SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

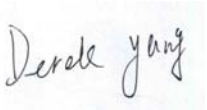
No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057
Telephone: +86 (0) 755 2601 2053
Fax: +86 (0) 755 2671 0594
Email: ee.shenzhen@sgs.com

FCC SAR TEST REPORT

Application No:	SZEM1610008522RG
Applicant:	Huawei Technologies Co.,Ltd.
Manufacturer:	Huawei Technologies Co.,Ltd.
Factory:	Huawei Technologies Co.,Ltd.
Product Name:	Mobile WiFi
Model No.(EUT):	601HW
Trade Mark:	HUAWEI
FCC ID:	QIS601HW
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2016-11-01
Date of Test:	2016-11-01 to 2016-11-22
Date of Issue:	2016-12-07
Test Result :	**PASS ***

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Authorized Signature:



Derek Yang

Wireless Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

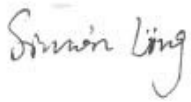
REVISION HISTORY

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2016-12-07		Original

TEST SUMMARY

Test Summary					
Frequency Band	**Test position**	**Test mode**	**Max Report SAR1-g (W/kg)**	**SAR limit (W/kg)**	**Verdict**
WCDMA Band II	Body	RMC	1.24	1.6	PASS
WCDMA Band IV	Body	RMC	**1.44**	1.6	PASS
LTE Band 2	Body	QPSK	1.28	1.6	PASS
LTE Band 4	Body	QPSK	1.43	1.6	PASS
LTE Band 12	Body	QPSK	0.69	1.6	PASS
LTE Band 17	Body	QPSK	0.68	1.6	PASS
LTE Band 25	Body	QPSK	1.07	1.6	PASS
LTE Band 26	Body	QPSK	0.91	1.6	PASS
LTE Band 41	Body	QPSK	1.07	1.6	PASS
WI-FI (2.4GHz)	Body	802.11b	0.38	1.6	PASS
WI-FI (5GHz)	Body	802.11a	0.69	1.6	PASS
Maximum Simultaneous SAR for Body			1.51	1.6	PASS

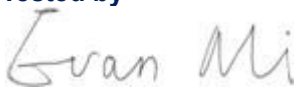
Approved & Released by



Simon Ling

SAR Manager

Tested by



Evan Mi

SAR Engineer

CONTENTS

1 General Information

1.1 Details of Client

Applicant:	Huawei Technologies Co.,Ltd.
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Manufacturer:	Huawei Technologies Co.,Ltd.
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Factory:	Huawei Technologies Co.,Ltd.
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.2 Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
Post code:	518057
Telephone:	+86 (0) 755 2601 2053
Fax:	+86 (0) 755 2671 0594
E-mail:	ee.shenzhen@sgs.com

1.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• FCC – Registration No.: 556682

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

• Industry Canada (IC)

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

1.4 General Description of EUT

Product Name:	Mobile WiFi		
Model No.(EUT):	601HW		
Trade Mark:	HUAWEI		
Product Phase:	production unit		
Device Type :	portable device		
Exposure Category:	uncontrolled environment / general population		
FCC ID:	QIS601HW		
IMEI:	861588030014346,861588030014304,861588030005989,861588030003428		
Hardware Version:	CL1SB06UM		
Software Version:	12.440.27.01.643		
Antenna Type:	Inner Antenna		
Device Operating Configurations :			
Modulation Mode:	**WCDMA**: QPSK;**LTE**:QPSK,16QAM,64QAM;**WIFI**: DSSS,OFDM		
HSDPA UE Category:	14	HSUPA UE Category	6
LTE UE category:	5		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	WCDMA Band 4	1710-1755	2110- 2155
	WCDMA Band 2	1850-1910	1930-1990
	LTE Band 2	1850-1910	1930-1990
	LTE Band 4	1710-1755	2110- 2155
	LTE Band 12	699-716	729- 746
	LTE Band 17	704-716	734-746
	LTE Band 25	1850-1915	1930-1995
	LTE Band 26	814-849	859-894
	LTE Band 41	2496-2690	2496-2690
	WIFI(2.4GHz)	2412-2462	2412-2462
	WIFI(5GHz)	5150-5250 5250-5350 5470-5725	5150-5250 5250-5350 5470-5725
Battery Information:	Model:	HWBCK1 HWBCM1	HWBCK1 HWBCM1
	Normal Voltage :	3.8V	3.8V
	Rated capacity :	2400mAh	2400mAh
	Manufacturer:	SCUD(Fujian)Electronics Co., Ltd	Sunwoda Electronic Co., Ltd.

1.5 Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
IEEE Std C95.1 – 1991	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 941225 D01 v03r01	3G SAR Procedures
KDB 941225 D05 v02r05	SAR for LTE Devices
KDB 941225 D05A v01r02	LTE Rel.10 KDB Inquiry Sheet
KDB 248227 D01 v02r02	802.11 Wi-Fi SAR
KDB 941225 D06 v02r01	Hot Spot SAR
KDB 616217 D04 v01r02	SAR for laptop and tablets
KDB447498 D01 v06	General RF Exposure Guidance
KDB447498 D03 v01	Supplement C Cross-Reference
KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
KDB 865664 D02 v01r02	RF Exposure Reporting

1.6 RF exposure limits

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR* (Brain*Trunk)	**1.60 mW/g**	8.00 mW/g
Spatial Average SAR** (Whole Body)	0.08 mW/g	0.40 mW/g
Spatial Peak SAR*** (Hands/Feet/Ankle/Wrist)	4.00 mW/g	20.00 mW/g

Notes:

* The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time

** The Spatial Average value of the SAR averaged over the whole body.

*** The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation.)

2 SAR Measurements System Configuration

2.1 The SAR Measurement System

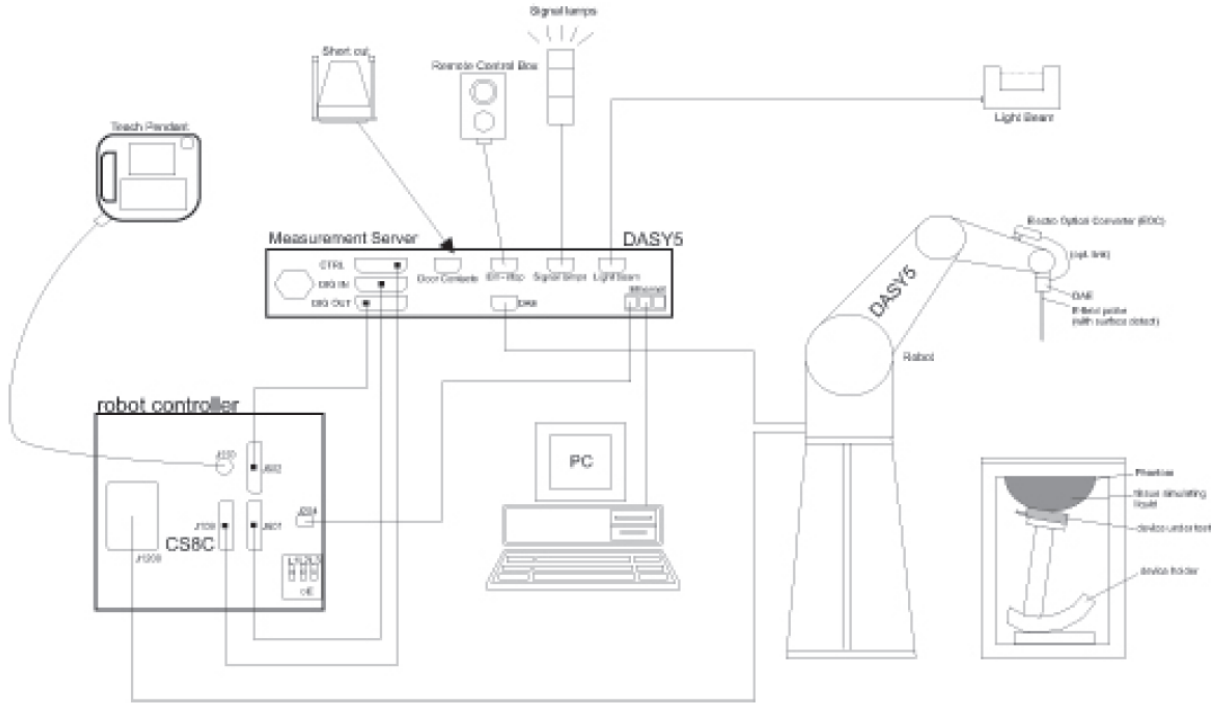
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY5 professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

The DASY5 system for performing compliance tests consists of the following items:
A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software .An arm extension for accommodation the data acquisition electronics (DAE).

A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.



F-1. SAR Measurement System Configuration

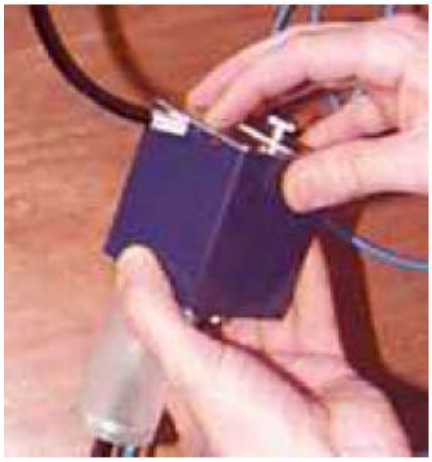
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 7.
- DASY5 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand, right-hand and Body Worn usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validating the proper functioning of the system.

2.2 Isotropic E-field Probe EX3DV4

	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
Compatibility	DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI

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 DASY4/5 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 f A
Dimensions	60 x 60 x 68 mm



2.4 SAM Twin Phantom

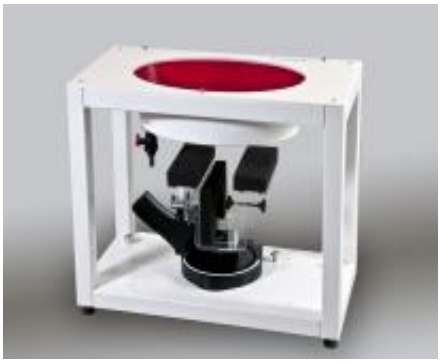
Material	Vinylester, glass fiber reinforced (VE-GF)
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)
Dimensions (incl. Wooden Support)	Length: 1000 mm Width: 500 mm Height: adjustable feet
Filling Volume	approx. 25 liters
Wooden Support	SPEAG standard phantom table

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.

Twin SAM V5.0 has the same shell geometry and is manufactured from the same material as Twin SAM V4.0, but has reinforced top structure.

2.5 ELI Phantom

Material	Vinylester, glass fiber reinforced (VE-GF)
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
Shell Thickness	2.0 ± 0.2 mm (bottom plate)
Dimensions	Major axis: 600 mm Minor axis: 400 mm
Filling Volume	approx. 30 liters
Wooden Support	SPEAG standard phantom table



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.

ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4, but has reinforced top structure.

2.6 Device Holder for Transmitters

F-2. **Device Holder for Transmitters**

- The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation centres for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.
- The DASY device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity ε=3 and loss tangent δ=0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

2.7 Measurement procedure

2.7.1 Scanning procedure

Step 1: Power reference measurement

The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure.

Step 2: *Area scan*

The SAR distribution at the exposed side of the head was measured at a distance of 4mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 15mm*15mm or 12mm*12mm or 10mm*10mm.Based on the area scan data, the area of the maximum absorption was determined by spline interpolation.

Step 3: *Zoom scan*

Around this point, a volume of 30mm*30mm*30mm (fine resolution volume scan, zoom scan) was assessed by measuring 5x5x7 points (≤2GHz) and 7x7x7 points (≥2GHz). On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

The data at the surface was extrapolated, since the centre of the dipoles is 2.0mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. (This can be variable. Refer to the probe specification).The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The volume was integrated with the trapezoidal algorithm. One thousand points were interpolated to calculate the average. All neighbouring volumes were evaluated until no neighboring volume with a higher average value was found.

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std. 1528-2013.

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

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

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

Step 4: Power reference measurement (drift)

The Power Drift Measurement job measures the field at the same location as the most recent power reference measurement job within the same procedure, and with the same settings. The indicated drift is mainly the variation of the DUT's output power and should vary max. ± 5 %

2.7.2 Data Storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DAE3". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated. The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

2.7.3 Data Evaluation by SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	Normi, ai0, ai1, ai2
	- Conversion factor	ConvFi
	- Diode compression point	Dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	ε
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power.

The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot cf / dcp_i$$

With Vi = compensated signal of channel i (i = x, y, z)

Ui = input signal of channel i (i = x, y, z)

cf = crest factor of exciting field (DASY parameter)

dcp i = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes:

$$E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$$

H-field probes:

$$H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) / f$$

With Vi = compensated signal of channel i (i = x, y, z)
Normi = sensor sensitivity of channel I (i = x, y, z)
[mV/(V/m)2] for E-field Probes
ConvF = sensitivity enhancement in solution
aij = sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
Ei = electric field strength of channel i in V/m

Hi = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = (E_x^2 + E_Y^2 + E_z^2)^{1/2}$$

The primary field data are used to calculate the derived field units.

$$SAR = (Etot^2 \cdot \sigma) / (\varepsilon \cdot 1000)$$

with SAR = local specific absorption rate in mW/g

Etot = total field strength in V/m

σ= conductivity in [mho/m] or [Siemens/m]

ε= equivalent tissue density in g/cm3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = E_{tot}{}^2{}_2 / 3770 \text{ or } \quad P_{pwe} = H_{tot}{}^2 \cdot 37.7$$

with Ppwe = equivalent power density of a plane wave in mW/cm2
Etot = total electric field strength in V/m

Htot = total magnetic field strength in A/m

3 Description of Test Position

3.1 The Body Test Position

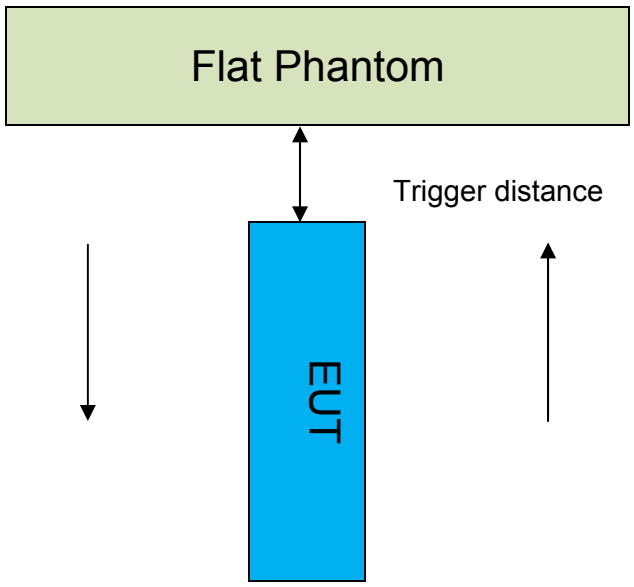
3.1.1 Wireless Router exposure conditions

Some battery-operated devices have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. For devices with form factors smaller than 9 cm x 5 cm, a test separation distance of 5 mm is required.

3.1.2 Proximity Sensor Triggering Test

1) Proximity sensor triggering distances

The Proximity sensor triggering was applied to WCDMA Band 2, 4; LTE Band 2, 4,25,26,41. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed.



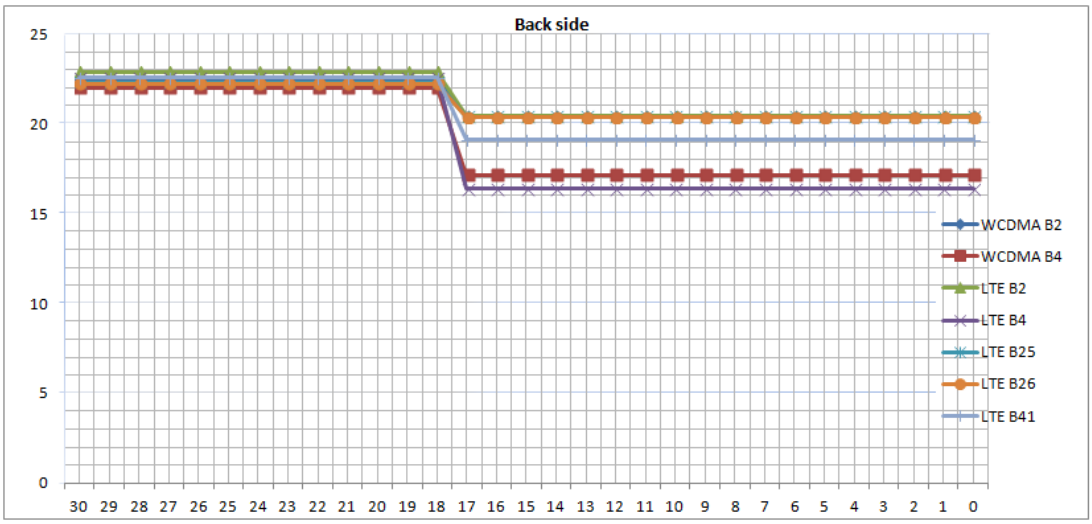
Proximity Sensor Triggering Distance(mm)			
Position	Front	Back	Right
Minimum	15	18	18
Required SAR Test	14	17	17

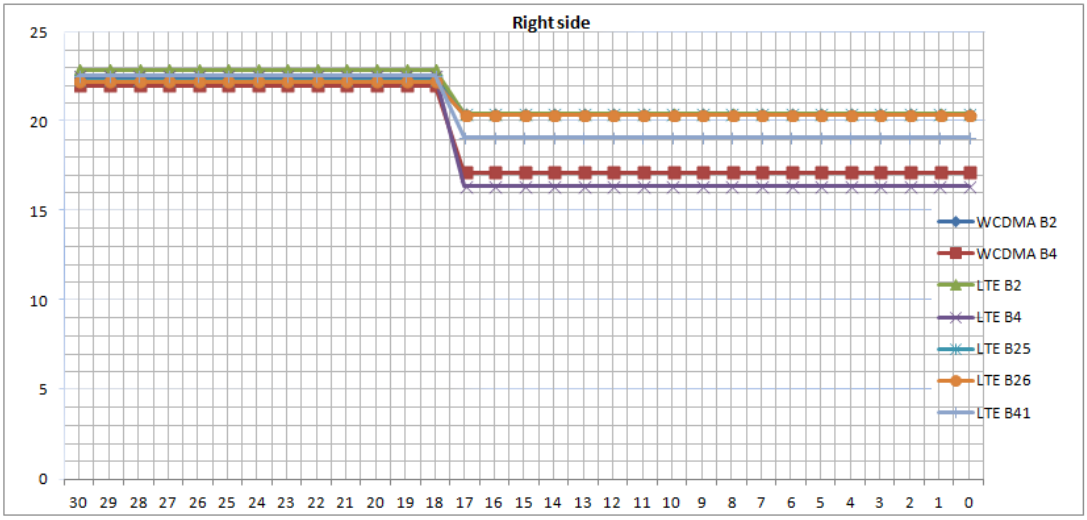
Antenna	Band	Trigger Condition	Body exposure condition
			Power reduction(dB)
Main Antenna	WCDMA B2	back side: Close to 18mm right side: Close to 18mm; front side: Close to 15mm	2
Main Antenna	WCDMA B4	back side: Close to 18mm right side: Close to 18mm; front side: Close to 15mm	5.3
Main Antenna	LTE B2	back side: Close to 18mm right side: Close to 18mm; front side: Close to 15mm	2
Main Antenna	LTE B4	back side: Close to 18mm right side: Close to 18mm; front side: Close to 15mm	5.5
Main Antenna	LTE B25	back side: Close to 18mm right side: Close to 18mm; front side: Close to 15mm	2
Main Antenna	LTE B26	back side: Close to 18mm right side: Close to 18mm; front side: Close to 15mm	2
Main Antenna	LTE B41	back side: Close to 18mm right side: Close to 18mm; front side: Close to 15mm	3

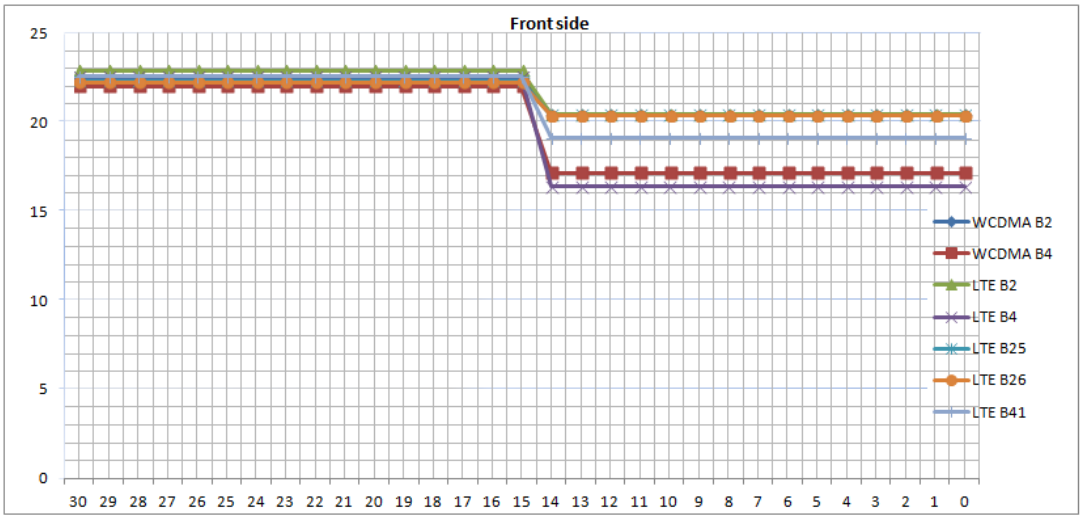
Note: SAR tests with proximity sensor power reduction are only required for the sides of frequency bands in the table above. For the other sides or other frequency bands of the device, SAR is still tested at the maximum power level with sensor off.

Band/Mode	Ch#	Measured Power(dBm)		Reduction levels(dB)
		Max. Power	Power back-off	
WCDMA B2 RMC 12.2kbps	9400	22.46	20.47	1.99
WCDMA B4 RMC 12.2kbps	1412	21.99	17.14	4.85
LTE B2(BW20,QPSK 1RB 0Offset)	18900	22.88	20.45	2.43
LTE B4(BW20,QPSK 1RB 0Offset)	20175	22.55	16.37	6.18
LTE B25(BW20,QPSK 1RB 0Offset)	26365	22.31	20.39	1.92
LTE B26(BW15,QPSK 1RB 0Offset)	26865	22.23	20.38	1.85
LTE B41(BW20,QPSK 1RB 0Offset)	40620	22.34	19.09	3.25

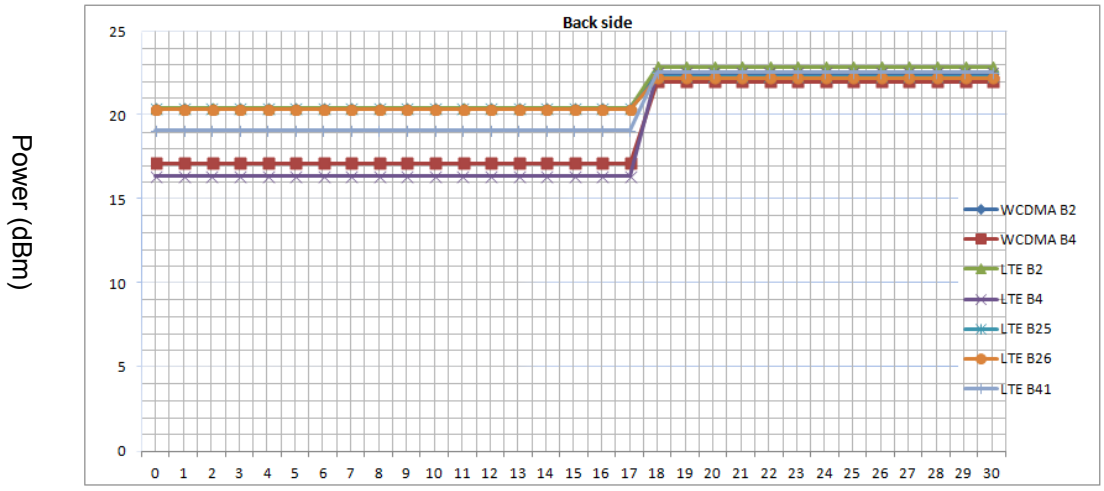
- DUT Moving Toward（Trigger）the Phantom

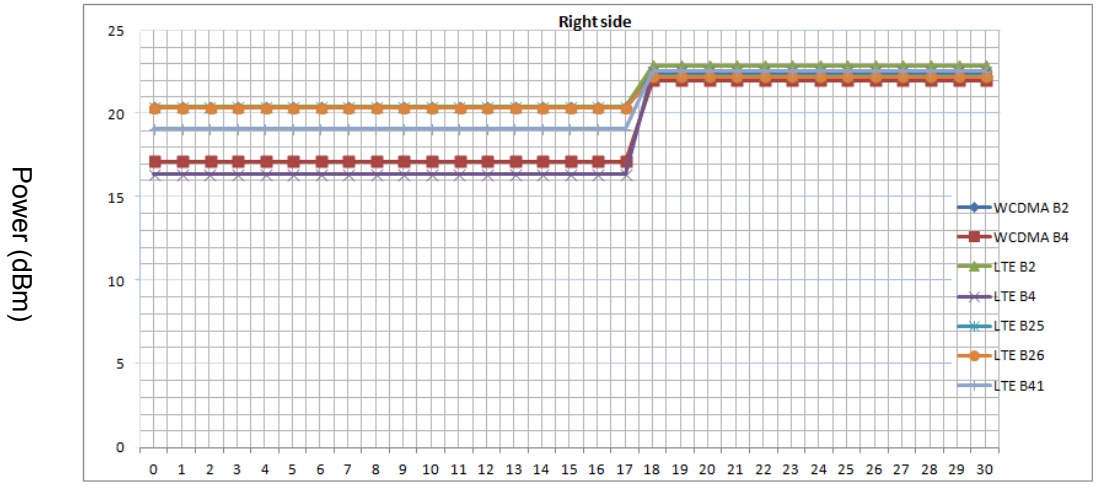


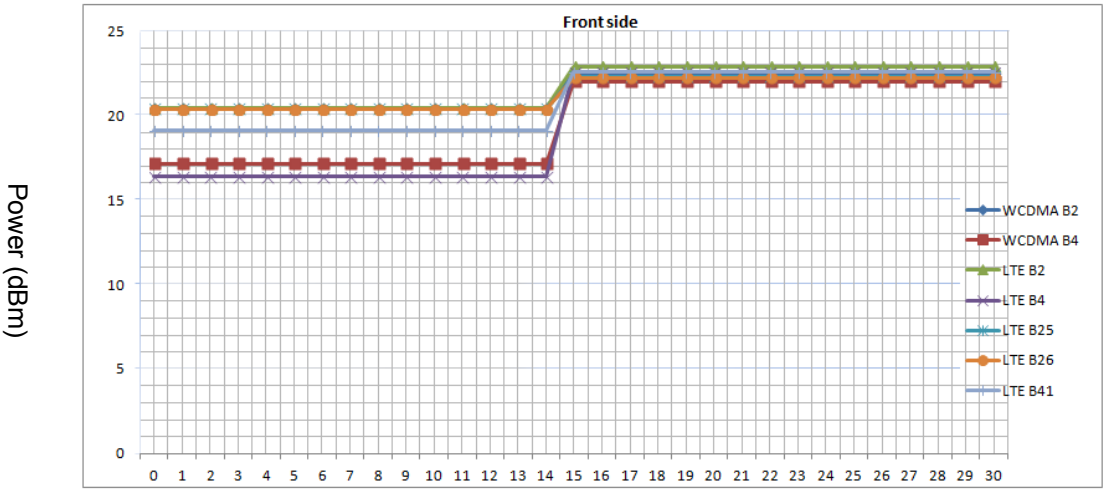




- DUT Moving Away（Release）from the Phantom







2) Proximity sensor coverage

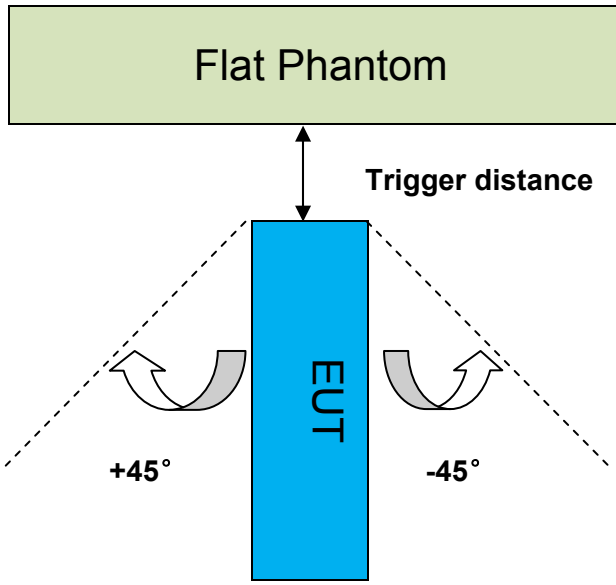
If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.

