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

Remark:

1. This device WLAN 2.4GHz / 5.2GHz / 5.8GHz supports Hotspot operation and Bluetooth support tethering applications.
2. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of WCDMA B2 / B4, CDMA BC1 and LTE B2 / B4 / B7 / B25.
3. There are two samples which is sample 1 and sample 2, the difference is scanner that from different suppliers, for there has no effect on SAR distribution, so only the sample 1 to perform full SAR testing.

3.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	HD5-CT40L1N
Equipment Name	DOLPHIN CT40
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 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 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 13: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
uplink modulations used	QPSK / 16QAM / 64QAM
LTE Voice / Data requirements	Voice and 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}) | MPR (dB) 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz 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	1. Yes, when operating in hotspot mode that LTE B2 / B4 / B7 / B25 power reduction applied to satisfy SAR compliance.
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 11.
LTE Carrier Aggregation Additional Information	This device supports maximum of 2 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.

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

LTE Band 2

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

LTE Band 4

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

LTE Band 5

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

LTE Band 7

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

LTE Band 12

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

LTE Band 13

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

LTE Band 17

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

LTE Band 25

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905

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

LTE Band 38								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580
M	38000	2595	38000	2595	38000	2595	38000	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610

LTE Band 41								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680

4. RF Exposure Limits

4.1 Uncontrolled Environment

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

4.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

5. Specific Absorption Rate (SAR)

5.1 Introduction

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

5.2 SAR Definition

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

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

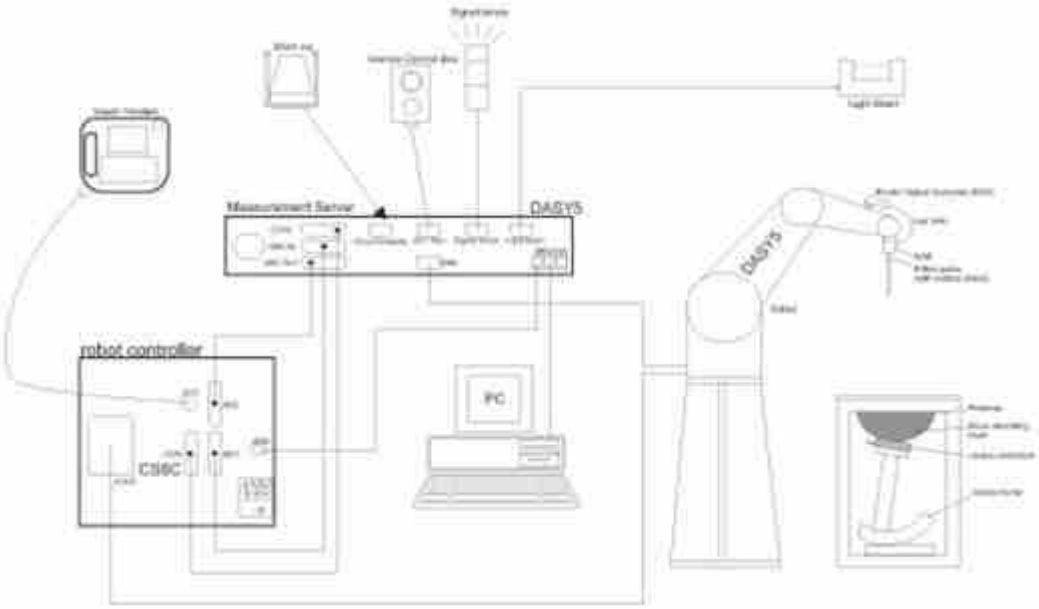
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

6. System Description and Setup

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



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

6.1 E-Field Probe

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

<ES3DV3 Probe>

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

<EX3DV4 Probe>

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

6.2 Data Acquisition Electronics (DAE)

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

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

Fig 5.1 Photo of DAE

6.3 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

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

6.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

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

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

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

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

Mounting Device for Laptops

7. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

7.1 Spatial Peak SAR Evaluation

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

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

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

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

7.2 Power Reference Measurement

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

7.3 Area Scan

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

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

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

7.4 Zoom Scan

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

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

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

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

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

7.5 Volume Scan Procedures

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

7.6 Power Drift Monitoring

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

8. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	2017/12/4	2018/12/3
SPEAG	835MHz System Validation Kit	D835V2	4d162	2017/12/5	2018/12/4
SPEAG	1750MHz System Validation Kit	D1750V2	1137	2018/7/30	2019/7/29
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	2017/12/6	2018/12/5
SPEAG	2450MHz System Validation Kit	D2450V2	924	2018/3/22	2019/3/21
SPEAG	2600MHz System Validation Kit	D2600V2	1070	2017/12/7	2018/12/6
SPEAG	5000MHz System Validation Kit	D5GHzV2	1167	2018/8/3	2019/8/2
SPEAG	Dosimetric E-Field Probe	EX3DV4	3819	2018/1/31	2019/1/30
SPEAG	Data Acquisition Electronics	DAE4	1437	2018/10/15	2019/10/14
RCPTWN	Thermometer	HTC-1	TM685-1	2018/3/16	2019/3/15
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	2018/4/17	2019/4/16
Agilent	Wireless Communication Test Set	E5515C	MY50266977	2018/5/21	2019/5/20
R&S	BT Base Station	CBT	100815	2018/2/5	2019/2/4
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	2017/12/7	2018/12/6
Agilent	ENA Network Analyzer	E5071C	MY46316648	2018/1/17	2019/1/16
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	2018/9/19	2019/9/18
LINE SEIKI	Digital Thermometer	DTM3000-spezial	3169	2018/9/11	2019/9/10
Anritsu	Power Meter	ML2495A	1419002	2018/5/18	2019/5/17
Anritsu	Power Sensor	MA2411B	1339124	2018/5/18	2019/5/17
Anritsu	Power Meter	ML2495A	1240001	2018/9/13	2019/9/12
Anritsu	Power Sensor	MA2411B	1207349	2018/9/13	2019/9/12
Agilent	Spectrum Analyzer	E4408B	MY44211028	2018/8/28	2019/8/27
Anritsu	Spectrum Analyzer	MS2830A	6201396378	2018/6/23	2019/6/22
Mini-Circuits	Power Amplifier	ZVE-8G+	070501814	2018/10/8	2019/10/7
Mini-Circuits	Power Amplifier	ZVE-8G+	6382	2018/8/9	2019/8/8
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

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

9. System Verification

9.1 Tissue Simulating Liquids

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

Fig 10.1Photo of Liquid Height for Head SAR

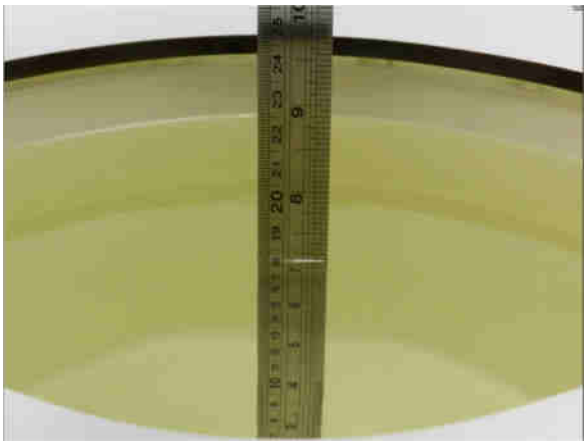


Fig 10.2 Photo of Liquid Height for Body SAR

9.2 Tissue Verification

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

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

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	HSL	22.5	0.882	40.803	0.89	41.90	-0.90	-2.62	±5	2018/11/2
835	HSL	22.5	0.887	41.987	0.90	41.50	-1.44	1.17	±5	2018/11/3
1750	HSL	22.6	1.378	41.340	1.37	40.10	0.58	3.09	±5	2018/11/4
1900	HSL	22.6	1.417	40.994	1.40	40.00	1.21	2.49	±5	2018/11/5
2450	HSL	22.8	1.758	39.247	1.80	39.20	-2.33	0.12	±5	2018/10/20
2600	HSL	22.4	1.981	38.254	1.96	39.00	1.07	-1.91	±5	2018/10/23
5250	HSL	22.5	4.591	36.753	4.71	35.95	-2.53	2.23	±5	2018/10/20
5600	HSL	22.6	5.207	36.213	5.07	35.50	2.70	2.01	±5	2018/10/23
5750	HSL	22.7	5.298	35.158	5.22	35.35	1.49	-0.54	±5	2018/10/24
750	MSL	22.5	0.970	54.646	0.96	55.50	1.04	-1.54	±5	2018/11/1
835	MSL	22.4	0.981	56.230	0.97	55.20	1.13	1.87	±5	2018/10/15
1750	MSL	22.6	1.511	51.994	1.49	53.40	1.41	-2.63	±5	2018/10/26
1900	MSL	22.5	1.584	54.212	1.52	53.30	4.21	1.71	±5	2018/10/25
2450	MSL	22.8	1.992	52.302	1.95	52.70	2.15	-0.76	±5	2018/10/29
2600	MSL	22.7	2.188	50.734	2.16	52.50	1.30	-3.36	±5	2018/10/30
5250	MSL	22.6	5.449	47.742	5.36	48.95	1.66	-2.47	±5	2018/10/31
5600	MSL	22.7	5.960	47.033	5.77	48.50	3.29	-3.02	±5	2018/10/31
5750	MSL	22.8	5.985	48.556	5.94	48.28	0.76	0.57	±5	2018/10/31

9.3 System Performance Check Results

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

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2018/11/2	750	HSL	250	D750V3-1099	EX3DV4 - SN3819	DAE4 Sn1437	2.14	8.33	8.56	2.76
2018/11/3	835	HSL	250	D835V2-4d162	EX3DV4 - SN3819	DAE4 Sn1437	2.22	9.56	8.88	-7.11
2018/11/4	1750	HSL	250	D1750V2-1137	EX3DV4 - SN3819	DAE4 Sn1437	8.84	36.50	35.36	-3.12
2018/11/5	1900	HSL	250	D1900V2-5d182	EX3DV4 - SN3819	DAE4 Sn1437	9.24	40.10	36.96	-7.83
2018/10/20	2450	HSL	250	D2450V2-924	EX3DV4 - SN3819	DAE4 Sn1437	12.20	51.80	48.8	-5.79
2018/10/23	2600	HSL	250	D2600V2-1070	EX3DV4 - SN3819	DAE4 Sn1437	14.30	58.20	57.2	-1.72
2018/10/20	5250	HSL	100	D5GHzV2-1167	EX3DV4 - SN3819	DAE4 Sn1437	7.80	77.00	78	1.30
2018/10/23	5600	HSL	100	D5GHzV2-1167	EX3DV4 - SN3819	DAE4 Sn1437	8.60	80.80	86	6.44
2018/10/24	5750	HSL	100	D5GHzV2-1167	EX3DV4 - SN3819	DAE4 Sn1437	8.07	76.90	80.7	4.94
2018/11/1	750	MSL	250	D750V3-1099	EX3DV4 - SN3819	DAE4 Sn1437	2.13	8.64	8.52	-1.39
2018/10/15	835	MSL	250	D835V2-4d162	EX3DV4 - SN3819	DAE4 Sn1437	2.39	9.56	9.56	0.00
2018/10/26	1750	MSL	250	D1750V2-1137	EX3DV4 - SN3819	DAE4 Sn1437	8.79	37.00	35.16	-4.97
2018/10/25	1900	MSL	250	D1900V2-5d182	EX3DV4 - SN3819	DAE4 Sn1437	10.10	40.40	40.4	0.00
2018/10/29	2450	MSL	250	D2450V2-924	EX3DV4 - SN3819	DAE4 Sn1437	13.20	50.70	52.8	4.14
2018/10/30	2600	MSL	250	D2600V2-1070	EX3DV4 - SN3819	DAE4 Sn1437	13.40	55.20	53.6	-2.90
2018/10/31	5250	MSL	100	D5GHzV2-1167	EX3DV4 - SN3819	DAE4 Sn1437	7.64	74.40	76.4	2.69
2018/10/31	5600	MSL	100	D5GHzV2-1167	EX3DV4 - SN3819	DAE4 Sn1437	7.97	77.10	79.7	3.37
2018/10/31	5750	MSL	100	D5GHzV2-1167	EX3DV4 - SN3819	DAE4 Sn1437	7.91	74.30	79.1	6.46

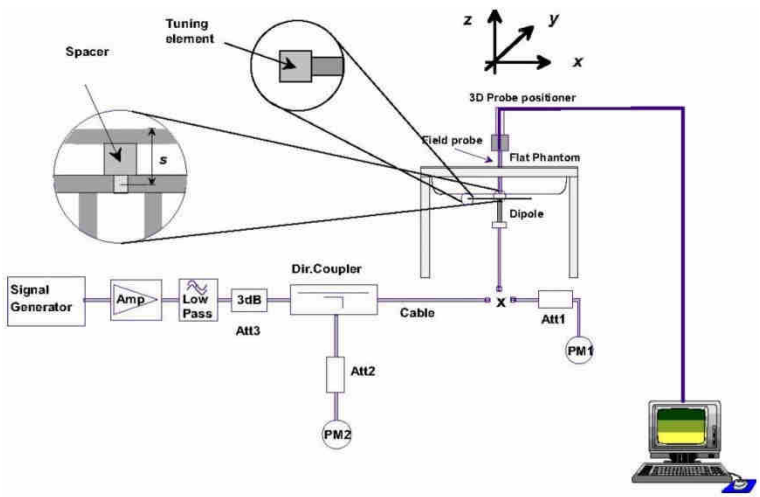


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

10. RF Exposure Positions

10.1 Ear and handset reference point

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

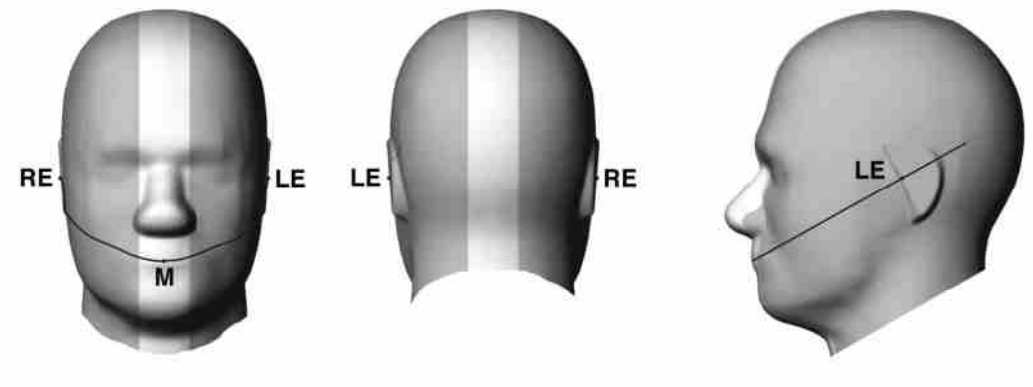


Fig 9.1.1 Front, back, and side views of SAM twin phantom

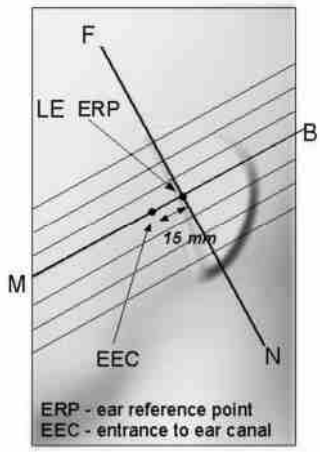


Fig 9.1.2 Close-up side view of phantom showing the ear region.

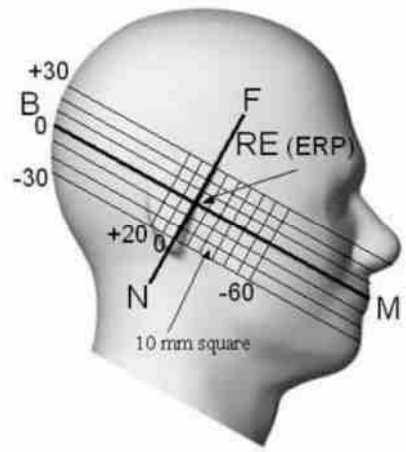


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

10.2 Definition of the cheek position

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

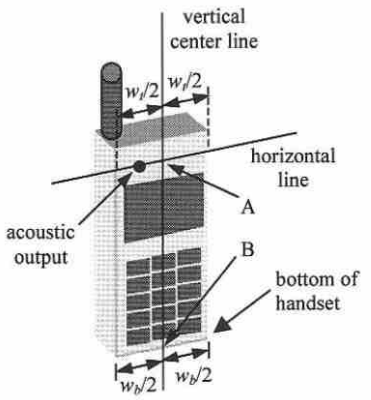


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

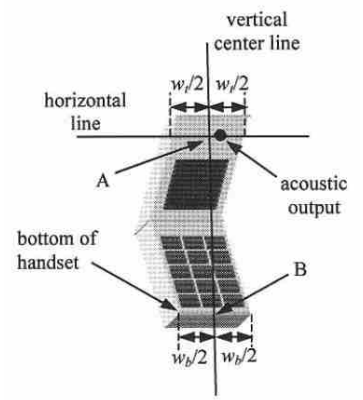


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

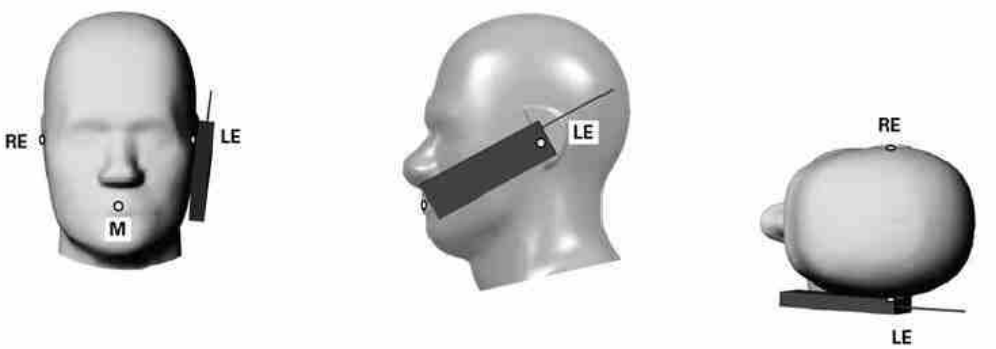


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

10.3 Definition of the tilt position

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

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

10.4 Body Worn Accessory

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

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

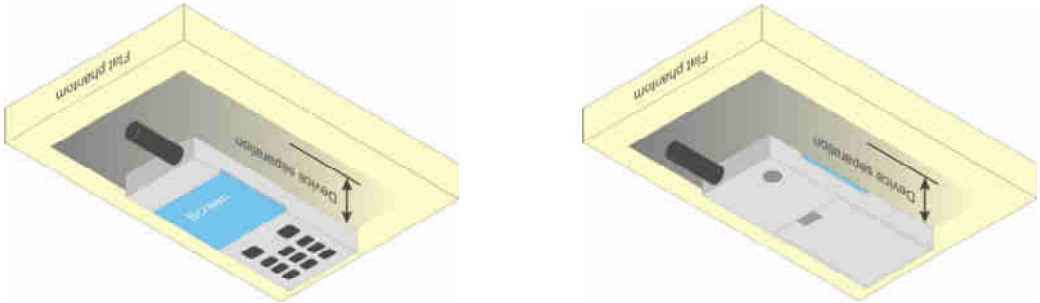


Fig 9.4 Body Worn Position

10.5 Product Specific Exposure

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

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

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

10.6 Wireless Router

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

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

11. 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 (2Tx slots) for GSM1900is considered as the primary mode.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode

<Default Power Mode>

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.10	32.04	32.05	33.40	23.10	23.04	23.05	24.40
GPRS 1 Tx slot	32.08	32.01	32.03	33.40	23.08	23.01	23.03	24.40
GPRS 2 Tx slots	29.54	29.57	29.67	30.40	23.54	23.57	23.67	24.40
GPRS 3 Tx slots	27.71	27.75	27.69	28.40	23.45	23.49	23.43	24.14
GPRS 4 Tx slots	26.15	26.28	26.35	27.40	23.15	23.28	23.35	24.40
EDGE 1 Tx slot	27.13	26.98	26.94	27.40	18.13	17.98	17.94	18.40
EDGE 2 Tx slots	23.86	23.91	23.78	24.40	17.86	17.91	17.78	18.40
EDGE 3 Tx slots	21.97	21.97	21.96	22.40	17.71	17.71	17.70	18.14
EDGE 4 Tx slots	20.77	20.68	20.60	21.40	17.77	17.68	17.60	18.40

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	29.15	29.40	29.85	30.50	20.15	20.40	20.85	21.50
GPRS 1 Tx slot	29.11	29.39	29.82	30.50	20.11	20.39	20.82	21.50
GPRS 2 Tx slots	26.45	26.93	27.16	28.20	20.45	20.93	21.16	22.20
GPRS 3 Tx slots	24.31	24.91	25.05	26.20	20.05	20.65	20.79	21.94
GPRS 4 Tx slots	22.95	23.27	23.70	24.90	19.95	20.27	20.70	21.90
EDGE 1 Tx slot	25.64	26.04	26.15	27.20	16.64	17.04	17.15	18.20
EDGE 2 Tx slots	22.55	22.95	23.20	24.20	16.55	16.95	17.20	18.20
EDGE 3 Tx slots	20.70	21.01	21.21	22.20	16.44	16.75	16.95	17.94
EDGE 4 Tx slots	19.35	19.68	20.11	21.20	16.35	16.68	17.11	18.20

<WCDMA Conducted Power>

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

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

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

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

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

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$.

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 $\beta_{hs} = 30/15 * \beta_c$, and Δ_{CQI} = 24/15 with $\beta_{hs} = 24/15 * \beta_c$.

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

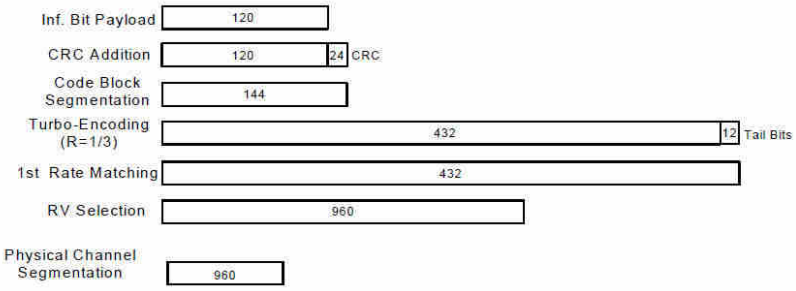


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. 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	22.10	22.05	22.14	23.00	20.85	20.86	20.73	21.50	23.60	23.75	23.61	24.90
3GPP Rel 99	RMC 12.2Kbps	22.11	22.07	22.15	23.00	20.86	20.87	20.74	21.50	23.63	23.76	23.62	24.90
3GPP Rel 6	HSDPA Subtest-1	20.96	21.07	21.14	22.00	19.66	19.71	19.61	20.50	22.69	22.82	22.72	23.90
3GPP Rel 6	HSDPA Subtest-2	20.97	21.08	21.12	22.00	19.61	19.70	19.66	20.50	22.70	22.74	22.71	23.90
3GPP Rel 6	HSDPA Subtest-3	20.27	20.56	20.71	21.50	19.08	19.18	19.14	20.50	22.26	22.25	22.24	23.90
3GPP Rel 6	HSDPA Subtest-4	20.43	20.64	20.63	21.50	19.11	19.23	19.15	20.50	22.29	22.32	22.24	23.90
3GPP Rel 8	DC-HSDPA Subtest-1	20.76	21.03	21.05	22.00	19.62	19.65	19.53	20.50	22.63	22.73	22.68	23.90
3GPP Rel 8	DC-HSDPA Subtest-2	20.85	21.02	21.10	22.00	19.56	19.64	19.62	20.50	22.65	22.65	22.65	23.90
3GPP Rel 8	DC-HSDPA Subtest-3	20.21	20.44	20.68	21.50	19.03	19.13	19.12	20.50	22.21	22.21	22.21	23.90
3GPP Rel 8	DC-HSDPA Subtest-4	20.41	20.52	20.61	21.50	19.07	19.21	19.13	20.50	22.23	22.28	22.20	23.90
3GPP Rel 6	HSUPA Subtest-1	20.97	21.08	21.23	22.00	19.66	19.73	19.70	20.50	22.70	22.77	22.71	23.90
3GPP Rel 6	HSUPA Subtest-2	19.01	19.14	19.18	20.00	17.72	17.74	17.68	18.50	20.67	20.77	20.70	21.90
3GPP Rel 6	HSUPA Subtest-3	19.97	20.12	20.25	21.00	18.68	18.69	18.69	19.50	21.71	21.81	21.58	22.90
3GPP Rel 6	HSUPA Subtest-4	18.98	19.05	19.18	20.00	17.67	17.76	17.69	18.50	20.63	20.77	20.68	21.90
3GPP Rel 6	HSUPA Subtest-5	21.00	21.10	21.20	22.00	19.70	19.70	19.70	20.50	22.70	22.80	22.70	23.90

<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	20.98	21.05	21.21	21.50	19.83	20.01	19.83	20.20
3GPP Rel 99	RMC 12.2Kbps	21.02	21.06	21.22	21.50	19.85	20.03	19.84	20.20
3GPP Rel 6	HSDPA Subtest-1	19.87	20.02	20.08	20.50	18.82	18.81	18.80	19.50
3GPP Rel 6	HSDPA Subtest-2	19.90	20.03	20.11	20.50	18.81	18.85	18.81	19.50
3GPP Rel 6	HSDPA Subtest-3	19.37	19.57	19.58	20.50	18.32	18.39	18.32	19.50
3GPP Rel 6	HSDPA Subtest-4	19.40	19.56	19.63	20.50	18.33	18.36	18.30	19.50
3GPP Rel 8	DC-HSDPA Subtest-1	19.73	19.95	20.05	20.50	18.80	18.74	18.65	19.50
3GPP Rel 8	DC-HSDPA Subtest-2	19.85	19.98	20.01	20.50	18.00	18.65	18.72	19.50
3GPP Rel 8	DC-HSDPA Subtest-3	19.24	19.52	19.52	20.50	18.25	18.25	18.24	19.50
3GPP Rel 8	DC-HSDPA Subtest-4	19.32	19.51	19.61	20.50	18.33	18.32	18.22	19.50
3GPP Rel 6	HSUPA Subtest-1	19.82	19.97	20.09	20.50	18.77	18.86	18.80	19.50
3GPP Rel 6	HSUPA Subtest-2	17.87	17.92	18.13	18.50	16.62	16.83	16.77	17.50
3GPP Rel 6	HSUPA Subtest-3	18.87	19.01	19.12	19.50	17.78	17.83	17.80	18.50
3GPP Rel 6	HSUPA Subtest-4	17.83	18.00	18.05	18.50	16.77	16.85	16.82	17.50
3GPP Rel 6	HSUPA Subtest-5	19.90	20.00	20.10	20.50	18.80	18.90	18.80	19.50

<CDMA2000 Conducted Power>

General Note:

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

<Default Power Mode>

Band	CDMA BC0			Tune-up Limit (dBm)	CDMA BC1			Tune-up Limit (dBm)	CDMA BC10			Tune-up Limit (dBm)
TX Channel	1013	384	777		25	600	1175		476	580	684	
Frequency (MHz)	824.7	836.52	848.31		1851.25	1880	1908.75		817.9	820.5	823.1	
RC1 SO55	23.68	23.76	23.78	23.80	22.45	22.60	22.53	22.70	23.75	23.83	23.70	24.80
RC3 SO55	23.65	23.74	23.77	23.80	22.44	22.59	22.51	22.70	23.73	23.81	23.68	24.80
RC3 SO32 (F+SCH)	23.64	23.73	23.75	23.80	22.44	22.57	22.50	22.70	23.70	23.79	23.65	24.80
RC3 SO32 (+SCH)	23.64	23.72	23.74	23.80	22.43	22.56	22.48	22.70	23.68	23.77	23.64	24.80
RTAP 153.6Kbps	23.62	23.70	23.72	23.80	22.42	22.55	22.47	22.70	23.68	23.76	23.63	24.80
RETAP 4096Bits	23.60	23.68	23.69	23.80	22.40	22.51	22.45	22.70	23.65	23.75	23.60	24.80

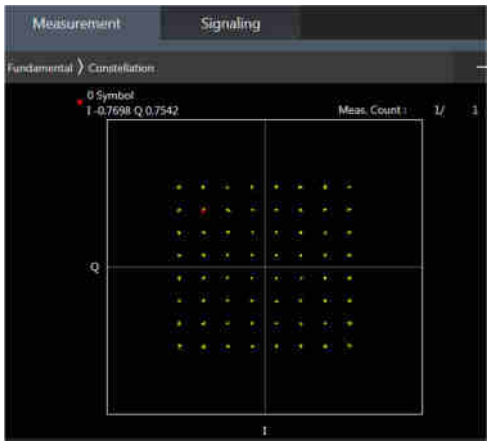
<Reduced Power Mode>

Band	CDMA BC1			Tune-up Limit (dBm)
TX Channel	25	600	1175	
Frequency (MHz)	1851.25	1880	1908.75	
RC1 SO55	20.84	20.95	20.93	21.00
RC3 SO55	20.82	20.92	20.90	21.00
RC3 SO32 (F+SCH)	20.81	20.89	20.86	21.00
RC3 SO32 (+SCH)	20.80	20.88	20.85	21.00
RTAP 153.6Kbps	20.80	20.91	20.90	21.00
RETAP 4096Bits	20.80	20.90	20.90	21.00

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B5 / B12 /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 17 / 38 SAR test was covered by Band 12 / 41; 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	23.24	23.25	23.28	23.3	0
20	QPSK	1	49	23.05	23.12	22.99		
20	QPSK	1	99	22.85	23.06	23.06		
20	QPSK	50	0	22.19	22.26	22.28	22.5	0.8
20	QPSK	50	24	22.14	22.23	22.15		
20	QPSK	50	50	22.12	22.13	22.09		
20	QPSK	100	0	22.16	22.24	22.25		
20	16QAM	1	0	22.49	22.50	22.48	22.5	0.8
20	16QAM	1	49	22.34	22.48	22.36		
20	16QAM	1	99	22.28	22.39	22.39		
20	16QAM	50	0	21.19	21.25	21.15	22.3	1
20	16QAM	50	24	21.13	21.20	21.17		
20	16QAM	50	50	21.11	21.12	21.11		
20	16QAM	100	0	21.16	21.17	21.16		
20	64QAM	1	0	21.50	21.45	21.47	22.3	1
20	64QAM	1	49	21.55	21.51	21.47		
20	64QAM	1	99	21.30	21.47	21.49		
20	64QAM	50	0	20.42	20.45	20.44	21.3	2
20	64QAM	50	24	20.38	20.40	20.38		
20	64QAM	50	50	20.37	20.38	20.38		
20	64QAM	100	0	20.43	20.40	20.41		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.11	23.18	23.18	23.3	0
15	QPSK	1	37	22.96	23.12	23.01		
15	QPSK	1	74	23.00	23.13	23.11		
15	QPSK	36	0	22.10	22.21	22.17	22.5	0.8
15	QPSK	36	20	22.12	22.20	22.14		
15	QPSK	36	39	22.04	22.13	22.09		
15	QPSK	75	0	22.11	22.15	22.12		
15	16QAM	1	0	22.49	22.50	22.42	22.5	0.8
15	16QAM	1	37	22.24	22.46	22.38		
15	16QAM	1	74	22.35	22.47	22.47		
15	16QAM	36	0	21.13	21.23	21.17	22.3	1
15	16QAM	36	20	21.10	21.18	21.15		
15	16QAM	36	39	21.04	21.17	21.12		
15	16QAM	75	0	21.07	21.20	21.12		
15	64QAM	1	0	21.48	21.13	20.87	22.3	1
15	64QAM	1	37	21.40	20.95	20.80		
15	64QAM	1	74	21.35	20.95	20.99		
15	64QAM	36	0	20.50	20.45	20.47	21.3	2
15	64QAM	36	20	20.50	20.50	20.47		
15	64QAM	36	39	20.37	20.48	20.32		
15	64QAM	75	0	20.33	20.37	20.44		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.03	23.15	23.08	23.3	0
10	QPSK	1	25	23.07	23.13	23.09		
10	QPSK	1	49	22.98	23.11	23.03		
10	QPSK	25	0	22.07	22.18	22.13	22.5	0.8
10	QPSK	25	12	22.07	22.14	22.13		
10	QPSK	25	25	22.04	22.12	22.13		
10	QPSK	50	0	22.03	22.17	22.13		
10	16QAM	1	0	22.34	22.50	22.44	22.5	0.8
10	16QAM	1	25	22.27	22.42	22.36		
10	16QAM	1	49	22.30	22.35	22.41		
10	16QAM	25	0	21.11	21.18	21.12	22.3	1
10	16QAM	25	12	21.06	21.15	21.14		
10	16QAM	25	25	21.00	21.12	21.11		
10	16QAM	50	0	21.10	21.15	21.12		
10	64QAM	1	0	21.21	21.42	21.22	22.3	1
10	64QAM	1	25	21.17	21.28	21.25		
10	64QAM	1	49	21.19	21.31	21.32		
10	64QAM	25	0	20.06	20.16	20.13	21.3	2
10	64QAM	25	12	20.06	20.12	20.14		
10	64QAM	25	25	20.02	20.15	20.10		
10	64QAM	50	0	20.06	20.10	20.13		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.04	23.12	23.11	23.3	0
5	QPSK	1	12	23.08	23.06	23.10		
5	QPSK	1	24	22.99	23.11	23.00		
5	QPSK	12	0	22.05	22.14	22.13	22.5	0.8
5	QPSK	12	7	22.02	22.15	22.13		
5	QPSK	12	13	22.00	22.15	22.09		
5	QPSK	25	0	22.00	22.12	22.11		
5	16QAM	1	0	22.32	22.48	22.42	22.5	0.8
5	16QAM	1	12	22.24	22.48	22.47		
5	16QAM	1	24	22.23	22.39	22.39		
5	16QAM	12	0	21.03	21.12	21.13	22.3	1
5	16QAM	12	7	21.02	21.20	21.17		
5	16QAM	12	13	21.02	21.14	21.18		
5	16QAM	25	0	21.03	21.12	21.10		
5	64QAM	1	0	21.15	21.32	21.28	22.3	1
5	64QAM	1	12	21.12	21.33	21.27		
5	64QAM	1	24	21.16	21.50	21.26		
5	64QAM	12	0	20.07	20.13	20.16	21.3	2
5	64QAM	12	7	20.07	20.20	20.16		
5	64QAM	12	13	20.07	20.15	20.10		
5	64QAM	25	0	20.01	20.12	20.10		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	22.99	23.09	23.10	23.3	0
3	QPSK	1	8	23.13	23.22	23.24		
3	QPSK	1	14	23.00	23.05	23.12		
3	QPSK	8	0	22.02	22.10	22.11	22.5	0.8
3	QPSK	8	4	22.01	22.14	22.12		
3	QPSK	8	7	21.97	22.08	22.08		
3	QPSK	15	0	22.00	22.11	22.12		
3	16QAM	1	0	22.29	22.43	22.42	22.5	0.8
3	16QAM	1	8	22.32	22.50	22.50		
3	16QAM	1	14	22.21	22.40	22.31		
3	16QAM	8	0	21.04	21.17	21.17	22.3	1
3	16QAM	8	4	21.06	21.18	21.17		
3	16QAM	8	7	21.02	21.14	21.17		
3	16QAM	15	0	21.02	21.13	21.16		
3	64QAM	1	0	21.08	21.32	21.23	22.3	1
3	64QAM	1	8	21.12	21.16	21.27		
3	64QAM	1	14	21.07	21.18	21.26		
3	64QAM	8	0	20.04	20.09	20.16	21.3	2
3	64QAM	8	4	20.06	20.15	20.17		
3	64QAM	8	7	19.98	20.11	20.14		
3	64QAM	15	0	20.02	20.14	20.08		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.90	23.02	22.99	23.3	0
1.4	QPSK	1	3	22.95	23.10	23.08		
1.4	QPSK	1	5	22.86	23.02	22.96		
1.4	QPSK	3	0	23.01	23.07	23.05		
1.4	QPSK	3	1	23.03	23.12	23.11		
1.4	QPSK	3	3	23.00	23.10	23.10		
1.4	QPSK	6	0	21.95	22.04	22.08	22.5	0.8
1.4	16QAM	1	0	22.23	22.36	22.33	22.5	0.8
1.4	16QAM	1	3	22.26	22.42	22.42		
1.4	16QAM	1	5	22.22	22.38	22.22		
1.4	16QAM	3	0	21.94	22.16	22.04		
1.4	16QAM	3	1	22.02	22.14	22.13		
1.4	16QAM	3	3	21.97	22.13	22.11		
1.4	16QAM	6	0	20.99	21.11	21.10	22.3	1
1.4	64QAM	1	0	21.10	21.21	21.22	22.3	1
1.4	64QAM	1	3	21.13	21.24	21.24		
1.4	64QAM	1	5	21.09	21.14	21.12		
1.4	64QAM	3	0	21.05	21.20	21.16		
1.4	64QAM	3	1	21.06	21.26	21.23		
1.4	64QAM	3	3	21.09	21.15	21.18		
1.4	64QAM	6	0	19.97	20.06	20.00	21.3	2

