FCC SAR Test Report

FCC ID: N7NEM7455

Project No.	:	1805C106
Equipment	:	Radio Module
Test Model	:	EM7455
Applicant	:	Sierra Wireless Inc.
Address	:	13811 Wireless Way Richmond, BC, Canada V6V 3A4

Date of Receipt	:	May 22, 2018
Date of Test	:	May 28, 2018 ~ Jun. 06, 2018
Issued Date	:	Jun. 12, 2018
Tested by	:	BTL Inc.

PREPARED BY	:	Rot . Liang (Rot Liang)
APPROVED BY	:	Herbort Liu (Herbort Liu)

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Testing Laboratory 2640

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCC SAR-1-1805C106	Original Issue	Jun. 12, 2018

1. GENERAL SUMMARY

Equipment	Radio Module
Brand Name	Sierra Wireless Inc.
Test Model	EM7455
Manufacturer	Sierra Wireless Inc.
Address	13811 Wireless Way Richmond, BC, Canada V6V 3A4
Standard(s)	**ANSI Std C95.1-1992**Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.(IEEE Std C95.1-1991) **IEEE Std 1528-2013**Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques **KDB616217 D04** SAR for laptop and tablets v01r02 **KDB941225 D01** 3G SAR Procedures v03r01 **KDB941225 D05** SAR for LTE Devices v02r05 **KDB447498 D01** General RF Exposure Guidance v06 **KDB865664 D01** SAR measurement 100 MHz to 6 GHz v01r04 **KDB865664 D02** SAR Reporting v01r02 **KDB690783 D01** SAR Listings on Grants v01r03

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCC SAR-1-1805C106) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. RF EMISSIONS MEASUREMENT

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **SAR room** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town,Dong Guan, China.523792

2.2 MEASUREMENT UNCERTAINTY

Note:Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz,when the highest measured1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described inIEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

3. GENERAL INFORMATION

3.1 STATEMENT OF COMPLIANCE

Tablet Mode

Equipment Class	Mode	Highest Body (0cm) SAR-1g(W/kg)
PCE	UMTS Band 2	1.46
	UMTS Band 4	1.41
	UMTS Band 5	1.26
	LTE Band 4	1.36
	LTE Band 7	1.16
	LTE Band 12	0.54
	LTE Band 13	0.56
	LTE Band 25	1.17
	LTE Band 26	1.13
	LTE Band 41	0.76
EM7455+8265D2W	The highest SAR for simultaneous transmission exposure condition is 1.54 W/kg.	
EM7455+3165D2W	The highest SAR for simultaneous transmission exposure condition is 1.47 W/kg.	

Note:

1) * For body-worn operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal and that positions the handset a minimum of 0mm from the body. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

2) The device is in compliance with Specific Absorption Rate(SAR)for general population uncontrolled exposure limits according to the FCC rule §2.1093, the ANSI C95.1:1992/IEEE C95.1:1991, the NCRP Report Number 86 for uncontrolled environment, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 .

3) According to TCB workshop October, 2014 RF Exposure Procedures Update (Overlapping LTE Bands): SAR for LTE Band 2 (Frequency range: 1850 – 1910 MHz) is covered by LTE Band 26 (Frequency range: 1850 – 1915 MHz) and LTE Band 5 (Frequency range: 824-849 MHz) is covered by LTE Band 26(Frequency range: 814-849 MHz) due to similar frequency range, the same maximum tune up limit and same channel bandwidth.

4) This test report only records the test results of the WWAN SAR for EM7455 Module Card. The test data of WLAN SAR for 3165D2W and 8265D2W, please refer to test report SAR.20170107 and SAR.20170108, which is issued by Intel Mobile Communication.

NB Mode

Equipment Class	Mode	Highest Body (0cm) SAR-1g(W/kg)
PCE	UMTS Band 2	0.26
	UMTS Band 4	0.30
	UMTS Band 5	0.22
	LTE Band 4	0.28
	LTE Band 7	0.19
	LTE Band 12	0.09
	LTE Band 13	0.18
	LTE Band 25	0.23
	LTE Band 26	0.19
	LTE Band 41	0.07
EM7455+8265D2W	The highest SAR for simultaneous transmission exposure condition is 1.10 W/kg.	
EM7455+3165D2W	The highest SAR for simultaneous transmission exposure condition is 1.10 W/kg.	

Note:

1) * For body-worn operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal and that positions the handset a minimum of 0mm from the body. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

2) The device is in compliance with Specific Absorption Rate(SAR)for general population uncontrolled exposure limits according to the FCC rule §2.1093, the ANSI C95.1:1992/IEEE C95.1:1991, the NCRP Report Number 86 for uncontrolled environment, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 .

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3.2 GENERAL DESCRIPTION OF EUT

Equipment	Radio Module		
Test Model	EM7455		
Module Card	EM7455		
Modulation	UMTS(QPSK) ,LTE(QPSK/16QAM)		
Operation Frequency Range(s)	Band	TX (MHz)	RX (MHz)
	UMTS Band 2	1850 ~ 1910	1930 ~ 1990
	UMTS Band 4	1710 ~ 1755	2110 ~ 2155
	UMTS Band 5	824 ~ 849	869 ~ 894
	LTE Band 2	1850 ~ 1910	1930 ~ 1990
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 5	824 ~ 849	869 ~ 894
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
	LTE Band 12	699 ~ 716	729 ~ 746
	LTE Band 13	777 ~ 787	746 ~ 756
	LTE Band 25	1850 ~ 1915	1930 ~ 1995
	LTE Band 26	814 ~ 849	859 ~ 894
	LTE Band 41	2496 ~ 2690	
Test Channels (low-mid-high):	Band	Channel	
	UMTS Band 2	9262-9400-9538	
	UMTS Band 4	1312-1413-1513	
	UMTS Band 5	4132-4182-4233	
	LTE Band 2	18700-18900-19100	
	LTE Band 4	20050-20175-20300	
	LTE Band 5	20450-20525-20600	
	LTE Band 7	20850-21100-21350	
	LTE Band 12	23060-23095-23130	
	LTE Band 13	23230	
	LTE Band 25	26140-26365-26590	
	LTE Band 26	26765-26865-26965	
	LTE Band 41	39750-40185-40620-41055-41490	

Note: 1. Implementation in the following platform. Model number: EM7455
Product name: Radio Module

Antenna Gain	Band	Ant Gain(dBi)
	UMTS B2	3.66
	UMTS B4	1.88
	UMTS B5	3.11
	LTE B2	3.66
	LTE B4	1.88
	LTE B5	3.11
	LTE B7	3.35
	LTE B12	-1.66
	LTE B13	3.66
	LTE B25	3.66
	LTE B26	3.11
	LTE B41	3.35
Other Information		
Battery	Model	BBLD3372D8
	Capacitance	3.7 Vdc
	Rated Voltage	9000 mAh
	Brand	SUNWODA

3.3 LABORATORY ENVIRONMENT

Temperature	Min. = 18ºC, Max. = 25ºC
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

3.4 MAIN TEST INSTRUMENTS

Item	Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. Interval
1	Data Acquisition Electronics	Speag	DAE4	1390	May 11, 2018	1 Year
2	E-field Probe	Speag	EX3DV4	7396	May 29, 2018	1 Year
3	Electro Optical Converter	Speag	ECO90	1151	N/A	N/A
4	System Validation Dipole	Speag	D750V3	1095	Sep. 30, 2015	3 Years
5	System Validation Dipole	Speag	D835V2	4d160	Sep. 30, 2015	3 Years
6	System Validation Dipole	Speag	D1750V2	1101	Sep. 22, 2015	3 Years
7	System Validation Dipole	Speag	D1900V2	5d179	Sep. 29, 2015	3 Years
8	System Validation Dipole	Speag	D2600V2	1067	Sep. 28, 2015	3 Years
9	ELI4 Phantom	Speag	ELI4 Phantom V5.0	1222	N/A	N/A
10	8960 Series 10 Wireless Com Test set	Agilent	E5515E	MY52112163	Aug. 20, 2017	1 Year
11	CMW500-Wideband Radio Communication Tester	RS	CMW500	152372	Mar. 11, 2018	1Year
12	CMW500-Wideband Radio Communication Tester	RS	CMW500	153883	Mar. 11, 2018	1Year
13	Power Amplifier	Mini-Circuits	ZHL-42W+	QA1333003	Mar. 09, 2018	1Year
14	Power Amplifier	Mini-Circuits	ZVE-8G+	520701341	Mar. 09, 2018	1Year
15	ENA Network Analyzer	Agilent	E5071C	MY46102965	Mar. 11, 2018	1 Year
16	MXG Analog Signal Generator	Agilent	N5181A	MY49060477	Jun. 30, 2017	1 Year
17	P-series power meter	Agilent	N1911A	MY45100473	Aug. 20, 2017	1 Year
18	wideband power sensor	Agilent	N1921A	MY51100041	Aug. 20, 2017	1 Year
19	Dielectric Assessment Kit	Speag	DAK-3.5	1226	N/A	N/A
20	Dual directional coupler	Woken	TS-PCC0M-05	107090019	Mar. 11, 2018	1 Year
21	coupler	Woken	0110A05601O-10	COM5BNW1A2	Mar. 11, 2018	1 Year

Note:
1.” N/A” denotes no model name, serial No. or calibration specified.
2.
1) Per KDB865664 D01 requirements for dipole calibration, the test laboratory has adopted three-year extended calibration interval. 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) The most recent return-loss result , measured at least annually, deviates by no more than 20% from the previous measurement;
d) The most recent measurement of the real or imaginary parts of the impedance, measured at least annually is within 5 Ω from the previous measurement.