The proximity sensor and main antenna use same metallic electrode, so there is no spatial offset.

3) Device tilt angle influences to proximity sensor triggering

The influence of device tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at 17 mm separation.

Rotating the tablet around the edge next to the phantom in ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.



The Sensor Triggering Distance(mm)	
Position	Right
Minimum	18
Required SAR Test	17

Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering for Right Side												
Band(MHz)	Minimum trigger distance Per KDB616217§6.2	Minimum trigger distance at which power reduction was maintained over ±45°	Power Reduction Status									
			-45°	-35°	-25°	-15°	-5°	0°	5°	15°	25°	35°	45°
WCDMA B2	18mm	18mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B4	18mm	18mm	on	on	on	on	on	on	on	on	on	on	on
LTE B2	18mm	18mm	on	on	on	on	on	on	on	on	on	on	on
LTE B4	18mm	18mm	on	on	on	on	on	on	on	on	on	on	on
LTE B25	18mm	18mm	on	on	on	on	on	on	on	on	on	on	on
LTE B26	18mm	18mm	on	on	on	on	on	on	on	on	on	on	on
LTE B41	18mm	18mm	on	on	on	on	on	on	on	on	on	on	on

4 SAR System Verification Procedure

4.1 Tissue Simulate Liquid

4.1.1 Recipes for Tissue Simulate Liquid

The bellowing tables give the recipes for tissue simulating liquids to be used in different frequency bands：

Ingredients (% by weight)	Frequency (MHz)				
	750	800-900	1800-2000	2300-2500	2500-2700
Tissue Type	**Body**	**Body**	**Body**	**Body**	**Body**
Water	50.3	50.75	70.17	68.53	72.26
Salt (NaCl)	1.60	0.94	0.39	0.1	0.1
Sucrose	47.0	48.21	0	0	0
HEC	0.52	0	0	0	0
Bactericide	0.05	0.10	0	0	0
Tween	0	0	29.44	31.37	27.74
Salt: 99^{+}% Pure Sodium Chloride Water: De-ionized, 16 MΩ^{+} resistivity Tween: Polyoxyethylene (20) sorbitan monolaurate			Sucrose: 98^{+}% Pure Sucrose HEC: Hydroxyethyl Cellulose		

Table 1： Recipe of Tissue Simulate Liquid

4.1.2 Measurement for Tissue Simulate Liquid

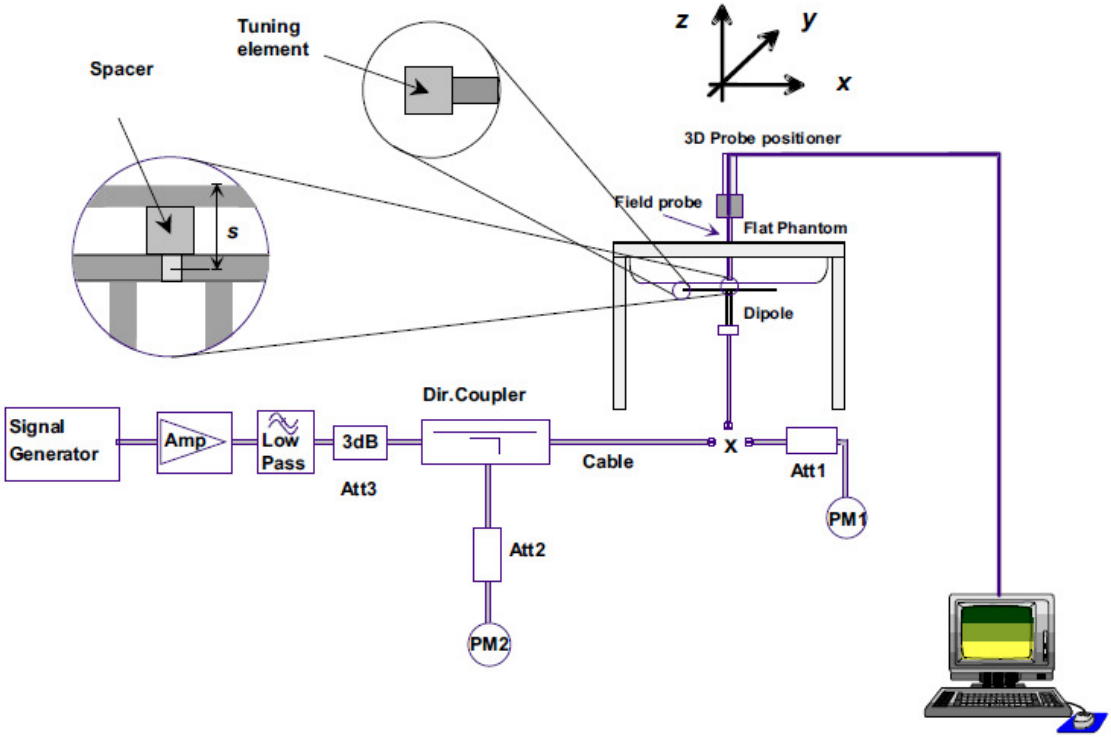
The dielectric properties for this Tissue Simulate Liquids were measured by using the Agilent Model 85070E Dielectric Probe in conjunction with Agilent E5071C Network Analyzer (300 KHz-8500 MHz). The Conductivity (σ) and Permittivity (ρ) are listed in Table 1.For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was 22±2°C.

Measurement for Tissue Simulate Liquid							
Tissue Type	Measured Frequency（MHz）	Target Tissue (±5%)		Measured Tissue		Liquid Temp.	Measured Date
		ε_r	σ(S/m)	ε_r	σ(S/m)	(℃)	
750 Body	750	55.53 (52.75~58.31)	0.96 (0.91~1.01）	56.086	0.942	22.3	2016/11/1
835 Body	835	55.2 (52.44~57.96)	0.97 (0.92~1.02)	55.375	0.98	22.1	2016/11/21
1800 Body	1800	53.3 (50.64~55.97)	1.52 (1.44~1.60)	54.359	1.535	22.3	2016/11/19
1800 Body	1800	53.3 (50.64~55.97)	1.52 (1.44~1.60)	52.9	1.525	22.3	2016/11/21
1900 Body	1900	53.3 (50.64~55.97)	1.52 (1.44~1.60)	52.205	1.523	22.3	2016/11/17
1900 Body	1900	53.3 (50.64~55.97)	1.52 (1.44~1.60)	52.597	1.501	22.3	2016/11/18
1900 Body	1900	53.3 (50.64~55.97)	1.52 (1.44~1.60)	52.851	1.528	22.3	2016/11/20
2450 Body	2450	52.70 (50.07~55.34)	1.95 (1.85~2.05)	51.68	1.951	22.0	2016/11/4
2600 Body	2600	52.50 (47.25~57.75)	2.16 (1.94~2.38)	52.866	2.171	22.4	2016/11/22
5200 Body	5200	49.01 (46.56~51.46)	5.30 (5.03~5.57）	47.697	5.259	22.2	2016/11/15
5600 Body	5600	48.47 (46.04~50.89)	5.77 (5.48~6.06）	46.881	5.859	22.2	2016/11/15

Table 2： Measurement result of Tissue electric parameters

4.2 SAR System Validation

The microwave circuit arrangement for system verification is sketched in F-3. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the table 5 (A power level of 250mw was input to the dipole antenna for bellow 5GHz, A power level of 100mw was input to the dipole antenna for 5GHz). During the tests, the ambient temperature of the laboratory was in the range 22±2°C, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



F-3. the microwave circuit arrangement used for SAR system verification

4.2.1 Justification for Extended SAR Dipole Calibrations

1) Referring to KDB865664 D01 requirements for dipole calibration, instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.
a) There is no physical damage on the dipole;
b) System check with specific dipole is within 10% of calibrated value;
c) Return-loss is within 10% of calibrated measurement;
d) Impedance is within 5Ω from the previous measurement.

2) Network analyzer probe calibration against air, distilled water and a shorting block performed before measuring liquid parameters.

4.2.2 Summary System Validation Result(s)

		Measured SAR 250mW	Measured SAR (normalized to 1w)	Target SAR (normalized to 1w) (±10%)	Liquid Temp. (℃)	Measured Date
		1-g (W/kg)	1-g (W/kg)	1-g(W/kg)		
D750V2	Body	2.26	9.04	8.65 (7.79~9.52)	22.3	2016/11/1
D835V2	Body	2.23	8.92	9.28 (8.35~10.21)	22.1	2016/11/21
D1800V2	Body	10.4	41.6	38.6 (34.74~42.46)	22.3	2016/11/19
D1800V2	Body	10.3	41.2	38.6 (34.74~42.46)	22.3	2016/11/21
D1900V2	Body	10.6	42.4	40.6 (36.54~44.66)	22.3	2016/11/17
D1900V2	Body	10.5	42	40.6 (36.54~44.66)	22.3	2016/11/18
D1900V2	Body	10.7	42.8	40.6 (36.54~44.66)	22.3	2016/11/20
D2450V2	Body	12.7	50.8	49.4 (44.46~54.34)	22	2016/11/4
D2600V2	Body	13.4	53.6	56.7 (51.03~62.37)	22.4	2016/11/22
Validation Kit		**Measured SAR 100mW**	**Measured SAR (normalized to 1w)**	**Target SAR (normalized to 1w) (±10%)**	**Liquid Temp. (℃)**	**Measured Date**
		1-g (W/kg)	**1-g (W/kg)**	**1-g(W/kg)**		
D5GHzV2	Body(5.2GHz)	7.68	76.8	74.2 (66.78~81.62)	22.2	2016/11/15
	Body(5.6GHz)	8.21	82.1	80.6 (72.54~88.66)	22.2	2016/11/15

Table 3： SAR System Validation Result

4.2.3 Detailed System Validation Results

Please see the Appendix A

5 Test results and Measurement Data

5.1 3G SAR Test Reduction Procedure

According to KDB 941225D01 v03, in the following 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 ≤ ¼ 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. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

5.2 Operation Configurations

5.2.1 WCDMA Test Configuration

1）. Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1’s” for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) are required in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified.

2）. Body SAR

SAR for body 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 DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreaing code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the handset, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

3）. HSDPA / HSUPA / DC-HSDPA

According to KDB 941225 D01v03, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA

a) 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(βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) are set according to values indicated in the following table 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	βc	Bd	βd(SF)	βc/βd	βhs	CM(dB)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	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

Note1: △ACK, △NACK and △CQI= 8 Ahs = βhs/βc=30/15 βhs=30/15*βc
Note2: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 5.13.1.A,and HSDPA EVM with phase discontinuity in clause 5.13.1AA, △ACK and △NACK= 8 (Ahs=30/15) with βhs=30/15*βc,and △CQI=
7 (Ahs=24/15) with βhs=24/15*βc.
Note3: CM=1 forβc/βd =12/15, βhs/βc=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.

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.

Parameter	Value
Nominal average inf. bit rate	534 kbit/s
Inter-TTI Distance	3 TTI"s
Number of HARQ Processes	2 Processes
Information Bit Payload	3202 Bits
MAC-d PDU size	336 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	4800 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	9600 SMLs
Coding Rate	0.67
Number of Physical Channel Codes	5

Table 4： settings of required H-Set 1 QPSK acc. to 3GPP 34.121

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	MaximumH S-DSCH Transport BlockBits/HS-DSCH TTI	Total Soft Channel Bits
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600
16	15	1	27952	345600

Table 5： HSDPA UE category

b) HSUPA

Due to inner loop power control requirements in HSUPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSUPA should be configured according to the values indicated below as well as other applicable procedures described in the „WCDMA Handset‟ and „Release 5 HSUPA Data Device‟ sections of 3G device.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	β_{ec}	β_{ed}	β_c (SF)	β_{ed} (code)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	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	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(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

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 : For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$

Note 5 : Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g

Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Table 6： Subtests for UMTS Release 6 HSUPA

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI(ms)	Minimum Speading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	10	2SF2&2SF4	11484	5.76
	4	4	2		20000	2.00
7 (No DPDCH)	4	8	2	2SF2&2SF4	22996	?
	4	4	10		20000	?

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4.UE categories 1 to 6 support QPSK only. UE category 7 supports QPSK and 16QAM.(TS25.306-7.3.0).

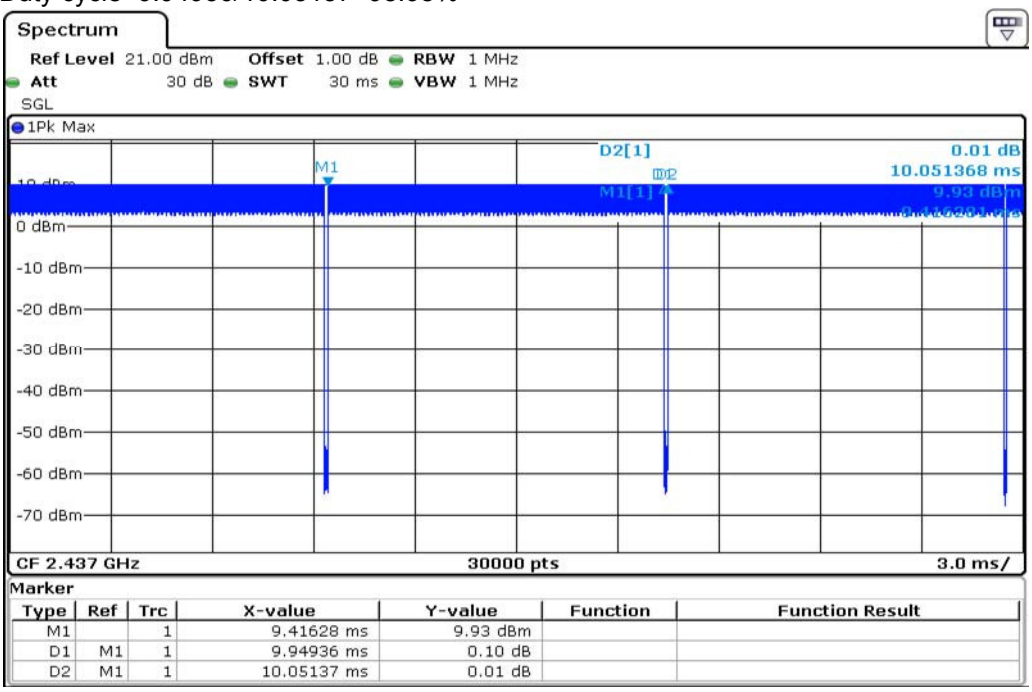
Table 7： HSUPA UE category

5.2.2 WiFi Test Configuration

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.

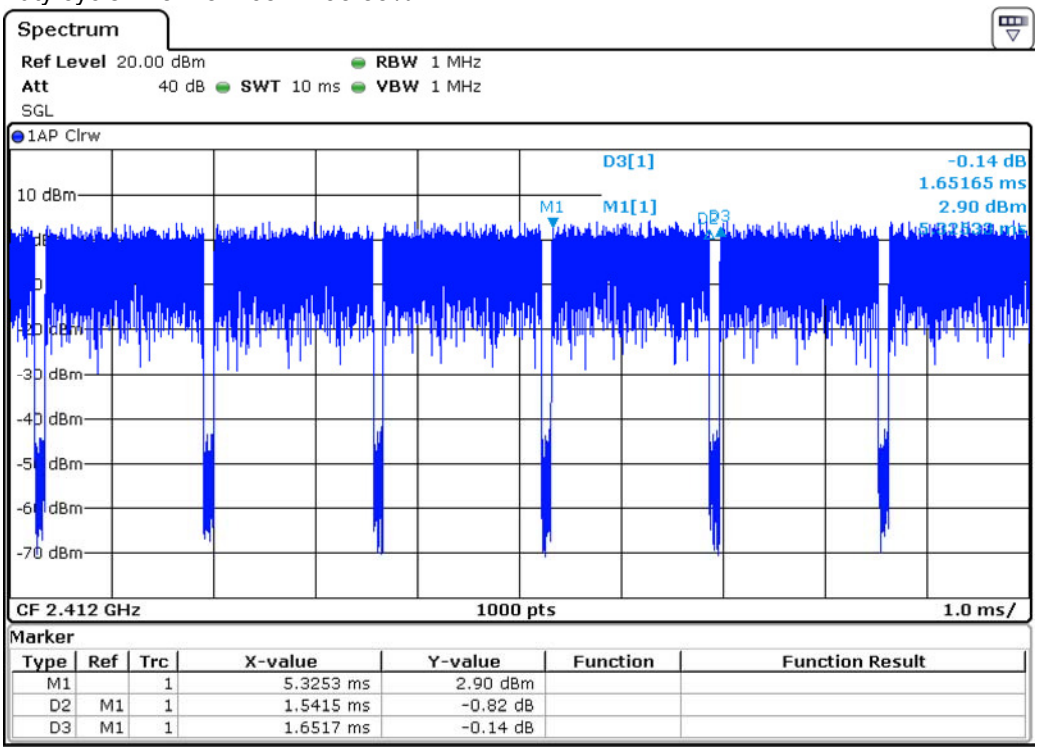
- 2.4G WIFI SISO

Duty cycle=9.94936/10.05137=98.98%

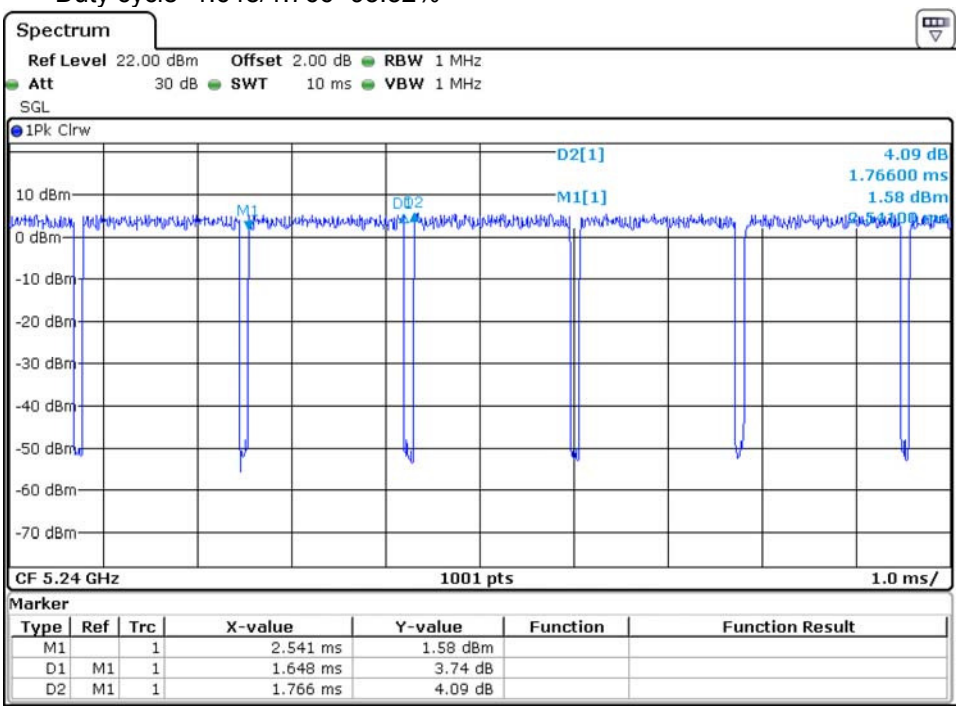


- 2.4G WIFI MIMO

Duty cycle=1.5415/1.6517=93.33%

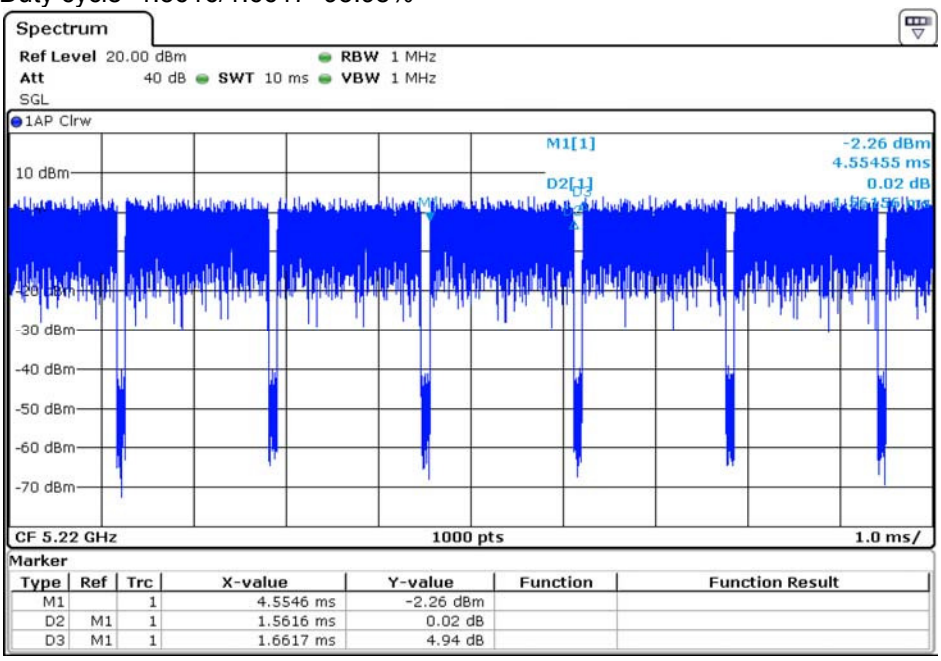


- 5.2G WIFI SISO
  Duty cycle=1.648/1.766=93.32%



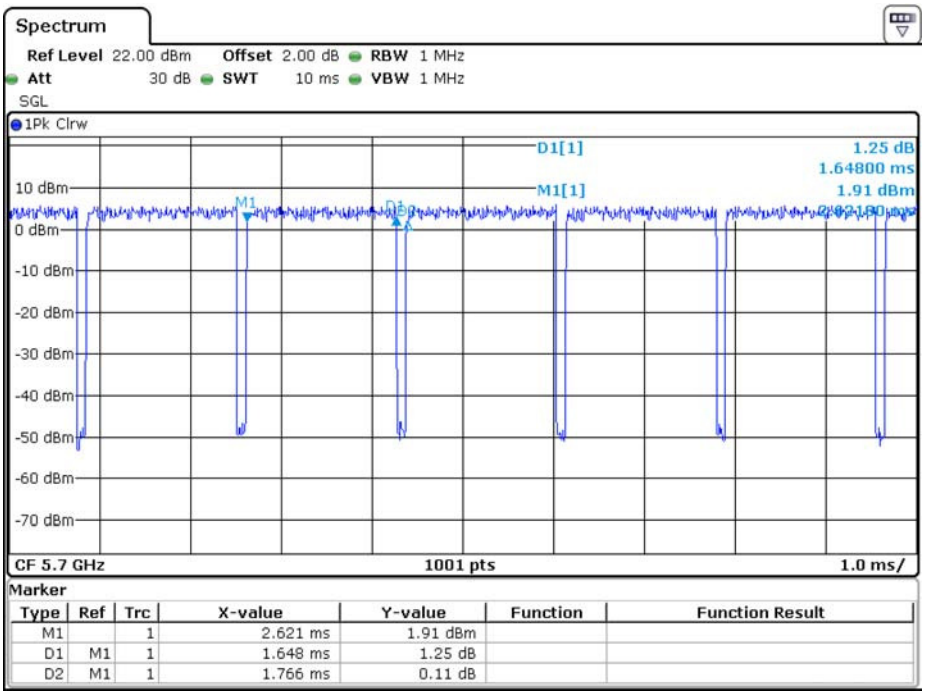
- 5.2G WIFI MIMO

Duty cycle=1.5616/1.6617=93.98%



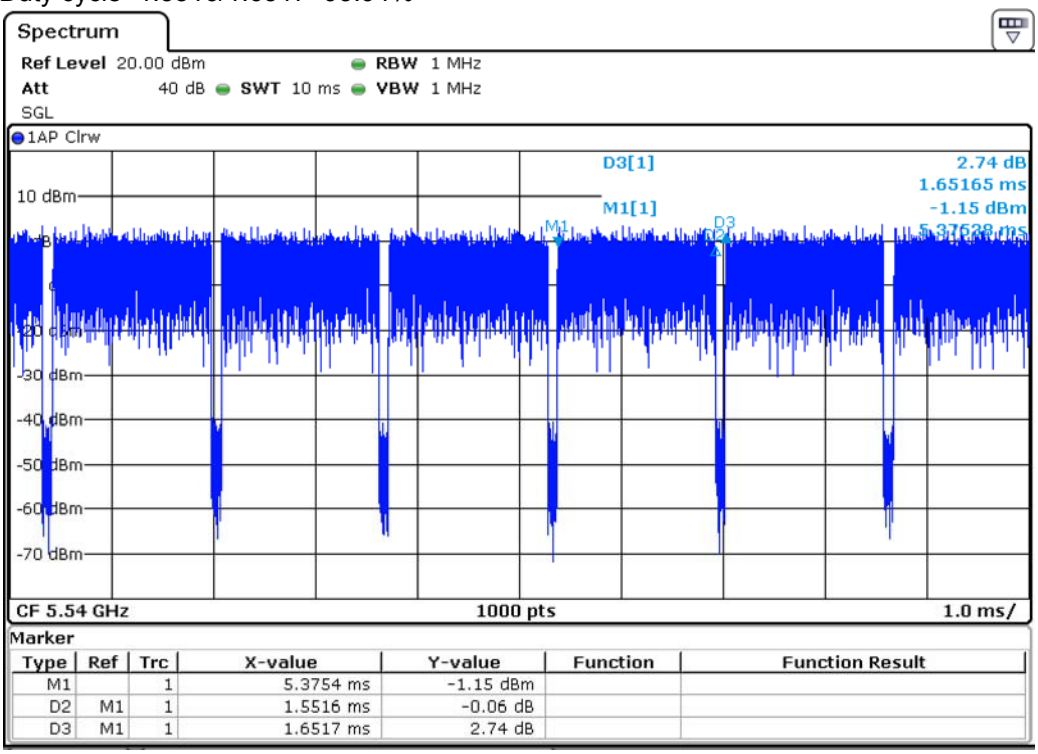
- 5.6G WIFI SISO

Duty cycle=1.648/1.766=93.32%



- 5.6G WIFI MIMO

Duty cycle=1.5516/1.6517=93.94%



5.2.2.1 Initial Test Position SAR Test Reduction Procedure

DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures. The initial test position procedure is described in the following:

1）. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other (remaining) test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band. SAR is also not required for that exposure configuration in the subsequent test configuration(s).

