

Variant FCC SAR Test Report

Report No. : SA171130C29H-1
Applicant : Honeywell International Inc.
Address : 9680 OLD BAILES ROAD, FORT MILL, SC 29707 USA
Product : Dolphin CN80
FCC ID : HD5-CN80L1N
Brand : Honeywell
Model No. : CN80L1N
Standards : FCC 47 CFR Part 2 (2.1093), IEEE C95.1:1992, IEEE Std 1528:2013
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CERTIFICATION: The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch – Lin Kou Laboratories**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by TAF or any government agencies.

This report is issued as a supplementary report to BV CPS report no.: SA171130C29-1. The difference compared with original report is the major changing to reduce WWAN_P2 power for CDMA BC1, WCDMA B2 and LTE B2 by software without any hardware change.

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Release Control Record

Report No.	Reason for Change	Date Issued
SA171130C29H-1	Initial release	May 29, 2018

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1. Summary of Maximum SAR Value

Equipment Class	Mode	Highest SAR-1g Head (W/kg)	Highest SAR-1g Body-worn Tested at 15 or 0 mm (W/kg)	Highest SAR-1g Hotspot Tested at 10 mm (W/kg)
PCE	WCDMA II	1.17	N/A	N/A
	CDMA BC1	1.12	N/A	N/A
	LTE 2	1.16	N/A	N/A

Note:

1. The SAR criteria (**Head & Body: SAR-1g 1.6 W/kg, and Extremity: SAR-10g 4.0 W/kg**) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.

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2. Description of Equipment Under Test

EUT Type	Dolphin CN80
FCC ID	HD5-CN80L1N
Brand Name	Honeywell
Model Name	CN80L1N
EUT Configuration	EUT 1: Short K/B-Qwety EUT 2: Short K/B-number
HW Version	Rev 1.1
HW P/N	DVT1
SW Version	OS.01.004-HON.01.004
SW P/N	518D
Tx Frequency Bands (Unit: MHz)	GSM850 : 824.2 ~ 848.8 GSM1900 : 1850.2 ~ 1909.8 WCDMA Band II : 1852.4 ~ 1907.6 WCDMA Band IV : 1712.4 ~ 1752.6 WCDMA Band V : 826.4 ~ 846.6 CDMA BC0 : 824.7 ~ 848.31 CDMA BC1 : 1851.25 ~ 1908.75 CDMA BC10 : 817.9 ~ 823.1 LTE Band 2 : 1850.7 ~ 1909.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 4 : 1710.7 ~ 1754.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 5 : 824.7 ~ 848.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 7 : 2502.5 ~ 2567.5 (BW: 5M, 10M, 15M, 20M) LTE Band 12 : 699.7 ~ 715.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 13 : 779.5 ~ 784.5 (BW: 5M, 10M) LTE Band 17 : 706.5 ~ 713.5 (BW: 5M, 10M) LTE Band 25 : 1850.7 ~ 1914.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 26 : 814.7 ~ 848.3 (BW: 1.4M, 3M, 5M, 10M, 15M) LTE Band 38 : 2572.5 ~ 2617.5 (BW: 5M, 10M, 15M, 20M) LTE Band 41 : 2498.5 ~ 2687.5 (BW: 5M, 10M, 15M, 20M) WLAN : 2412 ~ 2462, 5180 ~ 5240, 5260 ~ 5320, 5500 ~ 5700, 5745 ~ 5825 Bluetooth : 2402 ~ 2480 Zigbee : 2402 ~ 2480 NFC : 13.56
Uplink Modulations	GSM & GPRS : GMSK EDGE : 8PSK WCDMA : QPSK CDMA : QPSK LTE : QPSK, 16QAM, 64QAM 802.11b : DSSS 802.11a/g/n/ac : OFDM Bluetooth : GFSK, $\pi/4$ -DQPSK, 8-DPSK Zigbee : O-QPSK NFC : ASK
Maximum Tune-up Conducted Power (Unit: dBm)	Please refer to section 4.6.1 of this report
Antenna Type	PIFA Antenna
EUT Stage	Engineering Sample

Note:

1. This report is issued as a supplementary report to BV CPS report no.: SA171130C29-1. The difference compared with original report is the major changing to reduce WWAN_P2 power for CDMA BC1, WCDMA B2 and LTE B2 by software without any hardware change.
2. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

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List of Accessory:

Battery	Brand Name	Inventus Power, Inc. / Honeywell
	Model Name	CW-BAT
	Power Rating	3.85Vdc, 5800mAh
	Type	Li-ion

3. SAR Measurement System

3.1 Definition of Specific Absorption Rate (SAR)

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.

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:

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

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

SAR measurement can be related to the electrical field in the tissue by

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

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

3.2 SPEAG DASY52 System

DASY52 system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY52 software defined. The DASY52 software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC.

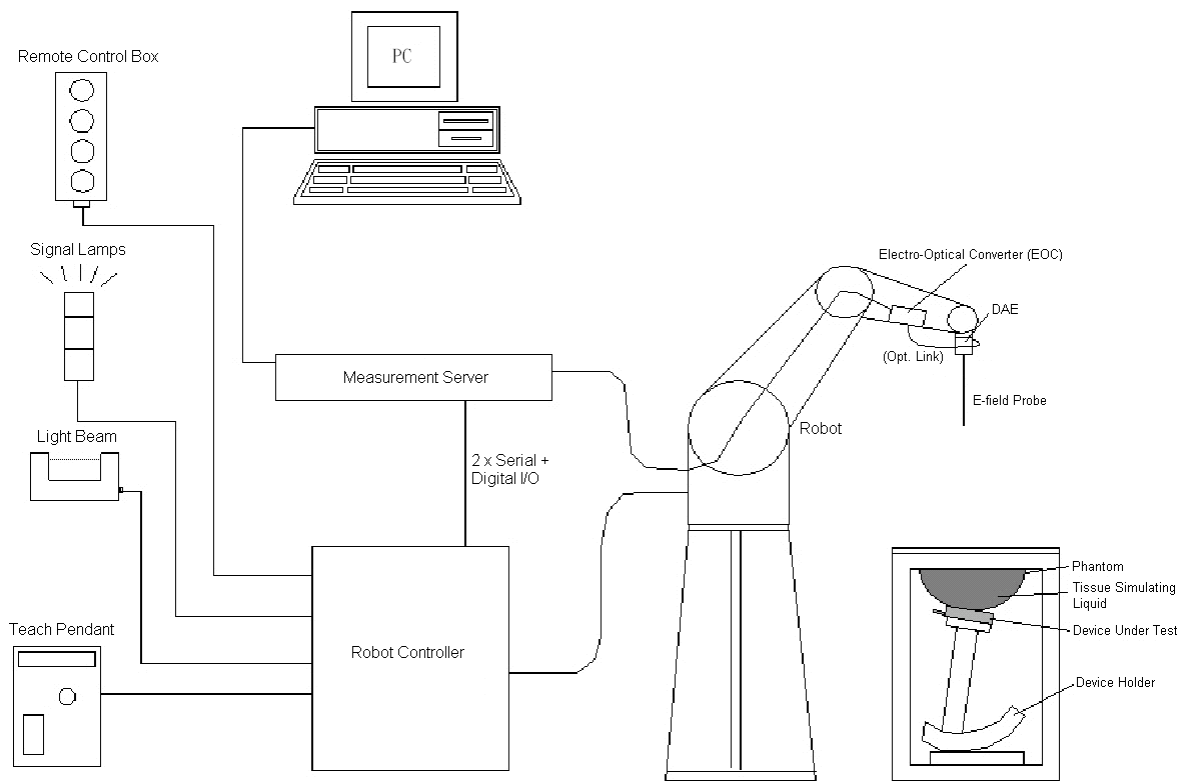


Fig-3.1 SPEAG DASY52 System Setup

3.2.1 Robot

The DASY52 system uses the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version of CS8c from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability ± 0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)



Fig-3.2 SPEAG DASY52 System

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3.2.2 Probes

The SAR measurement is conducted with the dosimetric probe. 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.

Model	EX3DV4	
Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).	
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 μ W/g to 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μ W/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	

Model	ES3DV3	
Construction	Symmetrical 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 to 4 GHz Linearity: ± 0.2 dB	
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	5 μ W/g to 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: 2.0 mm	

Model	ET3DV6	
Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection system. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz to 2.3 GHz; Linearity: ± 0.2 dB	
Directivity	± 0.2 dB in TSL (rotation around probe axis) ± 0.4 dB in TSL (rotation normal to probe axis)	
Dynamic Range	5 μ W/g to 100 mW/g; Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (Tip: 16 mm) Tip diameter: 6.8 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.7 mm	

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3.2.3 Data Acquisition Electronics (DAE)

Model	DAE3, DAE4	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.	
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)	
Input Offset Voltage	< 5µV (with auto zero)	
Input Bias Current	< 50 fA	
Dimensions	60 x 60 x 68 mm	

3.2.4 Phantoms

Model	Twin SAM	
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)	
Dimensions	Length: 1000 mm Width: 500 mm Height: adjustable feet	
Filling Volume	approx. 25 liters	

Model	ELI	
Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2.0 ± 0.2 mm (bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	approx. 30 liters	

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3.2.5 Device Holder

Model	Mounting Device	
Construction	In combination with the Twin SAM Phantom or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).	
Material	POM	

Model	Laptop Extensions Kit	
Construction	Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.). It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner.	
Material	POM, Acrylic glass, Foam	

3.2.6 System Validation Dipoles

Model	D-Serial	
Construction	Symmetrical dipole with 1/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.	
Frequency	750 MHz to 5800 MHz	
Return Loss	> 20 dB	
Power Capability	> 100 W (f < 1GHz), > 40 W (f > 1GHz)	

3.2.7 Tissue Simulating Liquids

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. 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. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in Table-3.1.



The dielectric properties of the head tissue simulating liquids are defined in IEEE 1528, and KDB 865664 D01 Appendix A. For the body tissue simulating liquids, the dielectric properties are defined in KDB 865664 D01 Appendix A. The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using a dielectric assessment kit and a network analyzer.

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Table-3.1 Targets of Tissue Simulating Liquid

Frequency (MHz)	Target Permittivity	Range of $\pm 5\%$	Target Conductivity	Range of $\pm 5\%$
For Head				
750	41.9	39.8 ~ 44.0	0.89	0.85 ~ 0.93
835	41.5	39.4 ~ 43.6	0.90	0.86 ~ 0.95
900	41.5	39.4 ~ 43.6	0.97	0.92 ~ 1.02
1450	40.5	38.5 ~ 42.5	1.20	1.14 ~ 1.26
1640	40.3	38.3 ~ 42.3	1.29	1.23 ~ 1.35
1750	40.1	38.1 ~ 42.1	1.37	1.30 ~ 1.44
1800	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
1900	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2000	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2300	39.5	37.5 ~ 41.5	1.67	1.59 ~ 1.75
2450	39.2	37.2 ~ 41.2	1.80	1.71 ~ 1.89
2600	39.0	37.1 ~ 41.0	1.96	1.86 ~ 2.06
3500	37.9	36.0 ~ 39.8	2.91	2.76 ~ 3.06
5200	36.0	34.2 ~ 37.8	4.66	4.43 ~ 4.89
5300	35.9	34.1 ~ 37.7	4.76	4.52 ~ 5.00
5500	35.6	33.8 ~ 37.4	4.96	4.71 ~ 5.21
5600	35.5	33.7 ~ 37.3	5.07	4.82 ~ 5.32
5800	35.3	33.5 ~ 37.1	5.27	5.01 ~ 5.53
For Body				
750	55.5	52.7 ~ 58.3	0.96	0.91 ~ 1.01
835	55.2	52.4 ~ 58.0	0.97	0.92 ~ 1.02
900	55.0	52.3 ~ 57.8	1.05	1.00 ~ 1.10
1450	54.0	51.3 ~ 56.7	1.30	1.24 ~ 1.37
1640	53.8	51.1 ~ 56.5	1.40	1.33 ~ 1.47
1750	53.4	50.7 ~ 56.1	1.49	1.42 ~ 1.56
1800	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
1900	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2000	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2300	52.9	50.3 ~ 55.5	1.81	1.72 ~ 1.90
2450	52.7	50.1 ~ 55.3	1.95	1.85 ~ 2.05
2600	52.5	49.9 ~ 55.1	2.16	2.05 ~ 2.27
3500	51.3	48.7 ~ 53.9	3.31	3.14 ~ 3.48
5200	49.0	46.6 ~ 51.5	5.30	5.04 ~ 5.57
5300	48.9	46.5 ~ 51.3	5.42	5.15 ~ 5.69
5500	48.6	46.2 ~ 51.0	5.65	5.37 ~ 5.93
5600	48.5	46.1 ~ 50.9	5.77	5.48 ~ 6.06
5800	48.2	45.8 ~ 50.6	6.00	5.70 ~ 6.30

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The following table gives the recipes for tissue simulating liquids.

Table-3.2 Recipes of Tissue Simulating Liquid

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
H750	0.2	-	0.2	1.5	56.0	-	42.1	-
H835	0.2	-	0.2	1.5	57.0	-	41.1	-
H900	0.2	-	0.2	1.4	58.0	-	40.2	-
H1450	-	43.3	-	0.6	-	-	56.1	-
H1640	-	45.8	-	0.5	-	-	53.7	-
H1750	-	47.0	-	0.4	-	-	52.6	-
H1800	-	44.5	-	0.3	-	-	55.2	-
H1900	-	44.5	-	0.2	-	-	55.3	-
H2000	-	44.5	-	0.1	-	-	55.4	-
H2300	-	44.9	-	0.1	-	-	55.0	-
H2450	-	45.0	-	0.1	-	-	54.9	-
H2600	-	45.1	-	0.1	-	-	54.8	-
H3500	-	8.0	-	0.2	-	20.0	71.8	-
H5G	-	-	-	-	-	17.2	65.5	17.3
B750	0.2	-	0.2	0.8	48.8	-	50.0	-
B835	0.2	-	0.2	0.9	48.5	-	50.2	-
B900	0.2	-	0.2	0.9	48.2	-	50.5	-
B1450	-	34.0	-	0.3	-	-	65.7	-
B1640	-	32.5	-	0.3	-	-	67.2	-
B1750	-	31.0	-	0.2	-	-	68.8	-
B1800	-	29.5	-	0.4	-	-	70.1	-
B1900	-	29.5	-	0.3	-	-	70.2	-
B2000	-	30.0	-	0.2	-	-	69.8	-
B2300	-	31.0	-	0.1	-	-	68.9	-
B2450	-	31.4	-	0.1	-	-	68.5	-
B2600	-	31.8	-	0.1	-	-	68.1	-
B3500	-	28.8	-	0.1	-	-	71.1	-
B5G	-	-	-	-	-	10.7	78.6	10.7

3.3 SAR System Verification

The system check verifies that the system operates within its specifications. It is performed daily or before every SAR measurement. The system check uses normal SAR measurements in the flat section of the phantom with a matched dipole at a specified distance. The system verification setup is shown as below.

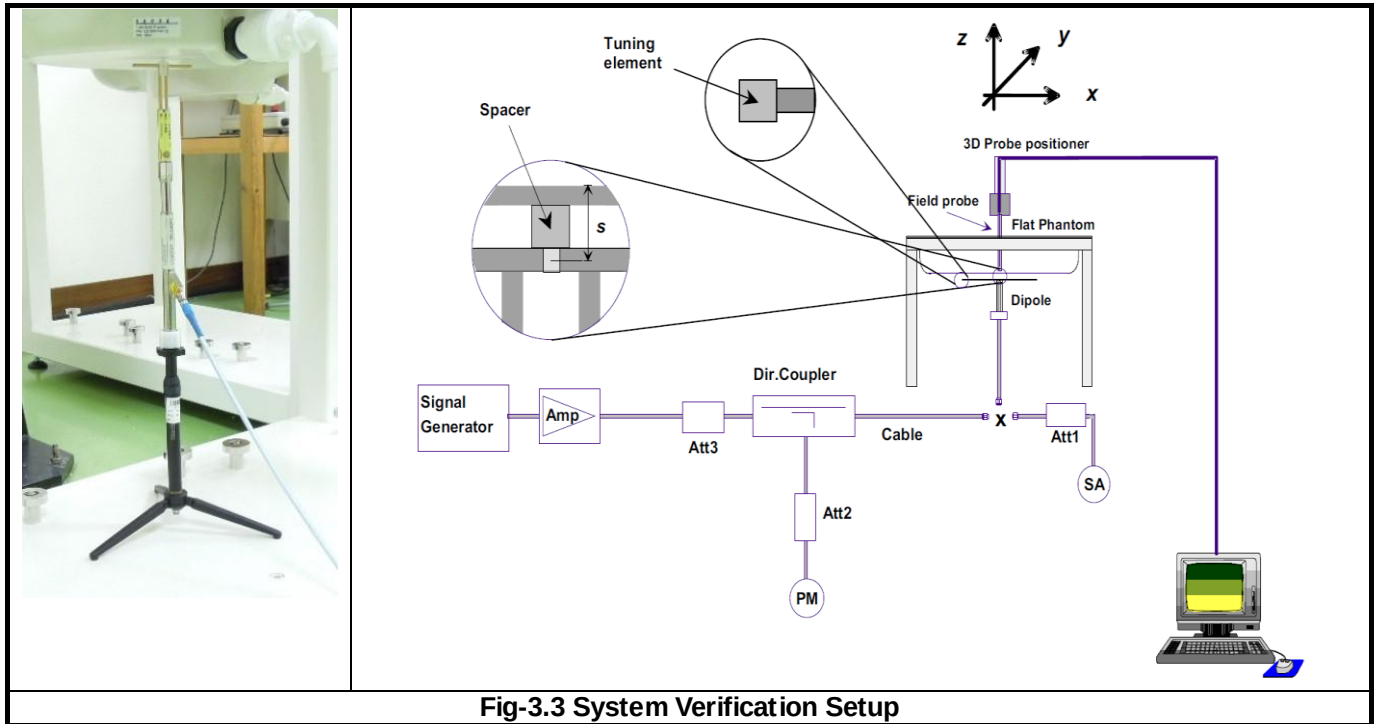


Fig-3.3 System Verification Setup

The validation dipole is placed beneath the flat phantom with the specific spacer in place. The distance spacer is touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The spectrum analyzer measures the forward power at the location of the system check dipole connector. The signal generator is adjusted for the desired forward power (250 mW is used for 700 MHz to 3 GHz, 100 mW is used for 3.5 GHz to 6 GHz) at the dipole connector and the power meter is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter.

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10 %.

3.4 SAR Measurement Procedure

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

- Power reference measurement
- Area scan
- Zoom scan
- Power drift measurement

The SAR measurement procedures for each of test conditions are as follows:

- Make EUT to transmit maximum output power
- Measure conducted output power through RF cable
- Place the EUT in the specific position of phantom
- Perform SAR testing steps on the DASY system
- Record the SAR value

3.4.1 Area & Zoom Scan Procedure

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. According to KDB 865664 D01, the resolution for Area and Zoom scan is specified in the table below.

Items	≤ 2 GHz	2-3 GHz	3-4 GHz	4-5 GHz	5-6 GHz
Area Scan ($\Delta x, \Delta y$)	≤ 15 mm	≤ 12 mm	≤ 12 mm	≤ 10 mm	≤ 10 mm
Zoom Scan ($\Delta x, \Delta y$)	≤ 8 mm	≤ 5 mm	≤ 5 mm	≤ 4 mm	≤ 4 mm
Zoom Scan (Δz)	≤ 5 mm	≤ 5 mm	≤ 4 mm	≤ 3 mm	≤ 2 mm
Zoom Scan Volume	≥ 30 mm	≥ 30 mm	≥ 28 mm	≥ 25 mm	≥ 22 mm

Note:

When zoom scan is required and report SAR is ≤ 1.4 W/kg, the zoom scan resolution of $\Delta x / \Delta y$ (2-3GHz: ≤ 8 mm, 3-4GHz: ≤ 7 mm, 4-6GHz: ≤ 5 mm) may be applied.

3.4.2 Volume Scan Procedure

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.

3.4.3 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 drift more than 5%, the SAR will be retested.

3.4.4 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 from 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

3.4.5 SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.

4. SAR Measurement Evaluation

4.1 EUT Configuration and Setting

<Connections between EUT and System Simulator>

For WWAN SAR testing, the EUT was linked and controlled by base station emulator. Communication between the EUT and the emulator was established by air link. The distance between the EUT and the communicating antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT. The EUT was set from the emulator to radiate maximum output power during SAR testing.

<Considerations Related to GSM / GPRS / EDGE for Setup and Testing>

The maximum multi-slot capability supported by this device is as below.

1. This EUT is class B device
2. This EUT supports GPRS multi-slot class 12 (max. uplink: 4, max. downlink: 4, total timeslots: 5)
3. This EUT supports EDGE multi-slot class 12 (max. uplink: 4, max. downlink: 4, total timeslots: 5)

For GSM850 frequency band, the power control level is set to 5 for GSM mode and GPRS (GMSK: CS1), and set to 8 for EDGE (GMSK: MCS1, 8PSK: MCS9). For GSM1900 frequency band, the power control level is set to 0 for GSM mode and GPRS (GMSK: CS1), and set to 2 for EDGE (GMSK: MCS1, 8PSK: MCS9).

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data 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.

<Considerations Related to WCDMA for Setup and Testing>

WCDMA Handsets Head SAR

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode.

WCDMA Handsets Body-worn SAR

SAR for body-worn configurations is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCH_n configurations supported by the handset with 12.2 kbps RMC as the primary mode.

Handsets with Release 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body-worn configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures in the "Release 5 HSDPA Data Devices", for the highest reported SAR body-worn exposure configuration in 12.2 kbps RMC. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

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Handsets with Release 6 HSUPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body-worn configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures in the "Release 6 HSPA Data Devices", for the highest reported body-worn exposure SAR configuration in 12.2 kbps RMC. When VOIP is applicable for next to the ear head exposure in HSPA, the 3G SAR test reduction procedure is applied to HSPA with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body-worn measurements is tested for next to the ear head exposure.

Release 5 HSDPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in 12.2 kbps RMC without HSDPA. HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH / HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (β_c , β_d), and HS-DPCCH power offset parameters (Δ_{ACK} , Δ_{NACK} , Δ_{CQI}) are set according to values indicated in below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	$\beta_{HS}^{(1)(2)}$	CM ⁽³⁾ (dB)	MPR ⁽³⁾ (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64	12/15 ⁽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 $\Delta_{CQI} = 30/15$ 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 $\Delta_{NACK} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$, and $\Delta_{CQI} = 24/15$ with $\beta_{HS} = 24/15 * \beta_c$.
Note 3: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{HS}/\beta_c = 24/15$. 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 $\beta_c = 11/15$ and $\beta_d = 15/15$.

Release 6 HSUPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode. Otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing. Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the β values indicated in below.

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Sub-test	β_c	β_d	β_d (SF)	β_c / β_d	$\beta_{HS}^{(1)}$	β_{ec}	$\beta_{ed}^{(4)(5)}$	β_{ed} (SF)	β_{ed} (Codes)	CM ⁽²⁾ (dB)	MPR ⁽²⁾⁽⁶⁾ (dB)	AG ⁽⁵⁾ Index	E-TFCI
1	11/15 ⁽³⁾	15/15 ⁽³⁾	64	11/15 ⁽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	β_{ed1} : 47/15 β_{ed2} : 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 $\Delta_{CQI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$. For sub-test 5, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 5/15$ with $\beta_{HS} = 5/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{HS}/\beta_c = 24/15$. 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 $\beta_c = 10/15$ and $\beta_d = 15/15$.

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.

DC-HSDPA SAR Guidance

The 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Otherwise, when SAR is required for Rel. 5 HSDPA, SAR is required for Rel. 8 DC-HSDPA. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

<Considerations Related to CDMA for Setup and Testing>

CDMA 1xRTT Handsets Head SAR

SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode. Otherwise, SAR is required for the channel with maximum measured output in RC1 using the head exposure configuration that results in the highest reported SAR in RC3.

CDMA 1xRTT Handsets Body-worn SAR

Body-worn 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 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH + SCH_n), with FCH only as the primary mode. Otherwise, SAR is required for multiple code channel configuration (FCH + SCH_n), with FCH at full rate and SCH₀ enabled at 9600 bps, using the highest reported SAR configuration for FCH only. The 3G SAR test reduction procedure is applied to body-worn SAR in RC1 with RC3 as the primary mode. Otherwise, SAR is required for RC1, with SO55 and full rate, using the highest reported SAR configuration for body-worn exposure in RC3.

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Handsets with built-in EV-DO

The 3G SAR test reduction procedure is applied to EV-DO Rev. 0 with 1xRTT RC3 as the primary mode to determine body-worn test requirements. Otherwise, body-worn SAR is required for Rev. 0, at 153.6 kbps, using the highest reported SAR configuration for body-worn exposure in RC3. The 3G SAR test reduction procedure is applied separately to Rev. A and Rev. B, with Rev. 0 as the primary mode to determine body-worn SAR test requirements. When SAR is not required for Rev. 0, the 3G SAR test reduction is applied with 1xRTT RC3 as the primary mode. Otherwise, SAR is required for Rev. A or Rev. B, with a Reverse Data Channel payload size of 4096 bits and a Termination Target of 16 slots defined for Subtype 2 and 3 Physical Layer configurations, using the highest reported SAR configuration for body-worn exposure in Rev. 0 or RC3, as appropriate. A Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with ACK Channel transmitting in all slots is configured in the downlink for Rev. 0, Rev. A and Rev. B.

EV-DO Data Devices

SAR is measured using the F/R TAP configurations required for Rev. 0, Rev. A and Rev. B. The AT is tested with a Reverse Data Channel rate of 153.6 kbps in Subtype 0/1 Physical Layer configurations. A Reverse Data Channel payload size of 4096 bits and Termination Target of 16 slots are used for Subtype 2 and 3. FTAP, FETAP and FMCTAP are all configured with a Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with ACK Channel transmitting in all slots. AT power control is in "All Bits Up" conditions for the TAP / ETAP / MCTAP. Body-worn and other body SAR are measured using Subtype 0/1 Physical Layer configurations for Rev. 0. The 3G SAR test reduction procedure is applied to Rev. A, Subtype 2 Physical layer configuration, with Rev. 0 as the primary mode. Otherwise, SAR is measured for Rev. A using the highest reported SAR configuration for body-worn exposure in Rev. 0. SAR is required for Rev. B, Subtype 3; it is measured by applying both the "test 2" and "test 3" configurations used for power measurement.

<Considerations Related to LTE for Setup and Testing>

This device contains LTE transmitter which follows 3GPP standards, is category 3, supports both QPSK and 16QAM modulations, and supported LTE band and channel bandwidth is listed in below. The output power was tested per 3GPP TS 36.521-1 maximum transmit procedures for both QPSK and 16QAM modulation. The results please refer to section 4.6 of this report.

EUT Supported LTE Band and Channel Bandwidth						
LTE Band	BW 1.4 MHz	BW 3 MHz	BW 5 MHz	BW 10 MHz	BW 15 MHz	BW 20 MHz
2	V	V	V	V	V	V
4	V	V	V	V	V	V
5	V	V	V	V		
7			V	V	V	V
12	V	V	V	V		
13			V	V		
17			V	V		
25	V	V	V	V	V	V
26	V	V	V	V	V	
38			V	V	V	V
41			V	V	V	V

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The LTE maximum power reduction (MPR) in accordance with 3GPP TS 36.101 is active all times during LTE operation. The allowed MPR for the maximum output power is specified in below.

Modulation	Channel Bandwidth / RB Configurations						LTE MPR Setting (dB)
	BW 1.4 MHz	BW 3 MHz	BW 5 MHz	BW 10 MHz	BW 15 MHz	BW 20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	1
16QAM	<= 5	<= 4	<= 8	<= 12	<= 16	<= 18	1
16QAM	> 5	> 4	> 8	> 12	> 16	> 18	2
64QAM	<= 5	<= 4	<= 8	<= 12	<= 16	<= 18	2
64QAM	> 5	> 4	> 8	> 12	> 16	> 18	3

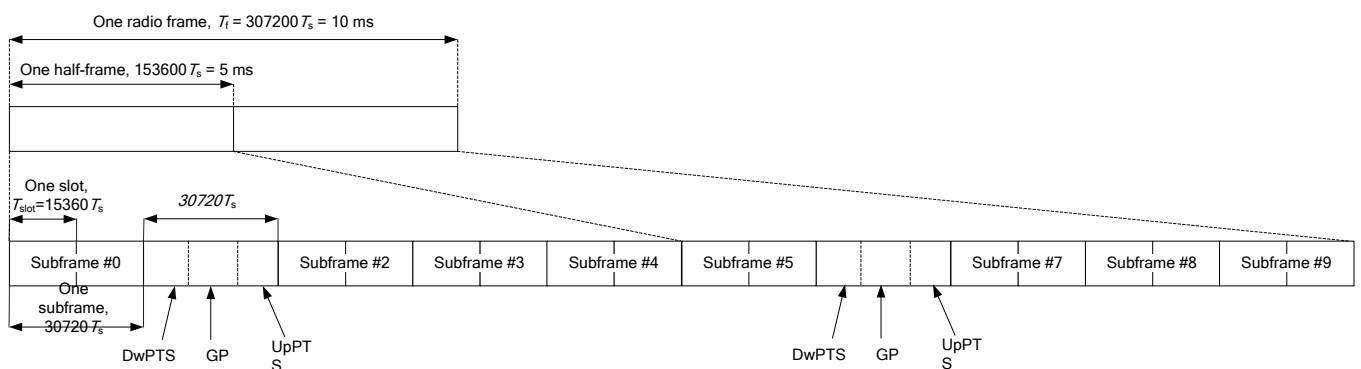
Note: MPR is according to the standard and implemented in the circuit (mandatory).

In addition, the device is compliant with additional maximum power reduction (A-MPR) requirements defined in 3GPP TS 36.101 section 6.2.4 that was disabled for all FCC compliance testing.

During LTE SAR testing, the related parameters of operating band, channel bandwidth, uplink channel number, modulation type, and RB was set in base station simulator. When the EUT has registered and communicated to base station simulator, the simulator set to make EUT transmitting the maximum radiated power.

TDD-LTE Setup Configurations

According to KDB 941225 D05, SAR testing for TDD-LTE device must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP TDD-LTE configurations. The TDD-LTE of this device supports frame structure type 2 defined in 3GPP TS 36.211 section 4.2, and the frame structure configuration can be referred to below.



3GPP TS 36.211 Figure 4.2-1: Frame Structure Type 2

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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 • Ts	2192 • Ts	2560 • Ts	7680 • Ts	2192 • Ts	2560 • Ts
1	19760 • Ts			20480 • Ts		
2	21952 • Ts			23040 • Ts		
3	24144 • Ts			25600 • Ts		
4	26336 • Ts	4384 • Ts	5120 • Ts	7680 • Ts	4384 • Ts	5120 • Ts
5	6592 • Ts			20480 • Ts		
6	19760 • Ts			23040 • Ts		
7	21952 • Ts			12800 • Ts		
8	24144 • Ts			-	-	-
9	13168 • Ts			-	-	-

3GPP TS 36.211 Table 4.2-1: Configuration of Special Subframe

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

3GPP TS 36.211 Table 4.2-2: Uplink-Downlink Configurations

LTE Downlink Carrier Aggregation (CA) Setup Configurations

LTE Carrier Aggregation (CA) was defined in 3GPP release 10 and higher. The LTE device in CA mode has one Primary Component Carrier (PCC) and one or more Secondary Component Carriers (SCC). PCC acts as the anchor carrier and can optionally cross-schedule data transmission on SCC. The RRC connection is only handled by one cell, the PCC for downlink and uplink communications. After making a data connection to the PCC, the LTE device adds the SCC on the downlink only. All uplink communications and acknowledgements remain identical to release 8 specifications on the PCC. The combinations of downlink carrier aggregation supported by this device are listed in below.