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	22.29	22.34	22.36	22.4	0
20	QPSK	1	49	22.19	22.22	22.09		
20	QPSK	1	99	22.07	22.13	22.04		
20	QPSK	50	0	21.30	21.34	21.35	21.9	0.5
20	QPSK	50	24	21.28	21.27	21.30		
20	QPSK	50	50	21.24	21.20	21.21		
20	QPSK	100	0	21.25	21.26	21.27		
20	16QAM	1	0	21.46	21.48	21.49	21.9	0.5
20	16QAM	1	49	21.48	21.50	21.48		
20	16QAM	1	99	21.45	21.43	21.50		
20	16QAM	50	0	20.28	20.32	20.37	20.4	2
20	16QAM	50	24	20.24	20.27	20.24		
20	16QAM	50	50	20.18	20.24	20.14		
20	16QAM	100	0	20.21	20.28	20.15		
20	64QAM	1	0	20.13	20.25	20.27	20.4	2
20	64QAM	1	49	19.97	20.03	19.97		
20	64QAM	1	99	20.03	20.03	19.92		
20	64QAM	50	0	18.91	18.99	19.02	19.4	3
20	64QAM	50	24	18.85	18.95	18.88		
20	64QAM	50	50	18.84	18.92	18.85		
20	64QAM	100	0	18.88	18.98	18.90		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.22	22.35	22.35	22.4	0
15	QPSK	1	37	22.14	22.16	22.08		
15	QPSK	1	74	22.17	22.21	22.10		
15	QPSK	36	0	21.22	21.28	21.21	21.9	0.5
15	QPSK	36	20	21.23	21.29	21.16		
15	QPSK	36	39	21.18	21.20	21.11		
15	QPSK	75	0	21.23	21.25	21.16		
15	16QAM	1	0	21.50	21.50	21.49	21.9	0.5
15	16QAM	1	37	21.48	21.46	21.40		
15	16QAM	1	74	21.45	21.49	21.43		
15	16QAM	36	0	20.24	20.26	20.21	20.4	2
15	16QAM	36	20	20.19	20.24	20.17		
15	16QAM	36	39	20.15	20.19	20.11		
15	16QAM	75	0	20.18	20.21	20.16		
15	64QAM	1	0	20.13	20.26	20.32	20.4	2
15	64QAM	1	37	19.92	20.07	19.98		
15	64QAM	1	74	19.96	20.08	20.01		
15	64QAM	36	0	18.87	19.01	18.90	19.4	3
15	64QAM	36	20	18.86	18.97	18.86		
15	64QAM	36	39	18.83	18.91	18.85		
15	64QAM	75	0	18.83	18.93	18.86		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.23	22.25	22.14	22.4	0
10	QPSK	1	25	22.17	22.13	22.14		
10	QPSK	1	49	22.15	22.15	22.04		
10	QPSK	25	0	21.20	21.25	21.17	21.9	0.5
10	QPSK	25	12	21.18	21.23	21.15		
10	QPSK	25	25	21.14	21.22	21.11		
10	QPSK	50	0	21.17	21.22	21.15		
10	16QAM	1	0	21.48	21.50	21.49	21.9	0.5
10	16QAM	1	25	21.44	21.44	21.49		
10	16QAM	1	49	21.40	21.45	21.43		
10	16QAM	25	0	20.16	20.21	20.13	20.4	2
10	16QAM	25	12	20.16	20.21	20.14		
10	16QAM	25	25	20.11	20.18	20.11		
10	16QAM	50	0	20.19	20.22	20.16		
10	64QAM	1	0	20.01	20.11	20.06	20.4	2
10	64QAM	1	25	19.96	20.05	19.98		
10	64QAM	1	49	19.95	20.02	19.94		
10	64QAM	25	0	18.80	18.93	18.85	19.4	3
10	64QAM	25	12	18.84	18.88	18.83		
10	64QAM	25	25	18.78	18.87	18.80		
10	64QAM	50	0	18.78	18.92	18.85		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.15	22.16	22.13	22.4	0
5	QPSK	1	12	22.08	22.14	22.10		
5	QPSK	1	24	22.13	22.13	22.02		
5	QPSK	12	0	21.14	21.19	21.14	21.9	0.5
5	QPSK	12	7	21.13	21.22	21.15		
5	QPSK	12	13	21.15	21.20	21.09		
5	QPSK	25	0	21.09	21.19	21.15		
5	16QAM	1	0	21.50	21.49	21.48	21.9	0.5
5	16QAM	1	12	21.44	21.48	21.46		
5	16QAM	1	24	21.42	21.48	21.42		
5	16QAM	12	0	20.18	20.17	20.09	20.4	2
5	16QAM	12	7	20.17	20.27	20.14		
5	16QAM	12	13	20.18	20.20	20.13		
5	16QAM	25	0	20.17	20.18	20.10		
5	64QAM	1	0	19.91	20.05	19.96	20.4	2
5	64QAM	1	12	19.90	20.05	19.88		
5	64QAM	1	24	19.92	19.99	19.90		
5	64QAM	12	0	18.78	18.93	18.82	19.4	3
5	64QAM	12	7	18.82	18.93	18.82		
5	64QAM	12	13	18.76	18.89	18.78		
5	64QAM	25	0	18.74	18.88	18.74		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.10	22.15	22.10	22.4	0
3	QPSK	1	8	22.25	22.27	22.22		
3	QPSK	1	14	22.11	22.11	22.06		
3	QPSK	8	0	21.13	21.19	21.09	21.9	0.5
3	QPSK	8	4	21.15	21.21	21.12		
3	QPSK	8	7	21.09	21.16	21.06		
3	QPSK	15	0	21.09	21.21	21.07		
3	16QAM	1	0	21.47	21.42	21.41	21.9	0.5
3	16QAM	1	8	21.45	21.46	21.44		
3	16QAM	1	14	21.37	21.47	21.42		
3	16QAM	8	0	20.21	20.28	20.15	20.4	2
3	16QAM	8	4	20.23	20.27	20.17		
3	16QAM	8	7	20.19	20.26	20.13		
3	16QAM	15	0	20.17	20.17	20.09		
3	64QAM	1	0	19.84	20.04	19.88	20.4	2
3	64QAM	1	8	19.90	20.08	19.87		
3	64QAM	1	14	19.84	19.94	19.90		
3	64QAM	8	0	18.75	18.88	18.79	19.4	3
3	64QAM	8	4	18.76	18.89	18.81		
3	64QAM	8	7	18.73	18.85	18.77		
3	64QAM	15	0	18.71	18.86	18.75		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.01	22.08	22.02	22.4	0
1.4	QPSK	1	3	22.09	22.16	22.09		
1.4	QPSK	1	5	22.06	22.06	22.00		
1.4	QPSK	3	0	22.07	22.15	22.05		
1.4	QPSK	3	1	22.13	22.18	22.08		
1.4	QPSK	3	3	22.12	22.19	22.12		
1.4	QPSK	6	0	21.05	21.12	21.03	21.9	0.5
1.4	16QAM	1	0	21.39	21.48	21.37	21.9	0.5
1.4	16QAM	1	3	21.49	21.50	21.39		
1.4	16QAM	1	5	21.37	21.45	21.37		
1.4	16QAM	3	0	21.14	21.19	21.12		
1.4	16QAM	3	1	21.21	21.20	21.20		
1.4	16QAM	3	3	21.13	21.19	21.20		
1.4	16QAM	6	0	20.15	20.20	20.07	20.4	2
1.4	64QAM	1	0	19.87	19.87	19.81	20.4	2
1.4	64QAM	1	3	19.85	19.98	19.88		
1.4	64QAM	1	5	19.81	19.89	19.77		
1.4	64QAM	3	0	19.82	19.97	19.84		
1.4	64QAM	3	1	19.83	20.00	19.87		
1.4	64QAM	3	3	19.81	19.96	19.81		
1.4	64QAM	6	0	18.65	18.81	18.69	19.4	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	23.45	23.30	23.37	24.7	0
10	QPSK	1	25	23.39	23.22	23.30		
10	QPSK	1	49	23.25	23.25	23.32		
10	QPSK	25	0	22.41	22.31	22.38	23.7	1
10	QPSK	25	12	22.41	22.29	22.39		
10	QPSK	25	25	22.47	22.32	22.46		
10	QPSK	50	0	22.48	22.26	22.47		
10	16QAM	1	0	22.67	22.63	22.68	23.7	1
10	16QAM	1	25	22.59	22.60	22.55		
10	16QAM	1	49	22.60	22.58	22.59		
10	16QAM	25	0	21.36	21.27	21.36	22.7	2
10	16QAM	25	12	21.40	21.35	21.35		
10	16QAM	25	25	21.33	21.35	21.41		
10	16QAM	50	0	21.36	21.30	21.46		
10	64QAM	1	0	21.37	21.39	21.39	22.7	2
10	64QAM	1	25	21.32	21.28	21.36		
10	64QAM	1	49	21.32	21.37	21.36		
10	64QAM	25	0	20.20	20.13	20.18	21.7	3
10	64QAM	25	12	20.17	20.15	20.19		
10	64QAM	25	25	20.13	20.21	20.26		
10	64QAM	50	0	20.17	20.13	20.30		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.42	23.27	23.25	24.7	0
5	QPSK	1	12	23.41	23.21	23.29		
5	QPSK	1	24	23.27	23.34	23.36		
5	QPSK	12	0	22.40	22.30	22.40	23.7	1
5	QPSK	12	7	22.38	22.29	22.40		
5	QPSK	12	13	22.36	22.29	22.42		
5	QPSK	25	0	22.40	22.26	22.40		
5	16QAM	1	0	22.62	22.63	22.55	23.7	1
5	16QAM	1	12	22.60	22.47	22.60		
5	16QAM	1	24	22.60	22.61	22.58		
5	16QAM	12	0	21.40	21.31	21.42	22.7	2
5	16QAM	12	7	21.40	21.32	21.42		
5	16QAM	12	13	21.41	21.30	21.42		
5	16QAM	25	0	21.39	21.27	21.40		
5	64QAM	1	0	21.35	21.27	21.34	22.7	2
5	64QAM	1	12	21.29	21.37	21.44		
5	64QAM	1	24	21.30	21.37	21.34		
5	64QAM	12	0	20.24	20.14	20.34	21.7	3
5	64QAM	12	7	20.24	20.12	20.32		
5	64QAM	12	13	20.18	20.15	20.29		
5	64QAM	25	0	20.14	20.10	20.24		

Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.32	23.23	23.39	24.7	0
3	QPSK	1	8	23.33	23.36	23.35		
3	QPSK	1	14	23.39	23.26	23.27		
3	QPSK	8	0	22.36	22.25	22.38	23.7	1
3	QPSK	8	4	22.41	22.27	22.38		
3	QPSK	8	7	22.38	22.21	22.35		
3	QPSK	15	0	22.37	22.25	22.38		
3	16QAM	1	0	22.64	22.65	22.55	23.7	1
3	16QAM	1	8	22.69	22.55	22.68		
3	16QAM	1	14	22.60	22.50	22.50		
3	16QAM	8	0	21.48	21.34	21.43	22.7	2
3	16QAM	8	4	21.43	21.33	21.43		
3	16QAM	8	7	21.43	21.25	21.39		
3	16QAM	15	0	21.38	21.27	21.40		
3	64QAM	1	0	21.34	21.24	21.36	22.7	2
3	64QAM	1	8	21.32	21.21	21.32		
3	64QAM	1	14	21.29	21.26	21.36		
3	64QAM	8	0	20.20	20.08	20.23	21.7	3
3	64QAM	8	4	20.20	20.12	20.30		
3	64QAM	8	7	20.16	20.07	20.24		
3	64QAM	15	0	20.17	20.09	20.26		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.28	23.17	23.22	24.7	0
1.4	QPSK	1	3	23.36	23.23	23.31		
1.4	QPSK	1	5	23.27	23.16	23.20		
1.4	QPSK	3	0	23.38	23.22	23.30		
1.4	QPSK	3	1	23.41	23.24	23.32		
1.4	QPSK	3	3	23.42	23.25	23.37		
1.4	QPSK	6	0	22.32	22.16	22.31	23.7	1
1.4	16QAM	1	0	22.53	22.44	22.55	23.7	1
1.4	16QAM	1	3	22.62	22.52	22.57		
1.4	16QAM	1	5	22.51	22.42	22.51		
1.4	16QAM	3	0	22.35	22.24	22.30		
1.4	16QAM	3	1	22.44	22.29	22.28		
1.4	16QAM	3	3	22.43	22.26	22.28		
1.4	16QAM	6	0	21.41	21.24	21.33	22.7	2
1.4	64QAM	1	0	21.25	21.18	21.29	22.7	2
1.4	64QAM	1	3	21.30	21.27	21.37		
1.4	64QAM	1	5	21.27	21.17	21.32		
1.4	64QAM	3	0	21.24	21.18	21.33		
1.4	64QAM	3	1	21.27	21.21	21.32		
1.4	64QAM	3	3	21.23	21.16	21.25		
1.4	64QAM	6	0	20.10	20.02	20.18	21.7	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	21.12	20.99	21.09	22.4	0
20	QPSK	1	49	21.26	21.19	21.14		
20	QPSK	1	99	21.22	21.19	21.06		
20	QPSK	50	0	20.24	20.14	20.11	21.4	1
20	QPSK	50	24	20.36	20.22	20.15		
20	QPSK	50	50	20.41	20.30	20.25		
20	QPSK	100	0	20.26	20.25	20.15		
20	16QAM	1	0	20.44	20.26	20.39	21.4	1
20	16QAM	1	49	20.55	20.52	20.46		
20	16QAM	1	99	20.50	20.51	20.30		
20	16QAM	50	0	19.16	19.25	19.15	20.4	2
20	16QAM	50	24	19.29	19.25	19.20		
20	16QAM	50	50	19.27	19.21	19.18		
20	16QAM	100	0	19.22	19.18	19.30		
20	64QAM	1	0	19.15	19.06	19.14	20.4	2
20	64QAM	1	49	19.21	19.26	19.22		
20	64QAM	1	99	19.21	19.24	18.70		
20	64QAM	50	0	17.86	18.11	18.08	19.4	3
20	64QAM	50	24	18.05	18.16	18.12		
20	64QAM	50	50	18.04	18.14	18.12		
20	64QAM	100	0	18.02	18.12	17.99		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	21.06	21.10	21.06	22.4	0
15	QPSK	1	37	21.13	21.19	21.12		
15	QPSK	1	74	21.19	21.14	20.70		
15	QPSK	36	0	20.14	20.20	20.21	21.4	1
15	QPSK	36	20	20.21	20.26	20.27		
15	QPSK	36	39	20.29	20.20	20.23		
15	QPSK	75	0	20.16	20.30	20.20		
15	16QAM	1	0	20.45	20.47	20.45	21.4	1
15	16QAM	1	37	20.55	20.47	20.45		
15	16QAM	1	74	20.53	20.47	20.60		
15	16QAM	36	0	19.14	19.15	19.16	20.4	2
15	16QAM	36	20	19.19	19.26	19.21		
15	16QAM	36	39	19.26	19.23	19.22		
15	16QAM	75	0	19.14	19.23	19.21		
15	64QAM	1	0	19.00	19.21	19.14	20.4	2
15	64QAM	1	37	19.08	19.27	19.13		
15	64QAM	1	74	19.17	19.32	18.70		
15	64QAM	36	0	17.84	18.13	18.04	19.4	3
15	64QAM	36	20	17.95	18.18	18.06		
15	64QAM	36	39	17.99	18.17	18.02		
15	64QAM	75	0	17.83	18.11	17.94		

Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	21.06	21.12	21.11	22.4	0
10	QPSK	1	25	21.13	21.15	20.94		
10	QPSK	1	49	21.21	21.11	20.70		
10	QPSK	25	0	20.16	20.18	20.08	21.4	1
10	QPSK	25	12	20.20	20.22	20.20		
10	QPSK	25	25	20.14	20.15	20.19		
10	QPSK	50	0	20.15	20.21	20.20		
10	16QAM	1	0	20.43	20.38	20.25	21.4	1
10	16QAM	1	25	20.44	20.47	20.26		
10	16QAM	1	49	20.50	20.43	19.85		
10	16QAM	25	0	19.13	19.17	19.06	20.4	2
10	16QAM	25	12	19.21	19.22	19.12		
10	16QAM	25	25	19.15	19.20	19.20		
10	16QAM	50	0	19.18	19.22	19.18		
10	64QAM	1	0	19.01	19.20	19.13	20.4	2
10	64QAM	1	25	19.06	19.28	19.21		
10	64QAM	1	49	19.17	19.28	18.93		
10	64QAM	25	0	17.82	18.09	17.97	19.4	3
10	64QAM	25	12	17.88	18.15	18.01		
10	64QAM	25	25	17.83	18.09	17.97		
10	64QAM	50	0	17.84	18.12	17.97		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	21.07	21.10	21.13	22.4	0
5	QPSK	1	12	21.15	21.18	20.72		
5	QPSK	1	24	21.10	21.13	20.94		
5	QPSK	12	0	20.16	20.16	20.04	21.4	1
5	QPSK	12	7	20.23	20.23	20.13		
5	QPSK	12	13	20.19	20.10	20.10		
5	QPSK	25	0	20.18	20.10	20.11		
5	16QAM	1	0	20.41	20.37	20.20	21.4	1
5	16QAM	1	12	20.48	20.40	20.04		
5	16QAM	1	24	20.41	20.52	20.20		
5	16QAM	12	0	19.19	19.11	19.07	20.4	2
5	16QAM	12	7	19.25	19.15	19.12		
5	16QAM	12	13	19.20	19.21	19.11		
5	16QAM	25	0	19.16	19.21	19.08		
5	64QAM	1	0	19.05	19.18	19.11	20.4	2
5	64QAM	1	12	18.99	19.30	19.20		
5	64QAM	1	24	18.92	19.24	19.19		
5	64QAM	12	0	17.82	18.12	18.07	19.4	3
5	64QAM	12	7	17.88	18.16	18.03		
5	64QAM	12	13	17.84	18.13	18.01		
5	64QAM	25	0	17.82	18.08	17.94		

<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	23.30	23.45	23.44	25	0
10	QPSK	1	25	23.58	23.65	23.43		
10	QPSK	1	49	23.43	23.52	23.51		
10	QPSK	25	0	22.40	22.57	22.32	24	1
10	QPSK	25	12	22.57	22.61	22.43		
10	QPSK	25	25	22.53	22.52	22.41		
10	QPSK	50	0	22.46	22.53	22.50		
10	16QAM	1	0	22.50	22.62	22.67	24	1
10	16QAM	1	25	22.69	22.77	22.65		
10	16QAM	1	49	22.64	22.74	22.73		
10	16QAM	25	0	21.42	21.57	21.45	23	2
10	16QAM	25	12	21.55	21.58	21.47		
10	16QAM	25	25	21.54	21.55	21.49		
10	16QAM	50	0	21.55	21.54	21.47		
10	64QAM	1	0	21.41	21.53	21.47	23	2
10	64QAM	1	25	21.58	21.64	21.55		
10	64QAM	1	49	21.56	21.65	21.61		
10	64QAM	25	0	20.31	20.48	20.38	22	3
10	64QAM	25	12	20.46	20.50	20.39		
10	64QAM	25	25	20.42	20.49	20.48		
10	64QAM	50	0	20.45	20.52	20.38		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	23.40	23.53	23.45	25	0
5	QPSK	1	12	23.44	23.49	23.37		
5	QPSK	1	24	23.55	23.53	23.46		
5	QPSK	12	0	22.52	22.54	22.48	24	1
5	QPSK	12	7	22.54	22.57	22.50		
5	QPSK	12	13	22.53	22.54	22.50		
5	QPSK	25	0	22.50	22.55	22.51		
5	16QAM	1	0	22.66	22.76	22.55	24	1
5	16QAM	1	12	22.68	22.74	22.69		
5	16QAM	1	24	22.79	22.77	22.69		
5	16QAM	12	0	21.59	21.53	21.52	23	2
5	16QAM	12	7	21.59	21.55	21.54		
5	16QAM	12	13	21.49	21.55	21.48		
5	16QAM	25	0	21.52	21.50	21.47		
5	64QAM	1	0	21.58	21.64	21.44	23	2
5	64QAM	1	12	21.52	21.63	21.59		
5	64QAM	1	24	21.66	21.67	21.61		
5	64QAM	12	0	20.46	20.54	20.56	22	3
5	64QAM	12	7	20.49	20.55	20.45		
5	64QAM	12	13	20.45	20.49	20.54		
5	64QAM	25	0	20.43	20.47	20.51		

Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.32	23.48	23.44	25	0
3	QPSK	1	8	23.38	23.59	23.60		
3	QPSK	1	14	23.30	23.51	23.40		
3	QPSK	8	0	22.35	22.52	22.45	24	1
3	QPSK	8	4	22.37	22.51	22.49		
3	QPSK	8	7	22.35	22.54	22.46		
3	QPSK	15	0	22.37	22.50	22.46		
3	16QAM	1	0	22.51	22.76	22.57	24	1
3	16QAM	1	8	22.60	22.90	22.69		
3	16QAM	1	14	22.53	22.72	22.68		
3	16QAM	8	0	21.43	21.59	21.47	23	2
3	16QAM	8	4	21.41	21.60	21.51		
3	16QAM	8	7	21.41	21.54	21.46		
3	16QAM	15	0	21.43	21.54	21.48		
3	64QAM	1	0	21.44	21.60	21.54	23	2
3	64QAM	1	8	21.47	21.61	21.51		
3	64QAM	1	14	21.45	21.64	21.53		
3	64QAM	8	0	20.31	20.48	20.51	22	3
3	64QAM	8	4	20.32	20.51	20.40		
3	64QAM	8	7	20.30	20.47	20.46		
3	64QAM	15	0	20.30	20.44	20.50		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	23.30	23.43	23.34	25	0
1.4	QPSK	1	3	23.30	23.44	23.32		
1.4	QPSK	1	5	23.30	23.39	23.30		
1.4	QPSK	3	0	23.40	23.46	23.33		
1.4	QPSK	3	1	23.45	23.52	23.42		
1.4	QPSK	3	3	23.44	23.54	23.41		
1.4	QPSK	6	0	22.30	22.45	22.34	24	1
1.4	16QAM	1	0	22.47	22.62	22.50	24	1
1.4	16QAM	1	3	22.58	22.73	22.62		
1.4	16QAM	1	5	22.50	22.64	22.58		
1.4	16QAM	3	0	22.30	22.50	22.40		
1.4	16QAM	3	1	22.30	22.57	22.43		
1.4	16QAM	3	3	22.31	22.54	22.45		
1.4	16QAM	6	0	21.31	21.51	21.46	23	2
1.4	64QAM	1	0	21.42	21.54	21.49	23	2
1.4	64QAM	1	3	21.44	21.63	21.59		
1.4	64QAM	1	5	21.37	21.55	21.51		
1.4	64QAM	3	0	21.34	21.51	21.40		
1.4	64QAM	3	1	21.41	21.55	21.45		
1.4	64QAM	3	3	21.32	21.53	21.47		
1.4	64QAM	6	0	20.30	20.37	20.38	22	3

<LTE Band 13>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23230				
Frequency (MHz)				782				
10	QPSK	1	0	22.30			23.1	0
10	QPSK	1	25	22.60				
10	QPSK	1	49	22.43				
10	QPSK	25	0	21.46			22.1	1
10	QPSK	25	12	21.55				
10	QPSK	25	25	21.68				
10	QPSK	50	0	21.49				
10	16QAM	1	0	21.88			22.1	1
10	16QAM	1	25	22.06				
10	16QAM	1	49	21.69				
10	16QAM	25	0	20.36			21.1	2
10	16QAM	25	12	20.59				
10	16QAM	25	25	20.53				
10	16QAM	50	0	20.45				
10	64QAM	1	0	20.29			21.1	2
10	64QAM	1	25	20.65				
10	64QAM	1	49	20.44				
10	64QAM	25	0	19.46			20.1	3
10	64QAM	25	12	19.56				
10	64QAM	25	25	19.32				
10	64QAM	50	0	19.40				
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	22.29	22.42	22.50	23.1	0
5	QPSK	1	12	22.38	22.45	22.39		
5	QPSK	1	24	22.34	22.59	22.36		
5	QPSK	12	0	21.48	21.61	21.53	22.1	1
5	QPSK	12	7	21.45	21.59	21.42		
5	QPSK	12	13	21.56	21.62	21.43		
5	QPSK	25	0	21.46	21.68	21.48		
5	16QAM	1	0	21.67	22.10	22.07	22.1	1
5	16QAM	1	12	21.64	22.08	22.01		
5	16QAM	1	24	21.81	22.06	21.98		
5	16QAM	12	0	20.51	20.65	20.54	21.1	2
5	16QAM	12	7	20.55	20.63	20.54		
5	16QAM	12	13	20.57	20.57	20.44		
5	16QAM	25	0	20.44	20.70	20.48		
5	64QAM	1	0	20.67	20.67	20.76	21.1	2
5	64QAM	1	12	20.68	20.82	20.56		
5	64QAM	1	24	20.85	20.78	20.51		
5	64QAM	12	0	19.50	19.56	19.61	20.1	3
5	64QAM	12	7	19.51	19.64	19.54		
5	64QAM	12	13	19.63	19.62	19.51		
5	64QAM	25	0	19.46	19.51	19.43		

<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	23.37	23.38	23.35	25	0
10	QPSK	1	25	23.38	23.38	23.30		
10	QPSK	1	49	23.44	23.51	23.38		
10	QPSK	25	0	22.42	22.51	22.35	24	1
10	QPSK	25	12	22.40	22.48	22.37		
10	QPSK	25	25	22.37	22.36	22.45		
10	QPSK	50	0	22.36	22.41	22.30		
10	16QAM	1	0	22.61	22.67	22.63	24	1
10	16QAM	1	25	22.63	22.65	22.58		
10	16QAM	1	49	22.59	22.61	22.65		
10	16QAM	25	0	21.42	21.39	21.38	23	2
10	16QAM	25	12	21.40	21.38	21.36		
10	16QAM	25	25	21.39	21.36	21.46		
10	16QAM	50	0	21.39	21.38	21.39		
10	64QAM	1	0	21.47	21.44	21.44	23	2
10	64QAM	1	25	21.48	21.49	21.47		
10	64QAM	1	49	21.53	21.52	21.51		
10	64QAM	25	0	20.33	20.33	20.32	22	3
10	64QAM	25	12	20.37	20.37	20.37		
10	64QAM	25	25	20.34	20.34	20.41		
10	64QAM	50	0	20.33	20.34	20.32		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	23.42	23.37	23.30	25	0
5	QPSK	1	12	23.39	23.31	23.48		
5	QPSK	1	24	23.34	23.49	23.39		
5	QPSK	12	0	22.37	22.36	22.45	24	1
5	QPSK	12	7	22.41	22.39	22.49		
5	QPSK	12	13	22.41	22.38	22.43		
5	QPSK	25	0	22.41	22.35	22.45		
5	16QAM	1	0	22.63	22.58	22.46	24	1
5	16QAM	1	12	22.60	22.58	22.50		
5	16QAM	1	24	22.56	22.48	22.53		
5	16QAM	12	0	21.42	21.39	21.48	23	2
5	16QAM	12	7	21.41	21.41	21.47		
5	16QAM	12	13	21.40	21.40	21.45		
5	16QAM	25	0	21.42	21.38	21.45		
5	64QAM	1	0	21.47	21.50	21.46	23	2
5	64QAM	1	12	21.48	21.47	21.50		
5	64QAM	1	24	21.51	21.48	21.48		
5	64QAM	12	0	20.35	20.34	20.39	22	3
5	64QAM	12	7	20.40	20.36	20.43		
5	64QAM	12	13	20.38	20.33	20.43		
5	64QAM	25	0	20.31	20.31	20.39		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	22.26	22.28	22.24	23.3	0
20	QPSK	1	49	22.07	22.12	22.09		
20	QPSK	1	99	22.04	22.10	22.10		
20	QPSK	50	0	21.23	21.26	21.20	22.3	1
20	QPSK	50	24	21.13	21.21	21.12		
20	QPSK	50	50	21.10	21.20	21.07		
20	QPSK	100	0	21.16	21.22	21.21		
20	16QAM	1	0	21.50	21.50	21.41	22.3	1
20	16QAM	1	49	21.34	21.40	21.27		
20	16QAM	1	99	21.35	21.42	21.36		
20	16QAM	50	0	20.24	20.26	20.18	21.3	2
20	16QAM	50	24	20.20	20.26	20.10		
20	16QAM	50	50	20.10	20.19	20.07		
20	16QAM	100	0	20.13	20.22	20.21		
20	64QAM	1	0	20.06	20.02	19.99	21.3	2
20	64QAM	1	49	19.82	19.96	19.84		
20	64QAM	1	99	19.75	19.88	19.63		
20	64QAM	50	0	18.79	18.86	18.73	20.3	3
20	64QAM	50	24	18.71	18.84	18.70		
20	64QAM	50	50	18.69	18.80	18.69		
20	64QAM	100	0	18.73	18.81	18.72		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	22.17	22.11	22.22	23.3	0
15	QPSK	1	37	21.92	21.96	22.05		
15	QPSK	1	74	21.93	22.04	22.09		
15	QPSK	36	0	21.07	21.16	21.23	22.3	1
15	QPSK	36	20	21.01	21.08	21.22		
15	QPSK	36	39	20.96	21.07	21.20		
15	QPSK	75	0	21.04	21.10	21.22		
15	16QAM	1	0	21.39	21.43	21.50	22.3	1
15	16QAM	1	37	21.24	21.31	21.33		
15	16QAM	1	74	21.25	21.38	21.32		
15	16QAM	36	0	20.09	20.10	20.23	21.3	2
15	16QAM	36	20	20.03	20.12	20.17		
15	16QAM	36	39	19.99	20.09	20.16		
15	16QAM	75	0	20.00	20.11	20.16		
15	64QAM	1	0	20.00	20.08	20.09	21.3	2
15	64QAM	1	37	19.80	19.88	19.74		
15	64QAM	1	74	19.84	19.93	19.74		
15	64QAM	36	0	18.80	18.83	18.70	20.3	3
15	64QAM	36	20	18.71	18.84	18.69		
15	64QAM	36	39	18.67	18.77	18.77		
15	64QAM	75	0	18.71	18.81	18.72		

Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	22.02	22.04	22.19	23.3	0
10	QPSK	1	25	21.96	21.98	21.97		
10	QPSK	1	49	21.85	21.98	22.06		
10	QPSK	25	0	21.02	21.06	21.13	22.3	1
10	QPSK	25	12	20.99	21.06	21.11		
10	QPSK	25	25	20.94	21.03	21.10		
10	QPSK	50	0	20.99	21.05	21.09		
10	16QAM	1	0	21.26	21.33	21.34	22.3	1
10	16QAM	1	25	21.19	21.28	21.27		
10	16QAM	1	49	21.14	21.24	21.27		
10	16QAM	25	0	19.99	20.10	20.11	21.3	2
10	16QAM	25	12	19.97	20.10	20.13		
10	16QAM	25	25	19.93	20.09	20.07		
10	16QAM	50	0	19.95	20.10	20.08		
10	64QAM	1	0	19.92	19.97	19.83	21.3	2
10	64QAM	1	25	19.75	19.92	19.73		
10	64QAM	1	49	19.71	19.91	19.79		
10	64QAM	25	0	18.63	18.79	18.66	20.3	3
10	64QAM	25	12	18.63	18.82	18.66		
10	64QAM	25	25	18.59	18.67	18.62		
10	64QAM	50	0	18.60	18.76	18.65		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	22.01	22.01	22.02	23.3	0
5	QPSK	1	12	21.92	21.98	22.11		
5	QPSK	1	24	21.98	21.99	22.04		
5	QPSK	12	0	20.99	21.07	21.06	22.3	1
5	QPSK	12	7	20.96	21.06	21.07		
5	QPSK	12	13	20.97	21.06	21.05		
5	QPSK	25	0	20.98	21.08	21.09		
5	16QAM	1	0	21.23	21.39	21.33	22.3	1
5	16QAM	1	12	21.19	21.37	21.30		
5	16QAM	1	24	21.18	21.35	21.27		
5	16QAM	12	0	19.96	20.08	20.10	21.3	2
5	16QAM	12	7	20.02	20.13	20.10		
5	16QAM	12	13	19.95	20.06	20.09		
5	16QAM	25	0	19.94	20.07	20.06		
5	64QAM	1	0	19.83	19.83	19.79	21.3	2
5	64QAM	1	12	19.71	19.78	19.72		
5	64QAM	1	24	19.74	19.80	19.77		
5	64QAM	12	0	18.67	18.73	18.69	20.3	3
5	64QAM	12	7	18.66	18.72	18.67		
5	64QAM	12	13	18.62	18.69	18.68		
5	64QAM	25	0	18.61	18.64	18.62		

Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	21.92	22.00	22.07	23.3	0
3	QPSK	1	8	22.00	22.12	22.10		
3	QPSK	1	14	21.85	22.01	21.96		
3	QPSK	8	0	20.96	20.95	21.11	22.3	1
3	QPSK	8	4	20.95	20.99	21.14		
3	QPSK	8	7	20.96	21.01	21.08		
3	QPSK	15	0	20.97	21.04	21.06		
3	16QAM	1	0	21.14	21.26	21.16	22.3	1
3	16QAM	1	8	21.25	21.35	21.24		
3	16QAM	1	14	21.13	21.23	21.15		
3	16QAM	8	0	20.02	20.13	20.11	21.3	2
3	16QAM	8	4	20.04	20.14	20.15		
3	16QAM	8	7	19.99	20.10	20.13		
3	16QAM	15	0	19.97	20.10	20.11		
3	64QAM	1	0	19.75	19.82	19.75	21.3	2
3	64QAM	1	8	19.75	19.80	19.78		
3	64QAM	1	14	19.75	19.82	19.77		
3	64QAM	8	0	18.63	18.68	18.67	20.3	3
3	64QAM	8	4	18.67	18.70	18.68		
3	64QAM	8	7	18.64	18.68	18.67		
3	64QAM	15	0	18.61	18.66	18.63		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	21.86	21.99	21.94	23.3	0
1.4	QPSK	1	3	21.94	22.02	22.03		
1.4	QPSK	1	5	21.85	21.95	21.96		
1.4	QPSK	3	0	21.88	22.02	22.04		
1.4	QPSK	3	1	21.98	22.08	22.11		
1.4	QPSK	3	3	21.96	22.04	22.06		
1.4	QPSK	6	0	20.89	21.03	21.05	22.3	1
1.4	16QAM	1	0	21.14	21.27	21.21	22.3	1
1.4	16QAM	1	3	21.23	21.35	21.33		
1.4	16QAM	1	5	21.14	21.18	21.27		
1.4	16QAM	3	0	20.92	21.07	21.00		
1.4	16QAM	3	1	20.96	21.08	21.10		
1.4	16QAM	3	3	20.96	21.09	21.05		
1.4	16QAM	6	0	19.98	20.09	20.12	21.3	2
1.4	64QAM	1	0	19.90	19.84	19.82	21.3	2
1.4	64QAM	1	3	19.96	19.92	19.89		
1.4	64QAM	1	5	19.87	19.86	19.81		
1.4	64QAM	3	0	19.92	19.84	19.76		
1.4	64QAM	3	1	19.94	19.88	19.80		
1.4	64QAM	3	3	19.78	19.83	19.76		
1.4	64QAM	6	0	18.67	18.69	18.64	20.3	3

<LTE Band 26>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26765	26865	26965		
Frequency (MHz)				821.5	831.5	841.5		
15	QPSK	1	0	23.42	23.44	23.25	23.7	0
15	QPSK	1	37	23.35	23.24	23.20		
15	QPSK	1	74	23.20	23.21	23.20		
15	QPSK	36	0	22.41	22.42	22.33	22.7	1
15	QPSK	36	20	22.39	22.32	22.31		
15	QPSK	36	39	22.33	22.27	22.31		
15	QPSK	75	0	22.41	22.40	22.35		
15	16QAM	1	0	22.70	22.64	22.55	22.7	1
15	16QAM	1	37	22.69	22.61	22.55		
15	16QAM	1	74	22.59	22.63	22.56		
15	16QAM	36	0	21.45	21.32	21.34	21.7	2
15	16QAM	36	20	21.46	21.30	21.31		
15	16QAM	36	39	21.36	21.33	21.34		
15	16QAM	75	0	21.40	21.28	21.37		
15	64QAM	1	0	21.43	21.34	21.28	21.7	2
15	64QAM	1	37	21.49	21.27	21.34		
15	64QAM	1	74	21.33	21.30	21.41		
15	64QAM	36	0	20.31	20.15	20.19	20.7	3
15	64QAM	36	20	20.32	20.14	20.23		
15	64QAM	36	39	20.26	20.14	20.25		
15	64QAM	75	0	20.28	20.07	20.23		
Channel				26740	26865	26990	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	QPSK	1	0	23.40	23.16	23.14	23.7	0
10	QPSK	1	25	23.35	23.15	23.21		
10	QPSK	1	49	23.33	23.16	23.17		
10	QPSK	25	0	22.44	22.14	22.18	22.7	1
10	QPSK	25	12	22.42	22.22	22.26		
10	QPSK	25	25	22.32	22.18	22.23		
10	QPSK	50	0	22.38	22.19	22.26		
10	16QAM	1	0	22.70	22.45	22.48	22.7	1
10	16QAM	1	25	22.70	22.48	22.45		
10	16QAM	1	49	22.61	22.42	22.40		
10	16QAM	25	0	21.41	21.13	21.15	21.7	2
10	16QAM	25	12	21.44	21.24	21.27		
10	16QAM	25	25	21.33	21.17	21.20		
10	16QAM	50	0	21.38	21.21	21.26		
10	64QAM	1	0	21.39	21.17	21.18	21.7	2
10	64QAM	1	25	21.39	21.25	21.27		
10	64QAM	1	49	21.34	21.21	21.20		
10	64QAM	25	0	20.20	19.97	20.03	20.7	3
10	64QAM	25	12	20.22	20.07	20.17		
10	64QAM	25	25	20.18	20.05	20.08		
10	64QAM	50	0	20.18	20.07	20.15		