2）. When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest extrapolated or estimated 1-g SAR conditions determined by area scans or next closest/smallest test separation distance and maximum RF coupling test positions based on manufacturer justification, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions (left, right, touch, tilt or subsequent surfaces and edges) are tested.

3）. For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested. a) Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

5.2.2.2 Initial Test Configuration Procedures

An initial test configuration is determined for OFDM transmission modes 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. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required. SAR test reduction for subsequent highest output test channels is determined according to *reported* SAR of the initial test configuration.
For next to the ear, hotspot mode and UMC mini-tablet exposure configurations where multiple test positions are required, the initial test position procedure is applied to minimize the number of test positions required for SAR measurement using the initial test configuration transmission mode. For fixed exposure conditions that do not have multiple SAR test positions, SAR is measured in the transmission mode determined by the initial test configuration.
When the *reported* SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until *reported* SAR is ≤ 1.2 W/kg or all required channels are tested.

5.2.2.3 Subsequent Test Configuration Procedures

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. The initial test position procedure is applied to next to the ear, UMPC mini-tablet and hotspot mode configurations. When the same maximum output power is specified for multiple transmission modes, additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. The subsequent test configuration and SAR measurement procedures are described in the following.

1）. When SAR test exclusion provisions of KDB Publication 447498 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.

2）. When the highest *reported* SAR for the initial test configuration (when applicable, include subsequent highest output channels), 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.

3）. The number of channels in the initial test configuration and subsequent test configuration can be different due to differences in channel bandwidth. When SAR measurement is required for a subsequent

test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel. This step requires additional power measurement to identify the highest maximum output power channel in the subsequent test configuration to determine SAR test reduction.

a)SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.

b) SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the *reported* SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested. i) For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration.

4）. SAR measurements for the remaining highest specified maximum output power OFDM transmission mode configurations that have not been tested in the initial test configuration (highest maximum output) or subsequent test configuration(s) (subsequent next highest maximum output power) is determined by recursively applying the subsequent test configuration procedures in this section to the remaining configurations according to the following:

a)replace “subsequent test configuration” with “next subsequent test configuration” (i.e., subsequent next highest specified maximum output power configuration)

b) replace “initial test configuration” with “all tested higher output power configurations”

5.2.2.4 2.4 GHz SAR Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions. When SAR measurement is required for an OFDM configuration, the initial test configuration, subsequent test configuration and initial test position procedures are applied. The SAR test exclusion requirements for 802.11g/n OFDM configurations are described in following.

- **802.11b DSSS SAR Test Requirements**

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

1）. When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

2）. When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

- **2.4 GHz 802.11g/n OFDM SAR Test Exclusion Requirements**

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3, including sub-sections). SAR is not required for the following 2.4 GHz OFDM conditions.

1）. When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.

2）. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

5.2.2.5 WiFi 5G SAR Test Procedures

5.2.2.5.1 U-NII-1 and U-NII-2A Bands

For devices that operate in only one of the U-NII-1 and U-NII-2A bands, the normally required SAR procedures for OFDM configurations are applied. 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); otherwise, both bands are tested independently for SAR.
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; otherwise, both bands are tested independently for SAR.
3) The two U-NII bands may be aggregated to support a 160 MHz channel on channel number 50. Without additional testing, the maximum output power for this is limited to the lower of the maximum output power certified for the two bands. When SAR measurement is required for at least one of the bands and the highest *reported* SAR adjusted by the ratio of specified maximum output power of aggregated to standalone band is > 1.2 W/kg, SAR is required for the 160 MHz channel. This procedure does not apply to an aggregated band with maximum output higher than the standalone band(s); the aggregated band must be tested independently for SAR. SAR is not required when the 160 MHz channel is operating at a reduced maximum power and also qualifies for SAR test exclusion.

5.2.2.5.2 U-NII-2C and U-NII-3 Bands

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. when Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

When the same transmitter and antenna(s) are used for U-NII-2C band and U-NII-3 band or 5.8 GHz band of §15.247, the bands may be aggregated to enable additional channels with 20, 40 or 80 MHz bandwidth to span across the band gap, as illustrated in Appendix B. The maximum output power for the additional band gap channels is limited to the lower of those certified for the bands. Unless band gap channels are permanently disabled, they must be considered for SAR testing. The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels. When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

5.2.2.5.3 OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements

The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined according to the following steps applied sequentially.

1) The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.

4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; 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. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.
   - The channel closest to mid-band frequency is selected for SAR measurement.
   - 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.

5.2.2.5.4 SAR Test Requirements for OFDM configurations

When SAR measurement is required for 802.11 a/n/ac OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. When the same transmitter and antenna(s) are used for U-NII-1 and U-NII-2A bands, additional SAR test reduction applies. When band gap channels between U-NII-2C band and 5.8 GHz U-NII-3 or §15.247 band are supported, the highest maximum output power transmission mode configuration and maximum output power channel across the bands must be used to determine SAR test reduction, according to the initial test configuration and subsequent test configuration requirements. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

5.2.2.5.5 MIMO SAR Considerations

Per KDB 248227D01v02, simultaneous transmission provisions in KDB Publication 447498 should be used to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1-g SAR single transmission SAR measurement is <1.6W/kg, no additional SAR measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

5.2.3 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

TDD LTE test consideration

For Time-Division Duplex (TDD) systems, SAR 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 LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.

LTE TDD Band 41 support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Frame structure type 2:

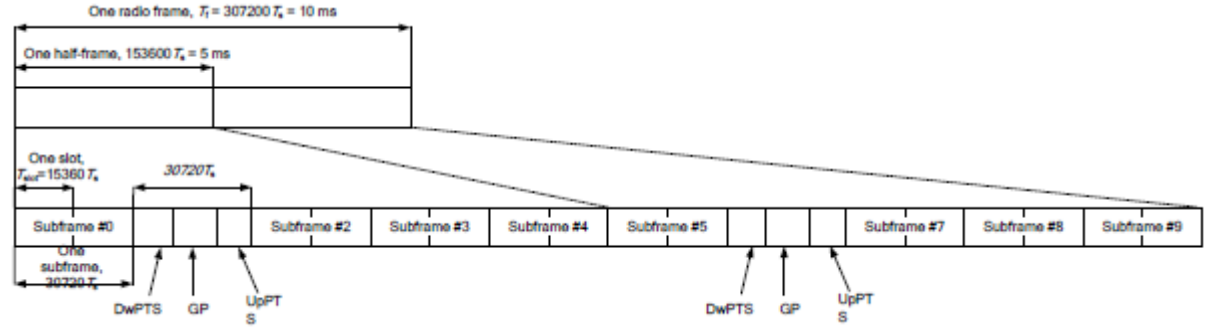


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	6592.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			7680.Ts	4384.Ts	5120.Ts
5	6592.Ts	4384.Ts	5120.Ts	20480.Ts		
6	19760.Ts			23040.Ts		
7	21952.Ts			25600.Ts		
8	24144.Ts			-	-	-
9	13168.Ts			-	-	-

Table 4.2-2: Uplink-downlink configurations.

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

Calculated Duty Cycle=[Extended cyclic prefix in uplink x (Ts) x # of S + # of U]/10ms

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

A) Spectrum Plots for RB Configurations
A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

B) MPR
MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

C) A-MPR
A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

D) Largest channel bandwidth standalone SAR test requirements
1) QPSK with 1 RB allocation
Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; 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.

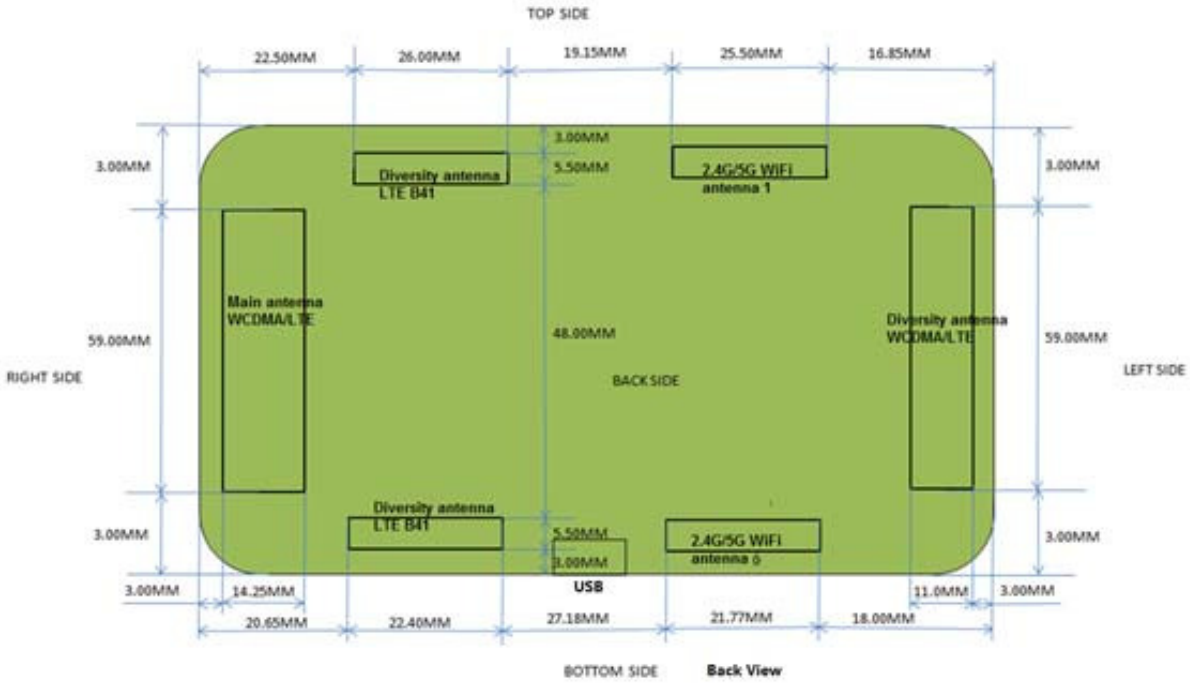
2) QPSK with 50% RB allocation
The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.

3) QPSK with 100% RB allocation
For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 1) and 2) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

4) Higher order modulations
For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

E) Other channel bandwidth standalone SAR test requirements
For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ 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.

5.2.4 DUT Antenna Locations



Note: The Div antenna does not have transmit function.

5.2.5 EUT side for SAR Testing

According to the distance between LTE/WCDAM/ &WIFI antennas and the sides of the EUT we can draw the conclusion that:

EUT Sides for SAR Testing						
Mode	Front	Back	Left	Right	Top	Bottom
Main Antenna	Yes	Yes	No	Yes	Yes	Yes
2.4GHz/5GHz Wi-Fi 0	Yes	Yes	Yes	No	No	Yes
2.4GHz/5GHz Wi-Fi 1	Yes	Yes	Yes	No	Yes	No
2.4GHz/5GHz Wi-Fi-MIMO	Yes	Yes	Yes	No	Yes	Yes

Table 8： EUT Sides for SAR Testing

Note: When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

5.2.6 Stand-alone SAR test evaluation

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.

Freq. Band	Frequency (GHz)	Position	Average Power		Test Separation (mm)	Calculate Value	Exclusion Threshold	Exclusion (Y/N)
			dBm	mW				
Wi-Fi	2.450	hotspot	18.5	70.79	10	11.1	3.0	N
	5	hotspot	16.5	44.67	10	10.0	3.0	N

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where
• f(GHz) is the RF channel transmit frequency in GHz
• Power and distance are rounded to the nearest mW and mm before calculation
• The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

5.3 Measurement of RF conducted Power

5.3.1 Conducted Power Of WCDMA

WCDMA1700-sensor off						WCDMA1900-sensor off					
Average Conducted Power(dBm)						Average Conducted Power(dBm)					
Channel		Tune up	1312	1412	1513	Channel		Tune up	9262	9400	9538
WCDMA	12.2kbps RMC	22.8	21.68	21.99	21.93	WCDMA	12.2kbps RMC	23	22.59	22.46	22.48
	64kbps RMC	22.8	21.67	21.97	21.91		64kbps RMC	23	22.58	22.44	22.44
	144kbps RMC	22.8	21.64	21.98	21.88		144kbps RMC	23	22.56	22.39	22.41
	384kbps RMC	22.8	21.65	21.97	21.89		384kbps RMC	23	22.55	22.36	22.37
HSDPA	Subtest 1	22	21.21	21.56	21.44	HSDPA	Subtest 1	22.5	22.11	22.01	22.01
	Subtest 2	22	21.18	21.51	21.5		Subtest 2	22.5	22.15	22.02	22.03
	Subtest 3	22	20.99	21.34	21.24		Subtest 3	22.0	21.96	21.76	21.73
	Subtest 4	22	20.97	21.34	21.26		Subtest 4	22.0	21.95	21.74	21.71
HSUPA	Subtest 1	22	21.18	21.53	21.44	HSUPA	Subtest 1	22.5	22.09	21.97	21.98
	Subtest 2	20.5	19.45	19.67	19.67		Subtest 2	20.5	20.33	20.18	20.19
	Subtest 3	21.5	20.26	20.60	20.49		Subtest 3	21.5	21.21	21.06	20.99
	Subtest 4	20.5	19.17	19.50	19.45		Subtest 4	20.5	20.15	19.90	19.87
	Subtest 5	22	20.65	20.81	20.72		Subtest 5	22.0	21.35	21.26	21.27
WCDMA1700-sensor on						WCDMA1900-sensor on					
Average Conducted Power(dBm)						Average Conducted Power(dBm)					
Channel		Tune up	1312	1412	1513	Channel		Tune up	9262	9400	9538
WCDMA	12.2kbps RMC	17.5	16.73	17.14	17.06	WCDMA	12.2kbps RMC	21	20.53	20.47	20.37
	64kbps RMC	17.5	16.72	17.11	17.02		64kbps RMC	21	20.51	20.45	20.36
	144kbps RMC	17.5	16.71	17.12	17.01		144kbps RMC	21	20.51	20.44	20.33
	384kbps RMC	17.5	16.68	17.08	17.01		384kbps RMC	21	20.49	20.41	20.31
HSDPA	Subtest 1	16	15.26	15.21	15.37	HSDPA	Subtest 1	20	19.65	19.62	19.50
	Subtest 2	16	15.23	15.15	15.21		Subtest 2	20	19.68	19.63	19.55
	Subtest 3	15.5	15.06	15.18	15.27		Subtest 3	19.5	19.31	19.41	19.25
	Subtest 4	15.5	15.00	15.45	15.38		Subtest 4	19.5	19.49	19.39	19.25
HSUPA	Subtest 1	16	15.23	15.68	15.57	HSUPA	Subtest 1	20	19.83	19.78	19.67
	Subtest 2	14	13.50	13.81	13.78		Subtest 2	18	17.81	17.91	17.81
	Subtest 3	15	14.33	14.74	14.62		Subtest 3	19	18.96	18.91	18.71
	Subtest 4	14	13.20	13.61	13.57		Subtest 4	18	17.89	17.75	17.61
	Subtest 5	15.5	14.70	14.96	14.85		Subtest 5	19.5	19.09	19.07	18.96

Table 9： Conducted Power Of WCDMA

1) When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.

5.3.2 Conducted Power Of LTE

LTE FDD Band 2-sensor off				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 18607	Channel 18900	Channel 19193
1.4MHz	QPSK	1	0	23	22.74	22.75	22.67
		1	2	23	22.52	22.6	22.5
		1	5	23	22.73	22.59	22.5
		3	0	22	21.66	21.65	21.62
		3	2	22	21.67	21.61	21.51
		3	3	22	21.67	21.64	21.53
		6	0	22	21.69	21.63	21.51
	16QAM	1	0	22	21.65	21.78	21.63
		1	2	22	21.53	21.53	21.42
		1	5	22	21.59	21.58	21.45
		3	0	21	20.31	20.31	20.28
		3	2	21	20.29	20.22	20.21
		3	3	21	20.3	20.3	20.14
		6	0	21	20.3	20.37	20.24
	64QAM	1	0	21	20.46	20.55	20.57
		1	2	21	20.29	20.48	20.28
		1	5	21	20.28	20.46	20.36
		3	0	20	19.40	19.55	19.43
		3	2	20	19.46	19.47	19.56
		3	3	20	19.48	19.35	19.56
		6	0	20	19.39	19.27	19.45
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 18615	Channel 18900	Channel 19185
3MHz	QPSK	1	0	23	22.74	22.76	22.68
		1	7	23	22.57	22.64	22.5
		1	14	23	22.73	22.61	22.55
		8	0	22	21.68	21.69	21.64
		8	4	22	21.67	21.64	21.55
		8	7	22	21.71	21.65	21.56
		15	0	22	21.74	21.66	21.54
	16QAM	1	0	22	21.6	21.72	21.59
		1	7	22	21.49	21.46	21.36
		1	14	22	21.56	21.51	21.41
		8	0	21	20.28	20.28	20.22
		8	4	21	20.25	20.2	20.16
		8	7	21	20.24	20.24	20.08
		15	0	21	20.27	20.3	20.18
	64QAM	1	0	21	20.49	20.57	20.60
		1	7	21	20.31	20.51	20.30
		1	14	21	20.32	20.49	20.37
		8	0	20	19.42	19.58	19.46
		8	4	20	19.46	19.48	19.56
		8	7	20	19.50	19.39	19.59
		15	0	20	19.40	19.28	19.46

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					18625	18900	19175
5MHz	QPSK	1	0	23	22.75	22.78	22.72
		1	13	23	22.62	22.66	22.51
		1	24	23	22.73	22.65	22.58
		12	0	22	21.71	21.69	21.65
		12	6	22	21.71	21.65	21.55
		12	13	22	21.71	21.66	21.6
		25	0	22	21.75	21.68	21.58
	16QAM	1	0	22	21.66	21.78	21.67
		1	13	22	21.56	21.52	21.42
		1	24	22	21.61	21.6	21.49
		12	0	21	20.37	20.33	20.29
		12	6	21	20.33	20.27	20.25
		12	13	21	20.31	20.29	20.18
		25	0	21	20.35	20.37	20.24
	64QAM	1	0	21	20.48	20.56	20.58
		1	13	21	20.31	20.51	20.29
		1	24	21	20.30	20.47	20.37
		12	0	20	19.41	19.57	19.46
		12	6	20	19.46	19.47	19.56
		12	13	20	19.48	19.37	19.58
		25	0	20	19.39	19.29	19.46
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					18650	18900	19150
10MHz	QPSK	1	0	23	22.79	22.82	22.75
		1	25	23	22.65	22.66	22.54
		1	49	23	22.76	22.67	22.59
		25	0	22	21.73	21.71	21.65
		25	13	22	21.71	21.66	21.59
		25	25	22	21.72	21.66	21.64
		50	0	22	21.76	21.71	21.61
	16QAM	1	0	22	21.74	21.83	21.72
		1	25	22	21.6	21.61	21.5
		1	49	22	21.65	21.69	21.54
		25	0	21	20.45	20.42	20.36
		25	13	21	20.41	20.34	20.31
		25	25	21	20.37	20.34	20.25
		50	0	21	20.42	20.42	20.3
	64QAM	1	0	21	20.51	20.59	20.61
		1	25	21	20.32	20.53	20.31
		1	49	21	20.31	20.49	20.38
		25	0	20	19.43	19.58	19.48
		25	13	20	19.49	19.49	19.58
		25	25	20	19.50	19.39	19.60
		50	0	20	19.42	19.30	19.49

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					18675	18900	19125
15MHz	QPSK	1	0	23	22.81	22.85	22.75
		1	38	23	22.69	22.68	22.54
		1	74	23	22.77	22.7	22.64
		36	0	22	21.76	21.75	21.67
		36	18	22	21.73	21.7	21.62
		36	39	22	21.75	21.69	21.65
		75	0	22	21.76	21.74	21.62
	16QAM	1	0	22	21.78	21.84	21.73
		1	38	22	21.64	21.63	21.53
		1	74	22	21.71	21.72	21.59
		36	0	21	20.49	20.47	20.4
		36	18	21	20.46	20.4	20.34
		36	39	21	20.42	20.39	20.31
		75	0	21	20.47	20.45	20.34
	64QAM	1	0	21	20.49	20.58	20.60
		1	38	21	20.31	20.51	20.30
		1	74	21	20.30	20.48	20.36
		36	0	20	19.41	19.57	19.47
		36	18	20	19.47	19.48	19.57
		36	39	20	19.49	19.38	19.59
		75	0	20	19.40	19.28	19.47
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					18700	18900	19100
20MHz	QPSK	1	0	23	22.85	22.88	22.87
		1	50	23	22.61	22.63	22.66
		1	99	23	22.66	22.69	22.7
		50	0	22	21.74	21.81	21.8
		50	25	22	21.66	21.72	21.73
		50	50	22	21.64	21.71	21.7
		100	0	22	21.69	21.78	21.75
	16QAM	1	0	22	21.55	21.64	21.66
		1	50	22	21.39	21.44	21.44
		1	99	22	21.43	21.45	21.47
		50	0	21	20.26	20.33	20.31
		50	25	21	20.18	20.26	20.26
		50	50	21	20.18	20.21	20.23
		100	0	21	20.21	20.26	20.25
	64QAM	1	0	21	20.51	20.6	20.62
		1	50	21	20.32	20.53	20.31
		1	99	21	20.33	20.5	20.39
		50	0	20	19.43	19.6	19.48
		50	25	20	19.49	19.5	19.59
		50	50	20	19.52	19.4	19.61
		100	0	20	19.43	19.3	19.49

LTE FDD Band 2-sensor on				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 18607	Channel 18900	Channel 19193
1.4MHz	QPSK	1	0	21	20.4	20.35	20.25
		1	2	21	20.17	20.19	20.02
		1	5	21	20.24	20.18	20.17
		3	0	21	20.33	20.25	20.09
		3	2	21	20.21	20.24	20.12
		3	3	21	20.26	20.2	20.08
		6	0	21	20.33	20.19	20.11
	16QAM	1	0	21	20.39	20.47	20.4
		1	2	21	20.13	20.24	20.24
		1	5	21	20.2	20.22	20.33
		3	0	21	20.27	20.28	20.32
		3	2	21	20.19	20.21	20.24
		3	3	21	20.18	20.18	20.23
		6	0	21	20.15	20.28	20.27
	64QAM	1	0	21	20.34	20.47	20.33
		1	2	21	20.1	20.17	20.23
		1	5	21	20.15	20.2	20.28
		3	0	21	20.04	20.04	20.06
		3	2	21	19.98	20	20.03
		3	3	21	19.97	19.94	19.98
		6	0	21	19.88	20.06	20.06
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 18615	Channel 18900	Channel 19185
3MHz	QPSK	1	0	21	20.35	20.43	20.39
		1	7	21	20.20	20.22	20.20
		1	14	21	20.20	20.22	20.27
		8	0	21	20.32	20.40	20.39
		8	4	21	20.23	20.30	20.31
		8	7	21	20.25	20.27	20.25
		15	0	21	20.32	20.30	20.36
	16QAM	1	0	21	20.34	20.45	20.41
		1	7	21	20.14	20.22	20.25
		1	14	21	20.27	20.24	20.29
		8	0	21	20.03	20.10	20.09
		8	4	21	19.96	20.02	20.02
		8	7	21	19.93	19.98	20.01
		15	0	21	19.96	20.02	20.05
	64QAM	1	0	21	20.21	20.33	20.16
		1	7	21	20.18	20.27	20.28
		1	14	21	20.31	20.30	20.38
		8	0	21	20.07	20.13	20.19
		8	4	21	20.01	20.12	20.07
		8	7	21	20.01	20.04	20.09
		15	0	21	19.99	20.10	20.10

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					18625	18900	19175
5MHz	QPSK	1	0	21	20.35	20.41	20.39
		1	13	21	20.19	20.20	20.20
		1	24	21	20.20	20.23	20.25
		12	0	21	20.34	20.38	20.38
		12	6	21	20.22	20.30	20.29
		12	13	21	20.25	20.27	20.26
		25	0	21	20.33	20.29	20.36
	16QAM	1	0	21	20.35	20.46	20.40
		1	13	21	20.15	20.23	20.24
		1	24	21	20.27	20.25	20.31
		12	0	21	20.03	20.09	20.08
		12	6	21	19.98	20.02	20.02
		12	13	21	19.94	19.98	20.02
		25	0	21	19.96	20.00	20.06
	64QAM	1	0	21	20.22	20.35	20.14
		1	13	21	20.16	20.26	20.29
		1	24	21	20.32	20.30	20.39
		12	0	21	20.07	20.14	20.18
		12	6	21	20.00	20.09	20.08
		12	13	21	20.01	20.04	20.07
		25	0	21	20.01	20.09	20.09
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					18650	18900	19150
10MHz	QPSK	1	0	21	20.33	20.40	20.39
		1	25	21	20.17	20.20	20.17
		1	49	21	20.19	20.22	20.24
		25	0	21	20.32	20.37	20.36
		25	13	21	20.21	20.28	20.28
		25	25	21	20.21	20.27	20.24
		50	0	21	20.30	20.28	20.33
	16QAM	1	0	21	20.33	20.43	20.38
		1	25	21	20.11	20.21	20.23
		1	49	21	20.23	20.22	20.28
		25	0	21	20.03	20.08	20.07
		25	13	21	19.95	19.99	20.01
		25	25	21	19.92	19.96	20.01
		50	0	21	19.94	19.98	20.03
	64QAM	1	0	21	20.19	20.30	20.12
		1	25	21	20.16	20.25	20.26
		1	49	21	20.31	20.29	20.38
		25	0	21	20.08	20.11	20.17
		25	13	21	20.00	20.08	20.06
		25	25	21	20.00	20.03	20.05
		50	0	21	19.99	20.07	20.09