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LTE CA Configurations and Bandwidth Combination Sets defined for Intra-Band Non-Contiguous CA

Downlink CA Configuration	Component Carriers in order of Increasing Carrier Frequency			Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
	Channel Bandwidths for Carrier-1 (MHz)	Channel Bandwidths for Carrier-2 (MHz)	Channel Bandwidths for Carrier-3 (MHz)		
CA_2A-2A	5, 10, 15, 20	5, 10, 15, 20		40	0
CA_4A-4A	5, 10, 15, 20	5, 10, 15, 20		40	0
	5, 10	5, 10		20	1
CA_7A-7A	5	15		40	0
	10	10, 15			
	15	15, 20			
	20	20			
	5, 10, 15, 20	5, 10, 15, 20		40	1
	5, 10, 15, 20	5, 10		30	2
	10, 15, 20	10, 15, 20		40	3
CA_41A-41A	10, 15, 20	10, 15, 20		40	0
	5, 10, 15, 20	5, 10, 15, 20		40	1

LTE CA Configurations and Bandwidth Combination Sets defined for Inter-Band CA (Two Bands)

Downlink CA Configuration	LTE Bands	Channel Bandwidths for Carrier (MHz)	Maximum Aggregated Bandwidth (MHz)	Bandwidth Combination Set
CA_2A-4A	2	1.4, 3, 5, 10, 15, 20	40	0
	4	5, 10, 15, 20		
	2	5, 10	20	1
	4	5, 10		
	2	5, 10, 15, 20	40	2
	4	5, 10, 15, 20		
CA_2A-5A	2	5, 10, 15, 20	30	0
	5	5, 10		
	2	5, 10	20	1
	5	5, 10		
CA_2A-12A	2	5, 10, 15, 20	30	0
	12	5, 10		
	2	5, 10, 15, 20	30	1
	12	3, 5, 10		
	2	5, 10	20	2
	12	5, 10		
CA_2A-13A	2	5, 10, 15, 20	30	0
	13	10		
	2	5, 10	20	1
	13	10		
CA_2A-29A	2	5, 10	20	0
	29	3, 5, 10		
	2	5, 10	20	1
	29	5, 10		
	2	5, 10, 15, 20	30	2
	29	5, 10		

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CA_4A-5A	4	5, 10	20	0
	5	5, 10		
	4	5, 10, 15, 20	30	1
	5	5, 10		
CA_4A-12A	4	1.4, 3, 5, 10	20	0
	12	5, 10		
	4	1.4, 3, 5, 10, 15, 20	30	1
	12	5, 10		
	4	5, 10, 15, 20	30	2
	12	3, 5, 10		
	4	5, 10	20	3
	12	5, 10		
	4	5, 10, 15, 20	30	4
	12	5, 10		
	4	5, 10, 15	20	5
	12	5		
CA_4A-13A	4	5, 10, 15, 20	30	0
	13	10		
	4	5, 10	20	1
	13	10		
CA_4A-29A	4	5, 10	20	0
	29	3, 5, 10		
	4	5, 10	20	1
	29	5, 10		
	4	5, 10, 15, 20	30	2
	29	5, 10		
CA_5A-7A	5	1.4, 3, 5, 10	30	0
	7	10, 15, 20		
	5	5, 10	30	1
	7	10, 15, 20		

<Considerations Related to WLAN for Setup and Testing>

In general, various vendor specific external test software and chipset based internal test modes are typically used for SAR measurement. These chipset based test mode utilities are generally hardware and manufacturer dependent, and often include substantial flexibility to reconfigure or reprogram a device. A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement. The test frequencies established using test mode must correspond to the actual channel frequencies. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. In addition, a periodic transmission duty factor is required for current generation SAR systems to measure SAR correctly. The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

According to KDB 248227 D01, this device has installed WLAN engineering testing software which can provide continuous transmitting RF signal. During WLAN SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

Initial Test Configuration

An initial test configuration is determined for OFDM transmission modes in 2.4 GHz and 5 GHz bands according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. 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 in the initial test configuration, for each frequency band.

Subsequent Test Configuration

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. Additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. When the highest reported SAR for the initial test configuration according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

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SAR Test Configuration and Channel Selection

When multiple channel bandwidth configurations in a frequency band have the same specified maximum output power, the initial test configuration is using largest channel bandwidth, lowest order modulation, lowest data rate, and lowest order 802.11 mode (i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n). After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following.

- 1) The channel closest to mid-band frequency is selected for SAR measurement.
- 2) For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

Test Reduction for U-NII-1 (5.2 GHz) and U-NII-2A (5.3 GHz) Bands

For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following.

- 1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition).
- 2) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration.

<Considerations Related to Bluetooth for Setup and Testing>

This device has installed Bluetooth engineering testing software which can provide continuous transmitting RF signal. During Bluetooth SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

4.2 EUT Testing Position

This report is prepared for TCB Class II PC and it is verified the Head Mode for CDMA BC1, WCDMA B2 and LTE B2. Used of the original SAR report (Report No.: SA171130C29-1) and verified to ensure the device remains compliant.

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4.3 Tissue Verification

The measuring results for tissue simulating liquid are shown as below.

Test Date	Tissue Type	Frequency (MHz)	Liquid Temp. (°C)	Measured Conductivity (σ)	Measured Permittivity (ϵ_r)	Target Conductivity (σ)	Target Permittivity (ϵ_r)	Conductivity Deviation (%)	Permittivity Deviation (%)
May 14, 2018	Head	1900	23.4	1.459	39.97	1.4	40	4.21	-0.08
May 15, 2018	Head	1900	23.2	1.46	38.759	1.4	40	4.29	-3.10
May 22, 2018	Head	1900	23.5	1.454	38.287	1.4	40	3.86	-4.28

Note:

The dielectric properties of the tissue simulating liquid must be measured within 24 hours before the SAR testing and within $\pm 5\%$ of the target values. Liquid temperature during the SAR testing must be within $\pm 2^\circ\text{C}$.

4.4 System Validation

The SAR measurement system was validated according to procedures in KDB 865664 D01. The validation status in tabulated summary is as below.

Test Date	Probe S/N	Calibration Point		Measured Conductivity (σ)	Measured Permittivity (ϵ_r)	Validation for CW			Validation for Modulation		
						Sensitivity Range	Probe Linearity	Probe Isotropy	Modulation Type	Duty Factor	PAR
May 14, 2018	3971	Head	1900	1.459	39.97	Pass	Pass	Pass	N/A	N/A	N/A
May 15, 2018	3971	Head	1900	1.46	38.759	Pass	Pass	Pass	N/A	N/A	N/A
May 22, 2018	3820	Head	1900	1.454	38.287	Pass	Pass	Pass	N/A	N/A	N/A

4.5 System Verification

The measuring result for system verification is tabulated as below.

Test Date	Mode	Frequency (MHz)	1W Target SAR-1g (W/kg)	Measured SAR-1g (W/kg)	Normalized to 1W SAR-1g (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N
May 14, 2018	Head	1900	40.70	9.73	38.92	-4.37	5d036	3971	1431
May 15, 2018	Head	1900	40.70	10.6	42.40	4.18	5d036	3971	1431
May 22, 2018	Head	1900	40.70	10.7	42.80	5.16	5d036	3820	917

Note:

Comparing to the reference SAR value provided by SPEAG, the validation data should be within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots can be referred to Appendix A of this report.

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4.6 Maximum Output Power

4.6.1 Maximum Target Conducted Power

The maximum conducted average power (Unit: dBm) including tune-up tolerance is shown as below.

WWAN

Head Mode

Mode	Maximum Burst-Averaged Output Power		Maximum Frame-Averaged Output Power	
	GSM850 (with WLAN Off)	GSM850 (With WLAN On)	GSM850 (with WLAN Off)	GSM850 (With WLAN On)
GSM (GMSK, 1Tx-slot)	34.2	31.5	25.20	22.50
GPRS (GMSK, 1Tx-slot)	34.2	31.5	25.20	22.50
GPRS (GMSK, 2Tx-slot)	31.4	28.5	25.40	22.50
GPRS (GMSK, 3Tx-slot)	29.6	26.7	25.34	22.44
GPRS (GMSK, 4Tx-slot)	28.4	25.5	25.40	22.50
EDGE (8PSK, 1Tx-slot)	28.4	28.4	19.40	19.40
EDGE (8PSK, 2Tx-slot)	25.4	25.4	19.40	19.40
EDGE (8PSK, 3Tx-slot)	23.6	23.6	19.34	19.34
EDGE (8PSK, 4Tx-slot)	22.4	22.4	19.40	19.40

Mode	Maximum Burst-Averaged Output Power	Maximum Frame-Averaged Output Power
	GSM1900	GSM1900
GSM (GMSK, 1Tx-slot)	31.1	22.10
GPRS (GMSK, 1Tx-slot)	31.1	22.10
GPRS (GMSK, 2Tx-slot)	28.1	22.10
GPRS (GMSK, 3Tx-slot)	26.3	22.04
GPRS (GMSK, 4Tx-slot)	25.1	22.10
EDGE (8PSK, 1Tx-slot)	28.6	19.60
EDGE (8PSK, 2Tx-slot)	25.6	19.60
EDGE (8PSK, 3Tx-slot)	23.8	19.54
EDGE (8PSK, 4Tx-slot)	22.6	19.60

Note:

1. SAR testing was performed on the maximum frame-averaged power mode.
2. The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:

$$\text{Frame-averaged power} = 10 \times \log (\text{Burst-averaged power mW} \times \text{Slot used} / 8)$$

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Mode	WCDMA Band II (With WLAN Off)	WCDMA Band II (With WLAN On)
RMC 12.2K	24.8	22.0
HSDPA/ HSUPA/ DC-HSDPA	23.8	21.0

Mode	WCDMA Band IV (With WLAN Off)	WCDMA Band IV (With WLAN On)
RMC 12.2K	25.1	23.1
HSDPA/ HSUPA/ DC-HSDPA	24.1	22.1

Mode	WCDMA Band V (With WLAN Off)	WCDMA Band V (With WLAN On)
RMC 12.2K	23.9	21.3
HSDPA/ HSUPA/ DC-HSDPA	22.9	20.3

Mode	CDMA BC0 (With WLAN Off)	CDMA BC0 (With WLAN On)
1xRTT / EVDO	24.3	21.7

Mode	CDMA BC1 (With WLAN Off)	CDMA BC1 (With WLAN On)
1xRTT / EVDO	24.1	22.0

Mode	CDMA BC10 (With WLAN Off)	CDMA BC10 (With WLAN On)
1xRTT / EVDO	25.0	21.8

Mode	LTE 2 (With WLAN Off)	LTE 2 (With WLAN On)
Maximum Target Power	24.6	21.5

Mode	LTE 4 (With WLAN Off)	LTE 4 (With WLAN On)
Maximum Target Power	25.1	23.2

Mode	LTE 5 (With WLAN Off)	LTE 5 (With WLAN On)
Maximum Target Power	24.3	21.6

Mode	LTE 7
Maximum Target Power	24.4

Mode	LTE 12 (With WLAN Off)	LTE 12 (With WLAN On)
Maximum Target Power	24.9	23.5

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Mode	LTE 13 (With WLAN Off)	LTE 13 (With WLAN On)
Maximum Target Power	24.9	22.4

Mode	LTE 17 (With WLAN Off)	LTE 17 (With WLAN On)
Maximum Target Power	24.9	23.5

Mode	LTE 25 (With WLAN Off)	LTE 25 (With WLAN On)
Maximum Target Power	24.0	21.6

Mode	LTE 26 (With WLAN Off)	LTE 26 (With WLAN On)
Maximum Target Power	24.6	21.8

Mode	LTE 38	LTE 41
Maximum Target Power	24.5	24.4

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Body-worn / Hotspot Mode

Mode	Maximum Burst-Averaged Output Power		Maximum Frame-Averaged Output Power	
	GSM850	GSM1900	GSM850	GSM1900
GSM (GMSK, 1Tx-slot)	34.4	31.1	25.40	22.10
GPRS (GMSK, 1Tx-slot)	34.4	31.1	25.40	22.10
GPRS (GMSK, 2Tx-slot)	31.4	28.1	25.40	22.10
GPRS (GMSK, 3Tx-slot)	29.6	26.3	25.34	22.04
GPRS (GMSK, 4Tx-slot)	28.4	25.1	25.40	22.10
EDGE (8PSK, 1Tx-slot)	28.4	28.6	19.40	19.60
EDGE (8PSK, 2Tx-slot)	25.4	25.6	19.40	19.60
EDGE (8PSK, 3Tx-slot)	23.6	23.8	19.34	19.54
EDGE (8PSK, 4Tx-slot)	22.4	22.6	19.40	19.60

Note:

- SAR testing was performed on the maximum frame-averaged power mode.
- The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:

Frame-averaged power = $10 \times \log (\text{Burst-averaged power mW} \times \text{Slot used} / 8)$

Mode	WCDMA Band II	WCDMA Band IV	WCDMA Band V
RMC 12.2K	25.1	25.1	24.9
HSDPA/ HSUPA/ DC-HSDPA	24.1	24.1	23.9

Mode	CDMA BC0	CDMA BC1	CDMA BC10
1xRTT / EVDO	25.4	25.6	25.4

Mode	LTE 2	LTE 4	LTE 5
Maximum Target Power	25.1	25.1	24.7

Mode	LTE 7 (Body-worn Mode)	LTE 7 (Hotspot Mode)
Maximum Target Power	24.4	23.2

Mode	LTE 12	LTE 13	LTE 17	LTE 25
Maximum Target Power	24.9	24.9	24.9	24.0

Mode	LTE 26	LTE 38	LTE 41
Maximum Target Power	24.6	24.5	24.4

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WLAN/BT

Head Mode

Mode	Ant.	802.11b	802.11g	802.11n HT20
2.4G WLAN	Ant-0	19.5	17.5	17.5
	Ant-1	19.5	17.5	17.5
	Ant-0+1	22.5	20.5	20.5

Mode	Ant.	802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80
5.2G WLAN	Ant-0	13.5	13.5	13.5	13.5
	Ant-1	13.5	13.5	13.5	13.5
	Ant-0+1	16.5	16.5	16.5	16.5
5.3G WLAN	Ant-0	13.5	13.5	13.5	13.5
	Ant-1	13.5	13.5	13.5	13.5
	Ant-0+1	16.5	16.5	16.5	16.5
5.6G WLAN	Ant-0	14.5	14.5	14.5	14.5
	Ant-1	14.5	14.5	14.5	14.5
	Ant-0+1	17.5	17.5	17.5	17.5
5.8G WLAN	Ant-0	14.5	14.5	14.5	14.5
	Ant-1	14.5	14.5	14.5	14.5
	Ant-0+1	17.5	17.5	17.5	17.5

Mode	2.4G Bluetooth Ant 0
Bluetooth DH	10.5
Bluetooth 2DH	10.5
Bluetooth 3DH	10.5
Bluetooth LE	2.0

Mode	2.4G Bluetooth Ant 1
Bluetooth LE	4.0

Mode	
Zigbee	4.0

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Body-worn Mode

Mode	Ant.	802.11b	802.11g	802.11n HT20
2.4G WLAN	Ant-0	20.5	17.5	17.5
	Ant-1	20.5	17.5	17.5
	Ant-0+1	23.5	20.5	20.5

Mode	Ant.	802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80
5.2G WLAN	Ant-0	15.0	15.0	CH38: 14.5 CH46: 15.5	14.5
	Ant-1	15.0	15.0	CH38: 14.5 CH46: 15.5	14.5
	Ant-0+1	18.0	18.0	CH38: 17.5 CH46: 18.5	17.5
5.3G WLAN	Ant-0	15.5	15.5	CH54: 15.5 CH62: 13.5	14.0
	Ant-1	15.5	15.5	CH54: 15.5 CH62: 13.5	14.0
	Ant-0+1	18.5	18.5	CH54: 18.5 CH62: 16.5	17.0
5.6G WLAN	Ant-0	17.5	17.5	CH102: 15.5 CH110: 17.5 CH118: 17.5 CH134: 17.5 CH142: 17.5	CH106: 15.0 CH138: 17.5
	Ant-1	17.5	17.5	CH102: 15.5 CH110: 17.5 CH118: 17.5 CH134: 17.5 CH142: 17.5	CH106: 15.0 CH138: 17.5
	Ant-0+1	20.5	20.5	CH102: 18.5 CH110: 20.5 CH118: 20.5 CH138: 20.5	CH106: 18.0 CH138: 20.5
5.8G WLAN	Ant-0	17.5	17.5	17.5	17.5
	Ant-1	17.5	17.5	17.5	17.5
	Ant-0+1	20.5	20.5	20.5	20.5

Mode	2.4G Bluetooth Ant 0
Bluetooth DH	10.5
Bluetooth 2DH	10.5
Bluetooth 3DH	10.5
Bluetooth LE	2.0

Mode	2.4G Bluetooth Ant 1
Bluetooth LE	4.0

Mode	
Zigbee	4.0

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Hotspot Mode

Mode	Ant.	802.11b	802.11g	802.11n HT20
2.4G WLAN	Ant-0	20.5	17.5	17.5
	Ant-1	20.5	17.5	17.5
	Ant-0+1	23.5	20.5	20.5

Mode	Ant.	802.11a	802.11n HT20	802.11n HT40	802.11ac VHT80
5.2G WLAN	Ant-0	11.5	11.5	11.5	11.5
	Ant-1	11.5	11.5	11.5	11.5
	Ant-0+1	14.5	14.5	14.5	14.5
5.8G WLAN	Ant-0	11.5	11.5	11.5	11.5
	Ant-1	11.5	11.5	11.5	11.5
	Ant-0+1	14.5	14.5	14.5	14.5

Mode	2.4G Bluetooth Ant 0
Bluetooth DH	10.5
Bluetooth 2DH	10.5
Bluetooth 3DH	10.5
Bluetooth LE	2.0

Mode	2.4G Bluetooth Ant 1
Bluetooth LE	4.0

Mode	
Zigbee	4.0

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4.6.2 Measured Conducted Power Result

The measuring conducted average power (Unit: dBm) is shown as below.

WWAN

Head Mode

Band	GSM850		
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
EUT with WLAN Off			
Maximum Burst- Averaged Output Power			
GSM (GMSK, 1Tx-slot)	32.98	33.13	33.18
GPRS (GMSK, 1Tx-slot)	33.05	33.13	33.19
GPRS (GMSK, 2Tx-slot)	30.41	30.49	30.55
GPRS (GMSK, 3Tx-slot)	28.14	28.30	28.41
GPRS (GMSK, 4Tx-slot)	26.85	26.90	27.01
EDGE (8PSK, 1Tx-slot)	27.52	27.39	27.53
EDGE (8PSK, 2Tx-slot)	24.38	24.28	24.33
EDGE (8PSK, 3Tx-slot)	22.43	22.53	22.38
EDGE (8PSK, 4Tx-slot)	21.25	20.88	21.11
EUT with WLAN On			
Maximum Burst- Averaged Output Power			
GSM (GMSK, 1Tx-slot)	30.36	30.12	30.60
GPRS (GMSK, 1Tx-slot)	30.03	30.08	30.59
GPRS (GMSK, 2Tx-slot)	26.80	26.83	26.92
GPRS (GMSK, 3Tx-slot)	25.65	25.70	25.74
GPRS (GMSK, 4Tx-slot)	24.23	24.31	24.40
EDGE (8PSK, 1Tx-slot)	27.71	27.65	27.88
EDGE (8PSK, 2Tx-slot)	25.04	24.91	24.78
EDGE (8PSK, 3Tx-slot)	22.81	22.82	22.78
EDGE (8PSK, 4Tx-slot)	21.44	21.56	21.41

Band	GSM1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880.0	1909.8
Maximum Burst- Averaged Output Power			
GSM (GMSK, 1Tx-slot)	30.12	30.58	31.02
GPRS (GMSK, 1Tx-slot)	30.16	30.57	30.71
GPRS (GMSK, 2Tx-slot)	27.69	27.96	28.09
GPRS (GMSK, 3Tx-slot)	25.66	25.85	26.05
GPRS (GMSK, 4Tx-slot)	24.19	24.48	24.58
EDGE (8PSK, 1Tx-slot)	26.95	27.03	27.21
EDGE (8PSK, 2Tx-slot)	23.92	24.03	24.23
EDGE (8PSK, 3Tx-slot)	21.93	22.16	22.34
EDGE (8PSK, 4Tx-slot)	20.63	20.81	20.93

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Band	WCDMA Band II			WCDMA Band IV			WCDMA Band V			3GPP MPR (dB)
Channel	9262	9400	9538	1312	1413	1513	4132	4182	4233	
Frequency (MHz)	1852.4	1880.0	1907.6	1712.4	1732.6	1752.6	826.4	836.4	846.6	
EUT with WLAN Off										
RMC 12.2K	24.65	24.54	24.49	24.55	24.62	24.65	22.67	22.99	23.36	-
HSDPA Subtest-1	23.18	23.03	23.05	23.58	23.65	23.68	21.66	21.98	22.35	0
HSDPA Subtest-2	23.12	22.97	22.91	23.57	23.64	23.67	21.64	21.96	22.33	0
HSDPA Subtest-3	22.73	22.53	22.51	23.10	23.17	23.20	21.25	21.57	21.94	0.5
HSDPA Subtest-4	22.70	22.50	22.49	23.08	23.15	23.18	21.22	21.54	21.91	0.5
HSUPA Subtest-1	23.23	23.02	23.04	23.57	23.64	23.67	21.69	22.01	22.38	0
HSUPA Subtest-2	20.47	20.22	20.21	21.64	21.71	21.74	19.71	20.03	20.40	2
HSUPA Subtest-3	22.30	22.05	22.04	22.59	22.66	22.69	20.72	21.04	21.41	1
HSUPA Subtest-4	20.07	19.82	19.81	21.58	21.65	21.68	19.69	20.01	20.38	2
HSUPA Subtest-5	23.30	23.05	23.04	23.60	23.67	23.70	21.79	22.11	22.48	0
EUT with WLAN On										
RMC 12.2K	21.81	21.51	21.49	22.54	22.67	22.72	20.11	20.39	20.71	-
HSDPA Subtest-1	20.81	20.51	20.49	21.50	21.63	21.68	19.10	19.38	19.70	0
HSDPA Subtest-2	20.75	20.45	20.43	21.48	21.61	21.66	19.07	19.35	19.67	0
HSDPA Subtest-3	20.34	20.04	20.02	21.05	21.18	21.23	18.61	18.89	19.21	0.5
HSDPA Subtest-4	20.33	20.03	20.01	21.04	21.17	21.22	18.59	18.87	19.19	0.5
HSUPA Subtest-1	20.89	20.59	20.57	21.52	21.65	21.70	19.13	19.41	19.73	0
HSUPA Subtest-2	18.83	18.53	18.51	19.57	19.70	19.75	17.15	17.43	17.75	2
HSUPA Subtest-3	19.83	19.53	19.51	20.54	20.67	20.72	18.13	18.41	18.73	1
HSUPA Subtest-4	18.80	18.50	18.48	19.48	19.61	19.66	17.14	17.42	17.74	2
HSUPA Subtest-5	20.90	20.60	20.58	21.58	21.71	21.76	19.16	19.44	19.76	0

Band	CDMA BC0			CDMA BC1		
Channel	1013	384	777	25	600	1175
Frequency (MHz)	824.70	836.52	848.31	1851.25	1880.00	1908.75
EUT with WLAN Off						
1xRTT RC1+SO55	22.73	22.92	23.41	23.28	23.06	23.30
1xRTT RC3+SO55	22.79	22.98	23.47	23.31	23.09	23.33
1xRTT RC3+SO32 (FCH)	22.72	22.91	23.40	23.28	23.06	23.30
1xRTT RC3+SO32 (SCH)	22.77	22.96	23.45	23.23	23.01	23.25
1xEVDO Rev0 RTAP 153.6	22.74	22.93	23.42	23.29	23.07	23.31
1xEVDO RevA RETAP 4096	22.53	22.72	23.21	23.16	22.94	23.18
EUT with WLAN On						
1xRTT RC1+SO55	20.12	20.31	20.82	21.14	20.78	21.01
1xRTT RC3+SO55	20.15	20.34	20.85	21.23	20.87	21.09
1xRTT RC3+SO32 (FCH)	20.13	20.32	20.83	21.13	20.77	20.99
1xRTT RC3+SO32 (SCH)	20.11	20.30	20.81	21.11	20.75	20.97
1xEVDO Rev0 RTAP 153.6	20.14	20.33	20.84	21.14	20.78	21.00
1xEVDO RevA RETAP 4096	20.12	20.31	20.82	21.13	20.77	20.99

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Band	CDMA BC10		
Channel	476	580	684
Frequency (MHz)	817.9	820.5	823.1
EUT with WLAN Off			
1xRTT RC1+SO55	23.47	23.46	23.43
1xRTT RC3+SO55	23.48	23.47	23.44
1xRTT RC3+SO32 (FCH)	23.45	23.44	23.41
1xRTT RC3+SO32 (SCH)	23.46	23.45	23.42
1xEVDO Rev0 RTAP 153.6	23.42	23.41	23.38
1xEVDO RevA RE TAP 4096	23.32	23.31	23.28
EUT with WLAN On			
1xRTT RC1+SO55	20.38	20.22	20.28
1xRTT RC3+SO55	20.33	20.42	20.39
1xRTT RC3+SO32 (FCH)	20.31	20.40	20.38
1xRTT RC3+SO32 (SCH)	20.30	20.39	20.36
1xEVDO Rev0 RTAP 153.6	20.33	20.41	20.38
1xEVDO RevA RE TAP 4096	20.29	20.38	20.35

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LTE Band 2															
EUT with WLAN Off															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18700	18900	19100				Channel		18675	18900	19125	
		Frequency (MHz)		1860.0	1880.0	1900.0				Frequency (MHz)		1857.5	1880.0	1902.5	
20M	QPSK	1	0	23.26	23.21	23.27	0	15M	QPSK	1	0	23.20	23.10	23.26	0
		1	50	23.11	23.07	23.17	0			1	37	23.11	23.02	23.12	0
		1	99	23.19	23.15	23.25	0			1	74	23.16	23.11	23.19	0
		50	0	22.39	22.35	22.45	1			36	0	22.35	22.26	22.42	1
		50	25	22.27	22.23	22.33	1			36	19	22.24	22.19	22.29	1
		50	50	22.27	22.23	22.33	1			36	39	22.24	22.14	22.28	1
	100	0	22.25	22.21	22.31	1	75			0	22.18	22.16	22.21	1	
	16QAM	1	0	22.19	22.14	22.25	1		16QAM	1	0	22.16	22.02	22.24	1
		1	50	22.08	21.99	22.08	1			1	37	22.00	22.00	22.03	1
		1	99	22.22	22.13	22.28	1			1	74	22.12	22.17	22.24	1
		50	0	21.39	21.30	21.45	2			36	0	21.24	21.21	21.33	2
		50	25	21.17	21.15	21.31	2			36	19	21.20	21.13	21.28	2
		50	50	21.22	21.22	21.28	2			36	39	21.23	21.06	21.29	2
	100	0	21.23	21.12	21.24	2	75			0	21.20	21.14	21.31	2	
	64QAM	1	0	21.17	21.12	21.23	2		64QAM	1	0	21.10	20.96	21.18	2
		1	50	21.06	20.97	21.06	2			1	37	20.94	20.94	20.97	2
		1	99	21.20	21.11	21.26	2			1	74	21.06	21.11	21.18	2
		50	0	20.37	20.28	20.43	3			36	0	20.18	20.15	20.27	3
		50	25	20.15	20.13	20.29	3			36	19	20.14	20.07	20.22	3
		50	50	20.20	20.20	20.26	3			36	39	20.17	20.00	20.23	3
	100	0	20.21	20.10	20.22	3	75			0	20.14	20.08	20.25	3	
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18650	18900	19150				Channel		18625	18900	19175	
		Frequency (MHz)		1855.0	1880.0	1905.0				Frequency (MHz)		1852.5	1880.0	1907.5	
10M	QPSK	1	0	23.13	23.02	23.09	0	5M	QPSK	1	0	23.01	23.01	23.10	0
		1	24	23.03	23.04	23.05	0			1	12	22.97	22.92	22.82	0
		1	49	23.11	23.11	23.19	0			1	24	23.04	23.08	23.18	0
		25	0	22.28	22.23	22.34	1			12	0	22.27	22.24	22.29	1
		25	12	22.12	22.03	22.18	1			12	6	22.15	22.15	21.99	1
		25	25	22.16	22.19	22.12	1			12	13	22.03	22.11	22.12	1
	50	0	22.16	22.09	22.21	1	25			0	22.24	22.09	22.22	1	
	16QAM	1	0	21.98	22.04	22.10	1		16QAM	1	0	22.11	22.07	22.14	1
		1	24	21.95	21.88	21.99	1			1	12	21.92	21.91	22.04	1
		1	49	22.04	22.13	22.09	1			1	24	21.99	22.03	22.22	1
		25	0	21.18	21.10	21.20	2			12	0	21.19	21.11	21.39	2
		25	12	21.06	21.05	21.14	2			12	6	20.96	21.12	21.22	2
		25	25	21.17	21.01	21.20	2			12	13	21.03	21.22	21.07	2
	50	0	21.02	21.02	21.21	2	25			0	21.11	21.01	21.17	2	
	64QAM	1	0	20.90	20.96	21.02	2		64QAM	1	0	21.06	21.02	21.09	2
		1	24	20.87	20.80	20.91	2			1	12	20.87	20.86	20.99	2
		1	49	20.96	21.05	21.01	2			1	24	20.94	20.98	21.17	2
		25	0	20.10	20.02	20.12	3			12	0	20.14	20.06	20.34	3
		25	12	19.98	19.97	20.06	3			12	6	19.91	20.07	20.17	3
		25	25	20.09	19.93	20.12	3			12	13	19.98	20.17	20.02	3
	50	0	19.94	19.94	20.13	3	25			0	20.06	19.96	20.12	3	
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18615	18900	19185				Channel		18607	18900	19193	
		Frequency (MHz)		1851.5	1880.0	1908.5				Frequency (MHz)		1850.7	1880.0	1909.3	
3M	QPSK	1	0	23.06	23.01	23.21	0	1.4M	QPSK	1	0	23.05	23.02	23.10	0
		1	7	23.03	22.92	23.03	0			1	2	23.06	22.89	23.06	0
		1	14	23.04	23.13	23.11	0			1	5	23.08	23.07	23.09	0
		8	0	22.19	22.22	22.28	1			3	0	23.26	23.22	23.24	0
		8	3	22.15	22.13	22.22	1			3	1	23.13	23.10	23.19	0
		8	7	22.15	22.08	22.17	1			3	3	23.16	23.08	23.13	0
	15	0	22.22	22.05	22.07	1	6			0	22.08	22.06	22.19	1	
	16QAM	1	0	22.04	22.00	22.19	1		16QAM	1	0	22.08	21.96	22.03	1
		1	7	21.90	21.84	21.98	1			1	2	21.98	21.90	21.99	1
		1	14	22.01	21.99	22.11	1			1	5	22.10	21.94	22.17	1
		8	0	21.27	21.25	21.29	2			3	0	22.20	22.12	22.26	1
		8	3	21.05	21.11	21.03	2			3	1	22.04	22.06	22.09	1
		8	7	21.16	21.08	21.15	2			3	3	22.00	22.08	22.03	1
	15	0	21.04	21.09	21.04	2	6			0	21.19	21.02	21.27	2	
	64QAM	1	0	20.97	20.93	21.12	2		64QAM	1	0	21.00	20.88	20.95	2
		1	7	20.83	20.77	20.91	2			1	2	20.90	20.82	20.91	2
		1	14	20.94	20.92	21.04	2			1	5	21.02	20.86	21.09	2
		8	0	20.20	20.18	20.22	3			3	0	21.12	21.04	21.18	2
		8	3	19.98	20.04	19.96	3			3	1	20.96	20.98	21.01	2
		8	7	20.09	20.01	20.08	3			3	3	20.92	21.00	20.95	2
	15	0	19.97	20.02	19.97	3	6			0	20.11	19.94	20.19	3	