Channel				26715	26865	27015	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	QPSK	1	0	23.37	23.08	23.18	23.7	0
5	QPSK	1	12	23.31	23.13	23.24		
5	QPSK	1	24	23.31	23.11	23.13		
5	QPSK	12	0	22.40	22.21	22.21	22.7	1
5	QPSK	12	7	22.41	22.19	22.24		
5	QPSK	12	13	22.40	22.18	22.20		
5	QPSK	25	0	22.39	22.15	22.22		
5	16QAM	1	0	22.69	22.42	22.50	22.7	1
5	16QAM	1	12	22.63	22.54	22.52		
5	16QAM	1	24	22.65	22.57	22.44		
5	16QAM	12	0	21.39	21.25	21.19	21.7	2
5	16QAM	12	7	21.43	21.28	21.23		
5	16QAM	12	13	21.39	21.20	21.23		
5	16QAM	25	0	21.42	21.17	21.20		
5	64QAM	1	0	21.38	21.12	21.29	21.7	2
5	64QAM	1	12	21.35	21.22	21.23		
5	64QAM	1	24	21.36	21.17	21.24		
5	64QAM	12	0	20.21	20.08	20.14	20.7	3
5	64QAM	12	7	20.25	20.06	20.13		
5	64QAM	12	13	20.22	20.02	20.11		
5	64QAM	25	0	20.18	20.03	20.06		
Channel				26705	26865	27025	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				815.5	831.5	847.5		
3	QPSK	1	0	23.30	23.17	23.16	23.7	0
3	QPSK	1	8	23.32	23.21	23.24		
3	QPSK	1	14	23.33	23.07	23.10		
3	QPSK	8	0	22.38	22.18	22.21	22.7	1
3	QPSK	8	4	22.39	22.22	22.23		
3	QPSK	8	7	22.37	22.15	22.17		
3	QPSK	15	0	22.42	22.17	22.20		
3	16QAM	1	0	22.65	22.56	22.40	22.7	1
3	16QAM	1	8	22.70	22.58	22.53		
3	16QAM	1	14	22.68	22.57	22.36		
3	16QAM	8	0	21.42	21.22	21.24	21.7	2
3	16QAM	8	4	21.44	21.27	21.26		
3	16QAM	8	7	21.41	21.23	21.23		
3	16QAM	15	0	21.43	21.20	21.20		
3	64QAM	1	0	21.34	21.17	21.19	21.7	2
3	64QAM	1	8	21.37	21.20	21.21		
3	64QAM	1	14	21.38	21.19	21.24		
3	64QAM	8	0	20.22	20.06	20.13	20.7	3
3	64QAM	8	4	20.21	20.09	20.14		
3	64QAM	8	7	20.21	20.01	20.08		
3	64QAM	15	0	20.19	20.02	20.06		

Channel				26697	26865	27033	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				814.7	831.5	848.3		
1.4	QPSK	1	0	23.32	23.14	23.06	23.7	0
1.4	QPSK	1	3	23.38	23.18	23.13		
1.4	QPSK	1	5	23.32	23.13	23.05		
1.4	QPSK	3	0	23.37	23.17	23.12		
1.4	QPSK	3	1	23.40	23.22	23.16		
1.4	QPSK	3	3	23.40	23.20	23.21		
1.4	QPSK	6	0	22.35	22.14	22.09	22.7	1
1.4	16QAM	1	0	22.61	22.36	22.29	22.7	1
1.4	16QAM	1	3	22.69	22.47	22.36		
1.4	16QAM	1	5	22.58	22.39	22.31		
1.4	16QAM	3	0	22.37	22.24	22.14		
1.4	16QAM	3	1	22.41	22.30	22.21		
1.4	16QAM	3	3	22.41	22.25	22.18		
1.4	16QAM	6	0	21.40	21.22	21.16	21.7	2
1.4	64QAM	1	0	21.25	21.09	21.11	21.7	2
1.4	64QAM	1	3	21.33	21.17	21.12		
1.4	64QAM	1	5	21.25	21.12	21.17		
1.4	64QAM	3	0	21.27	21.08	21.15		
1.4	64QAM	3	1	21.30	21.13	21.17		
1.4	64QAM	3	3	21.27	21.13	21.12		
1.4	64QAM	6	0	20.11	19.96	20.01	20.7	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	21.54	21.65	21.68	22	0
20	QPSK	1	49	21.48	21.56	21.61		
20	QPSK	1	99	21.37	21.41	21.46		
20	QPSK	50	0	21.28	21.38	21.44	22	0
20	QPSK	50	24	21.19	21.36	21.37		
20	QPSK	50	50	21.26	21.28	21.30		
20	QPSK	100	0	21.26	21.41	21.42		
20	16QAM	1	0	21.63	21.66	21.61	22	0
20	16QAM	1	49	21.50	21.41	21.53		
20	16QAM	1	99	21.42	21.47	21.57		
20	16QAM	50	0	21.36	21.42	21.37	22	0
20	16QAM	50	24	21.29	21.44	21.33		
20	16QAM	50	50	21.25	21.38	21.33		
20	16QAM	100	0	21.28	21.41	21.34		
20	64QAM	1	0	21.55	21.63	21.64	22	0
20	64QAM	1	49	21.37	21.46	21.39		
20	64QAM	1	99	21.25	21.51	21.43		
20	64QAM	50	0	21.35	21.43	21.38	22	0
20	64QAM	50	24	21.34	21.39	21.36		
20	64QAM	50	50	21.30	21.35	21.29		
20	64QAM	100	0	21.32	21.39	21.38		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	21.28	21.42	21.36	22	0
15	QPSK	1	37	21.15	21.27	21.21		
15	QPSK	1	74	21.21	21.32	21.30		
15	QPSK	36	0	21.26	21.39	21.34	22	0
15	QPSK	36	20	21.25	21.36	21.32		
15	QPSK	36	39	21.26	21.33	21.29		
15	QPSK	75	0	21.27	21.35	21.33		
15	16QAM	1	0	21.65	21.63	21.58	22	0
15	16QAM	1	37	21.43	21.63	21.56		
15	16QAM	1	74	21.62	21.63	21.64		
15	16QAM	36	0	21.32	21.44	21.32	22	0
15	16QAM	36	20	21.26	21.40	21.31		
15	16QAM	36	39	21.22	21.38	21.32		
15	16QAM	75	0	21.28	21.39	21.34		
15	64QAM	1	0	21.60	21.62	21.57	22	0
15	64QAM	1	37	21.34	21.45	21.38		
15	64QAM	1	74	21.44	21.49	21.54		
15	64QAM	36	0	21.30	21.40	21.35	22	0
15	64QAM	36	20	21.27	21.36	21.32		
15	64QAM	36	39	21.25	21.34	21.33		
15	64QAM	75	0	21.27	21.41	21.33		

Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	21.21	21.33	21.26	22	0
10	QPSK	1	25	21.13	21.26	21.19		
10	QPSK	1	49	21.12	21.25	21.20		
10	QPSK	25	0	21.23	21.36	21.29	22	0
10	QPSK	25	12	21.24	21.33	21.28		
10	QPSK	25	25	21.22	21.29	21.27		
10	QPSK	50	0	21.25	21.33	21.29		
10	16QAM	1	0	21.58	21.60	21.63	22	0
10	16QAM	1	25	21.40	21.66	21.52		
10	16QAM	1	49	21.46	21.64	21.55		
10	16QAM	25	0	21.24	21.36	21.29	22	0
10	16QAM	25	12	21.24	21.35	21.29		
10	16QAM	25	25	21.21	21.34	21.27		
10	16QAM	50	0	21.25	21.38	21.32		
10	64QAM	1	0	21.38	21.52	21.43	22	0
10	64QAM	1	25	21.39	21.40	21.38		
10	64QAM	1	49	21.34	21.43	21.42		
10	64QAM	25	0	21.25	21.37	21.30	22	0
10	64QAM	25	12	21.25	21.38	21.29		
10	64QAM	25	25	21.21	21.32	21.27		
10	64QAM	50	0	21.27	21.32	21.28		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	21.20	21.30	21.21	22	0
5	QPSK	1	12	21.10	21.26	21.20		
5	QPSK	1	24	21.18	21.27	21.19		
5	QPSK	12	0	21.20	21.34	21.23	22	0
5	QPSK	12	7	21.23	21.33	21.26		
5	QPSK	12	13	21.17	21.29	21.24		
5	QPSK	25	0	21.19	21.30	21.21		
5	16QAM	1	0	21.53	21.63	21.61	22	0
5	16QAM	1	12	21.46	21.63	21.56		
5	16QAM	1	24	21.45	21.59	21.54		
5	16QAM	12	0	21.22	21.38	21.26	22	0
5	16QAM	12	7	21.28	21.35	21.30		
5	16QAM	12	13	21.22	21.36	21.32		
5	16QAM	25	0	21.20	21.31	21.25		
5	64QAM	1	0	21.33	21.48	21.39	22	0
5	64QAM	1	12	21.35	21.38	21.36		
5	64QAM	1	24	21.35	21.39	21.37		
5	64QAM	12	0	21.23	21.36	21.26	22	0
5	64QAM	12	7	21.24	21.35	21.29		
5	64QAM	12	13	21.20	21.33	21.23		
5	64QAM	25	0	21.21	21.35	21.31		

Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	21.18	21.26	21.17	22	0
3	QPSK	1	8	21.16	21.22	21.19		
3	QPSK	1	14	21.16	21.24	21.17		
3	QPSK	8	0	21.19	21.32	21.24	22	0
3	QPSK	8	4	21.18	21.34	21.25		
3	QPSK	8	7	21.14	21.27	21.20		
3	QPSK	15	0	21.16	21.32	21.25		
3	16QAM	1	0	21.51	21.61	21.52	22	0
3	16QAM	1	8	21.48	21.60	21.57		
3	16QAM	1	14	21.39	21.63	21.49		
3	16QAM	8	0	21.24	21.38	21.31	22	0
3	16QAM	8	4	21.25	21.41	21.34		
3	16QAM	8	7	21.20	21.36	21.27		
3	16QAM	15	0	21.22	21.35	21.28		
3	64QAM	1	0	21.34	21.47	21.37	22	0
3	64QAM	1	8	21.38	21.48	21.39		
3	64QAM	1	14	21.33	21.38	21.39		
3	64QAM	8	0	21.22	21.32	21.27	22	0
3	64QAM	8	4	21.23	21.37	21.31		
3	64QAM	8	7	21.20	21.33	21.24		
3	64QAM	15	0	21.19	21.31	21.26		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	21.07	21.20	21.13	22	0
1.4	QPSK	1	3	21.14	21.26	21.21		
1.4	QPSK	1	5	21.11	21.21	21.11		
1.4	QPSK	3	0	21.15	21.23	21.21		
1.4	QPSK	3	1	21.21	21.28	21.23		
1.4	QPSK	3	3	21.15	21.25	21.18		
1.4	QPSK	6	0	21.05	21.25	21.16	22	0
1.4	16QAM	1	0	21.40	21.56	21.47	22	0
1.4	16QAM	1	3	21.48	21.64	21.52		
1.4	16QAM	1	5	21.39	21.59	21.50		
1.4	16QAM	3	0	21.15	21.30	21.22		
1.4	16QAM	3	1	21.23	21.36	21.29		
1.4	16QAM	3	3	21.18	21.29	21.19		
1.4	16QAM	6	0	21.19	21.33	21.26	22	0
1.4	64QAM	1	0	21.25	21.42	21.28	22	0
1.4	64QAM	1	3	21.31	21.48	21.37		
1.4	64QAM	1	5	21.30	21.42	21.31		
1.4	64QAM	3	0	21.17	21.29	21.17		
1.4	64QAM	3	1	21.24	21.30	21.27		
1.4	64QAM	3	3	21.15	21.25	21.19		
1.4	64QAM	6	0	21.15	21.27	21.18	22	0

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	20.53	20.64	20.73	21	0
20	QPSK	1	49	20.48	20.51	20.62		
20	QPSK	1	99	20.40	20.46	20.58		
20	QPSK	50	0	20.39	20.47	20.60	21	0
20	QPSK	50	24	20.37	20.42	20.57		
20	QPSK	50	50	20.29	20.37	20.51		
20	QPSK	100	0	20.19	20.29	20.38		
20	16QAM	1	0	20.57	20.60	20.64	21	0
20	16QAM	1	49	20.37	20.57	20.45		
20	16QAM	1	99	20.37	20.55	20.35		
20	16QAM	50	0	19.95	20.06	20.12	21	0
20	16QAM	50	24	19.92	20.01	20.01		
20	16QAM	50	50	19.87	19.98	19.93		
20	16QAM	100	0	19.89	19.99	19.93		
20	64QAM	1	0	20.38	20.42	20.50	21	0
20	64QAM	1	49	20.21	20.30	20.22		
20	64QAM	1	99	20.17	20.22	20.15		
20	64QAM	50	0	19.90	20.07	20.07	21	0
20	64QAM	50	24	19.92	20.02	19.94		
20	64QAM	50	50	19.90	19.97	19.91		
20	64QAM	100	0	19.90	20.01	19.95		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	20.11	20.27	20.32	21	0
15	QPSK	1	37	19.94	20.11	20.02		
15	QPSK	1	74	20.02	20.16	20.06		
15	QPSK	36	0	20.07	20.22	20.14	21	0
15	QPSK	36	20	20.08	20.18	20.10		
15	QPSK	36	39	20.07	20.13	20.07		
15	QPSK	75	0	20.08	20.17	20.15		
15	16QAM	1	0	20.47	20.57	20.72	21	0
15	16QAM	1	37	20.28	20.51	20.47		
15	16QAM	1	74	20.36	20.53	20.40		
15	16QAM	36	0	19.90	20.04	20.00	21	0
15	16QAM	36	20	19.89	19.99	19.93		
15	16QAM	36	39	19.84	19.98	19.88		
15	16QAM	75	0	19.87	20.00	19.92		
15	64QAM	1	0	20.36	20.43	20.52	21	0
15	64QAM	1	37	20.19	20.27	20.22		
15	64QAM	1	74	20.21	20.28	20.23		
15	64QAM	36	0	19.89	20.04	19.95	21	0
15	64QAM	36	20	19.87	20.02	19.94		
15	64QAM	36	39	19.86	19.96	19.90		
15	64QAM	75	0	19.87	20.00	19.94		

Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	20.02	20.16	20.09	21	0
10	QPSK	1	25	19.97	20.10	20.01		
10	QPSK	1	49	19.96	20.04	19.99		
10	QPSK	25	0	20.03	20.16	20.12	21	0
10	QPSK	25	12	20.02	20.18	20.12		
10	QPSK	25	25	20.01	20.12	20.06		
10	QPSK	50	0	20.02	20.17	20.11		
10	16QAM	1	0	20.43	20.53	20.54	21	0
10	16QAM	1	25	20.32	20.48	20.37		
10	16QAM	1	49	20.33	20.50	20.35		
10	16QAM	25	0	19.84	19.99	19.89	21	0
10	16QAM	25	12	19.84	19.98	19.92		
10	16QAM	25	25	19.82	19.94	19.86		
10	16QAM	50	0	19.88	19.96	19.91		
10	64QAM	1	0	20.17	20.32	20.24	21	0
10	64QAM	1	25	20.21	20.29	20.17		
10	64QAM	1	49	20.23	20.23	20.16		
10	64QAM	25	0	19.84	19.99	19.93	21	0
10	64QAM	25	12	19.85	20.02	19.91		
10	64QAM	25	25	19.83	19.95	19.86		
10	64QAM	50	0	19.82	19.98	19.94		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	19.97	20.11	20.06	21	0
5	QPSK	1	12	19.93	20.06	19.98		
5	QPSK	1	24	19.95	20.08	19.95		
5	QPSK	12	0	20.02	20.16	20.04	21	0
5	QPSK	12	7	20.01	20.17	20.05		
5	QPSK	12	13	19.99	20.10	20.04		
5	QPSK	25	0	19.96	20.15	20.05		
5	16QAM	1	0	20.33	20.54	20.39	21	0
5	16QAM	1	12	20.36	20.49	20.37		
5	16QAM	1	24	20.30	20.41	20.37		
5	16QAM	12	0	19.84	19.94	19.85	21	0
5	16QAM	12	7	19.87	20.00	19.88		
5	16QAM	12	13	19.84	19.97	19.83		
5	16QAM	25	0	19.79	19.95	19.83		
5	64QAM	1	0	20.16	20.33	20.19	21	0
5	64QAM	1	12	20.17	20.26	20.22		
5	64QAM	1	24	20.14	20.26	20.16		
5	64QAM	12	0	19.83	19.99	19.88	21	0
5	64QAM	12	7	19.85	19.99	19.87		
5	64QAM	12	13	19.78	19.95	19.85		
5	64QAM	25	0	19.83	19.94	19.84		

Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	19.91	20.06	20.03	21	0
3	QPSK	1	8	19.90	20.06	19.99		
3	QPSK	1	14	19.91	20.06	19.93		
3	QPSK	8	0	19.98	20.11	20.01	21	0
3	QPSK	8	4	19.97	20.15	20.05		
3	QPSK	8	7	19.94	20.10	19.98		
3	QPSK	15	0	19.99	20.12	20.01		
3	16QAM	1	0	20.33	20.53	20.36	21	0
3	16QAM	1	8	20.36	20.48	20.30		
3	16QAM	1	14	20.35	20.43	20.31		
3	16QAM	8	0	19.85	20.01	19.85	21	0
3	16QAM	8	4	19.87	20.02	19.89		
3	16QAM	8	7	19.82	19.98	19.86		
3	16QAM	15	0	19.82	19.98	19.82		
3	64QAM	1	0	20.15	20.30	20.11	21	0
3	64QAM	1	8	20.10	20.20	20.11		
3	64QAM	1	14	20.15	20.28	20.08		
3	64QAM	8	0	19.82	19.98	19.87	21	0
3	64QAM	8	4	19.85	20.02	19.85		
3	64QAM	8	7	19.75	19.95	19.85		
3	64QAM	15	0	19.79	19.91	19.80		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	19.86	20.03	19.90	21	0
1.4	QPSK	1	3	19.98	20.13	20.00		
1.4	QPSK	1	5	19.92	20.03	19.89		
1.4	QPSK	3	0	19.91	20.06	19.95		
1.4	QPSK	3	1	19.96	20.10	19.96		
1.4	QPSK	3	3	19.91	20.05	19.95		
1.4	QPSK	6	0	19.87	20.05	19.93	21	0
1.4	16QAM	1	0	20.23	20.30	20.21	21	0
1.4	16QAM	1	3	20.30	20.51	20.30		
1.4	16QAM	1	5	20.29	20.41	20.28		
1.4	16QAM	3	0	20.01	20.12	20.01		
1.4	16QAM	3	1	20.02	20.14	20.08		
1.4	16QAM	3	3	19.93	20.16	19.94		
1.4	16QAM	6	0	19.76	19.94	19.81	21	0
1.4	64QAM	1	0	20.03	20.33	20.18	21	0
1.4	64QAM	1	3	20.10	20.28	20.07		
1.4	64QAM	1	5	20.07	20.21	20.13		
1.4	64QAM	3	0	19.91	20.08	19.95		
1.4	64QAM	3	1	19.98	20.15	20.01		
1.4	64QAM	3	3	19.94	20.11	19.90		
1.4	64QAM	6	0	19.73	19.86	19.81	21	0

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	20.38	20.32	20.28	21	0
20	QPSK	1	49	20.57	20.42	20.33		
20	QPSK	1	99	20.29	20.26	20.31		
20	QPSK	50	0	20.26	20.24	20.22	21	0
20	QPSK	50	24	20.33	20.31	20.30		
20	QPSK	50	50	20.42	20.36	20.32		
20	QPSK	100	0	20.39	20.38	20.29		
20	16QAM	1	0	20.47	20.47	20.48	21	0
20	16QAM	1	49	20.46	20.50	20.43		
20	16QAM	1	99	20.48	20.47	20.38		
20	16QAM	50	0	19.29	19.36	19.33	20	1
20	16QAM	50	24	19.44	19.42	19.40		
20	16QAM	50	50	19.39	19.37	19.40		
20	16QAM	100	0	19.39	19.35	19.25		
20	64QAM	1	0	19.62	19.79	19.68	20	1
20	64QAM	1	49	19.65	19.66	19.69		
20	64QAM	1	99	19.69	19.68	19.67		
20	64QAM	50	0	19.27	19.32	19.31	20	1
20	64QAM	50	24	19.40	19.37	19.40		
20	64QAM	50	50	19.41	19.32	19.41		
20	64QAM	100	0	19.41	19.32	19.10		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	20.23	20.29	20.25	21	0
15	QPSK	1	37	20.28	20.35	20.32		
15	QPSK	1	74	20.36	20.29	20.32		
15	QPSK	36	0	20.30	20.35	20.32	21	0
15	QPSK	36	20	20.37	20.40	20.41		
15	QPSK	36	39	20.44	20.33	20.37		
15	QPSK	75	0	20.32	20.34	20.35		
15	16QAM	1	0	20.39	20.47	20.47	21	0
15	16QAM	1	37	20.48	20.53	20.42		
15	16QAM	1	74	20.48	20.47	20.07		
15	16QAM	36	0	19.32	19.39	19.31	20	1
15	16QAM	36	20	19.37	19.39	19.40		
15	16QAM	36	39	19.39	19.35	19.36		
15	16QAM	75	0	19.33	19.35	19.37		
15	64QAM	1	0	19.73	19.74	19.42	20	1
15	64QAM	1	37	19.76	19.58	19.53		
15	64QAM	1	74	19.70	19.50	19.27		
15	64QAM	36	0	18.58	18.36	18.37	20	1
15	64QAM	36	20	18.55	18.38	18.40		
15	64QAM	36	39	18.50	18.35	18.42		
15	64QAM	75	0	18.49	18.36	18.36		

Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	20.25	20.27	20.26	21	0
10	QPSK	1	25	20.27	20.30	20.28		
10	QPSK	1	49	20.29	20.30	20.34		
10	QPSK	25	0	20.33	20.33	20.34	21	0
10	QPSK	25	12	20.38	20.38	20.38		
10	QPSK	25	25	20.32	20.32	20.36		
10	QPSK	50	0	20.32	20.34	20.34		
10	16QAM	1	0	20.43	20.53	20.45	21	0
10	16QAM	1	25	20.45	20.46	20.43		
10	16QAM	1	49	20.51	20.42	20.28		
10	16QAM	25	0	19.28	19.29	19.34	20	1
10	16QAM	25	12	19.34	19.37	19.39		
10	16QAM	25	25	19.30	19.35	19.34		
10	16QAM	50	0	19.34	19.33	19.30		
10	64QAM	1	0	19.40	19.47	19.37	20	1
10	64QAM	1	25	19.51	19.51	19.43		
10	64QAM	1	49	19.55	19.49	19.38		
10	64QAM	25	0	18.31	18.34	18.29	20	1
10	64QAM	25	12	18.36	18.39	18.38		
10	64QAM	25	25	18.28	18.34	18.34		
10	64QAM	50	0	18.37	18.36	18.35		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	20.27	20.27	20.23	21	0
5	QPSK	1	12	20.26	20.26	20.27		
5	QPSK	1	24	20.22	20.26	20.24		
5	QPSK	12	0	20.36	20.32	20.30	21	0
5	QPSK	12	7	20.36	20.36	20.35		
5	QPSK	12	13	20.35	20.37	20.34		
5	QPSK	25	0	20.31	20.33	20.35		
5	16QAM	1	0	20.40	20.51	20.37	21	0
5	16QAM	1	12	20.53	20.42	20.45		
5	16QAM	1	24	20.48	20.51	20.46		
5	16QAM	12	0	19.31	19.36	19.31	20	1
5	16QAM	12	7	19.39	19.39	19.34		
5	16QAM	12	13	19.37	19.40	19.36		
5	16QAM	25	0	19.34	19.32	19.33		
5	64QAM	1	0	19.47	19.45	19.37	20	1
5	64QAM	1	12	19.45	19.53	19.45		
5	64QAM	1	24	19.50	19.50	19.41		
5	64QAM	12	0	18.35	18.33	18.36	20	1
5	64QAM	12	7	18.41	18.40	18.42		
5	64QAM	12	13	18.38	18.35	18.40		
5	64QAM	25	0	18.29	18.33	18.32		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	21.99	22.00	21.98	22.5	0
20	QPSK	1	49	21.64	21.76	21.67		
20	QPSK	1	99	21.61	21.73	21.63		
20	QPSK	50	0	20.82	20.89	20.85	21.5	1
20	QPSK	50	24	20.76	20.81	20.83		
20	QPSK	50	50	20.72	20.80	20.76		
20	QPSK	100	0	20.78	20.81	20.80		
20	16QAM	1	0	21.10	21.10	21.15	21.5	1
20	16QAM	1	49	20.94	21.01	21.04		
20	16QAM	1	99	20.97	21.05	20.98		
20	16QAM	50	0	19.81	19.83	19.87	20.5	2
20	16QAM	50	24	19.73	19.93	19.81		
20	16QAM	50	50	19.69	19.88	19.76		
20	16QAM	100	0	19.73	19.93	19.79		
20	64QAM	1	0	20.03	20.13	20.01	20.5	2
20	64QAM	1	49	19.89	20.01	19.96		
20	64QAM	1	99	19.78	19.95	19.86		
20	64QAM	50	0	18.80	18.85	18.84	19.5	3
20	64QAM	50	24	18.75	18.81	18.83		
20	64QAM	50	50	18.67	18.78	18.82		
20	64QAM	100	0	18.72	18.83	18.82		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	21.77	21.84	21.84	22.5	0
15	QPSK	1	37	21.62	21.72	21.68		
15	QPSK	1	74	21.64	21.77	21.71		
15	QPSK	36	0	20.79	20.81	20.81	21.5	1
15	QPSK	36	20	20.72	20.83	20.83		
15	QPSK	36	39	20.66	20.75	20.80		
15	QPSK	75	0	20.71	20.80	20.84		
15	16QAM	1	0	21.01	21.21	21.20	21.5	1
15	16QAM	1	37	20.96	20.97	21.02		
15	16QAM	1	74	20.92	21.05	20.94		
15	16QAM	36	0	19.74	19.84	19.91	20.5	2
15	16QAM	36	20	19.75	19.81	19.77		
15	16QAM	36	39	19.68	19.78	19.73		
15	16QAM	75	0	19.70	19.81	19.81		
15	64QAM	1	0	20.02	20.06	20.12	20.5	2
15	64QAM	1	37	19.87	19.96	19.84		
15	64QAM	1	74	19.86	19.98	19.92		
15	64QAM	36	0	18.78	18.82	18.83	19.5	3
15	64QAM	36	20	18.72	18.85	18.81		
15	64QAM	36	39	18.68	18.80	18.79		
15	64QAM	75	0	18.72	18.79	18.76		

Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	21.73	21.76	21.79	22.5	0
10	QPSK	1	25	21.60	21.74	21.74		
10	QPSK	1	49	21.60	21.73	21.74		
10	QPSK	25	0	20.72	20.80	20.82	21.5	1
10	QPSK	25	12	20.73	20.80	20.83		
10	QPSK	25	25	20.66	20.79	20.77		
10	QPSK	50	0	20.67	20.79	20.80		
10	16QAM	1	0	21.16	21.10	21.08	21.5	1
10	16QAM	1	25	20.96	20.99	20.97		
10	16QAM	1	49	20.92	21.04	21.01		
10	16QAM	25	0	19.67	19.77	19.79	20.5	2
10	16QAM	25	12	19.69	19.76	19.79		
10	16QAM	25	25	19.67	19.74	19.77		
10	16QAM	50	0	19.69	19.76	19.79		
10	64QAM	1	0	19.78	19.98	19.98	20.5	2
10	64QAM	1	25	19.77	19.84	19.92		
10	64QAM	1	49	19.63	19.76	19.92		
10	64QAM	25	0	18.62	18.71	18.81	19.5	3
10	64QAM	25	12	18.61	18.72	18.82		
10	64QAM	25	25	18.57	18.77	18.78		
10	64QAM	50	0	18.63	18.82	18.83		
Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	21.61	21.65	21.72	22.5	0
5	QPSK	1	12	21.53	21.63	21.74		
5	QPSK	1	24	21.54	21.62	21.71		
5	QPSK	12	0	20.57	20.71	20.64	21.5	1
5	QPSK	12	7	20.61	20.80	20.81		
5	QPSK	12	13	20.54	20.74	20.79		
5	QPSK	25	0	20.55	20.69	20.66		
5	16QAM	1	0	20.90	21.01	20.92	21.5	1
5	16QAM	1	12	20.87	20.94	20.91		
5	16QAM	1	24	20.78	20.94	20.85		
5	16QAM	12	0	19.59	19.66	19.65	20.5	2
5	16QAM	12	7	19.62	19.71	19.66		
5	16QAM	12	13	19.61	19.68	19.67		
5	16QAM	25	0	19.59	19.65	19.63		
5	64QAM	1	0	19.77	19.84	19.95	20.5	2
5	64QAM	1	12	19.75	19.79	19.86		
5	64QAM	1	24	19.70	19.81	19.90		
5	64QAM	12	0	18.60	18.72	18.80	19.5	3
5	64QAM	12	7	18.64	18.71	18.82		
5	64QAM	12	13	18.60	18.70	18.81		
5	64QAM	25	0	18.57	18.64	18.68		

Channel				26055	26340	26675	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1913.5		
3	QPSK	1	0	21.53	21.69	21.77	22.5	0
3	QPSK	1	8	21.55	21.72	21.77		
3	QPSK	1	14	21.52	21.61	21.64		
3	QPSK	8	0	20.66	20.67	20.78	21.5	1
3	QPSK	8	4	20.68	20.68	20.80		
3	QPSK	8	7	20.62	20.67	20.78		
3	QPSK	15	0	20.53	20.66	20.65		
3	16QAM	1	0	20.76	20.88	20.85	21.5	1
3	16QAM	1	8	20.98	21.08	20.97		
3	16QAM	1	14	20.76	20.93	20.92		
3	16QAM	8	0	19.63	19.77	19.71	20.5	2
3	16QAM	8	4	19.66	19.76	19.72		
3	16QAM	8	7	19.58	19.70	19.74		
3	16QAM	15	0	19.57	19.70	19.70		
3	64QAM	1	0	19.76	19.74	19.84	20.5	2
3	64QAM	1	8	19.70	19.75	19.80		
3	64QAM	1	14	19.74	19.72	19.80		
3	64QAM	8	0	18.60	18.71	18.66	19.5	3
3	64QAM	8	4	18.65	18.72	18.70		
3	64QAM	8	7	18.60	18.68	18.64		
3	64QAM	15	0	18.54	18.65	18.65		
Channel				26047	26340	26683	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1914.3		
1.4	QPSK	1	0	21.37	21.57	21.56	22.5	0
1.4	QPSK	1	3	21.58	21.59	21.55		
1.4	QPSK	1	5	21.52	21.53	21.54		
1.4	QPSK	3	0	21.59	21.64	21.61		
1.4	QPSK	3	1	21.56	21.64	21.67		
1.4	QPSK	3	3	21.56	21.66	21.67		
1.4	QPSK	6	0	20.47	20.62	20.58	21.5	1
1.4	16QAM	1	0	20.79	20.83	20.74	21.5	1
1.4	16QAM	1	3	20.78	20.92	20.87		
1.4	16QAM	1	5	20.78	20.80	20.76		
1.4	16QAM	3	0	20.50	20.61	20.57		
1.4	16QAM	3	1	20.59	20.67	20.67		
1.4	16QAM	3	3	20.52	20.66	20.62		
1.4	16QAM	6	0	19.57	19.64	19.66	20.5	2
1.4	64QAM	1	0	19.64	19.73	19.81	20.5	2
1.4	64QAM	1	3	19.67	19.87	19.86		
1.4	64QAM	1	5	19.59	19.66	19.69		
1.4	64QAM	3	0	19.67	19.69	19.68		
1.4	64QAM	3	1	19.66	19.79	19.76		
1.4	64QAM	3	3	19.62	19.71	19.70		
1.4	64QAM	6	0	18.47	18.61	18.58	19.5	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.