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					18675	18900	19125
15MHz	QPSK	1	0	21	20.35	20.42	20.40
		1	38	21	20.19	20.21	20.19
		1	74	21	20.21	20.23	20.27
		36	0	21	20.34	20.39	20.38
		36	18	21	20.23	20.30	20.30
		36	39	21	20.24	20.29	20.27
		75	0	21	20.32	20.31	20.35
	16QAM	1	0	21	20.34	20.46	20.41
		1	38	21	20.13	20.22	20.24
		1	74	21	20.25	20.24	20.30
		36	0	21	20.04	20.11	20.09
		36	18	21	19.96	20.01	20.02
		36	39	21	19.93	19.98	20.02
		75	0	21	19.97	20.00	20.06
	64QAM	1	0	21	20.21	20.33	20.15
		1	38	21	20.18	20.28	20.28
		1	74	21	20.33	20.31	20.39
		36	0	21	20.09	20.13	20.20
		36	18	21	20.01	20.11	20.08
		36	39	21	20.03	20.05	20.08
		75	0	21	20.00	20.10	20.10
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					18700	18900	19100
20MHz	QPSK	1	0	21	20.37	20.45	20.42
		1	50	21	20.21	20.24	20.22
		1	99	21	20.23	20.25	20.28
		50	0	21	20.35	20.41	20.4
		50	25	21	20.26	20.33	20.32
		50	50	21	20.26	20.3	20.28
		100	0	21	20.34	20.32	20.38
	16QAM	1	0	21	20.37	20.48	20.43
		1	50	21	20.16	20.25	20.27
		1	99	21	20.28	20.27	20.32
		50	0	21	20.06	20.12	20.11
		50	25	21	19.99	20.04	20.04
		50	50	21	19.95	20.01	20.04
		100	0	21	19.99	20.03	20.08
	64QAM	1	0	21	20.24	20.36	20.17
		1	50	21	20.19	20.29	20.3
		1	99	21	20.34	20.32	20.41
		50	0	21	20.1	20.16	20.21
		50	25	21	20.03	20.13	20.1
		50	50	21	20.04	20.06	20.1
		100	0	21	20.02	20.12	20.12

LTE FDD Band 4-sensor off				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 19957	Channel 20175	Channel 20393
1.4MHz	QPSK	1	0	23	22.36	22.45	22.41
		1	2	23	22.39	22.38	22.46
		1	5	23	22.32	22.35	22.44
		3	0	22	21.22	21.3	21.3
		3	2	22	21.22	21.21	21.24
		3	3	22	21.23	21.24	21.16
		6	0	22	21.22	21.21	21.2
	16QAM	1	0	22	21.45	21.52	21.43
		1	2	22	21.41	21.48	21.36
		1	5	22	21.4	21.45	21.38
		3	0	21	20.31	20.34	20.25
		3	2	21	20.23	20.23	20.31
		3	3	21	20.23	20.3	20.32
		6	0	21	20.21	20.26	20.24
	64QAM	1	0	21	20.63	20.71	20.65
		1	2	21	20.59	20.66	20.61
		1	5	21	20.54	20.56	20.6
		3	0	20	19.34	19.33	19.31
		3	2	20	19.28	19.33	19.32
		3	3	20	19.31	19.26	19.31
		6	0	20	19.32	19.28	19.19
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 19965	Channel 20175	Channel 20385
3MHz	QPSK	1	0	23	22.38	22.49	22.43
		1	7	23	22.4	22.42	22.47
		1	14	23	22.36	22.4	22.45
		8	0	22	21.27	21.32	21.34
		8	4	22	21.22	21.25	21.26
		8	7	22	21.28	21.27	21.21
		15	0	22	21.23	21.25	21.23
	16QAM	1	0	22	21.5	21.53	21.47
		1	7	22	21.43	21.53	21.4
		1	14	22	21.42	21.45	21.39
		8	0	21	20.31	20.38	20.3
		8	4	21	20.26	20.27	20.33
		8	7	21	20.25	20.32	20.36
		15	0	21	20.23	20.3	20.28
	64QAM	1	0	21	20.67	20.71	20.67
		1	7	21	20.64	20.67	20.64
		1	14	21	20.58	20.59	20.64
		8	0	20	19.35	19.38	19.34
		8	4	20	19.32	19.34	19.32
		8	7	20	19.32	19.28	19.31
		15	0	20	19.32	19.3	19.23

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 19975	Channel 20175	Channel 20375
5MHz	QPSK	1	0	23	22.4	22.49	22.46
		1	13	23	22.42	22.42	22.47
		1	24	23	22.36	22.44	22.46
		12	0	22	21.3	21.35	21.35
		12	6	22	21.25	21.3	21.29
		12	13	22	21.31	21.29	21.24
		25	0	22	21.24	21.26	21.27
	16QAM	1	0	22	21.53	21.55	21.51
		1	13	22	21.44	21.57	21.45
		1	24	22	21.43	21.5	21.42
		12	0	21	20.36	20.39	20.34
		12	6	21	20.28	20.3	20.36
		12	13	21	20.29	20.37	20.38
		25	0	21	20.28	20.33	20.31
	64QAM	1	0	21	20.69	20.73	20.7
		1	13	21	20.66	20.68	20.66
		1	24	21	20.6	20.61	20.68
		12	0	20	19.37	19.38	19.37
		12	6	20	19.35	19.35	19.35
		12	13	20	19.34	19.31	19.32
		25	0	20	19.32	19.31	19.24

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 20000	Channel 20175	Channel 20350
10MHz	QPSK	1	0	23	22.45	22.5	22.5
		1	25	23	22.43	22.45	22.48
		1	49	23	22.4	22.46	22.49
		25	0	22	21.33	21.38	21.37
		25	13	22	21.27	21.32	21.29
		25	25	22	21.31	21.33	21.28
		50	0	22	21.26	21.26	21.3
	16QAM	1	0	22	21.54	21.56	21.54
		1	25	22	21.46	21.59	21.48
		1	49	22	21.46	21.54	21.44
		25	0	21	20.38	20.41	20.39
		25	13	21	20.32	20.34	20.4
		25	25	21	20.31	20.38	20.42
		50	0	21	20.32	20.35	20.34
	64QAM	1	0	21	20.7	20.73	20.74
		1	25	21	20.67	20.7	20.69
		1	49	21	20.64	20.64	20.69
		25	0	20	19.41	19.41	19.41
		25	13	20	19.39	19.39	19.37
		25	25	20	19.34	19.33	19.32
		50	0	20	19.33	19.31	19.26

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					20025	20175	20325
15MHz	QPSK	1	0	23	22.5	22.53	22.54
		1	38	23	22.45	22.48	22.51
		1	74	23	22.41	22.49	22.53
		36	0	22	21.37	21.42	21.37
		36	18	22	21.31	21.36	21.33
		36	39	22	21.31	21.33	21.29
		75	0	22	21.27	21.3	21.3
	16QAM	1	0	22	21.55	21.58	21.56
		1	38	22	21.48	21.59	21.52
		1	74	22	21.5	21.56	21.48
		36	0	21	20.39	20.43	20.4
		36	18	21	20.34	20.39	20.41
		36	39	21	20.35	20.39	20.42
		75	0	21	20.34	20.36	20.38
	64QAM	1	0	21	20.7	20.74	20.74
		1	38	21	20.68	20.73	20.73
		1	74	21	20.64	20.68	20.71
		36	0	20	19.43	19.42	19.43
		36	18	20	19.42	19.4	19.39
		36	39	20	19.37	19.35	19.33
		75	0	20	19.33	19.36	19.28
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					20050	20175	20300
20MHz	QPSK	1	0	23	22.51	22.55	22.53
		1	50	23	22.47	22.52	22.54
		1	99	23	22.44	22.51	22.53
		50	0	22	21.39	21.43	21.4
		50	25	22	21.35	21.41	21.35
		50	50	22	21.31	21.36	21.33
		100	0	22	21.28	21.32	21.3
	16QAM	1	0	22	21.58	21.62	21.58
		1	50	22	21.53	21.59	21.56
		1	99	22	21.5	21.58	21.52
		50	0	21	20.4	20.44	20.43
		50	25	21	20.38	20.4	20.43
		50	50	21	20.37	20.4	20.43
		100	0	21	20.35	20.38	20.41
	64QAM	1	0	21	20.74	20.78	20.76
		1	50	21	20.73	20.77	20.76
		1	99	21	20.69	20.72	20.73
		50	0	20	19.44	19.45	19.44
		50	25	20	19.42	19.41	19.4
		50	50	20	19.4	19.4	19.36
		100	0	20	19.36	19.4	19.32

LTE FDD Band 4-sensor on				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 19957	Channel 20175	Channel 20393
1.4MHz	QPSK	1	0	17.5	16.28	16.34	16.51
		1	2	17.5	16.28	16.33	16.34
		1	5	17.5	16.31	16.28	16.34
		3	0	17.5	16.21	16.30	16.42
		3	2	17.5	16.21	16.26	16.38
		3	3	17.5	16.17	16.22	16.29
		6	0	17.5	16.21	16.29	16.35
	16QAM	1	0	17.5	16.35	16.45	16.58
		1	2	17.5	16.17	16.22	16.34
		1	5	17.5	16.21	16.25	16.37
		3	0	17.5	16.23	16.32	16.43
		3	2	17.5	16.21	16.26	16.38
		3	3	17.5	16.19	16.21	16.31
		6	0	17.5	16.19	16.28	16.38
	64QAM	1	0	17.5	16.34	16.43	16.39
		1	2	17.5	16.30	16.34	16.40
		1	5	17.5	16.28	16.30	16.44
		3	0	17.5	16.24	16.17	16.29
		3	2	17.5	16.22	16.19	16.29
		3	3	17.5	16.25	16.17	16.19
		6	0	17.5	16.17	16.25	16.28
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 19965	Channel 20175	Channel 20385
3MHz	QPSK	1	0	17.5	16.30	16.36	16.52
		1	7	17.5	16.30	16.33	16.36
		1	14	17.5	16.33	16.30	16.35
		8	0	17.5	16.24	16.30	16.44
		8	4	17.5	16.21	16.27	16.39
		8	7	17.5	16.19	16.24	16.31
		15	0	17.5	16.22	16.30	16.38
	16QAM	1	0	17.5	16.37	16.46	16.61
		1	7	17.5	16.18	16.23	16.36
		1	14	17.5	16.23	16.26	16.37
		8	0	17.5	16.24	16.33	16.45
		8	4	17.5	16.23	16.29	16.39
		8	7	17.5	16.21	16.23	16.33
		15	0	17.5	16.21	16.29	16.38
	64QAM	1	0	17.5	16.36	16.45	16.41
		1	7	17.5	16.32	16.36	16.42
		1	14	17.5	16.29	16.32	16.45
		8	0	17.5	16.26	16.19	16.31
		8	4	17.5	16.23	16.20	16.30
		8	7	17.5	16.26	16.18	16.20
		15	0	17.5	16.19	16.26	16.30

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 19975	Channel 20175	Channel 20375
5MHz	QPSK	1	0	17.5	16.30	16.34	16.51
		1	13	17.5	16.29	16.33	16.35
		1	24	17.5	16.31	16.29	16.33
		12	0	17.5	16.24	16.29	16.44
		12	6	17.5	16.21	16.26	16.38
		12	13	17.5	16.19	16.23	16.30
		25	0	17.5	16.23	16.30	16.38
	16QAM	1	0	17.5	16.37	16.45	16.60
		1	13	17.5	16.16	16.23	16.34
		1	24	17.5	16.22	16.27	16.37
		12	0	17.5	16.23	16.33	16.46
		12	6	17.5	16.22	16.27	16.39
		12	13	17.5	16.21	16.23	16.32
		25	0	17.5	16.21	16.29	16.38
	64QAM	1	0	17.5	16.37	16.45	16.40
		1	13	17.5	16.31	16.34	16.42
		1	24	17.5	16.28	16.30	16.44
		12	0	17.5	16.25	16.17	16.30
		12	6	17.5	16.22	16.19	16.30
		12	13	17.5	16.25	16.17	16.19
		25	0	17.5	16.20	16.25	16.30
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 20000	Channel 20175	Channel 20350
10MHz	QPSK	1	0	17.5	16.31	16.36	16.52
		1	25	17.5	16.29	16.33	16.36
		1	49	17.5	16.32	16.29	16.34
		25	0	17.5	16.24	16.30	16.45
		25	13	17.5	16.21	16.26	16.39
		25	25	17.5	16.17	16.22	16.31
		50	0	17.5	16.23	16.30	16.38
	16QAM	1	0	17.5	16.35	16.47	16.60
		1	25	17.5	16.16	16.22	16.34
		1	49	17.5	16.23	16.26	16.36
		25	0	17.5	16.25	16.32	16.45
		25	13	17.5	16.22	16.28	16.39
		25	25	17.5	16.20	16.21	16.33
		50	0	17.5	16.19	16.29	16.37
	64QAM	1	0	17.5	16.36	16.43	16.39
		1	25	17.5	16.31	16.34	16.42
		1	49	17.5	16.28	16.32	16.44
		25	0	17.5	16.24	16.18	16.30
		25	13	17.5	16.23	16.20	16.30
		25	25	17.5	16.26	16.17	16.19
		50	0	17.5	16.19	16.26	16.30

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 20025	Channel 20175	Channel 20325
15MHz	QPSK	1	0	17.5	16.31	16.35	16.51
		1	38	17.5	16.28	16.34	16.36
		1	74	17.5	16.33	16.29	16.34
		36	0	17.5	16.23	16.30	16.43
		36	18	17.5	16.22	16.27	16.40
		36	39	17.5	16.17	16.22	16.31
		75	0	17.5	16.22	16.31	16.37
	16QAM	1	0	17.5	16.37	16.45	16.59
		1	38	17.5	16.17	16.22	16.34
		1	74	17.5	16.21	16.25	16.37
		36	0	17.5	16.25	16.34	16.44
		36	18	17.5	16.22	16.27	16.38
		36	39	17.5	16.21	16.22	16.31
		75	0	17.5	16.19	16.28	16.38
	64QAM	1	0	17.5	16.37	16.43	16.39
		1	38	17.5	16.32	16.35	16.42
		1	74	17.5	16.29	16.31	16.44
		36	0	17.5	16.26	16.18	16.30
		36	18	17.5	16.22	16.18	16.31
		36	39	17.5	16.25	16.17	16.18
		75	0	17.5	16.19	16.26	16.29
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 20050	Channel 20175	Channel 20300
20MHz	QPSK	1	0	17.5	16.32	16.37	16.54
		1	50	17.5	16.31	16.35	16.38
		1	99	17.5	16.34	16.31	16.36
		50	0	17.5	16.25	16.32	16.46
		50	25	17.5	16.23	16.28	16.41
		50	50	17.5	16.2	16.25	16.32
		100	0	17.5	16.24	16.32	16.39
	16QAM	1	0	17.5	16.38	16.48	16.62
		1	50	17.5	16.19	16.24	16.37
		1	99	17.5	16.24	16.28	16.39
		50	0	17.5	16.26	16.35	16.47
		50	25	17.5	16.24	16.3	16.41
		50	50	17.5	16.22	16.24	16.34
		100	0	17.5	16.22	16.31	16.4
	64QAM	1	0	17.5	16.38	16.46	16.42
		1	50	17.5	16.33	16.37	16.44
		1	99	17.5	16.31	16.33	16.47
		50	0	17.5	16.27	16.2	16.32
		50	25	17.5	16.25	16.21	16.32
		50	50	17.5	16.28	16.19	16.21
		100	0	17.5	16.21	16.28	16.31

LTE FDD Band 12				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 23017	Channel 23095	Channel 23173
1.4MHz	QPSK	1	0	23	22.29	22.29	22.22
		1	2	23	22.23	22.29	22.21
		1	5	23	22.21	22.19	22.25
		3	0	22	21.27	21.29	21.23
		3	2	22	21.29	21.24	21.29
		3	3	22	21.28	21.25	21.25
		6	0	22	21.24	21.28	21.2
	16QAM	1	0	22	21.28	21.31	21.35
		1	2	22	21.28	21.35	21.28
		1	5	22	21.29	21.29	21.26
		3	0	21	21.35	21.32	21.28
		3	2	21	21.3	21.32	21.3
		3	3	21	21.28	21.26	21.27
		6	0	21	21.25	21.25	21.21
	64QAM	1	0	21	20.7	20.67	20.69
		1	2	21	20.73	20.65	20.61
		1	5	21	20.68	20.57	20.69
		3	0	20	19.57	19.62	19.61
		3	2	20	19.54	19.6	19.54
		3	3	20	19.51	19.56	19.48
		6	0	20	19.49	19.53	19.45
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 23025	Channel 23095	Channel 23165
3MHz	QPSK	1	0	23	22.34	22.31	22.26
		1	7	23	22.27	22.29	22.24
		1	14	23	22.23	22.23	22.27
		8	0	22	21.31	21.31	21.28
		8	4	22	21.29	21.28	21.3
		8	7	22	21.29	21.3	21.28
		15	0	22	21.26	21.31	21.24
	16QAM	1	0	22	21.3	21.35	21.37
		1	7	22	21.32	21.35	21.32
		1	14	22	21.3	21.31	21.29
		8	0	21	21.37	21.35	21.29
		8	4	21	21.32	21.34	21.31
		8	7	21	21.32	21.27	21.28
		15	0	21	21.27	21.26	21.23
	64QAM	1	0	21	20.72	20.72	20.71
		1	7	21	20.73	20.68	20.65
		1	14	21	20.68	20.6	20.7
		8	0	20	19.61	19.64	19.62
		8	4	20	19.56	19.61	19.56
		8	7	20	19.55	19.6	19.49
		15	0	20	19.51	19.56	19.49

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 23035	Channel 23095	Channel 23155
5MHz	QPSK	1	0	23	22.36	22.35	22.3
		1	13	23	22.29	22.33	22.29
		1	24	23	22.27	22.27	22.29
		12	0	22	21.34	21.36	21.33
		12	6	22	21.33	21.33	21.3
		12	13	22	21.31	21.32	21.29
		25	0	22	21.28	21.32	21.25
	16QAM	1	0	22	21.34	21.39	21.4
		1	13	22	21.35	21.37	21.34
		1	24	22	21.34	21.36	21.31
		12	0	21	21.38	21.37	21.32
		12	6	21	21.36	21.37	21.32
		12	13	21	21.36	21.31	21.32
		25	0	21	21.32	21.3	21.25
	64QAM	1	0	21	20.76	20.76	20.73
		1	13	21	20.77	20.71	20.68
		1	24	21	20.72	20.63	20.7
		12	0	20	19.63	19.66	19.63
		12	6	20	19.6	19.64	19.58
		12	13	20	19.58	19.64	19.53
		25	0	20	19.52	19.58	19.52

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 23060	Channel 23095	Channel 23130
10MHz	QPSK	1	0	23	22.35	22.38	22.34
		1	25	23	22.34	22.34	22.33
		1	49	23	22.32	22.3	22.3
		25	0	22	21.35	21.37	21.36
		25	13	22	21.35	21.36	21.35
		25	25	22	21.35	21.36	21.33
		50	0	22	21.31	21.32	21.28
	16QAM	1	0	22	21.39	21.42	21.4
		1	25	22	21.39	21.39	21.36
		1	49	22	21.35	21.36	21.35
		25	0	21	21.39	21.39	21.34
		25	13	21	21.39	21.39	21.33
		25	25	21	21.37	21.35	21.33
		50	0	21	21.33	21.3	21.29
	64QAM	1	0	21	20.77	20.77	20.77
		1	25	21	20.77	20.72	20.73
		1	49	21	20.75	20.67	20.72
		25	0	20	19.65	19.69	19.66
		25	13	20	19.64	19.66	19.62
		25	25	20	19.59	19.64	19.58
		50	0	20	19.55	19.6	19.55

LTE FDD Band 17				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 23755	Channel 23790	Channel 23825
5MHz	QPSK	1	0	23	22.57	22.59	22.53
		1	13	23	22.55	22.63	22.49
		1	24	23	22.51	22.59	22.48
		12	0	22	21.51	21.67	21.62
		12	6	22	21.53	21.66	21.63
		12	13	22	21.5	21.61	21.59
		25	0	22	21.46	21.63	21.61
	16QAM	1	0	22	21.63	21.71	21.67
		1	13	22	21.59	21.71	21.68
		1	24	22	21.56	21.66	21.66
		12	0	21	20.53	20.6	20.63
		12	6	21	20.54	20.57	20.67
		12	13	21	20.53	20.51	20.67
		25	0	21	20.56	20.6	20.69
	64QAM	1	0	21	20.68	20.74	20.6
		1	13	21	20.44	20.56	20.38
		1	24	21	20.43	20.49	20.33
		12	0	20	19.54	19.61	19.58
		12	6	20	19.38	19.63	19.5
		12	13	20	19.36	19.57	19.49
		25	0	20	19.46	19.67	19.64
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 23780	Channel 23790	Channel 23800
10MHz	QPSK	1	0	23	22.57	22.64	22.54
		1	25	23	22.56	22.64	22.5
		1	49	23	22.52	22.61	22.49
		25	0	22	21.55	21.68	21.66
		25	13	22	21.54	21.66	21.64
		25	25	22	21.54	21.66	21.61
		50	0	22	21.49	21.64	21.62
	16QAM	1	0	22	21.64	21.73	21.7
		1	25	22	21.61	21.71	21.68
		1	49	22	21.57	21.69	21.66
		25	0	21	20.56	20.62	20.67
		25	13	21	20.55	20.59	20.67
		25	25	21	20.54	20.56	20.67
		50	0	21	20.57	20.63	20.7
	64QAM	1	0	21	20.68	20.75	20.64
		1	25	21	20.47	20.57	20.41
		1	49	21	20.47	20.53	20.36
		25	0	20	19.57	19.65	19.59
		25	13	20	19.39	19.63	19.54
		25	25	20	19.39	19.62	19.5
		50	0	20	19.48	19.67	19.67

LTE FDD Band 25-sensor off				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26047	Channel 26365	Channel 26683
1.4MHz	QPSK	1	0	23	22.17	22.18	22.11
		1	2	23	22.23	22.19	22.19
		1	5	23	22.14	22.11	22.11
		3	0	22	20.62	20.66	20.59
		3	2	22	20.61	20.6	20.65
		3	3	22	20.51	20.59	20.59
		6	0	22	20.52	20.58	20.62
	16QAM	1	0	22	21.52	21.45	21.47
		1	2	22	21.49	21.43	21.41
		1	5	22	21.45	21.46	21.39
		3	0	21	19.94	19.88	19.89
		3	2	21	19.88	19.85	19.96
		3	3	21	19.87	19.9	19.88
		6	0	21	19.92	19.92	19.88
	64QAM	1	0	21	20.45	20.42	20.4
		1	2	21	20.39	20.42	20.37
		1	5	21	20.32	20.36	20.36
		3	0	20	19.39	19.40	19.39
		3	2	20	19.36	19.40	19.36
		3	3	20	19.31	19.38	19.34
		6	0	20	19.27	19.34	19.29
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26055	Channel 26365	Channel 26675
3MHz	QPSK	1	0	23	22.21	22.21	22.13
		1	7	23	22.24	22.21	22.21
		1	14	23	22.18	22.14	22.14
		8	0	22	20.63	20.68	20.61
		8	4	22	20.61	20.62	20.68
		8	7	22	20.52	20.59	20.63
		15	0	22	20.55	20.59	20.65
	16QAM	1	0	22	21.56	21.49	21.5
		1	7	22	21.52	21.48	21.43
		1	14	22	21.46	21.48	21.4
		8	0	21	19.98	19.91	19.93
		8	4	21	19.89	19.88	19.97
		8	7	21	19.9	19.94	19.92
		15	0	21	19.93	19.93	19.89
	64QAM	1	0	21	20.45	20.47	20.41
		1	7	21	20.42	20.44	20.41
		1	14	21	20.37	20.4	20.38
		8	0	20	19.39	19.41	19.38
		8	4	20	19.35	19.41	19.34
		8	7	20	19.31	19.38	19.34
		15	0	20	19.28	19.33	19.30

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26065	Channel 26365	Channel 26665
5MHz	QPSK	1	0	23	22.25	22.23	22.16
		1	13	23	22.25	22.24	22.25
		1	24	23	22.2	22.18	22.18
		12	0	22	20.65	20.72	20.63
		12	6	22	20.65	20.66	20.69
		12	13	22	20.55	20.63	20.66
		25	0	22	20.57	20.6	20.67
	16QAM	1	0	22	21.57	21.5	21.5
		1	13	22	21.52	21.51	21.43
		1	24	22	21.48	21.49	21.43
		12	0	21	20	19.93	19.94
		12	6	21	19.91	19.9	19.97
		12	13	21	19.94	19.96	19.95
		25	0	21	19.95	19.95	19.92
	64QAM	1	0	21	20.48	20.49	20.45
		1	13	21	20.42	20.47	20.44
		1	24	21	20.4	20.43	20.41
		12	0	20	19.39	19.41	19.38
		12	6	20	19.35	19.40	19.35
		12	13	20	19.31	19.37	19.34
		25	0	20	19.29	19.32	19.30
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26090	Channel 26365	Channel 26640
10MHz	QPSK	1	0	23	22.26	22.25	22.21
		1	25	23	22.26	22.25	22.25
		1	49	23	22.22	22.2	22.2
		25	0	22	20.7	20.72	20.68
		25	13	22	20.67	20.7	20.73
		25	25	22	20.58	20.66	20.71
		50	0	22	20.6	20.62	20.67
	16QAM	1	0	22	21.6	21.54	21.51
		1	25	22	21.53	21.54	21.46
		1	49	22	21.5	21.52	21.47
		25	0	21	20.04	19.98	19.96
		25	13	21	19.93	19.94	19.98
		25	25	21	19.96	19.99	19.96
		50	0	21	19.97	19.98	19.94
	64QAM	1	0	21	20.51	20.5	20.45
		1	25	21	20.45	20.48	20.48
		1	49	21	20.43	20.45	20.43
		25	0	20	19.39	19.41	19.39
		25	13	20	19.34	19.41	19.36
		25	25	20	19.31	19.39	19.35
		50	0	20	19.28	19.33	19.30