FCC SAR Test Report

LTE Band 2															
EUT with WLAN On															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18700	18900	19100				Channel		18675	18900	19125	
		Frequency (MHz)		1860.0	1880.0	1900.0				Frequency (MHz)		1857.5	1880.0	1902.5	
20M	QPSK	1	0	21.06	20.89	20.72	0	15M	QPSK	1	0	20.94	20.77	20.60	0
		1	50	20.80	20.63	20.46	0			1	37	20.68	20.51	20.34	0
		1	99	20.78	20.61	20.44	0			1	74	20.66	20.49	20.32	0
		50	0	19.95	19.78	19.61	1			36	0	19.83	19.66	19.49	1
		50	25	19.83	19.66	19.49	1			36	19	19.71	19.54	19.37	1
		50	50	19.80	19.63	19.46	1			36	39	19.68	19.51	19.34	1
		100	0	19.85	19.68	19.51	1			75	0	19.73	19.56	19.39	1
		1	0	20.01	19.84	19.67	1		16QAM	1	0	19.89	19.72	19.55	1
	16QAM	1	50	19.75	19.58	19.41	1			1	37	19.63	19.46	19.29	1
		1	99	19.73	19.56	19.39	1			1	74	19.61	19.44	19.27	1
		50	0	18.90	18.73	18.56	2			36	0	18.78	18.61	18.44	2
		50	25	18.78	18.61	18.44	2			36	19	18.66	18.49	18.32	2
		50	50	18.75	18.58	18.41	2			36	39	18.63	18.46	18.29	2
		100	0	18.80	18.63	18.46	2			75	0	18.68	18.51	18.34	2
		1	0	18.98	18.81	18.64	2		64QAM	1	0	18.86	18.69	18.52	2
	64QAM	1	50	18.72	18.55	18.38	2			1	37	18.60	18.43	18.26	2
		1	99	18.70	18.53	18.36	2			1	74	18.58	18.41	18.24	2
		50	0	17.87	17.70	17.53	3			36	0	17.75	17.58	17.41	3
		50	25	17.75	17.58	17.41	3			36	19	17.63	17.46	17.29	3
		50	50	17.72	17.55	17.38	3			36	39	17.60	17.43	17.26	3
		100	0	17.77	17.60	17.43	3			75	0	17.65	17.48	17.31	3
10M	QPSK	1	0	20.85	20.68	20.51	0	5M	QPSK	1	0	20.72	20.55	20.38	0
		1	24	20.59	20.42	20.25	0			1	12	20.46	20.29	20.12	0
		1	49	20.57	20.40	20.23	0			1	24	20.44	20.27	20.10	0
		25	0	19.74	19.57	19.40	1			12	0	19.61	19.44	19.27	1
		25	12	19.62	19.45	19.28	1			12	6	19.49	19.32	19.15	1
		25	25	19.59	19.42	19.25	1			12	13	19.46	19.29	19.12	1
		50	0	19.64	19.47	19.30	1			25	0	19.51	19.34	19.17	1
		1	0	19.80	19.63	19.46	1		16QAM	1	0	19.67	19.50	19.33	1
	16QAM	1	24	19.54	19.37	19.20	1			1	12	19.41	19.24	19.07	1
		1	49	19.52	19.35	19.18	1			1	24	19.39	19.22	19.05	1
		25	0	18.69	18.52	18.35	2			12	0	18.56	18.39	18.22	2
		25	12	18.57	18.40	18.23	2			12	6	18.44	18.27	18.10	2
		25	25	18.54	18.37	18.20	2			12	13	18.41	18.24	18.07	2
		50	0	18.59	18.42	18.25	2			25	0	18.46	18.29	18.12	2
		1	0	18.77	18.60	18.43	2		64QAM	1	0	18.64	18.47	18.30	2
	64QAM	1	24	18.51	18.34	18.17	2			1	12	18.38	18.21	18.04	2
		1	49	18.49	18.32	18.15	2			1	24	18.36	18.19	18.02	2
		25	0	17.66	17.49	17.32	3			12	0	17.53	17.36	17.19	3
		25	12	17.54	17.37	17.20	3			12	6	17.41	17.24	17.07	3
		25	25	17.51	17.34	17.17	3			12	13	17.38	17.21	17.04	3
		50	0	17.56	17.39	17.22	3			25	0	17.43	17.26	17.09	3
3M	QPSK	1	0	20.63	20.46	20.29	0	1.4M	QPSK	1	0	20.52	20.35	20.18	0
		1	7	20.37	20.20	20.03	0			1	2	20.26	20.09	19.92	0
		1	14	20.35	20.18	20.01	0			1	5	20.24	20.07	19.90	0
		8	0	19.52	19.35	19.18	1			3	0	20.15	19.98	19.81	0
		8	3	19.40	19.23	19.06	1			3	1	20.03	19.86	19.69	0
		8	7	19.37	19.20	19.03	1			3	3	20.00	19.83	19.66	0
		15	0	19.42	19.25	19.08	1			6	0	19.31	19.14	18.97	1
		1	0	19.58	19.41	19.24	1		16QAM	1	0	19.47	19.30	19.13	1
	16QAM	1	7	19.32	19.15	18.98	1			1	2	19.21	19.04	18.87	1
		1	14	19.30	19.13	18.96	1			1	5	19.19	19.02	18.85	1
		8	0	18.47	18.30	18.13	2			3	0	19.10	18.93	18.76	1
		8	3	18.35	18.18	18.01	2			3	1	18.98	18.81	18.64	1
		8	7	18.32	18.15	17.98	2			3	3	18.95	18.78	18.61	1
		15	0	18.37	18.20	18.03	2			6	0	18.26	18.09	17.92	2
		1	0	18.55	18.38	18.21	2		64QAM	1	0	18.44	18.27	18.10	2
	64QAM	1	7	18.29	18.12	17.95	2			1	2	18.18	18.01	17.84	2
		1	14	18.27	18.10	17.93	2			1	5	18.16	17.99	17.82	2
		8	0	17.44	17.27	17.10	3			3	0	18.07	17.90	17.73	2
		8	3	17.32	17.15	16.98	3			3	1	17.95	17.78	17.61	2
		8	7	17.29	17.12	16.95	3			3	3	17.92	17.75	17.58	2
		15	0	17.34	17.17	17.00	3			6	0	17.23	17.06	16.89	3

FCC SAR Test Report

LTE Band 4															
EUT with WLAN Off															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20050	20175	20300				Channel		20025	20175	20325	
		Frequency (MHz)		1720.0	1732.5	1745.0				Frequency (MHz)		1717.5	1732.5	1747.5	
20M	QPSK	1	0	24.57	24.59	24.64	0	15M	QPSK	1	0	24.44	24.46	24.51	0
		1	50	24.41	24.43	24.48	0			1	37	24.28	24.30	24.35	0
		1	99	24.39	24.41	24.46	0			1	74	24.26	24.28	24.33	0
		50	0	23.56	23.58	23.63	1			36	0	23.43	23.45	23.50	1
		50	25	23.47	23.49	23.54	1			36	19	23.34	23.36	23.41	1
		50	50	23.42	23.44	23.49	1			36	39	23.29	23.31	23.36	1
		100	0	23.49	23.51	23.56	1			75	0	23.36	23.38	23.43	1
		1	0	23.51	23.53	23.58	1		16QAM	1	0	23.38	23.40	23.45	1
	16QAM	1	50	23.35	23.37	23.42	1			1	37	23.22	23.24	23.29	1
		1	99	23.33	23.35	23.40	1			1	74	23.20	23.22	23.27	1
		50	0	22.50	22.52	22.57	2			36	0	22.37	22.39	22.44	2
		50	25	22.41	22.43	22.48	2			36	19	22.28	22.30	22.35	2
		50	50	22.36	22.38	22.43	2			36	39	22.23	22.25	22.30	2
		100	0	22.43	22.45	22.50	2			75	0	22.30	22.32	22.37	2
		1	0	22.49	22.51	22.56	2		64QAM	1	0	22.36	22.38	22.43	2
	64QAM	1	50	22.33	22.35	22.40	2			1	37	22.20	22.22	22.27	2
		1	99	22.31	22.33	22.38	2			1	74	22.18	22.20	22.25	2
		50	0	21.48	21.50	21.55	3			36	0	21.35	21.37	21.42	3
		50	25	21.39	21.41	21.46	3			36	19	21.26	21.28	21.33	3
		50	50	21.34	21.36	21.41	3			36	39	21.21	21.23	21.28	3
		100	0	21.41	21.43	21.48	3			75	0	21.28	21.30	21.35	3
10M	QPSK	1	0	24.35	24.37	24.42	0	5M	QPSK	1	0	24.21	24.23	24.28	0
		1	24	24.19	24.21	24.26	0			1	12	24.05	24.07	24.12	0
		1	49	24.17	24.19	24.24	0			1	24	24.03	24.05	24.10	0
		25	0	23.34	23.36	23.41	1			12	0	23.20	23.22	23.27	1
		25	12	23.25	23.27	23.32	1			12	6	23.11	23.13	23.18	1
		25	25	23.20	23.22	23.27	1			12	13	23.06	23.08	23.13	1
		50	0	23.27	23.29	23.34	1			25	0	23.13	23.15	23.20	1
		1	0	23.29	23.31	23.36	1		16QAM	1	0	23.15	23.17	23.22	1
	16QAM	1	24	23.13	23.15	23.20	1			1	12	22.99	23.01	23.06	1
		1	49	23.11	23.13	23.18	1			1	24	22.97	22.99	23.04	1
		25	0	22.28	22.30	22.35	2			12	0	22.14	22.16	22.21	2
		25	12	22.19	22.21	22.26	2			12	6	22.05	22.07	22.12	2
		25	25	22.14	22.16	22.21	2			12	13	22.00	22.02	22.07	2
		50	0	22.21	22.23	22.28	2			25	0	22.07	22.09	22.14	2
		1	0	22.27	22.29	22.34	2		64QAM	1	0	22.13	22.15	22.20	2
	64QAM	1	24	22.11	22.13	22.18	2			1	12	21.97	21.99	22.04	2
		1	49	22.09	22.11	22.16	2			1	24	21.95	21.97	22.02	2
		25	0	21.26	21.28	21.33	3			12	0	21.12	21.14	21.19	3
		25	12	21.17	21.19	21.24	3			12	6	21.03	21.05	21.10	3
		25	25	21.12	21.14	21.19	3			12	13	20.98	21.00	21.05	3
		50	0	21.19	21.21	21.26	3			25	0	21.05	21.07	21.12	3
3M	QPSK	1	0	24.13	24.15	24.20	0	1.4M	QPSK	1	0	24.02	24.04	24.09	0
		1	7	23.97	23.99	24.04	0			1	2	23.86	23.88	23.93	0
		1	14	23.95	23.97	24.02	0			1	5	23.84	23.86	23.91	0
		8	0	23.12	23.14	23.19	1			3	0	23.73	23.75	23.80	0
		8	3	23.03	23.05	23.10	1			3	1	23.64	23.66	23.71	0
		8	7	22.98	23.00	23.05	1			3	3	23.59	23.61	23.66	0
		15	0	23.05	23.07	23.12	1			6	0	22.94	22.96	23.01	1
		1	0	23.07	23.09	23.14	1		16QAM	1	0	22.96	22.98	23.03	1
	16QAM	1	7	22.91	22.93	22.98	1			1	2	22.80	22.82	22.87	1
		1	14	22.89	22.91	22.96	1			1	5	22.78	22.80	22.85	1
		8	0	22.06	22.08	22.13	2			3	0	22.67	22.69	22.74	1
		8	3	21.97	21.99	22.04	2			3	1	22.58	22.60	22.65	1
		8	7	21.92	21.94	21.99	2			3	3	22.53	22.55	22.60	1
		15	0	21.99	22.01	22.06	2			6	0	21.88	21.90	21.95	2
		1	0	22.05	22.07	22.12	2		64QAM	1	0	21.94	21.96	22.01	2
	64QAM	1	7	21.89	21.91	21.96	2			1	2	21.78	21.80	21.85	2
		1	14	21.87	21.89	21.94	2			1	5	21.76	21.78	21.83	2
		8	0	21.04	21.06	21.11	3			3	0	21.65	21.67	21.72	2
		8	3	20.95	20.97	21.02	3			3	1	21.56	21.58	21.63	2
		8	7	20.90	20.92	20.97	3			3	3	21.51	21.53	21.58	2
		15	0	20.97	20.99	21.04	3			6	0	20.86	20.88	20.93	3

FCC SAR Test Report

LTE Band 4															
EUT with WLAN On															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20050	20175	20300				Channel		20025	20175	20325	
		Frequency (MHz)		1720.0	1732.5	1745.0				Frequency (MHz)		1717.5	1732.5	1747.5	
20M	QPSK	1	0	22.66	22.68	22.74	0	15M	QPSK	1	0	22.57	22.59	22.65	0
		1	50	22.53	22.55	22.61	0			1	37	22.44	22.46	22.52	0
		1	99	22.49	22.51	22.57	0			1	74	22.40	22.42	22.48	0
		50	0	21.66	21.68	21.74	1			36	0	21.57	21.59	21.65	1
		50	25	21.61	21.63	21.69	1			36	19	21.52	21.54	21.60	1
		50	50	21.53	21.55	21.61	1			36	39	21.44	21.46	21.52	1
		100	0	21.60	21.62	21.68	1			75	0	21.51	21.53	21.59	1
		1	0	21.62	21.64	21.70	1		16QAM	1	0	21.53	21.55	21.61	1
	16QAM	1	50	21.49	21.51	21.57	1			1	37	21.40	21.42	21.48	1
		1	99	21.45	21.47	21.53	1			1	74	21.36	21.38	21.44	1
		50	0	20.62	20.64	20.70	2			36	0	20.53	20.55	20.61	2
		50	25	20.57	20.59	20.65	2			36	19	20.48	20.50	20.56	2
		50	50	20.49	20.51	20.57	2			36	39	20.40	20.42	20.48	2
		100	0	20.56	20.58	20.64	2			75	0	20.47	20.49	20.55	2
		1	0	20.56	20.58	20.64	2		64QAM	1	0	20.47	20.49	20.55	2
	64QAM	1	50	20.43	20.45	20.51	2			1	37	20.34	20.36	20.42	2
		1	99	20.39	20.41	20.47	2			1	74	20.30	20.32	20.38	2
		50	0	19.56	19.58	19.64	3			36	0	19.47	19.49	19.55	3
		50	25	19.51	19.53	19.59	3			36	19	19.42	19.44	19.50	3
		50	50	19.43	19.45	19.51	3			36	39	19.34	19.36	19.42	3
		100	0	19.50	19.52	19.58	3			75	0	19.41	19.43	19.49	3
		1	0	19.50	19.52	19.58	3			1	0	19.41	19.43	19.49	3
10M	QPSK	1	0	22.43	22.45	22.51	0	5M	QPSK	1	0	22.31	22.33	22.39	0
		1	24	22.30	22.32	22.38	0			1	12	22.18	22.20	22.26	0
		1	49	22.26	22.28	22.34	0			1	24	22.14	22.16	22.22	0
		25	0	21.43	21.45	21.51	1			12	0	21.31	21.33	21.39	1
		25	12	21.38	21.40	21.46	1			12	6	21.26	21.28	21.34	1
		25	25	21.30	21.32	21.38	1			12	13	21.18	21.20	21.26	1
		50	0	21.37	21.39	21.45	1			25	0	21.25	21.27	21.33	1
		1	0	21.39	21.41	21.47	1		16QAM	1	0	21.27	21.29	21.35	1
	16QAM	1	24	21.26	21.28	21.34	1			1	12	21.14	21.16	21.22	1
		1	49	21.22	21.24	21.30	1			1	24	21.10	21.12	21.18	1
		25	0	20.39	20.41	20.47	2			12	0	20.27	20.29	20.35	2
		25	12	20.34	20.36	20.42	2			12	6	20.22	20.24	20.30	2
		25	25	20.26	20.28	20.34	2			12	13	20.14	20.16	20.22	2
		50	0	20.33	20.35	20.41	2			25	0	20.21	20.23	20.29	2
		1	0	20.33	20.35	20.41	2		64QAM	1	0	20.21	20.23	20.29	2
	64QAM	1	24	20.20	20.22	20.28	2			1	12	20.08	20.10	20.16	2
		1	49	20.16	20.18	20.24	2			1	24	20.04	20.06	20.12	2
		25	0	19.33	19.35	19.41	3			12	0	19.21	19.23	19.29	3
		25	12	19.28	19.30	19.36	3			12	6	19.16	19.18	19.24	3
		25	25	19.20	19.22	19.28	3			12	13	19.08	19.10	19.16	3
		50	0	19.27	19.29	19.35	3			25	0	19.15	19.17	19.23	3
		1	0	19.27	19.29	19.35	3			1	0	19.15	19.17	19.23	3
3M	QPSK	1	0	22.23	22.25	22.31	0	1.4M	QPSK	1	0	22.12	22.14	22.20	0
		1	7	22.10	22.12	22.18	0			1	2	21.99	22.01	22.07	0
		1	14	22.06	22.08	22.14	0			1	5	21.95	21.97	22.03	0
		8	0	21.23	21.25	21.31	1			3	0	21.87	21.89	21.95	0
		8	3	21.18	21.20	21.26	1			3	1	21.82	21.84	21.90	0
		8	7	21.10	21.12	21.18	1			3	3	21.74	21.76	21.82	0
		15	0	21.17	21.19	21.25	1			6	0	21.06	21.08	21.14	1
		1	0	21.19	21.21	21.27	1		16QAM	1	0	21.08	21.10	21.16	1
	16QAM	1	7	21.06	21.08	21.14	1			1	2	20.95	20.97	21.03	1
		1	14	21.02	21.04	21.10	1			1	5	20.91	20.93	20.99	1
		8	0	20.19	20.21	20.27	2			3	0	20.83	20.85	20.91	1
		8	3	20.14	20.16	20.22	2			3	1	20.78	20.80	20.86	1
		8	7	20.06	20.08	20.14	2			3	3	20.70	20.72	20.78	1
		15	0	20.13	20.15	20.21	2			6	0	20.02	20.04	20.10	2
		1	0	20.13	20.15	20.21	2		64QAM	1	0	20.02	20.04	20.10	2
	64QAM	1	7	20.00	20.02	20.08	2			1	2	19.89	19.91	19.97	2
		1	14	19.96	19.98	20.04	2			1	5	19.85	19.87	19.93	2
		8	0	19.13	19.15	19.21	3			3	0	19.77	19.79	19.85	2
		8	3	19.08	19.10	19.16	3			3	1	19.72	19.74	19.80	2
		8	7	19.00	19.02	19.08	3			3	3	19.64	19.66	19.72	2
		15	0	19.07	19.09	19.15	3			6	0	18.96	18.98	19.04	3
		1	0	19.07	19.09	19.15	3			1	0	18.96	18.98	19.04	3

FCC SAR Test Report

LTE Band 5															
EUT with WLAN Off															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20450	20525	20600				Channel		20425	20525	20625	
		Frequency (MHz)		829.0	836.5	844.0				Frequency (MHz)		826.5	836.5	846.5	
10M	QPSK	1	0	22.96	22.98	23.24	0	5M	QPSK	1	0	22.83	22.85	23.11	0
		1	24	23.12	23.14	23.40	0			1	12	22.99	23.01	23.27	0
		1	49	23.23	23.25	23.51	0			1	24	23.10	23.12	23.38	0
		25	0	22.07	22.09	22.35	1			12	0	21.94	21.96	22.22	1
		25	12	22.17	22.19	22.45	1			12	6	22.04	22.06	22.32	1
		25	25	22.22	22.24	22.50	1			12	13	22.09	22.11	22.37	1
		50	0	22.15	22.17	22.43	1			25	0	22.02	22.04	22.30	1
		1	0	21.91	21.93	22.19	1		16QAM	1	0	21.78	21.80	22.06	1
	16QAM	1	24	22.07	22.09	22.35	1			1	12	21.94	21.96	22.22	1
		1	49	22.18	22.20	22.46	1			1	24	22.05	22.07	22.33	1
		25	0	21.02	21.04	21.30	2			12	0	20.89	20.91	21.17	2
		25	12	21.12	21.14	21.40	2			12	6	20.99	21.01	21.27	2
		25	25	21.17	21.19	21.45	2			12	13	21.04	21.06	21.32	2
		50	0	21.10	21.12	21.38	2			25	0	20.97	20.99	21.25	2
	64QAM	1	0	20.90	20.92	21.18	2		64QAM	1	0	20.77	20.79	21.05	2
		1	24	21.06	21.08	21.34	2			1	12	20.93	20.95	21.21	2
		1	49	21.17	21.19	21.45	2			1	24	21.04	21.06	21.32	2
		25	0	20.01	20.03	20.29	3			12	0	19.88	19.90	20.16	3
		25	12	20.11	20.13	20.39	3			12	6	19.98	20.00	20.26	3
		25	25	20.16	20.18	20.44	3			12	13	20.03	20.05	20.31	3
		50	0	20.09	20.11	20.37	3			25	0	19.96	19.98	20.24	3
		1	0	20.90	20.92	21.18	2			1	0	20.77	20.79	21.05	2
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20415	20525	20635				Channel		20407	20525	20643	
		Frequency (MHz)		825.5	836.5	847.5				Frequency (MHz)		824.7	836.5	848.3	
3M	QPSK	1	0	22.72	22.74	23.00	0	1.4M	QPSK	1	0	22.63	22.65	22.91	0
		1	7	22.88	22.90	23.16	0			1	2	22.79	22.81	23.07	0
		1	14	22.99	23.01	23.27	0			1	5	22.90	22.92	23.18	0
		8	0	21.83	21.85	22.11	1			3	0	22.46	22.48	22.74	0
		8	3	21.93	21.95	22.21	1			3	1	22.56	22.58	22.84	0
		8	7	21.98	22.00	22.26	1			3	3	22.61	22.63	22.89	0
		15	0	21.91	21.93	22.19	1			6	0	21.82	21.84	22.10	1
		1	0	21.67	21.69	21.95	1		16QAM	1	0	21.58	21.60	21.86	1
	16QAM	1	7	21.83	21.85	22.11	1			1	2	21.74	21.76	22.02	1
		1	14	21.94	21.96	22.22	1			1	5	21.85	21.87	22.13	1
		8	0	20.78	20.80	21.06	2			3	0	21.41	21.43	21.69	1
		8	3	20.88	20.90	21.16	2			3	1	21.51	21.53	21.79	1
		8	7	20.93	20.95	21.21	2			3	3	21.56	21.58	21.84	1
		15	0	20.86	20.88	21.14	2			6	0	20.77	20.79	21.05	2
	64QAM	1	0	20.66	20.68	20.94	2		64QAM	1	0	20.57	20.59	20.85	2
		1	7	20.82	20.84	21.10	2			1	2	20.73	20.75	21.01	2
		1	14	20.93	20.95	21.21	2			1	5	20.84	20.86	21.12	2
		8	0	19.77	19.79	20.05	3			3	0	20.40	20.42	20.68	2
		8	3	19.87	19.89	20.15	3			3	1	20.50	20.52	20.78	2
		8	7	19.92	19.94	20.20	3			3	3	20.55	20.57	20.83	2
		15	0	19.85	19.87	20.13	3			6	0	19.76	19.78	20.04	3

FCC SAR Test Report

LTE Band 5															
EUT with WLAN On															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20450	20525	20600				Channel		20425	20525	20625	
		Frequency (MHz)		829.0	836.5	844.0				Frequency (MHz)		826.5	836.5	846.5	
10M	QPSK	1	0	20.25	20.28	20.56	0	5M	QPSK	1	0	20.12	20.15	20.43	0
		1	24	20.43	20.46	20.74	0			1	12	20.30	20.33	20.61	0
		1	49	20.54	20.57	20.85	0			1	24	20.41	20.44	20.72	0
		25	0	19.38	19.41	19.69	1			12	0	19.25	19.28	19.56	1
		25	12	19.49	19.52	19.80	1			12	6	19.36	19.39	19.67	1
		25	25	19.52	19.55	19.83	1			12	13	19.39	19.42	19.70	1
		50	0	19.41	19.44	19.72	1			25	0	19.28	19.31	19.59	1
		1	0	19.19	19.22	19.50	1		16QAM	1	0	19.06	19.09	19.37	1
	16QAM	1	24	19.37	19.40	19.68	1			1	12	19.24	19.27	19.55	1
		1	49	19.48	19.51	19.79	1			1	24	19.35	19.38	19.66	1
		25	0	18.32	18.35	18.63	2			12	0	18.19	18.22	18.50	2
		25	12	18.43	18.46	18.74	2			12	6	18.30	18.33	18.61	2
		25	25	18.46	18.49	18.77	2			12	13	18.33	18.36	18.64	2
		50	0	18.35	18.38	18.66	2			25	0	18.22	18.25	18.53	2
	64QAM	1	0	18.16	18.19	18.47	2		64QAM	1	0	18.03	18.06	18.34	2
		1	24	18.34	18.37	18.65	2			1	12	18.21	18.24	18.52	2
		1	49	18.45	18.48	18.76	2			1	24	18.32	18.35	18.63	2
		25	0	17.29	17.32	17.60	3			12	0	17.16	17.19	17.47	3
		25	12	17.40	17.43	17.71	3			12	6	17.27	17.30	17.58	3
		25	25	17.43	17.46	17.74	3			12	13	17.30	17.33	17.61	3
		50	0	17.32	17.35	17.63	3			25	0	17.19	17.22	17.50	3
		1	0	18.16	18.19	18.47	2			25	0	17.19	17.22	17.50	3
3M	QPSK	1	0	20.03	20.06	20.34	0	1.4M	QPSK	1	0	19.91	19.94	20.22	0
		1	7	20.21	20.24	20.52	0			1	2	20.09	20.12	20.40	0
		1	14	20.32	20.35	20.63	0			1	5	20.20	20.23	20.51	0
		8	0	19.16	19.19	19.47	1			3	0	19.81	19.84	20.12	0
		8	3	19.27	19.30	19.58	1			3	1	19.92	19.95	20.23	0
		8	7	19.30	19.33	19.61	1			3	3	19.95	19.98	20.26	0
		15	0	19.19	19.22	19.50	1			6	0	19.07	19.10	19.38	1
		1	0	18.97	19.00	19.28	1		16QAM	1	0	18.85	18.88	19.16	1
	16QAM	1	7	19.15	19.18	19.46	1			1	2	19.03	19.06	19.34	1
		1	14	19.26	19.29	19.57	1			1	5	19.14	19.17	19.45	1
		8	0	18.10	18.13	18.41	2			3	0	18.75	18.78	19.06	1
		8	3	18.21	18.24	18.52	2			3	1	18.86	18.89	19.17	1
		8	7	18.24	18.27	18.55	2			3	3	18.89	18.92	19.20	1
		15	0	18.13	18.16	18.44	2			6	0	18.01	18.04	18.32	2
	64QAM	1	0	17.94	17.97	18.25	2		64QAM	1	0	17.82	17.85	18.13	2
		1	7	18.12	18.15	18.43	2			1	2	18.00	18.03	18.31	2
		1	14	18.23	18.26	18.54	2			1	5	18.11	18.14	18.42	2
		8	0	17.07	17.10	17.38	3			3	0	17.72	17.75	18.03	2
		8	3	17.18	17.21	17.49	3			3	1	17.83	17.86	18.14	2
		8	7	17.21	17.24	17.52	3			3	3	17.86	17.89	18.17	2
		15	0	17.10	17.13	17.41	3			6	0	16.98	17.01	17.29	3
		1	0	17.94	17.97	18.25	2			6	0	16.98	17.01	17.29	3

FCC SAR Test Report

LTE Band 7															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20850	21100	21350				Channel		20825	21100	21375	
		Frequency (MHz)		2510.0	2535.0	2560.0				Frequency (MHz)		2507.5	2535.0	2562.5	
20M	QPSK	1	0	22.88	22.91	23.11	0	15M	QPSK	1	0	22.75	22.78	22.98	0
		1	50	23.12	23.15	23.35	0			1	37	22.99	23.02	23.22	0
		1	99	23.18	23.21	23.41	0			1	74	23.05	23.08	23.28	0
		50	0	22.11	22.14	22.34	1			36	0	21.98	22.01	22.21	1
		50	25	22.18	22.21	22.41	1			36	19	22.05	22.08	22.28	1
		50	50	22.22	22.25	22.45	1			36	39	22.09	22.12	22.32	1
		100	0	22.13	22.16	22.36	1			75	0	22.00	22.03	22.23	1
		1	0	21.86	21.89	22.09	1		16QAM	1	0	21.73	21.76	21.96	1
	16QAM	1	50	22.10	22.13	22.33	1			1	37	21.97	22.00	22.20	1
		1	99	22.16	22.19	22.39	1			1	74	22.03	22.06	22.26	1
		50	0	21.09	21.12	21.32	2			36	0	20.96	20.99	21.19	2
		50	25	21.16	21.19	21.39	2			36	19	21.03	21.06	21.26	2
		50	50	21.20	21.23	21.43	2			36	39	21.07	21.10	21.30	2
		100	0	21.11	21.14	21.34	2			75	0	20.98	21.01	21.21	2
		1	0	20.83	20.86	21.06	2		64QAM	1	0	20.70	20.73	20.93	2
	64QAM	1	50	21.07	21.10	21.30	2			1	37	20.94	20.97	21.17	2
		1	99	21.13	21.16	21.36	2			1	74	21.00	21.03	21.23	2
		50	0	20.06	20.09	20.29	3			36	0	19.93	19.96	20.16	3
		50	25	20.13	20.16	20.36	3			36	19	20.00	20.03	20.23	3
		50	50	20.17	20.20	20.40	3			36	39	20.04	20.07	20.27	3
		100	0	20.08	20.11	20.31	3			75	0	19.95	19.98	20.18	3
		1	0	22.64	22.67	22.87	0	10M	QPSK	1	0	22.50	22.53	22.73	0
10M	QPSK	1	24	22.88	22.91	23.11	0			1	12	22.74	22.77	22.97	0
		1	49	22.94	22.97	23.17	0			1	24	22.80	22.83	23.03	0
		25	0	21.87	21.90	22.10	1			12	0	21.73	21.76	21.96	1
		25	12	21.94	21.97	22.17	1			12	6	21.80	21.83	22.03	1
		25	25	21.98	22.01	22.21	1			12	13	21.84	21.87	22.07	1
		50	0	21.89	21.92	22.12	1			25	0	21.75	21.78	21.98	1
	16QAM	1	0	21.62	21.65	21.85	1		16QAM	1	0	21.48	21.51	21.71	1
		1	24	21.86	21.89	22.09	1			1	12	21.72	21.75	21.95	1
		1	49	21.92	21.95	22.15	1			1	24	21.78	21.81	22.01	1
		25	0	20.85	20.88	21.08	2			12	0	20.71	20.74	20.94	2
		25	12	20.92	20.95	21.15	2			12	6	20.78	20.81	21.01	2
		25	25	20.96	20.99	21.19	2			12	13	20.82	20.85	21.05	2
		50	0	20.87	20.90	21.10	2			25	0	20.73	20.76	20.96	2
		1	0	20.59	20.62	20.82	2		64QAM	1	0	20.45	20.48	20.68	2
	64QAM	1	24	20.83	20.86	21.06	2			1	12	20.69	20.72	20.92	2
		1	49	20.89	20.92	21.12	2			1	24	20.75	20.78	20.98	2
		25	0	19.82	19.85	20.05	3			12	0	19.68	19.71	19.91	3
		25	12	19.89	19.92	20.12	3			12	6	19.75	19.78	19.98	3
		25	25	19.93	19.96	20.16	3			12	13	19.79	19.82	20.02	3
		50	0	19.84	19.87	20.07	3			25	0	19.70	19.73	19.93	3