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

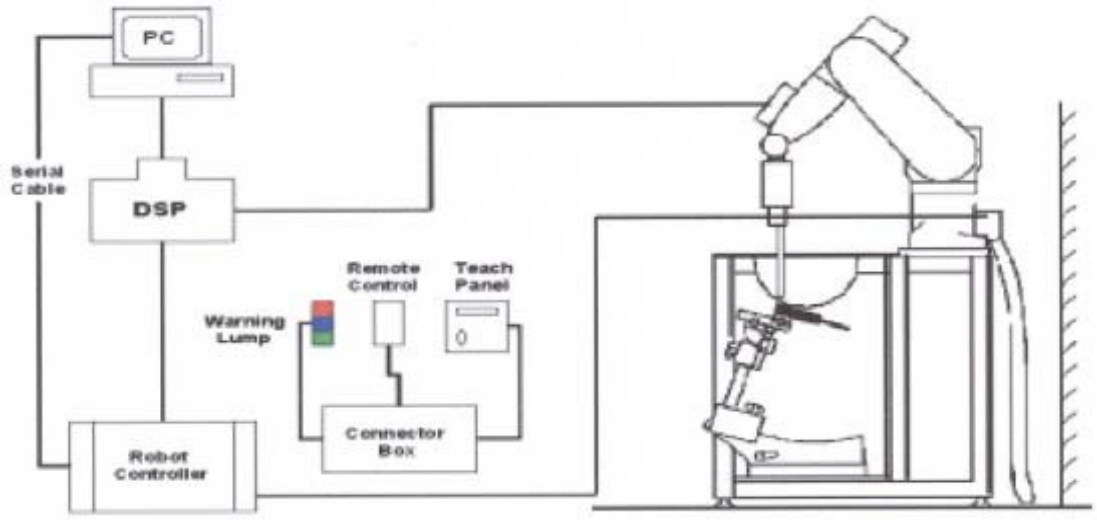
4. SAR MEASUREMENTS SYSTEM CONFIGURATION

4.1 SAR MEASUREMENT SET-UP

The DASY5 system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. 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.
3. A data acquisition electronic (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.
4. A unit to operate the optical surface detector which is connected to the EOC.
5. The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.
6. TheDASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 7
7. DASY5 software and SEMCAD data evaluation software.
8. Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
9. The generic twin phantom enabling the testing of left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. System validation dipoles allowing to validate the proper functioning of the system.

4.1.1 TEST SETUP LAYOUT



4.2 DASY5E-FIELDPROBESYSTEM

The SAR measurements were conducted with the dosimetric probe EX3DV4(manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

4.2.1 EX3DV4 PROBE SPECIFICATION

Construction	Symmetrical design with triangular core Interleaved sensors 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 HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 100 mW/g Linearity:± 0.2dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1.0 mm

EX3DV4 E-field Probe

4.2.2 E-FIELD PROBE CALIBRATION

Eachprobeiscalibratedaccordingtoadosimetricassessmentprocedurewithaccuracybetterthan±10 %.The spherical isotropy was evaluatedandfoundtobebetterthan±0.25dB.The sensitivity parameters (NormX,NormY,NormZ), the diode compression parameter (DCP) and the conversion factor(ConvF) ofthe probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C\frac{\Delta T}{\Delta t}$$

Where: Δt=Exposure time(30 seconds),

C =Heat capacity of tissue (brain or muscle),

ΔT=Temperature increase due to RF exposure.

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

Where: σ= Simulated Tissue Conductivity,

ρ=Tissue density (kg/m3).

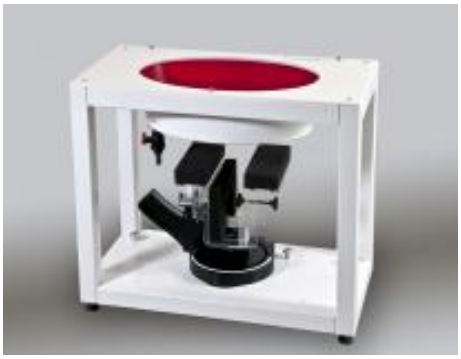
4.2.3 OTHER TEST EQUIPMENT

4.2.3.1. Device Holder for Transmitters

Construction: Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices (e.g., laptops, cameras, etc.) It is light weight and fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin SAM, ELI4and SAM v6.0Phantoms.
Material: POM, Acrylic glass, Foam

4.2.3.2 Phantom

Model	ELI4 Phantom
Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.
Shell Thickness	2±0.1 mm
Filling Volume	Approx. 30 liters
Dimensions	Length: 600 mm ; Width: 190mm Height: adjustable feet
Aailable	Special



4.2.4 SCANNING PROCEDURE

The DASY5 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

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. The indicated drift is mainly the variation of the DUT’s output power and should vary max. ± 5 %.

The “surface check” measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ± 0.1mm). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within ± 30°.)

- Area Scan

The “area scan” measures the SAR above the DUT or verification dipole on a parallel plane to the surface. It is used to locate the approximate location of the peak SAR with 2D spline interpolation. The robot performs a stepped movement along one grid axis while the local electrical field strength is measured by the probe. The probe is touching the surface of the SAM during acquisition of measurement values. The standard scan uses large grid spacing for faster measurement. Standard grid spacing for head measurements is 15 mm in x- and y- dimension(≤2GHz)，12 mm inx- and y- dimension(2-4 GHz) and 10mm in x- and y- dimension(4-6GHz). If a finer resolution is needed, the grid spacing can be reduced. Grid spacing and orientation have no influence on the SAR result. For special applications where the standard scan method does not find the peak SAR within the grid, e.g. mobile phones with flip cover, the grid can be adapted in orientation.

- Zoom Scan

A “zoom scan” measures the field in a volume around the 2D peak SAR value acquired in the previous “coarse” scan. This is a fine grid with maximum scan spatial resolution: Δx_{zoom}, Δy_{zoom}≤ 2GHz -≤8mm, 2-4GHz -≤5 mm and 4-6 GHz-≤4mm; Δz_{zoom}≤3GHz -≤5 mm, 3-4 GHz-≤4mm and 4-6GHz-≤2mm where the robot additionally moves the probe along the z-axis away from thebottom of the Phantom. DASY is also able to perform repeated zoom scans if more than 1 peak is found during area scan. In this document, the evaluated peak 1g and 10g averaged SAR values are shown in the 2D-graphics in Appendix B. Test results relevant for the specified standard (see chapter 1.4.)are shown in table form form in chapter 7.2.

A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube scan. The probe is moved away in z-direction from the bottom of the SAMphantom in 2 mm steps. This measurement shows the continuity of the liquid and can - depending inthe field strength – also show the liquid depth.

The following table summarizes the area scan and zoom scan resolutions per FCC KDB 865664D01:

Frequency	Maximun Area Scan resolution (Δx_{area}, Δy_{area})	Maximun Zoom Scan spatial resolution (Δx_{Zoom}, Δy_{Zoom})	Maximun Zoom Scan spatial resolution			Minimum zoom scan volume (x,y,z)
			Uniform Grid	Graded Grad		
			$\Delta z_{Zoom}(n)$	$\Delta z_{Zoom}(1)$*	$\Delta z_{Zoom}(n>1)$*	
≤2GHz	≤15mm	≤8mm	≤5mm	≤4mm	≤1.5*Δz_{Zoom}(n-1)	≥30mm
2-3GHz	≤12mm	≤5mm	≤5mm	≤4mm	≤1.5*Δz_{Zoom}(n-1)	≥30mm
3-4GHz	≤12mm	≤5mm	≤4mm	≤3mm	≤1.5*Δz_{Zoom}(n-1)	≥28mm
4-5GHz	≤10mm	≤4mm	≤3mm	≤2.5mm	≤1.5*Δz_{Zoom}(n-1)	≥25mm
5-6GHz	≤10mm	≤4mm	≤2mm	≤2mm	≤1.5*Δz_{Zoom}(n-1)	≥22mm

4.2.5 SPATIAL PEAK SAR EVALUATION

The spatial peak SAR - value for 1 and 10 g is evaluated after the Cube measurements have been done. The basis of the evaluation are the SAR values measured at the points of the fine cube grid consisting of 5 x 5 x 7 points(with 8mm horizontal resolution) or 7 x 7 x 7 points(with 5mm horizontal resolution) or 8 x 8 x 7 points(with 4mm horizontal resolution). The algorithm that finds the maximal averaged volume is separated into three different stages.

- The data between the dipole center of the probe and the surface of the phantom are extrapolated. This data cannot be measured since the center of the dipole is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is about 1 mm (see probe calibration sheet). The extrapolated data from a cube measurement can be visualized by selecting “Graph Evaluated”.
- The maximum interpolated value is searched with a straight-forward algorithm. Around this maximum the SAR - values averaged over the spatial volumes (1g or 10 g) are computed using the 3d-spline interpolation algorithm. If the volume cannot be evaluated (i.e., if a part of the grid was cut off by the boundary of the measurement area) the evaluation will be started on the corners of the bottom plane of the cube.
- All neighboring volumes are evaluated until no neighboring volume with a higher average value is found.

Extrapolation

The extrapolation is based on a least square algorithm [W. Gander, Computermathematik,p.168-180]. Through the points in the first 3 cm along the z-axis, polynomials of order four are calculated. These polynomials are then used to evaluate the points between the surface and the probe tip. The points, calculated from the surface, have a distance of 1 mm from each other.

Interpolation

The interpolation of the points is done with a 3d-Spline. The 3d-Spline is composed of three one-dimensional splines with the "Not a knot"-condition [W. Gander, Computermathematik, p.141-150] (x, y and z -direction) [Numerical Recipes in C, Second Edition, p.123ff].

Volume Averaging

At First the size of the cube is calculated. Then the volume is integrated with the trapezoidal algorithm. 8000 points (20x20x20) are interpolated to calculate the average.

Advanced Extrapolation

DASY5 uses the advanced extrapolation option which is able to compansate boundary effects on E-field probes.

4.2.6 DATA STORAGE AND EVALUATION

4.2.5.1 Data Storage

The DASY5 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 ".DAE4". 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], [mW/g], [mW/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.

4.2.7 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, a_{i0}, a_{i1},a_{i2}
	Conversion factor	$ConvF_i$
	Diode compression point	Dcp_i
Device parameters:	Frequency	f
	Crest factor	cf
Media parameters:	Conductivity	
	Density	

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 DASY5 components. In the direct measuring mode of the multi meter 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
V_i= compensated signal of channel i (i = x,y,z)
U_i= 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 V_i = compensated signal of channel i (i = x,y,z)

$Norm_i$ = 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]

E_i=electric field strength of channel i in V/m

H_i= 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.

$$SAR = (E_{tot})^2 \cdot \sigma / (\rho \cdot 1000)$$

With SAR=local specific absorption rate in mW/g

E_{tot}=total field strength in V/m
=conductivity in[mho/m]or[Siemens/m]
= equivalent tissue density in g/cm^3

Note that the density is normally set to 1(or1.06), 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.