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26115	Channel 26365	Channel 26615
15MHz	QPSK	1	0	23	22.26	22.27	22.25
		1	38	23	22.25	22.27	22.25
		1	74	23	22.22	22.23	22.25
		36	0	22	20.74	20.77	20.73
		36	18	22	20.71	20.71	20.74
		36	39	22	20.63	20.67	20.74
		75	0	22	20.61	20.65	20.67
	16QAM	1	0	22	21.6	21.57	21.54
		1	38	22	21.56	21.58	21.5
		1	74	22	21.55	21.55	21.49
		36	0	21	20.04	20	19.98
		36	18	21	19.96	19.99	19.99
		36	39	21	19.97	20	20
		75	0	21	19.99	19.99	19.94
	64QAM	1	0	21	20.54	20.51	20.5
		1	38	21	20.47	20.48	20.49
		1	74	21	20.44	20.49	20.48
		36	0	20	19.38	19.41	19.38
		36	18	20	19.35	19.40	19.34
		36	39	20	19.32	19.38	19.35
		75	0	20	19.28	19.34	19.29
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26140	Channel 26365	Channel 26590
20MHz	QPSK	1	0	23	22.29	22.31	22.28
		1	50	23	22.28	22.29	22.27
		1	99	23	22.27	22.26	22.26
		50	0	22	20.75	20.78	20.78
		50	25	22	20.72	20.75	20.77
		50	50	22	20.67	20.71	20.75
		100	0	22	20.65	20.66	20.71
	16QAM	1	0	22	21.61	21.62	21.58
		1	50	22	21.59	21.59	21.53
		1	99	22	21.56	21.56	21.51
		50	0	21	20.04	20.05	20.03
		50	25	21	20.01	20.01	20.03
		50	50	21	20	20.01	20
		100	0	21	19.99	20	19.97
	64QAM	1	0	21	20.54	20.55	20.55
		1	50	21	20.5	20.52	20.54
		1	99	21	20.46	20.49	20.49
		50	0	20	19.41	19.42	19.4
		50	25	20	19.37	19.42	19.37
		50	50	20	19.33	19.4	19.36
		100	0	20	19.3	19.35	19.32

LTE FDD Band 25-sensor on				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26047	Channel 26365	Channel 26683
1.4MHz	QPSK	1	0	21	20.36	20.27	20.23
		1	2	21	20.18	20.09	20.00
		1	5	21	20.21	20.14	20.09
		3	0	21	20.29	20.24	20.16
		3	2	21	20.28	20.17	20.10
		3	3	21	20.27	20.14	20.10
		6	0	21	20.27	20.23	20.11
	16QAM	1	0	21	20.41	20.39	20.29
		1	2	21	20.22	20.21	20.10
		1	5	21	20.30	20.23	20.22
		3	0	21	20.09	20.07	19.96
		3	2	21	20.05	20.01	19.92
		3	3	21	20.03	20.00	19.88
		6	0	21	20.06	20.02	19.90
	64QAM	1	0	21	20.20	20.13	20.11
		1	2	21	20.16	20.17	20.03
		1	5	21	20.27	20.14	20.17
		3	0	21	19.85	19.78	19.63
		3	2	21	19.76	19.75	19.63
		3	3	21	19.72	19.71	19.60
		6	0	21	19.80	19.73	19.62
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26055	Channel 26365	Channel 26675
3MHz	QPSK	1	0	21	20.38	20.29	20.26
		1	7	21	20.19	20.11	20.02
		1	14	21	20.23	20.16	20.11
		8	0	21	20.32	20.25	20.19
		8	4	21	20.31	20.19	20.12
		8	7	21	20.29	20.16	20.11
		15	0	21	20.29	20.24	20.14
	16QAM	1	0	21	20.42	20.41	20.32
		1	7	21	20.24	20.22	20.12
		1	14	21	20.32	20.25	20.23
		8	0	21	20.11	20.10	19.97
		8	4	21	20.07	20.04	19.94
		8	7	21	20.06	20.02	19.90
		15	0	21	20.07	20.04	19.92
	64QAM	1	0	21	20.21	20.15	20.13
		1	7	21	20.18	20.19	20.05
		1	14	21	20.30	20.16	20.18
		8	0	21	19.86	19.80	19.65
		8	4	21	19.79	19.76	19.65
		8	7	21	19.75	19.73	19.63
		15	0	21	19.82	19.74	19.63

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					26065	26365	26665
5MHz	QPSK	1	0	21	20.40	20.32	20.27
		1	13	21	20.20	20.12	20.03
		1	24	21	20.25	20.17	20.14
		12	0	21	20.34	20.27	20.20
		12	6	21	20.32	20.22	20.14
		12	13	21	20.32	20.19	20.13
		25	0	21	20.32	20.26	20.17
	16QAM	1	0	21	20.43	20.43	20.33
		1	13	21	20.26	20.23	20.14
		1	24	21	20.33	20.26	20.26
		12	0	21	20.13	20.13	20.00
		12	6	21	20.10	20.05	19.96
		12	13	21	20.08	20.04	19.93
		25	0	21	20.10	20.07	19.95
	64QAM	1	0	21	20.23	20.18	20.15
		1	13	21	20.20	20.21	20.08
		1	24	21	20.32	20.18	20.19
		12	0	21	19.88	19.82	19.68
		12	6	21	19.81	19.78	19.67
		12	13	21	19.77	19.75	19.65
		25	0	21	19.83	19.77	19.65
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					26090	26365	26640
10MHz	QPSK	1	0	21	20.41	20.34	20.30
		1	25	21	20.23	20.14	20.04
		1	49	21	20.27	20.19	20.16
		25	0	21	20.37	20.30	20.22
		25	13	21	20.34	20.23	20.15
		25	25	21	20.33	20.21	20.15
		50	0	21	20.34	20.27	20.19
	16QAM	1	0	21	20.45	20.45	20.36
		1	25	21	20.28	20.25	20.16
		1	49	21	20.34	20.27	20.29
		25	0	21	20.15	20.15	20.02
		25	13	21	20.12	20.07	19.97
		25	25	21	20.10	20.07	19.95
		50	0	21	20.12	20.09	19.97
	64QAM	1	0	21	20.24	20.20	20.18
		1	25	21	20.22	20.23	20.09
		1	49	21	20.34	20.21	20.22
		25	0	21	19.90	19.84	19.71
		25	13	21	19.84	19.79	19.70
		25	25	21	19.79	19.78	19.68
		50	0	21	19.85	19.79	19.66

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					26115	26365	26615
15MHz	QPSK	1	0	21	20.44	20.37	20.32
		1	38	21	20.25	20.16	20.07
		1	74	21	20.29	20.21	20.17
		36	0	21	20.38	20.32	20.25
		36	18	21	20.36	20.25	20.17
		36	39	21	20.34	20.23	20.17
		75	0	21	20.36	20.29	20.21
	16QAM	1	0	21	20.47	20.48	20.38
		1	38	21	20.31	20.27	20.18
		1	74	21	20.36	20.30	20.31
		36	0	21	20.18	20.16	20.05
		36	18	21	20.14	20.09	19.98
		36	39	21	20.11	20.08	19.97
		75	0	21	20.15	20.12	20.00
	64QAM	1	0	21	20.25	20.21	20.20
		1	38	21	20.25	20.25	20.12
		1	74	21	20.37	20.23	20.25
		36	0	21	19.92	19.85	19.74
		36	18	21	19.85	19.80	19.71
		36	39	21	19.82	19.80	19.70
		75	0	21	19.87	19.81	19.67
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel
					26140	26365	26590
20MHz	QPSK	1	0	21	20.46	20.39	20.34
		1	50	21	20.28	20.19	20.1
		1	99	21	20.32	20.22	20.19
		50	0	21	20.4	20.34	20.27
		50	25	21	20.37	20.28	20.19
		50	50	21	20.35	20.25	20.18
		100	0	21	20.38	20.31	20.22
	16QAM	1	0	21	20.5	20.5	20.41
		1	50	21	20.32	20.3	20.2
		1	99	21	20.39	20.32	20.33
		50	0	21	20.21	20.19	20.06
		50	25	21	20.16	20.12	20.01
		50	50	21	20.14	20.1	20
		100	0	21	20.16	20.14	20.02
	64QAM	1	0	21	20.26	20.24	20.22
		1	50	21	20.26	20.27	20.13
		1	99	21	20.38	20.25	20.27
		50	0	21	19.94	19.88	19.75
		50	25	21	19.87	19.82	19.73
		50	50	21	19.85	19.82	19.72
		100	0	21	19.89	19.83	19.7

LTE FDD Band 26-sensor off				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26697	Channel 26865	Channel 27033
1.4MHz	QPSK	1	0	23	22.05	22.17	22.09
		1	2	23	22.04	22.13	22.06
		1	5	23	22.02	22.06	22.05
		3	0	22	21.3	21.39	21.3
		3	2	22	21.26	21.38	21.34
		3	3	22	21.35	21.32	21.21
		6	0	22	21.24	21.24	21.23
	16QAM	1	0	22	21.58	21.58	21.57
		1	2	22	21.5	21.52	21.55
		1	5	22	21.45	21.53	21.51
		3	0	21	20.37	20.45	20.43
		3	2	21	20.42	20.4	20.39
		3	3	21	20.42	20.36	20.37
		6	0	21	20.37	20.41	20.34
	64QAM	1	0	21	20.73	20.71	20.73
		1	2	21	20.61	20.71	20.68
		1	5	21	20.59	20.67	20.73
		3	0	20	19.47	19.42	19.4
		3	2	20	19.42	19.44	19.41
		3	3	20	19.33	19.38	19.35
		6	0	20	19.31	19.35	19.34
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26705	Channel 26865	Channel 27025
3MHz	QPSK	1	0	23	22.09	22.18	22.11
		1	7	23	22.06	22.13	22.11
		1	14	23	22.02	22.1	22.08
		8	0	22	21.34	21.4	21.33
		8	4	22	21.29	21.38	21.34
		8	7	22	21.36	21.36	21.25
		15	0	22	21.27	21.28	21.24
	16QAM	1	0	22	21.58	21.59	21.57
		1	7	22	21.54	21.57	21.58
		1	14	22	21.49	21.58	21.55
		8	0	21	20.4	20.48	20.44
		8	4	21	20.43	20.44	20.43
		8	7	21	20.43	20.38	20.4
		15	0	21	20.41	20.43	20.38
	64QAM	1	0	21	20.77	20.73	20.74
		1	7	21	20.62	20.72	20.72
		1	14	21	20.59	20.7	20.73
		8	0	20	19.48	19.46	19.41
		8	4	20	19.45	19.47	19.43
		8	7	20	19.38	19.41	19.37
		15	0	20	19.33	19.37	19.39

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26715	Channel 26865	Channel 27015
5MHz	QPSK	1	0	23	22.12	22.18	22.15
		1	13	23	22.07	22.14	22.11
		1	24	23	22.03	22.13	22.09
		12	0	22	21.38	21.42	21.33
		12	6	22	21.33	21.41	21.35
		12	13	22	21.36	21.39	21.28
		25	0	22	21.3	21.31	21.25
	16QAM	1	0	22	21.6	21.61	21.62
		1	13	22	21.58	21.6	21.6
		1	24	22	21.53	21.59	21.57
		12	0	21	20.45	20.52	20.46
		12	6	21	20.45	20.46	20.47
		12	13	21	20.45	20.41	20.43
		25	0	21	20.43	20.45	20.39
	64QAM	1	0	21	20.77	20.76	20.77
		1	13	21	20.65	20.76	20.75
		1	24	21	20.61	20.75	20.73
		12	0	20	19.5	19.47	19.46
		12	6	20	19.47	19.5	19.46
		12	13	20	19.39	19.45	19.38
		25	0	20	19.36	19.4	19.43

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26750	Channel 26865	Channel 26990
10MHz	QPSK	1	0	23	22.13	22.21	22.17
		1	25	23	22.09	22.15	22.14
		1	49	23	22.05	22.16	22.12
		25	0	22	21.4	21.42	21.37
		25	13	22	21.36	21.43	21.36
		25	25	22	21.38	21.4	21.3
		50	0	22	21.33	21.34	21.3
	16QAM	1	0	22	21.61	21.63	21.66
		1	25	22	21.63	21.62	21.61
		1	49	22	21.56	21.61	21.59
		25	0	21	20.48	20.52	20.47
		25	13	21	20.5	20.5	20.5
		25	25	21	20.48	20.46	20.47
		50	0	21	20.44	20.45	20.41
	64QAM	1	0	21	20.77	20.79	20.78
		1	25	21	20.69	20.77	20.77
		1	49	21	20.63	20.77	20.77
		25	0	20	19.51	19.51	19.48
		25	13	20	19.48	19.51	19.48
		25	25	20	19.43	19.49	19.43
		50	0	20	19.38	19.42	19.43

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26775	Channel 26865	Channel 26965
15MHz	QPSK	1	0	23	22.18	22.23	22.21
		1	38	23	22.14	22.17	22.18
		1	74	23	22.1	22.17	22.13
		36	0	22	21.43	21.44	21.39
		36	18	22	21.39	21.44	21.38
		36	39	22	21.38	21.41	21.33
		75	0	22	21.35	21.36	21.3
	16QAM	1	0	22	21.64	21.68	21.66
		1	38	22	21.64	21.65	21.64
		1	74	22	21.6	21.63	21.62
		36	0	21	20.51	20.55	20.51
		36	18	21	20.5	20.54	20.51
		36	39	21	20.49	20.49	20.47
		75	0	21	20.48	20.46	20.46
	64QAM	1	0	21	20.77	20.81	20.8
		1	38	21	20.72	20.78	20.78
		1	74	21	20.67	20.78	20.77
		36	0	20	19.52	19.56	19.52
		36	18	20	19.49	19.51	19.48
		36	39	20	19.47	19.51	19.46
		75	0	20	19.43	19.46	19.45

LTE FDD Band 26-sensor on				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26697	Channel 26865	Channel 27033
1.4MHz	QPSK	1	0	21	20.36	20.29	20.34
		1	2	21	20.30	20.20	20.20
		1	5	21	20.17	20.08	20.09
		3	0	21	20.33	20.28	20.29
		3	2	21	20.38	20.28	20.30
		3	3	21	20.22	20.20	20.21
		6	0	21	20.32	20.25	20.26
	16QAM	1	0	21	20.39	20.37	20.40
		1	2	21	20.28	20.29	20.27
		1	5	21	20.22	20.12	20.15
		3	0	21	20.12	20.01	20.05
		3	2	21	20.09	20.02	20.09
		3	3	21	19.99	19.91	19.92
		6	0	21	20.04	20.00	20.03
	64QAM	1	0	21	20.36	20.42	20.46
		1	2	21	20.33	20.30	20.30
		1	5	21	20.24	20.19	20.16
		3	0	21	20.11	20.07	20.03
		3	2	21	20.17	20.03	20.05
		3	3	21	20.00	19.93	19.98
		6	0	21	20.06	20.01	20.03

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26705	Channel 26865	Channel 27025
3MHz	QPSK	1	0	21	20.38	20.31	20.36
		1	7	21	20.32	20.23	20.23
		1	14	21	20.20	20.09	20.12
		8	0	21	20.36	20.29	20.32
		8	4	21	20.40	20.29	20.33
		8	7	21	20.25	20.23	20.22
		15	0	21	20.34	20.27	20.27
	16QAM	1	0	21	20.41	20.39	20.42
		1	7	21	20.31	20.30	20.29
		1	14	21	20.24	20.14	20.17
		8	0	21	20.15	20.02	20.06
		8	4	21	20.12	20.05	20.10
		8	7	21	20.02	19.94	19.94
		15	0	21	20.06	20.02	20.04
	64QAM	1	0	21	20.38	20.45	20.48
		1	7	21	20.35	20.31	20.31
		1	14	21	20.26	20.20	20.18
		8	0	21	20.14	20.09	20.06
		8	4	21	20.18	20.05	20.08
		8	7	21	20.02	19.95	20.01
		15	0	21	20.08	20.03	20.05
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26715	Channel 26865	Channel 27015
5MHz	QPSK	1	0	21	20.41	20.33	20.39
		1	13	21	20.35	20.25	20.26
		1	24	21	20.22	20.12	20.13
		12	0	21	20.39	20.31	20.33
		12	6	21	20.41	20.31	20.34
		12	13	21	20.28	20.24	20.24
		25	0	21	20.37	20.28	20.30
	16QAM	1	0	21	20.42	20.41	20.44
		1	13	21	20.33	20.31	20.31
		1	24	21	20.26	20.16	20.18
		12	0	21	20.16	20.05	20.09
		12	6	21	20.13	20.07	20.11
		12	13	21	20.04	19.95	19.97
		25	0	21	20.07	20.04	20.06
	64QAM	1	0	21	20.40	20.46	20.49
		1	13	21	20.37	20.33	20.32
		1	24	21	20.28	20.22	20.21
		12	0	21	20.16	20.12	20.09
		12	6	21	20.19	20.07	20.11
		12	13	21	20.05	19.98	20.04
		25	0	21	20.10	20.04	20.08

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26750	Channel 26865	Channel 26990
10MHz	QPSK	1	0	21	20.42	20.36	20.41
		1	25	21	20.36	20.27	20.28
		1	49	21	20.23	20.14	20.16
		25	0	21	20.41	20.32	20.36
		25	13	21	20.42	20.33	20.36
		25	25	21	20.29	20.27	20.26
		50	0	21	20.38	20.30	20.33
	16QAM	1	0	21	20.44	20.43	20.46
		1	25	21	20.35	20.33	20.33
		1	49	21	20.28	20.18	20.20
		25	0	21	20.18	20.08	20.10
		25	13	21	20.15	20.10	20.13
		25	25	21	20.07	19.97	20.00
		50	0	21	20.10	20.07	20.07
	64QAM	1	0	21	20.43	20.47	20.51
		1	25	21	20.40	20.34	20.35
		1	49	21	20.31	20.24	20.23
		25	0	21	20.18	20.13	20.11
		25	13	21	20.21	20.10	20.12
		25	25	21	20.07	20.00	20.05
		50	0	21	20.12	20.06	20.10
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 26775	Channel 26865	Channel 26965
15MHz	QPSK	1	0	21	20.44	20.38	20.42
		1	38	21	20.37	20.3	20.31
		1	74	21	20.24	20.16	20.17
		36	0	21	20.43	20.35	20.38
		36	18	21	20.44	20.35	20.38
		36	39	21	20.3	20.29	20.27
		75	0	21	20.39	20.32	20.35
	16QAM	1	0	21	20.47	20.46	20.48
		1	38	21	20.37	20.35	20.35
		1	74	21	20.3	20.2	20.22
		36	0	21	20.19	20.11	20.13
		36	18	21	20.17	20.11	20.14
		36	39	21	20.08	19.99	20.02
		75	0	21	20.12	20.09	20.09
	64QAM	1	0	21	20.45	20.49	20.52
		1	38	21	20.41	20.37	20.37
		1	74	21	20.33	20.25	20.25
		36	0	21	20.2	20.14	20.13
		36	18	21	20.22	20.13	20.15
		36	39	21	20.1	20.02	20.07
		75	0	21	20.13	20.08	20.12

LTE TDD Band 41- sensor off				Conducted Power(dBm)					
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 39675	Channel 40148	Channel 40620	Channel 41093	Channel 41565
5MHz	QPSK	1	0	23	22.28	22.24	22.31	22.35	22.41
		1	13	23	22.27	22.24	22.36	22.20	22.43
		1	24	23	22.25	22.24	22.42	22.23	22.30
		12	0	22	21.36	21.30	21.44	21.31	21.52
		12	6	22	21.28	21.27	21.40	21.27	21.48
		12	13	22	21.24	21.19	21.28	21.16	21.28
		25	0	22	21.29	21.19	21.41	21.20	21.44
	16QAM	1	0	22	21.45	21.40	21.53	21.45	21.68
		1	13	22	21.29	21.28	21.40	21.22	21.47
		1	24	22	21.22	21.27	21.43	21.27	21.39
		12	0	21	20.40	20.35	20.49	20.32	20.51
		12	6	21	20.32	20.32	20.45	20.29	20.43
		12	13	21	20.23	20.21	20.41	20.19	20.41
		25	0	21	20.37	20.28	20.41	20.27	20.46
	64QAM	1	0	21	20.59	20.61	20.80	20.77	20.81
		1	13	21	20.56	20.57	20.58	20.59	20.61
		1	24	21	20.54	20.55	20.56	20.56	20.58
		12	0	20	19.51	19.53	19.55	19.57	19.57
		12	6	20	19.49	19.50	19.50	19.52	19.52
		12	13	20	19.34	19.35	19.35	19.37	19.40
		25	0	20	19.29	19.31	19.33	19.35	19.40
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 39700	Channel 40160	Channel 40620	Channel 41080	Channel 41540
10MHz	QPSK	1	0	23	22.32	22.28	22.35	22.41	22.43
		1	25	23	22.31	22.27	22.40	22.23	22.41
		1	49	23	22.29	22.28	22.36	22.28	22.32
		25	0	22	21.40	21.33	21.46	21.37	21.56
		25	13	22	21.33	21.32	21.42	21.33	21.52
		25	25	22	21.26	21.24	21.34	21.19	21.31
		50	0	22	21.33	21.22	21.46	21.24	21.47
	16QAM	1	0	22	21.51	21.45	21.58	21.50	21.73
		1	25	22	21.32	21.31	21.44	21.26	21.51
		1	49	22	21.25	21.30	21.47	21.31	21.42
		25	0	21	20.43	20.39	20.54	20.37	20.55
		25	13	21	20.36	20.36	20.50	20.33	20.48
		25	25	21	20.28	20.26	20.44	20.24	20.45
		50	0	21	20.39	20.32	20.44	20.30	20.50
	64QAM	1	0	21	20.63	20.64	20.83	20.83	20.84
		1	25	21	20.59	20.59	20.61	20.63	20.65
		1	49	21	20.58	20.59	20.60	20.60	20.61
		25	0	20	19.57	19.56	19.58	19.60	19.62
		25	13	20	19.54	19.52	19.53	19.56	19.56
		25	25	20	19.39	19.38	19.39	19.40	19.43
		50	0	20	19.34	19.36	19.35	19.39	19.43

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 39725	Channel 40173	Channel 40620	Channel 41068	Channel 41515
15MHz	QPSK	1	0	23	22.27	22.24	22.32	22.36	22.43
		1	38	23	22.27	22.23	22.36	22.19	22.43
		1	74	23	22.24	22.23	22.43	22.23	22.29
		36	0	22	21.36	21.29	21.44	21.32	21.53
		36	18	22	21.28	21.28	21.39	21.29	21.49
		36	39	22	21.23	21.18	21.28	21.15	21.27
		75	0	22	21.29	21.18	21.42	21.21	21.42
	16QAM	1	0	22	21.46	21.41	21.53	21.47	21.68
		1	38	22	21.29	21.27	21.42	21.22	21.46
		1	74	22	21.22	21.27	21.44	21.28	21.39
		36	0	21	20.41	20.35	20.49	20.34	20.50
		36	18	21	20.31	20.32	20.45	20.30	20.42
		36	39	21	20.24	20.21	20.40	20.20	20.42
		75	0	21	20.37	20.29	20.41	20.26	20.46
	64QAM	1	0	21	20.58	20.61	20.79	20.78	20.79
		1	38	21	20.56	20.55	20.58	20.59	20.61
		1	74	21	20.53	20.56	20.56	20.56	20.59
		36	0	20	19.53	19.53	19.54	19.56	19.56
		36	18	20	19.50	19.50	19.51	19.52	19.52
		36	39	20	19.33	19.34	19.35	19.37	19.39
		75	0	20	19.29	19.30	19.32	19.35	19.41
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 39750	Channel 40185	Channel 40620	Channel 41055	Channel 41490
20MHz	QPSK	1	0	23	22.29	22.26	22.34	22.38	22.46
		1	50	23	22.3	22.25	22.38	22.21	22.45
		1	99	23	22.27	22.25	22.45	22.25	22.31
		50	0	22	21.38	21.31	21.45	21.34	21.54
		50	25	22	21.3	21.3	21.41	21.3	21.51
		50	50	22	21.25	21.21	21.31	21.17	21.29
		100	0	22	21.3	21.21	21.44	21.22	21.45
	16QAM	1	0	22	21.48	21.42	21.56	21.48	21.7
		1	50	22	21.3	21.3	21.43	21.23	21.49
		1	99	22	21.24	21.28	21.45	21.29	21.41
		50	0	21	20.42	20.37	20.52	20.35	20.53
		50	25	21	20.34	20.34	20.47	20.31	20.45
		50	50	21	20.25	20.23	20.42	20.22	20.44
		100	0	21	20.38	20.3	20.42	20.28	20.48
	64QAM	1	0	21	20.61	20.63	20.81	20.8	20.82
		1	50	21	20.57	20.58	20.59	20.61	20.63
		1	99	21	20.56	20.57	20.58	20.58	20.6
		50	0	20	19.54	19.55	19.56	19.58	19.59
		50	25	20	19.51	19.51	19.52	19.53	19.54
		50	50	20	19.36	19.37	19.37	19.38	19.41
		100	0	20	19.31	19.33	19.34	19.37	19.42

LTE TDD Band 41-sensor on				Conducted Power(dBm)					
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 39675	Channel 40148	Channel 40620	Channel 41093	Channel 41565
5MHz	QPSK	1	0	20	18.98	18.94	19.09	19.28	19.28
		1	13	20	18.88	18.89	18.98	19.16	19.15
		1	24	20	18.91	18.81	19.02	19.23	19.08
		12	0	20	18.97	18.82	19.07	19.27	19.18
		12	6	20	18.94	18.85	19.04	19.25	19.07
		12	13	20	18.92	18.85	19.01	19.22	19.12
		25	0	20	18.92	18.86	19.00	19.24	19.14
	16QAM	1	0	20	19.04	19.03	19.11	19.33	19.32
		1	13	20	18.87	18.95	19.04	19.19	19.19
		1	24	20	18.87	18.89	19.02	19.19	19.1
		12	0	20	18.88	18.89	19.06	19.23	19.13
		12	6	20	18.99	18.95	19.07	19.27	19.18
		12	13	20	18.76	18.86	18.94	19.2	18.96
		25	0	20	18.96	18.82	19.01	19.22	19.06
	64QAM	1	0	20	19.00	18.98	19.02	19.27	19.29
		1	13	20	18.83	18.91	18.98	19.14	19.14
		1	24	20	18.80	18.79	18.94	19.12	19.03
		12	0	20	18.79	18.82	19.03	19.15	19.06
		12	6	20	18.91	18.89	19.03	19.2	19.08
		12	13	20	18.67	18.82	18.88	19.16	18.92
		25	0	20	18.86	18.79	18.93	19.17	19
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel 39700	Channel 40160	Channel 40620	Channel 41080	Channel 41540
10MHz	QPSK	1	0	20	19	18.95	19.13	19.32	19.3
		1	25	20	18.92	18.92	18.99	19.18	19.18
		1	49	20	18.92	18.86	19.04	19.25	19.13
		25	0	20	19.01	18.87	19.08	19.3	19.19
		25	13	20	18.97	18.88	19.06	19.26	19.11
		25	25	20	18.97	18.88	19.03	19.23	19.13
		50	0	20	18.96	18.87	19.03	19.25	19.16
	16QAM	1	0	20	19.06	19.07	19.15	19.35	19.36
		1	25	20	18.92	18.97	19.07	19.22	19.22
		1	49	20	18.9	18.93	19.05	19.2	19.14
		25	0	20	18.91	18.93	19.08	19.27	19.17
		25	13	20	19.01	18.98	19.08	19.31	19.22
		25	25	20	18.81	18.89	18.96	19.23	19
		50	0	20	18.97	18.84	19.03	19.23	19.06
	64QAM	1	0	20	19.01	18.98	19.12	19.32	19.26
		1	25	20	18.85	18.93	19.01	19.15	19.19
		1	49	20	18.83	18.87	19.01	19.15	19.07
		25	0	20	18.86	18.85	19.04	19.2	19.09
		25	13	20	18.96	18.93	19.02	19.28	19.16
		25	25	20	18.76	18.82	18.91	19.19	18.93
		50	0	20	18.9	18.76	18.98	19.18	19.03

Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel	Channel	Channel
					39725	40173	40620	41068	41515
15MHz	QPSK	1	0	20	19.06	18.95	19.07	19.32	19.24
		1	38	20	18.89	18.81	18.95	19.17	19.07
		1	74	20	18.86	18.85	18.97	19.09	19.01
		36	0	20	18.97	18.93	19.05	19.29	19.2
		36	18	20	18.99	18.9	19.07	19.28	19.2
		36	39	20	18.94	18.87	19.03	19.2	19.12
		75	0	20	18.97	18.92	19.03	19.28	19.25
	16QAM	1	0	20	19.03	19.01	19.06	19.43	19.41
		1	38	20	18.93	18.93	19.05	19.24	19.25
		1	74	20	18.89	18.88	19.05	19.24	19.16
		36	0	20	18.91	18.89	19	19.23	19.12
		36	18	20	18.87	18.89	18.96	19.21	19.17
		36	39	20	18.84	18.75	19.09	19.15	19.03
		75	0	20	18.91	18.91	19.43	19.27	19.16
	64QAM	1	0	20	19	18.95	18.99	19.39	19.37
		1	38	20	18.88	18.9	18.96	19.2	19.16
		1	74	20	18.85	18.84	18.97	19.2	19.06
		36	0	20	18.83	18.84	18.91	19.19	19.07
		36	18	20	18.82	18.82	18.92	19.15	19.12
		36	39	20	18.77	18.69	19.02	19.11	18.95
		75	0	20	18.83	18.85	19.37	19.2	19.12
Bandwidth	Modulation	RB size	RB offset	Tune up	Channel	Channel	Channel	Channel	Channel
					39750	40185	40620	41055	41490
20MHz	QPSK	1	0	20	19.14	19.07	19.09	19.04	19.22
		1	50	20	18.89	18.86	18.95	18.84	19.04
		1	99	20	18.85	18.87	18.97	18.81	18.97
		50	0	20	18.98	18.88	19.12	18.96	19.24
		50	25	20	18.99	18.91	19.02	18.98	19.04
		50	50	20	18.88	18.89	18.96	18.85	18.98
		100	0	20	19	18.94	19.08	18.95	19.08
	16QAM	1	0	20	19.14	19.09	19.22	19.08	19.36
		1	50	20	18.97	18.98	19.06	18.94	19.18
		1	99	20	18.9	18.84	19.03	18.9	19.03
		50	0	20	19.01	18.91	19.08	18.93	19.19
		50	25	20	18.97	18.88	19.08	18.89	19.14
		50	50	20	18.91	18.81	19.07	18.95	19.01
		100	0	20	18.96	18.86	19.07	18.92	19.13
	64QAM	1	0	20	19.05	18.99	19.14	19	19.33
		1	50	20	18.91	18.94	19.01	18.87	19.13
		1	99	20	18.84	18.78	18.95	18.86	18.97
		50	0	20	18.92	18.88	18.99	18.83	19.15
		50	25	20	18.88	18.83	19.01	18.79	19.08
		50	50	20	18.86	18.75	19.03	18.89	18.91
		100	0	20	18.9	18.83	19.03	18.87	19.04

Table 10：Conducted Power Of LTE

5.3.3 Conducted power measurements of Downlink LTE CA

In this section, the following conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR tests exclusion per KDB 941225 D05A. Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

The device supports Rel. 11 downlink only LTE Carrier Aggregation and certain network enhancement features (UE Category: cat 5). It supports a maximum of 2 carriers in the downlink. Other Release 11 or higher features are not supported, including Uplink Carrier Aggregation, Enhanced SC-FDMA and Uplink MIMO or other antenna diversity configurations etc.

The possible downlink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.101 V12.8.0. The detailed conducted power measurement results of downlink LTE CA are provided in the SAR report per 3GPP TS 36.521 V12.8.0. According to KDB 941225 D05A, the downlink only carrier aggregation conditions for this device can be excluded from SAR testing and PAG requirements.

intra-band contiguous CA (per 3GPP TS 36.101 V12.8.0 Table 5.6A.1-1)

E-UTRA CA configuration	Component carriers in order of increasing carrier frequency		Maximum aggregated bandwidth [MHz]	Bandwidth combination set
	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_41C	10	20	40	0
	15	15, 20		
	20	10, 15, 20		

Power test equipment: a KEYSIGHT UXM Wireless Test Set E7515A was used.

Initial Conditions						
Test Environment as specified in TS 36.508[7] subclause 4.1	NC[, TL/VL, TL/VH, TH/VL, TH/VH]					
Test Frequencies as specified in TS36.508 [7] subclause 4.3.1 for different CA bandwidth classes.	A: Mid range for PCC and SCC					
Test CC Combination setting (N_{RB_agg}) as specified in subclause 5.4.2A.1 for the CA Configuration	Lowest N_{RB_agg} Highest N_{RB_agg}					
Test Parameters for CA Configurations						
CA Configuration / N_{RB_agg}		DL Allocation	CC MOD	UL Allocation		
PCC NRB	SCCs NRB	PCC & SCC RB allocation		NRB_alloc	PCC RB allocations (L_{CRB} @ RB_{start})	
6	25	N/A for this test	QPSK	5	P_5@0	-
15	25		QPSK	4	P_4@0	-
25	50		QPSK	8	P_8@0	-
50	75		QPSK	12	P_12@0	-
75	100		QPSK	16	P_16@0	-
100	75		QPSK	18	P_18@0	-
Note 1: CA Configuration Test CC Combination settings are checked separately for each CA Configuration, which applicable aggregated channel bandwidths are specified in Table 5.4.2A.1-1						

The conducted power measurement results of downlink LTE CA Conducted Power are as below, so the downlink only carrier aggregation conditions for this device can be excluded from SAR testing:

DL LTE CA Class	PCC								SCC			Power	
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB Size	PCC UL RB offset	PCC DL RB Size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTE Tx Power(dBm)	Rel 11 DL LTE CA Tx Power(dBm)
CA_41C	LTE Band 41	20	1	0	100	0	41490	41490	LTE Band 41	20	41292	22.46	22.42

5.3.4 Conducted Power Of WIFI

Mode	Antenna	Channel	Frequency (MHz)	Data Rate （Mbps）	Tune up	Average Power (dBm)	SAR Test
802.11b	Ant0	1	2412	1	18.5	**16.70**	Yes
		6	2437		18.5	16.01	NO
		11	2462		18.5	16.38	NO
	Ant1	1	2412		18.5	**16.67**	Yes
		6	2437		18.5	15.99	NO
		11	2462		18.5	16.36	NO
802.11g	Ant0	1	2412	6	16	Not Required	NO
		6	2437		16	Not Required	NO
		11	2462		16	Not Required	NO
	Ant1	1	2412		16	Not Required	NO
		6	2437		16	Not Required	NO
		11	2462		16	Not Required	NO
802.11n HT20 SISO	Ant0	1	2412	6.5	15	Not Required	NO
		6	2437		15	Not Required	NO
		11	2462		15	Not Required	NO
	Ant1	1	2412		15	Not Required	NO
		6	2437		15	Not Required	NO
		11	2462		15	Not Required	NO
802.11n HT40 SISO	Ant0	3	2422	13.5	14	Not Required	NO
		6	2437		14	Not Required	NO
		9	2452		14	Not Required	NO
	Ant1	3	2422		14	Not Required	NO
		6	2437		14	Not Required	NO
		9	2452		14	Not Required	NO
802.11n HT20 MIMO	Sum	1	2412	13	17	**15.41**	Yes
		6	2437		17	14.96	NO
		11	2462		17	15.29	NO
802.11n HT40 MIMO	Sum	3	2422	27	16	Not Required	NO
		6	2437		16	Not Required	NO
		9	2452		16	Not Required	NO

Band(GHz)	Mode	Antenna	Channel	Frequency(MHz)	Data Rate（Mbps）	Tune up	Average Power (dBm)	SAR Test
5.2	802.11a	Ant0	36	5180	6	15	13.03	NO
			40	5200		15	**13.24**	Yes
			44	5220		15	12.96	NO
			48	5240		15	12.93	NO
		Ant1	36	5180		14.1	11.95	NO
			40	5200		14.1	12.01	NO
			44	5220		14.1	**12.25**	Yes
			48	5240		14.1	12.22	NO
	802.11n HT20	Ant0	36	5180	6.5	14	Not Required	NO
			40	5200		14	Not Required	NO
			44	5220		14	Not Required	NO
			48	5240		14	Not Required	NO
		Ant1	36	5180		14	Not Required	NO
			40	5200		14	Not Required	NO
			44	5220		14	Not Required	NO
			48	5240		14	Not Required	NO
	802.11n HT40	Ant0	38	5190	13.5	14	Not Required	NO
			46	5230		14	Not Required	NO
		Ant1	38	5190		14	Not Required	NO
			46	5230		14	Not Required	NO
	802.11ac 20M	Ant0	36	5180	6.5	13	Not Required	NO
			40	5200		13	Not Required	NO
			44	5220		13	Not Required	NO
			48	5240		13	Not Required	NO
		Ant1	36	5180		13	Not Required	NO
			40	5200		13	Not Required	NO
			44	5220		13	Not Required	NO
			48	5240		13	Not Required	NO
	802.11ac 40M	Ant0	38	5190	13.5	12	Not Required	NO
			46	5230		12	Not Required	NO
		Ant1	38	5190		12	Not Required	NO
			46	5230		12	Not Required	NO
	802.11ac 80M	Ant0	42	5210	29.3	12	Not Required	NO
		Ant1	42	5210		12	Not Required	NO

Band(GHz)	Mode	Antenna	Channel	Frequency(MHz)	Data Rate（Mbps）	Tune up	Average Power (dBm)	SAR Test
5.3	802.11a	Ant0	52	5260	6	14.9	Not Required	NO
			56	5280		14.9	Not Required	NO
			60	5300		14.9	Not Required	NO
			64	5320		14	Not Required	NO
		Ant1	52	5260		14	Not Required	NO
			56	5280		14	Not Required	NO
			60	5300		14	Not Required	NO
			64	5320		14	Not Required	NO
	802.11n HT20	Ant0	52	5260	6.5	13.9	Not Required	NO
			56	5280		13.9	Not Required	NO
			60	5300		13.9	Not Required	NO
			64	5320		13.9	Not Required	NO
		Ant1	52	5260		13.9	Not Required	NO
			56	5280		13.9	Not Required	NO
			60	5300		13.9	Not Required	NO
			64	5320		13.9	Not Required	NO
	802.11n HT40	Ant0	54	5270	13.5	13.9	Not Required	NO
			62	5310		13.9	Not Required	NO
		Ant1	54	5270		13.9	Not Required	NO
			62	5310		13.9	Not Required	NO
	802.11ac 20M	Ant0	52	5260	6.5	12.9	Not Required	NO
			56	5280		12.9	Not Required	NO
			60	5300		12.9	Not Required	NO
			64	5320		12.9	Not Required	NO
		Ant1	52	5260		12.9	Not Required	NO
			56	5280		12.9	Not Required	NO
			60	5300		12.9	Not Required	NO
			64	5320		12.9	Not Required	NO
	802.11ac 40M	Ant0	54	5270	13.5	11.9	Not Required	NO
			62	5310		11.9	Not Required	NO
		Ant1	54	5270		11.9	Not Required	NO
			62	5310		11.9	Not Required	NO
	802.11ac 80M	Ant0	58	5290	29.3	11.9	Not Required	NO
		Ant1	58	5290		11.9	Not Required	NO

Band(GHz)	Mode	Antenna	Channel	Frequency(MHz)	Data Rate（Mbps）	Tune up	Average Power (dBm)	SAR Test
5.5	802.11a	Ant0	100	5500	6	14.5	12.61	NO
			104	5520		14.5	**12.65**	Yes
			108	5540		14.5	12.56	NO
			112	5560		14.5	12.49	NO
			116	5580		14.5	12.56	NO
			120	5600		14.5	12.54	NO
			124	5620		14.5	12.61	NO
			128	5640		14.5	12.62	NO
			132	5660		14.5	12.64	NO
			136	5680		14.5	12.61	NO
			140	5700		14.5	12.46	NO
		Ant1	100	5500		14.5	12.47	NO
			104	5520		14.5	11.84	NO
			108	5540		14.5	11.71	NO
			112	5560		14.5	12.05	NO
			116	5580		14.5	12.64	NO
			120	5600		14.5	12.81	NO
			124	5620		14.5	12.85	NO
			128	5640		14.5	12.82	NO
			132	5660		14.5	12.80	NO
			136	5680		14.5	12.64	NO
			140	5700		14.5	**12.94**	YES
	802.11n HT20	Ant0	100	5500	6.5	14	Not Required	NO
			104	5520		14	Not Required	NO
			108	5540		14	Not Required	NO
			112	5560		14	Not Required	NO
			116	5580		14	Not Required	NO
			120	5600		14	Not Required	NO
			124	5620		14	Not Required	NO
			128	5640		14	Not Required	NO
			132	5660		14	Not Required	NO
			136	5680		14	Not Required	NO
			140	5700		14	Not Required	NO
		Ant1	100	5500		14	Not Required	NO
			104	5520		14	Not Required	NO
			108	5540		14	Not Required	NO
			112	5560		14	Not Required	NO
			116	5580		14	Not Required	NO
			120	5600		14	Not Required	NO
			124	5620		14	Not Required	NO
			128	5640		14	Not Required	NO
			132	5660		14	Not Required	NO
			136	5680		14	Not Required	NO
			140	5700		14	Not Required	NO

5.5	802.11n HT40	Ant0	102	5510	13.5	14	Not Required	NO
			110	5550		14	Not Required	NO
			118	5590		14	Not Required	NO
			126	5630		14	Not Required	NO
			134	5670		14	Not Required	NO
		Ant1	102	5510		14	Not Required	NO
			110	5550		14	Not Required	NO
			118	5590		14	Not Required	NO
			126	5630		14	Not Required	NO
			134	5670		14	Not Required	NO
	802.11ac 20M	Ant0	100	5500	6.5	13	Not Required	NO
			104	5520		13	Not Required	NO
			108	5540		13	Not Required	NO
			112	5560		13	Not Required	NO
			116	5580		13	Not Required	NO
			120	5600		13	Not Required	NO
			124	5620		13	Not Required	NO
			128	5640		13	Not Required	NO
			132	5660		13	Not Required	NO
			136	5680		13	Not Required	NO
			140	5700		13	Not Required	NO
		Ant1	100	5500		13	Not Required	NO
			104	5520		13	Not Required	NO
			108	5540		13	Not Required	NO
			112	5560		13	Not Required	NO
			116	5580		13	Not Required	NO
			120	5600		13	Not Required	NO
			124	5620		13	Not Required	NO
			128	5640		13	Not Required	NO
			132	5660		13	Not Required	NO
			136	5680		13	Not Required	NO
			140	5700		13	Not Required	NO
	802.11ac 40M	Ant0	102	5510	13.5	12	Not Required	NO
			110	5550		12	Not Required	NO
			118	5590		12	Not Required	NO
			126	5630		12	Not Required	NO
			134	5670		12	Not Required	NO
		Ant1	102	5510		12	Not Required	NO
			110	5550		12	Not Required	NO
			118	5590		12	Not Required	NO
			126	5630		12	Not Required	NO
			134	5670		12	Not Required	NO
	802.11ac 80M	Ant0	106	5530	29.3	12	Not Required	NO
			122	5610		12	Not Required	NO
		Ant1	106	5530		12	Not Required	NO
			122	5610		12	Not Required	NO

Band(GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate （Mbps）	Tune up	Average Power (dBm)	SAR Test
5.2	802.11n HT20 MIMO	Sum	36	5180	MCS8	16	14.17	NO
			40	5200		16	14.14	NO
			44	5220		16	**14.35**	Yes
			48	5240		16	14.17	NO
	802.11n HT40 MIMO	Sum	38	5190	MCS8	15.9	Not Required	NO
			46	5230		15.9	Not Required	NO
	802.11ac 20M MIMO	Sum	36	5180	MCS8	15.5	Not Required	NO
			40	5200		15.5	Not Required	NO
			44	5220		15.5	Not Required	NO
			48	5240		15.5	Not Required	NO
	802.11ac 40M MIMO	Sum	38	5190	MCS8	14.5	Not Required	NO
			46	5230		14.5	Not Required	NO
	802.11ac 80M MIMO	Sum	42	5210	MCS8	14.5	Not Required	NO
Band(GHz)	Mode	Antenna	Channel	Frequency (MHz)	Data Rate （Mbps）	Tune up	Average Power (dBm)	SAR Test
5.3	802.11n HT20 MIMO	Sum	52	5260	MCS8	15.9	Not Required	NO
			56	5280		15.9	Not Required	NO
			60	5300		15.9	Not Required	NO
			64	5320		15.9	Not Required	NO
	802.11n HT40 MIMO	Sum	54	5270	MCS8	15.8	Not Required	NO
			62	5310		15.8	Not Required	NO
	802.11ac 20M MIMO	Sum	52	5260	MCS8	15.4	Not Required	NO
			56	5280		15.4	Not Required	NO
			60	5300		15.4	Not Required	NO
			64	5320		15.4	Not Required	NO
	802.11ac 40M MIMO	Sum	54	5270	MCS8	14.4	Not Required	NO
			62	5310		14.4	Not Required	NO
	802.11ac 80M MIMO	Sum	58	5290	MCS8	14.4	Not Required	NO

Band(GHz)	Mode	Antenna	Channel	Frequency(MHz)	Data Rate（Mbps）	Tune up	Average Power (dBm)	SAR Test
5.5	802.11n HT20 MIMO	Sum	100	5500	MCS8	16.5	14.67	NO
			104	5520		16.5	14.65	NO
			108	5540		16.5	**14.68**	Yes
			112	5560		16.5	14.64	NO
			116	5580		16.5	14.60	NO
			120	5600		16.5	14.62	NO
			124	5620		16.5	14.57	NO
			128	5640		16.5	14.59	NO
			132	5660		16.5	14.54	NO
			136	5680		16.5	14.58	NO
			140	5700		16.5	14.67	NO
	802.11n HT40 MIMO	Sum	102	5510	MCS8	16.3	Not Required	NO
			110	5550		16.3	Not Required	NO
			118	5590		16.3	Not Required	NO
			126	5630		16.3	Not Required	NO
			134	5670		16.3	Not Required	NO
	802.11ac 20M MIMO	Sum	100	5500	MCS8	15.5	Not Required	NO
			104	5520		15.5	Not Required	NO
			108	5540		15.5	Not Required	NO
			112	5560		15.5	Not Required	NO
			116	5580		15.5	Not Required	NO
			120	5600		15.5	Not Required	NO
			124	5620		15.5	Not Required	NO
			128	5640		15.5	Not Required	NO
			132	5660		15.5	Not Required	NO
			136	5680		15.5	Not Required	NO
			140	5700		15.5	Not Required	NO
	802.11ac 40M MIMO	Sum	102	5510	MCS8	14.5	Not Required	NO
			110	5550		14.5	Not Required	NO
			118	5590		14.5	Not Required	NO
			126	5630		14.5	Not Required	NO
			134	5670		14.5	Not Required	NO
	802.11ac 80M MIMO	Sum	106	5530	MCS8	14.5	Not Required	NO
			122	5610		14.5	Not Required	NO

Table 11：Conducted Power Of WIFI.

5.4 Measurement of SAR Data

5.4.1 SAR Result Of WCDMA Band 2

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp	SAR limit (W/kg)
Hotspot Test data (Separate 10mm)											
Front side	RMC	9538/1907.6	1:1	0.507	-0.17	20.37	21	1.156	0.586	22.3	1.6
Front side	RMC	9262/1852.4	1:1	0.652	0.06	20.53	21	1.114	0.727	22.3	1.6
Front side	RMC	9400/1880	1:1	0.54	-0.06	20.47	21	1.130	0.610	22.3	1.6
Back side	RMC	9538/1907.6	1:1	0.833	0.03	20.37	21	1.156	0.963	22.3	1.6
Back side	RMC	9262/1852.4	1:1	0.991	0.01	20.53	21	1.114	1.104	22.3	1.6
Back side	RMC	9400/1880	1:1	0.841	0.1	20.47	21	1.130	0.950	22.3	1.6
Right side	RMC	9400/1880	1:1	0.951	0.01	20.47	21	1.130	1.074	22.3	1.6
Right side	RMC	9262/1852.4	1:1	1.11	-0.1	20.53	21	1.114	**1.237**	22.3	1.6
Right side	RMC	9538/1907.6	1:1	0.776	-0.09	20.37	21	1.156	0.897	22.3	1.6
Top side	RMC	9400/1880	1:1	0.0645	-0.11	22.46	23	1.132	0.073	22.3	1.6
Bottom side	RMC	9400/1880	1:1	0.32	0.14	22.46	23	1.132	0.362	22.3	1.6
Right side-repeat	RMC	9262/1852.4	1:1	1.07	-0.02	20.53	21	1.114	1.192	22.3	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off											
Front side -14mm	RMC	9400/1880	1:1	0.524	-0.18	22.46	23	1.132	0.593	22.3	1.6
Back side - 17mm	RMC	9400/1880	1:1	0.65	-0.11	22.46	23	1.132	0.736	22.3	1.6
Back side - 17mm	RMC	9262/1852.4	1:1	0.689	0.06	22.59	23	1.099	0.757	22.3	1.6
Back side - 17mm	RMC	9538/1907.6	1:1	0.58	-0.12	22.48	23	1.127	0.654	22.3	1.6
Right side -17mm	RMC	9400/1880	1:1	0.623	-0.18	22.46	23	1.132	0.705	22.3	1.6
Body Test data at The worse case with SCUD Battery(10mm)											
Right side	RMC	9262/1852.4	1:1	1.07	-0.09	20.53	21	1.114	1.192	22.3	1.6

Table 12：SAR of WCDMA 2 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Right side	9262/1852.4	1.11	1.07	1.04	N/A	N/A
1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

5.4.2 SAR Result Of WCDMA Band 4

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift(dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp	SAR limit (W/kg)
Hotspot Test data (Separate 10mm)											
Front side	RMC	1412/1732.4	1:1	0.467	-0.09	17.14	17.5	1.086	0.507	22.2	1.6
Back side	RMC	1412/1732.4	1:1	0.685	0.16	17.14	17.5	1.086	0.744	22.2	1.6
Back side	RMC	1312/1712.4	1:1	0.593	0.09	16.73	17.5	1.194	0.708	22.2	1.6
Back side	RMC	1513/1752.6	1:1	0.709	0.09	17.06	17.5	1.107	0.785	22.2	1.6
Right side	RMC	1412/1732.4	1:1	0.781	-0.1	17.14	17.5	1.086	0.848	22.2	1.6
Right side	RMC	1312/1712.4	1:1	0.642	-0.04	16.73	17.5	1.194	0.767	22.2	1.6
Right side	RMC	1513/1752.6	1:1	0.781	-0.15	17.06	17.5	1.107	0.864	22.2	1.6
Top side	RMC	1412/1732.4	1:1	0.00688	-0.03	21.99	22.8	1.205	0.008	22.2	1.6
Bottom side	RMC	1412/1732.4	1:1	0.116	-0.03	21.99	22.8	1.205	0.140	22.2	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off											
Front side -14mm	RMC	1412/1732.4	1:1	0.865	0.18	21.99	22.8	1.205	1.042	22.3	1.6
Front side -14mm	RMC	1312/1712.4	1:1	0.76	0.12	21.68	22.8	1.294	0.984	22.3	1.6
Front side -14mm	RMC	1513/1752.6	1:1	0.837	0.18	21.93	22.8	1.222	1.023	22.3	1.6
Back side -17mm	RMC	1412/1732.4	1:1	1	0.19	21.99	22.8	1.205	1.205	22.3	1.6
Back side -17mm	RMC	1312/1712.4	1:1	0.857	-0.19	21.68	22.8	1.294	1.109	22.3	1.6
Back side -17mm	RMC	1513/1752.6	1:1	0.966	0.01	21.93	22.8	1.222	1.180	22.3	1.6
Right side -17mm	RMC	1412/1732.4	1:1	1.11	-0.17	21.99	22.8	1.205	1.338	22.3	1.6
Right side -17mm	RMC	1312/1712.4	1:1	0.938	0.03	21.68	22.8	1.294	1.214	22.3	1.6
Right side -17mm	RMC	1513/1752.6	1:1	1.16	0.1	21.93	22.8	1.222	1.417	22.3	1.6
Right side -17mm-repeat	RMC	1513/1752.6	1:1	1.18	0.01	21.93	22.8	1.222	**1.442**	22.3	1.6
Body Test data at The worse case with SCUD Battery											
Right side -17mm	RMC	1513/1752.6	1:1	1.16	-0.12	21.93	22.8	1.222	1.417	22.3	1.6

Table 13：SAR of WCDMA Band 4 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Right side -17mm	1513/1752.6	1.16	1.18	1.02	N/A	N/A
1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

DUT Holder Perturbations verification											
Right side -17mm	RMC	1513/1752.6	1:1	1.15	-0.09	21.93	22.8	1.222	1.405	22.3	1.6
Note：According to 201610 FCC TCB workshop RF exposure slides, when the highest reported SAR of an antenna is > 1.2 W/kg, holder perturbation verification is required for each antenna, using the highest SAR configuration among all applicable frequency bands.											