FCC SAR Test Report

LTE Band 12															
EUT with WLAN Off															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23060	23095	23130				Channel		23035	23095	23155	
		Frequency (MHz)		704.0	707.5	711.0				Frequency (MHz)		701.5	707.5	713.5	
10M	QPSK	1	0	23.94	24.02	24.09	0	5M	QPSK	1	0	23.82	23.90	23.97	0
		1	24	24.06	24.14	24.21	0			1	12	23.94	24.02	24.09	0
		1	49	23.98	24.06	24.13	0			1	24	23.86	23.94	24.01	0
		25	0	23.03	23.11	23.18	1			12	0	22.91	22.99	23.06	1
		25	12	23.16	23.24	23.31	1			12	6	23.04	23.12	23.19	1
		25	25	23.11	23.19	23.26	1			12	13	22.99	23.07	23.14	1
		50	0	23.13	23.21	23.28	1			25	0	23.01	23.09	23.16	1
		1	0	22.88	22.96	23.03	1		16QAM	1	0	22.76	22.84	22.91	1
	16QAM	1	24	23.00	23.08	23.15	1			1	12	22.88	22.96	23.03	1
		1	49	22.92	23.00	23.07	1			1	24	22.80	22.88	22.95	1
		25	0	21.97	22.05	22.12	2			12	0	21.85	21.93	22.00	2
		25	12	22.10	22.18	22.25	2			12	6	21.98	22.06	22.13	2
		25	25	22.05	22.13	22.20	2			12	13	21.93	22.01	22.08	2
		50	0	22.07	22.15	22.22	2			25	0	21.95	22.03	22.10	2
	64QAM	1	0	21.87	21.95	22.02	2		64QAM	1	0	21.75	21.83	21.90	2
		1	24	21.99	22.07	22.14	2			1	12	21.87	21.95	22.02	2
		1	49	21.91	21.99	22.06	2			1	24	21.79	21.87	21.94	2
		25	0	20.96	21.04	21.11	3			12	0	20.84	20.92	20.99	3
		25	12	21.09	21.17	21.24	3			12	6	20.97	21.05	21.12	3
		25	25	21.04	21.12	21.19	3			12	13	20.92	21.00	21.07	3
		50	0	21.06	21.14	21.21	3			25	0	20.94	21.02	21.09	3
		1	0	21.87	21.95	22.02	2			25	0	20.94	21.02	21.09	3
3M	QPSK	1	0	23.73	23.81	23.88	0	1.4M	QPSK	1	0	23.60	23.68	23.75	0
		1	7	23.85	23.93	24.00	0			1	2	23.72	23.80	23.87	0
		1	14	23.77	23.85	23.92	0			1	5	23.64	23.72	23.79	0
		8	0	22.82	22.90	22.97	1			3	0	23.46	23.54	23.61	0
		8	3	22.95	23.03	23.10	1			3	1	23.59	23.67	23.74	0
		8	7	22.90	22.98	23.05	1			3	3	23.54	23.62	23.69	0
		15	0	22.92	23.00	23.07	1			6	0	22.79	22.87	22.94	1
		1	0	22.67	22.75	22.82	1		16QAM	1	0	22.54	22.62	22.69	1
	16QAM	1	7	22.79	22.87	22.94	1			1	2	22.66	22.74	22.81	1
		1	14	22.71	22.79	22.86	1			1	5	22.58	22.66	22.73	1
		8	0	21.76	21.84	21.91	2			3	0	22.40	22.48	22.55	1
		8	3	21.89	21.97	22.04	2			3	1	22.53	22.61	22.68	1
		8	7	21.84	21.92	21.99	2			3	3	22.48	22.56	22.63	1
		15	0	21.86	21.94	22.01	2			6	0	21.73	21.81	21.88	2
	64QAM	1	0	21.66	21.74	21.81	2		64QAM	1	0	21.53	21.61	21.68	2
		1	7	21.78	21.86	21.93	2			1	2	21.65	21.73	21.80	2
		1	14	21.70	21.78	21.85	2			1	5	21.57	21.65	21.72	2
		8	0	20.75	20.83	20.90	3			3	0	21.39	21.47	21.54	2
		8	3	20.88	20.96	21.03	3			3	1	21.52	21.60	21.67	2
		8	7	20.83	20.91	20.98	3			3	3	21.47	21.55	21.62	2
		15	0	20.85	20.93	21.00	3			6	0	20.72	20.80	20.87	3
		1	0	21.66	21.74	21.81	2			6	0	20.72	20.80	20.87	3

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LTE Band 12															
EUT with WLAN On															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23060	23095	23130				Channel		23035	23095	23155	
		Frequency (MHz)		704.0	707.5	711.0				Frequency (MHz)		701.5	707.5	713.5	
10M	QPSK	1	0	22.54	22.65	22.69	0	5M	QPSK	1	0	22.43	22.54	22.58	0
		1	24	22.65	22.76	22.80	0			1	12	22.54	22.65	22.69	0
		1	49	22.57	22.68	22.72	0			1	24	22.46	22.57	22.61	0
		25	0	21.61	21.72	21.76	1			12	0	21.50	21.61	21.65	1
		25	12	21.74	21.85	21.89	1			12	6	21.63	21.74	21.78	1
		25	25	21.71	21.82	21.86	1			12	13	21.60	21.71	21.75	1
		50	0	21.73	21.84	21.88	1			25	0	21.62	21.73	21.77	1
		1	0	21.49	21.60	21.64	1		16QAM	1	0	21.38	21.49	21.53	1
	16QAM	1	24	21.60	21.71	21.75	1			1	12	21.49	21.60	21.64	1
		1	49	21.52	21.63	21.67	1			1	24	21.41	21.52	21.56	1
		25	0	20.56	20.67	20.71	2			12	0	20.45	20.56	20.60	2
		25	12	20.69	20.80	20.84	2			12	6	20.58	20.69	20.73	2
		25	25	20.66	20.77	20.81	2			12	13	20.55	20.66	20.70	2
		50	0	20.68	20.79	20.83	2			25	0	20.57	20.68	20.72	2
	64QAM	1	0	20.48	20.59	20.63	2		64QAM	1	0	20.37	20.48	20.52	2
		1	24	20.59	20.70	20.74	2			1	12	20.48	20.59	20.63	2
		1	49	20.51	20.62	20.66	2			1	24	20.40	20.51	20.55	2
		25	0	19.55	19.66	19.70	3			12	0	19.44	19.55	19.59	3
		25	12	19.68	19.79	19.83	3			12	6	19.57	19.68	19.72	3
		25	25	19.65	19.76	19.80	3			12	13	19.54	19.65	19.69	3
		50	0	19.67	19.78	19.82	3			25	0	19.56	19.67	19.71	3
		1	0	22.34	22.45	22.49	0	3M	QPSK	1	0	22.22	22.33	22.37	0
3M	QPSK	1	7	22.45	22.56	22.60	0			1	2	22.33	22.44	22.48	0
		1	14	22.37	22.48	22.52	0			1	5	22.25	22.36	22.40	0
		8	0	21.41	21.52	21.56	1			3	0	22.10	22.21	22.25	0
		8	3	21.54	21.65	21.69	1			3	1	22.23	22.34	22.38	0
		8	7	21.51	21.62	21.66	1			3	3	22.20	22.31	22.35	0
		15	0	21.53	21.64	21.68	1			6	0	21.41	21.52	21.56	1
	16QAM	1	0	21.29	21.40	21.44	1		16QAM	1	0	21.17	21.28	21.32	1
		1	7	21.40	21.51	21.55	1			1	2	21.28	21.39	21.43	1
		1	14	21.32	21.43	21.47	1			1	5	21.20	21.31	21.35	1
		8	0	20.36	20.47	20.51	2			3	0	21.05	21.16	21.20	1
		8	3	20.49	20.60	20.64	2			3	1	21.18	21.29	21.33	1
		8	7	20.46	20.57	20.61	2			3	3	21.15	21.26	21.30	1
		15	0	20.48	20.59	20.63	2			6	0	20.36	20.47	20.51	2
	64QAM	1	0	20.28	20.39	20.43	2		64QAM	1	0	20.16	20.27	20.31	2
		1	7	20.39	20.50	20.54	2			1	2	20.27	20.38	20.42	2
		1	14	20.31	20.42	20.46	2			1	5	20.19	20.30	20.34	2
		8	0	19.35	19.46	19.50	3			3	0	20.04	20.15	20.19	2
		8	3	19.48	19.59	19.63	3			3	1	20.17	20.28	20.32	2
		8	7	19.45	19.56	19.60	3			3	3	20.14	20.25	20.29	2
		15	0	19.47	19.58	19.62	3			6	0	19.35	19.46	19.50	3

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LTE Band 13																	
EUT with WLAN Off																	
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)		
		Channel			23230					Channel		23205	23230	23225			
		Frequency (MHz)			782.0					Frequency (MHz)		779.5	782.0	784.5			
10M	QPSK	1	0		23.95		0	5M	QPSK	1	0	23.88	23.82	23.71	0		
		1	24		23.87		0			1	12	23.80	23.74	23.63	0		
		1	49		23.63		0			1	24	23.56	23.50	23.39	0		
		25	0		22.98		1			12	0	22.91	22.85	22.74	1		
		25	12		22.91		1			12	6	22.84	22.78	22.67	1		
		25	25		22.79		1			12	13	22.72	22.66	22.55	1		
		50	0		22.89		1			25	0	22.82	22.76	22.65	1		
	16QAM	1	0		22.91		1		16QAM	1	0	22.84	22.78	22.67	1		
		1	24		22.83		1			1	12	22.76	22.70	22.59	1		
		1	49		22.59		1			1	24	22.52	22.46	22.35	1		
		25	0		21.94		2			12	0	21.87	21.81	21.70	2		
		25	12		21.87		2			12	6	21.80	21.74	21.63	2		
		25	25		21.75		2			12	13	21.68	21.62	21.51	2		
		50	0		21.85		2			25	0	21.78	21.72	21.61	2		
	64QAM	1	0		21.89		2		64QAM	1	0	21.82	21.76	21.65	2		
		1	24		21.81		2			1	12	21.74	21.68	21.57	2		
		1	49		21.57		2			1	24	21.50	21.44	21.33	2		
		25	0		20.92		3			12	0	20.85	20.79	20.68	3		
		25	12		20.85		3			12	6	20.78	20.72	20.61	3		
		25	25		20.73		3			12	13	20.66	20.60	20.49	3		
		50	0		20.83		3			25	0	20.76	20.70	20.59	3		
	EUT with WLAN On																
	BW	MCS Index	RB Size	RB Offset	Low	Mid	High		3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
			Channel			23230						Channel		23205	23230	23225	
Frequency (MHz)				782.0		Frequency (MHz)		779.5				782.0	784.5				
10M	QPSK	1	0		21.69		0	5M	QPSK	1	0	21.64	21.66	21.61	0		
		1	24		21.52		0			1	12	21.62	21.49	21.46	0		
		1	49		21.30		0			1	24	21.52	21.27	21.37	0		
		25	0		20.69		1			12	0	20.66	20.66	20.54	1		
		25	12		20.58		1			12	6	20.67	20.55	20.53	1		
		25	25		20.45		1			12	13	20.55	20.42	20.39	1		
		50	0		20.57		1			25	0	20.69	20.54	20.43	1		
	16QAM	1	0		20.67		1		16QAM	1	0	20.61	20.63	20.58	1		
		1	24		20.50		1			1	12	20.59	20.46	20.43	1		
		1	49		20.28		1			1	24	20.49	20.24	20.34	1		
		25	0		19.67		2			12	0	19.63	19.63	19.51	2		
		25	12		19.56		2			12	6	19.64	19.52	19.50	2		
		25	25		19.43		2			12	13	19.52	19.39	19.36	2		
		50	0		19.55		2			25	0	19.66	19.51	19.40	2		
	64QAM	1	0		19.65		2		64QAM	1	0	19.58	19.60	19.55	2		
		1	24		19.48		2			1	12	19.56	19.43	19.40	2		
		1	49		19.26		2			1	24	19.46	19.21	19.31	2		
		25	0		18.65		3			12	0	18.60	18.60	18.48	3		
		25	12		18.54		3			12	6	18.61	18.49	18.47	3		
		25	25		18.41		3			12	13	18.49	18.36	18.33	3		
		50	0		18.53		3			25	0	18.63	18.48	18.37	3		

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LTE Band 17																	
EUT with WLAN Off																	
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)		
		Channel		23780	23790	23800				Channel		23755	23790	23825			
		Frequency (MHz)		709.0	710.0	711.0				Frequency (MHz)		706.5	710.0	713.5			
10M	QPSK	1	0	24.05	24.03	24.11	0	5M	QPSK	1	0	23.92	23.90	23.98	0		
		1	24	24.15	24.13	24.21	0			1	12	24.02	24.00	24.08	0		
		1	49	24.06	24.04	24.12	0			1	24	23.93	23.91	23.99	0		
		25	0	23.20	23.18	23.26	1			12	0	23.07	23.05	23.13	1		
		25	12	23.23	23.21	23.29	1			12	6	23.10	23.08	23.16	1		
		25	25	23.18	23.16	23.24	1			12	13	23.05	23.03	23.11	1		
		50	0	23.19	23.17	23.25	1			25	0	23.06	23.04	23.12	1		
	16QAM	1	0	23.01	22.99	23.07	1		16QAM	1	0	22.88	22.86	22.94	1		
		1	24	23.11	23.09	23.17	1			1	12	22.98	22.96	23.04	1		
		1	49	23.02	23.00	23.08	1			1	24	22.89	22.87	22.95	1		
		25	0	22.16	22.14	22.22	2			12	0	22.03	22.01	22.09	2		
		25	12	22.19	22.17	22.25	2			12	6	22.06	22.04	22.12	2		
		25	25	22.14	22.12	22.20	2			12	13	22.01	21.99	22.07	2		
	64QAM	50	0	22.15	22.13	22.21	2		25	0	22.02	22.00	22.08	2			
		1	0	22.00	21.98	22.06	2		64QAM	1	0	21.87	21.85	21.93	2		
		1	24	22.10	22.08	22.16	2			1	12	21.97	21.95	22.03	2		
		1	49	22.01	21.99	22.07	2			1	24	21.88	21.86	21.94	2		
		25	0	21.15	21.13	21.21	3			12	0	21.02	21.00	21.08	3		
		25	12	21.18	21.16	21.24	3			12	6	21.05	21.03	21.11	3		
		25	25	21.13	21.11	21.19	3			12	13	21.00	20.98	21.06	3		
	50	0	21.14	21.12	21.20	3	25			0	21.01	20.99	21.07	3			
	EUT with WLAN On																
	BW	MCS Index	RB Size	RB Offset	Low	Mid	High		3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
			Channel		23780	23790	23800					Channel		23755	23790	23825	
Frequency (MHz)			709.0	710.0	711.0	Frequency (MHz)		706.5				710.0	713.5				
10M	QPSK	1	0	22.64	22.66	22.69	0	5M	QPSK	1	0	22.51	22.53	22.56	0		
		1	24	22.70	22.72	22.75	0			1	12	22.57	22.59	22.62	0		
		1	49	22.63	22.65	22.68	0			1	24	22.50	22.52	22.55	0		
		25	0	21.77	21.79	21.82	1			12	0	21.64	21.66	21.69	1		
		25	12	21.80	21.82	21.85	1			12	6	21.67	21.69	21.72	1		
		25	25	21.73	21.75	21.78	1			12	13	21.60	21.62	21.65	1		
		50	0	21.74	21.76	21.79	1			25	0	21.61	21.63	21.66	1		
	16QAM	1	0	21.57	21.59	21.62	1		16QAM	1	0	21.44	21.46	21.49	1		
		1	24	21.63	21.65	21.68	1			1	12	21.50	21.52	21.55	1		
		1	49	21.56	21.58	21.61	1			1	24	21.43	21.45	21.48	1		
		25	0	20.70	20.72	20.75	2			12	0	20.57	20.59	20.62	2		
		25	12	20.73	20.75	20.78	2			12	6	20.60	20.62	20.65	2		
		25	25	20.66	20.68	20.71	2			12	13	20.53	20.55	20.58	2		
	64QAM	50	0	20.67	20.69	20.72	2		25	0	20.54	20.56	20.59	2			
		1	0	20.56	20.58	20.61	2		64QAM	1	0	20.43	20.45	20.48	2		
		1	24	20.62	20.64	20.67	2			1	12	20.49	20.51	20.54	2		
		1	49	20.55	20.57	20.60	2			1	24	20.42	20.44	20.47	2		
		25	0	19.69	19.71	19.74	3			12	0	19.56	19.58	19.61	3		
		25	12	19.72	19.74	19.77	3			12	6	19.59	19.61	19.64	3		
		25	25	19.65	19.67	19.70	3			12	13	19.52	19.54	19.57	3		
	50	0	19.66	19.68	19.71	3	25			0	19.53	19.55	19.58	3			

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LTE Band 25															
EUT with WLAN Off															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26140	26365	26590				Channel		26115	26365	26615	
		Frequency (MHz)		1860.0	1882.5	1905.0				Frequency (MHz)		1857.5	1882.5	1907.5	
20M	QPSK	1	0	23.25	23.02	22.98	0	15M	QPSK	1	0	23.16	22.93	22.89	0
		1	50	23.12	22.89	22.85	0			1	37	23.03	22.80	22.76	0
		1	99	23.01	22.78	22.74	0			1	74	22.92	22.69	22.65	0
		50	0	22.30	22.07	22.03	1			36	0	22.21	21.98	21.94	1
		50	25	21.33	21.10	21.06	1			36	19	21.24	21.01	21.01	1
		50	50	22.11	21.88	21.84	1			36	39	22.02	21.79	21.75	1
		100	0	22.22	21.99	21.95	1			75	0	22.13	21.90	21.86	1
		1	0	22.19	21.96	21.92	1		16QAM	1	0	22.10	21.87	21.83	1
	16QAM	1	50	22.06	21.83	21.79	1			1	37	21.97	21.74	21.70	1
		1	99	21.95	21.72	21.68	1			1	74	21.86	21.63	21.59	1
		50	0	21.24	21.01	20.97	2			36	0	21.15	20.92	20.88	2
		50	25	20.27	20.04	20.01	2			36	19	20.18	20.05	20.01	2
		50	50	21.05	20.82	20.78	2			36	39	20.96	20.73	20.69	2
		100	0	21.16	20.93	20.89	2			75	0	21.07	20.84	20.80	2
		1	0	21.16	20.93	20.89	2		64QAM	1	0	21.07	20.84	20.80	2
	64QAM	1	50	21.03	20.80	20.76	2			1	37	20.94	20.71	20.67	2
		1	99	20.92	20.69	20.65	2			1	74	20.83	20.60	20.56	2
		50	0	20.21	19.98	19.94	3			36	0	20.12	19.89	19.85	3
		50	25	19.24	19.01	19.01	3			36	19	19.15	19.12	19.01	3
		50	50	20.02	19.79	19.75	3			36	39	19.93	19.70	19.66	3
		100	0	20.13	19.90	19.86	3			75	0	20.04	19.81	19.77	3
		1	0	20.13	19.90	19.86	3			1	0	20.04	19.81	19.77	3
10M	QPSK	1	0	23.03	22.80	22.76	0	5M	QPSK	1	0	22.95	22.72	22.68	0
		1	24	22.90	22.67	22.63	0			1	12	22.82	22.59	22.55	0
		1	49	22.79	22.56	22.52	0			1	24	22.71	22.48	22.44	0
		25	0	22.08	21.85	21.81	1			12	0	22.00	21.77	21.73	1
		25	12	21.11	21.08	21.04	1			12	6	21.23	21.10	21.06	1
		25	25	21.89	21.66	21.62	1			12	13	21.81	21.58	21.54	1
		50	0	22.00	21.77	21.73	1			25	0	21.92	21.69	21.65	1
		1	0	21.97	21.74	21.70	1		16QAM	1	0	21.89	21.66	21.62	1
	16QAM	1	24	21.84	21.61	21.57	1			1	12	21.76	21.53	21.49	1
		1	49	21.73	21.50	21.46	1			1	24	21.65	21.42	21.38	1
		25	0	21.02	20.79	20.75	2			12	0	20.94	20.71	20.67	2
		25	12	20.05	20.02	20.01	2			12	6	20.27	20.14	20.10	2
		25	25	20.83	20.60	20.56	2			12	13	20.75	20.52	20.48	2
		50	0	20.94	20.71	20.67	2			25	0	20.86	20.63	20.59	2
		1	0	20.94	20.71	20.67	2		64QAM	1	0	20.86	20.63	20.59	2
	64QAM	1	24	20.81	20.58	20.54	2			1	12	20.73	20.50	20.46	2
		1	49	20.70	20.47	20.43	2			1	24	20.62	20.39	20.35	2
		25	0	19.99	19.76	19.72	3			12	0	19.91	19.68	19.64	3
		25	12	19.12	19.09	19.05	3			12	6	19.34	19.11	19.17	3
		25	25	19.80	19.57	19.53	3			12	13	19.72	19.49	19.45	3
		50	0	19.91	19.68	19.64	3			25	0	19.83	19.60	19.56	3
		1	0	19.91	19.68	19.64	3			1	0	19.83	19.60	19.56	3
3M	QPSK	1	0	22.84	22.61	22.57	0	1.4M	QPSK	1	0	22.76	22.53	22.49	0
		1	7	22.71	22.48	22.44	0			1	2	22.63	22.40	22.36	0
		1	14	22.6	22.37	22.33	0			1	5	22.52	22.29	22.25	0
		8	0	21.89	21.66	21.62	1			3	0	22.50	22.27	22.23	0
		8	3	20.92	20.69	20.65	1			3	1	22.53	22.30	22.26	0
		8	7	21.7	21.47	21.43	1			3	3	22.31	22.08	22.04	0
		15	0	21.81	21.58	21.54	1			6	0	21.73	21.50	21.46	1
		1	0	21.78	21.55	21.51	1		16QAM	1	0	21.70	21.47	21.43	1
	16QAM	1	7	21.65	21.42	21.38	1			1	2	21.57	21.34	21.30	1
		1	14	21.54	21.31	21.27	1			1	5	21.46	21.23	21.19	1
		8	0	20.83	20.6	20.56	2			3	0	21.40	21.17	21.13	1
		8	3	19.86	19.63	19.59	2			3	1	21.43	21.20	21.16	1
		8	7	20.64	20.41	20.37	2			3	3	21.21	21.18	21.14	1
		15	0	20.75	20.52	20.48	2			6	0	20.67	20.44	20.40	2
		1	0	20.75	20.52	20.48	2		64QAM	1	0	20.67	20.44	20.40	2
	64QAM	1	7	20.62	20.39	20.35	2			1	2	20.54	20.31	20.27	2
		1	14	20.51	20.28	20.24	2			1	5	20.43	20.20	20.16	2
		8	0	19.80	19.57	19.53	3			3	0	20.37	20.14	20.10	2
		8	3	19.23	19.10	19.06	3			3	1	20.39	20.16	20.12	2
		8	7	19.61	19.38	19.34	3			3	3	20.18	20.15	20.11	2
		15	0	19.72	19.49	19.45	3			6	0	19.64	19.41	19.37	3
		1	0	19.72	19.49	19.45	3			1	0	19.64	19.41	19.37	3

FCC SAR Test Report

LTE Band 25															
EUT with WLAN On															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26140	26365	26590				Channel		26115	26365	26615	
		Frequency (MHz)		1860.0	1882.5	1905.0				Frequency (MHz)		1857.5	1882.5	1907.5	
20M	QPSK	1	0	20.96	20.76	20.67	0	15M	QPSK	1	0	20.82	20.62	20.53	0
		1	50	20.72	20.52	20.43	0			1	37	20.58	20.38	20.29	0
		1	99	20.63	20.43	20.34	0			1	74	20.49	20.29	20.20	0
		50	0	19.86	19.66	19.57	1			36	0	19.72	19.52	19.43	1
		50	25	19.81	19.61	19.52	1			36	19	19.67	19.47	19.38	1
		50	50	19.65	19.45	19.36	1			36	39	19.51	19.31	19.22	1
		100	0	19.79	19.59	19.50	1			75	0	19.65	19.45	19.36	1
		1	0	19.91	19.71	19.62	1		16QAM	1	0	19.77	19.57	19.48	1
	16QAM	1	50	19.67	19.47	19.38	1			1	37	19.53	19.33	19.24	1
		1	99	19.58	19.38	19.29	1			1	74	19.44	19.24	19.15	1
		50	0	18.81	18.61	18.52	2			36	0	18.67	18.47	18.38	2
		50	25	18.76	18.56	18.47	2			36	19	18.62	18.42	18.33	2
		50	50	18.60	18.40	18.31	2			36	39	18.46	18.26	18.17	2
		100	0	18.74	18.54	18.45	2			75	0	18.60	18.40	18.31	2
		1	0	18.89	18.69	18.60	2		64QAM	1	0	18.75	18.55	18.46	2
	64QAM	1	50	18.65	18.45	18.36	2			1	37	18.51	18.31	18.22	2
		1	99	18.56	18.36	18.27	2			1	74	18.42	18.22	18.13	2
		50	0	17.79	17.59	17.50	3			36	0	17.65	17.45	17.36	3
		50	25	17.74	17.54	17.45	3			36	19	17.60	17.40	17.31	3
		50	50	17.58	17.38	17.29	3			36	39	17.44	17.24	17.15	3
		100	0	17.72	17.52	17.43	3			75	0	17.58	17.38	17.29	3
		1	0	17.72	17.52	17.43	3			75	0	17.58	17.38	17.29	3
10M	QPSK	1	0	20.73	20.53	20.44	0	5M	QPSK	1	0	20.61	20.41	20.32	0
		1	24	20.49	20.29	20.20	0			1	12	20.37	20.17	20.08	0
		1	49	20.40	20.20	20.11	0			1	24	20.28	20.08	19.99	0
		25	0	19.63	19.43	19.34	1			12	0	19.51	19.31	19.22	1
		25	12	19.58	19.38	19.29	1			12	6	19.46	19.26	19.17	1
		25	25	19.42	19.22	19.13	1			12	13	19.30	19.10	19.01	1
		50	0	19.56	19.36	19.27	1			25	0	19.44	19.24	19.15	1
		1	0	19.68	19.48	19.39	1		16QAM	1	0	19.56	19.36	19.27	1
	16QAM	1	24	19.44	19.24	19.15	1			1	12	19.32	19.12	19.03	1
		1	49	19.35	19.15	19.06	1			1	24	19.23	19.03	18.94	1
		25	0	18.58	18.38	18.29	2			12	0	18.46	18.26	18.17	2
		25	12	18.53	18.33	18.24	2			12	6	18.41	18.21	18.12	2
		25	25	18.37	18.17	18.08	2			12	13	18.25	18.05	17.96	2
		50	0	18.51	18.31	18.22	2			25	0	18.39	18.19	18.10	2
		1	0	18.66	18.46	18.37	2		64QAM	1	0	18.54	18.34	18.25	2
	64QAM	1	24	18.42	18.22	18.13	2			1	12	18.30	18.10	18.01	2
		1	49	18.33	18.13	18.04	2			1	24	18.21	18.01	17.92	2
		25	0	17.56	17.36	17.27	3			12	0	17.44	17.24	17.15	3
		25	12	17.51	17.31	17.22	3			12	6	17.39	17.19	17.10	3
		25	25	17.35	17.15	17.06	3			12	13	17.23	17.03	16.94	3
		50	0	17.49	17.29	17.20	3			25	0	17.37	17.17	17.08	3
		1	0	17.49	17.29	17.20	3			25	0	17.37	17.17	17.08	3
3M	QPSK	1	0	20.53	20.33	20.24	0	1.4M	QPSK	1	0	20.42	20.22	20.13	0
		1	7	20.29	20.09	20	0			1	2	20.18	19.98	19.89	0
		1	14	20.2	20	19.91	0			1	5	20.09	19.89	19.80	0
		8	0	19.43	19.23	19.14	1			3	0	20.12	19.92	19.83	0
		8	3	19.38	19.18	19.09	1			3	1	20.07	19.87	19.78	0
		8	7	19.22	19.02	18.93	1			3	3	19.91	19.71	19.62	0
		15	0	19.36	19.16	19.07	1			6	0	19.25	19.05	18.96	1
		1	0	19.48	19.28	19.19	1		16QAM	1	0	19.37	19.17	19.08	1
	16QAM	1	7	19.24	19.04	18.95	1			1	2	19.13	18.93	18.84	1
		1	14	19.15	18.95	18.86	1			1	5	19.04	18.84	18.75	1
		8	0	18.38	18.18	18.09	2			3	0	19.07	18.87	18.78	1
		8	3	18.33	18.13	18.04	2			3	1	19.02	18.82	18.73	1
		8	7	18.17	17.97	17.88	2			3	3	18.86	18.66	18.65	1
		15	0	18.31	18.11	18.02	2			6	0	18.20	18.00	17.91	2
		1	0	18.46	18.26	18.17	2		64QAM	1	0	18.35	18.15	18.06	2
	64QAM	1	7	18.22	18.02	17.93	2			1	2	18.11	17.91	17.82	2
		1	14	18.13	17.93	17.84	2			1	5	18.02	17.82	17.73	2
		8	0	17.36	17.16	17.07	3			3	0	18.05	17.85	17.76	2
		8	3	17.31	17.11	17.02	3			3	1	18.00	17.80	17.71	2
		8	7	17.15	16.95	16.86	3			3	3	17.84	17.64	17.61	2
		15	0	17.29	17.09	17.00	3			6	0	17.18	16.98	16.89	3
		1	0	17.29	17.09	17.00	3			6	0	17.18	16.98	16.89	3