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

With P_{pwe}= equivalent power density of a plane wave in mW/cm^2

E_{tot}=total field strength in V/m

H_{tot}=total magnetic field strength in A/m

5. SYSTEM VERIFICATION PROCEDURE

5.1 TISSUE VERIFICATION

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine of the dielectic parameter are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within ± 5% of the target values.
The following materials are used for producing the tissue-equivalent materials.

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
Body 750	0.2	-	0.2	0.8	48.8	-	50.0	-
Body 835	0.2	-	0.2	0.9	48.5	-	50.2	-
Body 1750	-	31.0	-	0.2	-	-	68.8	-
Body 1900	-	29.5	-	0.3	-	-	70.2	-
Body 2600	-	31.8	-	0.1	-	-	68.1	-

Salt: 99+% Pure Sodium Chloride; Sugar: 98+% Pure Sucrose; Water: De-ionized, 16M + resistivity
HEC: Hydroxyethyl Cellulose; DGBE: 99+% Di(ethylene glycol) butyl ether,[2-(2-butoxyethoxy)ethanol]
Triton X-100(ultra pure): Polyethylene glycol mono [4-(1,1,3,3-tetramethylbutyl)phenyl]ether

Tissue Verification									
Tissue Type	Frequency (MHz)	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (εr)	Targeted Conductivity (σ)	Targeted Permittivity (εr)	Deviation Conductivity (σ) (%)	Deviation Permittivity (εr) (%)	Date
Body	750	22.5	0.957	55.552	0.96	55.5	-0.31	0.09	May 30, 2018
Body	835	22.4	0.977	55.621	0.97	55.2	0.72	0.76	May 31, 2018
Body	1750	22.3	1.499	52.347	1.49	53.4	0.60	-1.97	Jun. 01, 2018
Body	1900	22.5	1.545	52.512	1.52	53.3	1.64	-1.48	Jun. 02, 2018
Body	2600	22.2	2.234	52.085	2.16	52.5	3.43	-0.79	Jun. 03, 2018

Note:
1)The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 °C of the conditions expected during the SAR evaluation to satisfy protocol requirements.
2)KDB 865664 was ensured to be applied for probe calibration frequencies greater than or equal to 50MHz of the EUT frequencies.
3)The above measured tissue parameters were used in the DASY software to perform interpolation via the DASY software to determine actual dielectric parameters at the test frequencies. The SAR test plots may slightly differ from the table above since the DASY rounds to three significant digits.

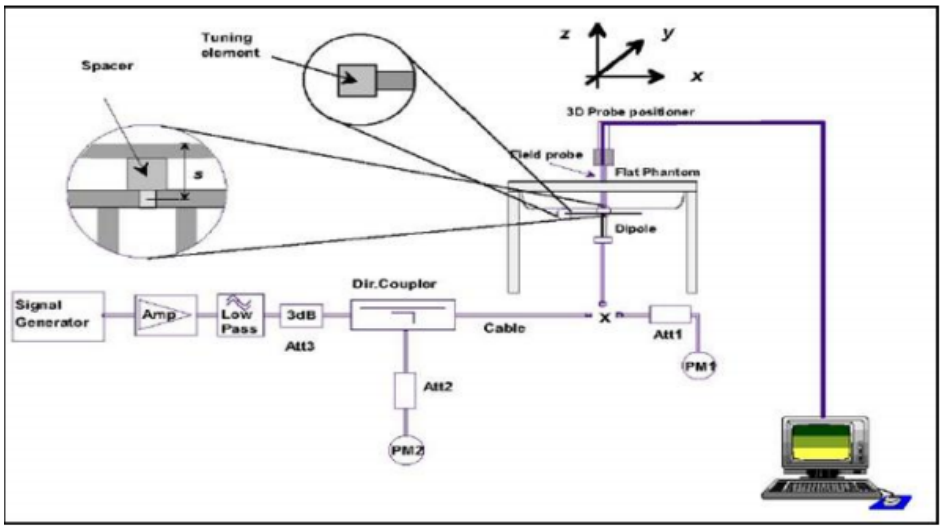
5.2 SYSTEM CHECK

The system check is performed for verifying the accuracy of the complete measurement system and performance of the software. The system check is performed with tissue equivalent material according to IEEE P1528 (described above). The following table shows system check results for all frequency bands and tissue liquids used during the tests.

System Check	Frequency (MHz)	Date	Targeted SAR-1g (W/kg)	Measured SAR-1g (W/kg)	normalized SAR-1g (W/kg)	Deviation (%)	Dipole S/N
Body	750	May 30, 2018	8.65	2.09	8.36	-3.35	1095
Body	835	May 31, 2018	9.52	2.34	9.36	-1.68	4d160
Body	1750	Jun. 01, 2018	35.70	9.11	36.44	2.07	1101
Body	1900	Jun. 02, 2018	39.60	9.78	39.12	-1.21	5d179
Body	2600	Jun. 03, 2018	54.10	13.70	54.80	1.29	1067

5.3 SYSTEM CHECK PROCEDURE

The system check is performed by using a system check dipole which is positioned parallel to the planar part of the SAM phantom at the reference point. The distance of the dipole to the SAM phantom is determined by a plexiglass spacer. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 250 mW(below 5GHz) or 100mW(above 5GHz). To adjust this power a power meter is used. The power sensor is connected to the cable before the system check to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the system check to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test. System check results have to be equal or near the values determined during dipole calibration (target SAR in table above) with the relevant liquids and test system(±10 %).



6. SAR MEASUREMENT VARIABILITY AND UNCERTAINTY

6.1 SAR MEASUREMENT VARIABILITY

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ⩾ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is⩾ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ⩾1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

The detailed repeated measurement results are shown in Section 8.2.

7. OPERATIONAL CONDITIONS DURING TEST

7.1 SAR TEST CONFIGURATION

7.1.1 UMTS TEST CONFIGURATION

1. Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the procedures description in section 5.2 of 3GPP TS 34.121,using the appropriate RMC or AMR with TPC(transmit power control) set to all “1s” for WCDMA/HSDPA or applying the required inner loop power control procedure to maintain maximum output power while HSUPA is active. Result for all applicable physical channel configurations(DPCCH,DPDCHn and spreading codes, HSDPA, HSPA)
Should be tabulated in the SAR report .All configuration that are not supported by the DUT or cannot be measured due to technical or equipment limitation should be clearly identified.

2. WCDMA

(1).Head SAR Measurements
SAR for Head exposure configurations in voice mode is measured using a 12.2 kbps RMC with TPC bits configured to all “1s”. SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2 kbps AMR is less than ¼ dB higher than that measured in 12.2 kbps RMC. Otherwise SAR is measured on the maximum output channel in 12.2 kbps AMR with 3.4kbps SRB(signalling radio bearer) using the exposure configuration that results in the highest SAR in12.2kbps RMC for that RF channel.

(2).Body SAR Measurements
SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits configured to all “1s”. SAR for other spreading codes and multiple DPDCHn, when supported by the EUT, are not required when the maximum average outputs of each RF channel, for each spreading code and DPDCHn configuration, are less than ¼ dB higher than those measured in 12.2 kbps RMC.

3. HSDPA

SAR for body exposure configurations is measured according to the “Body SAR Measurements”” procedures of 3G device. In addition, body SAR is also measured for HSDPA when the maximum average outputs of each RF channel with HSDPA active is at ¼ dB higher than that measured without HSDPA using 12.2kbps RMC or the maximum SAR 12.2kbps RMC is above 75% of the SAR limit. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2 kbps RMC without HSDPA.
HSDPA should be configured according to UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HAPRQ 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 condition, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. The β_c and β_d gain factors for DPCCH and DPDCH were set according to the values in the below table, β_{hs} for HS-DPCCH is set automatically to the correct value when ΔACK, ΔNACK, ΔCQI = 8. The variation of the β_c /β_d ratio causes a power reduction at sub-tests 2 - 4.

Sub-test	β_c	β_d	β_d (SF)	β_c /β_d	β_{hs} (1)	CM(dB)(2)	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

Note 1: ΔACK, ΔNACK and ΔCQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$
Note 2 : CM=1 for β_c/β_d= 12/15, β_{hs}/β_c = 24/15. For all other combinations of DPDCH,DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
Note 3 : For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1,TF1) to β_c = 11/15 and β_d = 15/15

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

Settings of required H-Set 1 QPSK acc. to 3GPP 34.121

Parameter	Value
Nominal average inf. bit rate	534 kbit/s
Inter-TTI Distance	3 TTI"s
Number of HARQ Proce ses	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

HSDPA UE category

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	Maximum HS-DSCH Transport Block Bits/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

4. HSUPA

SAR for Body exposure configurations is measured according to the “Body SAR Measurements” procedures of 3G device. 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 primary mode and the adjusted SAR is ≤ 1.2W/kg, SAR measurement is not required for the secondary mode.

Per KDB941225 D01, the 3G SAR test reduction procedures is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures for the highest reported body exposure SAR configuration in 12.2 kbps RMC.

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 HSDPA should be configured according to the values indicated below as well as other applicable procedures described in the “WCDMA Handset“ and „Release 5 HSDPA Data Device” sections of 3G device.

Subtests for WCDMA Release 6 HSUPA

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.

HSUPA UE category

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).

5. DC-HSDPA

In DC-HSDPA implementation of this device, the uplink parameters are the same as HSDPA. No additional channels and modulations (16 QAM, and 64 QAM) are supported in uplink. The difference is only in the downlink parameters, where two carriers are supported. HSDPA settings were used on uplink.

For Rel. 8 DC-HSDPA apply the four subtests from HSDPA Release 5 except use fixed reference channel H-Set 12 for DC-HSDPA. And we can apply the same SAR test exclusion criteria used for Rel. 6 HSPA for Rel. 7 HSPA+ and Rel. 8 DC-HSDPA. That is, if the HSPA, HSPA+, or the DC-HSDPA maximum output is not more than 0.25 dB higher than WCDMA, SAR measurement for those modes is not required.
The following tests were completed according to procedures in section 7.3.13 of 3GPP TS 34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0
Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13
The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.
The measurements were performed with a Fixed Reference Channel (FRC) H-Set 12 with QPSK

Parameter	Value
Nominal average inf. bit rate	60 kbit/s
Inter-TTI Distance	1 TTI"s
Number of HARQ Processes	6 Processes
Information Bit Payload	120 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	960 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	3200 SMLs
Coding Rate	0.15
Number of Physical Channel Codes	1

Note:
1.The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table above.
2.Maximum number of transmission is limited to 1,i.e.,retransmission is not allowed. The redundancy and constellation version 0 shall be used.