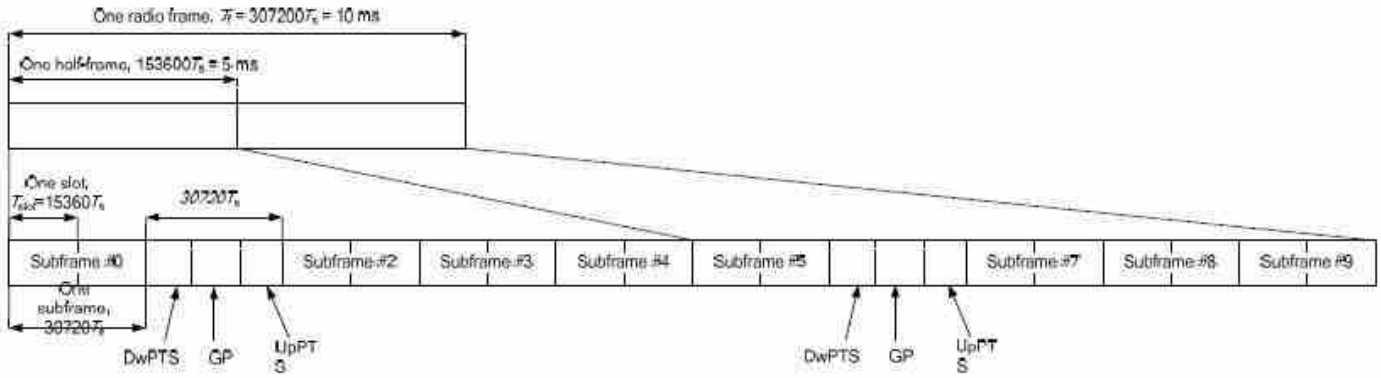


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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 38>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				37850	38000	38150		
Frequency (MHz)				2580	2595	2610		
20	QPSK	1	0	22.00	22.00	22.01	24	0
20	QPSK	1	49	22.23	22.14	22.23		
20	QPSK	1	99	22.41	22.16	22.23		
20	QPSK	50	0	21.33	21.32	21.31	23	1
20	QPSK	50	24	21.45	21.36	21.43		
20	QPSK	50	50	21.44	21.33	21.34		
20	QPSK	100	0	21.44	21.28	21.43		
20	16QAM	1	0	21.41	21.19	21.42	23	1
20	16QAM	1	49	21.61	21.48	21.64		
20	16QAM	1	99	21.67	21.59	21.55		
20	16QAM	50	0	20.24	20.33	20.30	22	2
20	16QAM	50	24	20.39	20.40	20.57		
20	16QAM	50	50	20.40	20.49	20.44		
20	16QAM	100	0	20.39	20.35	20.49		
20	64QAM	1	0	20.11	20.00	20.00	22	2
20	64QAM	1	49	20.29	20.07	20.21		
20	64QAM	1	99	20.28	20.07	20.24		
20	64QAM	50	0	19.16	19.05	19.10	21	3
20	64QAM	50	24	19.29	19.03	19.20		
20	64QAM	50	50	19.25	19.10	19.16		
20	64QAM	100	0	19.20	19.03	19.15		
Channel				37825	38000	38175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2577.5	2595	2612.5		
15	QPSK	1	0	22.15	22.17	22.08	24	0
15	QPSK	1	37	22.30	22.23	22.28		
15	QPSK	1	74	22.25	22.29	22.32		
15	QPSK	36	0	21.25	21.32	21.41	23	1
15	QPSK	36	20	21.45	21.39	21.46		
15	QPSK	36	39	21.39	21.48	21.47		
15	QPSK	75	0	21.39	21.37	21.41		
15	16QAM	1	0	21.42	21.53	21.37	23	1
15	16QAM	1	37	21.59	21.56	21.57		
15	16QAM	1	74	21.51	21.60	21.63		
15	16QAM	36	0	20.30	20.32	20.43	22	2
15	16QAM	36	20	20.39	20.37	20.46		
15	16QAM	36	39	20.40	20.50	20.51		
15	16QAM	75	0	20.40	20.39	20.47		
15	64QAM	1	0	20.24	20.06	20.04	22	2
15	64QAM	1	37	20.38	20.10	20.20		
15	64QAM	1	74	20.25	20.10	20.27		
15	64QAM	36	0	19.16	19.00	19.18	21	3
15	64QAM	36	20	19.27	19.03	19.17		
15	64QAM	36	39	19.27	19.08	19.25		
15	64QAM	75	0	19.27	19.05	19.16		

Channel				37800	38000	38200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2575	2595	2615		
10	QPSK	1	0	22.05	22.10	22.17	24	0
10	QPSK	1	25	22.13	22.16	22.22		
10	QPSK	1	49	22.22	22.23	22.28		
10	QPSK	25	0	21.38	21.31	21.34	23	1
10	QPSK	25	12	21.39	21.43	21.41		
10	QPSK	25	25	21.38	21.40	21.47		
10	QPSK	50	0	21.25	21.32	21.39		
10	16QAM	1	0	21.49	21.43	21.42	23	1
10	16QAM	1	25	21.48	21.59	21.53		
10	16QAM	1	49	21.48	21.67	21.61		
10	16QAM	25	0	20.31	20.33	20.39	22	2
10	16QAM	25	12	20.36	20.39	20.48		
10	16QAM	25	25	20.45	20.37	20.52		
10	16QAM	50	0	20.37	20.43	20.42		
10	64QAM	1	0	20.25	20.03	20.22	22	2
10	64QAM	1	25	20.23	20.05	20.19		
10	64QAM	1	49	20.29	20.07	20.32		
10	64QAM	25	0	19.28	19.06	19.26	21	3
10	64QAM	25	12	19.32	19.09	19.28		
10	64QAM	25	25	19.39	19.07	19.33		
10	64QAM	50	0	19.24	19.04	19.21		
Channel				37775	38000	38225	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2572.5	2595	2617.5		
5	QPSK	1	0	22.12	22.14	22.25	24	0
5	QPSK	1	12	22.11	22.19	22.35		
5	QPSK	1	24	22.12	22.15	22.26		
5	QPSK	12	0	21.31	21.33	21.44	23	1
5	QPSK	12	7	21.37	21.41	21.56		
5	QPSK	12	13	21.32	21.42	21.53		
5	QPSK	25	0	21.39	21.38	21.46		
5	16QAM	1	0	21.52	21.41	21.55	23	1
5	16QAM	1	12	21.51	21.48	21.55		
5	16QAM	1	24	21.51	21.54	21.66		
5	16QAM	12	0	20.36	20.43	20.52	22	2
5	16QAM	12	7	20.46	20.45	20.61		
5	16QAM	12	13	20.45	20.42	20.56		
5	16QAM	25	0	20.38	20.41	20.53		
5	64QAM	1	0	20.25	20.02	20.27	22	2
5	64QAM	1	12	20.31	20.05	20.27		
5	64QAM	1	24	20.31	20.02	20.34		
5	64QAM	12	0	19.33	19.06	19.32	21	3
5	64QAM	12	7	19.36	19.06	19.34		
5	64QAM	12	13	19.31	19.05	19.30		
5	64QAM	25	0	19.31	19.05	19.33		

<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	22.19	22.17	22.02	22.02	22.00	24	0
20	QPSK	1	49	22.37	22.45	22.36	22.22	22.19		
20	QPSK	1	99	22.27	22.18	22.26	22.11	22.00		
20	QPSK	50	0	21.46	21.43	21.42	21.45	21.23	23	1
20	QPSK	50	24	21.49	21.50	21.48	21.46	21.21		
20	QPSK	50	50	21.45	21.41	21.43	21.31	21.11		
20	QPSK	100	0	21.41	21.41	21.27	21.39	21.21		
20	16QAM	1	0	21.47	21.62	21.53	21.46	21.28	23	1
20	16QAM	1	49	21.77	21.80	21.71	21.53	21.35		
20	16QAM	1	99	21.56	21.63	21.58	21.45	21.19		
20	16QAM	50	0	20.46	20.47	20.40	20.42	20.25	22	2
20	16QAM	50	24	20.52	20.55	20.42	20.39	20.25		
20	16QAM	50	50	20.56	20.51	20.52	20.38	20.20		
20	16QAM	100	0	20.53	20.49	20.38	20.39	20.24		
20	64QAM	1	0	20.19	20.25	20.07	20.08	20.27	22	2
20	64QAM	1	49	20.21	20.51	20.04	20.21	20.24		
20	64QAM	1	99	20.19	20.33	20.05	20.20	20.06		
20	64QAM	50	0	19.23	19.38	19.04	19.22	19.18	21	3
20	64QAM	50	24	19.24	19.43	19.08	19.22	19.20		
20	64QAM	50	50	19.24	19.41	19.15	19.20	19.11		
20	64QAM	100	0	19.20	19.42	19.05	19.23	19.14		
Channel				39725	40173	40620	41068	41515	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
15	QPSK	1	0	22.30	22.41	22.18	22.13	22.00	24	0
15	QPSK	1	37	22.40	22.40	22.31	22.15	22.04		
15	QPSK	1	74	22.36	22.41	22.37	22.15	22.01		
15	QPSK	36	0	21.49	21.44	21.32	21.29	21.18	23	1
15	QPSK	36	20	21.55	21.48	21.36	21.35	21.22		
15	QPSK	36	39	21.45	21.50	21.47	21.32	21.15		
15	QPSK	75	0	21.46	21.47	21.31	21.34	21.19		
15	16QAM	1	0	21.59	21.63	21.43	21.46	21.29	23	1
15	16QAM	1	37	21.73	21.80	21.53	21.52	21.36		
15	16QAM	1	74	21.66	21.62	21.65	21.44	21.22		
15	16QAM	36	0	20.43	20.45	20.30	20.34	20.17	22	2
15	16QAM	36	20	20.49	20.53	20.36	20.38	20.22		
15	16QAM	36	39	20.43	20.46	20.46	20.34	20.12		
15	16QAM	75	0	20.49	20.49	20.39	20.37	20.19		
15	64QAM	1	0	20.20	20.45	20.04	20.18	20.15	22	2
15	64QAM	1	37	20.26	20.51	20.08	20.18	20.14		
15	64QAM	1	74	20.24	20.43	20.15	20.34	20.04		
15	64QAM	36	0	19.17	19.39	19.00	19.14	19.10	21	3
15	64QAM	36	20	19.18	19.45	19.19	19.20	19.11		
15	64QAM	36	39	19.13	19.40	19.13	19.13	19.01		
15	64QAM	75	0	19.20	19.46	19.05	19.23	19.11		

Channel				39700	40160	40620	41080	41540	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
10	QPSK	1	0	22.26	22.31	22.16	22.05	22.00	24	0
10	QPSK	1	25	22.35	22.23	22.21	22.17	22.00		
10	QPSK	1	49	22.24	22.32	22.24	22.25	22.00		
10	QPSK	25	0	21.52	21.47	21.45	21.29	21.17	23	1
10	QPSK	25	12	21.48	21.48	21.42	21.31	21.20		
10	QPSK	25	25	21.54	21.47	21.42	21.31	21.18		
10	QPSK	50	0	21.53	21.47	21.30	21.35	21.17		
10	16QAM	1	0	21.62	21.63	21.62	21.42	21.32	23	1
10	16QAM	1	25	21.75	21.58	21.62	21.49	21.37		
10	16QAM	1	49	21.76	21.54	21.70	21.49	21.16		
10	16QAM	25	0	20.46	20.47	20.46	20.33	20.17	22	2
10	16QAM	25	12	20.56	20.59	20.51	20.45	20.23		
10	16QAM	25	25	20.47	20.53	20.49	20.40	20.14		
10	16QAM	50	0	20.48	20.49	20.47	20.38	20.16		
10	64QAM	1	0	20.20	20.50	20.07	20.26	20.13	22	2
10	64QAM	1	25	20.21	20.46	20.21	20.25	20.12		
10	64QAM	1	49	20.18	20.41	20.15	20.10	20.00		
10	64QAM	25	0	19.24	19.51	19.10	19.05	19.14	21	3
10	64QAM	25	12	19.27	19.54	19.12	19.07	19.19		
10	64QAM	25	25	19.23	19.50	19.20	19.15	19.08		
10	64QAM	50	0	19.19	19.48	19.04	19.00	19.07		
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	22.27	22.29	22.14	22.10	22.00	24	0
5	QPSK	1	12	22.33	22.32	22.18	22.10	22.03		
5	QPSK	1	24	22.31	22.27	22.25	22.17	22.00		
5	QPSK	12	0	21.49	21.45	21.32	21.34	21.11	23	1
5	QPSK	12	7	21.51	21.50	21.38	21.39	21.13		
5	QPSK	12	13	21.53	21.53	21.48	21.36	21.12		
5	QPSK	25	0	21.51	21.49	21.33	21.30	21.13		
5	16QAM	1	0	21.65	21.69	21.49	21.49	21.27	23	1
5	16QAM	1	12	21.73	21.77	21.54	21.50	21.35		
5	16QAM	1	24	21.57	21.72	21.62	21.52	21.28		
5	16QAM	12	0	20.54	20.54	20.42	20.37	20.17	22	2
5	16QAM	12	7	20.59	20.55	20.53	20.47	20.24		
5	16QAM	12	13	20.58	20.57	20.54	20.43	20.18		
5	16QAM	25	0	20.56	20.56	20.45	20.41	20.15		
5	64QAM	1	0	20.19	20.49	20.06	20.18	20.26	22	2
5	64QAM	1	12	20.19	20.52	20.10	20.21	20.52		
5	64QAM	1	24	20.21	20.51	20.20	20.27	20.34		
5	64QAM	12	0	19.22	19.51	19.10	19.19	19.39	21	3
5	64QAM	12	7	19.24	19.51	19.23	19.21	19.44		
5	64QAM	12	13	19.22	19.50	19.21	19.28	19.42		
5	64QAM	25	0	19.23	19.48	19.07	19.21	19.43		

<LTE Carrier Aggregation combinations>

General Note:

1. This device supports Carrier Aggregation on downlink only for inter and intra band, Uplink CA is not supported. For the device supports combination bands and configurations are according to 3GPP and listed in the below table.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.
3. All permutations exist. No restrictions on Pcell & Scell combinations.
4. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.
5. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.
6. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
7. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
8. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.
9. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

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

<Two Carrier power verification>

Configure		CA combinations	PCC							SCC				Power	
			LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx. Power (dBm)	Without CA Tx. Power (dBm)
Inter-Band		CA_2A-4A	Band 2	20M	1900	19100	QPSK	1	0	Band 4	20M	2132.5	2175	23.23	23.28
			Band 4	20M	1745	20300	QPSK	1	0	Band 2	20M	1960	900	22.32	22.36
		CA_2A-5A	Band 2	20M	1900	19100	QPSK	1	0	Band 5	10M	881.5	2525	23.22	23.28
			Band 5	10M	829	20450	QPSK	1	0	Band 2	20M	1960	900	23.38	23.45
		CA_2A-12A	Band 2	20M	1900	19100	QPSK	1	0	Band 12	10M	737.5	5095	23.26	23.28
			Band 12	10M	707.5	23095	QPSK	1	25	Band 2	20M	1960	900	23.63	23.65
		CA_2A-13A	Band 2	20M	1900	19100	QPSK	1	0	Band 13	10M	751	5230	23.23	23.28
			Band 13	10M	782	23230	QPSK	1	25	Band 2	20M	1960	900	22.41	22.30
		CA_4A-5A	Band 4	20M	1745	20300	QPSK	1	0	Band 5	10M	881.5	2525	22.30	22.36
			Band 5	10M	829	20450	QPSK	1	0	Band 4	20M	2132.5	2175	23.26	23.45
		CA_4A-12A	Band 4	20M	1745	20300	QPSK	1	0	Band 12	10M	737.5	5095	22.34	22.36
			Band 12	10M	707.5	23095	QPSK	1	25	Band 4	20M	2132.5	2175	23.52	23.65
		CA_4A-13A	Band 4	20M	1745	20300	QPSK	1	0	Band 13	10M	751	5230	22.32	22.36
			Band 13	10M	782	23230	QPSK	1	25	Band 4	20M	2132.5	2175	22.53	22.60
		CA_5A-7A	Band 5	10M	829	20450	QPSK	1	0	Band 7	20M	2655	3100	23.41	23.45
			Band 7	20M	2510	20850	QPSK	1	49	Band 5	10M	881.5	2525	21.22	21.26
Intra-Band	Contiguous	CA_2C	Band 2	20M	1900	19100	QPSK	1	0	Band 2	20M	1960.2	902	23.26	23.28
		CA_7B	Band 7	15M	2507.5	20825	QPSK	1	37	Band 7	5M	2631.8	2868	21.16	21.20
		CA_7C	Band 7	20M	2510	20850	QPSK	1	49	Band 7	20M	2649.8	3048	21.23	21.26
		CA_41C	Band 41	20M	2549.5	40185	QPSK	1	49	Band 41	20M	2569.3	40383	22.38	22.45
	Non-Contiguous	CA_2A-2A	Band 2	20M	1900	19100	QPSK	1	0	Band 2	5M	1932.5	625	23.20	23.28
		CA_4A-4A	Band 4	20M	1745	20300	QPSK	1	0	Band 4	5M	2112.5	1975	22.31	22.36
		CA_7A-7A	Band 7	20M	2510	20850	QPSK	1	49	Band 7	5M	2687.5	3425	21.12	21.26
		CA_41A-41A	Band 41	20M	2549.5	40185	QPSK	1	49	Band 41	5M	2687.5	41565	22.41	22.45

<WLAN Conducted Power>

General Note:

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

<2.4GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	11.64	12.00	100.00
		6	2437	11.79	12.00	
		11	2462	11.42	12.00	
	802.11g 6Mbps	1	2412	13.05	13.50	94.08
		6	2437	13.08	13.50	
		11	2462	12.70	13.50	
	802.11n-HT20 MCS0	1	2412	12.02	12.50	94.32
		6	2437	12.16	12.50	
		11	2462	11.81	12.50	

<5GHz WLAN>

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	11.78	12.50	94.04
		40	5200	11.82	12.50	
		44	5220	11.54	12.50	
		48	5240	11.29	12.50	
	802.11n-HT20 MCS0	36	5180	10.83	11.00	92.36
		40	5200	10.63	11.00	
		44	5220	10.58	11.00	
		48	5240	10.37	11.00	
	802.11n-HT40 MCS0	38	5190	10.72	11.00	90.97
		46	5230	10.36	11.00	
	802.11ac-VHT20 MCS0	36	5180	10.73	11.00	94.64
		40	5200	10.63	11.00	
		44	5220	10.53	11.00	
		48	5240	10.33	11.00	
	802.11ac-VHT40 MCS0	38	5190	10.71	11.00	89.80
		46	5230	10.29	11.00	
	802.11ac-VHT80 MCS0	42	5210	10.49	11.00	82.60

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	11.98	12.50	94.04
		56	5280	11.83	12.50	
		60	5300	11.66	12.50	
		64	5320	11.59	12.50	
	802.11n-HT20 MCS0	52	5260	11.06	11.50	92.36
		56	5280	10.90	11.00	
		60	5300	10.77	11.00	
		64	5320	10.50	11.00	
	802.11n-HT40 MCS0	54	5270	10.84	11.00	90.97
		62	5310	10.67	11.00	
	802.11ac-VHT20 MCS0	52	5260	10.90	11.00	94.64
		56	5280	10.82	11.00	
		60	5300	10.66	11.00	
		64	5320	10.48	11.00	
	802.11ac-VHT40 MCS0	54	5270	10.82	11.00	89.80
		62	5310	10.68	11.00	
	802.11ac-VHT80 MCS0	58	5290	9.14	10.00	82.60

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	12.02	12.50	94.04
		116	5580	11.64	12.50	
		124	5620	11.60	12.50	
		132	5660	11.58	12.50	
		140	5700	11.41	12.50	
	802.11n-HT20 MCS0	100	5500	11.04	11.50	92.36
		116	5580	10.69	11.00	
		124	5620	10.86	11.00	
		132	5660	10.51	11.00	
		140	5700	10.53	11.00	
	802.11n-HT40 MCS0	102	5510	10.60	11.00	90.97
		110	5550	10.80	11.00	
		126	5630	10.69	11.00	
		134	5670	10.53	11.00	
	802.11ac-VHT20 MCS0	100	5500	10.89	11.00	94.64
		116	5580	10.77	11.00	
		124	5620	10.52	11.00	
		132	5660	10.55	11.00	
		140	5700	10.30	11.00	
	802.11ac-VHT40 MCS0	102	5510	10.78	11.00	89.80
		110	5550	10.68	11.00	
		126	5630	10.62	11.00	
		134	5670	10.64	11.00	
	802.11ac-VHT80 MCS0	106	5530	10.21	10.50	82.60
		122	5610	10.39	10.50	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a MCS0	149	5745	11.54	12.50	94.04
		157	5785	11.53	12.50	
		165	5825	12.02	12.50	
	802.11n-HT20 MCS0	149	5745	10.64	11.00	92.36
		157	5785	10.56	11.00	
		165	5825	10.93	11.00	
	802.11n-HT40 MCS0	151	5755	10.34	11.00	90.97
		159	5795	10.76	11.00	
	802.11ac-VHT20 MCS0	149	5745	10.53	11.00	94.64
		157	5785	10.50	11.00	
		165	5825	10.87	11.00	
	802.11ac-VHT40 MCS0	151	5755	10.65	11.00	89.80
		159	5795	10.74	11.00	
	802.11ac-VHT80 MCS0	155	5775	10.29	10.50	82.60

<2.4GHz Bluetooth>

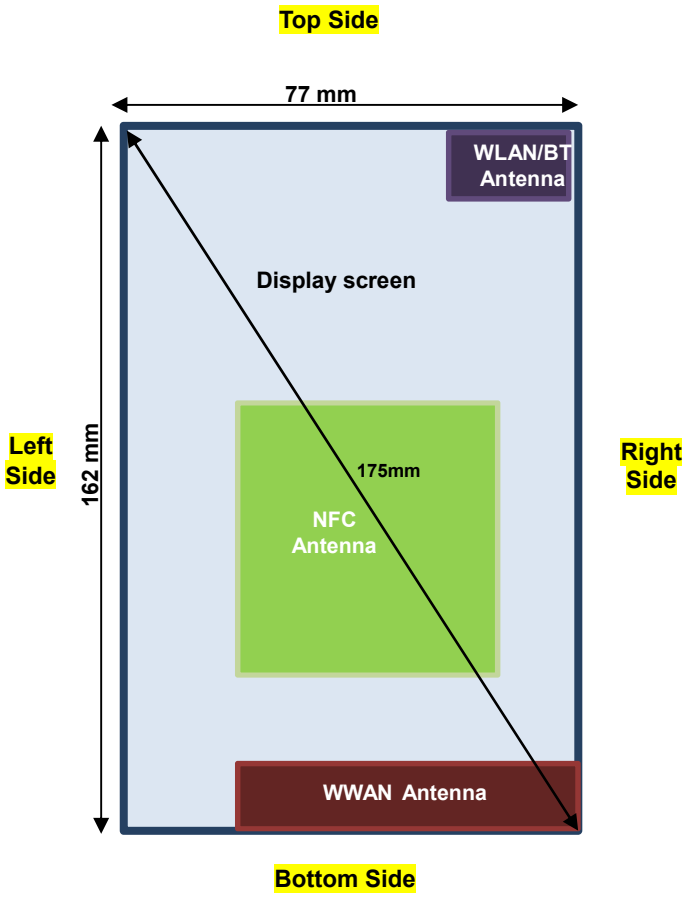
Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	9.48	7.63	7.49
	CH 39	2441	9.06	6.43	6.48
	CH 78	2480	8.42	6.23	6.24
Tune-up Limit			10	8	8

Mode	Channel	Frequency (MHz)	Average power (dBm)	
			1Mbps	2Mbps
LE	CH 00	2402	-0.62	-0.51
	CH 19	2440	-1.51	-1.28
	CH 39	2480	-1.73	-1.88
Tune-up Limit			0.1	0.1

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 77.06% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation.

12. Antenna Location



Front View

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

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

General Note:

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

13. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
4. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of WCDMA B2 / B4. CDMA BC1 and LTE B2 / B4 / B7 / B25.
5. 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.
6. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g product specific SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold, for this device only bottom side SAR for WWAN transmitter scaled to maximum output power is higher than 1.2W/kg of WCDMA B2 / B4, CDMA BC1 and LTE B2 / B4 / B7 / B25 / B41, therefore product specific SAR is necessary.
7. For 5.3GHz / 5.5GHz WLAN product specific SAR is necessary too, due to an overall diagonal dimension is > 16cm.

GSM Note:

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

UMTS Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. 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.

CDMA Note:

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

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 / B5 / B4/ B26 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE band 17 / 38 SAR test was covered by Band 12 / 41; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

WLAN Note:

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

13.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS(4 Tx slots)	Right Cheek	0mm	251	848.8	26.35	27.40	1.274	0.01	0.300	0.382
	GSM850	GPRS(4 Tx slots)	Right Tilted	0mm	251	848.8	26.35	27.40	1.274	0.07	0.192	0.245
01	GSM850	GPRS(4 Tx slots)	Left Cheek	0mm	251	848.8	26.35	27.40	1.274	0.09	0.303	0.386
	GSM850	GPRS(4 Tx slots)	Left Tilted	0mm	251	848.8	26.35	27.40	1.274	0.02	0.176	0.224
	GSM850	GPRS(4 Tx slots)	Left Cheek	0mm	128	824.2	26.15	27.40	1.334	0.09	0.218	0.291
	GSM850	GPRS(4 Tx slots)	Left Cheek	0mm	189	836.4	26.28	27.40	1.294	0.03	0.278	0.360
	GSM1900	GPRS(2 Tx slots)	Right Cheek	0mm	810	1909.8	27.16	28.20	1.271	0.09	0.050	0.064
	GSM1900	GPRS(2 Tx slots)	Right Tilted	0mm	810	1909.8	27.16	28.20	1.271	0.02	0.041	0.052
02	GSM1900	GPRS(2 Tx slots)	Left Cheek	0mm	810	1909.8	27.16	28.20	1.271	0.04	0.051	0.065
	GSM1900	GPRS(2 Tx slots)	Left Tilted	0mm	810	1909.8	27.16	28.20	1.271	0.08	0.042	0.053
	GSM1900	GPRS(2 Tx slots)	Left Cheek	0mm	512	1850.2	26.45	28.20	1.496	0.03	0.043	0.064
	GSM1900	GPRS(2 Tx slots)	Left Cheek	0mm	661	1880	26.93	28.20	1.340	0.09	0.041	0.055

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA V	RMC 12.2Kbps	Right Cheek	0mm	4182	836.4	23.76	24.90	1.300	0.03	0.333	0.433
	WCDMA V	RMC 12.2Kbps	Right Tilted	0mm	4182	836.4	23.76	24.90	1.300	0.08	0.228	0.296
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	4182	836.4	23.76	24.90	1.300	0.04	0.335	0.436
	WCDMA V	RMC 12.2Kbps	Left Tilted	0mm	4182	836.4	23.76	24.90	1.300	0.02	0.206	0.268
	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	4132	826.4	23.63	24.90	1.340	0.05	0.348	0.466
03	WCDMA V	RMC 12.2Kbps	Left Cheek	0mm	4233	846.6	23.62	24.90	1.343	0.05	0.433	0.581
04	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	1413	1732.6	20.87	21.50	1.156	0.03	0.139	0.161
	WCDMA IV	RMC 12.2Kbps	Right Tilted	0mm	1413	1732.6	20.87	21.50	1.156	0.12	0.010	0.012
	WCDMA IV	RMC 12.2Kbps	Left Cheek	0mm	1413	1732.6	20.87	21.50	1.156	0.04	0.059	0.068
	WCDMA IV	RMC 12.2Kbps	Left Tilted	0mm	1413	1732.6	20.87	21.50	1.156	0.02	0.001	0.001
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	1312	1712.4	20.86	21.50	1.159	0.06	0.121	0.140
	WCDMA IV	RMC 12.2Kbps	Right Cheek	0mm	1513	1752.6	20.74	21.50	1.191	0.01	0.112	0.133
	WCDMA II	RMC 12.2Kbps	Right Cheek	0mm	9538	1907.6	22.15	23.00	1.216	0.07	0.069	0.084
	WCDMA II	RMC 12.2Kbps	Right Tilted	0mm	9538	1907.6	22.15	23.00	1.216	0.09	0.074	0.090
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	9538	1907.6	22.15	23.00	1.216	0.02	0.087	0.106
	WCDMA II	RMC 12.2Kbps	Left Tilted	0mm	9538	1907.6	22.15	23.00	1.216	0.03	0.071	0.086
	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	9262	1852.4	22.11	23.00	1.227	0.02	0.089	0.109
05	WCDMA II	RMC 12.2Kbps	Left Cheek	0mm	9400	1880	22.07	23.00	1.239	0.01	0.110	0.136

<CDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	CDMA2000 BC0	RC3 SO55	Right Cheek	0mm	777	848.31	23.77	23.80	1.007	0.09	0.409	0.412
	CDMA2000 BC0	RC3 SO55	Right Tilted	0mm	777	848.31	23.77	23.80	1.007	0.08	0.262	0.264
06	CDMA2000 BC0	RC3 SO55	Left Cheek	0mm	777	848.31	23.77	23.80	1.007	0.03	0.447	0.450
	CDMA2000 BC0	RC3 SO55	Left Tilted	0mm	777	848.31	23.77	23.80	1.007	0.05	0.243	0.245
	CDMA2000 BC0	RC3 SO55	Left Cheek	0mm	1013	824.7	23.65	23.80	1.035	0.16	0.321	0.332
	CDMA2000 BC0	RC3 SO55	Left Cheek	0mm	384	836.52	23.74	23.80	1.014	0.1	0.360	0.365
	CDMA2000 BC10	RC3 SO55	Right Cheek	0mm	580	820.5	23.81	24.80	1.256	0.09	0.315	0.396
	CDMA2000 BC10	RC3 SO55	Right Tilted	0mm	580	820.5	23.81	24.80	1.256	0.02	0.230	0.289
07	CDMA2000 BC10	RC3 SO55	Left Cheek	0mm	580	820.5	23.81	24.80	1.256	0.02	0.316	0.397
	CDMA2000 BC10	RC3 SO55	Left Tilted	0mm	580	820.5	23.81	24.80	1.256	0.05	0.211	0.265
	CDMA2000 BC10	RC3 SO55	Left Cheek	0mm	476	817.9	23.73	24.80	1.279	-0.02	0.300	0.384
	CDMA2000 BC10	RC3 SO55	Left Cheek	0mm	684	823.1	23.68	24.80	1.294	0.03	0.298	0.386
	CDMA2000 BC1	RC3 SO55	Right Cheek	0mm	600	1880	22.59	22.70	1.026	0.01	0.090	0.092
	CDMA2000 BC1	RC3 SO55	Right Tilted	0mm	600	1880	22.59	22.70	1.026	0.18	0.075	0.077
	CDMA2000 BC1	RC3 SO55	Left Cheek	0mm	600	1880	22.59	22.70	1.026	0.09	0.092	0.094
	CDMA2000 BC1	RC3 SO55	Left Tilted	0mm	600	1880	22.59	22.70	1.026	0.04	0.081	0.083
	CDMA2000 BC1	RC3 SO55	Left Cheek	0mm	25	1851.25	22.44	22.70	1.062	0.14	0.090	0.096
08	CDMA2000 BC1	RC3 SO55	Left Cheek	0mm	1175	1908.75	22.51	22.70	1.045	0.1	0.093	0.097

<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 1g SAR (W/kg)	Reported 1g SAR (W/kg)
09	LTE Band 12	10M	QPSK	1RB	25Offset	Right Cheek	0mm	23095	707.5	23.65	25.00	1.365	0.02	0.300	0.409
	LTE Band 12	10M	QPSK	1RB	25Offset	Right Tilted	0mm	23095	707.5	23.65	25.00	1.365	0.11	0.142	0.194
	LTE Band 12	10M	QPSK	1RB	25Offset	Left Cheek	0mm	23095	707.5	23.65	25.00	1.365	0.1	0.219	0.299
	LTE Band 12	10M	QPSK	1RB	25Offset	Left Tilted	0mm	23095	707.5	23.65	25.00	1.365	0.02	0.128	0.175
	LTE Band 12	10M	QPSK	25RB	12Offset	Right Cheek	0mm	23095	707.5	22.61	24.00	1.377	0.03	0.188	0.259
	LTE Band 12	10M	QPSK	25RB	12Offset	Right Tilted	0mm	23095	707.5	22.61	24.00	1.377	0.05	0.116	0.160
	LTE Band 12	10M	QPSK	25RB	12Offset	Left Cheek	0mm	23095	707.5	22.61	24.00	1.377	0.02	0.177	0.244
	LTE Band 12	10M	QPSK	25RB	12Offset	Left Tilted	0mm	23095	707.5	22.61	24.00	1.377	0.08	0.105	0.145
10	LTE Band 13	10M	QPSK	1RB	25Offset	Right Cheek	0mm	23230	782	22.60	23.10	1.122	0.02	0.320	0.359
	LTE Band 13	10M	QPSK	1RB	25Offset	Right Tilted	0mm	23230	782	22.60	23.10	1.122	0.06	0.176	0.197
	LTE Band 13	10M	QPSK	1RB	25Offset	Left Cheek	0mm	23230	782	22.60	23.10	1.122	0.09	0.272	0.305
	LTE Band 13	10M	QPSK	1RB	25Offset	Left Tilted	0mm	23230	782	22.60	23.10	1.122	0.05	0.185	0.208
	LTE Band 13	10M	QPSK	25RB	25Offset	Right Cheek	0mm	23230	782	21.68	22.10	1.102	0.02	0.262	0.289
	LTE Band 13	10M	QPSK	25RB	25Offset	Right Tilted	0mm	23230	782	21.68	22.10	1.102	0.05	0.144	0.159
	LTE Band 13	10M	QPSK	25RB	25Offset	Left Cheek	0mm	23230	782	21.68	22.10	1.102	0.06	0.269	0.296
	LTE Band 13	10M	QPSK	25RB	25Offset	Left Tilted	0mm	23230	782	21.68	22.10	1.102	0.01	0.152	0.167
	LTE Band 5	10M	QPSK	1RB	0Offset	Right Cheek	0mm	20525	836.5	23.30	24.70	1.380	0.13	0.277	0.382
	LTE Band 5	10M	QPSK	1RB	0Offset	Right Tilted	0mm	20525	836.5	23.30	24.70	1.380	0.1	0.176	0.243
11	LTE Band 5	10M	QPSK	1RB	0Offset	Left Cheek	0mm	20525	836.5	23.30	24.70	1.380	-0.13	0.326	0.450
	LTE Band 5	10M	QPSK	1RB	0Offset	Left Tilted	0mm	20525	836.5	23.30	24.70	1.380	0.04	0.180	0.248
	LTE Band 5	10M	QPSK	25RB	25Offset	Right Cheek	0mm	20525	836.5	22.32	23.70	1.374	0.03	0.243	0.334
	LTE Band 5	10M	QPSK	25RB	25Offset	Right Tilted	0mm	20525	836.5	22.32	23.70	1.374	-0.11	0.153	0.210
	LTE Band 5	10M	QPSK	25RB	25Offset	Left Cheek	0mm	20525	836.5	22.32	23.70	1.374	0.03	0.258	0.355
	LTE Band 5	10M	QPSK	25RB	25Offset	Left Tilted	0mm	20525	836.5	22.32	23.70	1.374	0.04	0.156	0.214

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 26	15M	QPSK	1RB	0Offset	Right Cheek	0mm	26865	831.5	23.44	23.70	1.062	0.04	0.265	0.281
	LTE Band 26	15M	QPSK	1RB	0Offset	Right Tilted	0mm	26865	831.5	23.44	23.70	1.062	0.02	0.167	0.177
	LTE Band 26	15M	QPSK	1RB	0Offset	Left Cheek	0mm	26865	831.5	23.44	23.70	1.062	0.03	0.277	0.294
	LTE Band 26	15M	QPSK	1RB	0Offset	Left Tilted	0mm	26865	831.5	23.44	23.70	1.062	0.04	0.167	0.177
	LTE Band 26	15M	QPSK	1RB	0Offset	Left Cheek	0mm	26765	821.5	23.42	23.70	1.067	0.09	0.244	0.260
12	LTE Band 26	15M	QPSK	1RB	0Offset	Left Cheek	0mm	26965	841.5	23.25	23.70	1.109	0.02	0.342	0.379
	LTE Band 26	15M	QPSK	36RB	0Offset	Right Cheek	0mm	26865	831.5	22.42	22.70	1.067	0.01	0.221	0.236
	LTE Band 26	15M	QPSK	36RB	0Offset	Right Tilted	0mm	26865	831.5	22.42	22.70	1.067	0.07	0.141	0.150
	LTE Band 26	15M	QPSK	36RB	0Offset	Left Cheek	0mm	26865	831.5	22.42	22.70	1.067	0.06	0.236	0.252
	LTE Band 26	15M	QPSK	36RB	0Offset	Left Tilted	0mm	26865	831.5	22.42	22.70	1.067	0.02	0.142	0.151
13	LTE Band 4	20M	QPSK	1RB	0Offset	Right Cheek	0mm	20175	1732.5	22.34	22.40	1.014	0.04	0.204	0.207
	LTE Band 4	20M	QPSK	1RB	0Offset	Right Tilted	0mm	20175	1732.5	22.34	22.40	1.014	0.11	0.151	0.153
	LTE Band 4	20M	QPSK	1RB	0Offset	Left Cheek	0mm	20175	1732.5	22.34	22.40	1.014	0.09	0.103	0.104
	LTE Band 4	20M	QPSK	1RB	0Offset	Left Tilted	0mm	20175	1732.5	22.34	22.40	1.014	0.02	0.065	0.066
	LTE Band 4	20M	QPSK	50RB	0Offset	Right Cheek	0mm	20175	1732.5	21.34	21.90	1.138	0.04	0.090	0.102
	LTE Band 4	20M	QPSK	50RB	0Offset	Right Tilted	0mm	20175	1732.5	21.34	21.90	1.138	0.08	0.043	0.049
	LTE Band 4	20M	QPSK	50RB	0Offset	Left Cheek	0mm	20175	1732.5	21.34	21.90	1.138	0.09	0.067	0.076
	LTE Band 4	20M	QPSK	50RB	0Offset	Left Tilted	0mm	20175	1732.5	21.34	21.90	1.138	0.05	0.001	0.001
	LTE Band 25	20M	QPSK	1RB	0Offset	Right Cheek	0mm	26340	1880	22.28	23.30	1.265	0.08	0.085	0.108
	LTE Band 25	20M	QPSK	1RB	0Offset	Right Tilted	0mm	26340	1880	22.28	23.30	1.265	0.01	0.073	0.092
14	LTE Band 25	20M	QPSK	1RB	0Offset	Left Cheek	0mm	26340	1880	22.28	23.30	1.265	0.04	0.100	0.126
	LTE Band 25	20M	QPSK	1RB	0Offset	Left Tilted	0mm	26340	1880	22.28	23.30	1.265	0.06	0.064	0.081
	LTE Band 25	20M	QPSK	1RB	0Offset	Left Cheek	0mm	26140	1860	22.26	23.30	1.271	0.04	0.092	0.117
	LTE Band 25	20M	QPSK	1RB	0Offset	Left Cheek	0mm	26590	1905	22.24	23.30	1.276	0.02	0.098	0.125
	LTE Band 25	20M	QPSK	50RB	0Offset	Right Cheek	0mm	26340	1880	21.26	22.30	1.271	0.01	0.068	0.086
	LTE Band 25	20M	QPSK	50RB	0Offset	Right Tilted	0mm	26340	1880	21.26	22.30	1.271	0.08	0.057	0.072
	LTE Band 25	20M	QPSK	50RB	0Offset	Left Cheek	0mm	26340	1880	21.26	22.30	1.271	0.04	0.095	0.121
	LTE Band 25	20M	QPSK	50RB	0Offset	Left Tilted	0mm	26340	1880	21.26	22.30	1.271	0.12	0.054	0.069
	LTE Band 2	20M	QPSK	1RB	0Offset	Right Cheek	0mm	19100	1900	23.28	23.30	1.005	0.02	0.103	0.103
	LTE Band 2	20M	QPSK	1RB	0Offset	Right Tilted	0mm	19100	1900	23.28	23.30	1.005	0.06	0.088	0.088
	LTE Band 2	20M	QPSK	1RB	0Offset	Left Cheek	0mm	19100	1900	23.28	23.30	1.005	0.04	0.122	0.123
	LTE Band 2	20M	QPSK	1RB	0Offset	Left Tilted	0mm	19100	1900	23.28	23.30	1.005	0.08	0.094	0.094
	LTE Band 2	20M	QPSK	1RB	0Offset	Left Cheek	0mm	18700	1860	23.24	23.30	1.014	0.07	0.116	0.118
15	LTE Band 2	20M	QPSK	1RB	0Offset	Left Cheek	0mm	18900	1880	23.25	23.30	1.012	0.08	0.126	0.127
	LTE Band 2	20M	QPSK	50RB	0Offset	Right Cheek	0mm	19100	1900	22.28	22.50	1.052	0.07	0.081	0.085
	LTE Band 2	20M	QPSK	50RB	0Offset	Right Tilted	0mm	19100	1900	22.28	22.50	1.052	0.01	0.071	0.075
	LTE Band 2	20M	QPSK	50RB	0Offset	Left Cheek	0mm	19100	1900	22.28	22.50	1.052	0.05	0.096	0.101
	LTE Band 2	20M	QPSK	50RB	0Offset	Left Tilted	0mm	19100	1900	22.28	22.50	1.052	0.02	0.072	0.076
16	LTE Band 7	20M	QPSK	1RB	49Offset	Right Cheek	0mm	20850	2510	21.26	22.40	1.300	0.02	0.141	0.183
	LTE Band 7	20M	QPSK	1RB	49Offset	Right Tilted	0mm	20850	2510	21.26	22.40	1.300	0.13	0.025	0.032
	LTE Band 7	20M	QPSK	1RB	49Offset	Left Cheek	0mm	20850	2510	21.26	22.40	1.300	0.11	0.076	0.099
	LTE Band 7	20M	QPSK	1RB	49Offset	Left Tilted	0mm	20850	2510	21.26	22.40	1.300	0.05	0.008	0.010
	LTE Band 7	20M	QPSK	1RB	49Offset	Right Cheek	0mm	21100	2535	21.19	22.40	1.321	-0.02	0.095	0.126
	LTE Band 7	20M	QPSK	1RB	49Offset	Right Cheek	0mm	21350	2560	21.14	22.40	1.337	-0.04	0.105	0.140
	LTE Band 7	20M	QPSK	50RB	50Offset	Right Cheek	0mm	20850	2510	20.41	21.40	1.256	0.04	0.110	0.138
	LTE Band 7	20M	QPSK	50RB	50Offset	Right Tilted	0mm	20850	2510	20.41	21.40	1.256	-0.09	0.019	0.023
	LTE Band 7	20M	QPSK	50RB	50Offset	Left Cheek	0mm	20850	2510	20.41	21.40	1.256	-0.04	0.056	0.070
	LTE Band 7	20M	QPSK	50RB	50Offset	Left Tilted	0mm	20850	2510	20.41	21.40	1.256	0.03	0.002	0.003