FCC SAR Test Report

LTE Band 26															
EUT with WLAN Off															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26765	26865	26965				Channel		26740	26865	26990	
		Frequency (MHz)		821.5	831.5	841.5				Frequency (MHz)		819.0	831.5	844.0	
15M	QPSK	1	0	23.54	23.43	23.51	0	10M	QPSK	1	0	23.41	23.30	23.38	0
		1	37	23.48	23.37	23.45	0			1	24	23.35	23.24	23.32	0
		1	74	23.64	23.53	23.61	0			1	49	23.51	23.40	23.48	0
		36	0	22.57	22.46	22.54	1			25	0	22.44	22.33	22.41	1
		36	19	22.52	22.41	22.49	1			25	12	22.39	22.28	22.36	1
		36	39	22.67	22.56	22.64	1			25	25	22.54	22.43	22.51	1
		75	0	22.54	22.43	22.51	1			50	0	22.41	22.30	22.38	1
		1	0	22.52	22.41	22.49	1		16QAM	1	0	22.39	22.28	22.36	1
	16QAM	1	37	22.46	22.35	22.43	1			1	24	22.33	22.22	22.30	1
		1	74	22.62	22.51	22.59	1			1	49	22.49	22.38	22.46	1
		36	0	21.55	21.44	21.52	2			25	0	21.42	21.31	21.39	2
		36	19	21.50	21.39	21.47	2			25	12	21.37	21.26	21.34	2
		36	39	21.65	21.54	21.62	2			25	25	21.52	21.41	21.49	2
		75	0	21.52	21.41	21.49	2			50	0	21.39	21.28	21.36	2
		1	0	21.51	21.40	21.48	2		64QAM	1	0	21.38	21.27	21.35	2
	64QAM	1	37	21.45	21.34	21.42	2			1	24	21.32	21.21	21.29	2
		1	74	21.61	21.50	21.58	2			1	49	21.48	21.37	21.45	2
		36	0	20.54	20.43	20.51	3			25	0	20.41	20.30	20.38	3
		36	19	20.49	20.38	20.46	3			25	12	20.36	20.25	20.33	3
		36	39	20.64	20.53	20.61	3			25	25	20.51	20.40	20.48	3
		75	0	20.51	20.40	20.48	3			50	0	20.38	20.27	20.35	3
		1	0	20.51	20.40	20.48	3			1	0	20.38	20.27	20.35	3
5M	QPSK	1	0	23.32	23.21	23.29	0	3M	QPSK	1	0	23.21	23.10	23.18	0
		1	12	23.26	23.15	23.23	0			1	7	23.15	23.04	23.12	0
		1	24	23.42	23.31	23.39	0			1	14	23.31	23.20	23.28	0
		12	0	22.35	22.24	22.32	1			8	0	22.24	22.13	22.21	1
		12	6	22.30	22.19	22.27	1			8	3	22.19	22.08	22.16	1
		12	13	22.45	22.34	22.42	1			8	7	22.34	22.23	22.31	1
		25	0	22.32	22.21	22.29	1			15	0	22.21	22.10	22.18	1
		1	0	22.30	22.19	22.27	1		16QAM	1	0	22.19	22.08	22.16	1
	16QAM	1	12	22.24	22.13	22.21	1			1	7	22.13	22.02	22.10	1
		1	24	22.40	22.29	22.37	1			1	14	22.29	22.18	22.26	1
		12	0	21.33	21.22	21.30	2			8	0	21.22	21.11	21.19	2
		12	6	21.28	21.17	21.25	2			8	3	21.17	21.06	21.14	2
		12	13	21.43	21.32	21.40	2			8	7	21.32	21.21	21.29	2
		25	0	21.30	21.19	21.27	2			15	0	21.19	21.08	21.16	2
		1	0	21.29	21.18	21.26	2		64QAM	1	0	21.18	21.07	21.15	2
	64QAM	1	12	21.23	21.12	21.20	2			1	7	21.12	21.01	21.09	2
		1	24	21.39	21.28	21.36	2			1	14	21.28	21.17	21.25	2
		12	0	20.32	20.21	20.29	3			8	0	20.21	20.10	20.18	3
		12	6	20.27	20.16	20.24	3			8	3	20.16	20.05	20.13	3
		12	13	20.42	20.31	20.39	3			8	7	20.31	20.20	20.28	3
		25	0	20.29	20.18	20.26	3			15	0	20.18	20.07	20.15	3
		1	0	20.29	20.18	20.26	3			1	0	20.18	20.07	20.15	3
1.4M	QPSK	1	0	23.13	23.02	23.10	0			1	0	23.13	23.02	23.10	0
		1	2	23.07	22.96	23.04	0			1	2	23.07	22.96	23.04	0
		1	5	23.23	23.12	23.20	0			1	5	23.23	23.12	23.20	0
		3	0	22.87	22.76	22.84	0			3	0	22.87	22.76	22.84	0
		3	1	22.82	22.71	22.79	0			3	1	22.82	22.71	22.79	0
		3	3	22.97	22.86	22.94	0			3	3	22.97	22.86	22.94	0
		6	0	22.13	22.02	22.10	1			6	0	22.13	22.02	22.10	1
		1	0	22.11	22.00	22.08	1		16QAM	1	0	22.11	22.00	22.08	1
	16QAM	1	2	22.05	21.94	22.02	1			1	2	22.05	21.94	22.02	1
		1	5	22.21	22.10	22.18	1			1	5	22.21	22.10	22.18	1
		3	0	21.85	21.74	21.82	1			3	0	21.85	21.74	21.82	1
		3	1	21.80	21.69	21.77	1			3	1	21.80	21.69	21.77	1
		3	3	21.95	21.84	21.92	1			3	3	21.95	21.84	21.92	1
		6	0	21.11	21.00	21.08	2			6	0	21.11	21.00	21.08	2
		1	0	21.10	20.99	21.07	2		64QAM	1	0	21.10	20.99	21.07	2
	64QAM	1	2	21.04	20.93	21.01	2			1	2	21.04	20.93	21.01	2
		1	5	21.20	21.09	21.17	2			1	5	21.20	21.09	21.17	2
		3	0	20.84	20.73	20.81	2			3	0	20.84	20.73	20.81	2
		3	1	20.79	20.68	20.76	2			3	1	20.79	20.68	20.76	2
		3	3	20.94	20.83	20.91	2			3	3	20.94	20.83	20.91	2
		6	0	20.10	19.99	20.07	3			6	0	20.10	19.99	20.07	3
		1	0	20.10	19.99	20.07	3			1	0	20.10	19.99	20.07	3

FCC SAR Test Report

LTE Band 26															
EUT with WLAN On															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26765	26865	26965				Channel		26740	26865	26990	
		Frequency (MHz)		821.5	831.5	841.5				Frequency (MHz)		819.0	831.5	844.0	
15M	QPSK	1	0	20.98	20.80	20.89	0	10M	QPSK	1	0	20.96	20.78	20.87	0
		1	37	21.11	20.73	20.93	0			1	24	21.09	20.71	20.91	0
		1	74	21.21	21.19	21.10	0			1	49	21.19	21.17	21.08	0
		36	0	20.09	20.01	20.05	1			25	0	20.07	19.99	20.03	1
		36	19	20.21	20.08	20.11	1			25	12	20.19	20.06	20.09	1
		36	39	20.30	20.20	20.24	1			25	25	20.28	20.18	20.22	1
		75	0	20.17	20.01	20.05	1			50	0	20.15	19.99	20.03	1
		1	0	19.96	19.78	19.87	1		16QAM	1	0	19.93	19.75	19.84	1
	16QAM	1	37	20.09	19.71	19.91	1			1	24	20.06	19.68	19.88	1
		1	74	20.19	20.17	20.08	1			1	49	20.16	20.14	20.05	1
		36	0	19.07	18.99	19.03	2			25	0	19.04	18.96	19.00	2
		36	19	19.19	19.06	19.09	2			25	12	19.16	19.03	19.06	2
		36	39	19.28	19.18	19.22	2			25	25	19.25	19.15	19.19	2
		75	0	19.15	18.99	19.03	2			50	0	19.12	18.96	19.00	2
		1	0	18.94	18.76	18.85	2		64QAM	1	0	18.90	18.72	18.81	2
	64QAM	1	37	19.07	18.69	18.89	2			1	24	19.03	18.65	18.85	2
		1	74	19.17	19.15	19.06	2			1	49	19.13	19.11	19.02	2
		36	0	18.05	17.97	18.01	3			25	0	18.01	17.93	17.97	3
		36	19	18.17	18.04	18.07	3			25	12	18.13	18.00	18.03	3
		36	39	18.26	18.16	18.20	3			25	25	18.22	18.12	18.16	3
		75	0	18.13	17.97	18.01	3			50	0	18.09	17.93	17.97	3
		1	0	18.13	17.97	18.01	3			50	0	18.09	17.93	17.97	3
5M	QPSK	1	0	20.94	20.76	20.85	0	3M	QPSK	1	0	20.92	20.74	20.83	0
		1	12	21.07	20.69	20.89	0			1	7	21.05	20.67	20.87	0
		1	24	21.17	21.15	21.06	0			1	14	21.15	21.13	21.04	0
		12	0	20.05	19.97	20.01	1			8	0	20.03	19.95	19.99	1
		12	6	20.17	20.04	20.07	1			8	3	20.15	20.02	20.05	1
		12	13	20.26	20.16	20.20	1			8	7	20.24	20.14	20.18	1
		25	0	20.13	19.97	20.01	1			15	0	20.11	19.95	19.99	1
		1	0	19.90	19.72	19.81	1		16QAM	1	0	19.86	19.68	19.77	1
	16QAM	1	12	20.03	19.65	19.85	1			1	7	19.99	19.61	19.81	1
		1	24	20.13	20.11	20.02	1			1	14	20.09	20.07	19.98	1
		12	0	19.01	18.93	18.97	2			8	0	18.97	18.89	18.93	2
		12	6	19.13	19.00	19.03	2			8	3	19.09	18.96	18.99	2
		12	13	19.22	19.12	19.16	2			8	7	19.18	19.08	19.12	2
		25	0	19.09	18.93	18.97	2			15	0	19.05	18.89	18.93	2
		1	0	18.86	18.68	18.77	2		64QAM	1	0	18.80	18.62	18.71	2
	64QAM	1	12	18.99	18.61	18.81	2			1	7	18.93	18.55	18.75	2
		1	24	19.09	19.07	18.98	2			1	14	19.03	19.01	18.92	2
		12	0	17.97	17.89	17.93	3			8	0	17.91	17.83	17.87	3
		12	6	18.09	17.96	17.99	3			8	3	18.03	17.90	17.93	3
		12	13	18.18	18.08	18.12	3			8	7	18.12	18.02	18.06	3
		25	0	18.05	17.89	17.93	3			15	0	17.99	17.83	17.87	3
		1	0	18.05	17.89	17.93	3			15	0	17.99	17.83	17.87	3
1.4M	QPSK	1	0	20.90	20.72	20.81	0		QPSK	1	0	20.90	20.72	20.81	0
		1	2	21.03	20.65	20.85	0			1	2	21.03	20.65	20.85	0
		1	5	21.13	21.11	21.02	0			1	5	21.13	21.11	21.02	0
		3	0	20.01	19.93	19.97	0			3	0	20.01	19.93	19.97	0
		3	1	20.13	20.00	20.03	0			3	1	20.13	20.00	20.03	0
		3	3	20.22	20.12	20.16	0			3	3	20.22	20.12	20.16	0
		6	0	20.09	19.93	19.97	1			6	0	20.09	19.93	19.97	1
		1	0	19.82	19.64	19.73	1		16QAM	1	0	19.82	19.64	19.73	1
	16QAM	1	2	19.95	19.57	19.77	1			1	2	19.95	19.57	19.77	1
		1	5	20.05	20.03	19.94	1			1	5	20.05	20.03	19.94	1
		3	0	18.93	18.85	18.89	1			3	0	18.93	18.85	18.89	1
		3	1	19.05	18.92	18.95	1			3	1	19.05	18.92	18.95	1
		3	3	19.14	19.04	19.08	1			3	3	19.14	19.04	19.08	1
		6	0	19.01	18.85	18.89	2			6	0	19.01	18.85	18.89	2
		1	0	18.74	18.56	18.65	2		64QAM	1	0	18.74	18.56	18.65	2
	64QAM	1	2	18.87	18.49	18.69	2			1	2	18.87	18.49	18.69	2
		1	5	18.97	18.95	18.86	2			1	5	18.97	18.95	18.86	2
		3	0	17.85	17.77	17.81	2			3	0	17.85	17.77	17.81	2
		3	1	17.97	17.84	17.87	2			3	1	17.97	17.84	17.87	2
		3	3	18.06	17.96	18.00	2			3	3	18.06	17.96	18.00	2
		6	0	17.93	17.77	17.81	3			6	0	17.93	17.77	17.81	3
		1	0	17.93	17.77	17.81	3			1	0	17.93	17.77	17.81	3

FCC SAR Test Report

LTE Band 38															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		37850	38000	38150				Channel		37825	38000	38175	
		Frequency (MHz)		2580.0	2595.0	2610.0				Frequency (MHz)		2577.5	2595.0	2612.5	
20M	QPSK	1	0	23.43	23.59	23.63	0	15M	QPSK	1	0	23.29	23.45	23.49	0
		1	50	23.67	23.83	23.87	0			1	37	23.53	23.69	23.73	0
		1	99	23.57	23.73	23.77	0			1	74	23.43	23.59	23.63	0
		50	0	22.68	22.84	22.88	1			36	0	22.54	22.70	22.74	1
		50	25	22.76	22.92	22.96	1			36	19	22.62	22.78	22.82	1
		50	50	22.73	22.89	22.93	1			36	39	22.59	22.75	22.79	1
		100	0	22.72	22.88	22.92	1			75	0	22.58	22.74	22.78	1
	16QAM	1	0	22.36	22.52	22.56	1		16QAM	1	0	22.22	22.38	22.42	1
		1	50	22.60	22.76	22.80	1			1	37	22.46	22.62	22.66	1
		1	99	22.50	22.66	22.70	1			1	74	22.36	22.52	22.56	1
		50	0	21.61	21.77	21.81	2			36	0	21.47	21.63	21.67	2
		50	25	21.69	21.85	21.89	2			36	19	21.55	21.71	21.75	2
		50	50	21.66	21.82	21.86	2			36	39	21.52	21.68	21.72	2
		100	0	21.65	21.81	21.85	2			75	0	21.51	21.67	21.71	2
	64QAM	1	0	21.33	21.49	21.53	2		64QAM	1	0	21.19	21.35	21.39	2
		1	50	21.57	21.73	21.77	2			1	37	21.43	21.59	21.63	2
		1	99	21.47	21.63	21.67	2			1	74	21.33	21.49	21.53	2
		50	0	20.58	20.74	20.78	3			36	0	20.44	20.60	20.64	3
		50	25	20.66	20.82	20.86	3			36	19	20.52	20.68	20.72	3
		50	50	20.63	20.79	20.83	3			36	39	20.49	20.65	20.69	3
		100	0	20.62	20.78	20.82	3			75	0	20.48	20.64	20.68	3
10M	QPSK	1	0	23.20	23.36	23.40	0	5M	QPSK	1	0	23.08	23.24	23.28	0
		1	24	23.44	23.60	23.64	0			1	12	23.32	23.48	23.52	0
		1	49	23.34	23.50	23.54	0			1	24	23.22	23.38	23.42	0
		25	0	22.45	22.61	22.65	1			12	0	22.33	22.49	22.53	1
		25	12	22.53	22.69	22.73	1			12	6	22.41	22.57	22.61	1
		25	25	22.50	22.66	22.70	1			12	13	22.38	22.54	22.58	1
		50	0	22.49	22.65	22.69	1			25	0	22.37	22.53	22.57	1
	16QAM	1	0	22.13	22.29	22.33	1		16QAM	1	0	22.01	22.17	22.21	1
		1	24	22.37	22.53	22.57	1			1	12	22.25	22.41	22.45	1
		1	49	22.27	22.43	22.47	1			1	24	22.15	22.31	22.35	1
		25	0	21.38	21.54	21.58	2			12	0	21.26	21.42	21.46	2
		25	12	21.46	21.62	21.66	2			12	6	21.34	21.50	21.54	2
		25	25	21.43	21.59	21.63	2			12	13	21.31	21.47	21.51	2
		50	0	21.42	21.58	21.62	2			25	0	21.30	21.46	21.50	2
	64QAM	1	0	21.10	21.26	21.30	2		64QAM	1	0	20.98	21.14	21.18	2
		1	24	21.34	21.50	21.54	2			1	12	21.22	21.38	21.42	2
		1	49	21.24	21.40	21.44	2			1	24	21.12	21.28	21.32	2
		25	0	20.35	20.51	20.55	3			12	0	20.23	20.39	20.43	3
		25	12	20.43	20.59	20.63	3			12	6	20.31	20.47	20.51	3
		25	25	20.40	20.56	20.60	3			12	13	20.28	20.44	20.48	3
		50	0	20.39	20.55	20.59	3			25	0	20.27	20.43	20.47	3

FCC SAR Test Report

LTE Band 41																					
BW	MCS Index	RB Size	RB Offset	Low	Low	Mid	Mid	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Low	Mid	Mid	Mid	High	3GPP MPR (dB)
		Channel		39750	39790	40185	40620	41055	41490				Channel		39725	39765	40173	40620	41068	41515	
		Frequency (MHz)		2506	2510.0	2549.5	2593.0	2636.5	2680.0				Frequency (MHz)		2503.5	2507.5	2548.3	2593.0	2637.8	2682.5	
20M	QPSK	1	0	23.67	23.54	23.63	23.68	23.57	23.47	0	15M	QPSK	1	0	23.54	23.51	23.50	23.55	23.44	23.34	0
		1	50	23.78	23.69	23.74	23.79	23.68	23.58	0			1	37	23.65	23.66	23.61	23.66	23.55	23.45	0
		1	99	23.82	23.65	23.78	23.83	23.72	23.62	0			1	74	23.69	23.62	23.65	23.70	23.59	23.49	0
		50	0	22.81	22.68	22.77	22.82	22.71	22.61	1			36	0	22.68	22.65	22.64	22.69	22.58	22.48	1
		50	25	22.84	22.83	22.80	22.85	22.74	22.64	1			36	19	22.71	22.80	22.67	22.72	22.61	22.51	1
		50	50	22.88	22.77	22.84	22.89	22.78	22.68	1			36	39	22.75	22.74	22.71	22.76	22.65	22.55	1
		100	0	22.82	22.78	22.78	22.83	22.72	22.62	1			75	0	22.69	22.75	22.65	22.70	22.59	22.49	1
	16 QAM	1	0	22.63	22.45	22.59	22.64	22.53	22.43	1		16 QAM	1	0	22.50	22.42	22.46	22.51	22.40	22.30	1
		1	50	22.74	22.60	22.70	22.75	22.64	22.54	1			1	37	22.61	22.57	22.57	22.62	22.51	22.41	1
		1	99	22.78	22.62	22.74	22.79	22.68	22.58	1			1	74	22.65	22.59	22.61	22.66	22.55	22.45	1
		50	0	21.77	21.61	21.73	21.78	21.67	21.57	2			36	0	21.64	21.58	21.60	21.65	21.54	21.44	2
		50	25	21.80	21.78	21.76	21.81	21.70	21.60	2			36	19	21.67	21.75	21.63	21.68	21.57	21.47	2
		50	50	21.84	21.72	21.80	21.85	21.74	21.64	2			36	39	21.71	21.69	21.67	21.72	21.61	21.51	2
		100	0	21.78	21.76	21.74	21.79	21.68	21.58	2			75	0	21.65	21.73	21.61	21.66	21.55	21.45	2
	64 QAM	1	0	21.62	21.44	21.58	21.63	21.52	21.42	2		64 QAM	1	0	21.49	21.41	21.45	21.50	21.39	21.29	2
		1	50	21.73	21.69	21.69	21.74	21.63	21.53	2			1	37	21.60	21.66	21.56	21.61	21.50	21.40	2
		1	99	21.77	21.63	21.73	21.78	21.67	21.57	2			1	74	21.64	21.60	21.60	21.65	21.54	21.44	2
		50	0	20.76	20.65	20.72	20.77	20.66	20.56	3			36	0	20.63	20.62	20.59	20.64	20.53	20.43	3
		50	25	20.79	20.74	20.75	20.80	20.69	20.59	3			36	19	20.66	20.71	20.62	20.67	20.56	20.46	3
		50	50	20.83	20.67	20.79	20.84	20.73	20.63	3			36	39	20.70	20.64	20.66	20.71	20.60	20.50	3
		100	0	20.77	20.72	20.73	20.78	20.67	20.57	3			75	0	20.64	20.69	20.60	20.65	20.54	20.44	3
BW	MCS Index	RB Size	RB Offset	Low	Low	Mid	Mid	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Low	Mid	Mid	Mid	High	3GPP MPR (dB)
		Channel		39700	39740	40160	40620	41080	41540				Channel		39675	39715	40148	40620	41093	41565	
		Frequency (MHz)		2501.0	2505	2547.0	2593.0	2639.0	2685.0				Frequency (MHz)		2498.5	2502.5	2545.8	2593.0	2640.3	2687.5	
10M	QPSK	1	0	23.45	23.49	23.41	23.46	23.35	23.25	0	5M	QPSK	1	0	23.33	23.48	23.29	23.34	23.23	23.13	0
		1	24	23.56	23.64	23.52	23.57	23.46	23.36	0			1	12	23.44	23.63	23.40	23.45	23.34	23.24	0
		1	49	23.60	23.60	23.56	23.61	23.50	23.40	0			1	24	23.48	23.59	23.44	23.49	23.38	23.28	0
		25	0	22.59	22.63	22.55	22.60	22.49	22.39	1			12	0	22.47	22.62	22.43	22.48	22.37	22.27	1
		25	12	22.62	22.78	22.58	22.63	22.52	22.42	1			12	6	22.50	22.77	22.46	22.51	22.40	22.30	1
		25	25	22.66	22.72	22.62	22.67	22.56	22.46	1			12	13	22.54	22.71	22.50	22.55	22.44	22.34	1
		50	0	22.60	22.73	22.56	22.61	22.50	22.40	1			25	0	22.48	22.72	22.44	22.49	22.38	22.28	1
	16 QAM	1	0	22.41	22.40	22.37	22.42	22.31	22.21	1		16 QAM	1	0	22.29	22.39	22.25	22.30	22.19	22.09	1
		1	24	22.52	22.55	22.48	22.53	22.42	22.32	1			1	12	22.40	22.54	22.36	22.41	22.30	22.20	1
		1	49	22.56	22.57	22.52	22.57	22.46	22.36	1			1	24	22.44	22.56	22.40	22.45	22.34	22.24	1
		25	0	21.55	21.56	21.51	21.56	21.45	21.35	2			12	0	21.43	21.55	21.39	21.44	21.33	21.23	2
		25	12	21.58	21.73	21.54	21.59	21.48	21.38	2			12	6	21.46	21.72	21.42	21.47	21.36	21.26	2
		25	25	21.62	21.67	21.58	21.63	21.52	21.42	2			12	13	21.50	21.66	21.46	21.51	21.40	21.30	2
		50	0	21.56	21.71	21.52	21.57	21.46	21.36	2			25	0	21.44	21.70	21.40	21.45	21.34	21.24	2
	64 QAM	1	0	21.40	21.39	21.36	21.41	21.30	21.20	2		64 QAM	1	0	21.28	21.38	21.24	21.29	21.18	21.08	2
		1	24	21.51	21.64	21.47	21.52	21.41	21.31	2			1	12	21.39	21.63	21.35	21.40	21.29	21.19	2
		1	49	21.55	21.58	21.51	21.56	21.45	21.35	2			1	24	21.43	21.57	21.39	21.44	21.33	21.23	2
		25	0	20.54	20.60	20.50	20.55	20.44	20.34	3			12	0	20.42	20.59	20.38	20.43	20.32	20.22	3
		25	12	20.57	20.69	20.53	20.58	20.47	20.37	3			12	6	20.45	20.68	20.41	20.46	20.35	20.25	3
		25	25	20.61	20.62	20.57	20.62	20.51	20.41	3			12	13	20.49	20.61	20.45	20.50	20.39	20.29	3
		50	0	20.55	20.67	20.51	20.56	20.45	20.35	3			25	0	20.43	20.66	20.39	20.44	20.33	20.23	3

FCC SAR Test Report

Body-worn / Hotspot Mode

Band	GSM850			GSM1900		
Channel	128	189	251	512	661	810
Frequency (MHz)	824.2	836.4	848.8	1850.2	1880.0	1909.8
Maximum Burst- Averaged Output Power						
GSM (GMSK, 1Tx-slot)	34.00	34.13	34.15	30.34	30.75	31.08
GPRS (GMSK, 1Tx-slot)	34.01	34.14	34.16	30.44	30.85	31.09
GPRS (GMSK, 2Tx-slot)	30.70	30.83	30.85	27.67	28.08	28.09
GPRS (GMSK, 3Tx-slot)	28.36	28.49	28.51	25.64	26.05	26.28
GPRS (GMSK, 4Tx-slot)	27.07	27.20	27.22	24.19	24.60	24.93
EDGE (8PSK, 1Tx-slot)	27.69	27.82	27.84	26.84	27.25	27.58
EDGE (8PSK, 2Tx-slot)	24.41	24.54	24.56	23.84	24.25	24.58
EDGE (8PSK, 3Tx-slot)	22.61	22.74	22.76	21.89	22.30	22.63
EDGE (8PSK, 4Tx-slot)	21.23	21.36	21.38	20.80	20.91	21.24

Band	WCDMA Band II			WCDMA Band IV			WCDMA Band V			3GPP MPR (dB)
Channel	9262	9400	9538	1312	1413	1513	4132	4182	4233	
Frequency (MHz)	1852.4	1880.0	1907.6	1712.4	1732.6	1752.6	826.4	836.4	846.6	
RMC 12.2K	24.67	24.42	24.40	24.51	24.65	24.69	23.65	23.96	24.40	-
HSDPA Subtest-1	23.62	23.37	23.35	23.51	23.65	23.69	22.69	23.00	23.44	0
HSDPA Subtest-2	23.63	23.38	23.36	23.50	23.64	23.68	22.67	22.98	23.42	0
HSDPA Subtest-3	23.17	22.92	22.90	23.03	23.17	23.21	22.22	22.53	22.97	0.5
HSDPA Subtest-4	23.14	22.89	22.87	23.01	23.15	23.19	22.21	22.52	22.96	0.5
HSUPA Subtest-1	23.63	23.38	23.36	23.50	23.64	23.68	22.68	22.99	23.43	0
HSUPA Subtest-2	21.64	21.39	21.37	21.50	21.64	21.68	20.74	21.05	21.49	2
HSUPA Subtest-3	22.64	22.39	22.37	22.49	22.63	22.67	21.71	22.02	22.46	1
HSUPA Subtest-4	21.64	21.39	21.37	21.49	21.63	21.67	20.68	20.99	21.43	2
HSUPA Subtest-5	23.65	23.40	23.38	23.56	23.70	23.74	22.69	23.00	23.44	0

Band	CDMA BC0			CDMA BC1		
Channel	1013	384	777	25	600	1175
Frequency (MHz)	824.70	836.52	848.31	1851.25	1880.00	1908.75
1xRTT RC1+SO55	23.77	24.06	24.52	24.89	24.72	24.83
1xRTT RC3+SO55	23.79	24.08	24.54	24.90	24.73	24.84
1xRTT RC3+SO32 (FCH)	23.75	24.04	24.50	24.86	24.69	24.80
1xRTT RC3+SO32 (SCH)	23.74	24.03	24.49	24.88	24.71	24.82
1xEVDO Rev0 RTAP 153.6	23.78	24.07	24.53	24.85	24.68	24.79
1xEVDO RevA RE TAP 4096	23.55	23.84	24.30	24.76	24.59	24.70

Band	CDMA BC10		
Channel	476	580	684
Frequency (MHz)	817.9	820.5	823.1
1xRTT RC1+SO55	23.96	23.85	23.94
1xRTT RC3+SO55	24.07	23.96	24.05
1xRTT RC3+SO32 (FCH)	24.09	23.98	24.07
1xRTT RC3+SO32 (SCH)	23.95	23.84	23.93
1xEVDO Rev0 RTAP 153.6	23.93	23.82	23.91
1xEVDO RevA RE TAP 4096	23.72	23.61	23.70

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LTE Band 2															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18700	18900	19100				Channel		18675	18900	19125	
		Frequency (MHz)		1860.0	1880.0	1900.0				Frequency (MHz)		1857.5	1880.0	1902.5	
20M	QPSK	1	0	24.65	24.43	24.32	0	15M	QPSK	1	0	24.57	24.35	24.24	0
		1	50	24.40	24.18	24.07	0			1	37	24.32	24.10	23.99	0
		1	99	24.37	24.15	24.04	0			1	74	24.29	24.07	23.96	0
		50	0	23.62	23.40	23.29	1			36	0	23.54	23.32	23.21	1
		50	25	23.47	23.25	23.14	1			36	19	23.39	23.17	23.06	1
		50	50	23.42	23.20	23.09	1			36	39	23.34	23.12	23.01	1
		100	0	23.48	23.26	23.15	1			75	0	23.40	23.18	23.07	1
		1	0	23.60	23.38	23.27	1		16QAM	1	0	23.52	23.30	23.19	1
	16QAM	1	50	23.35	23.13	23.02	1			1	37	23.27	23.05	22.94	1
		1	99	23.32	23.10	22.99	1			1	74	23.24	23.02	22.91	1
		50	0	22.57	22.35	22.24	2			36	0	22.49	22.27	22.16	2
		50	25	22.42	22.20	22.09	2			36	19	22.34	22.12	22.01	2
		50	50	22.37	22.15	22.04	2			36	39	22.29	22.07	21.96	2
		100	0	22.43	22.21	22.10	2			75	0	22.35	22.13	22.02	2
	64QAM	1	0	22.58	22.36	22.25	2		64QAM	1	0	22.50	22.28	22.17	2
		1	50	22.33	22.11	22.00	2			1	37	22.25	22.03	21.92	2
		1	99	22.30	22.08	21.97	2			1	74	22.22	22.00	21.89	2
		50	0	21.55	21.33	21.22	3			36	0	21.47	21.25	21.14	3
		50	25	21.40	21.18	21.07	3			36	19	21.32	21.10	20.99	3
		50	50	21.35	21.13	21.02	3			36	39	21.27	21.05	20.94	3
		100	0	21.41	21.19	21.08	3			75	0	21.33	21.11	21.00	3
10M	QPSK	1	0	24.46	24.24	24.13	0	5M	QPSK	1	0	24.33	24.11	24.00	0
		1	24	24.21	23.99	23.88	0			1	12	24.08	23.86	23.75	0
		1	49	24.18	23.96	23.85	0			1	24	24.05	23.83	23.72	0
		25	0	23.43	23.21	23.10	1			12	0	23.30	23.08	22.97	1
		25	12	23.28	23.06	22.95	1			12	6	23.15	22.93	22.82	1
		25	25	23.23	23.01	22.90	1			12	13	23.10	22.88	22.77	1
		50	0	23.29	23.07	22.96	1			25	0	23.16	22.94	22.83	1
		1	0	23.41	23.19	23.08	1		16QAM	1	0	23.28	23.06	22.95	1
	16QAM	1	24	23.16	22.94	22.83	1			1	12	23.03	22.81	22.70	1
		1	49	23.13	22.91	22.80	1			1	24	23.00	22.78	22.67	1
		25	0	22.38	22.16	22.05	2			12	0	22.25	22.03	21.92	2
		25	12	22.23	22.01	21.90	2			12	6	22.10	21.88	21.77	2
		25	25	22.18	21.96	21.85	2			12	13	22.05	21.83	21.72	2
		50	0	22.24	22.02	21.91	2			25	0	22.11	21.89	21.78	2
	64QAM	1	0	22.39	22.17	22.06	2		64QAM	1	0	22.26	22.04	21.93	2
		1	24	22.14	21.92	21.81	2			1	12	22.01	21.79	21.68	2
		1	49	22.11	21.89	21.78	2			1	24	21.98	21.76	21.65	2
		25	0	21.36	21.14	21.03	3			12	0	21.23	21.01	20.90	3
		25	12	21.21	20.99	20.88	3			12	6	21.08	20.86	20.75	3
		25	25	21.16	20.94	20.83	3			12	13	21.03	20.81	20.70	3
		50	0	21.22	21.00	20.89	3			25	0	21.09	20.87	20.76	3
3M	QPSK	1	0	24.27	24.05	23.94	0	1.4M	QPSK	1	0	24.16	23.94	23.83	0
		1	7	24.02	23.80	23.69	0			1	2	23.91	23.69	23.58	0
		1	14	23.99	23.77	23.66	0			1	5	23.88	23.66	23.55	0
		8	0	23.24	23.02	22.91	1			3	0	23.63	23.41	23.30	0
		8	3	23.09	22.87	22.76	1			3	1	23.62	23.40	23.29	0
		8	7	23.04	22.82	22.71	1			3	3	23.62	23.40	23.29	0
		15	0	23.10	22.88	22.77	1			6	0	23.92	23.70	23.59	1
		1	0	23.22	23.00	22.89	1		16QAM	1	0	23.11	22.89	22.78	1
	16QAM	1	7	22.97	22.75	22.64	1			1	2	22.86	22.64	22.53	1
		1	14	22.94	22.72	22.61	1			1	5	22.83	22.61	22.50	1
		8	0	22.19	21.97	21.86	2			3	0	22.68	22.46	22.35	1
		8	3	22.04	21.82	21.71	2			3	1	22.53	22.31	22.20	1
		8	7	21.99	21.77	21.66	2			3	3	22.48	22.26	22.15	1
		15	0	22.05	21.83	21.72	2			6	0	21.94	21.72	21.61	2
	64QAM	1	0	22.20	21.98	21.87	2		64QAM	1	0	22.09	21.87	21.76	2
		1	7	21.95	21.73	21.62	2			1	2	21.84	21.62	21.51	2
		1	14	21.92	21.70	21.59	2			1	5	21.81	21.59	21.48	2
		8	0	21.17	20.95	20.84	3			3	0	21.66	21.44	21.33	2
		8	3	21.02	20.80	20.69	3			3	1	21.51	21.29	21.18	2
		8	7	20.97	20.75	20.64	3			3	3	21.46	21.24	21.13	2
		15	0	21.03	20.81	20.70	3			6	0	20.92	20.70	20.59	3