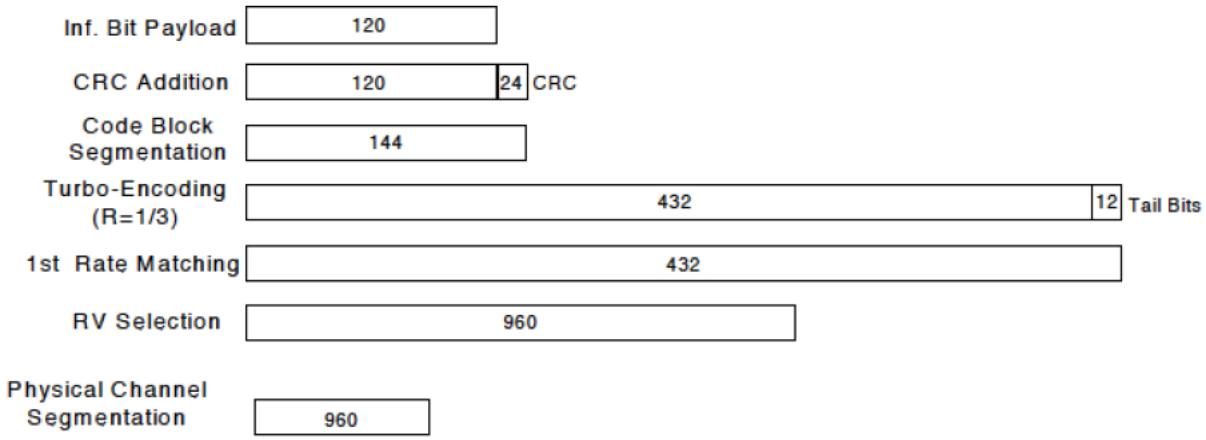


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 5 procedures. A summary of subtest settings are illustrated below:

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	CM(dB)(2)	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

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 β_c/β_d= 12/15, β_{hs}/β_c = 24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
Note 3 : For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15

Up commands are set continuously to set the UE to Max power.

Note:
1.The Dual Carriers transmission only applies to HSDPA physical channels
2.The Dual Carriers belong to the same Node and are on adjacent carriers.
3.The Dual Carriers do not support MIMO to serve UEs configured for dual cell operation
4.The Dual Carriers operate in the same frequency band .
5.The device doesn't support the modulation of 16QAM in uplink but 64QAM in downlink for DC-HSDPA mode.
6.The device doesn‟t support carrier aggregation for it just can operate in Release 8.

7.1.2 LTE TEST CONFIGURATION

SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices. The CMW500 Wide Band Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all TTI frames(Maximum TTI)

1. Spectrum Plots for RB configurations

A properly configured base station simulator was used for LTE output power measurements and SAR testing. Therefore, spectrum plots for RB configurations were not required to be included in this report.

2. MPR

When MPR is implemented permanently within the UE, regardless of network requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR.
The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101:

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

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

3. A-MPR

A-MPR(Additional MPR) has been disabled for all SAR tests by using Network Signalling Value of "NS_01"on the base station simulator.

4. LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test requirements

i) 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.

ii) QPSK with 50% RB allocation

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

iii) 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 i) and ii) 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.

iv) 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.

B) 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.

LTE (TDD) Test Configuration

TDD LTE Band 41 supports 3GPP TS 36for Time-Division Duplex (TDD) systems, SAR must be tested using a fixedperiodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.
TDD LTE Band 41 supports 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations andTable 4.2-1 for Special subframe configurations.

Figure 4.2-1: Frame structure type 2

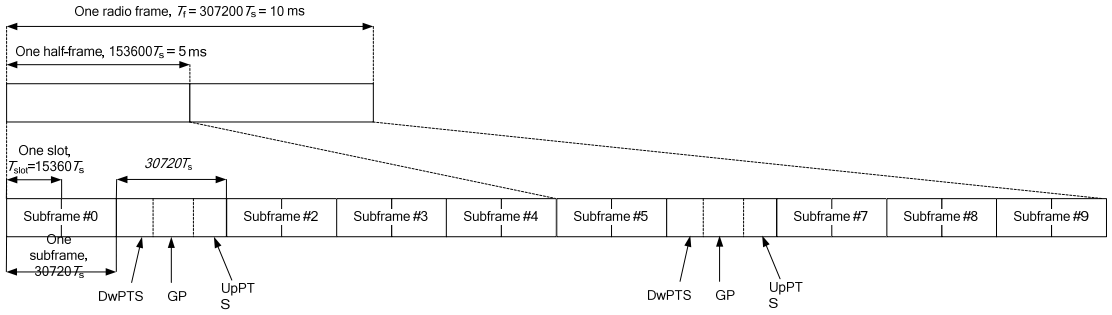


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

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

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

According to Figure 4.2-1, one radio frame is configured by 10 subframes, which consist of Uplink-subframe, Downlink-subframe and Special subframe. For TDD-LTE, the Duty Cycle should be calculated on Uplink-subframes and Special subframes, due to Special subframe containing both Uplink transmissions. So for one radio frame, Duty Cycle can be calculated with formula as below. The count of Uplink subframes are according to Table 4.2-2:

Duty cycle =(30720Ts*Ups+Uplink Component*Specials)/(307200Ts)

About the uplink component of Special subframes, we can figure out by Table 4.2-1:

Uplink Component=UpPTS

In conclusion, for the TDD LTE Band 41, Duty Cycle can be calculated with formula as below .all these sets are ok when we test, or we can set as below.

Duty cycle =[(30720Ts*Ups)+UpPTS *Specials]/(307200Ts)

And we can get different Duty cycles under different configurations:

Uplink-downlink configuratin	Subframe number			Configuration of special subframe							
				Normal cyclic prefix in downlink				Extended cyclic prefix in downlink			
				Normal cyclic prefix in uplink		Extended cyclic prefix in uplink		Normal cyclic prefix in uplink		Extended cyclic prefix in uplink	
	D	S	U	configuration 0-4	configuration 5-9	configuration 0-4	configuration 5-9	configuration 0-3	configuration 4-7	configuration 0-3	configuration
0	2	2	6	61.43%	62.85%	61.67%	63.33%	61.43%	62.85%	61.67%	63.33%
1	4	2	4	41.43%	42.85%	41.67%	43.33%	41.43%	42.85%	41.67%	43.33%
2	6	2	2	21.43%	22.85%	21.67%	23.33%	21.43%	22.85%	21.67%	23.33%
3	6	1	3	30.71%	31.43%	30.83%	31.67%	30.71%	31.43%	30.83%	31.67%
4	7	1	2	20.71%	21.43%	20.83%	21.67%	20.71%	21.43%	20.83%	21.67%
5	8	1	1	10.71%	11.43%	10.83%	11.67%	10.71%	11.43%	10.83%	11.67%
6	3	2	5	51.43%	52.85%	51.67%	53.33%	51.43%	52.85%	51.67%	53.33%

For TDD LTE, SAR should be tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7 for Frame structure type 2

7.2 SAR SENSOR WORKING

When the sensor is active，the active distance and SAR power reduce as below：

Band	Sensor Trigger Distance	Full power level(dBm)	Reduced power level(dBm)
UMTS B2	Top side: 11mm	24	16
	Rear Face: 12mm		
UMTS B4	Top side: 11mm	24	16
	Rear Face: 12mm		
UMTS B5	Top side: 11mm	24	20
	Rear Face: 12mm		
LTE B2	Top side: 11mm	24	18
	Rear Face: 12mm		
LTE B4	Top side: 11mm	24	16
	Rear Face: 12mm		
LTE B5	Top side: 11mm	24	20
	Rear Face: 12mm		
LTE B7	Top side: 11mm	23	15
	Rear Face: 12mm		
LTE B12	Top side: 11mm	24	20
	Rear Face: 12mm		
LTE B13	Top side: 11mm	24	18
	Rear Face: 12mm		
LTE B25	Top side: 11mm	24	18
	Rear Face: 12mm		
LTE B26	Top side: 11mm	24	20
	Rear Face: 12mm		
LTE B41	Top side: 11mm	23	17
	Rear Face: 12mm		

Note:

1. Since the capacitive proximity sensor triggering distance for the top side/Rear Face is N mm, a conservative distance of N-1 mm was required for additional SAR test at maximum power level with sensor off.

2. 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.

7.3 POWER REDUCTION BY PROXIMITY SENSOR

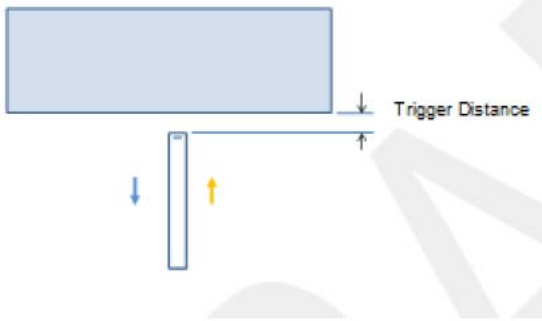
7.3.1 PROXIMITY SENSOR TRIGGERING DISTANCE

The bottom of the DUT was placed directly below the flat phantom. The DUT was moved toward the phantom in accordance with the steps outlined in KDB 616217 §6.2 to determine the trigger distance for enabling power reduction. The DUT was moved away from the phantom to determine the trigger distance for resuming full power.

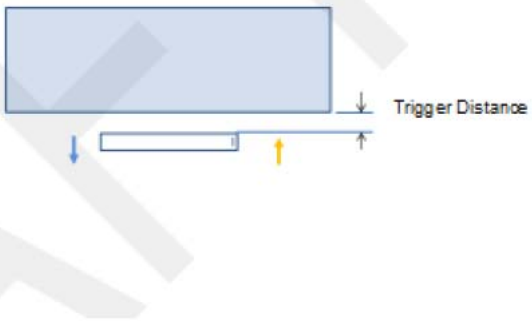
The measurement was then repeated for the Rear surface.

The DUT featured a sound indicator on its player that showed the status of the proximity sensor (Triggered or not triggered). This was used to determine the status of the sensor during the proximity sensor assessment as monitoring the output power directly was not practical without affecting the measurement.

It was confirmed separately that the output power was altered according to the proximity sensor status indication. This was achieved by observing the proximity sensor status at the same time as monitoring the conducted power. Section 9 contains both the full and reduced conducted power measurements.