5.4.3 SAR Result Of LTE Band 2(20MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp.	SAR limit (W/kg)
Hotspot Test data (Separate 10mm 1RB)											
Front side	QPSK	18900/1880	1:1	0.601	-0.03	20.45	21	1.135	0.682	22.3	1.6
Back side	QPSK	18900/1880	1:1	0.871	-0.1	20.45	21	1.135	0.989	22.3	1.6
Back side	QPSK	18700/1860	1:1	0.956	-0.08	20.37	21	1.156	1.105	22.3	1.6
Back side	QPSK	19100/1900	1:1	0.828	-0.02	20.42	21	1.143	0.946	22.3	1.6
Right side	QPSK	18900/1880	1:1	0.95	-0.11	20.45	21	1.135	1.078	22.3	1.6
Right side	QPSK	18700/1860	1:1	1.11	-0.08	20.37	21	1.156	**1.283**	22.3	1.6
Right side	QPSK	19100/1900	1:1	0.887	-0.04	20.42	21	1.143	1.014	22.3	1.6
Top side	QPSK	18900/1880	1:1	0.0403	-0.03	22.88	23	1.028	0.041	22.3	1.6
Bottom side	QPSK	18900/1880	1:1	0.29	-0.16	22.88	23	1.028	0.298	22.3	1.6
Right side -repeat	QPSK	18700/1860	1:1	1.07	-0.17	20.45	21	1.135	1.214	22.3	1.6
Hotspot Test data-sensor on(Separate 10mm 50%RB)											
Front side	QPSK	18900/1880	1:1	0.577	-0.05	20.41	21	1.146	0.661	22.3	1.6
Back side	QPSK	18900/1880	1:1	0.87	-0.17	20.41	21	1.146	0.997	22.3	1.6
Back side	QPSK	18700/1860	1:1	0.971	-0.2	20.35	21	1.161	1.128	22.3	1.6
Back side	QPSK	19100/1900	1:1	0.846	0.15	20.4	21	1.148	0.971	22.3	1.6
Right side	QPSK	18900/1880	1:1	0.914	-0.1	20.41	21	1.146	1.047	22.3	1.6
Right side	QPSK	18700/1860	1:1	0.985	-0.13	20.35	21	1.161	1.144	22.3	1.6
Right side	QPSK	19100/1900	1:1	0.781	-0.03	20.4	21	1.148	0.897	22.3	1.6
Top side	QPSK	18900/1880	1:1	0.0315	-0.01	21.81	22	1.045	0.033	22.3	1.6
Bottom side	QPSK	18900/1880	1:1	0.285	-0.1	21.81	22	1.045	0.298	22.3	1.6
Right side -repeat	QPSK	18700/1860	1:1	0.974	-0.13	20.35	21	1.161	1.131	22.3	1.6
Hotspot Test data-sensor on (Separate 10mm 100%RB)											
Back side	QPSK	19100/1900	1:1	0.81	-0.04	20.38	21	1.153	0.934	22.3	1.6
Right side	QPSK	19100/1900	1:1	0.746	-0.19	20.38	21	1.153	0.860	22.3	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off f(1RB)											
Front side -14mm	QPSK	18900/1880	1:1	0.652	-0.02	22.88	23	1.028	0.670	22.3	1.6
Front side -14mm	QPSK	18700/1860	1:1	0.677	0.07	22.85	23	1.035	0.701	22.3	1.6
Front side -14mm	QPSK	19100/1900	1:1	0.597	0.04	22.87	23	1.030	0.615	22.3	1.6

Back side -17mm	QPSK	18900/1880	1:1	0.689	0.18	22.88	23	1.028	0.708	22.3	1.6
Back side -17mm	QPSK	18700/1860	1:1	0.728	-0.09	22.85	23	1.035	0.754	22.3	1.6
Back side -17mm	QPSK	19100/1900	1:1	0.609	0.1	22.87	23	1.030	0.628	22.3	1.6
Right side -17mm	QPSK	18900/1880	1:1	0.677	-0.16	22.88	23	1.028	0.696	22.3	1.6
Right side -17mm	QPSK	18700/1860	1:1	0.745	-0.19	22.85	23	1.035	0.771	22.3	1.6
Right side -17mm	QPSK	19100/1900	1:1	0.593	-0.13	22.87	23	1.030	0.611	22.3	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (50%RB)											
Front side -14mm	QPSK	18900/1880	1:1	0.484	-0.18	21.81	22	1.045	0.506	22.3	1.6
Back side -17mm	QPSK	18900/1880	1:1	0.52	-0.18	21.81	22	1.045	0.543	22.3	1.6
Right side -17mm	QPSK	18900/1880	1:1	0.503	-0.19	21.81	22	1.045	0.525	22.3	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (100%RB)											
Front side -14mm	QPSK	18900/1880	1:1	0.489	-0.15	21.78	22	1.052	0.514	22.3	1.6
Back side -17mm	QPSK	18900/1880	1:1	0.504	-0.15	21.78	22	1.052	0.530	22.3	1.6
Right side -17mm	QPSK	18900/1880	1:1	0.483	-0.12	21.78	22	1.052	0.508	22.3	1.6
Body Test data at The worse case with SCUD Battery(10mm)											
Right side	QPSK	18700/1860	1:1	1.06	-0.16	20.37	21	1.156	1.225	22.3	1.6

Table 14：SAR of LTE Band 2 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Right side	18700/1860	1.11	1.07	1.04	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

5.4.1 SAR Result Of LTE Band 4(20MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp.	SAR limit (W/kg)
Hotspot Test data (Separate 10mm 1RB)											
Front side	QPSK	20300/1745	1:1	0.386	-0.07	16.54	17.5	1.247	0.481	22.3	1.6
Back side	QPSK	20300/1745	1:1	0.632	-0.1	16.54	17.5	1.247	0.788	22.3	1.6
Back side	QPSK	20175/1732.5	1:1	0.571	-0.02	16.37	17.5	1.297	0.741	22.3	1.6
Back side	QPSK	20050/1720	1:1	0.531	-0.18	16.32	17.5	1.312	0.697	22.3	1.6
Right side	QPSK	20300/1745	1:1	0.701	-0.16	16.54	17.5	1.247	0.874	22.3	1.6
Right side	QPSK	20175/1732.5	1:1	0.663	-0.17	16.37	17.5	1.297	0.860	22.3	1.6
Right side	QPSK	20050/1720	1:1	0.602	0.322	16.32	17.5	1.312	0.790	22.3	1.6
Top side	QPSK	20175/1732.5	1:1	0.0873	0.07	22.55	23	1.109	0.097	22.3	1.6
Bottom side	QPSK	20175/1732.5	1:1	0.247	-0.12	22.55	23	1.109	0.274	22.3	1.6
Hotspot Test data (Separate 10mm 50%RB)											
Front side	QPSK	20300/1745	1:1	0.377	0.04	16.46	17.5	1.271	0.479	22.3	1.6
Back side	QPSK	20300/1745	1:1	0.615	0.19	16.46	17.5	1.271	0.781	22.3	1.6
Right side	QPSK	20300/1745	1:1	0.697	-0.05	16.46	17.5	1.271	0.886	22.3	1.6
Right side	QPSK	20175/1732.5	1:1	0.679	-0.17	16.32	17.5	1.312	0.891	22.3	1.6
Right side	QPSK	20050/1720	1:1	0.604	-0.15	16.25	17.5	1.334	0.805	22.3	1.6
Top side	QPSK	20175/1732.5	1:1	0.0558	-0.18	21.43	22	1.140	0.064	22.3	1.6
Bottom side	QPSK	20175/1732.5	1:1	0.392	-0.18	21.43	22	1.140	0.447	22.3	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (1RB)											
Front side - 14mm	QPSK	20175/1732.5	1:1	1.04	-0.02	22.55	23	1.109	1.154	22.3	1.6
Front side - 14mm	QPSK	20300/1745	1:1	1.1	-0.1	22.53	23	1.114	1.226	22.3	1.6
Front side - 14mm	QPSK	20050/1720	1:1	0.984	-0.07	22.51	23	1.119	1.102	22.3	1.6
Back side - 17mm	QPSK	20175/1732.5	1:1	1.11	-0.2	22.55	23	1.109	1.231	22.3	1.6
Back side - 17mm	QPSK	20300/1745	1:1	1.2	0.16	22.53	23	1.114	1.337	22.3	1.6
Back side - 17mm	QPSK	20050/1720	1:1	1.02	0.09	22.51	23	1.119	1.142	22.3	1.6
Right side - 17mm	QPSK	20175/1732.5	1:1	1.2	-0.16	22.55	23	1.109	1.331	22.3	1.6
Right side - 17mm	QPSK	20300/1745	1:1	1.26	-0.12	22.53	23	1.114	1.404	22.3	1.6
Right side - 17mm	QPSK	20050/1720	1:1	1.08	-0.11	22.51	23	1.119	1.209	22.3	1.6

Right side - 17mm-repeat	QPSK	20300/1745	1:1	1.28	-0.14	22.53	23	1.114	**1.426**	22.3	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (50%RB)											
Front side - 14mm	QPSK	20175/1732.5	1:1	0.827	-0.04	21.43	22	1.140	0.943	22.3	1.6
Front side - 14mm	QPSK	20300/1745	1:1	0.871	-0.09	21.4	22	1.148	1.000	22.3	1.6
Front side - 14mm	QPSK	20050/1720	1:1	0.771	-0.19	21.39	22	1.151	0.887	22.3	1.6
Back side - 17mm	QPSK	20175/1732.5	1:1	0.9	-0.12	21.43	22	1.140	1.026	22.3	1.6
Back side - 17mm	QPSK	20300/1745	1:1	0.945	-0.14	21.4	22	1.148	1.085	22.3	1.6
Back side - 17mm	QPSK	20050/1720	1:1	0.818	0.18	21.39	22	1.151	0.941	22.3	1.6
Right side - 17mm	QPSK	20175/1732.5	1:1	0.963	-0.08	21.43	22	1.140	1.098	22.3	1.6
Right side - 17mm	QPSK	20300/1745	1:1	0.99	-0.19	21.4	22	1.148	1.137	22.3	1.6
Right side - 17mm	QPSK	20050/1720	1:1	0.886	-0.13	21.39	22	1.151	1.020	22.3	1.6
Right side - 17mm-repeat	QPSK	20300/1745	1:1	1.02	-0.11	21.4	22	1.148	1.171	22.3	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (100%RB)											
Front side - 14mm	QPSK	20175/1732.5	1:1	0.822	-0.05	21.32	22	1.169	0.961	22.3	1.6
Back side - 17mm	QPSK	20175/1732.5	1:1	0.928	-0.02	21.32	22	1.169	1.085	22.3	1.6
Right side - 17mm	QPSK	20175/1732.5	1:1	1.02	-0.06	21.32	22	1.169	1.193	22.3	1.6
Right side - 17mm-repeat	QPSK	20175/1732.5	1:1	1.07	-0.01	21.32	22	1.169	1.251	22.3	1.6
Body Test data at The worse case with SCUD Battery(17mm)											
Right side	QPSK	20300/1745	1:1	1.24	-0.14	22.53	23	1.114	1.382	22.3	1.6

Table 15： SAR of LTE Band 4 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Right side -17mm	20300/1745	1.26	1.28	1.02	N/A	N/A
1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

5.4.2 SAR Result Of LTE Band 12(10MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.	SAR limit(W/kg)
Hotspot Test data(Separate 10mm 1RB)											
Front side	QPSK	23095/707.5	1:1	0.483	-0.06	22.38	23	1.153	0.557	22.1	1.6
Back side	QPSK	23095/707.5	1:1	0.599	-0.19	22.38	23	1.153	**0.691**	22.1	1.6
Right side	QPSK	23095/707.5	1:1	0.0502	-0.16	22.38	23	1.153	0.058	22.1	1.6
Top side	QPSK	23095/707.5	1:1	0.146	-0.14	22.38	23	1.153	0.168	22.1	1.6
Bottom side	QPSK	23095/707.5	1:1	0.186	0.08	22.38	23	1.153	0.215	22.1	1.6
Hotspot Test data(Separate 10mm 50%RB)											
Front side	QPSK	23095/707.5	1:1	0.375	-0.06	21.37	22	1.156	0.434	22.1	1.6
Back side	QPSK	23095/707.5	1:1	0.497	-0.06	21.37	22	1.156	0.575	22.1	1.6
Right side	QPSK	23095/707.5	1:1	0.0366	-0.11	21.37	22	1.156	0.042	22.1	1.6
Top side	QPSK	23095/707.5	1:1	0.146	-0.08	21.37	22	1.156	0.169	22.1	1.6
Bottom side	QPSK	23095/707.5	1:1	0.161	-0.07	21.37	22	1.156	0.186	22.1	1.6
Body Test data at The worse case with SCUD Battery(10mm)											
Back side	QPSK	23095/707.5	1:1	0.547	-0.15	22.38	23	1.153	0.631	22.1	1.6

Table 16： SAR of LTE Band 12 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

5.4.3 SAR Result Of LTE Band 17(10MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.	SAR limit(W/kg)
Hotspot Test data(Separate 10mm 1RB)											
Front side	QPSK	23790/710	1:1	0.481	-0.04	22.64	23	1.086	0.523	22.1	1.6
Back side	QPSK	23790/710	1:1	0.624	-0.08	22.64	23	1.086	**0.678**	22.1	1.6
Right side	QPSK	23790/710	1:1	0.0571	-0.17	22.64	23	1.086	0.062	22.1	1.6
Top side	QPSK	23790/710	1:1	0.174	-0.12	22.64	23	1.086	0.189	22.1	1.6
Bottom side	QPSK	23790/710	1:1	0.194	-0.11	22.64	23	1.086	0.211	22.1	1.6
Hotspot Test data(Separate 10mm 50%RB)											
Front side	QPSK	23790/710	1:1	0.387	-0.06	21.68	22	1.076	0.417	22.1	1.6
Back side	QPSK	23790/710	1:1	0.504	-0.06	21.68	22	1.076	0.543	22.1	1.6
Right side	QPSK	23790/710	1:1	0.0437	0.09	21.68	22	1.076	0.047	22.1	1.6
Top side	QPSK	23790/710	1:1	0.137	0.03	21.68	22	1.076	0.147	22.1	1.6
Bottom side	QPSK	23790/710	1:1	0.159	-0.1	21.68	22	1.076	0.171	22.1	1.6
Body Test data at The worse case with SCUD Battery(10mm)											
Back side	QPSK	23790/710	1:1	0.579	-0.08	22.64	23	1.086	0.629	22.1	1.6

Table 17： SAR of LTE Band 17 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

5.4.1 SAR Result Of LTE Band 25(20MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.	SAR limit(W/kg)
Hotspot Test data (Separate 10mm 1RB)											
Front side	QPSK	26140/1860	1:1	0.601	0.05	20.46	21	1.132	0.681	22.1	1.6
Back side	QPSK	26365/1882.5	1:1	0.887	0.07	20.39	21	1.151	1.021	22.1	1.6
Back side	QPSK	26140/1860	1:1	0.811	-0.17	20.46	21	1.132	0.918	22.1	1.6
Back side	QPSK	26590/1905	1:1	0.78	0.17	20.34	21	1.164	0.908	22.1	1.6
Right side	QPSK	26365/1882.5	1:1	0.924	-0.02	20.39	21	1.151	1.063	22.1	1.6
Right side	QPSK	26140/1860	1:1	0.793	-0.18	20.46	21	1.132	0.898	22.1	1.6
Right side	QPSK	26590/1905	1:1	0.747	-0.11	20.34	21	1.164	0.870	22.1	1.6
Top side	QPSK	26365/1882.5	1:1	0.0538	0.06	22.31	23	1.172	0.063	22.1	1.6
Bottom side	QPSK	26365/1882.5	1:1	0.313	0.01	22.31	23	1.172	0.367	22.1	1.6
Right side-repeat	QPSK	26365/1882.5	1:1	0.807	-0.14	20.78	21	1.052	0.849	22.1	1.6
Hotspot Test data (Separate 10mm 50%RB)											
Front side	QPSK	26140/1860	1:1	0.529	-0.15	20.4	21	1.148	0.607	22.1	1.6
Back side	QPSK	26365/1882.5	1:1	0.891	-0.12	20.34	21	1.164	1.037	22.1	1.6
Back side	QPSK	26140/1860	1:1	0.852	0.04	20.4	21	1.148	0.978	22.1	1.6
Back side	QPSK	26590/1905	1:1	0.788	0.02	20.27	21	1.183	0.932	22.1	1.6
Right side	QPSK	26365/1882.5	1:1	0.898	-0.09	20.34	21	1.164	1.045	22.1	1.6
Right side	QPSK	26140/1860	1:1	0.848	-0.12	20.4	21	1.148	0.974	22.1	1.6
Right side	QPSK	26590/1905	1:1	0.773	-0.01	20.27	21	1.183	0.914	22.1	1.6
Top side	QPSK	26365/1882.5	1:1	0.059	-0.1	20.78	22	1.324	0.078	22.1	1.6
Bottom side	QPSK	26365/1882.5	1:1	0.414	-0.04	20.78	22	1.324	0.548	22.1	1.6
Right side-repeat	QPSK	26365/1882.5	1:1	0.78	-0.01	20.34	21	1.164	0.908	22.1	1.6
Hotspot Test data (Separate 10mm 100%RB)											
Back side	QPSK	26140/1860	1:1	0.689	-0.08	20.38	21	1.153	0.795	22.1	1.6
Right side	QPSK	26140/1860	1:1	0.702	-0.1	20.38	21	1.153	0.810	22.1	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (1RB)											
Front side - 14mm	QPSK	26365/1882.5	1:1	0.362	0.14	22.31	23	1.172	0.424	22.3	1.6
Back side - 17mm	QPSK	26365/1882.5	1:1	0.652	0.03	22.31	23	1.172	0.764	22.3	1.6

Right side - 17mm	QPSK	26365/1882.5	1:1	0.473	-0.03	22.31	23	1.172	0.554	22.3	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (50%RB)											
Front side - 14mm	QPSK	26365/1882.5	1:1	0.344	-0.12	20.78	22	1.324	0.456	22.3	1.6
Back side - 17mm	QPSK	26365/1882.5	1:1	0.493	0.03	20.78	22	1.324	0.653	22.3	1.6
Right side - 17mm	QPSK	26365/1882.5	1:1	0.45	-0.13	20.78	22	1.324	0.596	22.3	1.6
Body Test data at The worse case with SCUD Battery(10mm)											
Right side	QPSK	26365/1882.5	1:1	0.934	0.15	20.39	21	1.151	**1.075**	22.1	1.6

Table 18： SAR of LTE Band 25 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Right side	26365/1882.5	0.924	0.807	1.14	N/A	N/A
1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

5.4.2 SAR Result Of LTE Band 26(15MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.	SAR limit(W/kg)
Hotspot Test data (Separate 10mm 1RB)											
Front side	QPSK	26775/822.5	1:1	0.493	-0.06	20.44	21	1.138	0.561	22.1	1.6
Back side	QPSK	26775/822.5	1:1	0.597	-0.14	20.44	21	1.138	0.679	22.1	1.6
Right side	QPSK	26775/822.5	1:1	0.0314	-0.07	20.44	21	1.138	0.036	22.1	1.6
Top side	QPSK	26865/831.5	1:1	0.365	-0.05	22.23	23	1.194	0.436	22.1	1.6
Bottom side	QPSK	26865/831.5	1:1	0.565	-0.13	22.23	23	1.194	0.675	22.1	1.6
Hotspot Test data (Separate 10mm 50%RB)											
Front side	QPSK	26775/822.5	1:1	0.51	-0.1	20.43	21	1.140	0.582	22.1	1.6
Back side	QPSK	26775/822.5	1:1	0.632	-0.05	20.43	21	1.140	0.721	22.1	1.6
Right side	QPSK	26775/822.5	1:1	0.0471	0.08	20.43	21	1.140	0.054	22.1	1.6
Top side	QPSK	26865/831.5	1:1	0.299	-0.03	21.44	22	1.138	0.340	22.1	1.6
Bottom side	QPSK	26865/831.5	1:1	0.468	-0.03	21.44	22	1.138	0.532	22.1	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (1RB)											
Front side - 14mm	QPSK	26865/831.5	1:1	0.62	-0.14	22.23	23	1.194	0.740	22.3	1.6
Back side - 17mm	QPSK	26865/831.5	1:1	0.686	-0.11	22.23	23	1.194	0.819	22.3	1.6
Back side - 17mm	QPSK	26775/822.5	1:1	0.605	0.07	22.18	23	1.208	0.731	22.3	1.6
Back side - 17mm	QPSK	26965/841.5	1:1	0.761	-0.11	22.21	23	1.199	**0.913**	22.3	1.6
Right side - 17mm	QPSK	26865/831.5	1:1	0.0317	-0.17	22.23	23	1.194	0.038	22.3	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (50%RB)											
Front side - 14mm	QPSK	26865/831.5	1:1	0.51	-0.05	21.44	22	1.138	0.580	22.3	1.6
Back side - 17mm	QPSK	26865/831.5	1:1	0.552	-0.18	21.44	22	1.138	0.628	22.3	1.6
Right side - 17mm	QPSK	26865/831.5	1:1	0.03	0	21.44	22	1.138	0.034	22.3	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (100%RB)											
Back side - 17mm	QPSK	26865/831.5	1:1	0.558	0.13	22.23	23	1.194	0.666	22.3	1.6
Body Test data at The worse case with SCUD Battery(10mm)											
Back side - 17mm	QPSK	26965/841.5	1:1	0.686	-0.04	22.21	23	1.199	0.823	22.3	1.6

Table 19： SAR of LTE Band 26 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

5.4.1 SAR Result Of LTE Band 41(20MHz)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.	SAR limit(W/kg)
Hotspot Test data (Separate 10mm 1RB)											
Front side	QPSK	41490/2680	1:1.579	0.348	-0.07	19.22	20	1.197	0.416	22.1	1.6
Back side	QPSK	41490/2680	1:1.579	0.898	-0.16	19.22	20	1.197	**1.075**	22.1	1.6
Back side	QPSK	41055/2636.5	1:1.579	0.785	-0.15	19.04	20	1.247	0.979	22.1	1.6
Back side	QPSK	40620/2593	1:1.579	0.601	-0.18	19.09	20	1.233	0.741	22.1	1.6
Back side	QPSK	40185/2549.5	1:1.579	0.619	-0.19	19.07	20	1.239	0.767	22.1	1.6
Back side	QPSK	39750/2506	1:1.579	0.541	-0.15	19.14	20	1.219	0.659	22.1	1.6
Right side	QPSK	41490/2680	1:1.579	0.719	-0.19	19.22	20	1.197	0.860	22.1	1.6
Right side	QPSK	41055/2636.5	1:1.579	0.639	-0.07	19.04	20	1.247	0.797	22.1	1.6
Right side	QPSK	40620/2593	1:1.579	0.545	0.11	19.09	20	1.233	0.672	22.1	1.6
Right side	QPSK	40185/2549.5	1:1.579	0.485	0.02	19.07	20	1.239	0.601	22.1	1.6
Right side	QPSK	39750/2506	1:1.579	0.49	-0.04	19.14	20	1.219	0.597	22.1	1.6
Top side	QPSK	41490/2680	1:1.579	0.112	0.01	22.46	23	1.132	0.127	22.1	1.6
Bottom side	QPSK	41490/2680	1:1.579	0.0813	0.2	22.46	23	1.132	0.092	22.1	1.6
Back side-repeat	QPSK	41490/2680	1:1.579	0.781	0.18	19.22	20	1.197	0.935	22.1	1.6
Hotspot Test data (Separate 10mm 50%RB)											
Front side	QPSK	41490/2680	1:1.579	0.389	0.07	19.24	20	1.191	0.463	22.1	1.6
Back side	QPSK	41490/2680	1:1.579	0.753	-0.07	19.24	20	1.191	0.897	22.1	1.6
Back side	QPSK	41055/2636.5	1:1.579	0.718	0.07	18.96	20	1.271	0.912	22.1	1.6
Back side	QPSK	40620/2593	1:1.579	0.598	0.03	19.12	20	1.225	0.732	22.1	1.6
Back side	QPSK	40185/2549.5	1:1.579	0.701	-0.09	18.88	20	1.294	0.907	22.1	1.6
Back side	QPSK	39750/2506	1:1.579	0.527	-0.05	18.98	20	1.265	0.667	22.1	1.6
Right side	QPSK	41490/2680	1:1.579	0.688	-0.18	19.24	20	1.191	0.820	22.1	1.6
Right side	QPSK	41055/2636.5	1:1.579	0.624	-0.06	18.96	20	1.271	0.793	22.1	1.6
Right side	QPSK	40620/2593	1:1.579	0.53	-0.08	19.12	20	1.225	0.649	22.1	1.6
Right side	QPSK	40185/2549.5	1:1.579	0.479	-0.18	18.88	20	1.294	0.620	22.1	1.6
Right side	QPSK	39750/2506	1:1.579	0.449	0.06	18.98	20	1.265	0.568	22.1	1.6
Top side	QPSK	41490/2680	1:1.579	0.0879	-0.01	21.34	22	1.164	0.102	22.1	1.6

Bottom side	QPSK	41490/2680	1:1.579	0.0642	0.09	21.34	22	1.164	0.075	22.1	1.6
Hotspot Test data (Separate 10mm 100%RB)											
Back side	QPSK	41490/2680	1:1.579	0.764	0.08	19.08	20	1.236	0.944	22.1	1.6
Right side	QPSK	41490/2680	1:1.579	0.681	-0.17	19.08	20	1.236	0.842	22.1	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (1RB)											
Front side - 14mm	QPSK	41490/2680	1:1.579	0.363	0.13	22.46	23	1.132	0.411	22.3	1.6
Back side - 17mm	QPSK	41490/2680	1:1.579	0.66	-0.1	22.46	23	1.132	0.747	22.3	1.6
Right side - 17mm	QPSK	41490/2680	1:1.579	0.623	-0.14	22.46	23	1.132	0.705	22.3	1.6
Additional SAR test at maximum power level and conservative triggering distance with sensor off (50%RB)											
Front side - 14mm	QPSK	41490/2680	1:1.579	0.376	-0.17	21.34	22	1.164	0.438	22.3	1.6
Back side - 17mm	QPSK	41490/2680	1:1.579	0.53	0.13	21.34	22	1.164	0.617	22.3	1.6
Right side - 17mm	QPSK	41490/2680	1:1.579	0.499	-0.12	21.34	22	1.164	0.581	22.3	1.6
Body Test data at The worse case with SCUD Battery(10mm)											
Back side	QPSK	41490/2680	1:1.579	0.822	0	19.22	20	1.197	0.984	22.1	1.6

Table 20：SAR of LTE Band 41 for Body.