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LTE Band 4															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20050	20175	20300				Channel		20025	20175	20325	
		Frequency (MHz)		1720.0	1732.5	1745.0				Frequency (MHz)		1717.5	1732.5	1747.5	
20M	QPSK	1	0	24.52	24.56	24.59	0	15M	QPSK	1	0	24.41	24.45	24.48	0
		1	50	24.36	24.40	24.43	0			1	37	24.25	24.29	24.32	0
		1	99	24.34	24.38	24.41	0			1	74	24.23	24.27	24.30	0
		50	0	23.52	23.56	23.59	1			36	0	23.41	23.45	23.48	1
		50	25	23.47	23.51	23.54	1			36	19	23.36	23.40	23.43	1
		50	50	23.38	23.42	23.45	1			36	39	23.27	23.31	23.34	1
		100	0	23.42	23.46	23.49	1			75	0	23.31	23.35	23.38	1
	16QAM	1	0	23.50	23.54	23.57	1		16QAM	1	0	23.39	23.43	23.46	1
		1	50	23.34	23.38	23.41	1			1	37	23.23	23.27	23.30	1
		1	99	23.32	23.36	23.39	1			1	74	23.21	23.25	23.28	1
		50	0	22.50	22.54	22.57	2			36	0	22.39	22.43	22.46	2
		50	25	22.45	22.49	22.52	2			36	19	22.34	22.38	22.41	2
		50	50	22.36	22.40	22.43	2			36	39	22.25	22.29	22.32	2
		100	0	22.40	22.44	22.47	2			75	0	22.29	22.33	22.36	2
	64QAM	1	0	22.41	22.45	22.48	2		64QAM	1	0	22.30	22.34	22.37	2
		1	50	22.25	22.29	22.32	2			1	37	22.14	22.18	22.21	2
		1	99	22.23	22.27	22.30	2			1	74	22.12	22.16	22.19	2
		50	0	21.41	21.45	21.48	3			36	0	21.30	21.34	21.37	3
		50	25	21.36	21.40	21.43	3			36	19	21.25	21.29	21.32	3
		50	50	21.27	21.31	21.34	3			36	39	21.16	21.20	21.23	3
		100	0	21.31	21.35	21.38	3			75	0	21.20	21.24	21.27	3
10M	QPSK	1	0	24.33	24.37	24.40	0	5M	QPSK	1	0	24.27	24.31	24.34	0
		1	24	24.17	24.21	24.24	0			1	12	24.11	24.15	24.18	0
		1	49	24.15	24.19	24.22	0			1	24	24.09	24.13	24.16	0
		25	0	23.33	23.37	23.40	1			12	0	23.27	23.31	23.34	1
		25	12	23.28	23.32	23.35	1			12	6	23.22	23.26	23.29	1
		25	25	23.19	23.23	23.26	1			12	13	23.13	23.17	23.20	1
		50	0	23.23	23.27	23.30	1			25	0	23.17	23.21	23.24	1
	16QAM	1	0	23.31	23.35	23.38	1		16QAM	1	0	23.25	23.29	23.32	1
		1	24	23.15	23.19	23.22	1			1	12	23.09	23.13	23.16	1
		1	49	23.13	23.17	23.20	1			1	24	23.07	23.11	23.14	1
		25	0	22.31	22.35	22.38	2			12	0	22.25	22.29	22.32	2
		25	12	22.26	22.30	22.33	2			12	6	22.20	22.24	22.27	2
		25	25	22.17	22.21	22.24	2			12	13	22.11	22.15	22.18	2
		50	0	22.21	22.25	22.28	2			25	0	22.15	22.19	22.22	2
	64QAM	1	0	22.22	22.26	22.29	2		64QAM	1	0	22.16	22.20	22.23	2
		1	24	22.06	22.10	22.13	2			1	12	22.00	22.04	22.07	2
		1	49	22.04	22.08	22.11	2			1	24	21.98	22.02	22.05	2
		25	0	21.22	21.26	21.29	3			12	0	21.16	21.20	21.23	3
		25	12	21.17	21.21	21.24	3			12	6	21.11	21.15	21.18	3
		25	25	21.08	21.12	21.15	3			12	13	21.02	21.06	21.09	3
		50	0	21.12	21.16	21.19	3			25	0	21.06	21.10	21.13	3
3M	QPSK	1	0	24.16	24.20	24.23	0	1.4M	QPSK	1	0	24.06	24.10	24.13	0
		1	7	24.00	24.04	24.07	0			1	2	23.90	23.94	23.97	0
		1	14	23.98	24.02	24.05	0			1	5	23.88	23.92	23.95	0
		8	0	23.16	23.20	23.23	1			3	0	23.76	23.80	23.83	0
		8	3	23.11	23.15	23.18	1			3	1	23.71	23.75	23.78	0
		8	7	23.02	23.06	23.09	1			3	3	23.62	23.66	23.69	0
		15	0	23.06	23.10	23.13	1			6	0	22.96	23.00	23.03	1
	16QAM	1	0	23.14	23.18	23.21	1		16QAM	1	0	23.04	23.08	23.11	1
		1	7	22.98	23.02	23.05	1			1	2	22.88	22.92	22.95	1
		1	14	22.96	23.00	23.03	1			1	5	22.86	22.90	22.93	1
		8	0	22.14	22.18	22.21	2			3	0	22.74	22.78	22.81	1
		8	3	22.09	22.13	22.16	2			3	1	22.69	22.73	22.76	1
		8	7	22.00	22.04	22.07	2			3	3	22.60	22.64	22.67	1
		15	0	22.04	22.08	22.11	2			6	0	21.94	21.98	22.01	2
	64QAM	1	0	22.05	22.09	22.12	2		64QAM	1	0	21.95	21.99	22.02	2
		1	7	21.89	21.93	21.96	2			1	2	21.79	21.83	21.86	2
		1	14	21.87	21.91	21.94	2			1	5	21.77	21.81	21.84	2
		8	0	21.05	21.09	21.12	3			3	0	21.65	21.69	21.72	2
		8	3	21.00	21.04	21.07	3			3	1	21.60	21.64	21.67	2
		8	7	20.91	20.95	20.98	3			3	3	21.51	21.55	21.58	2
		15	0	20.95	20.99	21.02	3			6	0	20.85	20.89	20.92	3

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LTE Band 5															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20450	20525	20600				Channel		20425	20525	20625	
		Frequency (MHz)		829.0	836.5	844.0				Frequency (MHz)		826.5	836.5	846.5	
10M	QPSK	1	0	23.34	23.36	23.62	0	5M	QPSK	1	0	23.25	23.27	23.53	0
		1	24	23.48	23.50	23.76	0			1	12	23.39	23.41	23.67	0
		1	49	23.61	23.63	23.89	0			1	24	23.52	23.54	23.80	0
		25	0	22.47	22.49	22.75	1			12	0	22.38	22.40	22.66	1
		25	12	22.54	22.56	22.82	1			12	6	22.45	22.47	22.73	1
		25	25	22.62	22.64	22.90	1			12	13	22.53	22.55	22.81	1
		50	0	22.52	22.54	22.80	1			25	0	22.43	22.45	22.71	1
	16QAM	1	0	22.33	22.35	22.61	1		16QAM	1	0	22.24	22.26	22.52	1
		1	24	22.47	22.49	22.75	1			1	12	22.38	22.40	22.66	1
		1	49	22.60	22.62	22.88	1			1	24	22.51	22.53	22.79	1
		25	0	21.46	21.48	21.74	2			12	0	21.37	21.39	21.65	2
		25	12	21.53	21.55	21.81	2			12	6	21.44	21.46	21.72	2
		25	25	21.61	21.63	21.89	2			12	13	21.52	21.54	21.80	2
		50	0	21.51	21.53	21.79	2			25	0	21.42	21.44	21.70	2
	64QAM	1	0	21.29	21.31	21.57	2		64QAM	1	0	21.20	21.22	21.48	2
		1	24	21.43	21.45	21.71	2			1	12	21.34	21.36	21.62	2
		1	49	21.56	21.58	21.84	2			1	24	21.47	21.49	21.75	2
		25	0	20.42	20.44	20.70	3			12	0	20.33	20.35	20.61	3
		25	12	20.49	20.51	20.77	3			12	6	20.40	20.42	20.68	3
		25	25	20.57	20.59	20.85	3			12	13	20.48	20.50	20.76	3
		50	0	20.47	20.49	20.75	3			25	0	20.38	20.40	20.66	3
3M	QPSK	1	0	23.20	23.22	23.48	0	1.4M	QPSK	1	0	23.09	23.11	23.37	0
		1	7	23.34	23.36	23.62	0			1	2	23.23	23.25	23.51	0
		1	14	23.47	23.49	23.75	0			1	5	23.36	23.38	23.64	0
		8	0	22.33	22.35	22.61	1			3	0	23.22	23.24	23.50	0
		8	3	22.40	22.42	22.68	1			3	1	23.29	23.31	23.57	0
		8	7	22.48	22.50	22.76	1			3	3	23.37	23.39	23.65	0
		15	0	22.38	22.40	22.66	1			6	0	22.27	22.29	22.55	1
	16QAM	1	0	22.19	22.21	22.47	1		16QAM	1	0	22.08	22.10	22.36	1
		1	7	22.33	22.35	22.61	1			1	2	22.22	22.24	22.50	1
		1	14	22.46	22.48	22.74	1			1	5	22.35	22.37	22.63	1
		8	0	21.32	21.34	21.60	2			3	0	22.21	22.23	22.49	1
		8	3	21.39	21.41	21.67	2			3	1	22.28	22.30	22.56	1
		8	7	21.47	21.49	21.75	2			3	3	22.36	22.38	22.64	1
		15	0	21.37	21.39	21.65	2			6	0	21.26	21.28	21.54	2
	64QAM	1	0	21.15	21.17	21.43	2		64QAM	1	0	21.04	21.06	21.32	2
		1	7	21.29	21.31	21.57	2			1	2	21.18	21.20	21.46	2
		1	14	21.42	21.44	21.70	2			1	5	21.31	21.33	21.59	2
		8	0	20.28	20.30	20.56	3			3	0	21.17	21.19	21.45	2
		8	3	20.35	20.37	20.63	3			3	1	21.24	21.26	21.52	2
		8	7	20.43	20.45	20.71	3			3	3	21.32	21.34	21.60	2
		15	0	20.33	20.35	20.61	3			6	0	20.22	20.24	20.50	3

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LTE Band 7															
Body-worn Mode															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20850	21100	21350				Channel		20825	21100	21375	
		Frequency (MHz)		2510.0	2535.0	2560.0				Frequency (MHz)		2507.5	2535.0	2562.5	
20M	QPSK	1	0	23.33	23.32	23.48	0	15M	QPSK	1	0	23.26	23.25	23.41	0
		1	50	23.66	23.56	23.72	0			1	37	23.59	23.49	23.65	0
		1	99	23.70	23.60	23.76	0			1	74	23.63	23.53	23.69	0
		50	0	22.63	22.53	22.69	1			36	0	22.56	22.46	22.62	1
		50	25	22.73	22.63	22.79	1			36	19	22.66	22.56	22.72	1
		50	50	22.69	22.59	22.75	1			36	39	22.62	22.52	22.68	1
		100	0	22.67	22.57	22.73	1			75	0	22.60	22.50	22.66	1
		1	0	22.32	22.31	22.47	1		16QAM	1	0	22.25	22.24	22.40	1
	16QAM	1	50	22.65	22.55	22.71	1			1	37	22.58	22.48	22.64	1
		1	99	22.69	22.59	22.75	1			1	74	22.62	22.52	22.68	1
		50	0	21.62	21.52	21.68	2			36	0	21.55	21.45	21.61	2
		50	25	21.72	21.62	21.78	2			36	19	21.65	21.55	21.71	2
		50	50	21.68	21.58	21.74	2			36	39	21.61	21.51	21.67	2
		100	0	21.66	21.56	21.72	2			75	0	21.59	21.49	21.65	2
	64QAM	1	0	21.28	21.27	21.43	2		64QAM	1	0	21.21	21.20	21.36	2
		1	50	21.61	21.51	21.67	2			1	37	21.54	21.44	21.60	2
		1	99	21.65	21.55	21.71	2			1	74	21.58	21.48	21.64	2
		50	0	20.58	20.48	20.64	3			36	0	20.51	20.41	20.57	3
		50	25	20.68	20.58	20.74	3			36	19	20.61	20.51	20.67	3
		50	50	20.64	20.54	20.70	3			36	39	20.57	20.47	20.63	3
		100	0	20.62	20.52	20.68	3			75	0	20.55	20.45	20.61	3
		1	0	21.16	21.15	21.31	0	10M	QPSK	1	0	23.04	23.03	23.19	0
10M	QPSK	1	24	23.49	23.39	23.55	0			1	12	23.37	23.27	23.43	0
		1	49	23.53	23.43	23.59	0			1	24	23.41	23.31	23.47	0
		25	0	22.46	22.36	22.52	1			12	0	22.34	22.24	22.40	1
		25	12	22.56	22.46	22.62	1			12	6	22.44	22.34	22.50	1
		25	25	22.52	22.42	22.58	1			12	13	22.40	22.30	22.46	1
		50	0	22.50	22.40	22.56	1			25	0	22.38	22.28	22.44	1
	16QAM	1	0	22.15	22.14	22.30	1		16QAM	1	0	22.03	22.02	22.18	1
		1	24	22.48	22.38	22.54	1			1	12	22.36	22.26	22.42	1
		1	49	22.52	22.42	22.58	1			1	24	22.40	22.30	22.46	1
		25	0	21.45	21.35	21.51	2			12	0	21.33	21.23	21.39	2
		25	12	21.55	21.45	21.61	2			12	6	21.43	21.33	21.49	2
		25	25	21.51	21.41	21.57	2			12	13	21.39	21.29	21.45	2
	64QAM	50	0	21.49	21.39	21.55	2			25	0	21.37	21.27	21.43	2
		1	0	21.11	21.10	21.26	2		64QAM	1	0	20.99	20.98	21.14	2
		1	24	21.44	21.34	21.50	2			1	12	21.32	21.22	21.38	2
		1	49	21.48	21.38	21.54	2			1	24	21.36	21.26	21.42	2
		25	0	20.41	20.31	20.47	3			12	0	20.29	20.19	20.35	3
		25	12	20.51	20.41	20.57	3			12	6	20.39	20.29	20.45	3
		25	25	20.47	20.37	20.53	3			12	13	20.35	20.25	20.41	3
		50	0	20.45	20.35	20.51	3			25	0	20.33	20.23	20.39	3

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LTE Band 7															
Hotspot Mode															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20850	21100	21350				Channel		20825	21100	21375	
		Frequency (MHz)		2510.0	2535.0	2560.0				Frequency (MHz)		2507.5	2535.0	2562.5	
20M	QPSK	1	0	21.51	21.52	21.70	0	15M	QPSK	1	0	21.49	21.50	21.68	0
		1	50	21.57	21.66	21.73	0			1	37	21.55	21.64	21.71	0
		1	99	21.62	21.67	21.79	0			1	74	21.60	21.65	21.77	0
		50	0	20.50	20.62	20.71	1			36	0	20.48	20.60	20.69	1
		50	25	20.73	20.69	20.79	1			36	19	20.71	20.67	20.77	1
		50	50	20.70	20.68	20.75	1			36	39	20.68	20.66	20.73	1
		100	0	20.68	20.66	20.69	1			75	0	20.66	20.64	20.67	1
		1	0	20.49	20.50	20.68	1		16QAM	1	0	20.46	20.47	20.65	1
	16QAM	1	50	20.55	20.64	20.71	1			1	37	20.52	20.61	20.68	1
		1	99	20.60	20.65	20.77	1			1	74	20.57	20.62	20.74	1
		50	0	19.48	19.60	19.69	2			36	0	19.45	19.57	19.66	2
		50	25	19.71	19.67	19.77	2			36	19	19.68	19.64	19.74	2
		50	50	19.68	19.66	19.73	2			36	39	19.65	19.63	19.70	2
		100	0	19.66	19.64	19.67	2			75	0	19.63	19.61	19.64	2
	64QAM	1	0	19.47	19.48	19.66	2		64QAM	1	0	19.43	19.44	19.62	2
		1	50	19.53	19.62	19.69	2			1	37	19.49	19.58	19.65	2
		1	99	19.58	19.63	19.75	2			1	74	19.54	19.59	19.71	2
		50	0	18.46	18.58	18.67	3			36	0	18.42	18.54	18.63	3
		50	25	18.69	18.65	18.75	3			36	19	18.65	18.61	18.71	3
		50	50	18.66	18.64	18.71	3			36	39	18.62	18.60	18.67	3
		100	0	18.64	18.62	18.65	3			75	0	18.60	18.58	18.61	3
		1	0	21.48	21.49	21.67	0	10M	QPSK	1	0	21.46	21.47	21.65	0
10M	QPSK	1	24	21.54	21.63	21.70	0			1	12	21.52	21.61	21.68	0
		1	49	21.59	21.64	21.76	0			1	24	21.57	21.62	21.74	0
		25	0	20.47	20.59	20.68	1			12	0	20.45	20.57	20.66	1
		25	12	20.70	20.66	20.76	1			12	6	20.68	20.64	20.74	1
		25	25	20.67	20.65	20.72	1			12	13	20.65	20.63	20.70	1
		50	0	20.65	20.63	20.66	1			25	0	20.63	20.61	20.64	1
	16QAM	1	0	20.44	20.45	20.63	1		16QAM	1	0	20.40	20.41	20.59	1
		1	24	20.50	20.59	20.66	1			1	12	20.46	20.55	20.62	1
		1	49	20.55	20.60	20.72	1			1	24	20.51	20.56	20.68	1
		25	0	19.43	19.55	19.64	2			12	0	19.39	19.51	19.60	2
		25	12	19.66	19.62	19.72	2			12	6	19.62	19.58	19.68	2
		25	25	19.63	19.61	19.68	2			12	13	19.59	19.57	19.64	2
	64QAM	50	0	19.61	19.59	19.62	2			25	0	19.57	19.55	19.58	2
		1	0	19.40	19.41	19.59	2		64QAM	1	0	19.34	19.35	19.53	2
		1	24	19.46	19.55	19.62	2			1	12	19.40	19.49	19.56	2
		1	49	19.51	19.56	19.68	2			1	24	19.45	19.50	19.62	2
		25	0	18.39	18.51	18.60	3			12	0	18.33	18.45	18.54	3
		25	12	18.62	18.58	18.68	3			12	6	18.56	18.52	18.62	3
		25	25	18.59	18.57	18.64	3			12	13	18.53	18.51	18.58	3
		50	0	18.57	18.55	18.58	3			25	0	18.51	18.49	18.52	3

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LTE Band 12															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23060	23095	23130				Channel		23035	23095	23155	
		Frequency (MHz)		704.0	707.5	711.0				Frequency (MHz)		701.5	707.5	713.5	
10M	QPSK	1	0	23.97	23.96	24.05	0	5M	QPSK	1	0	23.88	23.87	23.96	0
		1	24	24.08	24.07	24.16	0			1	12	23.99	23.98	24.07	0
		1	49	24.04	24.03	24.12	0			1	24	23.95	23.94	24.03	0
		25	0	23.10	23.09	23.18	1			12	0	23.01	23.00	23.09	1
		25	12	23.20	23.19	23.28	1			12	6	23.11	23.10	23.19	1
		25	25	23.15	23.14	23.23	1			12	13	23.06	23.05	23.14	1
		50	0	23.17	23.16	23.25	1			25	0	23.08	23.07	23.16	1
	16QAM	1	0	22.95	22.94	23.03	1		16QAM	1	0	22.86	22.85	22.94	1
		1	24	23.06	23.05	23.14	1			1	12	22.97	22.96	23.05	1
		1	49	23.02	23.01	23.10	1			1	24	22.93	22.92	23.01	1
		25	0	22.08	22.07	22.16	2			12	0	21.99	21.98	22.07	2
		25	12	22.18	22.17	22.26	2			12	6	22.09	22.08	22.17	2
		25	25	22.13	22.12	22.21	2			12	13	22.04	22.03	22.12	2
		50	0	22.15	22.14	22.23	2			25	0	22.06	22.05	22.14	2
	64QAM	1	0	21.89	21.88	21.97	2		64QAM	1	0	21.80	21.79	21.88	2
		1	24	22.00	21.99	22.08	2			1	12	21.91	21.90	21.99	2
		1	49	21.96	21.95	22.04	2			1	24	21.87	21.86	21.95	2
		25	0	21.02	21.01	21.10	3			12	0	20.93	20.92	21.01	3
		25	12	21.12	21.11	21.20	3			12	6	21.03	21.02	21.11	3
		25	25	21.07	21.06	21.15	3			12	13	20.98	20.97	21.06	3
		50	0	21.09	21.08	21.17	3			25	0	21.00	20.99	21.08	3
3M	QPSK	1	0	23.74	23.73	23.82	0	1.4M	QPSK	1	0	23.59	23.58	23.67	0
		1	7	23.85	23.84	23.93	0			1	2	23.70	23.69	23.78	0
		1	14	23.81	23.80	23.89	0			1	5	23.66	23.65	23.74	0
		8	0	22.87	22.86	22.95	1			3	0	23.52	23.51	23.60	0
		8	3	22.97	22.96	23.05	1			3	1	23.62	23.61	23.70	0
		8	7	22.92	22.91	23.00	1			3	3	23.57	23.56	23.65	0
		15	0	22.94	22.93	23.02	1			6	0	22.79	22.78	22.87	1
	16QAM	1	0	22.72	22.71	22.80	1		16QAM	1	0	22.57	22.56	22.65	1
		1	7	22.83	22.82	22.91	1			1	2	22.68	22.67	22.76	1
		1	14	22.79	22.78	22.87	1			1	5	22.64	22.63	22.72	1
		8	0	21.85	21.84	21.93	2			3	0	22.50	22.49	22.58	1
		8	3	21.95	21.94	22.03	2			3	1	22.60	22.59	22.68	1
		8	7	21.90	21.89	21.98	2			3	3	22.55	22.54	22.63	1
		15	0	21.92	21.91	22.00	2			6	0	21.77	21.76	21.85	2
	64QAM	1	0	21.66	21.65	21.74	2		64QAM	1	0	21.51	21.50	21.59	2
		1	7	21.77	21.76	21.85	2			1	2	21.62	21.61	21.70	2
		1	14	21.73	21.72	21.81	2			1	5	21.58	21.57	21.66	2
		8	0	20.79	20.78	20.87	3			3	0	21.44	21.43	21.52	2
		8	3	20.89	20.88	20.97	3			3	1	21.54	21.53	21.62	2
		8	7	20.84	20.83	20.92	3			3	3	21.49	21.48	21.57	2
		15	0	20.86	20.85	20.94	3			6	0	20.71	20.70	20.79	3

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LTE Band 13															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel			23230					Channel		23205	23230	23225	
		Frequency (MHz)			782.0					Frequency (MHz)		779.5	782.0	784.5	
10M	QPSK	1	0		23.91		0	5M	QPSK	1	0	23.94	23.90	23.78	0
		1	24		23.81		0			1	12	23.83	23.79	23.67	0
		1	49		23.55		0			1	24	23.71	23.67	23.55	0
		25	0		22.95		1			12	0	22.88	22.84	22.72	1
		25	12		22.87		1			12	6	22.91	22.87	22.75	1
		25	25		22.73		1			12	13	22.78	22.74	22.62	1
		50	0		22.83		1			25	0	22.87	22.83	22.71	1
	16QAM	1	0		22.89		1		16QAM	1	0	22.92	22.88	22.76	1
		1	24		22.79		1			1	12	22.81	22.77	22.65	1
		1	49		22.53		1			1	24	22.69	22.65	22.53	1
		25	0		21.93		2			12	0	21.86	21.82	21.70	2
		25	12		21.85		2			12	6	21.89	21.85	21.73	2
		25	25		21.71		2			12	13	21.76	21.72	21.60	2
		50	0		21.81		2			25	0	21.85	21.81	21.69	2
	64QAM	1	0		21.84		2		64QAM	1	0	21.86	21.82	21.70	2
		1	24		21.74		2			1	12	21.75	21.71	21.59	2
		1	49		21.48		2			1	24	21.63	21.59	21.47	2
		25	0		20.88		3			12	0	20.80	20.76	20.64	3
		25	12		20.80		3			12	6	20.83	20.79	20.67	3
		25	25		20.66		3			12	13	20.70	20.66	20.54	3
		50	0		20.76		3			25	0	20.79	20.75	20.63	3

LTE Band 17															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23780	23790	23800				Channel		23755	23790	23825	
		Frequency (MHz)		709.0	710.0	711.0				Frequency (MHz)		706.5	710.0	713.5	
10M	QPSK	1	0	23.96	23.98	24.05	0	5M	QPSK	1	0	23.88	23.90	23.97	0
		1	24	24.04	24.06	24.13	0			1	12	23.96	23.98	24.05	0
		1	49	23.97	23.99	24.06	0			1	24	23.89	23.91	23.98	0
		25	0	23.13	23.15	23.22	1			12	0	23.05	23.07	23.14	1
		25	12	23.15	23.17	23.24	1			12	6	23.07	23.09	23.16	1
		25	25	23.02	23.04	23.11	1			12	13	22.94	22.96	23.03	1
		50	0	23.09	23.11	23.18	1			25	0	23.01	23.03	23.10	1
	16QAM	1	0	22.94	22.96	23.03	1		16QAM	1	0	22.86	22.88	22.95	1
		1	24	23.02	23.04	23.11	1			1	12	22.94	22.96	23.03	1
		1	49	22.95	22.97	23.04	1			1	24	22.87	22.89	22.96	1
		25	0	22.11	22.13	22.20	2			12	0	22.03	22.05	22.12	2
		25	12	22.13	22.15	22.22	2			12	6	22.05	22.07	22.14	2
		25	25	22.00	22.02	22.09	2			12	13	21.92	21.94	22.01	2
		50	0	22.07	22.09	22.16	2			25	0	21.99	22.01	22.08	2
	64QAM	1	0	21.87	21.89	21.96	2		64QAM	1	0	21.79	21.81	21.88	2
		1	24	21.95	21.97	22.04	2			1	12	21.87	21.89	21.96	2
		1	49	21.88	21.90	21.97	2			1	24	21.80	21.82	21.89	2
		25	0	21.04	21.06	21.13	3			12	0	20.96	20.98	21.05	3
		25	12	21.06	21.08	21.15	3			12	6	20.98	21.00	21.07	3
		25	25	20.93	20.95	21.02	3			12	13	20.85	20.87	20.94	3
		50	0	21.00	21.02	21.09	3			25	0	20.92	20.94	21.01	3

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LTE Band 25															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		26140	26365	26590				Channel		26115	26365	26615	
		Frequency (MHz)		1860.0	1882.5	1905.0				Frequency (MHz)		1857.5	1882.5	1907.5	
20M	QPSK	1	0	23.22	22.96	22.91	0	15M	QPSK	1	0	23.12	22.86	22.81	0
		1	50	23.12	22.86	22.81	0			1	37	23.02	22.76	22.71	0
		1	99	23.03	22.77	22.72	0			1	74	22.93	22.67	22.62	0
		50	0	22.27	22.01	21.96	1			36	0	22.17	21.91	21.86	1
		50	25	22.21	21.95	21.90	1			36	19	22.11	21.85	21.80	1
		50	50	22.07	21.81	21.76	1			36	39	21.97	21.71	21.66	1
	16QAM	100	0	22.12	21.86	21.81	1			75	0	22.02	21.76	21.71	1
		1	0	22.20	21.94	21.89	1		16QAM	1	0	22.10	21.84	21.79	1
		1	50	22.10	21.84	21.79	1			1	37	22.00	21.74	21.69	1
		1	99	22.01	21.75	21.70	1			1	74	21.91	21.65	21.60	1
		50	0	21.25	20.99	20.94	2			36	0	21.15	20.89	20.84	2
		50	25	21.19	20.93	20.88	2			36	19	21.09	20.83	20.78	2
	64QAM	50	50	21.05	20.79	20.74	2			36	39	20.95	20.69	20.64	2
		100	0	21.10	20.84	20.79	2			75	0	21.00	20.74	20.69	2
		1	0	21.14	20.88	20.83	2		64QAM	1	0	21.04	20.78	20.73	2
		1	50	21.04	20.78	20.73	2			1	37	20.94	20.68	20.63	2
		1	99	20.95	20.69	20.64	2			1	74	20.85	20.59	20.54	2
		50	0	20.19	19.93	19.88	3			36	0	20.09	19.83	19.78	3
		50	25	20.13	19.87	19.82	3			36	19	20.03	19.77	19.72	3
		50	50	19.99	19.73	19.68	3			36	39	19.89	19.63	19.58	3
		100	0	20.04	19.78	19.73	3			75	0	19.94	19.68	19.63	3
10M	QPSK	1	0	23.01	22.75	22.70	0	5M	QPSK	1	0	22.94	22.68	22.63	0
		1	24	22.91	22.65	22.60	0			1	12	22.84	22.58	22.53	0
		1	49	22.82	22.56	22.51	0			1	24	22.75	22.49	22.44	0
		25	0	22.06	21.80	21.75	1			12	0	21.99	21.73	21.68	1
		25	12	22.00	21.74	21.69	1			12	6	21.93	21.67	21.62	1
		25	25	21.86	21.60	21.55	1			12	13	21.79	21.53	21.48	1
	16QAM	50	0	21.91	21.65	21.60	1			25	0	21.84	21.58	21.53	1
		1	0	21.99	21.73	21.68	1		16QAM	1	0	21.92	21.66	21.61	1
		1	24	21.89	21.63	21.58	1			1	12	21.82	21.56	21.51	1
		1	49	21.80	21.54	21.49	1			1	24	21.73	21.47	21.42	1
		25	0	21.04	20.78	20.73	2			12	0	20.97	20.71	20.66	2
		25	12	20.98	20.72	20.67	2			12	6	20.91	20.65	20.60	2
	64QAM	25	25	20.84	20.58	20.53	2			12	13	20.77	20.51	20.46	2
		50	0	20.89	20.63	20.58	2			25	0	20.82	20.56	20.51	2
		1	0	20.93	20.67	20.62	2		64QAM	1	0	20.86	20.60	20.55	2
		1	24	20.83	20.57	20.52	2			1	12	20.76	20.50	20.45	2
		1	49	20.74	20.48	20.43	2			1	24	20.67	20.41	20.36	2
		25	0	19.98	19.72	19.67	3			12	0	19.91	19.65	19.60	3
3M	QPSK	25	12	19.92	19.66	19.61	3			12	6	19.85	19.59	19.54	3
		25	25	19.78	19.52	19.47	3			12	13	19.71	19.45	19.40	3
		50	0	19.83	19.57	19.52	3			25	0	19.76	19.50	19.45	3
	16QAM	1	0	21.79	21.53	21.48	1	1.4M	QPSK	1	0	22.76	22.50	22.45	0
		1	7	21.69	21.43	21.38	1			1	2	22.66	22.40	22.35	0
		1	14	21.6	21.34	21.29	1			1	5	22.57	22.31	22.26	0
		8	0	20.84	20.58	20.53	2			3	0	22.71	22.45	22.40	0
		8	3	20.78	20.52	20.47	2			3	1	22.65	22.39	22.34	0
		8	7	20.64	20.38	20.33	2			3	3	22.51	22.25	22.20	0
	64QAM	15	0	20.69	20.43	20.38	2			6	0	21.66	21.40	21.35	1
		1	0	20.73	20.47	20.42	2		16QAM	1	0	21.74	21.48	21.43	1
		1	7	20.63	20.37	20.32	2			1	2	21.64	21.38	21.33	1
		1	14	20.54	20.28	20.23	2			1	5	21.55	21.29	21.24	1
		8	0	19.78	19.52	19.47	3			3	0	21.69	21.43	21.38	1
		8	3	19.72	19.46	19.41	3			3	1	21.63	21.37	21.32	1
	QPSK	8	7	19.58	19.32	19.27	3			3	3	21.49	21.23	21.18	1
		15	0	19.63	19.37	19.32	3			6	0	20.64	20.38	20.33	2
	16QAM	1	0	20.68	20.42	20.37	2		64QAM	1	0	20.68	20.42	20.37	2
		1	7	20.58	20.32	20.27	2			1	2	20.58	20.32	20.27	2
		1	14	20.49	20.23	20.18	2			1	5	20.49	20.23	20.18	2
		8	0	20.63	20.37	20.32	2			3	0	20.63	20.37	20.32	2
		8	3	20.57	20.31	20.26	2			3	1	20.57	20.31	20.26	2
		8	7	20.43	20.17	20.12	2			3	3	20.43	20.17	20.12	2
		15	0	19.58	19.32	19.27	3			6	0	19.58	19.32	19.27	3