Proximity Sensor Trigger Distance Assessment
KDB 616219 §6.2, Edge 1



Proximity Sensor Trigger Distance Assessment
KDB 616219 §6.2, Rear

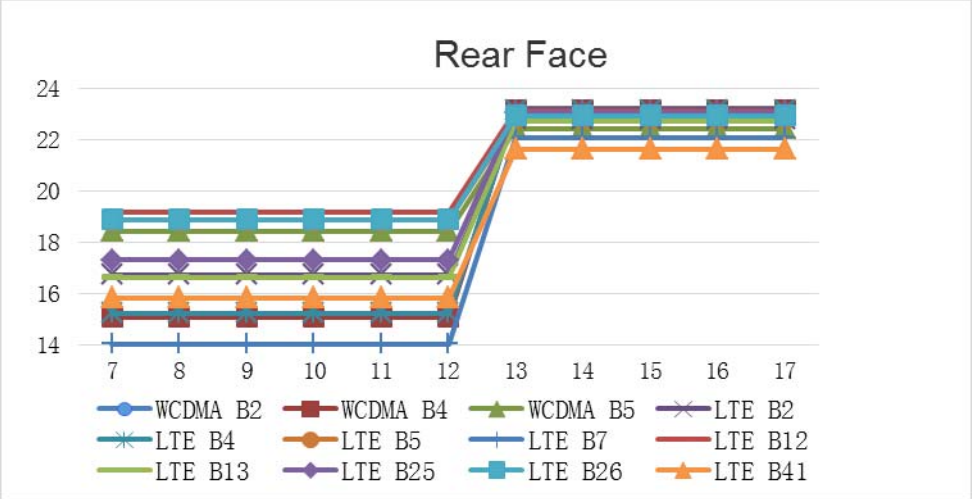
LEGEND

Direction of DUT travel for determination of power reduction triggering point

Direction of DUT travel for determination of full power resumption triggering point

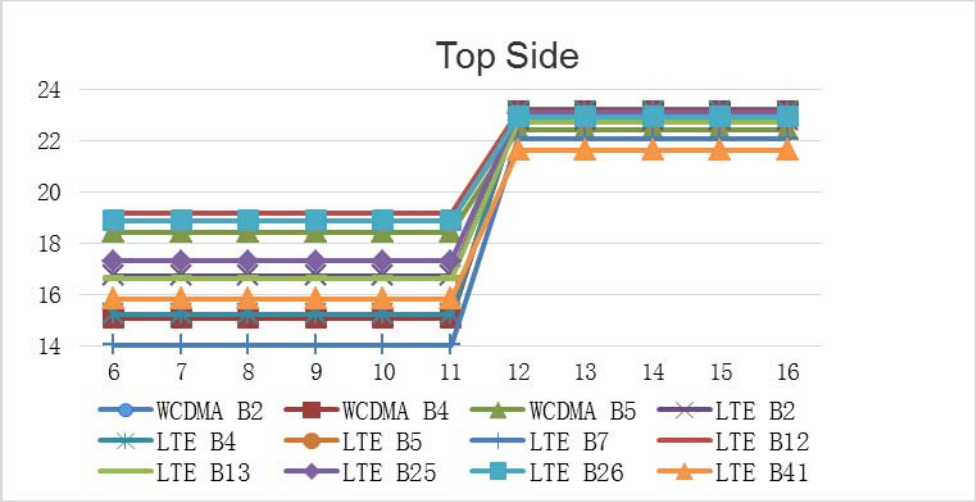
Proximity Sensor Triggering Distance Measurement Results For Rear Face

mode	distance(mm)										
	Rear Face										
	Sensor on						Sensor off				
	7	8	9	10	11	12	13	14	15	16	17
UMTS B2	15.12	15.12	15.12	15.12	15.12	15.12	23.21	23.21	23.21	23.21	23.21
UMTS B4	15.08	15.08	15.08	15.08	15.08	15.08	23.16	23.16	23.16	23.16	23.16
UMTS B5	18.43	18.43	18.43	18.43	18.43	18.43	22.44	22.44	22.44	22.44	22.44
LTE B2	16.73	16.73	16.73	16.73	16.73	16.73	22.82	22.82	22.82	22.82	22.82
LTE B4	15.24	15.24	15.24	15.24	15.24	15.24	23.13	23.13	23.13	23.13	23.13
LTE B5	18.87	18.87	18.87	18.87	18.87	18.87	22.85	22.85	22.85	22.85	22.85
LTE B7	14.05	14.05	14.05	14.05	14.05	14.05	22.08	22.08	22.08	22.08	22.08
LTE B12	19.2	19.2	19.2	19.2	19.2	19.2	23.12	23.12	23.12	23.12	23.12
LTE B13	16.63	16.63	16.63	16.63	16.63	16.63	22.74	22.74	22.74	22.74	22.74
LTE B25	17.31	17.31	17.31	17.31	17.31	17.31	23.07	23.07	23.07	23.07	23.07
LTE B26	18.88	18.88	18.88	18.88	18.88	18.88	22.94	22.94	22.94	22.94	22.94
LTE B41	15.84	15.84	15.84	15.84	15.84	15.84	21.64	21.64	21.64	21.64	21.64



Proximity Sensor Triggering Distance Measurement Results For Top Side

mode	distance(mm)										
	Top Side										
	Sensor on						Sensor off				
	6	7	8	9	10	11	12	13	14	15	16
UMTS B2	15.12	15.12	15.12	15.12	15.12	15.12	23.21	23.21	23.21	23.21	23.21
UMTS B4	15.08	15.08	15.08	15.08	15.08	15.08	23.16	23.16	23.16	23.16	23.16
UMTS B5	18.43	18.43	18.43	18.43	18.43	18.43	22.44	22.44	22.44	22.44	22.44
LTE B2	16.73	16.73	16.73	16.73	16.73	16.73	22.82	22.82	22.82	22.82	22.82
LTE B4	15.24	15.24	15.24	15.24	15.24	15.24	23.13	23.13	23.13	23.13	23.13
LTE B5	18.87	18.87	18.87	18.87	18.87	18.87	22.85	22.85	22.85	22.85	22.85
LTE B7	14.05	14.05	14.05	14.05	14.05	14.05	22.08	22.08	22.08	22.08	22.08
LTE B12	19.2	19.2	19.2	19.2	19.2	19.2	23.12	23.12	23.12	23.12	23.12
LTE B13	16.63	16.63	16.63	16.63	16.63	16.63	22.74	22.74	22.74	22.74	22.74
LTE B25	17.31	17.31	17.31	17.31	17.31	17.31	23.07	23.07	23.07	23.07	23.07
LTE B26	18.88	18.88	18.88	18.88	18.88	18.88	22.94	22.94	22.94	22.94	22.94
LTE B41	15.84	15.84	15.84	15.84	15.84	15.84	21.64	21.64	21.64	21.64	21.64



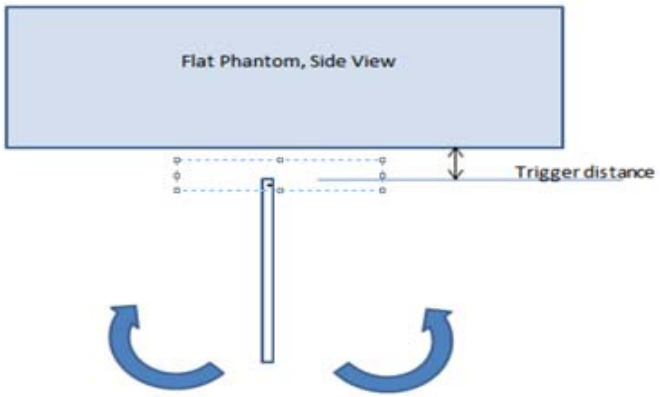
7.3.2 PROXIMITY SENSOR COVERAGE (KDB 616217 §6.3)

As there is no spatial offset between the antenna and the proximity sensor element, proximity sensor coverage did not need to be assessed.

7.3.3 PROXIMITY SENSOR TILT ANGLE ASSESSMENT (KDB 616217 §6.4)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Bottom parallel to the base of the flat phantom for each band.

The EUT was rotated about Edge 1 for angles up to +/- 45°. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up to +/- 45°.



Proximity sensor tilt angle assessment (bottom)

Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering for Top

Mode	Minimum distance at which power reduction was maintained over +/-45°		Power reduction status(ON/OFF)										
	Rear Face	Top Side	-45°	-40°	-30°	-20°	-10°	-0°	10°	20°	30°	40°	45°
UMTS B2	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on
UMTS B4	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on
UMTS B5	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on
LTE B2	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on
LTE B4	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on
LTE B5	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on
LTE B7	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on
LTE B12	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on
LTE B13	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on
LTE B25	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on
LTE B26	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on
LTE B41	12mm	11mm	on	on	on	on	on	on	on	on	on	on	on

7.4 LTE CARRIER AGGREGATION POWER

LTE Rel.10 Carrier Aggregation

When downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than 1/4dB higher than the maximum output power measured when downlink carrier aggregation is inactive, the CA test is not required.