<TDD 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	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
17	LTE Band 41	20M	QPSK	1RB	49Offset	Right Cheek	0mm	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.03	0.091	0.130
	LTE Band 41	20M	QPSK	1RB	49Offset	Right Tilted	0mm	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.09	0.020	0.029
	LTE Band 41	20M	QPSK	1RB	49Offset	Left Cheek	0mm	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.01	0.079	0.113
	LTE Band 41	20M	QPSK	1RB	49Offset	Left Tilted	0mm	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.04	0.040	0.057
	LTE Band 41	20M	QPSK	1RB	49Offset	Right Cheek	0mm	39750	2506	22.37	24.00	1.455	62.9	1.006	0.11	0.078	0.114
	LTE Band 41	20M	QPSK	1RB	49Offset	Right Cheek	0mm	40620	2593	22.36	24.00	1.459	62.9	1.006	0.08	0.064	0.094
	LTE Band 41	20M	QPSK	1RB	49Offset	Right Cheek	0mm	41055	2636.5	22.22	24.00	1.507	62.9	1.006	0.09	0.048	0.073
	LTE Band 41	20M	QPSK	1RB	49Offset	Right Cheek	0mm	41490	2680	22.19	24.00	1.517	62.9	1.006	0.13	0.036	0.054
	LTE Band 41	20M	QPSK	50RB	24Offset	Right Cheek	0mm	40185	2549.5	21.50	23.00	1.413	62.9	1.006	0.04	0.073	0.103
	LTE Band 41	20M	QPSK	50RB	24Offset	Right Tilted	0mm	40185	2549.5	21.50	23.00	1.413	62.9	1.006	-0.06	0.016	0.023
	LTE Band 41	20M	QPSK	50RB	24Offset	Left Cheek	0mm	40185	2549.5	21.50	23.00	1.413	62.9	1.006	0.08	0.062	0.088
	LTE Band 41	20M	QPSK	50RB	24Offset	Left Tilted	0mm	40185	2549.5	21.50	23.00	1.413	62.9	1.006	-0.18	0.031	0.045

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 6Mbps	Right Cheek	0mm	6	2437	11.79	12.00	1.050	100	1.000	0.06	0.098	0.103
	WLAN2.4GHz	802.11b 6Mbps	Right Tilted	0mm	6	2437	11.79	12.00	1.050	100	1.000	0.08	0.081	0.085
18	WLAN2.4GHz	802.11b 6Mbps	Left Cheek	0mm	6	2437	11.79	12.00	1.050	100	1.000	0.01	0.298	0.313
	WLAN2.4GHz	802.11b 6Mbps	Left Tilted	0mm	6	2437	11.79	12.00	1.050	100	1.000	0.06	0.189	0.198
	WLAN2.4GHz	802.11b 6Mbps	Left Cheek	0mm	1	2412	11.64	12.00	1.086	100	1.000	0.02	0.230	0.250
	WLAN2.4GHz	802.11b 6Mbps	Left Cheek	0mm	11	2462	11.42	12.00	1.143	100	1.000	0.04	0.249	0.285
	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	52	5260	11.98	12.50	1.128	94.04	1.063	0.08	0.209	0.251
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	52	5260	11.98	12.50	1.128	94.04	1.063	0.07	0.216	0.259
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	52	5260	11.98	12.50	1.128	94.04	1.063	0.04	0.239	0.287
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	52	5260	11.98	12.50	1.128	94.04	1.063	0.01	0.124	0.149
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	56	5280	11.83	12.50	1.168	94.04	1.063	0.03	0.300	0.372
19	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	60	5300	11.66	12.50	1.214	94.04	1.063	0.09	0.290	0.374
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	64	5320	11.59	12.50	1.234	94.04	1.063	0.01	0.254	0.333
	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	100	5500	12.02	12.50	1.118	94.04	1.063	0.11	0.193	0.229
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	100	5500	12.02	12.50	1.118	94.04	1.063	0.16	0.160	0.190
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	100	5500	12.02	12.50	1.118	94.04	1.063	0.07	0.225	0.267
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	100	5500	12.02	12.50	1.118	94.04	1.063	0.09	0.168	0.200
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	116	5580	11.64	12.50	1.220	94.04	1.063	0.02	0.241	0.313
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	124	5620	11.60	12.50	1.231	94.04	1.063	0.05	0.244	0.319
20	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	132	5660	11.58	12.50	1.237	94.04	1.063	0.04	0.261	0.343
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	140	5700	11.41	12.50	1.286	94.04	1.063	0.06	0.237	0.324
	WLAN5GHz	802.11a 6Mbps	Right Cheek	0mm	165	5825	12.02	12.50	1.118	94.04	1.063	0.01	0.026	0.031
	WLAN5GHz	802.11a 6Mbps	Right Tilted	0mm	165	5825	12.02	12.50	1.118	94.04	1.063	0.09	0.017	0.020
	WLAN5GHz	802.11a 6Mbps	Left Cheek	0mm	165	5825	12.02	12.50	1.118	94.04	1.063	0.05	0.131	0.156
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	165	5825	12.02	12.50	1.118	94.04	1.063	0.04	0.135	0.160
	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	149	5745	11.54	12.50	1.248	94.04	1.063	0.02	0.198	0.263
21	WLAN5GHz	802.11a 6Mbps	Left Tilted	0mm	157	5785	11.53	12.50	1.251	94.04	1.063	0.04	0.263	0.350

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	DH5 1Mbps	Right Cheek	0mm	0	2402	9.48	10.00	1.127	77.06	1.081	0.04	0.028	0.034
	Bluetooth	DH5 1Mbps	Right Tilted	0mm	0	2402	9.48	10.00	1.127	77.06	1.081	0.07	0.022	0.027
	Bluetooth	DH5 1Mbps	Left Cheek	0mm	0	2402	9.48	10.00	1.127	77.06	1.081	0.01	0.074	0.091
	Bluetooth	DH5 1Mbps	Left Tilted	0mm	0	2402	9.48	10.00	1.127	77.06	1.081	0.02	0.051	0.062
22	Bluetooth	DH5 1Mbps	Left Cheek	0mm	39	2441	9.06	10.00	1.242	77.06	1.081	0.07	0.114	0.153
	Bluetooth	DH5 1Mbps	Left Cheek	0mm	78	2480	8.42	10.00	1.439	77.06	1.081	0.05	0.097	0.151

13.2 Hotspot SAR

<GSM SAR>

Plot 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 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS(4 Tx slots)	Front	10mm	OFF	251	848.8	26.35	27.40	1.274	0.08	0.296	0.377
23	GSM850	GPRS(4 Tx slots)	Back	10mm	OFF	251	848.8	26.35	27.40	1.274	0.03	0.586	0.746
	GSM850	GPRS(4 Tx slots)	Left Side	10mm	OFF	251	848.8	26.35	27.40	1.274	0.04	0.245	0.312
	GSM850	GPRS(4 Tx slots)	Right Side	10mm	OFF	251	848.8	26.35	27.40	1.274	-0.01	0.290	0.369
	GSM850	GPRS(4 Tx slots)	Bottom Side	10mm	OFF	251	848.8	26.35	27.40	1.274	0.07	0.170	0.216
	GSM850	GPRS(4 Tx slots)	Back	10mm	OFF	128	824.2	26.15	27.40	1.334	0.07	0.507	0.676
	GSM850	GPRS(4 Tx slots)	Back	10mm	OFF	189	836.4	26.28	27.40	1.294	0.02	0.537	0.695
	GSM1900	GPRS(2 Tx slots)	Front	10mm	OFF	810	1909.8	27.16	28.20	1.271	0.09	0.436	0.554
24	GSM1900	GPRS(2 Tx slots)	Back	10mm	OFF	810	1909.8	27.16	28.20	1.271	0.02	0.834	1.060
	GSM1900	GPRS(2 Tx slots)	Left Side	10mm	OFF	810	1909.8	27.16	28.20	1.271	0.11	0.072	0.091
	GSM1900	GPRS(2 Tx slots)	Right Side	10mm	OFF	810	1909.8	27.16	28.20	1.271	0.08	0.081	0.103
	GSM1900	GPRS(2 Tx slots)	Bottom Side	10mm	OFF	810	1909.8	27.16	28.20	1.271	0.09	0.458	0.582
	GSM1900	GPRS(2 Tx slots)	Back	10mm	OFF	512	1850.2	26.45	28.20	1.496	-0.14	0.539	0.806
	GSM1900	GPRS(2 Tx slots)	Back	10mm	OFF	661	1880	26.93	28.20	1.340	0.02	0.622	0.833

<WCDMA SAR>

Plot 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 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA V	RMC 12.2Kbps	Front	10mm	OFF	4182	836.4	23.76	24.90	1.300	0.05	0.430	0.559
	WCDMA V	RMC 12.2Kbps	Back	10mm	OFF	4182	836.4	23.76	24.90	1.300	0.09	0.705	0.917
	WCDMA V	RMC 12.2Kbps	Left Side	10mm	OFF	4182	836.4	23.76	24.90	1.300	0.03	0.328	0.426
	WCDMA V	RMC 12.2Kbps	Right Side	10mm	OFF	4182	836.4	23.76	24.90	1.300	0.07	0.408	0.530
	WCDMA V	RMC 12.2Kbps	Bottom Side	10mm	OFF	4182	836.4	23.76	24.90	1.300	0.11	0.188	0.244
	WCDMA V	RMC 12.2Kbps	Back	10mm	OFF	4132	826.4	23.63	24.90	1.340	0.02	0.648	0.868
25	WCDMA V	RMC 12.2Kbps	Back	10mm	OFF	4233	846.6	23.62	24.90	1.343	0.06	0.735	0.987
	WCDMA IV	RMC 12.2Kbps	Front	10mm	ON	1413	1732.6	20.03	20.20	1.040	0.03	0.368	0.383
	WCDMA IV	RMC 12.2Kbps	Back	10mm	ON	1413	1732.6	20.03	20.20	1.040	0.01	1.150	1.196
	WCDMA IV	RMC 12.2Kbps	Left Side	10mm	ON	1413	1732.6	20.03	20.20	1.040	0.04	0.056	0.058
	WCDMA IV	RMC 12.2Kbps	Right Side	10mm	ON	1413	1732.6	20.03	20.20	1.040	-0.01	0.085	0.088
	WCDMA IV	RMC 12.2Kbps	Bottom Side	10mm	ON	1413	1732.6	20.03	20.20	1.040	0.06	0.520	0.541
26	WCDMA IV	RMC 12.2Kbps	Back	10mm	ON	1312	1712.4	19.85	20.20	1.084	0.09	1.140	1.236
	WCDMA IV	RMC 12.2Kbps	Back	10mm	ON	1513	1752.6	19.84	20.20	1.086	0.08	1.070	1.162
	WCDMA II	RMC 12.2Kbps	Front	10mm	ON	9538	1907.6	21.22	21.50	1.067	0.02	0.585	0.624
	WCDMA II	RMC 12.2Kbps	Back	10mm	ON	9538	1907.6	21.22	21.50	1.067	0.07	1.180	1.259
	WCDMA II	RMC 12.2Kbps	Left Side	10mm	ON	9538	1907.6	21.22	21.50	1.067	0.04	0.094	0.100
	WCDMA II	RMC 12.2Kbps	Right Side	10mm	ON	9538	1907.6	21.22	21.50	1.067	0.09	0.090	0.096
	WCDMA II	RMC 12.2Kbps	Bottom Side	10mm	ON	9538	1907.6	21.22	21.50	1.067	0.11	0.600	0.640
	WCDMA II	RMC 12.2Kbps	Back	10mm	ON	9262	1852.4	21.02	21.50	1.117	0.06	1.200	1.340
27	WCDMA II	RMC 12.2Kbps	Back	10mm	ON	9400	1880	21.06	21.50	1.107	0.08	1.220	1.350

<CDMA SAR>

Plot 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 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	CDMA2000 BC0	RTAP 153.6Kbps	Front	10mm	OFF	777	848.31	23.72	23.80	1.019	0.08	0.432	0.440
	CDMA2000 BC0	RTAP 153.6Kbps	Back	10mm	OFF	777	848.31	23.72	23.80	1.019	0.02	0.683	0.696
	CDMA2000 BC0	RTAP 153.6Kbps	Left Side	10mm	OFF	777	848.31	23.72	23.80	1.019	0.1	0.336	0.342
	CDMA2000 BC0	RTAP 153.6Kbps	Right Side	10mm	OFF	777	848.31	23.72	23.80	1.019	0.04	0.411	0.419
	CDMA2000 BC0	RTAP 153.6Kbps	Bottom Side	10mm	OFF	777	848.31	23.72	23.80	1.019	0.05	0.192	0.196
	CDMA2000 BC0	RTAP 153.6Kbps	Back	10mm	OFF	1013	824.7	23.62	23.80	1.042	0.01	0.678	0.707
28	CDMA2000 BC0	RTAP 153.6Kbps	Back	10mm	OFF	384	836.52	23.70	23.80	1.023	0.09	0.693	0.709
	CDMA2000 BC10	RTAP 153.6Kbps	Front	10mm	OFF	580	820.5	23.76	24.80	1.271	0.07	0.403	0.512
29	CDMA2000 BC10	RTAP 153.6Kbps	Back	10mm	OFF	580	820.5	23.76	24.80	1.271	0.09	0.609	0.774
	CDMA2000 BC10	RTAP 153.6Kbps	Left Side	10mm	OFF	580	820.5	23.76	24.80	1.271	0.04	0.301	0.382
	CDMA2000 BC10	RTAP 153.6Kbps	Right Side	10mm	OFF	580	820.5	23.76	24.80	1.271	0.06	0.396	0.503
	CDMA2000 BC10	RTAP 153.6Kbps	Bottom Side	10mm	OFF	580	820.5	23.76	24.80	1.271	0.01	0.163	0.207
	CDMA2000 BC10	RTAP 153.6Kbps	Back	10mm	OFF	476	817.9	23.68	24.80	1.294	0.02	0.585	0.757
	CDMA2000 BC10	RTAP 153.6Kbps	Back	10mm	OFF	684	823.1	23.63	24.80	1.309	0.05	0.588	0.770
	CDMA2000 BC1	RTAP 153.6Kbps	Front	10mm	ON	600	1880	20.91	21.00	1.021	0.02	0.556	0.568
	CDMA2000 BC1	RTAP 153.6Kbps	Back	10mm	ON	600	1880	20.91	21.00	1.021	0.07	1.130	1.154
	CDMA2000 BC1	RTAP 153.6Kbps	Left Side	10mm	ON	600	1880	20.91	21.00	1.021	-0.11	0.091	0.093
	CDMA2000 BC1	RTAP 153.6Kbps	Right Side	10mm	ON	600	1880	20.91	21.00	1.021	0.03	0.078	0.080
	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Side	10mm	ON	600	1880	20.91	21.00	1.021	0.08	0.587	0.599
30	CDMA2000 BC1	RTAP 153.6Kbps	Back	10mm	ON	25	1851.25	20.80	21.00	1.047	0.07	1.150	1.204
	CDMA2000 BC1	RTAP 153.6Kbps	Back	10mm	ON	1175	1908.75	20.90	21.00	1.023	0.09	1.080	1.105

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Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 12	10M	QPSK	1RB	25Offset	Front	10mm	OFF	23095	707.5	23.65	25.00	1.365	-0.01	0.276	0.377
31	LTE Band 12	10M	QPSK	1RB	25Offset	Back	10mm	OFF	23095	707.5	23.65	25.00	1.365	0.01	0.418	0.570
	LTE Band 12	10M	QPSK	1RB	25Offset	Left Side	10mm	OFF	23095	707.5	23.65	25.00	1.365	0.02	0.195	0.266
	LTE Band 12	10M	QPSK	1RB	25Offset	Right Side	10mm	OFF	23095	707.5	23.65	25.00	1.365	0.04	0.327	0.446
	LTE Band 12	10M	QPSK	1RB	25Offset	Bottom Side	10mm	OFF	23095	707.5	23.65	25.00	1.365	0.09	0.088	0.120
	LTE Band 12	10M	QPSK	25RB	12Offset	Front	10mm	OFF	23095	707.5	22.61	24.00	1.377	0.08	0.227	0.313
	LTE Band 12	10M	QPSK	25RB	12Offset	Back	10mm	OFF	23095	707.5	22.61	24.00	1.377	0.09	0.282	0.388
	LTE Band 12	10M	QPSK	25RB	12Offset	Left Side	10mm	OFF	23095	707.5	22.61	24.00	1.377	0.01	0.156	0.215
	LTE Band 12	10M	QPSK	25RB	12Offset	Right Side	10mm	OFF	23095	707.5	22.61	24.00	1.377	0.12	0.278	0.383
	LTE Band 12	10M	QPSK	25RB	12Offset	Bottom Side	10mm	OFF	23095	707.5	22.61	24.00	1.377	0.13	0.071	0.098
	LTE Band 13	10M	QPSK	1RB	25Offset	Front	10mm	OFF	23230	782	22.60	23.10	1.122	0.08	0.361	0.405
32	LTE Band 13	10M	QPSK	1RB	25Offset	Back	10mm	OFF	23230	782	22.60	23.10	1.122	0.06	0.544	0.610
	LTE Band 13	10M	QPSK	1RB	25Offset	Left Side	10mm	OFF	23230	782	22.60	23.10	1.122	0.01	0.277	0.311
	LTE Band 13	10M	QPSK	1RB	25Offset	Right Side	10mm	OFF	23230	782	22.60	23.10	1.122	0.02	0.389	0.436
	LTE Band 13	10M	QPSK	1RB	25Offset	Bottom Side	10mm	OFF	23230	782	22.60	23.10	1.122	0.09	0.141	0.158
	LTE Band 13	10M	QPSK	25RB	25Offset	Front	10mm	OFF	23230	782	21.68	22.10	1.102	0.05	0.297	0.327
	LTE Band 13	10M	QPSK	25RB	25Offset	Back	10mm	OFF	23230	782	21.68	22.10	1.102	0.07	0.463	0.510
	LTE Band 13	10M	QPSK	25RB	25Offset	Left Side	10mm	OFF	23230	782	21.68	22.10	1.102	0.03	0.225	0.248
	LTE Band 13	10M	QPSK	25RB	25Offset	Right Side	10mm	OFF	23230	782	21.68	22.10	1.102	0.12	0.317	0.349
	LTE Band 13	10M	QPSK	25RB	25Offset	Bottom Side	10mm	OFF	23230	782	21.68	22.10	1.102	0.01	0.115	0.127

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 5	10M	QPSK	1RB	0Offset	Front	10mm	OFF	20525	836.5	23.30	24.70	1.380	0.15	0.254	0.351
33	LTE Band 5	10M	QPSK	1RB	0Offset	Back	10mm	OFF	20525	836.5	23.30	24.70	1.380	0.09	0.412	0.569
	LTE Band 5	10M	QPSK	1RB	0Offset	Left Side	10mm	OFF	20525	836.5	23.30	24.70	1.380	0.08	0.186	0.257
	LTE Band 5	10M	QPSK	1RB	0Offset	Right Side	10mm	OFF	20525	836.5	23.30	24.70	1.380	0.09	0.290	0.400
	LTE Band 5	10M	QPSK	1RB	0Offset	Bottom Side	10mm	OFF	20525	836.5	23.30	24.70	1.380	0.1	0.180	0.248
	LTE Band 5	10M	QPSK	25RB	25Offset	Front	10mm	OFF	20525	836.5	22.32	23.70	1.374	0.03	0.252	0.346
	LTE Band 5	10M	QPSK	25RB	25Offset	Back	10mm	OFF	20525	836.5	22.32	23.70	1.374	0.05	0.388	0.533
	LTE Band 5	10M	QPSK	25RB	25Offset	Left Side	10mm	OFF	20525	836.5	22.32	23.70	1.374	0.01	0.177	0.243
	LTE Band 5	10M	QPSK	25RB	25Offset	Right Side	10mm	OFF	20525	836.5	22.32	23.70	1.374	0.03	0.244	0.335
	LTE Band 5	10M	QPSK	25RB	25Offset	Bottom Side	10mm	OFF	20525	836.5	22.32	23.70	1.374	0.05	0.165	0.227
	LTE Band 26	15M	QPSK	1RB	0Offset	Front	10mm	OFF	26865	831.5	23.44	23.70	1.062	0.1	0.298	0.316
34	LTE Band 26	15M	QPSK	1RB	0Offset	Back	10mm	OFF	26865	831.5	23.44	23.70	1.062	0.02	0.513	0.545
	LTE Band 26	15M	QPSK	1RB	0Offset	Left Side	10mm	OFF	26865	831.5	23.44	23.70	1.062	0.06	0.246	0.261
	LTE Band 26	15M	QPSK	1RB	0Offset	Right Side	10mm	OFF	26865	831.5	23.44	23.70	1.062	0.05	0.220	0.234
	LTE Band 26	15M	QPSK	1RB	0Offset	Bottom Side	10mm	OFF	26865	831.5	23.44	23.70	1.062	0.06	0.119	0.126
	LTE Band 26	15M	QPSK	1RB	0Offset	Back	10mm	OFF	26765	821.5	23.42	23.70	1.067	0.04	0.479	0.511
	LTE Band 26	15M	QPSK	1RB	0Offset	Back	10mm	OFF	26965	841.5	23.25	23.70	1.109	0.02	0.488	0.541
	LTE Band 26	15M	QPSK	36RB	0Offset	Front	10mm	OFF	26865	831.5	22.42	22.70	1.067	0.07	0.238	0.254
	LTE Band 26	15M	QPSK	36RB	0Offset	Back	10mm	OFF	26865	831.5	22.42	22.70	1.067	0.03	0.409	0.436
	LTE Band 26	15M	QPSK	36RB	0Offset	Left Side	10mm	OFF	26865	831.5	22.42	22.70	1.067	0.01	0.194	0.207
	LTE Band 26	15M	QPSK	36RB	0Offset	Right Side	10mm	OFF	26865	831.5	22.42	22.70	1.067	0.06	0.267	0.285
	LTE Band 26	15M	QPSK	36RB	0Offset	Bottom Side	10mm	OFF	26865	831.5	22.42	22.70	1.067	0.05	0.099	0.106
	LTE Band 4	20M	QPSK	1RB	0Offset	Front	10mm	ON	20175	1732.5	20.64	21.00	1.086	0.09	0.424	0.461
35	LTE Band 4	20M	QPSK	1RB	0Offset	Back	10mm	ON	20175	1732.5	20.64	21.00	1.086	0.08	1.260	1.369
	LTE Band 4	20M	QPSK	1RB	0Offset	Left Side	10mm	ON	20175	1732.5	20.64	21.00	1.086	0.05	0.059	0.064
	LTE Band 4	20M	QPSK	1RB	0Offset	Right Side	10mm	ON	20175	1732.5	20.64	21.00	1.086	0.07	0.100	0.109
	LTE Band 4	20M	QPSK	1RB	0Offset	Bottom Side	10mm	ON	20175	1732.5	20.64	21.00	1.086	0.04	0.611	0.664
	LTE Band 4	20M	QPSK	50RB	0Offset	Front	10mm	ON	20175	1732.5	20.47	21.00	1.130	0.05	0.343	0.388
	LTE Band 4	20M	QPSK	50RB	0Offset	Back	10mm	ON	20175	1732.5	20.47	21.00	1.130	0.01	1.130	1.277
	LTE Band 4	20M	QPSK	50RB	0Offset	Left Side	10mm	ON	20175	1732.5	20.47	21.00	1.130	0.02	0.043	0.049
	LTE Band 4	20M	QPSK	50RB	0Offset	Right Side	10mm	ON	20175	1732.5	20.47	21.00	1.130	0.02	0.083	0.094
	LTE Band 4	20M	QPSK	50RB	0Offset	Bottom Side	10mm	ON	20175	1732.5	20.47	21.00	1.130	0.09	0.509	0.575
	LTE Band 4	20M	QPSK	100RB	0Offset	Back	10mm	ON	20175	1732.5	20.29	21.00	1.178	0.11	1.010	1.189

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 25	20M	QPSK	1RB	0Offset	Front	10mm	ON	26340	1880	22.00	22.50	1.122	0.12	0.532	0.597
36	LTE Band 25	20M	QPSK	1RB	0Offset	Back	10mm	ON	26340	1880	22.00	22.50	1.122	0.01	1.150	1.290
	LTE Band 25	20M	QPSK	1RB	0Offset	Left Side	10mm	ON	26340	1880	22.00	22.50	1.122	0.07	0.090	0.101
	LTE Band 25	20M	QPSK	1RB	0Offset	Right Side	10mm	ON	26340	1880	22.00	22.50	1.122	0.01	0.087	0.098
	LTE Band 25	20M	QPSK	1RB	0Offset	Bottom Side	10mm	ON	26340	1880	22.00	22.50	1.122	0.15	0.570	0.640
	LTE Band 25	20M	QPSK	1RB	0Offset	Back	10mm	ON	26140	1860	21.99	22.50	1.125	0.01	1.120	1.260
	LTE Band 25	20M	QPSK	1RB	0Offset	Back	10mm	ON	26590	1905	21.98	22.50	1.127	0.03	1.060	1.195
	LTE Band 25	20M	QPSK	50RB	0Offset	Front	10mm	ON	26340	1880	20.89	21.50	1.151	0.09	0.432	0.497
	LTE Band 25	20M	QPSK	50RB	0Offset	Back	10mm	ON	26340	1880	20.89	21.50	1.151	0.05	0.905	1.041
	LTE Band 25	20M	QPSK	50RB	0Offset	Left Side	10mm	ON	26340	1880	20.89	21.50	1.151	0.04	0.073	0.084
	LTE Band 25	20M	QPSK	50RB	0Offset	Right Side	10mm	ON	26340	1880	20.89	21.50	1.151	0.02	0.072	0.083
	LTE Band 25	20M	QPSK	50RB	0Offset	Bottom Side	10mm	ON	26340	1880	20.89	21.50	1.151	0.11	0.461	0.531
	LTE Band 25	20M	QPSK	50RB	0Offset	Back	10mm	ON	26140	1860	20.82	21.50	1.169	0.02	0.923	1.079
	LTE Band 25	20M	QPSK	50RB	0Offset	Back	10mm	ON	26590	1905	20.85	21.50	1.161	0.08	0.870	1.010
	LTE Band 25	20M	QPSK	100RB	0Offset	Back	10mm	ON	26340	1880	20.81	21.50	1.172	0.16	0.911	1.068
	LTE Band 2	20M	QPSK	1RB	0Offset	Front	10mm	ON	19100	1900	21.68	22.00	1.076	0.08	0.738	0.794
	LTE Band 2	20M	QPSK	1RB	0Offset	Back	10mm	ON	19100	1900	21.68	22.00	1.076	0.13	1.030	1.109
	LTE Band 2	20M	QPSK	1RB	0Offset	Left Side	10mm	ON	19100	1900	21.68	22.00	1.076	0.02	0.135	0.145
	LTE Band 2	20M	QPSK	1RB	0Offset	Right Side	10mm	ON	19100	1900	21.68	22.00	1.076	0.04	0.118	0.127
	LTE Band 2	20M	QPSK	1RB	0Offset	Bottom Side	10mm	ON	19100	1900	21.68	22.00	1.076	0.07	0.734	0.790
	LTE Band 2	20M	QPSK	1RB	0Offset	Back	10mm	ON	18700	1860	21.54	22.00	1.112	0.03	1.100	1.223
	LTE Band 2	20M	QPSK	1RB	0Offset	Back	10mm	ON	18900	1880	21.65	22.00	1.084	0.09	1.080	1.171
	LTE Band 2	20M	QPSK	50RB	0Offset	Front	10mm	ON	19100	1900	21.44	22.00	1.138	0.08	0.601	0.684
	LTE Band 2	20M	QPSK	50RB	0Offset	Back	10mm	ON	19100	1900	21.44	22.00	1.138	0.09	1.050	1.195
	LTE Band 2	20M	QPSK	50RB	0Offset	Left Side	10mm	ON	19100	1900	21.44	22.00	1.138	0.03	0.109	0.124
	LTE Band 2	20M	QPSK	50RB	0Offset	Right Side	10mm	ON	19100	1900	21.44	22.00	1.138	0.06	0.095	0.108
	LTE Band 2	20M	QPSK	50RB	0Offset	Bottom Side	10mm	ON	19100	1900	21.44	22.00	1.138	0.11	0.589	0.670
37	LTE Band 2	20M	QPSK	50RB	0Offset	Back	10mm	ON	18700	1860	21.28	22.00	1.180	0.04	1.120	1.322
	LTE Band 2	20M	QPSK	50RB	0Offset	Back	10mm	ON	18900	1880	21.38	22.00	1.153	0.04	1.060	1.223
	LTE Band 2	20M	QPSK	100RB	0Offset	Back	10mm	ON	19100	1900	21.42	22.00	1.143	0.08	0.986	1.127
	LTE Band 7	20M	QPSK	1RB	49Offset	Front	10mm	ON	20850	2510	20.57	21.00	1.104	0.02	0.418	0.462
38	LTE Band 7	20M	QPSK	1RB	49Offset	Back	10mm	ON	20850	2510	20.57	21.00	1.104	0.05	1.170	1.292
	LTE Band 7	20M	QPSK	1RB	49Offset	Left Side	10mm	ON	20850	2510	20.57	21.00	1.104	0.09	0.051	0.056
	LTE Band 7	20M	QPSK	1RB	49Offset	Right Side	10mm	ON	20850	2510	20.57	21.00	1.104	0.04	0.140	0.155
	LTE Band 7	20M	QPSK	1RB	49Offset	Bottom Side	10mm	ON	20850	2510	20.57	21.00	1.104	0.07	0.765	0.845
	LTE Band 7	20M	QPSK	1RB	49Offset	Back	10mm	ON	21100	2535	20.42	21.00	1.143	0.09	1.060	1.211
	LTE Band 7	20M	QPSK	1RB	49Offset	Back	10mm	ON	21350	2560	20.33	21.00	1.167	0.02	0.976	1.139
	LTE Band 7	20M	QPSK	1RB	49Offset	Bottom Side	10mm	ON	21100	2535	20.42	21.00	1.143	0.03	0.731	0.835
	LTE Band 7	20M	QPSK	1RB	49Offset	Bottom Side	10mm	ON	21350	2560	20.33	21.00	1.167	0.01	0.723	0.844
	LTE Band 7	20M	QPSK	50RB	50Offset	Front	10mm	ON	20850	2510	20.42	21.00	1.143	0.02	0.291	0.333
	LTE Band 7	20M	QPSK	50RB	50Offset	Back	10mm	ON	20850	2510	20.42	21.00	1.143	0.09	0.926	1.058
	LTE Band 7	20M	QPSK	50RB	50Offset	Left Side	10mm	ON	20850	2510	20.42	21.00	1.143	0.08	0.042	0.048
	LTE Band 7	20M	QPSK	50RB	50Offset	Right Side	10mm	ON	20850	2510	20.42	21.00	1.143	0.05	0.117	0.134
	LTE Band 7	20M	QPSK	50RB	50Offset	Bottom Side	10mm	ON	20850	2510	20.42	21.00	1.143	0.07	0.615	0.703
	LTE Band 7	20M	QPSK	50RB	50Offset	Back	10mm	ON	21100	2535	20.36	21.00	1.159	0.16	0.859	0.995
	LTE Band 7	20M	QPSK	50RB	50Offset	Back	10mm	ON	21350	2560	20.30	21.00	1.175	0.1	0.808	0.949
	LTE Band 7	20M	QPSK	100RB	0Offset	Back	10mm	ON	20850	2510	20.39	21.00	1.151	0.09	0.943	1.085

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Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41	20M	QPSK	1RB	49Offset	Front	10mm	OFF	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.11	0.380	0.546
39	LTE Band 41	20M	QPSK	1RB	49Offset	Back	10mm	OFF	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.03	0.990	1.423
	LTE Band 41	20M	QPSK	1RB	49Offset	Left Side	10mm	OFF	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.04	0.001	0.001
	LTE Band 41	20M	QPSK	1RB	49Offset	Right Side	10mm	OFF	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.05	0.056	0.080
	LTE Band 41	20M	QPSK	1RB	49Offset	Bottom Side	10mm	OFF	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.09	0.318	0.457
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	10mm	OFF	39750	2506	22.37	24.00	1.455	62.9	1.006	0.04	0.899	1.316
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	10mm	OFF	40620	2593	22.36	24.00	1.459	62.9	1.006	0.01	0.861	1.264
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	10mm	OFF	41055	2636.5	22.22	24.00	1.507	62.9	1.006	0.05	0.855	1.296
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	10mm	OFF	41490	2680	22.19	24.00	1.517	62.9	1.006	0.09	0.823	1.256
	LTE Band 41	20M	QPSK	50RB	24Offset	Front	10mm	OFF	40185	2549.5	21.50	23.00	1.413	62.9	1.006	0.03	0.254	0.361
	LTE Band 41	20M	QPSK	50RB	24Offset	Back	10mm	OFF	40185	2549.5	21.50	23.00	1.413	62.9	1.006	0.09	0.723	1.027
	LTE Band 41	20M	QPSK	50RB	24Offset	Left Side	10mm	OFF	40185	2549.5	21.50	23.00	1.413	62.9	1.006	0.06	0.001	0.001
	LTE Band 41	20M	QPSK	50RB	24Offset	Right Side	10mm	OFF	40185	2549.5	21.50	23.00	1.413	62.9	1.006	0.09	0.048	0.068
	LTE Band 41	20M	QPSK	50RB	24Offset	Bottom Side	10mm	OFF	40185	2549.5	21.50	23.00	1.413	62.9	1.006	0.08	0.301	0.428
	LTE Band 41	20M	QPSK	50RB	24Offset	Back	10mm	OFF	39750	2506	21.49	23.00	1.416	62.9	1.006	0.06	0.658	0.937
	LTE Band 41	20M	QPSK	50RB	24Offset	Back	10mm	OFF	40620	2593	21.48	23.00	1.419	62.9	1.006	0.07	0.620	0.885
	LTE Band 41	20M	QPSK	50RB	24Offset	Back	10mm	OFF	41055	2636.5	21.46	23.00	1.426	62.9	1.006	0.01	0.621	0.891
	LTE Band 41	20M	QPSK	50RB	24Offset	Back	10mm	OFF	41490	2680	21.21	23.00	1.510	62.9	1.006	0.02	0.602	0.915
	LTE Band 41	20M	QPSK	100RB	0Offset	Back	10mm	OFF	40185	2549.5	21.41	23.00	1.442	62.9	1.006	0.04	0.718	1.042