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LTE Band 26																
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	
		Channel		26765	26865	26965				Channel		26740	26865	26990		
		Frequency (MHz)		821.5	831.5	841.5				Frequency (MHz)		819.0	831.5	844.0		
15M	QPSK	1	0	23.58	23.39	23.47	0	10M	QPSK	1	0	23.48	23.29	23.37	0	
		1	37	23.49	23.30	23.38	0			1	24	23.39	23.20	23.28	0	
		1	74	23.69	23.50	23.58	0			1	49	23.59	23.40	23.48	0	
		36	0	22.62	22.43	22.51	1			25	0	22.52	22.33	22.41	1	
		36	19	22.59	22.40	22.48	1			25	12	22.49	22.30	22.38	1	
		36	39	22.71	22.52	22.60	1			25	25	22.61	22.42	22.50	1	
		75	0	22.56	22.37	22.45	1			50	0	22.46	22.27	22.35	1	
	16QAM	1	0	22.52	22.33	22.41	1		16QAM	1	0	22.42	22.23	22.31	1	
		1	37	22.43	22.24	22.32	1			1	24	22.33	22.14	22.22	1	
		1	74	22.63	22.44	22.52	1			1	49	22.53	22.34	22.42	1	
		36	0	21.56	21.37	21.45	2			25	0	21.46	21.27	21.35	2	
		36	19	21.53	21.34	21.42	2			25	12	21.43	21.24	21.32	2	
		36	39	21.65	21.46	21.54	2			25	25	21.55	21.36	21.44	2	
		75	0	21.50	21.31	21.39	2			50	0	21.40	21.21	21.29	2	
	64QAM	1	0	21.45	21.26	21.34	2		64QAM	1	0	21.35	21.16	21.24	2	
		1	37	21.36	21.17	21.25	2			1	24	21.26	21.07	21.15	2	
		1	74	21.56	21.37	21.45	2			1	49	21.46	21.27	21.35	2	
		36	0	20.49	20.30	20.38	3			25	0	20.39	20.20	20.28	3	
		36	19	20.46	20.27	20.35	3			25	12	20.36	20.17	20.25	3	
		36	39	20.58	20.39	20.47	3			25	25	20.48	20.29	20.37	3	
		75	0	20.43	20.24	20.32	3			50	0	20.33	20.14	20.22	3	
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	
		Channel		26715	26865	27015				Channel		26705	26865	27025		
		Frequency (MHz)		816.5	831.5	846.5				Frequency (MHz)		815.5	831.5	847.5		
5M	QPSK	1	0	23.40	23.21	23.29	0	3M	QPSK	1	0	23.33	23.14	23.22	0	
		1	12	23.31	23.12	23.20	0			1	7	23.24	23.05	23.13	0	
		1	24	23.51	23.32	23.40	0			1	14	23.44	23.25	23.33	0	
		12	0	22.44	22.25	22.33	1			8	0	22.37	22.18	22.26	1	
		12	6	22.41	22.22	22.30	1			8	3	22.34	22.15	22.23	1	
		12	13	22.53	22.34	22.42	1			8	7	22.46	22.27	22.35	1	
		25	0	22.38	22.19	22.27	1			15	0	22.31	22.12	22.20	1	
	16QAM	1	0	22.34	22.15	22.23	1		16QAM	1	0	22.27	22.08	22.16	1	
		1	12	22.25	22.06	22.14	1			1	7	22.18	21.99	22.07	1	
		1	24	22.45	22.26	22.34	1			1	14	22.38	22.19	22.27	1	
		12	0	21.38	21.19	21.27	2			8	0	21.31	21.12	21.20	2	
		12	6	21.35	21.16	21.24	2			8	3	21.28	21.09	21.17	2	
		12	13	21.47	21.28	21.36	2			8	7	21.40	21.21	21.29	2	
		25	0	21.32	21.13	21.21	2			15	0	21.25	21.06	21.14	2	
	64QAM	1	0	21.27	21.08	21.16	2		64QAM	1	0	21.20	21.01	21.09	2	
		1	12	21.18	20.99	21.07	2			1	7	21.11	20.92	21.00	2	
		1	24	21.38	21.19	21.27	2			1	14	21.31	21.12	21.20	2	
		12	0	20.31	20.12	20.20	3			8	0	20.24	20.05	20.13	3	
		12	6	20.28	20.09	20.17	3			8	3	20.21	20.02	20.10	3	
		12	13	20.40	20.21	20.29	3			8	7	20.33	20.14	20.22	3	
		25	0	20.25	20.06	20.14	3			15	0	20.18	19.99	20.07	3	
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)									
		Channel		26697	26865	27033										
		Frequency (MHz)		814.7	831.5	848.3										
1.4M	QPSK	1	0	23.20	23.01	23.09	0									
		1	2	23.11	22.92	23.00	0									
		1	5	23.31	23.12	23.20	0									
		3	0	23.14	22.95	23.03	0									
		3	1	23.11	22.92	23.00	0									
		3	3	23.23	23.04	23.12	0									
		6	0	22.18	21.99	22.07	1									
	16QAM	1	0	22.14	21.95	22.03	1									
		1	2	22.05	21.86	21.94	1									
		1	5	22.25	22.06	22.14	1									
		3	0	22.08	21.89	21.97	1									
		3	1	22.05	21.86	21.94	1									
		3	3	22.17	21.98	22.06	1									
		6	0	21.12	20.93	21.01	2									
	64QAM	1	0	21.07	20.88	20.96	2									
		1	2	20.98	20.79	20.87	2									
		1	5	21.18	20.99	21.07	2									
		3	0	21.01	20.82	20.90	2									
		3	1	20.98	20.79	20.87	2									
		3	3	21.10	20.91	20.99	2									
		6	0	20.05	19.86	19.94	3									

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LTE Band 38															
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		37850	38000	38150				Channel		37825	38000	38175	
		Frequency (MHz)		2580.0	2595.0	2610.0				Frequency (MHz)		2577.5	2595.0	2612.5	
20M	QPSK	1	0	23.41	23.57	23.59	0	15M	QPSK	1	0	23.29	23.45	23.47	0
		1	50	23.65	23.81	23.83	0			1	37	23.53	23.69	23.71	0
		1	99	23.59	23.75	23.77	0			1	74	23.47	23.63	23.65	0
		50	0	22.71	22.87	22.89	1			36	0	22.59	22.75	22.77	1
		50	25	22.74	22.90	22.92	1			36	19	22.62	22.78	22.80	1
		50	50	22.72	22.88	22.90	1			36	39	22.60	22.76	22.78	1
		100	0	22.73	22.89	22.91	1			75	0	22.61	22.77	22.79	1
	16QAM	1	0	22.36	22.52	22.54	1		16QAM	1	0	22.24	22.40	22.42	1
		1	50	22.60	22.76	22.78	1			1	37	22.48	22.64	22.66	1
		1	99	22.54	22.70	22.72	1			1	74	22.42	22.58	22.60	1
		50	0	21.66	21.82	21.84	2			36	0	21.54	21.70	21.72	2
		50	25	21.69	21.85	21.87	2			36	19	21.57	21.73	21.75	2
		50	50	21.67	21.83	21.85	2			36	39	21.55	21.71	21.73	2
		100	0	21.68	21.84	21.86	2			75	0	21.56	21.72	21.74	2
	64QAM	1	0	21.32	21.48	21.50	2		64QAM	1	0	21.20	21.36	21.38	2
		1	50	21.56	21.72	21.74	2			1	37	21.44	21.60	21.62	2
		1	99	21.50	21.66	21.68	2			1	74	21.38	21.54	21.56	2
		50	0	20.62	20.78	20.80	3			36	0	20.50	20.66	20.68	3
		50	25	20.65	20.81	20.83	3			36	19	20.53	20.69	20.71	3
		50	50	20.63	20.79	20.81	3			36	39	20.51	20.67	20.69	3
		100	0	20.64	20.80	20.82	3			75	0	20.52	20.68	20.70	3
10M	QPSK	1	0	23.21	23.37	23.39	0	5M	QPSK	1	0	23.11	23.27	23.29	0
		1	24	23.45	23.61	23.63	0			1	12	23.35	23.51	23.53	0
		1	49	23.39	23.55	23.57	0			1	24	23.29	23.45	23.47	0
		25	0	22.51	22.67	22.69	1			12	0	22.41	22.57	22.59	1
		25	12	22.54	22.70	22.72	1			12	6	22.44	22.60	22.62	1
		25	25	22.52	22.68	22.70	1			12	13	22.42	22.58	22.60	1
		50	0	22.53	22.69	22.71	1			25	0	22.43	22.59	22.61	1
	16QAM	1	0	22.16	22.32	22.34	1		16QAM	1	0	22.06	22.22	22.24	1
		1	24	22.40	22.56	22.58	1			1	12	22.30	22.46	22.48	1
		1	49	22.34	22.50	22.52	1			1	24	22.24	22.40	22.42	1
		25	0	21.46	21.62	21.64	2			12	0	21.36	21.52	21.54	2
		25	12	21.49	21.65	21.67	2			12	6	21.39	21.55	21.57	2
		25	25	21.47	21.63	21.65	2			12	13	21.37	21.53	21.55	2
		50	0	21.48	21.64	21.66	2			25	0	21.38	21.54	21.56	2
	64QAM	1	0	21.12	21.28	21.30	2		64QAM	1	0	21.02	21.18	21.20	2
		1	24	21.36	21.52	21.54	2			1	12	21.26	21.42	21.44	2
		1	49	21.30	21.46	21.48	2			1	24	21.20	21.36	21.38	2
		25	0	20.42	20.58	20.60	3			12	0	20.32	20.48	20.50	3
		25	12	20.45	20.61	20.63	3			12	6	20.35	20.51	20.53	3
		25	25	20.43	20.59	20.61	3			12	13	20.33	20.49	20.51	3
		50	0	20.44	20.60	20.62	3			25	0	20.34	20.50	20.52	3

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LTE Band 41																							
BW	MCS Index	RB Size	RB Offset	Low	Low	Mid	Mid	Mid	High	3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Low	Mid	Mid	Mid	High	3GPP MPR (dB)		
		Channel	39750	39790	40185	40620	41055	41490	Channel				39725	39765	40173	40620	41068	41515					
		Frequency (MHz)	2506	2510.0	2549.5	2593.0	2636.5	2680.0	Frequency (MHz)				2503.5	2507.5	2548.3	2593.0	2637.8	2682.5					
20M	QPSK	1	0	23.66	23.57	23.64	23.67	23.58	23.44	0	15M	QPSK	1	0	23.54	23.50	23.52	23.55	23.46	23.32	0		
		1	50	23.77	23.72	23.75	23.78	23.69	23.55	0			1	37	23.65	23.66	23.63	23.66	23.57	23.43	0		
		1	99	23.80	23.68	23.78	23.81	23.72	23.58	0			1	74	23.68	23.62	23.66	23.69	23.60	23.46	0		
		50	0	22.79	22.71	22.77	22.80	22.71	22.57	1			36	0	22.67	22.71	22.65	22.68	22.59	22.45	1		
		50	25	22.88	22.86	22.86	22.89	22.80	22.66	1			36	19	22.76	22.76	22.74	22.77	22.68	22.54	1		
		50	50	22.83	22.80	22.81	22.84	22.75	22.61	1			36	39	22.71	22.70	22.69	22.72	22.63	22.49	1		
		100	0	22.84	22.81	22.82	22.85	22.76	22.62	1			75	0	22.72	22.66	22.70	22.73	22.64	22.50	1		
		16 QAM	1	0	22.61	22.48	22.59	22.62	22.53	22.39			1	16 QAM	1	0	22.49	22.45	22.47	22.50	22.41	22.27	1
	1		50	22.72	22.63	22.70	22.73	22.64	22.50	1		1	37		22.60	22.67	22.58	22.61	22.52	22.38	1		
	1		99	22.75	22.65	22.73	22.76	22.67	22.53	1		1	74		22.63	22.61	22.61	22.64	22.55	22.41	1		
	50		0	21.74	21.64	21.72	21.75	21.66	21.52	2		36	0		21.62	21.61	21.60	21.63	21.54	21.40	2		
	50		25	21.83	21.81	21.81	21.84	21.75	21.61	2		36	19		21.71	21.77	21.69	21.72	21.63	21.49	2		
	50		50	21.78	21.75	21.76	21.79	21.70	21.56	2		36	39		21.66	21.62	21.64	21.67	21.58	21.44	2		
	100		0	21.79	21.79	21.77	21.80	21.71	21.57	2		75	0		21.67	21.65	21.65	21.68	21.59	21.45	2		
	64 QAM		1	0	21.57	21.47	21.55	21.58	21.49	21.35		2	64 QAM		1	0	21.45	21.35	21.43	21.46	21.37	21.23	2
		1	50	21.68	21.72	21.66	21.69	21.60	21.46	2		1		37	21.56	21.62	21.54	21.57	21.48	21.34	2		
		1	99	21.71	21.66	21.69	21.72	21.63	21.49	2		1		74	21.59	21.58	21.57	21.60	21.51	21.37	2		
		50	0	20.70	20.68	20.68	20.71	20.62	20.48	3		36		0	20.58	20.61	20.56	20.59	20.50	20.36	3		
		50	25	20.79	20.77	20.77	20.80	20.71	20.57	3		36		19	20.67	20.69	20.65	20.68	20.59	20.45	3		
		50	50	20.74	20.70	20.72	20.75	20.66	20.52	3		36		39	20.62	20.68	20.60	20.63	20.54	20.40	3		
		100	0	20.75	20.75	20.73	20.76	20.67	20.53	3		75		0	20.63	20.62	20.61	20.64	20.55	20.41	3		
		BW	MCS Index	RB Size	RB Offset	Low	Low	Mid	Mid	Mid		High		3GPP MPR (dB)	BW	MCS Index	RB Size	RB Offset	Low	Low	Mid	Mid	Mid
	Channel			39700	39740	40160	40620	41080	41540	Channel		39675	39715				40148	40620	41093	41565			
	Frequency (MHz)			2501.0	2505	2547.0	2593.0	2639.0	2685.0	Frequency (MHz)		2498.5	2502.5				2545.8	2593.0	2640.3	2687.5			
10M	QPSK	1	0	23.46	23.35	23.44	23.47	23.38	23.24	0	5M	QPSK	1	0	23.36	23.30	23.34	23.37	23.28	23.14	0		
		1	24	23.57	23.60	23.55	23.58	23.49	23.35	0			1	12	23.47	23.56	23.45	23.48	23.39	23.25	0		
		1	49	23.60	23.54	23.58	23.61	23.52	23.38	0			1	24	23.50	23.51	23.48	23.51	23.42	23.28	0		
		25	0	22.59	22.65	22.57	22.60	22.51	22.37	1			12	0	22.49	22.59	22.47	22.50	22.41	22.27	1		
		25	12	22.68	22.69	22.66	22.69	22.60	22.46	1			12	6	22.58	22.61	22.56	22.59	22.50	22.36	1		
		25	25	22.63	22.62	22.61	22.64	22.55	22.41	1			12	13	22.53	22.48	22.51	22.54	22.45	22.31	1		
		50	0	22.64	22.60	22.62	22.65	22.56	22.42	1			25	0	22.54	22.57	22.52	22.55	22.46	22.32	1		
		16 QAM	1	0	22.41	22.37	22.39	22.42	22.33	22.19			1	16 QAM	1	0	22.31	22.36	22.29	22.32	22.23	22.09	1
	1		24	22.52	22.53	22.50	22.53	22.44	22.30	1		1	12		22.42	22.43	22.40	22.43	22.34	22.20	1		
	1		49	22.55	22.56	22.53	22.56	22.47	22.33	1		1	24		22.45	22.43	22.43	22.46	22.37	22.23	1		
	25		0	21.54	21.57	21.52	21.55	21.46	21.32	2		12	0		21.44	21.55	21.42	21.45	21.36	21.22	2		
	25		12	21.63	21.68	21.61	21.64	21.55	21.41	2		12	6		21.53	21.67	21.51	21.54	21.45	21.31	2		
	25		25	21.58	21.51	21.56	21.59	21.50	21.36	2		12	13		21.48	21.45	21.46	21.49	21.40	21.26	2		
	50		0	21.59	21.63	21.57	21.60	21.51	21.37	2		25	0		21.49	21.52	21.47	21.50	21.41	21.27	2		
	64 QAM		1	0	21.37	21.21	21.35	21.38	21.29	21.15		2	64 QAM		1	0	21.27	21.19	21.25	21.28	21.19	21.05	2
		1	24	21.48	21.55	21.46	21.49	21.40	21.26	2		1		12	21.38	21.40	21.36	21.39	21.30	21.16	2		
		1	49	21.51	21.53	21.49	21.52	21.43	21.29	2		1		24	21.41	21.43	21.39	21.42	21.33	21.19	2		
		25	0	20.50	20.60	20.48	20.51	20.42	20.28	3		12		0	20.40	20.45	20.38	20.41	20.32	20.18	3		
		25	12	20.59	20.63	20.57	20.60	20.51	20.37	3		12		6	20.49	20.54	20.47	20.50	20.41	20.27	3		
		25	25	20.54	20.64	20.52	20.55	20.46	20.32	3		12		13	20.44	20.49	20.42	20.45	20.36	20.22	3		
		50	0	20.55	20.52	20.53	20.56	20.47	20.33	3		25		0	20.45	20.50	20.43	20.46	20.37	20.23	3		

FCC SAR Test Report

WLAN/BT

Head Mode

<WLAN 2.4G>

Mode	Channel	Frequency (MHz)	Average Power (Ant-0)	Average Power (Ant-1)	Average Power (Ant-0 + Ant-1)
802.11b	1	2412	17.79	17.93	20.81
	6	2437	17.74	17.92	20.83
	11	2462	17.96	18.06	20.77

<WLAN 5.3G>

Mode	Channel	Frequency (MHz)	Average Power (Ant-0)	Average Power (Ant-1)	Average Power (Ant-0 + Ant-1)
802.11ac (VHT80)	58	5290	12.96	12.09	15.13

<WLAN 5.6G>

Mode	Channel	Frequency (MHz)	Average Power (Ant-0)	Average Power (Ant-1)	Average Power (Ant-0 + Ant-1)
802.11ac (VHT80)	106	5530	12.79	13.01	16.11
	138	5690	13.08	12.99	16.12

<WLAN 5.8G>

Mode	Channel	Frequency (MHz)	Average Power (Ant-0)	Average Power (Ant-1)	Average Power (Ant-0 + Ant-1)
802.11ac (VHT80)	155	5775	13.23	12.96	16.02

<Bluetooth Ant 0>

Mode	Channel	Frequency (MHz)	Average Power
Bluetooth EDR	0	2402	9.81
	39	2441	8.79
	78	2480	8.74
Bluetooth LE	0	2402	0.90
	19	2440	0.19
	39	2480	0.45

<Bluetooth Ant 1>

Mode	Channel	Frequency (MHz)	Average Power
Bluetooth LE	0	2402	2.75
	19	2440	2.74
	39	2480	2.76

<Zigbee>

Mode	Channel	Frequency (MHz)	Average Power
Zigbee	11	2402	2.89
	18	2440	2.82
	26	2480	2.73

FCC SAR Test Report

Body-worn Mode

<WLAN 2.4G>

Mode	Channel	Frequency (MHz)	Average Power (Ant-0)	Average Power (Ant-1)	Average Power (Ant-0 + Ant-1)
802.11b	1	2412	18.97	19.12	22.06
	6	2437	19.02	19.04	22.04
	11	2462	19.15	18.84	22.01

<WLAN 5.3G>

Mode	Channel	Frequency (MHz)	Average Power (Ant-0)	Average Power (Ant-1)	Average Power (Ant-0 + Ant-1)
802.11n (HT40)	54	5270	14.05	14.39	17.23
	62	5310	11.76	12.36	15.08

<WLAN 5.6G>

Mode	Channel	Frequency (MHz)	Average Power (Ant-0)	Average Power (Ant-1)	Average Power (Ant-0 + Ant-1)
802.11ac (VHT80)	106	5530	13.62	13.92	16.78
	138	5690	15.53	16.44	19.02

<WLAN 5.8G>

Mode	Channel	Frequency (MHz)	Average Power (Ant-0)	Average Power (Ant-1)	Average Power (Ant-0 + Ant-1)
802.11ac (VHT80)	155	5775	15.52	16.67	19.14

<Bluetooth Ant 0>

Mode	Channel	Frequency (MHz)	Average Power
Bluetooth EDR	0	2402	9.81
	39	2441	8.79
	78	2480	8.74
Bluetooth LE	0	2402	0.90
	19	2440	0.19
	39	2480	0.45

<Bluetooth Ant 1>

Mode	Channel	Frequency (MHz)	Average Power
Bluetooth LE	0	2402	2.75
	19	2440	2.74
	39	2480	2.76

<Zigbee>

Mode	Channel	Frequency (MHz)	Average Power
Zigbee	11	2402	2.89
	18	2440	2.82
	26	2480	2.73

FCC SAR Test Report

Hotspot Mode

<WLAN 2.4G>

Mode	Channel	Frequency (MHz)	Average Power (Ant-0)	Average Power (Ant-1)	Average Power (Ant-0 + Ant-1)
802.11b	1	2412	18.97	19.12	22.06
	6	2437	19.02	19.04	22.04
	11	2462	19.15	18.84	22.01

<WLAN 5.2G>

Mode	Channel	Frequency (MHz)	Average Power (Ant-0)	Average Power (Ant-1)	Average Power (Ant-0 + Ant-1)
802.11ac (VHT80)	42	5210	10.43	10.46	13.44

<WLAN 5.8G>

Mode	Channel	Frequency (MHz)	Average Power (Ant-0)	Average Power (Ant-1)	Average Power (Ant-0 + Ant-1)
802.11ac (VHT80)	155	5775	10.59	10.47	13.48

<Bluetooth Ant 0>

Mode	Channel	Frequency (MHz)	Average Power
Bluetooth EDR	0	2402	9.81
	39	2441	8.79
	78	2480	8.74
Bluetooth LE	0	2402	0.90
	19	2440	0.19
	39	2480	0.45

<Bluetooth Ant 1>

Mode	Channel	Frequency (MHz)	Average Power
Bluetooth LE	0	2402	2.75
	19	2440	2.74
	39	2480	2.76

<Zigbee>

Mode	Channel	Frequency (MHz)	Average Power
Zigbee	11	2402	2.89
	18	2440	2.82
	26	2480	2.73

4.7 SAR Testing Results

4.7.1 SAR Test Reduction Considerations

<KDB 447498 D01, General RF Exposure Guidance>

Testing of other required channels within the operating mode of a frequency band is not required when the reported SAR for the mid-band or highest output power channel is:

- (1) ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- (2) ≤ 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
- (3) ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

<KDB 941225 D01, 3G SAR Measurement Procedures>

The mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq 1/4$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

<KDB 941225 D05, SAR Evaluation Considerations for LTE Devices>

(1) QPSK with 1 RB and 50% RB allocation

Start with the largest channel bandwidth and measure SAR, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

(2) 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.

(3) Higher order modulations

SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> 1/2$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

(4) Other channel bandwidth

SAR is required when the highest maximum output power of the smaller channel bandwidth is $> 1/2$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

FCC SAR Test Report

<Power Confirmation for SAR Test Exclusion for LTE Downlink CA>

According to KDB 941225 D05A, the uplink maximum output power below was measured with downlink CA active on the channel with highest measured maximum output power when downlink CA is inactive. The downlink SCC channel was paired with the uplink channel as normal operation. For intra-band contiguous CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing per section 5.4.1A of 3GPP TS36.521. For intra-band non-contiguous CA, the downlink channel spacing between the component carriers was set to maximum separation from PCC and remain fully within the downlink transmission band. For Inter-band CA, the SCC downlink channel was set to near the middle of its transmission band.

Head Mode (Wifi Off)

Power Measurements for Intra-Band Non-Contiguous Downlink CA

CA Combination	PCC								SCC1				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_2A-2A	2	20M	18700	1860	1	0	700	1940	2	20M	1100	1980	23.21	23.26
CA_4A-4A	4	20M	20300	1745	1	0	2300	2145	4	20M	2050	2120	24.63	24.64
CA_7A-7A	7	20M	21350	2560	1	99	3100	2565	7	20M	2850	2630	23.40	23.41
CA_41A-41A	41	20M	40620	2593	1	99	40620	2593	41	20M	39750	2506	23.80	23.83

Power Measurements for Inter-Band Downlink CA

CA Combination	PCC								SCC1				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_2A-4A	2	20M	18700	1860	1	0	700	1940	4	20M	2175	2132.5	23.15	23.26
CA_2A-5A	2	20M	18700	1860	1	0	700	1940	5	10M	2525	881.5	23.18	23.26
CA_2A-12A	2	20M	18700	1860	1	0	700	1940	12	10M	5095	737.5	23.17	23.26
CA_2A-13A	2	20M	18700	1860	1	0	700	1940	13	10M	5230	751	23.20	23.26
CA_2A-29A	2	20M	18700	1860	1	0	700	1940	29	10M	9715	722.5	23.24	23.26
CA_4A-5A	4	20M	20300	1745	1	0	2300	2145	5	10M	2525	881.5	24.61	24.64
CA_4A-12A	4	20M	20300	1745	1	0	2300	2145	12	10M	5095	737.5	24.61	24.64
CA_4A-13A	4	20M	20300	1745	1	0	2300	2145	13	10M	5230	751	24.62	24.64
CA_4A-29A	4	20M	20300	1745	1	0	2300	2145	29	10M	9715	722.5	24.59	24.64
CA_5A-7A	5	10M	20600	844	1	0	2600	889	7	20M	3100	2655	23.51	23.51

FCC SAR Test Report

Head Mode (Wifi On)

Power Measurements for Intra-Band Non-Contiguous Downlink CA

CA Combination	PCC								SCC1				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_2A-2A	2	20M	18700	1860	1	0	700	1940	2	20M	1100	1980	21.05	21.06
CA_4A-4A	4	20M	20300	1745	1	0	2300	2145	4	20M	2050	2120	22.70	22.74
CA_7A-7A	7	20M	21350	2560	1	99	3100	2565	7	20M	2850	2630	23.40	23.41
CA_41A-41A	41	20M	40620	2593	1	99	40620	2593	41	20M	39750	2506	23.80	23.83

Power Measurements for Inter-Band Downlink CA

CA Combination	PCC								SCC1				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_2A-4A	2	20M	18700	1860	1	0	700	1940	4	20M	2175	2132.5	21.06	21.06
CA_2A-5A	2	20M	18700	1860	1	0	700	1940	5	10M	2525	881.5	21.06	21.06
CA_2A-12A	2	20M	18700	1860	1	0	700	1940	12	10M	5095	737.5	21.04	21.06
CA_2A-13A	2	20M	18700	1860	1	0	700	1940	13	10M	5230	751	21.05	21.06
CA_2A-29A	2	20M	18700	1860	1	0	700	1940	29	10M	9715	722.5	21.02	21.06
CA_4A-5A	4	20M	20300	1745	1	0	2300	2145	5	10M	2525	881.5	22.69	22.74
CA_4A-12A	4	20M	20300	1745	1	0	2300	2145	12	10M	5095	737.5	22.65	22.74
CA_4A-13A	4	20M	20300	1745	1	0	2300	2145	13	10M	5230	751	22.66	22.74
CA_4A-29A	4	20M	20300	1745	1	0	2300	2145	29	10M	9715	722.5	22.63	22.74
CA_5A-7A	5	10M	20600	844	1	49	2600	889	7	20M	3100	2655	20.23	20.85

Body-worn Mode

Power Measurements for Intra-Band Non-Contiguous Downlink CA

CA Combination	PCC								SCC1				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_2A-2A	2	20M	18700	1860	1	0	700	1940	2	20M	1100	1980	24.58	24.65
CA_4A-4A	4	20M	20300	1745	1	0	2300	2145	4	20M	2050	2120	24.53	24.59
CA_7A-7A	7	20M	21350	2560	1	99	3100	2565	7	20M	2850	2630	23.51	23.76
CA_41A-41A	41	20M	40620	2593	1	99	40620	2593	41	20M	39750	2506	23.80	23.81

Power Measurements for Inter-Band Downlink CA

CA Combination	PCC								SCC1				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_2A-4A	2	20M	18700	1860	1	0	700	1940	4	20M	2175	2132.5	24.53	24.65
CA_2A-5A	2	20M	18700	1860	1	0	700	1940	5	10M	2525	881.5	24.52	24.65
CA_2A-12A	2	20M	18700	1860	1	0	700	1940	12	10M	5095	737.5	24.65	24.65
CA_2A-13A	2	20M	18700	1860	1	0	700	1940	13	10M	5230	751	24.61	24.65
CA_2A-29A	2	20M	18700	1860	1	0	700	1940	29	10M	9715	722.5	24.55	24.65
CA_4A-5A	4	20M	20300	1745	1	0	2300	2145	5	10M	2525	881.5	24.56	24.59
CA_4A-12A	4	20M	20300	1745	1	0	2300	2145	12	10M	5095	737.5	24.52	24.59
CA_4A-13A	4	20M	20300	1745	1	0	2300	2145	13	10M	5230	751	24.51	24.59
CA_4A-29A	4	20M	20300	1745	1	0	2300	2145	29	10M	9715	722.5	24.56	24.59
CA_5A-7A	5	10M	20600	844	1	49	2600	889	7	20M	3100	2655	23.81	23.89

FCC SAR Test Report

Body-worn Mode

Power Measurements for Intra-Band Non-Contiguous Downlink CA

CA Combination	PCC								SCC1				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_2A-2A	2	20M	18700	1860	1	0	700	1940	2	20M	1100	1980	24.58	24.65
CA_4A-4A	4	20M	20300	1745	1	0	2300	2145	4	20M	2050	2120	24.53	24.59
CA_7A-7A	7	20M	21350	2560	1	99	3100	2565	7	20M	2850	2630	21.75	21.79
CA_41A-41A	41	20M	40620	2593	1	99	40620	2593	41	20M	39750	2506	23.80	23.81

Power Measurements for Inter-Band Downlink CA

CA Combination	PCC								SCC1				Power	
	LTE Band	BW (MHz)	UL Channel	UL Freq. (MHz)	RB Size	RB Offset	DL Channel	DL Freq. (MHz)	LTE Band	BW (MHz)	DL Channel	DL Freq. (MHz)	Tx Power with DL-CA Active (dBm)	Single Carrier Tx Power (dBm)
CA_2A-4A	2	20M	18700	1860	1	0	700	1940	4	20M	2175	2132.5	24.53	24.65
CA_2A-5A	2	20M	18700	1860	1	0	700	1940	5	10M	2525	881.5	24.52	24.65
CA_2A-12A	2	20M	18700	1860	1	0	700	1940	12	10M	5095	737.5	24.65	24.65
CA_2A-13A	2	20M	18700	1860	1	0	700	1940	13	10M	5230	751	24.61	24.65
CA_2A-29A	2	20M	18700	1860	1	0	700	1940	29	10M	9715	722.5	24.55	24.65
CA_4A-5A	4	20M	20300	1745	1	0	2300	2145	5	10M	2525	881.5	24.56	24.59
CA_4A-12A	4	20M	20300	1745	1	0	2300	2145	12	10M	5095	737.5	24.52	24.59
CA_4A-13A	4	20M	20300	1745	1	0	2300	2145	13	10M	5230	751	24.51	24.59
CA_4A-29A	4	20M	20300	1745	1	0	2300	2145	29	10M	9715	722.5	24.56	24.59
CA_5A-7A	5	10M	20600	844	1	49	2600	889	7	20M	3100	2655	23.81	23.89

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Summary for SAR Test Exclusion for LTE Downlink CA

Per power confirmation results in above, the uplink maximum output power with downlink CA active remains within the specified tune-up tolerance and not more than 0.25 dB higher than the maximum output power with downlink CA inactive. According to KDB 941225 D05A, the SAR test exclusion applies to LTE downlink CA operation.