Table 1-1：LTE CA Inter-band Bandwidth Support

E-UTRA CA configuration	E-UTRA bands	1.4 [MHz]	3 [MHz]	5 [MHz]	10 [MHz]	15 [MHz]	20 [MHz]	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_2A-5A	2			Y	Y	Y	Y	30	0
	5			Y	Y				
CA_2A-12A	2			Y	Y	Y	Y	30	0
	12			Y	Y				
	2			Y	Y	Y	Y	30	1
	12		Y	Y	Y				
CA_2A-13A	2			Y	Y	Y	Y	30	0
	13				Y				
	2			Y	Y			20	1
	13				Y				
CA_4A-5A	4			Y	Y			20	0
	5			Y	Y				
	4			Y	Y	Y	Y	30	1
	5			Y	Y				
CA_4A-12A	4	Y	Y	Y	Y			20	0
	12			Y	Y				
	4	Y	Y	Y	Y	Y	Y	30	1
	12			Y	Y				
	4			Y	Y	Y	Y	30	2
	12		Y	Y	Y				
	4			Y	Y			20	3
	12			Y	Y				
	4			Y	Y	Y	Y	30	4
	12			Y	Y				
CA_4A-13A	4			Y	Y	Y	Y	30	0
	13				Y				
	4			Y	Y			20	1
	13				Y				

Note:
1）For the inter-band CA combinations, all the listed bands above can be used as PCC or SCC.
2) The channel spacing and aggregated channel bandwidth for CA are identical to the associated specification in 3GPP TS 36.101 V13.2.0.
3) The reference test frequencies for CA refers to3GPP TS 36.508 V13.1.0

Table 1-2：LTE CA Intra-band (Contiguous) Bandwidth Support

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_7C	15	15	40	0
	20	20		
	10	20	40	1
	15	15,20		
	20	10, 15,20		
CA_41C	10	20	40	0
	15	15,20		
	20	10,15,20		
	5,10	20	40	1
	15	15,20		
	20	5,10,15,20		

Note:
1) The channel spacing and aggregated channel bandwidth for CA are identical to the associated specification in 3GPP TS 36.101 V13.2.0.
2) The reference test frequencies for CA refers to3GPP TS 36.508 V13.1.0

1) Carrier Aggregation power test results (Main full Power)

E-UTRA CA configuration	CC-Combo	PCC									SCC				Power	
		Band	BW [MHZ]	Modulation	RB Size	RB Offset	Channel（UL）	Frequency [MHZ]	Channel（DL）	Frequency [MHZ]	Band	BW [MHZ]	Channel（DL）	Frequency [MHZ]	TX power with DL CA	TX Power Single Carrier
CA_2A-5A	5M+5M	LTE B2	5	QPSK	1	12	18900	1880	900	1960	LTE B5	5	2525	881.5	22.71	22.93
	5M+10M	LTE B2	5	QPSK	1	12	18900	1880	900	1960	LTE B5	10	2525	881.5	22.67	22.93
	10M+5M	LTE B2	10	QPSK	1	24	18900	1880	900	1960	LTE B5	5	2525	881.5	22.74	22.90
	10M+10M	LTE B2	10	QPSK	1	24	18900	1880	900	1960	LTE B5	10	2525	881.5	22.72	22.90
	15M+5M	LTE B2	15	QPSK	1	37	18900	1880	900	1960	LTE B5	5	2525	881.5	22.65	22.96
	15M+10M	LTE B2	15	QPSK	1	37	18900	1880	900	1960	LTE B5	10	2525	881.5	22.68	22.96
	20M+5M	LTE B2	20	QPSK	1	50	18900	1880	900	1960	LTE B5	5	2525	881.5	22.53	22.82
	20M+10M	LTE B2	20	QPSK	1	50	18900	1880	900	1960	LTE B5	10	2525	881.5	22.59	22.82
CA_2A-12A	5M+5M	LTE B2	5	QPSK	1	12	18900	1880	900	1960	LTE B12	5	5095	737.5	22.64	22.93
	5M+10M	LTE B2	5	QPSK	1	12	18900	1880	900	1960	LTE B12	10	5095	737.5	22.66	22.93
	10M+5M	LTE B2	10	QPSK	1	24	18900	1880	900	1960	LTE B12	5	5095	737.5	22.69	22.90
	10M+10M	LTE B2	10	QPSK	1	24	18900	1880	900	1960	LTE B12	10	5095	737.5	22.71	22.90
	15M+5M	LTE B2	15	QPSK	1	37	18900	1880	900	1960	LTE B12	5	5095	737.5	22.63	22.96
	15M+10M	LTE B2	15	QPSK	1	37	18900	1880	900	1960	LTE B12	10	5095	737.5	22.58	22.96
	20M+5M	LTE B2	20	QPSK	1	50	18900	1880	900	1960	LTE B12	5	5095	737.5	22.54	22.82
	20M+10M	LTE B2	20	QPSK	1	50	18900	1880	900	1960	LTE B12	10	5095	737.5	22.58	22.82
CA_2A-13A	5M+10M	LTE B2	5	QPSK	1	12	18900	1880	900	1960	LTE B13	10	5230	751	22.75	22.93
	10M+10M	LTE B2	10	QPSK	1	24	18900	1880	900	1960	LTE B13	10	5230	751	22.66	22.90
	15M+10M	LTE B2	15	QPSK	1	37	18900	1880	900	1960	LTE B13	10	5230	751	22.72	22.96
	20M+10M	LTE B2	20	QPSK	1	50	18900	1880	900	1960	LTE B13	10	5230	751	22.56	22.82
CA_4A-5A	5M+5M	LTE B4	5	QPSK	1	12	20175	1732.5	2175	2132.5	LTE B5	5	2525	881.5	22.91	23.05
	5M+10M	LTE B4	5	QPSK	1	12	20175	1732.5	2175	2132.5	LTE B5	10	2525	881.5	22.85	23.05
	10M+5M	LTE B4	10	QPSK	1	24	20175	1732.5	2175	2132.5	LTE B5	5	2525	881.5	22.87	23.03
	10M+10M	LTE B4	10	QPSK	1	24	20175	1732.5	2175	2132.5	LTE B5	10	2525	881.5	22.83	23.03
	15M+5M	LTE B4	15	QPSK	1	37	20175	1732.5	2175	2132.5	LTE B5	5	2525	881.5	22.96	23.12
	15M+10M	LTE B4	15	QPSK	1	37	20175	1732.5	2175	2132.5	LTE B5	10	2525	881.5	22.93	23.12
	20M+5M	LTE B4	20	QPSK	1	50	20175	1732.5	2175	2132.5	LTE B5	5	2525	881.5	22.74	22.93
	20M+10M	LTE B4	20	QPSK	1	50	20175	1732.5	2175	2132.5	LTE B5	10	2525	881.5	22.78	22.93

E-UTRA CA configuration	CC-Combo	PCC									SCC				Power	
		Band	BW [MHZ]	Modulation	RB Size	RB Offset	Channel（UL)	Frequency [MHZ]	Channel（DL)	Frequency [MHZ]	Band	BW [MHZ]	Channel（DL)	Frequency [MHZ]	TX power with DL CA	TX Power Single Carrier
CA_4A-12A	5M+5M	LTE B4	5	QPSK	1	12	20175	1732.5	2175	2132.5	LTE B12	5	5095	737.5	22.82	23.05
	5M+10M	LTE B4	5	QPSK	1	12	20175	1732.5	2175	2132.5	LTE B12	10	5095	737.5	22.83	23.05
	10M+5M	LTE B4	10	QPSK	1	24	20175	1732.5	2175	2132.5	LTE B12	5	5095	737.5	22.78	23.03
	10M+10M	LTE B4	10	QPSK	1	24	20175	1732.5	2175	2132.5	LTE B12	10	5095	737.5	22.84	23.03
	15M+5M	LTE B4	15	QPSK	1	37	20175	1732.5	2175	2132.5	LTE B12	5	5095	737.5	22.96	23.12
	15M+10M	LTE B4	15	QPSK	1	37	20175	1732.5	2175	2132.5	LTE B12	10	5095	737.5	22.92	23.12
	20M+5M	LTE B4	20	QPSK	1	50	20175	1732.5	2175	2132.5	LTE B12	5	5095	737.5	22.74	22.93
	20M+10M	LTE B4	20	QPSK	1	50	20175	1732.5	2175	2132.5	LTE B12	10	5095	737.5	22.78	22.93
CA_4A-13A	5M+10M	LTE B4	5	QPSK	1	12	20175	1732.5	2175	2132.5	LTE B13	10	5230	751	22.88	23.05
	10M+10M	LTE B4	10	QPSK	1	24	20175	1732.5	2175	2132.5	LTE B13	10	5230	751	22.85	23.03
	15M+10M	LTE B4	15	QPSK	1	37	20175	1732.5	2175	2132.5	LTE B13	10	5230	751	22.94	23.12
	20M+10M	LTE B4	20	QPSK	1	50	20175	1732.5	2175	2132.5	LTE B13	10	5230	751	22.76	22.93
CA_7C	10M+20M	LTE B7	10	QPSK	1	0	21006	2525.6	3006	2645.6	LTE B7	20	3150	2660	21.57	21.84
	15M+15M	LTE B7	15	QPSK	1	0	21225	2547.5	3225	2667.5	LTE B7	15	3375	2682.5	21.73	22.02
	15M+20M	LTE B7	15	QPSK	1	0	21003	2525.3	3003	2645.3	LTE B7	20	3174	2662.4	21.75	22.02
	20M+10M	LTE B7	20	QPSK	1	0	21051	2530.1	3051	2650.1	LTE B7	10	3195	2664.5	21.67	22.08
	20M+15M	LTE B7	20	QPSK	1	0	21026	2527.6	3026	2647.6	LTE B7	15	3197	2664.7	21.77	22.08
	20M+20M	LTE B7	20	QPSK	1	0	21001	2525.1	3001	2645.1	LTE B7	20	3199	2664.9	21.74	22.08
CA_41C	10M+20M	LTE B41	10	QPSK	1	24	40596	2590.6	40596	2590.6	LTE B7	20	40740	2565	21.67	21.90
	15M+15M	LTE B41	15	QPSK	1	37	40615	2592.5	40615	2592.5	LTE B7	15	40765	2607.5	21.59	21.86
	15M+20M	LTE B41	15	QPSK	1	37	40593	2590.3	40593	2590.3	LTE B7	20	40764	2607.4	21.58	21.86
	20M+10M	LTE B41	20	QPSK	1	50	40641	2595.1	40641	2595.1	LTE B7	10	40785	2609.5	21.62	21.95
	20M+15M	LTE B41	20	QPSK	1	50	40616	2592.6	40616	2592.6	LTE B7	15	40787	2609.7	21.73	21.95
	20M+20M	LTE B41	20	QPSK	1	50	40591	2590.1	40591	2590.1	LTE B7	20	40789	2609.9	21.69	21.95

2) Carrier Aggregation power test results (Main Power sensor)