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 6Mbps	Front	10mm	6	2437	11.79	12.00	1.050	100	1.000	0.13	0.033	0.035
	WLAN2.4GHz	802.11b 6Mbps	Back	10mm	6	2437	11.79	12.00	1.050	100	1.000	0.1	0.047	0.049
	WLAN2.4GHz	802.11b 6Mbps	Right Side	10mm	6	2437	11.79	12.00	1.050	100	1.000	0.09	0.038	0.040
	WLAN2.4GHz	802.11b 6Mbps	Top Side	10mm	6	2437	11.79	12.00	1.050	100	1.000	0.04	0.016	0.017
	WLAN2.4GHz	802.11b 6Mbps	Back	10mm	1	2412	11.64	12.00	1.086	100	1.000	0.01	0.063	0.068
40	WLAN2.4GHz	802.11b 6Mbps	Back	10mm	11	2462	11.42	12.00	1.143	100	1.000	0.04	0.074	0.085
	WLAN5GHz	802.11a 6Mbps	Front	10mm	40	5200	11.82	12.50	1.170	94.04	1.063	-0.11	0.044	0.055
	WLAN5GHz	802.11a 6Mbps	Back	10mm	40	5200	11.82	12.50	1.170	94.04	1.063	0.03	0.071	0.088
	WLAN5GHz	802.11a 6Mbps	Right Side	10mm	40	5200	11.82	12.50	1.170	94.04	1.063	0.04	0.001	0.001
	WLAN5GHz	802.11a 6Mbps	Top Side	10mm	40	5200	11.82	12.50	1.170	94.04	1.063	0.07	0.013	0.016
41	WLAN5GHz	802.11a 6Mbps	Back	10mm	36	5180	11.78	12.50	1.181	94.04	1.063	-0.08	0.079	0.100
	WLAN5GHz	802.11a 6Mbps	Back	10mm	44	5220	11.54	12.50	1.248	94.04	1.063	0.02	0.075	0.099
	WLAN5GHz	802.11a 6Mbps	Back	10mm	48	5240	11.29	12.50	1.322	94.04	1.063	0.01	0.002	0.003
	WLAN5GHz	802.11a 6Mbps	Front	10mm	165	5825	12.02	12.50	1.118	94.04	1.063	0.08	0.001	0.001
	WLAN5GHz	802.11a 6Mbps	Back	10mm	165	5825	12.02	12.50	1.118	94.04	1.063	0.07	0.076	0.091
	WLAN5GHz	802.11a 6Mbps	Right Side	10mm	165	5825	12.02	12.50	1.118	94.04	1.063	0.01	0.179	0.213
	WLAN5GHz	802.11a 6Mbps	Top Side	10mm	165	5825	12.02	12.50	1.118	94.04	1.063	0.02	0.094	0.111
	WLAN5GHz	802.11a 6Mbps	Right Side	10mm	149	5745	11.54	12.50	1.248	94.04	1.063	0.09	0.172	0.228
42	WLAN5GHz	802.11a 6Mbps	Right Side	10mm	157	5785	11.53	12.50	1.251	94.04	1.063	0.05	0.203	0.270

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	DH5 1Mbps	Front	10mm	0	2402	9.48	10.00	1.127	77.06	1.081	0.05	0.001	0.001
	Bluetooth	DH5 1Mbps	Back	10mm	0	2402	9.48	10.00	1.127	77.06	1.081	-0.02	0.031	0.038
	Bluetooth	DH5 1Mbps	Right Side	10mm	0	2402	9.48	10.00	1.127	77.06	1.081	-0.04	0.001	0.001
	Bluetooth	DH5 1Mbps	Top Side	10mm	0	2402	9.48	10.00	1.127	77.06	1.081	-0.14	0.001	0.001
	Bluetooth	DH5 1Mbps	Back	10mm	39	2441	9.06	10.00	1.242	77.06	1.081	-0.09	0.028	0.037
43	Bluetooth	DH5 1Mbps	Back	10mm	78	2480	8.42	10.00	1.439	77.06	1.081	0.05	0.029	0.045

13.3 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS(4 Tx slots)	Front	15mm	251	848.8	26.35	27.40	1.274	-0.05	0.275	0.350
44	GSM850	GPRS(4 Tx slots)	Back	15mm	251	848.8	26.35	27.40	1.274	0.08	0.398	0.507
	GSM850	GPRS(4 Tx slots)	Back	15mm	128	824.2	26.15	27.40	1.334	0.02	0.348	0.464
	GSM850	GPRS(4 Tx slots)	Back	15mm	189	836.4	26.28	27.40	1.294	0.04	0.334	0.432
	GSM1900	GPRS(2 Tx slots)	Front	15mm	810	1909.8	27.16	28.20	1.271	0.09	0.271	0.344
45	GSM1900	GPRS(2 Tx slots)	Back	15mm	810	1909.8	27.16	28.20	1.271	0.07	0.471	0.598
	GSM1900	GPRS(2 Tx slots)	Back	15mm	512	1850.2	26.45	28.20	1.496	0.03	0.393	0.588
	GSM1900	GPRS(2 Tx slots)	Back	15mm	661	1880	26.93	28.20	1.340	0.08	0.443	0.593

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA V	RMC 12.2Kbps	Front	15mm	4182	836.4	23.76	24.90	1.300	0.03	0.294	0.382
46	WCDMA V	RMC 12.2Kbps	Back	15mm	4182	836.4	23.76	24.90	1.300	0.01	0.498	0.647
	WCDMA V	RMC 12.2Kbps	Back	15mm	4132	826.4	23.63	24.90	1.340	0.11	0.481	0.644
	WCDMA V	RMC 12.2Kbps	Back	15mm	4233	846.6	23.62	24.90	1.343	0.06	0.471	0.632
	WCDMA IV	RMC 12.2Kbps	Front	15mm	1413	1732.6	20.87	21.50	1.156	0.08	0.211	0.244
	WCDMA IV	RMC 12.2Kbps	Back	15mm	1413	1732.6	20.87	21.50	1.156	0.05	0.630	0.728
47	WCDMA IV	RMC 12.2Kbps	Back	15mm	1312	1712.4	20.86	21.50	1.159	0.06	0.631	0.731
	WCDMA IV	RMC 12.2Kbps	Back	15mm	1513	1752.6	20.74	21.50	1.191	0.01	0.575	0.685
	WCDMA II	RMC 12.2Kbps	Front	15mm	9538	1907.6	22.15	23.00	1.216	0.09	0.342	0.416
	WCDMA II	RMC 12.2Kbps	Back	15mm	9538	1907.6	22.15	23.00	1.216	-0.01	0.620	0.754
48	WCDMA II	RMC 12.2Kbps	Back	15mm	9262	1852.4	22.11	23.00	1.227	0.04	0.651	0.799
	WCDMA II	RMC 12.2Kbps	Back	15mm	9400	1880	22.07	23.00	1.239	0.08	0.644	0.798

<CDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Front	15mm	777	848.31	23.75	23.80	1.012	0.13	0.300	0.303
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Back	15mm	777	848.31	23.75	23.80	1.012	0.01	0.388	0.392
	CDMA2000 BC0	RC3 SO32 (F+SCH)	Back	15mm	1013	824.7	23.64	23.80	1.038	0.08	0.391	0.406
49	CDMA2000 BC0	RC3 SO32 (F+SCH)	Back	15mm	384	836.52	23.73	23.80	1.016	0.04	0.423	0.430
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Front	15mm	580	820.5	23.79	24.80	1.262	0.09	0.290	0.366
50	CDMA2000 BC10	RC3 SO32 (F+SCH)	Back	15mm	580	820.5	23.79	24.80	1.262	0.01	0.391	0.493
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Back	15mm	476	817.9	23.70	24.80	1.288	0.04	0.377	0.486
	CDMA2000 BC10	RC3 SO32 (F+SCH)	Back	15mm	684	823.1	23.65	24.80	1.303	0.02	0.375	0.489
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Front	15mm	600	1880	22.57	22.70	1.030	0.02	0.393	0.405
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Back	15mm	600	1880	22.57	22.70	1.030	0.05	0.772	0.795
51	CDMA2000 BC1	RC3 SO32 (F+SCH)	Back	15mm	25	1851.25	22.44	22.70	1.062	0.03	0.838	0.890
	CDMA2000 BC1	RC3 SO32 (F+SCH)	Back	15mm	1175	1908.75	22.50	22.70	1.047	0.09	0.769	0.805

<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 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 12	10M	QPSK	1RB	25Offset	Front	15mm	23095	707.5	23.65	25.00	1.365	0.04	0.292	0.398
52	LTE Band 12	10M	QPSK	1RB	25Offset	Back	15mm	23095	707.5	23.65	25.00	1.365	0.05	0.372	0.508
	LTE Band 12	10M	QPSK	25RB	12Offset	Front	15mm	23095	707.5	22.61	24.00	1.377	0.02	0.237	0.326
	LTE Band 12	10M	QPSK	25RB	12Offset	Back	15mm	23095	707.5	22.61	24.00	1.377	0.03	0.256	0.353
	LTE Band 13	10M	QPSK	1RB	25Offset	Front	15mm	23230	782	22.60	23.10	1.122	0.01	0.352	0.395
53	LTE Band 13	10M	QPSK	1RB	25Offset	Back	15mm	23230	782	22.60	23.10	1.122	0.06	0.454	0.509
	LTE Band 13	10M	QPSK	25RB	25Offset	Front	15mm	23230	782	21.68	22.10	1.102	0.08	0.287	0.316
	LTE Band 13	10M	QPSK	25RB	25Offset	Back	15mm	23230	782	21.68	22.10	1.102	0.05	0.307	0.338
	LTE Band 5	10M	QPSK	1RB	0Offset	Front	15mm	20525	836.5	23.30	24.70	1.380	0.16	0.217	0.300
54	LTE Band 5	10M	QPSK	1RB	0Offset	Back	15mm	20525	836.5	23.30	24.70	1.380	0.09	0.371	0.512
	LTE Band 5	10M	QPSK	25RB	25Offset	Front	15mm	20525	836.5	22.32	23.70	1.374	0.09	0.183	0.251
	LTE Band 5	10M	QPSK	25RB	25Offset	Back	15mm	20525	836.5	22.32	23.70	1.374	0.02	0.256	0.352
	LTE Band 26	15M	QPSK	1RB	0Offset	Front	15mm	26865	831.5	23.44	23.70	1.062	0.08	0.213	0.226
	LTE Band 26	15M	QPSK	1RB	0Offset	Back	15mm	26865	831.5	23.44	23.70	1.062	0.11	0.295	0.313
	LTE Band 26	15M	QPSK	1RB	0Offset	Back	15mm	26765	821.5	23.42	23.70	1.067	0.03	0.267	0.285
55	LTE Band 26	15M	QPSK	1RB	0Offset	Back	15mm	26965	841.5	23.25	23.70	1.109	0.18	0.390	0.433
	LTE Band 26	15M	QPSK	36RB	0Offset	Front	15mm	26865	831.5	22.42	22.70	1.067	0.09	0.175	0.187
	LTE Band 26	15M	QPSK	36RB	0Offset	Back	15mm	26865	831.5	22.42	22.70	1.067	0.04	0.246	0.262
	LTE Band 4	20M	QPSK	1RB	0Offset	Front	15mm	20175	1732.5	22.34	22.40	1.014	0.08	0.303	0.307
56	LTE Band 4	20M	QPSK	1RB	0Offset	Back	15mm	20175	1732.5	22.34	22.40	1.014	0.02	0.903	0.916
	LTE Band 4	20M	QPSK	50RB	0Offset	Front	15mm	20175	1732.5	21.34	21.90	1.138	0.1	0.262	0.298
	LTE Band 4	20M	QPSK	50RB	0Offset	Back	15mm	20175	1732.5	21.34	21.90	1.138	0.02	0.728	0.828
	LTE Band 4	20M	QPSK	100RB	0Offset	Back	15mm	20175	1732.5	21.26	21.90	1.159	0.05	0.750	0.869
	LTE Band 25	20M	QPSK	1RB	0Offset	Front	15mm	26340	1880	22.28	23.30	1.265	0.02	0.323	0.409
57	LTE Band 25	20M	QPSK	1RB	0Offset	Back	15mm	26340	1880	22.28	23.30	1.265	0.06	0.684	0.865
	LTE Band 25	20M	QPSK	1RB	0Offset	Back	15mm	26140	1860	22.26	23.30	1.271	0.01	0.674	0.856
	LTE Band 25	20M	QPSK	1RB	0Offset	Back	15mm	26590	1905	22.24	23.30	1.276	0.05	0.658	0.840
	LTE Band 25	20M	QPSK	50RB	0Offset	Front	15mm	26340	1880	21.26	22.30	1.271	0.09	0.260	0.330
	LTE Band 25	20M	QPSK	50RB	0Offset	Back	15mm	26340	1880	21.26	22.30	1.271	0.03	0.538	0.684
	LTE Band 25	20M	QPSK	100RB	0Offset	Back	15mm	26340	1880	21.22	22.30	1.282	0.02	0.543	0.696
	LTE Band 2	20M	QPSK	1RB	0Offset	Front	15mm	19100	1900	23.28	23.30	1.005	0.09	0.456	0.458
	LTE Band 2	20M	QPSK	1RB	0Offset	Back	15mm	19100	1900	23.28	23.30	1.005	0.04	0.882	0.886
58	LTE Band 2	20M	QPSK	1RB	0Offset	Back	15mm	18700	1860	23.24	23.30	1.014	0.05	0.902	0.915
	LTE Band 2	20M	QPSK	1RB	0Offset	Back	15mm	18900	1880	23.25	23.30	1.012	0.07	0.891	0.901
	LTE Band 2	20M	QPSK	50RB	0Offset	Front	15mm	19100	1900	22.28	22.50	1.052	0.02	0.363	0.382
	LTE Band 2	20M	QPSK	50RB	0Offset	Back	15mm	19100	1900	22.28	22.50	1.052	0.04	0.706	0.743
	LTE Band 2	20M	QPSK	100RB	0Offset	Back	15mm	19100	1900	22.25	22.50	1.059	0.05	0.678	0.718
	LTE Band 7	20M	QPSK	1RB	49Offset	Front	15mm	20850	2510	21.26	22.40	1.300	0.18	0.229	0.298
59	LTE Band 7	20M	QPSK	1RB	49Offset	Back	15mm	20850	2510	21.26	22.40	1.300	0.05	0.693	0.901
	LTE Band 7	20M	QPSK	1RB	49Offset	Back	15mm	21100	2535	21.19	22.40	1.321	-0.06	0.596	0.787
	LTE Band 7	20M	QPSK	1RB	49Offset	Back	15mm	21350	2560	21.14	22.40	1.337	0.01	0.528	0.706
	LTE Band 7	20M	QPSK	50RB	50Offset	Front	15mm	20850	2510	20.41	21.40	1.256	0.05	0.190	0.239
	LTE Band 7	20M	QPSK	50RB	50Offset	Back	15mm	20850	2510	20.41	21.40	1.256	0.13	0.549	0.690
	LTE Band 7	20M	QPSK	100RB	0Offset	Back	15mm	20850	2510	20.26	21.40	1.300	0.02	0.515	0.670

<TDD 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	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 41	20M	QPSK	1RB	49Offset	Front	15mm	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.07	0.192	0.276
60	LTE Band 41	20M	QPSK	1RB	49Offset	Back	15mm	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.01	0.498	0.716
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	15mm	39750	2506	22.37	24.00	1.455	62.9	1.006	0.01	0.455	0.666
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	15mm	40620	2593	22.36	24.00	1.459	62.9	1.006	-0.05	0.435	0.638
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	15mm	41055	2636.5	22.22	24.00	1.507	62.9	1.006	0.09	0.428	0.649
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	15mm	41490	2680	22.19	24.00	1.517	62.9	1.006	0.04	0.421	0.643
	LTE Band 41	20M	QPSK	50RB	24Offset	Front	15mm	40185	2549.5	21.50	23.00	1.413	62.9	1.006	0.03	0.153	0.217
	LTE Band 41	20M	QPSK	50RB	24Offset	Back	15mm	40185	2549.5	21.50	23.00	1.413	62.9	1.006	-0.11	0.461	0.655

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN2.4GHz	802.11b 6Mbps	Front	15mm	6	2437	11.79	12.00	1.050	100	1.000	-0.02	0.023	0.024
	WLAN2.4GHz	802.11b 6Mbps	Back	15mm	6	2437	11.79	12.00	1.050	100	1.000	0.07	0.063	0.066
	WLAN2.4GHz	802.11b 6Mbps	Back	15mm	1	2412	11.64	12.00	1.086	100	1.000	-0.01	0.025	0.027
61	WLAN2.4GHz	802.11b 6Mbps	Back	15mm	11	2462	11.42	12.00	1.143	100	1.000	-0.09	0.064	0.073
	WLAN5GHz	802.11a 6Mbps	Front	15mm	52	5260	11.98	12.50	1.128	94.04	1.063	0.09	0.048	0.058
62	WLAN5GHz	802.11a 6Mbps	Back	15mm	52	5260	11.98	12.50	1.128	94.04	1.063	0.03	0.069	0.083
	WLAN5GHz	802.11a 6Mbps	Back	15mm	56	5280	11.83	12.50	1.168	94.04	1.063	0.02	0.066	0.082
	WLAN5GHz	802.11a 6Mbps	Back	15mm	60	5300	11.66	12.50	1.214	94.04	1.063	0.04	0.062	0.080
	WLAN5GHz	802.11a 6Mbps	Back	15mm	64	5320	11.59	12.50	1.234	94.04	1.063	0.01	0.047	0.062
63	WLAN5GHz	802.11a 6Mbps	Front	15mm	100	5500	12.02	12.50	1.118	94.04	1.063	0.07	0.049	0.058
	WLAN5GHz	802.11a 6Mbps	Back	15mm	100	5500	12.02	12.50	1.118	94.04	1.063	0.04	0.047	0.056
	WLAN5GHz	802.11a 6Mbps	Front	15mm	116	5580	11.64	12.50	1.220	94.04	1.063	0.02	0.041	0.053
	WLAN5GHz	802.11a 6Mbps	Front	15mm	124	5620	11.60	12.50	1.231	94.04	1.063	0.09	0.036	0.047
	WLAN5GHz	802.11a 6Mbps	Front	15mm	132	5660	11.58	12.50	1.237	94.04	1.063	0.11	0.033	0.043
	WLAN5GHz	802.11a 6Mbps	Front	15mm	140	5700	11.41	12.50	1.286	94.04	1.063	0.09	0.035	0.048
	WLAN5GHz	802.11a 6Mbps	Front	15mm	165	5825	12.02	12.50	1.118	94.04	1.063	0.08	0.030	0.035
	WLAN5GHz	802.11a 6Mbps	Back	15mm	165	5825	12.02	12.50	1.118	94.04	1.063	0.06	0.041	0.048
64	WLAN5GHz	802.11a 6Mbps	Back	15mm	149	5745	11.54	12.50	1.248	94.04	1.063	0.04	0.056	0.074
	WLAN5GHz	802.11a 6Mbps	Back	15mm	157	5785	11.53	12.50	1.251	94.04	1.063	0.01	0.046	0.061

<Bluetooth SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	Bluetooth	DH5 1Mbps	Front	15mm	0	2402	9.48	10.00	1.127	77.06	1.081	0.08	0.003	0.003
65	Bluetooth	DH5 1Mbps	Back	15mm	0	2402	9.48	10.00	1.127	77.06	1.081	0.05	0.015	0.018
	Bluetooth	DH5 1Mbps	Back	15mm	39	2441	9.06	10.00	1.242	77.06	1.081	0.06	0.011	0.015
	Bluetooth	DH5 1Mbps	Back	15mm	78	2480	8.42	10.00	1.439	77.06	1.081	0.04	0.010	0.016

13.4 Product Specific SAR

<WCDMA SAR>

Plot 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)	Reported 10g SAR (W/kg)
66	WCDMA IV	RMC 12.2Kbps	Back	0mm	OFF	1413	1732.6	20.87	21.50	1.156	0.04	2.550	2.948
	WCDMA IV	RMC 12.2Kbps	Back	0mm	OFF	1312	1712.4	20.86	21.50	1.159	0.03	2.480	2.874
	WCDMA IV	RMC 12.2Kbps	Back	0mm	OFF	1513	1752.6	20.74	21.50	1.191	0.05	2.360	2.811
	WCDMA II	RMC 12.2Kbps	Back	0mm	OFF	9538	1907.6	22.15	23.00	1.216	0.08	2.590	3.150
67	WCDMA II	RMC 12.2Kbps	Back	0mm	OFF	9262	1852.4	22.11	23.00	1.227	0.09	2.780	3.412
	WCDMA II	RMC 12.2Kbps	Back	0mm	OFF	9400	1880	22.07	23.00	1.239	0.01	2.750	3.407

<CDMA SAR>

Plot 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)	Reported 10g SAR (W/kg)
	CDMA2000 BC1	RTAP 153.6Kbps	Back	0mm	OFF	600	1880	22.55	22.70	1.035	0.03	3.250	3.364
68	CDMA2000 BC1	RTAP 153.6Kbps	Back	0mm	OFF	25	1851.25	22.42	22.70	1.067	0.04	3.260	3.477
	CDMA2000 BC1	RTAP 153.6Kbps	Back	0mm	OFF	1175	1908.75	22.47	22.70	1.054	0.09	3.100	3.269

<FDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	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)	Reported 10g SAR (W/kg)
69	LTE Band 4	20M	QPSK	1RB	0Offset	Back	0mm	OFF	20175	1732.5	22.34	22.40	1.014	0.07	3.510	3.559
	LTE Band 4	20M	QPSK	50RB	0Offset	Back	0mm	OFF	20175	1732.5	21.34	21.90	1.138	0.04	2.890	3.288
	LTE Band 4	20M	QPSK	100RB	0Offset	Back	0mm	OFF	20175	1732.5	21.26	21.90	1.159	0.09	2.780	3.221
70	LTE Band 25	20M	QPSK	1RB	0Offset	Back	0mm	OFF	26340	1880	22.28	23.30	1.265	0.08	2.800	3.541
	LTE Band 25	20M	QPSK	1RB	0Offset	Back	0mm	OFF	26140	1860	22.26	23.30	1.271	0.02	2.780	3.532
	LTE Band 25	20M	QPSK	1RB	0Offset	Back	0mm	OFF	26590	1905	22.24	23.30	1.276	0.05	2.720	3.472
	LTE Band 25	20M	QPSK	50RB	0Offset	Back	0mm	OFF	26340	1880	21.26	22.30	1.271	0.05	2.180	2.770
	LTE Band 25	20M	QPSK	50RB	0Offset	Back	0mm	OFF	26140	1860	21.23	22.30	1.279	0.03	2.360	3.019
	LTE Band 25	20M	QPSK	50RB	0Offset	Back	0mm	OFF	26590	1905	21.20	22.30	1.288	0.01	2.330	3.002
	LTE Band 25	20M	QPSK	100RB	0Offset	Back	0mm	OFF	26340	1880	21.22	22.30	1.282	0.08	2.310	2.962
	LTE Band 2	20M	QPSK	1RB	0Offset	Back	0mm	OFF	19100	1900	23.28	23.30	1.005	0.06	3.540	3.556
71	LTE Band 2	20M	QPSK	1RB	0Offset	Back	0mm	OFF	18700	1860	23.24	23.30	1.014	0.09	3.570	3.620
	LTE Band 2	20M	QPSK	1RB	0Offset	Back	0mm	OFF	18900	1880	23.25	23.30	1.012	0.08	3.570	3.611
	LTE Band 2	20M	QPSK	50RB	0Offset	Back	0mm	OFF	19100	1900	22.28	22.50	1.052	0.02	2.830	2.977
	LTE Band 2	20M	QPSK	50RB	0Offset	Back	0mm	OFF	18700	1860	22.19	22.50	1.074	0.13	3.010	3.233
	LTE Band 2	20M	QPSK	50RB	0Offset	Back	0mm	OFF	18900	1880	22.26	22.50	1.057	0.05	2.870	3.033
	LTE Band 2	20M	QPSK	100RB	0Offset	Back	0mm	OFF	19100	1900	22.25	22.50	1.059	0.01	2.970	3.146
72	LTE Band 7	20M	QPSK	1RB	49Offset	Back	0mm	OFF	20850	2510	21.26	22.40	1.300	0.04	2.780	3.614
	LTE Band 7	20M	QPSK	1RB	49Offset	Back	0mm	OFF	21100	2535	21.19	22.40	1.321	0.11	2.560	3.383
	LTE Band 7	20M	QPSK	1RB	49Offset	Back	0mm	OFF	21350	2560	21.14	22.40	1.337	0.01	2.370	3.168
	LTE Band 7	20M	QPSK	50RB	50Offset	Back	0mm	OFF	20850	2510	20.41	21.40	1.256	0.09	2.240	2.814
	LTE Band 7	20M	QPSK	50RB	50Offset	Back	0mm	OFF	21100	2535	20.30	21.40	1.288	0.04	2.070	2.667
	LTE Band 7	20M	QPSK	50RB	50Offset	Back	0mm	OFF	21350	2560	20.25	21.40	1.303	0.14	1.920	2.502
	LTE Band 7	20M	QPSK	100RB	50Offset	Back	0mm	OFF	20850	2510	20.26	21.40	1.300	0.18	2.300	2.990

<TDD LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
73	LTE Band 41	20M	QPSK	1RB	49Offset	Back	0mm	OFF	40185	2549.5	22.45	24.00	1.429	62.9	1.006	0.07	2.160	3.105
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	0mm	OFF	39790	2510	22.34	24.00	1.466	62.9	1.006	0.18	2.090	3.081
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	0mm	OFF	39750	2506	22.37	24.00	1.455	62.9	1.006	0.02	1.920	2.811
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	0mm	OFF	40620	2593	22.36	24.00	1.459	62.9	1.006	0.12	1.790	2.627
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	0mm	OFF	41055	2636.5	22.22	24.00	1.507	62.9	1.006	0.08	1.790	2.713
	LTE Band 41	20M	QPSK	1RB	49Offset	Back	0mm	OFF	41490	2680	22.19	24.00	1.517	62.9	1.006	-0.06	1.800	2.747
	LTE Band 41	20M	QPSK	50RB	24Offset	Back	0mm	OFF	40185	2549.5	21.50	23.00	1.413	62.9	1.006	0.06	1.750	2.487
	LTE Band 41	20M	QPSK	50RB	24Offset	Back	0mm	OFF	39750	2506	21.49	23.00	1.416	62.9	1.006	0.07	1.600	2.279
	LTE Band 41	20M	QPSK	50RB	24Offset	Back	0mm	OFF	40620	2593	21.48	23.00	1.419	62.9	1.006	0.05	1.480	2.113
	LTE Band 41	20M	QPSK	50RB	24Offset	Back	0mm	OFF	41055	2636.5	21.46	23.00	1.426	62.9	1.006	0.02	1.480	2.123
	LTE Band 41	20M	QPSK	50RB	24Offset	Back	0mm	OFF	41490	2680	21.21	23.00	1.510	62.9	1.006	0.05	1.530	2.324
	LTE Band 41	20M	QPSK	100RB	0Offset	Back	0mm	OFF	40185	2549.5	21.41	23.00	1.442	62.9	1.006	0.03	1.750	2.539

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	WLAN5GHz	802.11a 6Mbps	Front	0mm	52	5260	11.98	12.50	1.128	94.04	1.063	0.01	0.104	0.125
	WLAN5GHz	802.11a 6Mbps	Back	0mm	52	5260	11.98	12.50	1.128	94.04	1.063	0.07	0.259	0.311
	WLAN5GHz	802.11a 6Mbps	Right Side	0mm	52	5260	11.98	12.50	1.128	94.04	1.063	0.04	0.144	0.173
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	52	5260	11.98	12.50	1.128	94.04	1.063	0.02	0.061	0.074
	WLAN5GHz	802.11a 6Mbps	Back	0mm	56	5280	11.83	12.50	1.168	94.04	1.063	0.09	0.285	0.354
74	WLAN5GHz	802.11a 6Mbps	Back	0mm	60	5300	11.66	12.50	1.214	94.04	1.063	0.05	0.282	0.364
	WLAN5GHz	802.11a 6Mbps	Back	0mm	64	5320	11.59	12.50	1.234	94.04	1.063	0.03	0.267	0.350
	WLAN5GHz	802.11a 6Mbps	Front	0mm	100	5500	12.02	12.50	1.118	94.04	1.063	0.02	0.120	0.143
	WLAN5GHz	802.11a 6Mbps	Back	0mm	100	5500	12.02	12.50	1.118	94.04	1.063	0.05	0.285	0.339
	WLAN5GHz	802.11a 6Mbps	Right Side	0mm	100	5500	12.02	12.50	1.118	94.04	1.063	0.01	0.185	0.220
	WLAN5GHz	802.11a 6Mbps	Top Side	0mm	100	5500	12.02	12.50	1.118	94.04	1.063	-0.05	0.071	0.084
75	WLAN5GHz	802.11a 6Mbps	Back	0mm	116	5580	11.64	12.50	1.220	94.04	1.063	0.09	0.264	0.342
	WLAN5GHz	802.11a 6Mbps	Back	0mm	124	5620	11.60	12.50	1.231	94.04	1.063	0.12	0.232	0.304
	WLAN5GHz	802.11a 6Mbps	Back	0mm	132	5660	11.58	12.50	1.237	94.04	1.063	0.04	0.244	0.321
	WLAN5GHz	802.11a 6Mbps	Back	0mm	140	5700	11.41	12.50	1.286	94.04	1.063	0.02	0.217	0.297

13.5 Repeated SAR Measurement

No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA II	RMC 12.2Kbps	Back	10mm	ON	9400	1880	21.06	21.50	1.107	0.08	1.220	-	1.350
2nd	WCDMA II	RMC 12.2Kbps	Back	10mm	ON	9400	1880	21.06	21.50	1.107	0.02	1.200	1.02	1.328
1st	LTE Band 4	20M_QPSK_1RB_0Offset	Back	10mm	ON	20175	1732.5	20.64	21.00	1.086	0.08	1.260	-	1.369
2nd	LTE Band 4	20M_QPSK_1RB_0Offset	Back	10mm	ON	20175	1732.5	20.64	21.00	1.086	0.12	1.240	1.02	1.347
1st	LTE Band 7	20M_QPSK_1RB_49Offset	Back	10mm	ON	20850	2510	20.57	21.00	1.104	0.05	1.170	-	1.292
2nd	LTE Band 7	20M_QPSK_1RB_49Offset	Back	10mm	ON	20850	2510	20.57	21.00	1.104	0.01	1.130	1.04	1.248

No.	Band	BW (MHz)	Modulation	RB Size	RB offset	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	LTE Band 4	20M	QPSK	1RB	0Offset	Back	0mm	OFF	20175	1732.5	22.34	22.40	1.014	0.07	3.510	-	3.559
2nd	LTE Band 4	20M	QPSK	1RB	0Offset	Back	0mm	OFF	20175	1732.5	22.34	22.40	1.014	0.03	3.490	1.01	3.539
1st	LTE Band 2	20M	QPSK	1RB	0Offset	Back	0mm	OFF	18700	1860	23.24	23.30	1.014	0.09	3.570	-	3.620
2nd	LTE Band 2	20M	QPSK	1RB	0Offset	Back	0mm	OFF	18700	1860	23.24	23.30	1.014	0.04	3.530	1.01	3.579
1st	LTE Band 7	20M	QPSK	1RB	49Offset	Back	0mm	OFF	20850	2510	21.26	22.40	1.300	0.04	2.780	-	3.614
2nd	LTE Band 7	20M	QPSK	1RB	49Offset	Back	0mm	OFF	20850	2510	21.26	22.40	1.300	0.08	2.750	1.01	3.575

General Note:

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

14. Simultaneous Transmission Analysis

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

General Note:

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

14.1 Head Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
GSM	GSM850	Right Cheek	0.382	0.103	0.251	0.034	**0.485**	**0.633**	**0.416**
		Right Tilted	0.245	0.085	0.259	0.027	**0.330**	**0.504**	**0.272**
		Left Cheek	0.386	0.313	0.374	0.153	**0.699**	**0.760**	**0.539**
		Left Tilted	0.224	0.198	0.350	0.062	**0.422**	**0.574**	**0.286**
	GSM1900	Right Cheek	0.064	0.103	0.251	0.034	**0.167**	**0.315**	**0.098**
		Right Tilted	0.052	0.085	0.259	0.027	**0.137**	**0.311**	**0.079**
		Left Cheek	0.065	0.313	0.374	0.153	**0.378**	**0.439**	**0.218**
		Left Tilted	0.053	0.198	0.350	0.062	**0.251**	**0.403**	**0.115**
WCDMA	WCDMA II	Right Cheek	0.084	0.103	0.251	0.034	**0.187**	**0.335**	**0.118**
		Right Tilted	0.090	0.085	0.259	0.027	**0.175**	**0.349**	**0.117**
		Left Cheek	0.136	0.313	0.374	0.153	**0.449**	**0.510**	**0.289**
		Left Tilted	0.086	0.198	0.350	0.062	**0.284**	**0.436**	**0.148**
	WCDMA IV	Right Cheek	0.161	0.103	0.251	0.034	**0.264**	**0.412**	**0.195**
		Right Tilted	0.012	0.085	0.259	0.027	**0.097**	**0.271**	**0.039**
		Left Cheek	0.068	0.313	0.374	0.153	**0.381**	**0.442**	**0.221**
		Left Tilted	0.001	0.198	0.350	0.062	**0.199**	**0.351**	**0.063**
	WCDMA V	Right Cheek	0.433	0.103	0.251	0.034	**0.536**	**0.684**	**0.467**
		Right Tilted	0.296	0.085	0.259	0.027	**0.381**	**0.555**	**0.323**
		Left Cheek	0.581	0.313	0.374	0.153	**0.894**	**0.955**	**0.734**
		Left Tilted	0.268	0.198	0.350	0.062	**0.466**	**0.618**	**0.330**
CDMA	CDMA2000 BC0	Right Cheek	0.412	0.103	0.251	0.034	**0.515**	**0.663**	**0.446**
		Right Tilted	0.264	0.085	0.259	0.027	**0.349**	**0.523**	**0.291**
		Left Cheek	0.450	0.313	0.374	0.153	**0.763**	**0.824**	**0.603**
		Left Tilted	0.245	0.198	0.350	0.062	**0.443**	**0.595**	**0.307**
	CDMA2000 BC1	Right Cheek	0.092	0.103	0.251	0.034	**0.195**	**0.343**	**0.126**
		Right Tilted	0.077	0.085	0.259	0.027	**0.162**	**0.336**	**0.104**
		Left Cheek	0.097	0.313	0.374	0.153	**0.410**	**0.471**	**0.250**
		Left Tilted	0.083	0.198	0.350	0.062	**0.281**	**0.433**	**0.145**
	CDMA2000 BC10	Right Cheek	0.396	0.103	0.251	0.034	**0.499**	**0.647**	**0.430**
		Right Tilted	0.289	0.085	0.259	0.027	**0.374**	**0.548**	**0.316**
		Left Cheek	0.397	0.313	0.374	0.153	**0.710**	**0.771**	**0.550**
		Left Tilted	0.265	0.198	0.350	0.062	**0.463**	**0.615**	**0.327**

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
LTE	LTE Band 12	Right Cheek	0.409	0.103	0.251	0.034	**0.512**	**0.660**	**0.443**
		Right Tilted	0.194	0.085	0.259	0.027	**0.279**	**0.453**	**0.221**
		Left Cheek	0.299	0.313	0.374	0.153	**0.612**	**0.673**	**0.452**
		Left Tilted	0.175	0.198	0.350	0.062	**0.373**	**0.525**	**0.237**
	LTE Band 13	Right Cheek	0.359	0.103	0.251	0.034	**0.462**	**0.610**	**0.393**
		Right Tilted	0.197	0.085	0.259	0.027	**0.282**	**0.456**	**0.224**
		Left Cheek	0.305	0.313	0.374	0.153	**0.618**	**0.679**	**0.458**
		Left Tilted	0.208	0.198	0.350	0.062	**0.406**	**0.558**	**0.270**
	LTE Band 5	Right Cheek	0.382	0.103	0.251	0.034	**0.485**	**0.633**	**0.416**
		Right Tilted	0.243	0.085	0.259	0.027	**0.328**	**0.502**	**0.270**
		Left Cheek	0.450	0.313	0.374	0.153	**0.763**	**0.824**	**0.603**
		Left Tilted	0.248	0.198	0.350	0.062	**0.446**	**0.598**	**0.310**
	LTE Band 26	Right Cheek	0.281	0.103	0.251	0.034	**0.384**	**0.532**	**0.315**
		Right Tilted	0.177	0.085	0.259	0.027	**0.262**	**0.436**	**0.204**
		Left Cheek	0.379	0.313	0.374	0.153	**0.692**	**0.753**	**0.532**
		Left Tilted	0.177	0.198	0.350	0.062	**0.375**	**0.527**	**0.239**
	LTE Band 4	Right Cheek	0.207	0.103	0.251	0.034	**0.310**	**0.458**	**0.241**
		Right Tilted	0.153	0.085	0.259	0.027	**0.238**	**0.412**	**0.180**
		Left Cheek	0.104	0.313	0.374	0.153	**0.417**	**0.478**	**0.257**
		Left Tilted	0.066	0.198	0.350	0.062	**0.264**	**0.416**	**0.128**
	LTE Band 2	Right Cheek	0.103	0.103	0.251	0.034	**0.206**	**0.354**	**0.137**
		Right Tilted	0.088	0.085	0.259	0.027	**0.173**	**0.347**	**0.115**
		Left Cheek	0.127	0.313	0.374	0.153	**0.440**	**0.501**	**0.280**
		Left Tilted	0.094	0.198	0.350	0.062	**0.292**	**0.444**	**0.156**
	LTE Band 25	Right Cheek	0.108	0.103	0.251	0.034	**0.211**	**0.359**	**0.142**
		Right Tilted	0.092	0.085	0.259	0.027	**0.177**	**0.351**	**0.119**
		Left Cheek	0.126	0.313	0.374	0.153	**0.439**	**0.500**	**0.279**
		Left Tilted	0.081	0.198	0.350	0.062	**0.279**	**0.431**	**0.143**
	LTE Band 7	Right Cheek	0.183	0.103	0.251	0.034	**0.286**	**0.434**	**0.217**
		Right Tilted	0.032	0.085	0.259	0.027	**0.117**	**0.291**	**0.059**
		Left Cheek	0.099	0.313	0.374	0.153	**0.412**	**0.473**	**0.252**
		Left Tilted	0.010	0.198	0.350	0.062	**0.208**	**0.360**	**0.072**
	LTE Band 41	Right Cheek	0.130	0.103	0.251	0.034	**0.233**	**0.381**	**0.164**
		Right Tilted	0.029	0.085	0.259	0.027	**0.114**	**0.288**	**0.056**
		Left Cheek	0.113	0.313	0.374	0.153	**0.426**	**0.487**	**0.266**
		Left Tilted	0.057	0.198	0.350	0.062	**0.255**	**0.407**	**0.119**