<KDB 248227 D01, SAR Guidance for Wi-Fi Transmitters>

- (1) For handsets operating next to ear, hotspot mode or mini-tablet configurations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When the reported SAR of initial test position is ≤ 0.4 W/kg, SAR testing for remaining test positions is not required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
- (2) For WLAN 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is ≤ 0.8 W/kg, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is ≤ 1.2 W/kg.
- (3) For WLAN 5 GHz, the initial test configuration was selected according to the transmission mode with the highest maximum output power. When the reported SAR of initial test configuration is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SAR result is ≤ 1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and it is ≤ 1.2 W/kg.
- (4) For WLAN MIMO mode, the power-based standalone SAR test exclusion or the sum of SAR provision in KDB 447498 to determine simultaneous transmission SAR test exclusion should be applied. Otherwise, SAR for MIMO mode will be measured with all applicable antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

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4.7.2 SAR Results for Head Exposure Condition

Plot No.	Band	Mode	Test Position	Ch.	EUT Config.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
Cell Transmission with WLAN Off											
01	WCDMAII	RMC12.2K	Right Cheek	9262	1	24.8	24.65	1.04	0.11	0.989	1.02
	WCDMAII	RMC12.2K	Right Tilted	9262	1	24.8	24.65	1.04	0.05	1.09	1.13
	WCDMAII	RMC12.2K	Left Cheek	9262	1	24.8	24.65	1.04	-0.02	1.13	1.17
	WCDMAII	RMC12.2K	Left Tilted	9262	1	24.8	24.65	1.04	-0.15	0.958	0.99
	WCDMAII	RMC12.2K	Right Cheek	9400	1	24.8	24.54	1.06	0.08	1.01	1.07
	WCDMAII	RMC12.2K	Right Cheek	9538	1	24.8	24.49	1.07	-0.13	1.07	1.15
	WCDMAII	RMC12.2K	Right Tilted	9400	1	24.8	24.54	1.06	-0.05	1.03	1.09
	WCDMAII	RMC12.2K	Right Tilted	9538	1	24.8	24.49	1.07	0.13	1.07	1.15
	WCDMAII	RMC12.2K	Left Cheek	9400	1	24.8	24.54	1.06	0.03	1.05	1.11
	WCDMAII	RMC12.2K	Left Cheek	9538	1	24.8	24.49	1.07	0.07	1.08	1.16
	WCDMAII	RMC12.2K	Left Tilted	9400	1	24.8	24.54	1.06	-0.15	1.06	1.13
	WCDMAII	RMC12.2K	Left Tilted	9538	1	24.8	24.49	1.07	-0.15	1.01	1.08
	WCDMAII	RMC12.2K	Left Cheek	9262	2	24.8	24.65	1.04	0.02	1.08	1.12
	WCDMAII	RMC12.2K	Left Cheek	9400	2	24.8	24.54	1.06	0.01	1	1.06
02	WCDMAII	RMC12.2K	Left Cheek	9538	2	24.8	24.49	1.07	0.09	1.03	1.11
	WCDMAII	RMC12.2K	Left Cheek	9262	1	24.8	24.65	1.04	-0.02	1.11	1.15
	CDMABC1	RC3+SO55	Right Cheek	1175	1	24.1	23.33	1.19	0.04	0.856	1.02
	CDMABC1	RC3+SO55	Right Tilted	1175	1	24.1	23.33	1.19	0.08	0.927	1.11
	CDMABC1	RC3+SO55	Left Cheek	1175	1	24.1	23.33	1.19	-0.01	0.934	1.12
	CDMABC1	RC3+SO55	Left Tilted	1175	1	24.1	23.33	1.19	0.13	0.714	0.85
	CDMABC1	RC3+SO55	Right Cheek	25	1	24.1	23.31	1.20	0.15	0.851	1.02
	CDMABC1	RC3+SO55	Right Cheek	600	1	24.1	23.09	1.26	-0.06	0.839	1.06
	CDMABC1	RC3+SO55	Right Tilted	25	1	24.1	23.31	1.20	0.15	0.898	1.08
	CDMABC1	RC3+SO55	Right Tilted	600	1	24.1	23.09	1.26	-0.06	0.877	1.11
	CDMABC1	RC3+SO55	Left Cheek	25	1	24.1	23.31	1.20	0.15	0.899	1.08
	CDMABC1	RC3+SO55	Left Cheek	600	1	24.1	23.09	1.26	-0.06	0.881	1.11
	CDMABC1	RC3+SO55	Left Tilted	25	1	24.1	23.31	1.20	0.15	0.711	0.85
	CDMABC1	RC3+SO55	Left Tilted	600	1	24.1	23.09	1.26	-0.06	0.705	0.89
	CDMABC1	RC3+SO55	Left Cheek	1175	2	24.1	23.33	1.19	-0.02	0.926	1.11
	CDMABC1	RC3+SO55	Left Cheek	25	2	24.1	23.31	1.20	0.05	0.859	1.03
	CDMABC1	RC3+SO55	Left Cheek	600	2	24.1	23.09	1.26	0.06	0.841	1.06
	CDMABC1	RC3+SO55	Left Cheek	1175	1	24.1	23.33	1.19	-0.01	0.931	1.11

Note: The SAR testing above was verified based on the worst case of original report.

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Plot No.	Band	Mode	RB#	RB Offset	Test Position	Ch.	EUT Config.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
Cell Transmission with WLAN Off													
03	LTE 2	QPSK20M	1	0	Right Cheek	19100	1	24.6	23.27	1.36	0.18	0.822	1.12
	LTE 2	QPSK20M	1	0	Right Tilted	19100	1	24.6	23.27	1.36	-0.03	0.844	1.15
	LTE 2	QPSK20M	1	0	Left Cheek	19100	1	24.6	23.27	1.36	0.02	0.854	1.16
	LTE 2	QPSK20M	1	0	Left Tilted	19100	1	24.6	23.27	1.36	0.09	0.717	0.97
	LTE 2	QPSK20M	50	0	Right Cheek	19100	1	23.6	22.45	1.30	0.01	0.681	0.89
	LTE 2	QPSK20M	50	0	Right Tilted	19100	1	23.6	22.45	1.30	0.19	0.699	0.91
	LTE 2	QPSK20M	50	0	Left Cheek	19100	1	23.6	22.45	1.30	-0.02	0.707	0.92
	LTE 2	QPSK20M	50	0	Left Tilted	19100	1	23.6	22.45	1.30	-0.06	0.594	0.77
	LTE 2	QPSK20M	1	0	Right Cheek	18700	1	24.6	23.26	1.36	-0.11	0.809	1.10
	LTE 2	QPSK20M	1	0	Right Cheek	18900	1	24.6	23.21	1.38	-0.03	0.811	1.12
	LTE 2	QPSK20M	1	0	Right Tilted	18700	1	24.6	23.26	1.36	-0.11	0.829	1.13
	LTE 2	QPSK20M	1	0	Right Tilted	19100	1	24.6	23.21	1.38	-0.03	0.835	1.15
	LTE 2	QPSK20M	1	0	Left Cheek	18700	1	24.6	23.26	1.36	-0.11	0.841	1.14
	LTE 2	QPSK20M	1	0	Left Cheek	18900	1	24.6	23.21	1.38	-0.03	0.833	1.15
	LTE 2	QPSK20M	1	0	Left Tilted	19100	1	24.6	23.26	1.36	-0.11	0.711	0.97
	LTE 2	QPSK20M	1	0	Left Tilted	19100	1	24.6	23.21	1.38	-0.03	0.698	0.96
	LTE 2	QPSK20M	50	0	Right Cheek	18700	1	23.6	22.39	1.32	0.13	0.678	0.90
	LTE 2	QPSK20M	50	0	Right Cheek	18900	1	23.6	22.35	1.33	0.15	0.688	0.92
	LTE 2	QPSK20M	100	0	Right Cheek	19100	1	23.6	23.27	1.08	0.18	0.681	0.73
	LTE 2	QPSK20M	50	0	Right Tilted	18700	1	23.6	22.39	1.32	0.06	0.701	0.93
	LTE 2	QPSK20M	50	0	Right Tilted	18900	1	23.6	22.35	1.33	-0.02	0.695	0.93
	LTE 2	QPSK20M	100	0	Right Tilted	19100	1	23.6	23.27	1.08	-0.03	0.665	0.72
	LTE 2	QPSK20M	50	0	Left Cheek	18700	1	23.6	22.39	1.32	-0.11	0.702	0.93
	LTE 2	QPSK20M	50	0	Left Cheek	18900	1	23.6	22.35	1.33	-0.03	0.705	0.94
	LTE 2	QPSK20M	100	0	Left Cheek	19100	1	23.6	22.31	1.35	0.07	0.685	0.92
	LTE 2	QPSK20M	100	0	Left Tilted	19100	1	23.6	23.27	1.08	0.09	0.677	0.73
	LTE 2	QPSK20M	1	0	Left Cheek	19100	2	24.6	23.27	1.36	-0.03	0.802	1.09
	LTE 2	QPSK20M	1	0	Left Cheek	18700	2	24.6	23.26	1.36	0.02	0.789	1.07
	LTE 2	QPSK20M	1	0	Left Cheek	18900	2	24.6	23.21	1.38	0.01	0.781	1.08
	LTE 2	QPSK20M	1	0	Left Cheek	19100	1	24.6	23.27	1.36	0.02	0.849	1.15

Note: The SAR testing above was verified based on the worst case of original report.

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4.7.3 SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10 , the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR repeated measurement procedure:

1. When the highest measured SAR is < 0.80 W/kg, repeated measurement is not required.
2. When the highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3. If the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 , or when the original or repeated measurement is ≥ 1.45 W/kg, perform a second repeated measurement.
4. If the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 , and the original, first or second repeated measurement is ≥ 1.5 W/kg, perform a third repeated measurement.

Band	Mode	Test Position	Ch.	Original Measured SAR-1g (W/kg)	1st Repeated SAR-1g (W/kg)	L/S Ratio	2nd Repeated SAR-1g (W/kg)	L/S Ratio	3rd Repeated SAR-1g (W/kg)	L/S Ratio
WCDMA II	RMC12.2K	Left Cheek	9262	1.13	1.11	1.02	N/A	N/A	N/A	N/A
CDMA BC1	RC3+SO55	Left Cheek	1175	0.934	0.931	1.00	N/A	N/A	N/A	N/A
LTE 2	QPSK20M	Left Cheek	19100	0.854	0.849	1.01	N/A	N/A	N/A	N/A

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4.7.4 Simultaneous Multi-band Transmission Evaluation

<Possibilities of Simultaneous Transmission>

The simultaneous transmission possibilities for this device are listed as below.

Simultaneous TX Combination	Capable Transmit Configurations	Head Exposure Condition	Body-worn Exposure Condition	Hotspot Exposure Condition
1	GSM + WLAN 2.4G + Zigbee + NFC	Yes	Yes	Yes
2	GSM + WLAN 5G + Zigbee + NFC	Yes	Yes	Yes
3	GSM + BT Ant0 (Data) + Zigbee + NFC	Yes	Yes	Yes
4	WCDMA + WLAN 2.4G + Zigbee + NFC	Yes	Yes	Yes
5	WCDMA + WLAN 5G + Zigbee + NFC	Yes	Yes	Yes
6	WCDMA + BT Ant0 + Zigbee + NFC	Yes	Yes	Yes
7	CDMA + WLAN 2.4G + Zigbee + NFC	Yes	Yes	Yes
8	CDMA + WLAN 5G + Zigbee + NFC	Yes	Yes	Yes
9	CDMA + BT Ant0 + Zigbee + NFC	Yes	Yes	Yes
10	LTE + WLAN 2.4G + Zigbee + NFC	Yes	Yes	Yes
11	LTE + WLAN 5G + Zigbee + NFC	Yes	Yes	Yes
12	LTE + BT Ant0 + Zigbee + NFC	Yes	Yes	Yes

Note:

1. The WLAN 2.4G and WLAN 5G cannot transmit simultaneously.
2. The WLAN and Bluetooth cannot transmit simultaneously.

<SAR Summation Analysis>

WWAN with WLAN off mode the simultaneous transmission evaluation has no effect and simultaneous SAR is not required.

Test Engineer : Kevin Yao, and Isaac Liao

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5. Calibration of Test Equipment

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D1900V2	5d036	Jan. 18, 2018	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3971	Mar. 26, 2018	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3820	Jun. 27, 2017	1 Year
Data Acquisition Electronics	SPEAG	DAE4	917	Dec. 14, 2017	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1431	Mar. 16, 2018	1 Year
Wireless Communication Test Set	Agilent	E5515C	MY50266628	Dec. 06, 2017	1 Year
Radio Communication Analyzer	Anritsu	MT8820C	6201010285	Aug. 08, 2017	1 Year
ENA Series Network Analyzer	Agilent	E5071C	MY46214281	Jun. 09, 2017	1 Year
Spectrum Analyzer	R&S	FSL6	102006	Mar. 23, 2018	1 Year
MXG Analog Signal Generator	Agilent	N5181A	MY50143868	Jul. 10, 2017	1 Year
Power Meter	Anritsu	ML2495A	1218009	Jul. 12, 2017	1 Year
Power Sensor	Anritsu	MA2411B	1207252	Jul. 12, 2017	1 Year
Dielectric Assessment Kit	SPEAG	DAK-3.5	1047	Aug. 15, 2017	1 Year

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6. Measurement Uncertainty

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.0	Normal	1	1	1	6.0	6.0	∞
Axial Isotropy	4.7	Rectangular	√3	√0.5	√0.5	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	√0.5	√0.5	3.9	3.9	∞
Boundary Effect	1.0	Rectangular	√3	1	1	0.6	0.6	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	3.5	Rectangular	√3	1	1	2.0	2.0	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom	2.9	Rectangular	√3	1	1	1.7	1.7	∞
Post-processing	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Test Sample Related								
Test Sample Positioning	3.9 / 2.06	Normal	1	1	1	3.9	2.1	35
Device Holder Uncertainty	2.9 / 4.1	Normal	1	1	1	2.9	4.1	11
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Power Scaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	6.1	Rectangular	√3	1	1	3.5	3.5	∞
Liquid Conductivity (Temperature Uncertainty)	3.24	Rectangular	√3	0.78	0.71	1.5	1.3	∞
Liquid Conductivity (Measured)	2.88	Normal	1	0.78	0.71	2.2	2.0	43
Liquid Permittivity (Temperature Uncertainty)	1.13	Rectangular	√3	0.23	0.26	0.2	0.2	∞
Liquid Permittivity (Measured)	2.50	Normal	1	0.23	0.26	0.6	0.7	54
Combined Standard Uncertainty						± 11.4 %	± 11.2 %	
Expanded Uncertainty (K=2)						± 22.8 %	± 22.4 %	

Head SAR Uncertainty Budget for Frequency Range of 300 MHz to 3 GHz

FCC SAR Test Report

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.55	Normal	1	1	1	6.55	6.55	∞
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	3.9	3.9	∞
Boundary Effect	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	3.5	Rectangular	√3	1	1	2.0	2.0	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom	6.7	Rectangular	√3	1	1	3.9	3.9	∞
Post-processing	4.0	Rectangular	√3	1	1	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	3.9 / 2.06	Normal	1	1	1	3.9	2.1	35
Device Holder Uncertainty	2.9 / 4.1	Normal	1	1	1	2.9	4.1	11
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Power Scaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	6.6	Rectangular	√3	1	1	3.8	3.8	∞
Liquid Conductivity (Temperature Uncertainty)	3.24	Rectangular	√3	0.78	0.71	1.5	1.3	∞
Liquid Conductivity (Measured)	2.88	Normal	1	0.78	0.71	2.2	2.0	43
Liquid Permittivity (Temperature Uncertainty)	1.13	Rectangular	√3	0.23	0.26	0.2	0.2	∞
Liquid Permittivity (Measured)	2.50	Normal	1	0.23	0.26	0.6	0.7	54
Combined Standard Uncertainty						± 12.5 %	± 12.3 %	
Expanded Uncertainty (K=2)						± 25.0 %	± 24.6 %	

Head SAR Uncertainty Budget for Frequency Range of 3 GHz to 6 GHz

FCC SAR Test Report

Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.0	Normal	1	1	1	6.0	6.0	∞
Axial Isotropy	4.7	Rectangular	√3	√0.5	√0.5	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	√0.5	√0.5	3.9	3.9	∞
Boundary Effect	1.0	Rectangular	√3	1	1	0.6	0.6	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	3.5	Rectangular	√3	1	1	2.0	2.0	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom	2.9	Rectangular	√3	1	1	1.7	1.7	∞
Post-processing	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Test Sample Related								
Test Sample Positioning	4.38 / 1.35	Normal	1	1	1	4.4	1.4	29
Device Holder Uncertainty	2.9 / 4.1	Normal	1	1	1	2.9	4.1	11
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Power Scaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.2	Rectangular	√3	1	1	4.2	4.2	∞
Liquid Conductivity (Temperature Uncertainty)	3.24	Rectangular	√3	0.78	0.71	1.5	1.3	∞
Liquid Conductivity (Measured)	2.88	Normal	1	0.78	0.71	2.2	2.0	43
Liquid Permittivity (Temperature Uncertainty)	1.13	Rectangular	√3	0.23	0.26	0.2	0.2	∞
Liquid Permittivity (Measured)	2.50	Normal	1	0.23	0.26	0.6	0.7	54
Combined Standard Uncertainty						± 11.8 %	± 11.3 %	
Expanded Uncertainty (K=2)						± 23.6 %	± 22.6 %	

Body SAR Uncertainty Budget for Frequency Range of 300 MHz to 3 GHz

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Source of Uncertainty	Uncertainty (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.55	Normal	1	1	1	6.55	6.55	∞
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	3.9	3.9	∞
Boundary Effect	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Probe Modulation Response	3.5	Rectangular	√3	1	1	2.0	2.0	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions – Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions – Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom	6.7	Rectangular	√3	1	1	3.9	3.9	∞
Post-processing	4.0	Rectangular	√3	1	1	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	4.38 / 1.35	Normal	1	1	1	4.4	1.4	29
Device Holder Uncertainty	2.9 / 4.1	Normal	1	1	1	2.9	4.1	11
Power Drift of Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Power Scaling	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Phantom and Setup								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.6	Rectangular	√3	1	1	4.4	4.4	∞
Liquid Conductivity (Temperature Uncertainty)	3.24	Rectangular	√3	0.78	0.71	1.5	1.3	∞
Liquid Conductivity (Measured)	2.88	Normal	1	0.78	0.71	2.2	2.0	43
Liquid Permittivity (Temperature Uncertainty)	1.13	Rectangular	√3	0.23	0.26	0.2	0.2	∞
Liquid Permittivity (Measured)	2.50	Normal	1	0.23	0.26	0.6	0.7	54
Combined Standard Uncertainty						± 12.8 %	± 12.4 %	
Expanded Uncertainty (K=2)						± 25.6 %	± 24.8 %	

Body SAR Uncertainty Budget for Frequency Range of 3 GHz to 6 GHz

FCC SAR Test Report

7. Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The road map of all our labs can be found in our web site also.

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Appendix A. SAR Plots of System Verification

The plots for system verification with largest deviation for each SAR system combination are shown as follows.

System Check_H1900_180522

DUT: Dipole 1900 MHz; Type: D1900V2; SN: 5d036

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: H16T20N2_0522 Medium parameters used: $f = 1900$ MHz; $\sigma = 1.454$ S/m; $\epsilon_r = 38.287$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.8 °C ; Liquid Temperature : 23.5 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.92, 7.92, 7.92); Calibrated: 2017/06/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn917; Calibrated: 2017/12/14
- Phantom: Twin SAM Phantom_1496; Type: QD000P40CA;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 16.0 W/kg

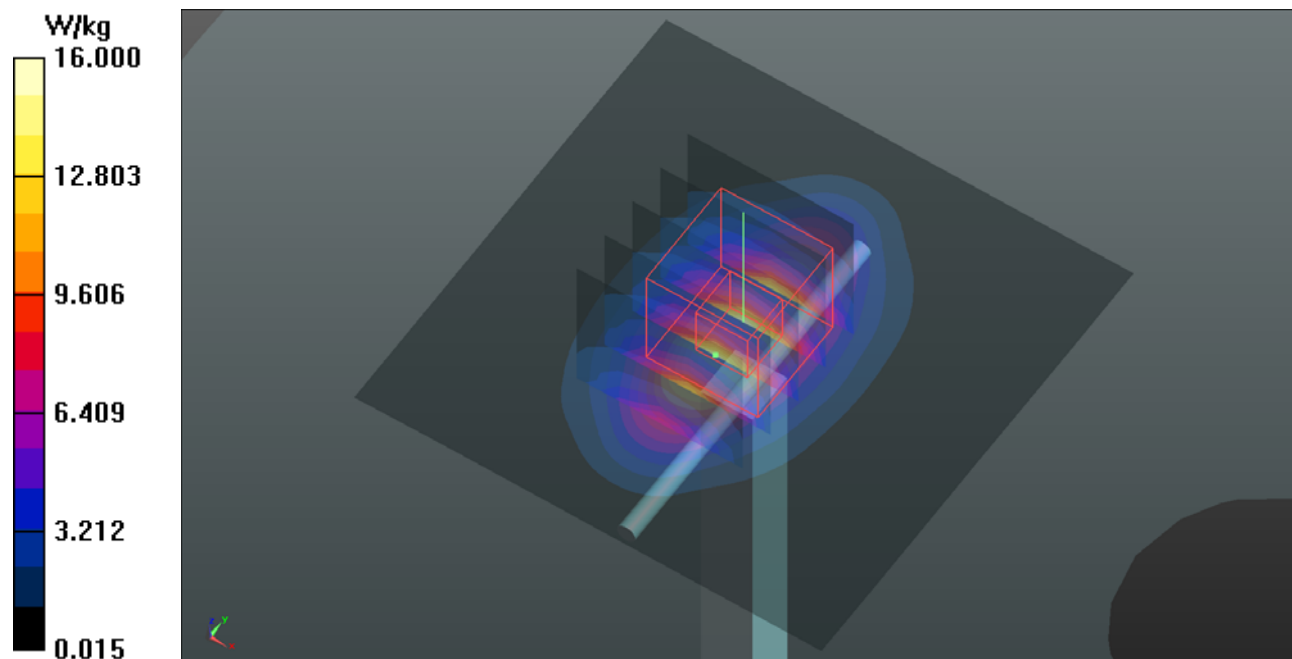
Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 105.2 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 19.8 W/kg

SAR(1 g) = 10.7 W/kg; SAR(10 g) = 5.55 W/kg

Maximum value of SAR (measured) = 15.4 W/kg



Appendix B. SAR Plots of SAR Measurement

The SAR plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination, and measured SAR > 1.5 W/kg are shown as follows.

P01 WCDMA II_RMC12.2K_Left Cheek_Ch9262**DUT: 180331C16**

Communication System: WCDMA; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: H16T20N1_0515 Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.421$ S/m; $\epsilon_r = 38.919$; ρ

$= 1000$ kg/m³

Ambient Temperature : 23.8 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(8.52, 8.52, 8.52); Calibrated: 2018/03/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2018/03/16
- Phantom: Twin SAM Phantom_1654; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)

- Area Scan (81x161x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.40 W/kg

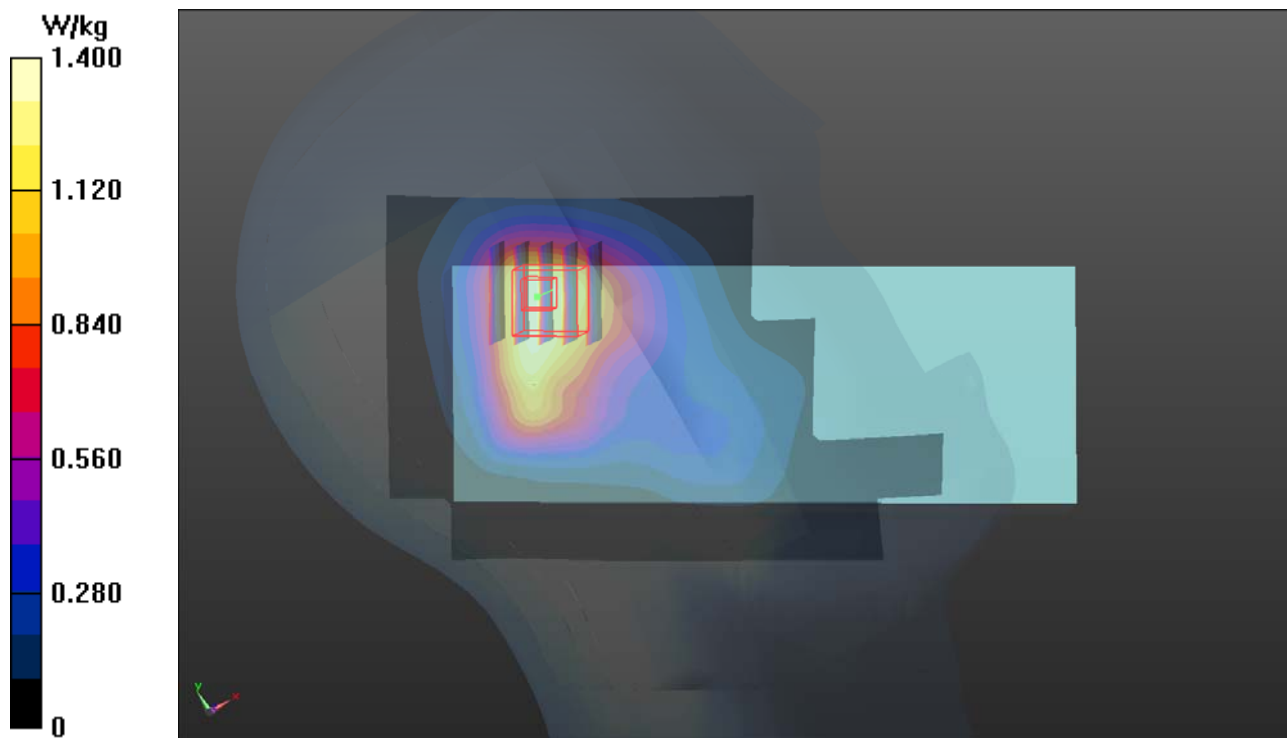
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 28.96 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.94 W/kg

SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.659 W/kg

Maximum value of SAR (measured) = 1.63 W/kg



P02 CDMA BC1_RC3+SO55_Left Cheek_Ch1175**DUT: 180331C16**

Communication System: CDMA2000; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium: H16T20N1_0514 Medium parameters used: $f = 1909$ MHz; $\sigma = 1.469$ S/m; $\epsilon_r = 39.929$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.4 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(8.52, 8.52, 8.52); Calibrated: 2018/03/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2018/03/16
- Phantom: Twin SAM Phantom_1654; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7373)

- Area Scan (81x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.27 W/kg

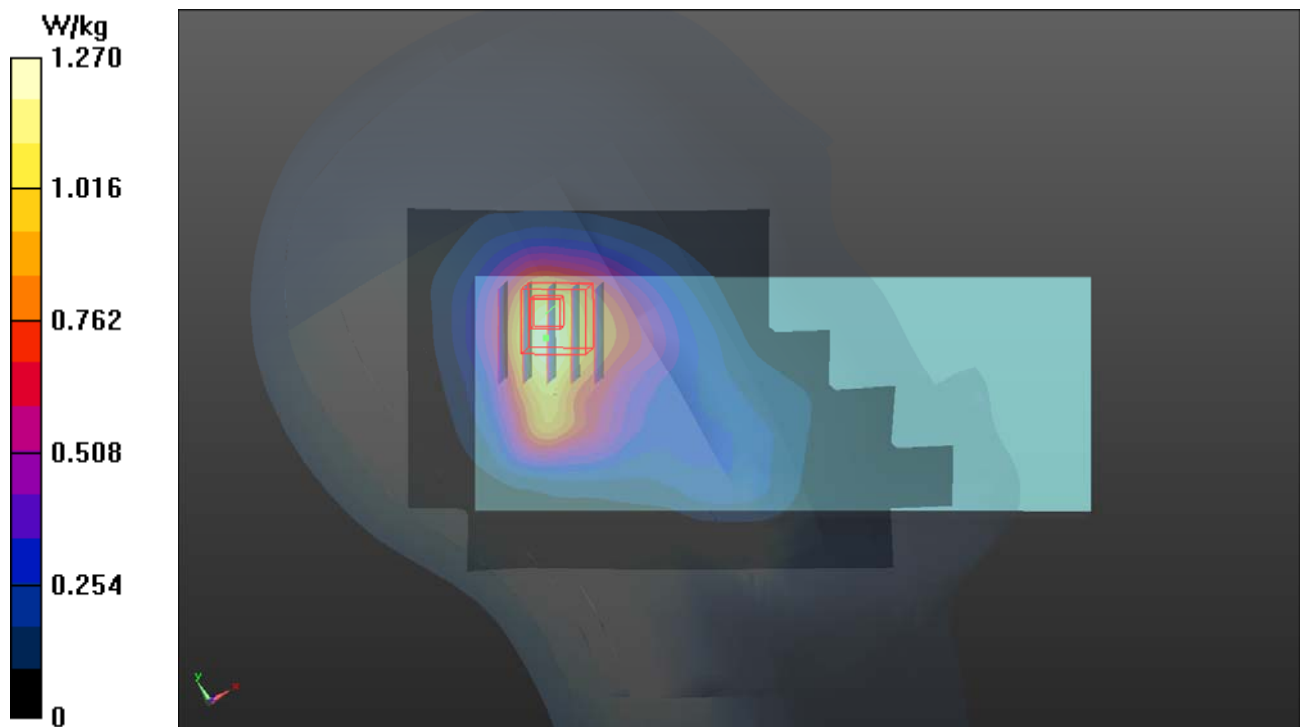
- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.21 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.65 W/kg

SAR(1 g) = 0.934 W/kg; SAR(10 g) = 0.538 W/kg

Maximum value of SAR (measured) = 1.39 W/kg



P03 LTE 2_QPSK20M_Left Cheek_Ch19100_1RB_OS0**DUT: 180331C16**

Communication System: LTE; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: H16T20N1_0515 Medium parameters used: $f = 1900$ MHz; $\sigma = 1.46$ S/m; $\epsilon_r = 38.759$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.8 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3971; ConvF(8.52, 8.52, 8.52); Calibrated: 2018/03/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1431; Calibrated: 2018/03/16
- Phantom: Twin SAM Phantom_1654; Type: QD000P40;
- Measurement SW: DASY52, Version 52.10 (1); SEMCAD X Version 14.6.11 (7437)

- Area Scan (81x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.07 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.62 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.48 W/kg

SAR(1 g) = 0.854 W/kg; SAR(10 g) = 0.495 W/kg

Maximum value of SAR (measured) = 1.23 W/kg