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back Side	41490/2680	0.898	0.781	1.15	N/A	N/A
1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

5.4.2 SAR Result Of 2.4GHz WIFI SISO

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift(dB)	Conducted power (dBm)	Tune up Limit(dBm)	Tune up Scaled factor	Scaled SAR(W/kg)	Liquid Temp.	SAR limit(W/kg)
Hotspot Test data (Separate 10mm)-WIFI 0												
Front side	802.11b	1/2412	1:1.01	1.01	0.188	0.02	16.7	18.5	1.514	0.287	22	1.6
Back side	802.11b	1/2412	1:1.01	1.01	0.211	-0.04	16.7	18.5	1.514	0.323	22	1.6
Left side	802.11b	1/2412	1:1.01	1.01	0.243	-0.13	16.7	18.5	1.514	0.371	22	1.6
Bottom side	802.11b	1/2412	1:1.01	1.01	0.246	-0.1	16.7	18.5	1.514	**0.376**	22	1.6
Body Test data at The worse case with SCUD Battery(10mm)-Antenna 0												
Bottom side	802.11b	1/2412	1:1.01	1.01	0.235	-0.1	16.7	18.5	1.514	0.359	22	1.6
Hotspot Test data (Separate 10mm)--WIFI 1												
Front side	802.11b	1/2412	1:1.01	1.01	0.234	0.18	16.67	18.5	1.524	0.360	22	1.6
Back side	802.11b	1/2412	1:1.01	1.01	0.129	0.11	16.67	18.5	1.524	0.199	22	1.6
Left side	802.11b	1/2412	1:1.01	1.01	0.162	-0.1	16.67	18.5	1.524	0.249	22	1.6
Top side	802.11b	1/2412	1:1.01	1.01	0.236	-0.04	16.67	18.5	1.524	0.363	22	1.6
Body Test data at The worse case with SCUD Battery(10mm)-Antenna 1												
Top side	802.11b	1/2412	1:1.01	1.01	0.218	0.01	16.67	18.5	1.524	0.336	22	1.6
Additional SAR test at the conservative distance for Simultaneous Transmit Evaluation -WIFI 0												
Front side-14mm	802.11b	1/2412	1:1.01	1.01	0.119	0.14	16.7	18.5	1.514	0.182	22	1.6
Back side-17mm	802.11b	1/2412	1:1.01	1.01	0.103	0.14	16.7	18.5	1.514	0.157	22	1.6
Additional SAR test at the conservative distance for Simultaneous Transmit Evaluation -WIFI 1												
Front side-14mm	802.11b	1/2412	1:1.01	1.01	0.0943	-0.03	16.67	18.5	1.524	0.145	22	1.6
Back side-17mm	802.11b	1/2412	1:1.01	1.01	0.0496	0.01	16.67	18.5	1.524	0.076	22	1.6

Table 21：SAR of 2.4GHz WIFI SISO for Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

5.4.3 SAR Result Of 2.4GHz WIFI MIMO

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power (dBm)	Tune up Limit(dBm)	Tune up Scaled factor	Scaled SAR(W/kg)	Liquid Temp.	SAR limit(W/kg)
Hotspot Test data (Separate 10mm)												
Front side	802.11n20	1/2412	1:1.07	1.07	0.0692	0.09	15.41	17	1.443	0.107	22	1.6
Back side	802.11n20	1/2412	1:1.07	1.07	0.107	0.09	15.41	17	1.443	0.165	22	1.6
Left side	802.11n20	1/2412	1:1.07	1.07	0.141	0.07	15.41	17	1.443	0.218	22	1.6
Top side	802.11n20	1/2412	1:1.07	1.07	0.0592	0.04	15.41	17	1.443	0.091	22	1.6
Bottom side	802.11n20	1/2412	1:1.07	1.07	0.0832	0.05	15.41	17	1.443	0.128	22	1.6
Body Test data at The worse case with SCUD Battery(10mm)												
Left side	802.11n20	1/2412	1:1.07	1.07	0.172	0.02	15.41	17	1.443	**0.265**	22	1.6

Table 22：SAR of 2.4GHz WIFI MIMO for Body

5.4.4 SAR Result Of 5.2GHz WIFI SISO

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power (dBm)	Tune up Limit(dBm)	Tune up Scaled factor	Scaled SAR(W/kg)	Liquid Temp.	SAR limit(W/kg)
Hotspot Test data (Separate 10mm)-WIFI 0												
Front side	802.11a	40/5200	1:1.07	1.07	0.176	0.04	13.24	15	1.500	0.282	22.2	1.6
Back side	802.11a	40/5200	1:1.07	1.07	0.0262	-0.01	13.24	15	1.500	0.042	22.2	1.6
Left side	802.11a	40/5200	1:1.07	1.07	0.00464	-0.02	13.24	15	1.500	0.007	22.2	1.6
Bottom side	802.11a	40/5200	1:1.07	1.07	0.429	-0.18	13.24	15	1.500	**0.688**	22.2	1.6
Body Test data at The worse case with SCUD Battery(10mm)-Antenna 0												
Bottom side	802.11a	40/5200	1:1.07	1.07	0.388	-0.02	13.24	15	1.500	0.623	22.2	1.6
Hotspot Test data (Separate 10mm)--WIFI 1												
Front side	802.11a	44/5220	1:1.07	1.07	0.0857	0.04	12.25	14.1	1.531	0.140	22.2	1.6
Back side	802.11a	44/5220	1:1.07	1.07	<0.001	<0.001	12.25	14.1	1.531	<0.001	22.2	1.6
Left side	802.11a	44/5220	1:1.07	1.07	0.00348	0.04	12.25	14.1	1.531	0.006	22.2	1.6
Top side	802.11a	44/5220	1:1.07	1.07	0.177	-0.01	12.25	14.1	1.531	0.290	22.2	1.6
Body Test data at The worse case with SCUD Battery(10mm)-Antenna 1												
Top side	802.11a	44/5220	1:1.07	1.07	0.168	0.02	12.25	14.1	1.531	0.275	22.2	1.6

Table 23：SAR of 5.2GHz WIFI SISO for Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

5.4.5 SAR Result Of 5.2GHz WIFI MIMO

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power (dBm)	Tune up Limit(dBm)	Tune up Scaled factor	Scaled SAR(W/kg)	Liquid Temp.	SAR limit(W/kg)
Hotspot Test data (Separate 10mm)												
Front side	802.11n20	44/5220	1:1.06	1.06	0.126	0	14.35	16	1.462	0.195	22.2	1.6
Back side	802.11n20	44/5220	1:1.06	1.06	0.132	0.07	14.35	16	1.462	0.205	22.2	1.6
Left side	802.11n20	44/5220	1:1.06	1.06	0.0114	0.18	14.35	16	1.462	0.018	22.2	1.6
Top side	802.11n20	44/5220	1:1.06	1.06	0.117	0.16	14.35	16	1.462	0.181	22.2	1.6
Bottom side	802.11n20	44/5220	1:1.06	1.06	0.147	0.04	14.35	16	1.462	**0.228**	22.2	1.6
Body Test data at The worse case with SCUD Battery(10mm)												
Bottom side	802.11n20	44/5220	1:1.06	1.06	0.134	0.14	14.35	16	1.462	0.208	22.2	1.6
Additional SAR test at the conservative distance for Simultaneous Transmit Evaluation												
Front side-14mm	802.11n20	44/5220	1:1.06	1.06	0.068	0	14.35	16	1.462	0.105	22.2	1.6
Back side-17mm	802.11n20	44/5220	1:1.06	1.06	0.047	0	14.35	16	1.462	0.073	22.2	1.6

Table 24： SAR of 5.2GHz WIFI MIMO for Body

5.4.6 SAR Result Of 5.6GHz WIFI SISO

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power (dBm)	Tune up Limit(dBm)	Tune up Scaled factor	Scaled SAR(W/kg)	Liquid Temp.	SAR limit(W/kg)
Hotspot Test data (Separate 10mm)-WIFI 0												
Front side	802.11a	104/5520	1:1.07	1.07	0.089	-0.18	12.65	14.5	1.531	0.146	22.2	1.6
Back side	802.11a	104/5520	1:1.07	1.07	0.0204	-0.09	12.65	14.5	1.531	0.033	22.2	1.6
Left side	802.11a	104/5520	1:1.07	1.07	<0.001	<0.001	12.65	14.5	1.531	<0.001	22.2	1.6
Bottom side	802.11a	104/5520	1:1.07	1.07	0.238	-0.06	12.65	14.5	1.531	0.390	22.2	1.6
Body Test data at The worse case with SCUD Battery(10mm)-Antenna 0												
Bottom side	802.11a	104/5520	1:1.07	1.07	0.272	0.07	12.65	14.5	1.531	**0.446**	22.2	1.6
Hotspot Test data (Separate 10mm)--WIFI 1												
Front side	802.11a	140/5700	1:1.07	1.07	0.002	-0.03	12.94	14.5	1.432	0.003	22.2	1.6
Back side	802.11a	140/5700	1:1.07	1.07	<0.001	<0.001	12.94	14.5	1.432	<0.001	22.2	1.6
Left side	802.11a	140/5700	1:1.07	1.07	0.0129	0.06	12.94	14.5	1.432	0.020	22.2	1.6
Top side	802.11a	140/5700	1:1.07	1.07	0.148	0.1	12.94	14.5	1.432	0.227	22.2	1.6
Body Test data at The worse case with SCUD Battery(10mm)-Antenna 1												
Top side	802.11a	140/5700	1:1.07	1.07	0.141	-0.1	12.94	14.5	1.432	0.216	22.2	1.6

Table 25：SAR of 5.6GHz WIFI SISO for Body

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B

2) If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

5.4.7 SAR Result Of 5.6GHz WIFI MIMO

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power (dBm)	Tune up Limit(dBm)	Tune up Scaled factor	Scaled SAR(W/kg)	Liquid Temp.	SAR limit(W/kg)
Hotspot Test data (Separate 10mm)												
Front side	802.11n20	108/5540	1:1.06	1.06	0.0139	-0.06	14.68	16.5	1.521	0.022	22.2	1.6
Back side	802.11n20	108/5540	1:1.06	1.06	0.00962	0.12	14.68	16.5	1.521	0.016	22.2	1.6
Left side	802.11n20	108/5540	1:1.06	1.06	<0.001	-0.02	14.68	16.5	1.521	<0.001	22.2	1.6
Top side	802.11n20	108/5540	1:1.06	1.06	0.0789	-0.15	14.68	16.5	1.521	0.127	22.2	1.6
Bottom side	802.11n20	108/5540	1:1.06	1.06	0.112	0.02	14.68	16.5	1.521	0.181	22.2	1.6
Body Test data at The worse case with SCUD Battery(10mm)												
Bottom side	802.11n20	108/5540	1:1.06	1.06	0.14	0.01	14.68	16.5	1.521	**0.226**	22.2	1.6

Table 26： SAR of 5.6GHz WIFI MIMO for Body

5.5 Multiple Transmitter Evaluation

5.5.1 Simultaneous SAR SAR test evaluation

1) Simultaneous Transmission

NO.	Simultaneous Transmission Configuration	Hotspot
1	WCDMA/LTE+ 2.4GHz WiFi SISO	Yes
2	WCDMA/LTE+ 2.4GHz WiFi MIMO	Yes
3	WCDMA/LTE+ 5GHz WiFi SISO	Yes
4	WCDMA/LTE+ 5GHz WiFi MIMO	Yes
5	2.4GHz WiFi+ 5GHz WiFi	NA

2) Simultaneous Transmission SAR Summation Scenario for hotspot

WWAN Band	Exposure position	①MAX.WWAN SAR(W/kg)	②2.4GHz WiFi0 SISO	③2.4GHz WiFi1 SISO	④2.4GHz WiFi MIMO	Summed SAR ①+②	Summed SAR①+③	Summed SAR ①+④	Volume scan
WCDMA Band2	Front	0.727	0.287	0.360	0.107	1.014	1.087	0.833	No
	Back	1.104	0.323	0.199	0.165	1.427	1.303	1.269	No
	Left	0.000	0.371	0.249	0.265	0.371	0.249	0.265	No
	Right	1.237	0.000	0.000	0.000	1.237	1.237	1.237	No
	Top	0.073	0.000	0.363	0.091	0.073	0.436	0.164	No
	Bottom	0.362	0.376	0.000	0.128	0.738	0.362	0.491	No
WCDMA Band4	Front	1.042	0.182	0.145	0.107	1.224	1.187	1.149	No
	Back	1.205	0.157	0.076	0.165	1.362	1.281	1.370	No
	Left	0.000	0.371	0.249	0.265	0.371	0.249	0.265	No
	Right	1.442	0.000	0.000	0.000	1.442	1.442	1.442	No
	Top	0.008	0.000	0.363	0.091	0.008	0.372	0.100	No
	Bottom	0.140	0.376	0.000	0.128	0.516	0.140	0.268	No
LTE Band 2	Front	0.701	0.287	0.360	0.107	0.988	1.061	0.808	No
	Back	1.128	0.323	0.199	0.165	1.450	1.326	1.293	No
	Left	0.000	0.371	0.249	0.265	0.371	0.249	0.265	No
	Right	1.283	0.000	0.000	0.000	1.283	1.283	1.283	No
	Top	0.041	0.000	0.363	0.091	0.041	0.405	0.133	No
	Bottom	0.298	0.376	0.000	0.128	0.674	0.298	0.427	No
LTE Band 4	Front	1.226	0.182	0.145	0.107	1.408	1.371	1.333	No
	Back	1.337	0.157	0.076	0.165	1.495	1.413	**1.502**	No
	Left	0.000	0.371	0.249	0.265	0.371	0.249	0.265	No
	Right	1.426	0.000	0.000	0.000	1.426	1.426	1.426	No
	Top	0.097	0.000	0.363	0.091	0.097	0.460	0.188	No
	Bottom	0.447	0.376	0.000	0.128	0.823	0.447	0.575	No
LTE Band 12	Front	0.557	0.287	0.360	0.107	0.845	0.917	0.664	No
	Back	0.691	0.323	0.199	0.165	1.013	0.889	0.856	No
	Left	0.000	0.371	0.249	0.265	0.371	0.249	0.265	No
	Right	0.058	0.000	0.000	0.000	0.058	0.058	0.058	No
	Top	0.169	0.000	0.363	0.091	0.169	0.532	0.260	No
	Bottom	0.215	0.376	0.000	0.128	0.591	0.215	0.343	No
LTE Band 17	Front	0.523	0.287	0.360	0.107	0.810	0.883	0.629	No
	Back	0.678	0.323	0.199	0.165	1.000	0.876	0.843	No
	Left	0.000	0.371	0.249	0.265	0.371	0.249	0.265	No
	Right	0.062	0.000	0.000	0.000	0.062	0.062	0.062	No
	Top	0.189	0.000	0.363	0.091	0.189	0.552	0.280	No
	Bottom	0.211	0.376	0.000	0.128	0.587	0.211	0.339	No
LTE Band 25	Front	0.681	0.287	0.360	0.107	0.968	1.041	0.787	No
	Back	1.037	0.323	0.199	0.165	1.360	1.236	1.202	No
	Left	0.000	0.371	0.249	0.265	0.371	0.249	0.265	No
	Right	1.075	0.000	0.000	0.000	1.075	1.075	1.075	No
	Top	0.078	0.000	0.363	0.091	0.078	0.441	0.170	No
	Bottom	0.548	0.376	0.000	0.128	0.924	0.548	0.677	No
LTE	Front	0.740	0.182	0.145	0.107	0.922	0.885	0.847	No

Band 26	Back	0.913	0.157	0.076	0.165	1.070	0.989	1.078	No
	Left	0.000	0.371	0.249	0.265	0.371	0.249	0.265	No
	Right	0.054	0.000	0.000	0.000	0.054	0.054	0.054	No
	Top	0.436	0.000	0.363	0.091	0.436	0.799	0.527	No
	Bottom	0.675	0.376	0.000	0.128	1.051	0.675	0.803	No
LTE Band 41	Front	0.463	0.287	0.360	0.107	0.751	0.824	0.570	No
	Back	1.075	0.323	0.199	0.165	1.397	1.273	1.240	No
	Left	0.000	0.371	0.249	0.265	0.371	0.249	0.265	No
	Right	0.860	0.000	0.000	0.000	0.860	0.860	0.860	No
	Top	0.127	0.000	0.363	0.091	0.127	0.490	0.218	No
	Bottom	0.092	0.376	0.000	0.128	0.468	0.092	0.220	No

WWAN Band	Exposure position	①MAX.WWAN SAR(W/kg)	②5GHz WiFi0 SISO	③5GHz WiFi1 SISO	④5GHz WiFi MIMO	Summed SAR①+②	Summed SAR①+③	Summed SAR①+④	Volume scan
WCDMA Band2	Front	0.727	0.282	0.140	0.195	1.009	0.867	0.922	No
	Back	1.104	0.042	0.000	0.205	1.146	1.104	1.309	No
	Left	0.000	0.007	0.020	0.018	0.007	0.020	0.018	No
	Right	1.237	0.000	0.000	0.000	1.237	1.237	1.237	No
	Top	0.073	0.000	0.290	0.181	0.073	0.363	0.254	No
	Bottom	0.362	0.688	0.000	0.228	1.051	0.362	0.590	No
WCDMA Band4	Front	1.042	0.282	0.140	0.195	1.325	1.183	1.238	No
	Back	1.205	0.042	0.000	0.205	1.247	1.205	1.410	No
	Left	0.000	0.007	0.020	0.018	0.007	0.020	0.018	No
	Right	1.442	0.000	0.000	0.000	1.442	1.442	1.442	No
	Top	0.008	0.000	0.290	0.181	0.008	0.298	0.190	No
	Bottom	0.140	0.688	0.000	0.228	0.828	0.140	0.368	No
LTE Band 2	Front	0.701	0.282	0.140	0.195	0.983	0.841	0.896	No
	Back	1.128	0.042	0.000	0.205	1.170	1.128	1.332	No
	Left	0.000	0.007	0.020	0.018	0.007	0.020	0.018	No
	Right	1.283	0.000	0.000	0.000	1.283	1.283	1.283	No
	Top	0.041	0.000	0.290	0.181	0.041	0.331	0.223	No
	Bottom	0.298	0.688	0.000	0.228	0.987	0.298	0.526	No
LTE Band 4	Front	1.226	0.282	0.140	0.105	**1.508**	1.366	1.331	No
	Back	1.337	0.042	0.000	0.073	1.379	1.337	1.410	No
	Left	0.000	0.007	0.020	0.018	0.007	0.020	0.018	No
	Right	1.426	0.000	0.000	0.000	1.426	1.426	1.426	No
	Top	0.097	0.000	0.290	0.181	0.097	0.387	0.278	No
	Bottom	0.447	0.688	0.000	0.228	1.135	0.447	0.675	No
LTE Band 12	Front	0.557	0.282	0.140	0.195	0.840	0.698	0.752	No
	Back	0.691	0.042	0.000	0.205	0.733	0.691	0.896	No
	Left	0.000	0.007	0.020	0.018	0.007	0.020	0.018	No
	Right	0.058	0.000	0.000	0.000	0.058	0.058	0.058	No
	Top	0.169	0.000	0.290	0.181	0.169	0.459	0.350	No
	Bottom	0.215	0.688	0.000	0.228	0.903	0.215	0.442	No
LTE Band 17	Front	0.523	0.282	0.140	0.195	0.805	0.663	0.718	No
	Back	0.678	0.042	0.000	0.205	0.720	0.678	0.883	No
	Left	0.000	0.007	0.020	0.018	0.007	0.020	0.018	No
	Right	0.062	0.000	0.000	0.000	0.062	0.062	0.062	No

	Top	0.189	0.000	0.290	0.181	0.189	0.479	0.370	No
	Bottom	0.211	0.688	0.000	0.228	0.899	0.211	0.439	No
LTE Band 25	Front	0.681	0.282	0.140	0.195	0.963	0.821	0.876	No
	Back	1.037	0.042	0.000	0.205	1.079	1.037	1.242	No
	Left	0.000	0.007	0.020	0.018	0.007	0.020	0.018	No
	Right	1.075	0.000	0.000	0.000	1.075	1.075	1.075	No
	Top	0.078	0.000	0.290	0.181	0.078	0.368	0.259	No
	Bottom	0.548	0.688	0.000	0.228	1.237	0.548	0.776	No
LTE Band 26	Front	0.740	0.282	0.140	0.195	1.023	0.881	0.936	No
	Back	0.913	0.042	0.000	0.205	0.955	0.913	1.117	No
	Left	0.000	0.007	0.020	0.018	0.007	0.020	0.018	No
	Right	0.054	0.000	0.000	0.000	0.054	0.054	0.054	No
	Top	0.436	0.000	0.290	0.181	0.436	0.726	0.617	No
	Bottom	0.675	0.688	0.000	0.228	1.363	0.675	0.902	No
LTE Band 41	Front	0.463	0.282	0.140	0.195	0.746	0.604	0.659	No
	Back	1.075	0.042	0.000	0.205	1.117	1.075	1.279	No
	Left	0.000	0.007	0.020	0.018	0.007	0.020	0.018	No
	Right	0.860	0.000	0.000	0.000	0.860	0.860	0.860	No
	Top	0.127	0.000	0.290	0.181	0.127	0.417	0.308	No
	Bottom	0.092	0.688	0.000	0.228	0.780	0.092	0.320	No

6 Equipment list

Test Platform	SPEAG DASY5 Professional
Location	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Description	SAR Test System (Frequency range 300MHz-6GHz)
Software Reference	DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Hardware Reference

	Equipment	Manufacturer	Model	Serial Number	Calibration Date	Due date of calibration
☒	Robot	Staubli	RX90L	F03/5V32A1/A01	NCR	NCR
☒	Twin Phantom	SPEAG	SAM 1	TP-1283	NCR	NCR
☒	Twin Phantom	SPEAG	SAM 2	1913	NCR	NCR
☐	Flat Phantom	SPEAG	ELI 5.0	1128	NCR	NCR
☒	DAE	SPEAG	DAE3	569	2015-11-24	2016-11-23
☒	E-Field Probe	SPEAG	EX3DV4	3962	2015-11-27	2016-11-26
☒	Validation Kits	SPEAG	D750V3	1126	2014-09-19	2017-09-18
☒	Validation Kits	SPEAG	D835V2	4d015	2013-11-25	2016-11-24
☒	Validation Kits	SPEAG	D1800V2	2d070	2013-11-27	2016-11-26
☒	Validation Kits	SPEAG	D1900V2	5d028	2013-11-27	2016-11-26
☒	Validation Kits	SPEAG	D2450V2	733	2013-11-26	2016-11-25
☒	Validation Kits	SPEAG	D2600V2	1093	2014-09-23	2017-09-22
☒	Validation Kits	SPEAG	D5GHzV2	1165	2013-12-11	2016-12-10
☒	Agilent Network Analyzer	Agilent	E5071C	MY46523590	2016-03-08	2017-03-08
☒	Dielectric Probe Kit	Agilent	85070E	US01440210	NCR	NCR
☒	Universal Radio Communication Tester	R&S	CMU200	123090	2016-06-27	2017-06-26
☒	Universal Radio Communication Tester	R&S	CMW500	152271	2016-03-08	2017-03-08
☒	UXM Wireless Test Set	KEYSIGHT	E7515A	MY56040323	2016-08-06	2017-08-05
☒	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
☒	Signal Generator	Agilent	N5171B	MY53050736	2016-03-08	2017-03-08
☒	Preamplifier	Mini-Circuits	ZHL-42W	15542	NCR	NCR
☒	Power Meter	Agilent	E4416A	GB41292095	2016-03-08	2017-03-08
☒	Power Sensor	Agilent	8481H	MY41091234	2016-03-08	2017-03-08
☒	Power Sensor	R&S	NRP-Z92	100025	2016-03-08	2017-03-08
☒	Attenuator	SHX	TS2-3dB	30704	NCR	NCR
☒	Coaxial low pass filter	Mini-Circuits	VLF-2500(+)	NA	NCR	NCR
☒	Coaxial low pass filter	Microlab Fxr	LA-F13	NA	NCR	NCR
☒	50 Ω coaxial load	Mini-Circuits	KARN-50+	00850	NCR	NCR
☒	DC POWER SUPPLY	SAKO	SK1730SL5A	NA	NCR	NCR

7 Measurement Uncertainty

Measurements and results are all in compliance with the standards listed in this report. All measurements and results are recorded and maintained at the laboratory performing the tests and measurement uncertainties are taken into account when comparing measurements to pass/ fail criteria. The Expanded uncertainty (95% CONFIDENCE INTERVAL) is 21.84%.

A	b1	c	d	e = f(d,k)	g	i = C*g/e	k
Uncertainty Component	Section in P1528	Tol (%)	Prob . Dist.	Div.	Ci (1g)	1g ui (%)	Vi (Veff)
Probe calibration	E.2.1	6.7	N	1	1	6.70	∞
Axial isotropy	E.2.2	0.5	R	$\sqrt{3}$	(1 – Cp)1/2	0.20	∞
hemispherical isotropy	E.2.2	2.6	R	$\sqrt{3}$	$\sqrt{Cp}$	1.06	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	0.58	∞
Linearity	E.2.4	0.6	R	$\sqrt{3}$	1	0.35	∞
System detection limit	E.2.5	0.25	R	$\sqrt{3}$	1	0.14	∞
Readout electronics	E.2.6	0.3	N	1	1	0.30	∞
Response time	E.2.7	0	R	$\sqrt{3}$	1	0.00	∞
Integration time	E.2.8	2.6	R	$\sqrt{3}$	1	1.50	∞
RF ambient Condition –Noise	E.6.1	3	R	$\sqrt{3}$	1	1.73	∞
RF ambient Condition - reflections	E.6.1	3	R	$\sqrt{3}$	1	1.73	∞
Probe positioning- mechanical tolerance	E.6.2	1.5	R	$\sqrt{3}$	1	0.87	∞
Probe positioning- with respect to phantom	E.6.3	2.9	R	$\sqrt{3}$	1	1.67	∞
Max. SAR evaluation	E.5.2	1	R	$\sqrt{3}$	1	0.58	∞
Test sample positioning	E.4.2	3.7	N	1	1	3.70	9
Device holder uncertainty	E.4.1	3.6	N	1	1	3.60	∞
Output power variation –SAR drift measurement	6.6.2	5	R	$\sqrt{3}$	1	2.89	∞
Phantom uncertainty (shape and thickness tolerances)	E.3.1	4	R	$\sqrt{3}$	1	2.31	∞
Liquid conductivity - deviation from target values	E.3.2	5	R	$\sqrt{3}$	0.64	1.85	∞
Liquid conductivity - measurement uncertainty	E.3.2	5.78	N	1	0.64	3.68	5
Liquid permittivity - deviation from target values	E.3.3	5	R	$\sqrt{3}$	0.6	1.73	∞
Liquid permittivity - measurement uncertainty	E.3.3	0.62	N	1	0.6	0.372	5

Combined standard uncertainty				RSS		10.92	430
Expanded uncertainty (95% CONFIDENCE INTERVAL)				K=2		**21.84**	

Table 27：Measurement Uncertainty

8 Calibration certificate

Please see the Appendix C

9 Photographs

Please see the Appendix D

Appendix A: Detailed System Validation Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

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