14.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
GSM	GSM850	Front	0.377	0.035	0.055	0.001	**0.412**	**0.432**	**0.378**
		Back	0.746	0.085	0.100	0.045	**0.831**	**0.846**	**0.791**
		Left side	0.312				**0.312**	**0.312**	**0.312**
		Right side	0.369	0.040	0.270	0.001	**0.409**	**0.639**	**0.370**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.216				**0.216**	**0.216**	**0.216**
	GSM1900	Front	0.554	0.035	0.055	0.001	**0.589**	**0.609**	**0.555**
		Back	1.060	0.085	0.100	0.045	**1.145**	**1.160**	**1.105**
		Left side	0.091				**0.091**	**0.091**	**0.091**
		Right side	0.103	0.040	0.270	0.001	**0.143**	**0.373**	**0.104**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.582				**0.582**	**0.582**	**0.582**
WCDMA	WCDMA II	Front	0.624	0.035	0.055	0.001	**0.659**	**0.679**	**0.625**
		Back	1.350	0.085	0.100	0.045	**1.435**	**1.450**	**1.395**
		Left side	0.100				**0.100**	**0.100**	**0.100**
		Right side	0.096	0.040	0.270	0.001	**0.136**	**0.366**	**0.097**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.640				**0.640**	**0.640**	**0.640**
	WCDMA IV	Front	0.383	0.035	0.055	0.001	**0.418**	**0.438**	**0.384**
		Back	1.236	0.085	0.100	0.045	**1.321**	**1.336**	**1.281**
		Left side	0.058				**0.058**	**0.058**	**0.058**
		Right side	0.088	0.040	0.270	0.001	**0.128**	**0.358**	**0.089**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.541				**0.541**	**0.541**	**0.541**
	WCDMA V	Front	0.559	0.035	0.055	0.001	**0.594**	**0.614**	**0.560**
		Back	0.987	0.085	0.100	0.045	**1.072**	**1.087**	**1.032**
		Left side	0.426				**0.426**	**0.426**	**0.426**
		Right side	0.530	0.040	0.270	0.001	**0.570**	**0.800**	**0.531**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.244				**0.244**	**0.244**	**0.244**
CDMA	CDMA2000 BC0	Front	0.440	0.035	0.055	0.001	**0.475**	**0.495**	**0.441**
		Back	0.709	0.085	0.100	0.045	**0.794**	**0.809**	**0.754**
		Left side	0.342				**0.342**	**0.342**	**0.342**
		Right side	0.419	0.040	0.270	0.001	**0.459**	**0.689**	**0.420**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.196				**0.196**	**0.196**	**0.196**
	CDMA2000 BC1	Front	0.568	0.035	0.055	0.001	**0.603**	**0.623**	**0.569**
		Back	1.204	0.085	0.100	0.045	**1.289**	**1.304**	**1.249**
		Left side	0.093				**0.093**	**0.093**	**0.093**
		Right side	0.080	0.040	0.270	0.001	**0.120**	**0.350**	**0.081**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.599				**0.599**	**0.599**	**0.599**
	CDMA2000 BC10	Front	0.512	0.035	0.055	0.001	**0.547**	**0.567**	**0.513**
		Back	0.774	0.085	0.100	0.045	**0.859**	**0.874**	**0.819**
		Left side	0.382	0.000	0.000	0.000	**0.382**	**0.382**	**0.382**
		Right side	0.503	0.040	0.270	0.001	**0.543**	**0.773**	**0.504**
		Top side	0.000	0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.207	0.000	0.000	0.000	**0.207**	**0.207**	**0.207**

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
LTE	LTE Band 12	Front	0.377	0.035	0.055	0.001	**0.412**	**0.432**	**0.378**
		Back	0.570	0.085	0.100	0.045	**0.655**	**0.670**	**0.615**
		Left side	0.266				**0.266**	**0.266**	**0.266**
		Right side	0.446	0.040	0.270	0.001	**0.486**	**0.716**	**0.447**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.120				**0.120**	**0.120**	**0.120**
	LTE Band 13	Front	0.405	0.035	0.055	0.001	**0.440**	**0.460**	**0.406**
		Back	0.610	0.085	0.100	0.045	**0.695**	**0.710**	**0.655**
		Left side	0.311				**0.311**	**0.311**	**0.311**
		Right side	0.436	0.040	0.270	0.001	**0.476**	**0.706**	**0.437**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.158				**0.158**	**0.158**	**0.158**
	LTE Band 5	Front	0.351	0.035	0.055	0.001	**0.386**	**0.406**	**0.352**
		Back	0.569	0.085	0.100	0.045	**0.654**	**0.669**	**0.614**
		Left side	0.257				**0.257**	**0.257**	**0.257**
		Right side	0.400	0.040	0.270	0.001	**0.440**	**0.670**	**0.401**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.248				**0.248**	**0.248**	**0.248**
	LTE Band 26	Front	0.316	0.035	0.055	0.001	**0.351**	**0.371**	**0.317**
		Back	0.545	0.085	0.100	0.045	**0.630**	**0.645**	**0.590**
		Left side	0.261				**0.261**	**0.261**	**0.261**
		Right side	0.285	0.040	0.270	0.001	**0.325**	**0.555**	**0.286**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.126				**0.126**	**0.126**	**0.126**
	LTE Band 4	Front	0.461	0.035	0.055	0.001	**0.496**	**0.516**	**0.462**
		Back	1.369	0.085	0.100	0.045	**1.454**	**1.469**	**1.414**
		Left side	0.064				**0.064**	**0.064**	**0.064**
		Right side	0.109	0.040	0.270	0.001	**0.149**	**0.379**	**0.110**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.664				**0.664**	**0.664**	**0.664**
	LTE Band 2	Front	0.794	0.035	0.055	0.001	**0.829**	**0.849**	**0.795**
		Back	1.322	0.085	0.100	0.045	**1.407**	**1.422**	**1.367**
		Left side	0.145				**0.145**	**0.145**	**0.145**
		Right side	0.127	0.040	0.270	0.001	**0.167**	**0.397**	**0.128**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.790				**0.790**	**0.790**	**0.790**
	LTE Band 25	Front	0.597	0.035	0.055	0.001	**0.632**	**0.652**	**0.598**
		Back	1.290	0.085	0.100	0.045	**1.375**	**1.390**	**1.335**
		Left side	0.101				**0.101**	**0.101**	**0.101**
		Right side	0.098	0.040	0.270	0.001	**0.138**	**0.368**	**0.099**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.640				**0.640**	**0.640**	**0.640**
	LTE Band 7	Front	0.462	0.035	0.055	0.001	**0.497**	**0.517**	**0.463**
		Back	1.292	0.085	0.100	0.045	**1.377**	**1.392**	**1.337**
		Left side	0.056				**0.056**	**0.056**	**0.056**
		Right side	0.155	0.040	0.270	0.001	**0.195**	**0.425**	**0.156**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.845				**0.845**	**0.845**	**0.845**
	LTE Band 41	Front	0.546	0.035	0.055	0.001	**0.581**	**0.601**	**0.547**
		Back	1.423	0.085	0.100	0.045	**1.508**	**1.523**	**1.468**
		Left side	0.001				**0.001**	**0.001**	**0.001**
		Right side	0.080	0.040	0.270	0.001	**0.120**	**0.350**	**0.081**
		Top side		0.017	0.111	0.001	**0.017**	**0.111**	**0.001**
		Bottom side	0.457				**0.457**	**0.457**	**0.457**

14.3 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN 1g SAR (W/kg)	3 5GHz WLAN 1g SAR (W/kg)	4 Bluetooth 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
GSM	GSM850	Front	0.350	0.024	0.058	0.003	**0.374**	**0.408**	**0.353**
		Back	0.507	0.073	0.083	0.018	**0.580**	**0.590**	**0.525**
	GSM1900	Front	0.344	0.024	0.058	0.003	**0.368**	**0.402**	**0.347**
		Back	0.598	0.073	0.083	0.018	**0.671**	**0.681**	**0.616**
WCDMA	WCDMA II	Front	0.416	0.024	0.058	0.003	**0.440**	**0.474**	**0.419**
		Back	0.799	0.073	0.083	0.018	**0.872**	**0.882**	**0.817**
	WCDMA IV	Front	0.244	0.024	0.058	0.003	**0.268**	**0.302**	**0.247**
		Back	0.731	0.073	0.083	0.018	**0.804**	**0.814**	**0.749**
	WCDMA V	Front	0.382	0.024	0.058	0.003	**0.406**	**0.440**	**0.385**
		Back	0.647	0.073	0.083	0.018	**0.720**	**0.730**	**0.665**
CDMA	CDMA2000 BC0	Front	0.303	0.024	0.058	0.003	**0.327**	**0.361**	**0.306**
		Back	0.430	0.073	0.083	0.018	**0.503**	**0.513**	**0.448**
	CDMA2000 BC1	Front	0.405	0.024	0.058	0.003	**0.429**	**0.463**	**0.408**
		Back	0.890	0.073	0.083	0.018	**0.963**	**0.973**	**0.908**
	CDMA2000 BC10	Front	0.366	0.024	0.058	0.003	**0.390**	**0.424**	**0.369**
		Back	0.493	0.073	0.083	0.018	**0.566**	**0.576**	**0.511**
LTE	LTE Band 12	Front	0.398	0.024	0.058	0.003	**0.422**	**0.456**	**0.401**
		Back	0.508	0.073	0.083	0.018	**0.581**	**0.591**	**0.526**
	LTE Band 13	Front	0.395	0.024	0.058	0.003	**0.419**	**0.453**	**0.398**
		Back	0.509	0.073	0.083	0.018	**0.582**	**0.592**	**0.527**
	LTE Band 5	Front	0.300	0.024	0.058	0.003	**0.324**	**0.358**	**0.303**
		Back	0.512	0.073	0.083	0.018	**0.585**	**0.595**	**0.530**
	LTE Band 26	Front	0.226	0.024	0.058	0.003	**0.250**	**0.284**	**0.229**
		Back	0.433	0.073	0.083	0.018	**0.506**	**0.516**	**0.451**
	LTE Band 4	Front	0.307	0.024	0.058	0.003	**0.331**	**0.365**	**0.310**
		Back	0.916	0.073	0.083	0.018	**0.989**	**0.999**	**0.934**
	LTE Band 2	Front	0.458	0.024	0.058	0.003	**0.482**	**0.516**	**0.461**
		Back	0.915	0.073	0.083	0.018	**0.988**	**0.998**	**0.933**
	LTE Band 25	Front	0.409	0.024	0.058	0.003	**0.433**	**0.467**	**0.412**
		Back	0.865	0.073	0.083	0.018	**0.938**	**0.948**	**0.883**
	LTE Band 7	Front	0.298	0.024	0.058	0.003	**0.322**	**0.356**	**0.301**
		Back	0.901	0.073	0.083	0.018	**0.974**	**0.984**	**0.919**
	LTE Band 41	Front	0.276	0.024	0.058	0.003	**0.300**	**0.334**	**0.279**
		Back	0.716	0.073	0.083	0.018	**0.789**	**0.799**	**0.734**

14.4 Product Specific Exposure Conditions

Remark:

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

WWAN Band		Exposure Position	1 WWAN 10g SAR (W/kg)	2 2.4GHz WLAN 10g SAR (W/kg)	3 5GHz WLAN 10g SAR (W/kg)	4 Bluetooth 10g SAR (W/kg)	**1+2 Summed 10g SAR (W/kg)**	**1+3 Summed 10g SAR (W/kg)**	**1+4 Summed 10g SAR (W/kg)**
WCDMA	WCDMA II	Front	-	-	0.143	-	-	-	-
		Back	3.412	-	0.364	-	**3.412**	**3.776**	**3.412**
		Left side	-	-	-	-	-	-	-
		Right side	-	-	0.220	-	-	**0.220**	-
		Top side	-	-	0.084	-	-	**0.084**	-
		Bottom side	-	-	-	-	-	-	-
	WCDMA IV	Front	-	-	0.143	-	-	**0.143**	-
		Back	2.948	-	0.364	-	**2.948**	**3.312**	**2.948**
		Left side	-	-	-	-	-	-	-
		Right side	-	-	0.220	-	-	**0.220**	-
		Top side	-	-	0.084	-	-	**0.084**	-
		Bottom side	-	-	-	-	-	-	-
CDMA	CDMA2000 BC1	Front	-	-	0.143	-	-	**0.143**	-
		Back	3.477	-	0.364	-	**3.477**	**3.841**	**3.477**
		Left side	-	-	-	-	-	-	-
		Right side	-	-	0.220	-	-	**0.220**	-
		Top side	-	-	0.084	-	-	**0.084**	-
		Bottom side	-	-	-	-	-	-	-

WWAN Band		Exposure Position	1 WWAN 10g SAR (W/kg)	2 2.4GHz WLAN 10g SAR (W/kg)	3 5GHz WLAN 10g SAR (W/kg)	4 Bluetooth 10g SAR (W/kg)	1+2 Summed 10g SAR (W/kg)	1+3 Summed 10g SAR (W/kg)	1+4 Summed 10g SAR (W/kg)
LTE	LTE Band 4	Front	-	-	0.143	-	-	**0.143**	-
		Back	3.559	-	0.364	-	**3.559**	**3.923**	**3.559**
		Left side	-	-	-	-	-	-	-
		Right side	-	-	0.220	-	-	**0.220**	-
		Top side	-	-	0.084	-	-	**0.084**	-
		Bottom side	-	-	-	-	-	-	-
	LTE Band 2	Front	-	-	0.143	-	-	**0.143**	-
		Back	3.620	-	0.364	-	**3.620**	**3.984**	**3.620**
		Left side	-	-	-	-	-	-	-
		Right side	-	-	0.220	-	-	**0.220**	-
		Top side	-	-	0.084	-	-	**0.084**	-
		Bottom side	-	-	-	-	-	-	-
	LTE Band 25	Front	-	-	0.143	-	-	**0.143**	-
		Back	3.541	-	0.364	-	**3.541**	**3.905**	**3.541**
		Left side	-	-	-	-	-	-	-
		Right side	-	-	0.220	-	-	**0.220**	-
		Top side	-	-	0.084	-	-	**0.084**	-
		Bottom side	-	-	-	-	-	-	-
	LTE Band 7	Front	-	-	0.143	-	-	**0.143**	-
		Back	3.614	-	0.364	-	**3.614**	**3.978**	**3.614**
		Left side	-	-	-	-	-	-	-
		Right side	-	-	0.220	-	-	**0.220**	-
		Top side	-	-	0.084	-	-	**0.084**	-
		Bottom side	-	-	-	-	-	-	-
	LTE Band 41	Front	-	-	0.143	-	-	**0.143**	-
		Back	3.105	-	0.364	-	**3.105**	**3.469**	**3.105**
		Left side	-	-	-	-	-	-	-
		Right side	-	-	0.220	-	-	**0.220**	-
		Top side	-	-	0.084	-	-	**0.084**	-
		Bottom side	-	-	-	-	-	-	-

Test Engineer：Bevis Chang Mood Huang Andy Jiang Willy Yu Neil Hsiang and Carter Chuang

15. 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.

16. References

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

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

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

[4] SPEAG DASY System Handbook

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

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

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

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

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

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

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

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

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

Appendix A. Plots of System Performance Check

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018.11.02

System Check_Head_750MHz

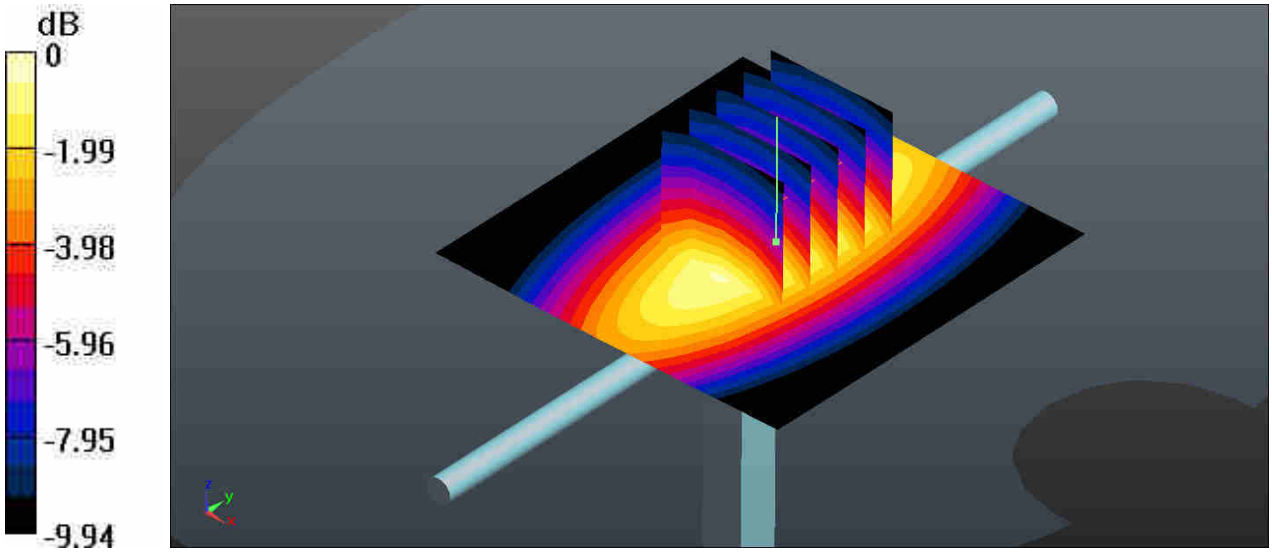
DUT: D750V3-SN:1099

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium: HSL_750_181102 Medium parameters used: f = 750 MHz; σ = 0.882 S/m; ε_r = 40.803; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(10.06, 10.06, 10.06); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.58 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 55.15 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.13 W/kg
SAR(1 g) = 2.14 W/kg; SAR(10 g) = 1.43 W/kg
Maximum value of SAR (measured) = 2.69 W/kg



0 dB = 2.69 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018.11.03

System Check_Head_835MHz

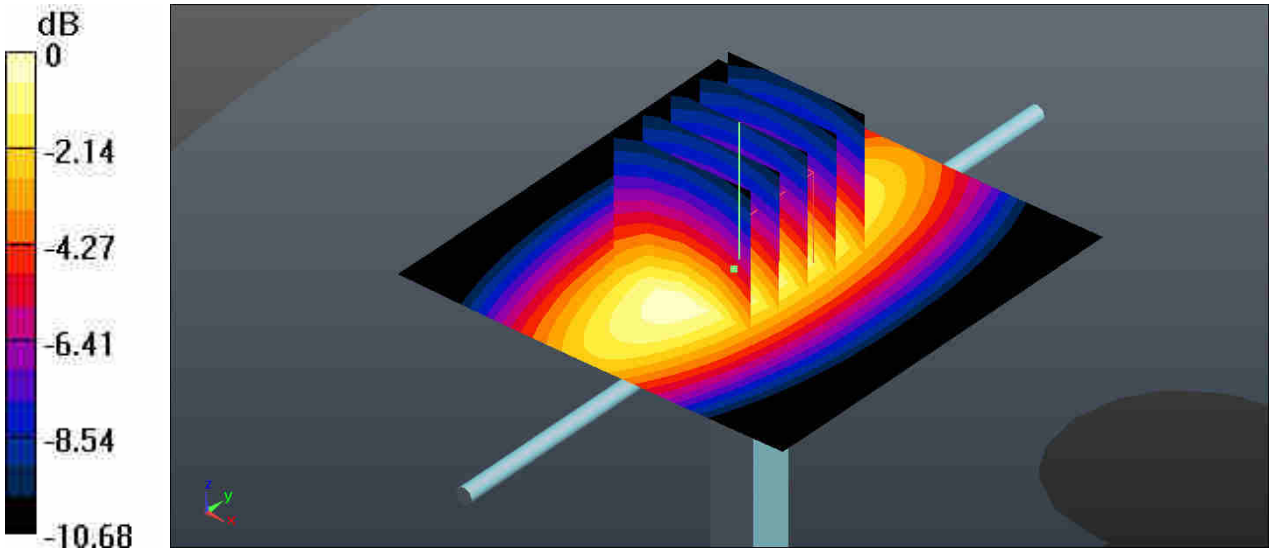
DUT: D835V2-SN:4d162

Communication System: UID 0, CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL_835_181103 Medium parameters used: f = 835 MHz; σ = 0.887 S/m; ε_r = 41.987; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(9.66, 9.66, 9.66); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.75 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.59 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 3.17 W/kg
SAR(1 g) = 2.22 W/kg; SAR(10 g) = 1.46 W/kg
Maximum value of SAR (measured) = 2.71 W/kg



0 dB = 2.71 W/kg

System Check_Head_1750MHz

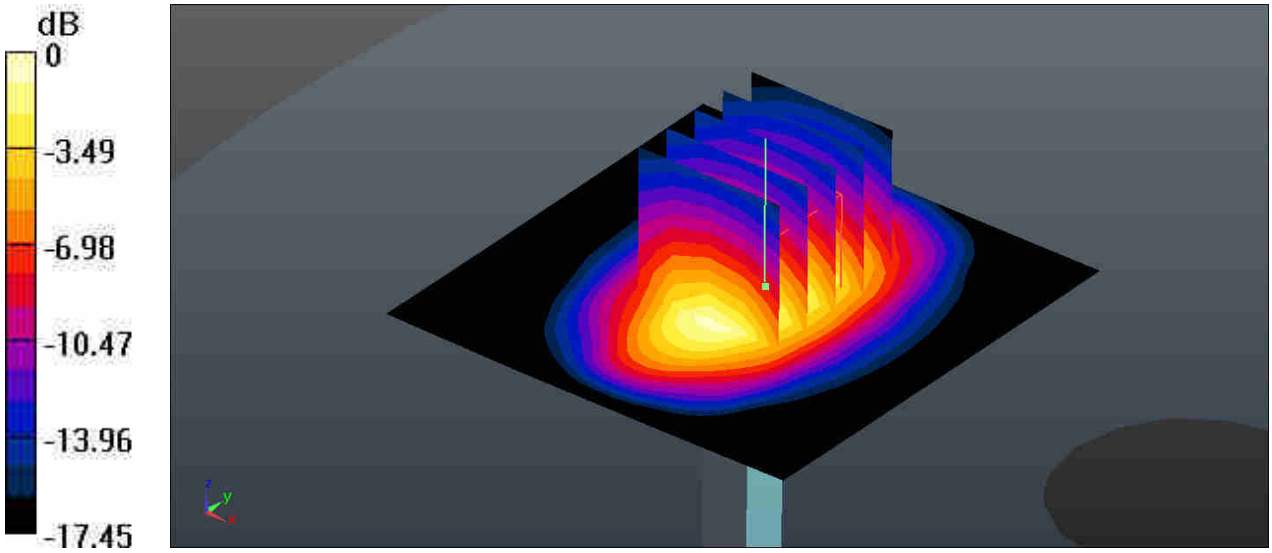
DUT: D1750V2-SN:1137

Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1750_181104 Medium parameters used: f = 1750 MHz; σ = 1.378 S/m; ε_r = 41.34; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(8.37, 8.37, 8.37); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.8 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 96.13 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 15.8 W/kg
SAR(1 g) = 8.84 W/kg; SAR(10 g) = 4.76 W/kg
Maximum value of SAR (measured) = 12.2 W/kg



0 dB = 12.2 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018.11.05

System Check_Head_1900MHz

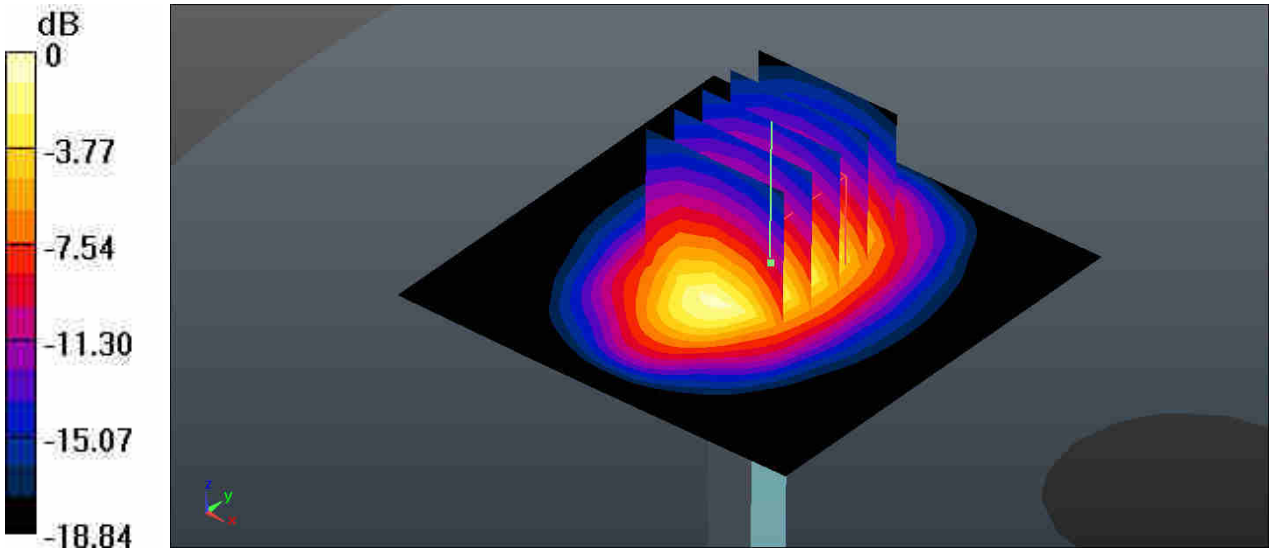
DUT: D1900V2-SN:5d182

Communication System: UID 0, CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL_1900_181105 Medium parameters used: f = 1900 MHz; σ = 1.417 S/m; ε_r = 40.994; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(8.13, 8.13, 8.13); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.8 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 97.93 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 17.1 W/kg
SAR(1 g) = 9.24 W/kg; SAR(10 g) = 4.84 W/kg
Maximum value of SAR (measured) = 13.1 W/kg



0 dB = 13.1 W/kg

System Check_Head_2450MHz

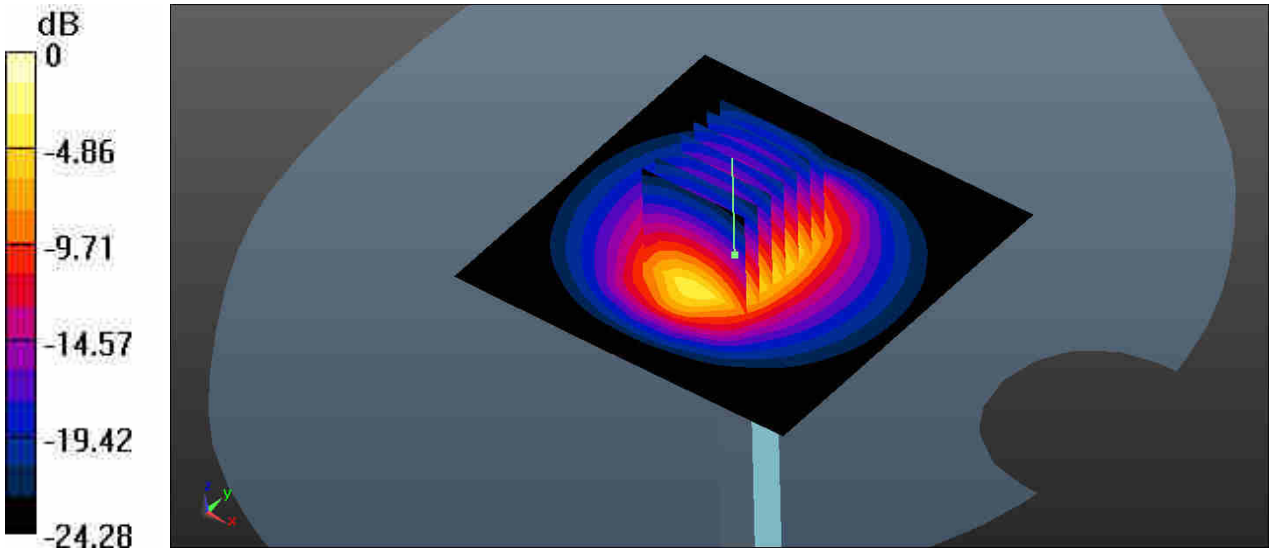
DUT: D2450V2-SN:924

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL_2450_181020 Medium parameters used: f = 2450 MHz; σ = 1.758 S/m; ε_r = 39.247; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(7.4, 7.4, 7.4); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 18.8 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.18 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 26.4 W/kg
SAR(1 g) = 12.2 W/kg; SAR(10 g) = 5.58 W/kg
Maximum value of SAR (measured) = 19.0 W/kg



0 dB = 19.0 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018.10.23

System Check_Head_2600MHz

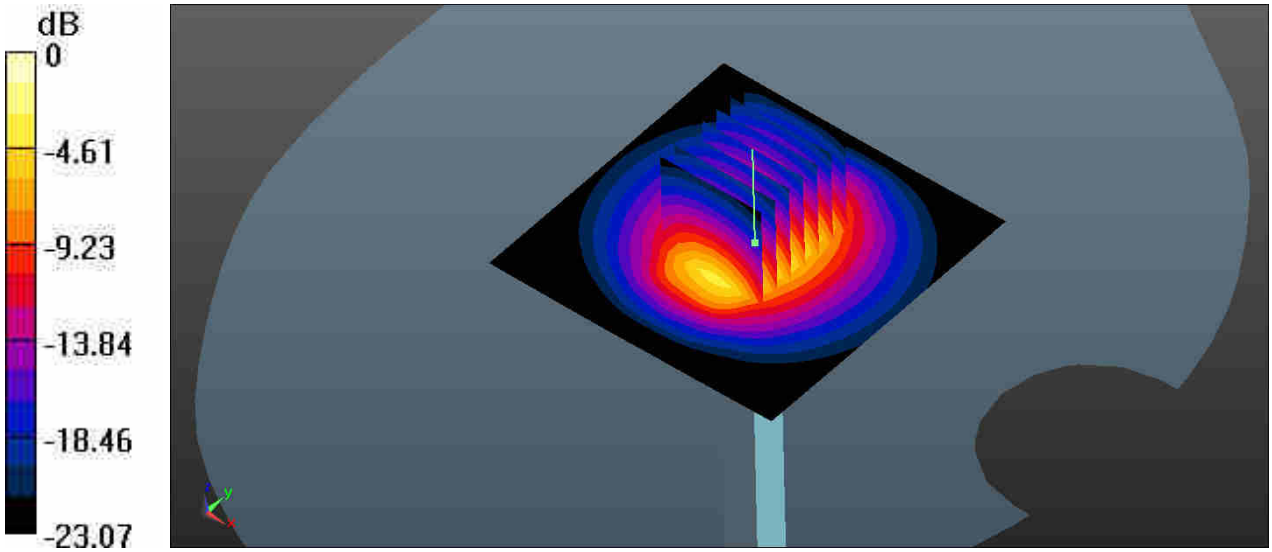
DUT: D2600V2-SN:1070

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL_2600_181023 Medium parameters used: f = 2600 MHz; σ = 1.981 S/m; ε_r = 38.254; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(7.21, 7.21, 7.21); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (71x71x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 22.4 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 106.5 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 29.9 W/kg
SAR(1 g) = 14.3 W/kg; SAR(10 g) = 6.4 W/kg
Maximum value of SAR (measured) = 22.1 W/kg



0 dB = 22.1 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018.10.20

System Check_Head_5250MHz

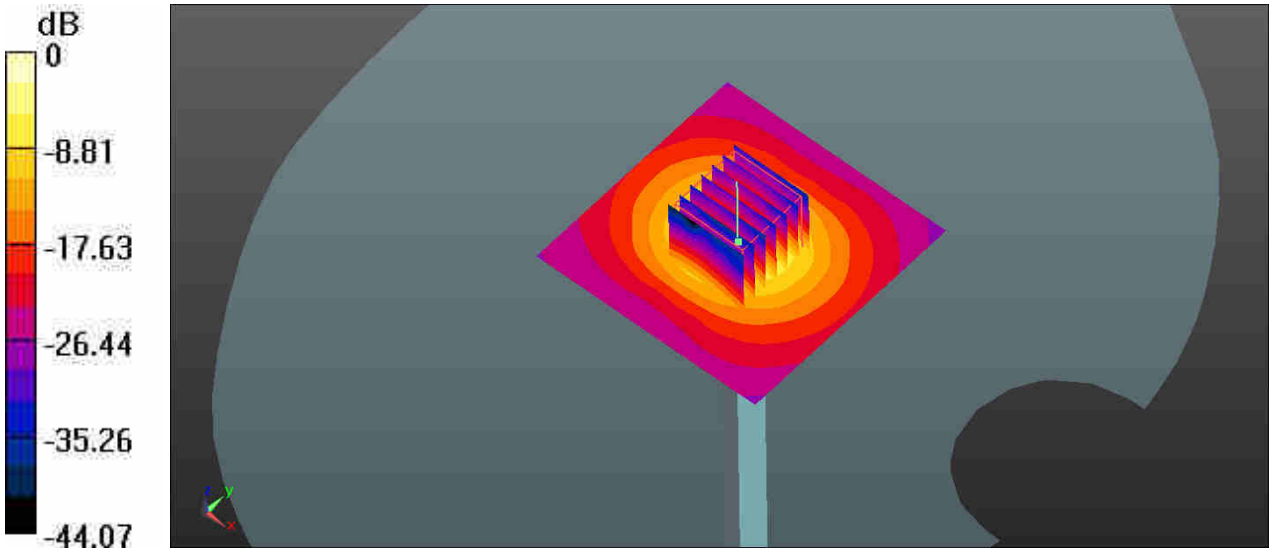
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: HSL_5250_181020 Medium parameters used: f = 5250 MHz; σ = 4.591 S/m; ε_r = 36.753; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(5.15, 5.15, 5.15); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 18.8 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 57.52 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 33.2 W/kg
SAR(1 g) = 7.8 W/kg; SAR(10 g) = 2.13 W/kg
Maximum value of SAR (measured) = 19.8 W/kg



0 dB = 19.8 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018.10.23

System Check_Head_5600MHz

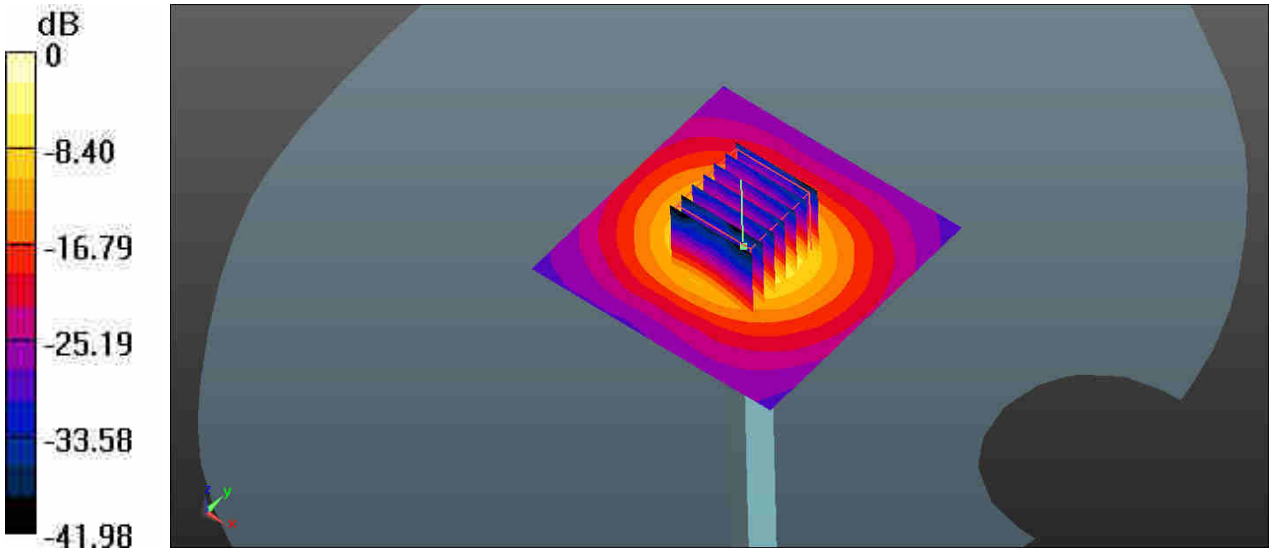
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: HSL_5600_181023 Medium parameters used: f = 5600 MHz; σ = 5.207 S/m; ε_r = 36.213; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(4.78, 4.78, 4.78); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 21.2 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 56.98 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 36.6 W/kg
SAR(1 g) = 8.6 W/kg; SAR(10 g) = 2.35 W/kg
Maximum value of SAR (measured) = 22.0 W/kg



0 dB = 22.0 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018.10.24

System Check_Head_5750MHz

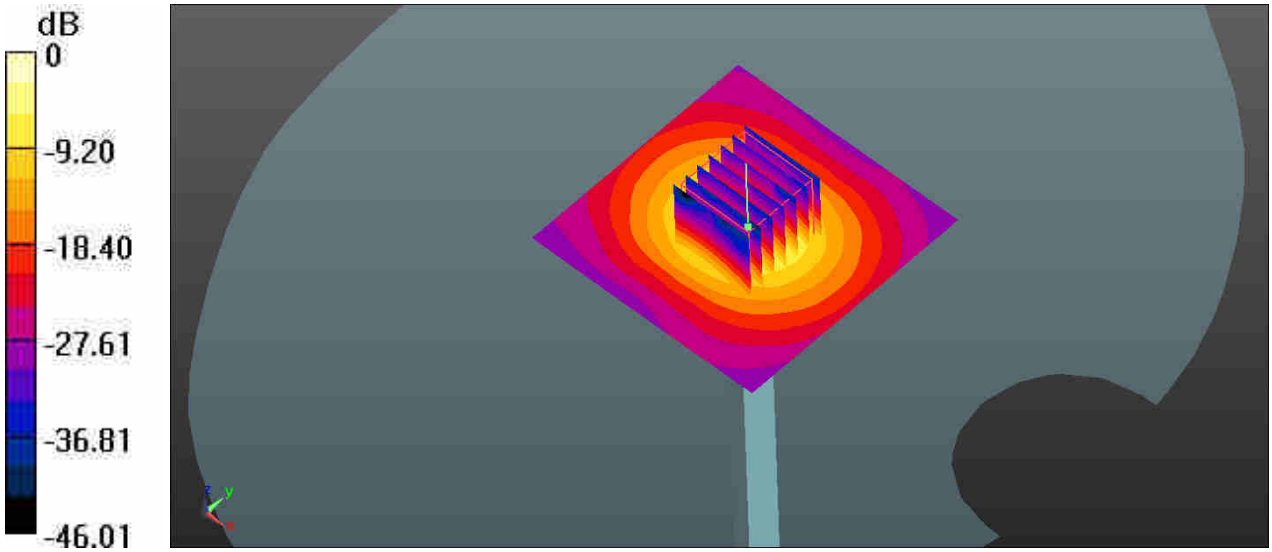
DUT:D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium: HSL_5750_181024 Medium parameters used: f = 5750 MHz; σ = 5.298 S/m; ε_r = 35.158; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(4.8, 4.8, 4.8); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 20.0 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 54.45 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 35.2 W/kg
SAR(1 g) = 8.07 W/kg; SAR(10 g) = 2.21 W/kg
Maximum value of SAR (measured) = 20.6 W/kg



0 dB = 20.6 W/kg

System Check_Body_750MHz

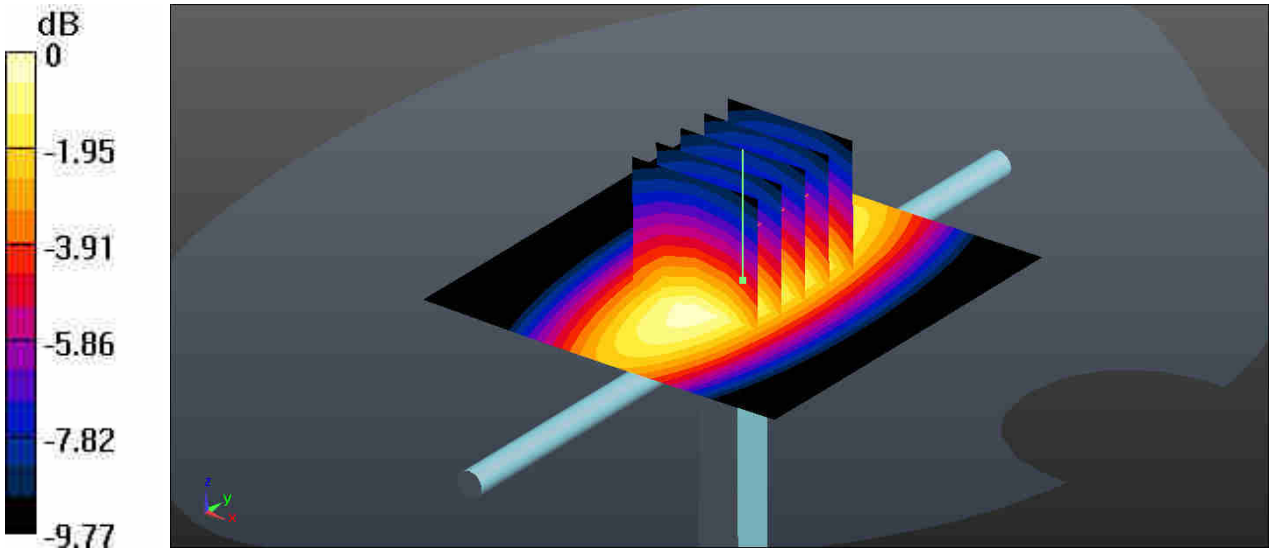
DUT: D750V3-SN:1099

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium: MSL_750_181101 Medium parameters used: f = 750 MHz; σ = 0.97 S/m; ε_r = 54.646; ρ = 1000 kg/m^3
Ambient Temperature：23.4 ℃； Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(9.7, 9.7, 9.7); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.70 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.78 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 3.10 W/kg
SAR(1 g) = 2.13 W/kg; SAR(10 g) = 1.43 W/kg
Maximum value of SAR (measured) = 2.67 W/kg



0 dB = 2.67 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018.10.15

System Check_Body_835MHz

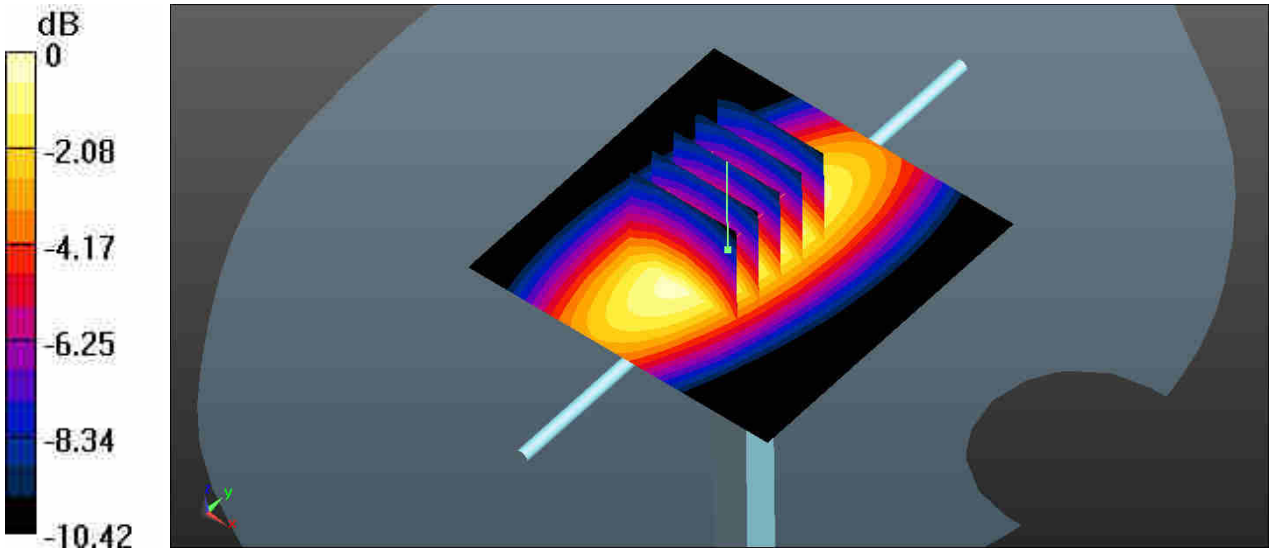
DUT: D835V2-SN:4d162

Communication System: UID 0, CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL_835_181015 Medium parameters used: f = 835 MHz; σ = 0.981 S/m; ε_r = 56.23; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(9.49, 9.49, 9.49); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.01 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.77 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 3.46 W/kg
SAR(1 g) = 2.39 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 3.00 W/kg



0 dB = 3.00 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018.10.26

System Check_Body_1750MHz

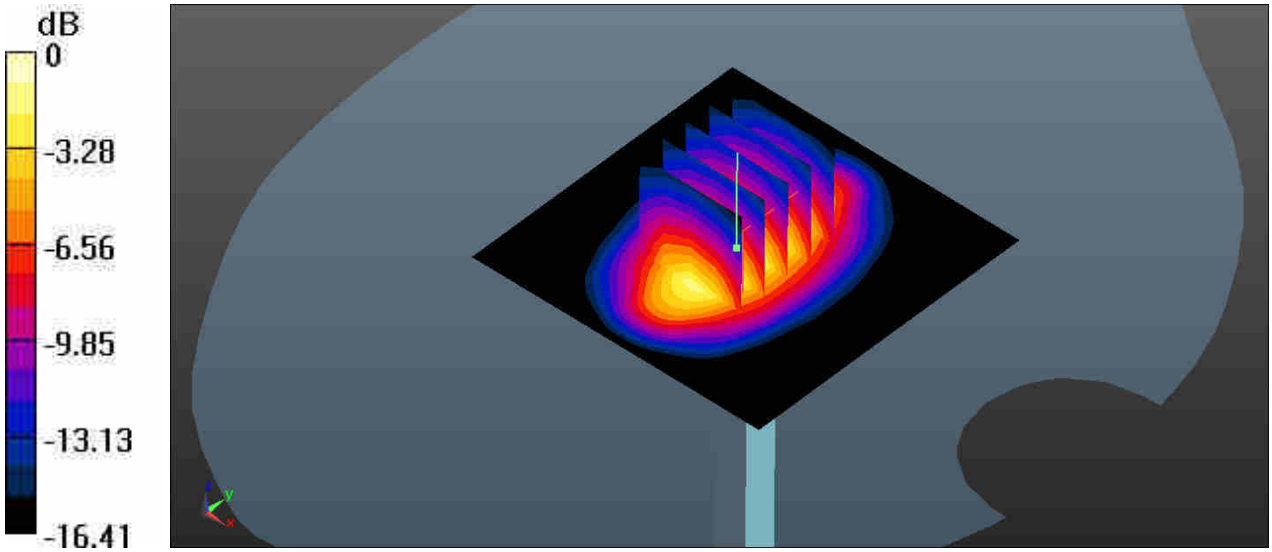
DUT: D1750V2-SN:1137

Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: MSL_1750_181026 Medium parameters used: f = 1750 MHz; σ = 1.511 S/m; ε_r = 51.994; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(7.93, 7.93, 7.93); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.2 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 91.84 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 15.2 W/kg
SAR(1 g) = 8.79 W/kg; SAR(10 g) = 4.72 W/kg
Maximum value of SAR (measured) = 12.3 W/kg



0 dB = 12.3 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018.10.25

System Check_Body_1900MHz

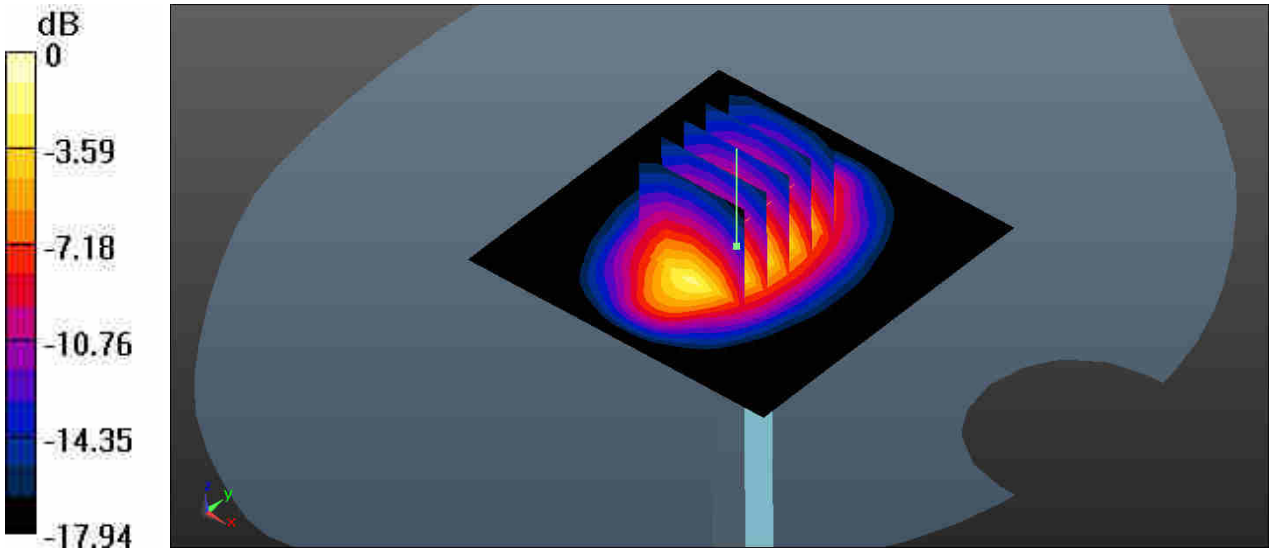
DUT: D1900V2-SN:5d182

Communication System: UID 0, CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_181025 Medium parameters used: f = 1900 MHz; σ = 1.584 S/m; ε_r = 54.212; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(7.69, 7.69, 7.69); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 14.3 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 85.08 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 18.2 W/kg
SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.18 W/kg
Maximum value of SAR (measured) = 14.5 W/kg



0 dB = 14.5 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018.10.29

System Check_Body_2450MHz

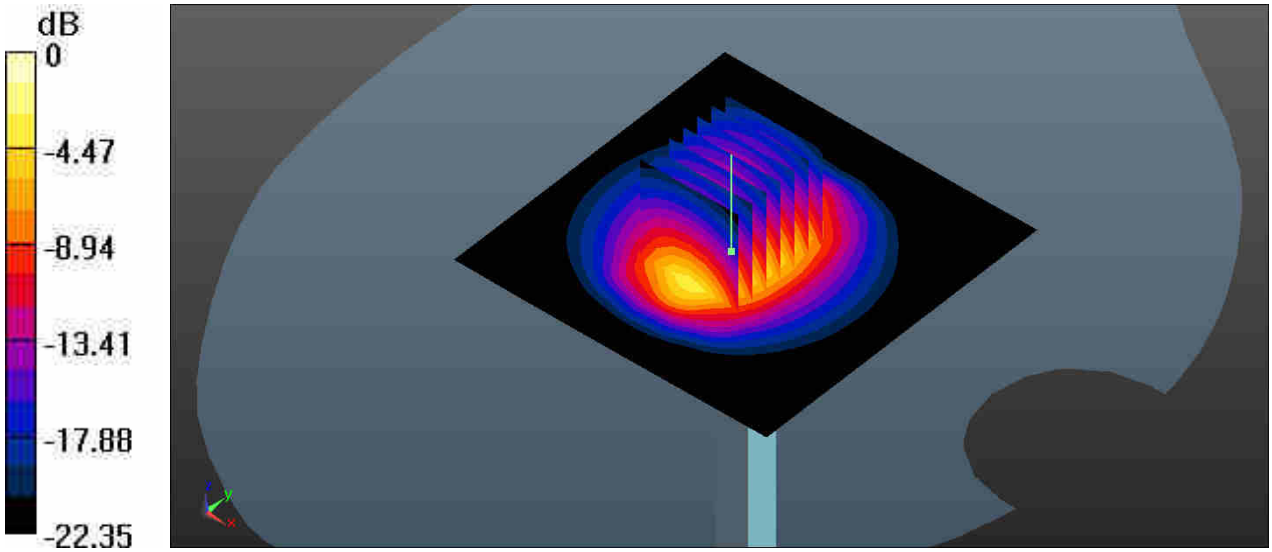
DUT: D2450V2-SN:924

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: MSL_2450_181029 Medium parameters used: f = 2450 MHz; σ = 1.992 S/m; ε_r = 52.302; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃； Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(7.46, 7.46, 7.46); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (81x81x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 20.3 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.95 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 27.6 W/kg
SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.06 W/kg
Maximum value of SAR (measured) = 20.2 W/kg



0 dB = 20.2 W/kg

System Check_Body_2600MHz

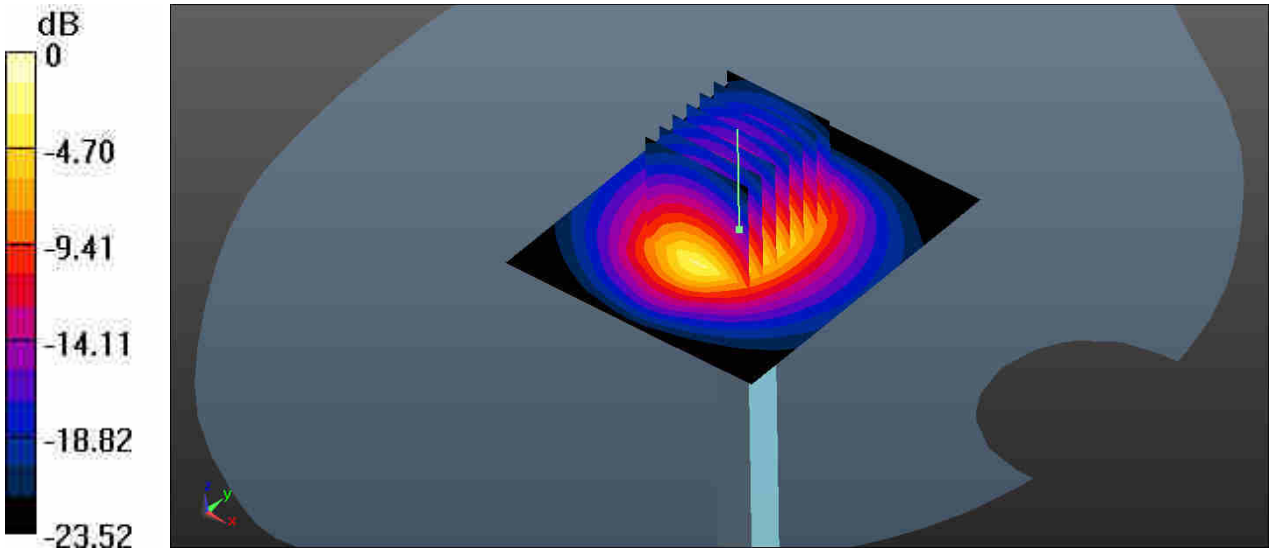
DUT:D2600V2-SN:1070

Communication System: UID 0, CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: MSL_2600_181030 Medium parameters used: f = 2600 MHz; σ = 2.188 S/m; ε_r = 50.734; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(6.92, 6.92, 6.92); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (61x71x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 22.7 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 99.26 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 28.9 W/kg
SAR(1 g) = 13.4 W/kg; SAR(10 g) = 5.89 W/kg
Maximum value of SAR (measured) = 21.1 W/kg



0 dB = 21.1 W/kg

System Check_Body_5250MHz

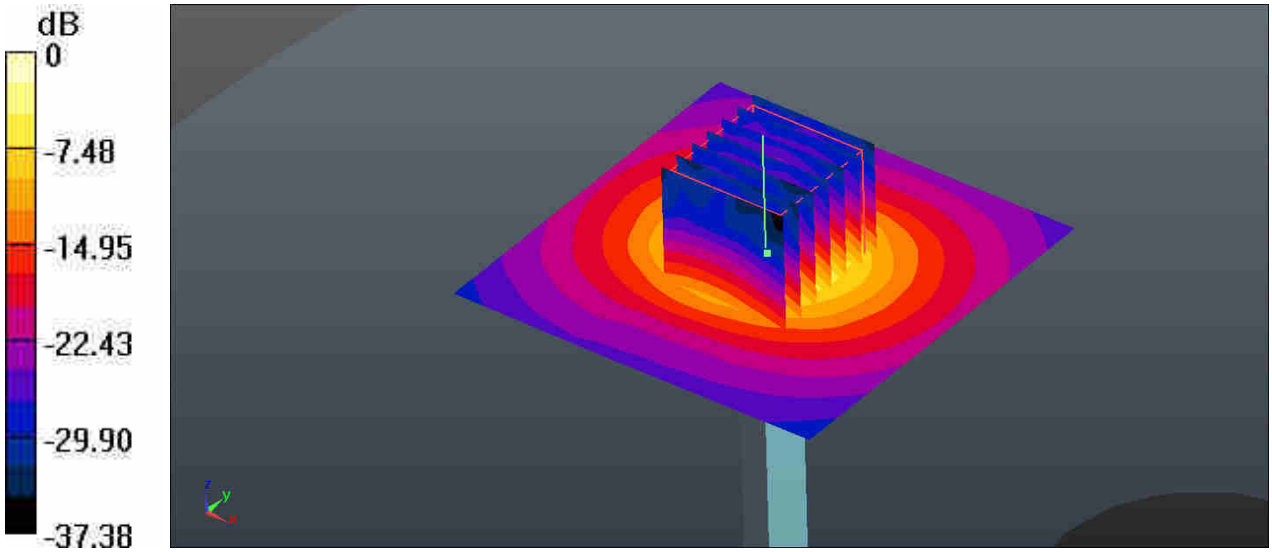
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: MSL_5250_181031 Medium parameters used: f = 5250 MHz; σ = 5.449 S/m; ε_r = 47.742; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃； Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(4.7, 4.7, 4.7); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 18.2 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 46.44 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 34.1 W/kg
SAR(1 g) = 7.64 W/kg; SAR(10 g) = 2.07 W/kg
Maximum value of SAR (measured) = 19.0 W/kg



0 dB = 19.0 W/kg

System Check_Body_5600MHz

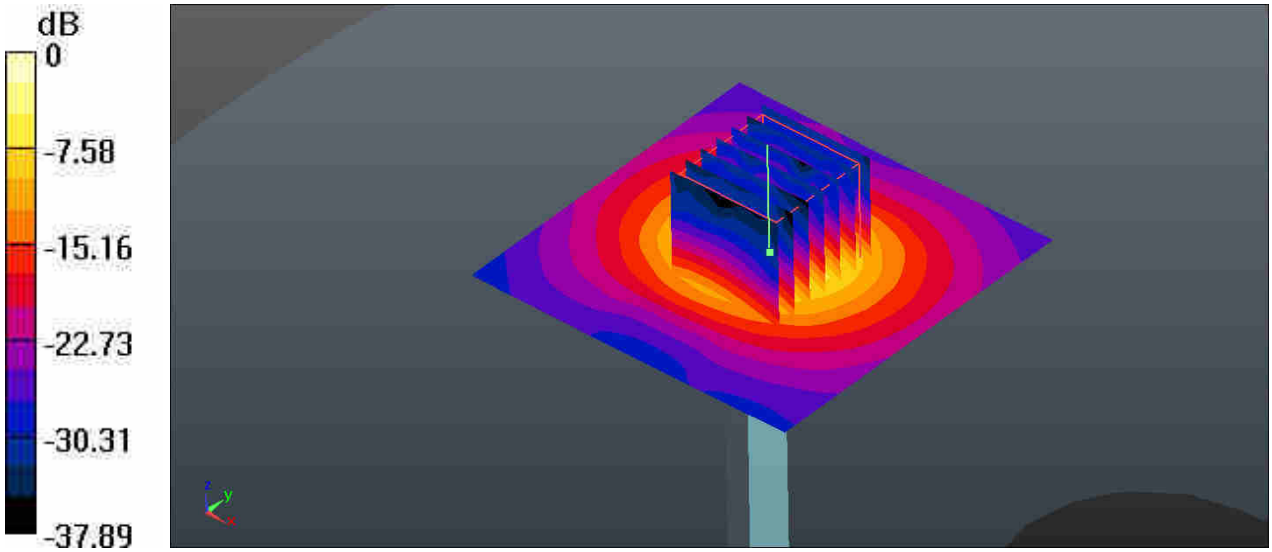
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: MSL_5600_181031 Medium parameters used: f = 5600 MHz; σ = 5.96 S/m; ε_r = 47.033; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃； Liquid Temperature：22.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(4.18, 4.18, 4.18); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 21.0 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 46.20 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 41.2 W/kg
SAR(1 g) = 7.97 W/kg; SAR(10 g) = 2.29 W/kg
Maximum value of SAR (measured) = 22.9 W/kg



0 dB = 22.9 W/kg

System Check_Body_5750MHz

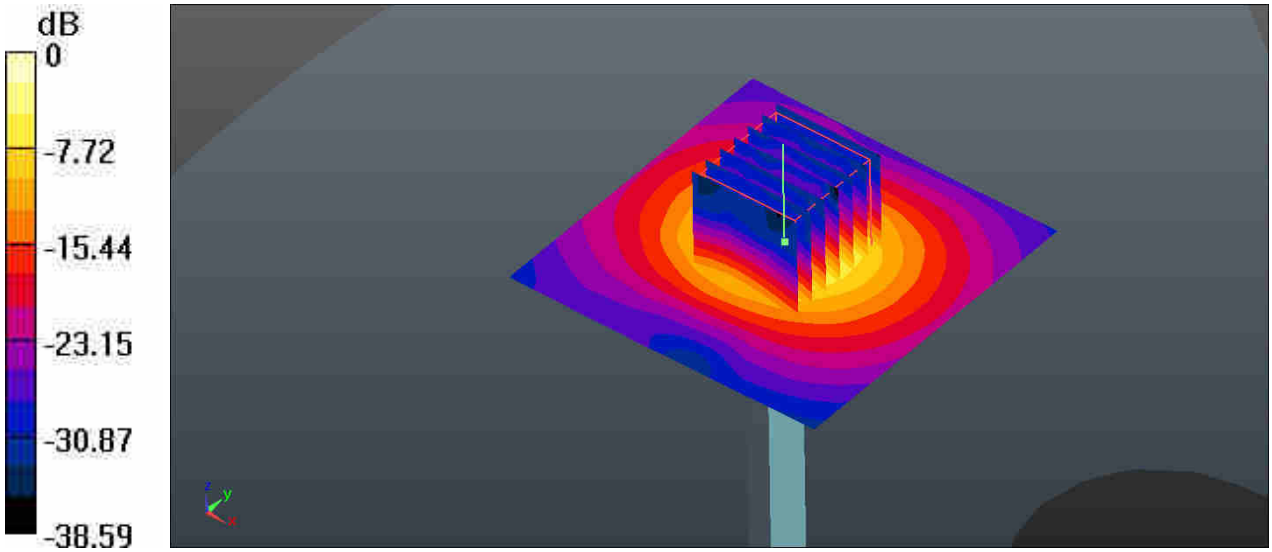
DUT: D5GHzV2-SN:1167

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium: MSL_5750_181031 Medium parameters used: f = 5750 MHz; σ = 5.985 S/m; ε_r = 48.556; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(4.32, 4.32, 4.32); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 19.4 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 42.88 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 39.9 W/kg
SAR(1 g) = 7.91 W/kg; SAR(10 g) = 2.17 W/kg
Maximum value of SAR (measured) = 20.0 W/kg



0 dB = 20.0 W/kg

Appendix B. Plots of SAR Measurement

The plots are shown as follows.

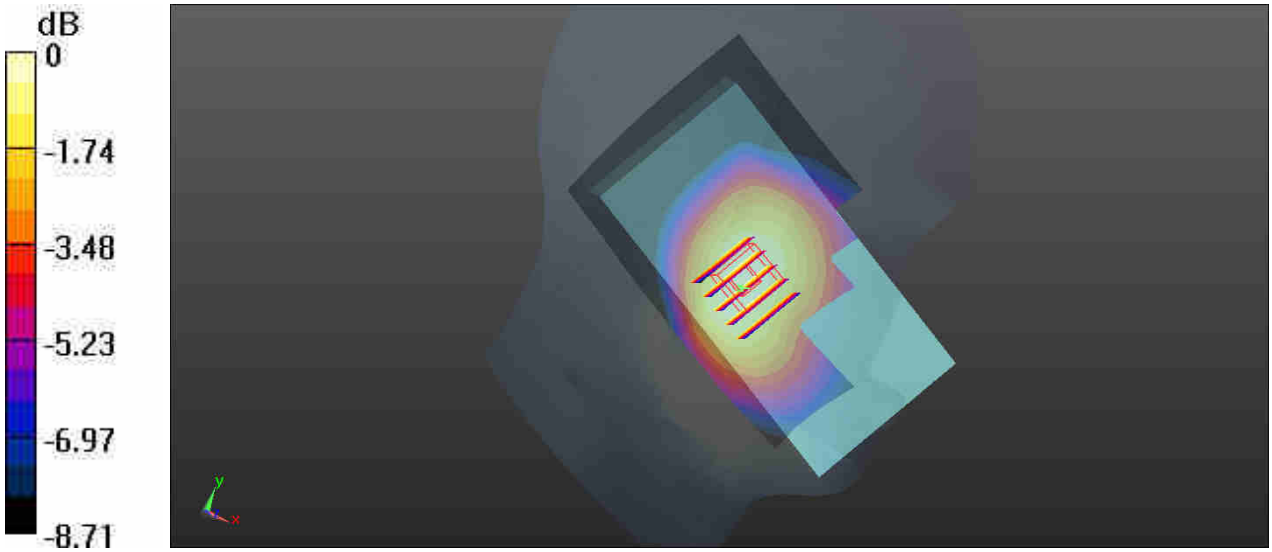
01_GSM850_GPRS(4 Tx slots)_Left Cheek_Ch251

Communication System: UID 0, GPRS/EDGE12 (0); Frequency: 848.8 MHz;Duty Cycle: 1:2.08
Medium: HSL_835_181103 Medium parameters used: f = 849 MHz; σ = 0.883 S/m; ε_r = 41.543; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(9.66, 9.66, 9.66); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch251/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.340 W/kg

Ch251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.082 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.369 W/kg
SAR(1 g) = 0.303 W/kg; SAR(10 g) = 0.234 W/kg
Maximum value of SAR (measured) = 0.341 W/kg



0 dB = 0.340 W/kg

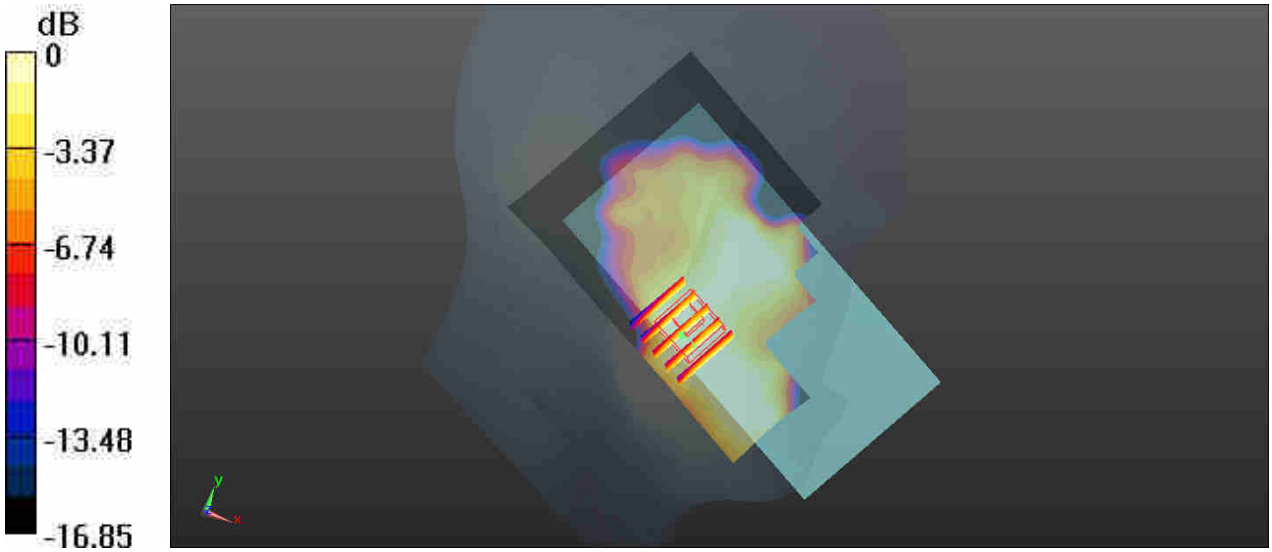
02_GSM1900_GPRS(2 Tx slots)_Left Cheek_Ch810

Communication System: UID 0, GPRS/EDGE10 (0); Frequency: 1909.8 MHz;Duty Cycle: 1:4.15
Medium: HSL_1900_181105 Medium parameters used: f = 1910 MHz; σ = 1.429 S/m; ε_r = 40.972; ρ = 1000 kg/m^3
Ambient Temperature：23.6 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(8.13, 8.13, 8.13); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch810/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.0740 W/kg

Ch810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.0730 W/kg
SAR(1 g) = 0.051 W/kg; SAR(10 g) = 0.036 W/kg
Maximum value of SAR (measured) = 0.0625 W/kg



0 dB = 0.0625 W/kg

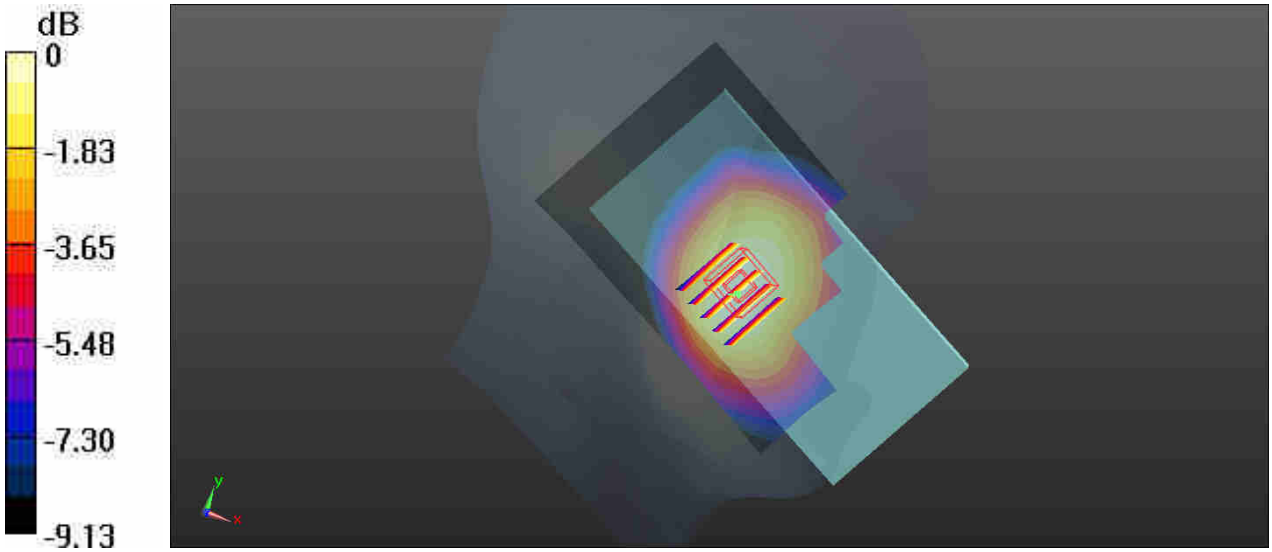
03_WCDMA V_RMC 12.2Kbps_Left Cheek_Ch4233

Communication System: UID 0, UMTS (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: HSL_835_181103 Medium parameters used: f = 847 MHz; σ = 0.884 S/m; ε_r = 41.628; ρ = 1000 kg/m^3
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(9.66, 9.66, 9.66); Calibrated: 2018.01.31;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1437; Calibrated: 2018.10.15
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch4233/Area Scan (71x131x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.486 W/kg

Ch4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.242 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.534 W/kg
SAR(1 g) = 0.433 W/kg; SAR(10 g) = 0.336 W/kg
Maximum value of SAR (measured) = 0.493 W/kg



0 dB = 0.486 W/kg