E-UTRA CA configuration	CC-Combo	PCC									SCC				Power	
		Band	BW [MHZ]	Modulation	RB Size	RB Offset	Channel（UL）	Frequency [MHZ]	Channel（DL）	Frequency [MHZ]	Band	BW [MHZ]	Channel（DL）	Frequency [MHZ]	TX power with DL CA	TX Power Single Carrier
CA_2A-5A	5M+5M	LTE B2	5	QPSK	1	12	18900	1880	900	1960	LTE B5	5	2525	881.5	16.55	16.89
	5M+10M	LTE B2	5	QPSK	1	12	18900	1880	900	1960	LTE B5	10	2525	881.5	16.59	16.89
	10M+5M	LTE B2	10	QPSK	1	24	18900	1880	900	1960	LTE B5	5	2525	881.5	16.62	16.90
	10M+10M	LTE B2	10	QPSK	1	24	18900	1880	900	1960	LTE B5	10	2525	881.5	16.57	16.90
	15M+5M	LTE B2	15	QPSK	1	37	18900	1880	900	1960	LTE B5	5	2525	881.5	16.42	16.77
	15M+10M	LTE B2	15	QPSK	1	37	18900	1880	900	1960	LTE B5	10	2525	881.5	16.38	16.77
	20M+5M	LTE B2	20	QPSK	1	50	18900	1880	900	1960	LTE B5	5	2525	881.5	16.45	16.73
	20M+10M	LTE B2	20	QPSK	1	50	18900	1880	900	1960	LTE B5	10	2525	881.5	16.42	16.73
CA_2A-12A	5M+5M	LTE B2	5	QPSK	1	12	18900	1880	900	1960	LTE B12	5	5095	737.5	16.64	16.89
	5M+10M	LTE B2	5	QPSK	1	12	18900	1880	900	1960	LTE B12	10	5095	737.5	16.68	16.89
	10M+5M	LTE B2	10	QPSK	1	24	18900	1880	900	1960	LTE B12	5	5095	737.5	16.58	16.90
	10M+10M	LTE B2	10	QPSK	1	24	18900	1880	900	1960	LTE B12	10	5095	737.5	16.57	16.90
	15M+5M	LTE B2	15	QPSK	1	37	18900	1880	900	1960	LTE B12	5	5095	737.5	16.48	16.77
	15M+10M	LTE B2	15	QPSK	1	37	18900	1880	900	1960	LTE B12	10	5095	737.5	16.51	16.77
	20M+5M	LTE B2	20	QPSK	1	50	18900	1880	900	1960	LTE B12	5	5095	737.5	16.51	16.73
	20M+10M	LTE B2	20	QPSK	1	50	18900	1880	900	1960	LTE B12	10	5095	737.5	16.54	16.73
CA_2A-13A	5M+10M	LTE B2	5	QPSK	1	12	18900	1880	900	1960	LTE B13	10	5230	751	16.71	16.89
	10M+10M	LTE B2	10	QPSK	1	24	18900	1880	900	1960	LTE B13	10	5230	751	16.66	16.90
	15M+10M	LTE B2	15	QPSK	1	37	18900	1880	900	1960	LTE B13	10	5230	751	16.38	16.77
	20M+10M	LTE B2	20	QPSK	1	50	18900	1880	900	1960	LTE B13	10	5230	751	16.42	16.73
CA_4A-5A	5M+5M	LTE B4	5	QPSK	1	12	20175	1732.5	2175	2132.5	LTE B5	5	2525	881.5	14.78	15.03
	5M+10M	LTE B4	5	QPSK	1	12	20175	1732.5	2175	2132.5	LTE B5	10	2525	881.5	14.81	15.03
	10M+5M	LTE B4	10	QPSK	1	24	20175	1732.5	2175	2132.5	LTE B5	5	2525	881.5	14.68	14.97
	10M+10M	LTE B4	10	QPSK	1	24	20175	1732.5	2175	2132.5	LTE B5	10	2525	881.5	14.71	14.97
	15M+5M	LTE B4	15	QPSK	1	37	20175	1732.5	2175	2132.5	LTE B5	5	2525	881.5	14.73	14.99
	15M+10M	LTE B4	15	QPSK	1	37	20175	1732.5	2175	2132.5	LTE B5	10	2525	881.5	14.75	14.99
	20M+5M	LTE B4	20	QPSK	1	50	20175	1732.5	2175	2132.5	LTE B5	5	2525	881.5	14.72	15.02
	20M+10M	LTE B4	20	QPSK	1	50	20175	1732.5	2175	2132.5	LTE B5	10	2525	881.5	14.67	15.02

E-UTRA CA configuration	CC-Combo	PCC									SCC				Power	
		Band	BW [MHZ]	Modulation	RB Size	RB Offset	Channel（UL)	Frequency [MHZ]	Channel（DL)	Frequency [MHZ]	Band	BW [MHZ]	Channel（DL)	Frequency [MHZ]	TX power with DL CA	TX Power Single Carrier
CA_4A-12A	5M+5M	LTE B4	5	QPSK	1	12	20175	1732.5	2175	2132.5	LTE B12	5	5095	737.5	14.78	15.03
	5M+10M	LTE B4	5	QPSK	1	12	20175	1732.5	2175	2132.5	LTE B12	10	5095	737.5	14.75	15.03
	10M+5M	LTE B4	10	QPSK	1	24	20175	1732.5	2175	2132.5	LTE B12	5	5095	737.5	14.64	14.97
	10M+10M	LTE B4	10	QPSK	1	24	20175	1732.5	2175	2132.5	LTE B12	10	5095	737.5	14.68	14.97
	15M+5M	LTE B4	15	QPSK	1	37	20175	1732.5	2175	2132.5	LTE B12	5	5095	737.5	14.72	14.99
	15M+10M	LTE B4	15	QPSK	1	37	20175	1732.5	2175	2132.5	LTE B12	10	5095	737.5	14.76	14.99
	20M+5M	LTE B4	20	QPSK	1	50	20175	1732.5	2175	2132.5	LTE B12	5	5095	737.5	14.74	15.02
	20M+10M	LTE B4	20	QPSK	1	50	20175	1732.5	2175	2132.5	LTE B12	10	5095	737.5	14.69	15.02
CA_4A-13A	5M+10M	LTE B4	5	QPSK	1	12	20175	1732.5	2175	2132.5	LTE B13	10	5230	751	14.76	15.03
	10M+10M	LTE B4	10	QPSK	1	24	20175	1732.5	2175	2132.5	LTE B13	10	5230	751	14.72	14.97
	15M+10M	LTE B4	15	QPSK	1	37	20175	1732.5	2175	2132.5	LTE B13	10	5230	751	14.69	14.99
	20M+10M	LTE B4	20	QPSK	1	50	20175	1732.5	2175	2132.5	LTE B13	10	5230	751	14.71	15.02
CA_7C	10M+20M	LTE B7	10	QPSK	1	0	21006	2525.6	3006	2645.6	LTE B7	20	3150	2660	13.48	13.77
	15M+15M	LTE B7	15	QPSK	1	0	21225	2547.5	3225	2667.5	LTE B7	15	3375	2682.5	13.82	14.04
	15M+20M	LTE B7	15	QPSK	1	0	21003	2525.3	3003	2645.3	LTE B7	20	3174	2662.4	14.79	14.04
	20M+10M	LTE B7	20	QPSK	1	0	21051	2530.1	3051	2650.1	LTE B7	10	3195	2664.5	14.81	14.05
	20M+15M	LTE B7	20	QPSK	1	0	21026	2527.6	3026	2647.6	LTE B7	15	3197	2664.7	14.74	14.05
	20M+20M	LTE B7	20	QPSK	1	0	21001	2525.1	3001	2645.1	LTE B7	20	3199	2664.9	14.69	14.05
CA_41C	10M+20M	LTE B41	10	QPSK	1	24	40596	2590.6	40596	2590.6	LTE B7	20	40740	2565	15.78	16.00
	15M+15M	LTE B41	15	QPSK	1	37	40615	2592.5	40615	2592.5	LTE B7	15	40765	2607.5	15.81	16.14
	15M+20M	LTE B41	15	QPSK	1	37	40593	2590.3	40593	2590.3	LTE B7	20	40764	2607.4	15.83	16.14
	20M+10M	LTE B41	20	QPSK	1	50	40641	2595.1	40641	2595.1	LTE B7	10	40785	2609.5	16.07	16.38
	20M+15M	LTE B41	20	QPSK	1	50	40616	2592.6	40616	2592.6	LTE B7	15	40787	2609.7	16.14	16.38
	20M+20M	LTE B41	20	QPSK	1	50	40591	2590.1	40591	2590.1	LTE B7	20	40789	2609.9	16.12	16.38

7.5 TEST POSITION

7.5.1 BODY TEST CONFIGURATION

The overall diagonal dimension of the display section of a tablet is 27.2cm>20cm,Per FCC KDB 616217,the back surface and edges of the tablet should be tested for SAR compliance with the Tablet touching the phantom.SAR evaluation for the front surface of tablet display screens are generally not necessary.
The SAR Exclusion Threshold in KDB 447498 D01can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned adjacent the phantom and the edge containing the antenna positioned perpendicular to the phantom.

SAR test reduction and exclusion guidance

(1)The SAR exclusion threshold for distances<50mm is defined by the following equation:

$$\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \cdot \sqrt{\text{Frequency (GHz)}} \le 3.0$$

The test exclusions are applicable only when the minimum test separation distance is ≤50mm and for transmission frequencies between 100MHz and 6GHz. When the minimum test separation distance is<5mm, a distance of 5mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

(2)The SAR exclusion threshold for distances>50mm is defined by the following equation, as illustrated in KDB 447498 D01 Appendix B:

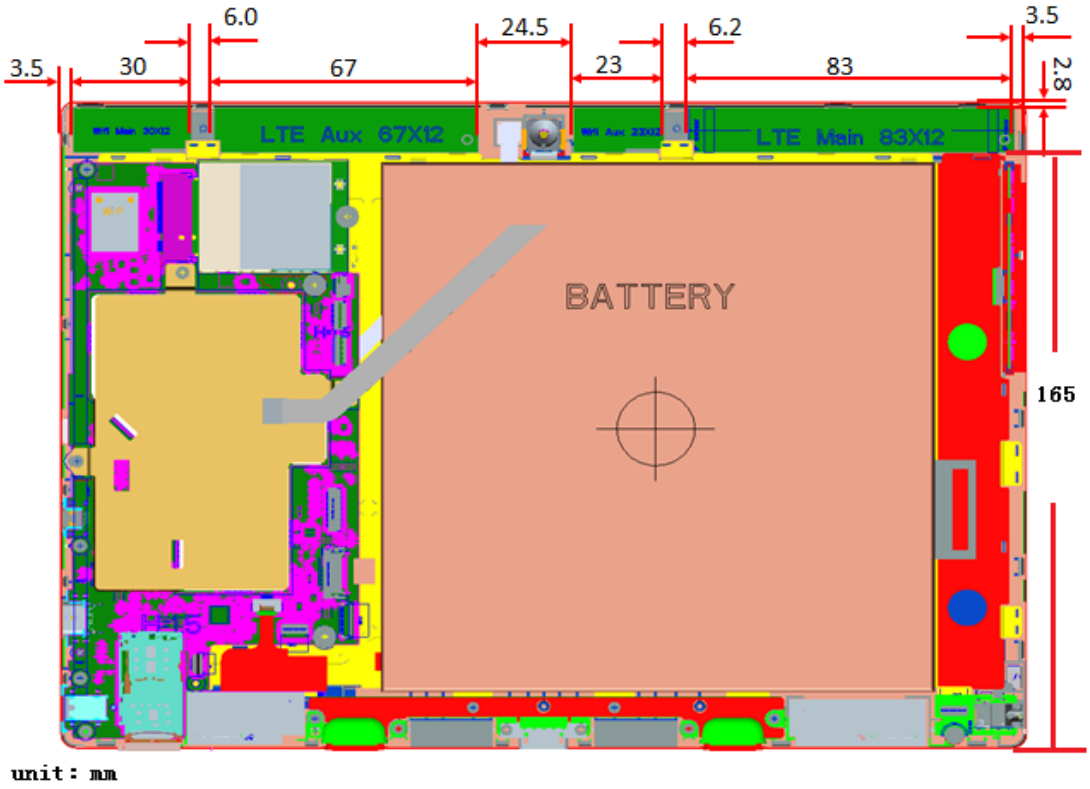
a) at 100 MHz to1500 MHz

[Power allowed at numeric Threshold at 50 mm in step 1) + (test separation distance - 50 mm) · ($f_{(MHz)}$/150)] mW

b) at >1500MHz and ≤6GHz

[Power allowed at numeric Threshold at 50 mm in step 1) + (test separation distance - 50 mm) ·10] mW

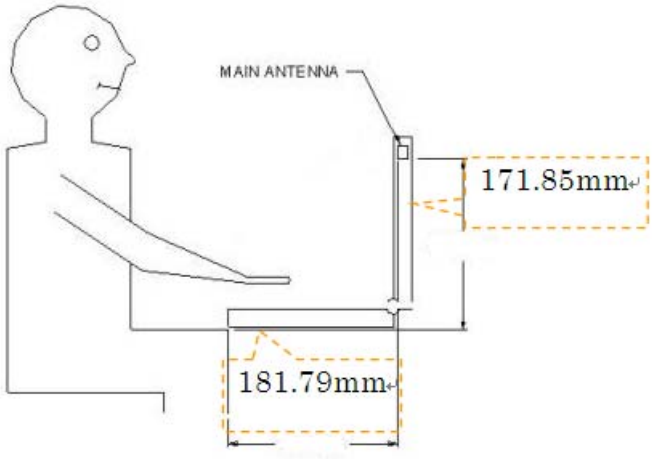
The location of the antenna for table mode is as below:



Antenna	Front Face	Rear Face	Right Side	Left Side	Top Side	Bottom Side
WWAN Main	5mm	5mm	160.2mm	5mm	5mm	165mm

Note:
1) WWAN Aux is used to improve the acceptance of performance of the main antenna, it does not have a transmitter function.

The location of the antenna for notebook mode is as below:



Antenna	Bottom Side
WWAN Main	171.85mm

The distance <50mm

Mode	Position	Distance (mm)	Pmax (dBm)	Pmax (mW)	f(GHz)	Calculation Result	SAR Exclusion threshold	Test Requirement (Yes/No)
UMTS B2	Rear/Top/Left	5	24	251.19	1.9076	69.39	3	Yes
UMTS B4	Rear/Top/Left	5	24	251.19	1.7526	66.51	3	Yes
UMTS B5	Rear/Top/Left	5	24	251.19	0.8466	46.22	3	Yes
LTE B2	Rear/Top/Left	5	24	251.19	1.9	69.25	3	Yes
LTE B4	Rear/Top/Left	5	24	251.19	1.7450	66.36	3	Yes
LTE B5	Rear/Top/Left	5	24	251.19	0.8440	46.15	3	Yes
LTE B7	Rear/Top/Left	5	23	199.53	2.56	63.85	3	Yes
LTE B12	Rear/Top/Left	5	24	251.19	0.711	42.36	3	Yes
LTE B13	Rear/Top/Left	5	24	251.19	0.782	44.43	3	Yes
LTE B25	Rear/Top/Left	5	24	251.19	1.905	69.34	3	Yes
LTE B26	Rear/Top/Left	5	24	251.19	0.8415	46.08	3	Yes
LTE B41	Rear/Top/Left	5	23	199.53	2.68	65.33	3	Yes

The distance >50mm

Mode	Position	Distance (mm)	Pmax (dBm)	Pmax (mW)	f(GHz)	Power allowed at numeric Threshold at 50mm	SAR Exclusion Result	Test Requirement (Yes/No)
UMTS B2	Right	160.2	24	251.19	1.9076	108.60	1210.60	No
	Bottom	165	24	251.19	1.9076	108.60	1258.60	No
UMTS B4	Right	160.2	24	251.19	1.7526	113.31	1215.31	No
	Bottom	165	24	251.19	1.7526	113.31	1263.31	No
UMTS B5	Right	160.2	24	251.19	0.8466	163.02	784.99	No
	Bottom	165	24	251.19	0.8466	163.02	812.08	No
LTE B2	Right	160.2	24	251.19	1.9	108.82	1210.82	No
	Bottom	165	24	251.19	1.9	108.82	1258.82	No
LTE B4	Right	160.2	24	251.19	1.745	113.55	1215.55	No
	Bottom	165	24	251.19	1.745	113.55	1263.55	No
LTE B5	Right	160.2	24	251.19	0.844	163.28	783.33	No
	Bottom	165	24	251.19	0.844	163.28	810.34	No
LTE B7	Right	160.2	23	199.53	2.56	93.75	1195.75	No
	Bottom	165	23	199.53	2.56	93.75	1243.75	No
LTE B12	Right	160.2	24	251.19	0.711	177.89	700.24	No
	Bottom	165	24	251.19	0.711	177.89	722.99	No
LTE B13	Right	160.2	24	251.19	0.782	169.62	744.13	No
	Bottom	165	24	251.19	0.782	169.62	769.16	No
LTE B25	Right	160.2	24	251.19	1.905	108.68	1210.68	No
	Bottom	165	24	251.19	1.905	108.68	1258.68	No
LTE B26	Right	160.2	24	251.19	0.8415	163.52	781.74	No
	Bottom	165	24	251.19	0.8415	163.52	808.67	No
LTE B41	Right	160.2	23	199.53	2.68	91.63	1193.63	No
	Bottom	165	23	199.53	2.68	91.63	1241.63	No

8. TEST RESULT

8.1 CONDUCTED POWER RESULTS

8.1.1 SENSOR OFF CONDUCTED POWER MEASUREMENTS OF UMTS

Band	UMTS II				UMTS IV				UMTS V			
Tx Channel	Max.	9262	9400	9538	Max.	1312	1413	1513	Max.	4132	4182	4233
Rx Channel	Tune-up	9662	9800	9938	Tune-up	1537	1638	1738	Tune-up	4357	4407	4458
Frequency	Power	1852.4	1880	1907.6	Power	1712.4	1732.6	1752.6	Power	826.4	836.4	846.6
RMC 12.2K	24.00	23.21	22.99	23.14	24.00	23.16	23.08	23.03	24.00	22.44	22.46	22.57
RMC 64K	24.00	23.18	23.01	23.11	24.00	23.16	23.09	23.04	24.00	22.51	22.47	22.53
RMC 144K	24.00	23.26	23.04	23.17	24.00	23.18	23.10	23.07	24.00	22.56	22.51	22.55
RMC 384K	24.00	23.23	23.03	23.16	24.00	23.19	23.11	23.06	24.00	22.54	22.49	22.56
HSDPA Subtest-1	23.00	21.98	21.89	21.99	23.00	21.90	21.92	21.88	23.00	21.60	21.40	21.45
HSDPA Subtest-2	23.00	22.01	21.93	22.04	23.00	22.05	22.00	21.93	23.00	21.62	21.38	21.40
HSDPA Subtest-3	22.50	21.55	21.45	21.58	22.50	21.57	21.46	21.42	22.50	21.16	20.94	20.96
HSDPA Subtest-4	22.50	21.48	21.38	21.52	22.50	21.51	21.44	21.41	22.50	21.15	20.92	20.96
HSUPA Subtest-1	23.00	21.36	21.60	21.70	23.00	21.73	21.72	21.64	23.00	21.12	21.14	21.20
HSUPA Subtest-2	22.50	21.16	22.01	21.13	22.50	21.11	21.01	21.00	22.50	20.61	20.54	20.56
HSUPA Subtest-3	22.00	21.04	20.88	20.44	22.00	20.38	20.88	20.27	22.00	20.16	20.08	20.08
HSUPA Subtest-4	23.00	21.62	21.51	21.62	23.00	21.64	21.54	21.50	23.00	21.12	21.02	21.05
HSUPA Subtest-5	23.00	22.18	22.05	22.11	23.00	22.18	22.14	22.06	23.00	21.65	21.56	21.55
DC-HSDPA Subtest-1	23.00	21.98	21.89	21.99	23.00	21.90	21.92	21.88	23.00	21.60	21.40	21.45
DC-HSDPA Subtest-2	23.00	22.01	21.93	22.04	23.00	22.05	22.00	21.93	23.00	21.62	21.38	21.40
DC-HSDPA Subtest-3	22.50	21.55	21.45	21.58	22.50	21.57	21.46	21.42	22.50	21.16	20.94	20.96
DC-HSDPA Subtest-4	22.50	21.48	21.38	21.52	22.50	21.51	21.44	21.41	22.50	21.15	20.92	20.96

8.1.1.1 SENSOR ON CONDUCTED POWER MEASUREMENTS OF UMTS

Band	UMTS II				UMTS IV				UMTS V			
Tx Channel	Max.	9262	9400	9538	Max.	1312	1413	1513	Max.	4132	4182	4233
Rx Channel	Tune-up	9662	9800	9938	Tune-up	1537	1638	1738	Tune-up	4357	4407	4458
Frequency	Power	1852.4	1880	1907.6	Power	1712.4	1732.6	1752.6	Power	826.4	836.4	846.6
RMC 12.2K	16.00	15.12	14.97	14.96	16.00	15.08	15.28	15.10	20.00	18.43	18.61	18.47
RMC 64K	16.00	15.09	14.98	14.97	16.00	15.07	15.27	15.11	20.00	18.44	18.58	18.46
RMC 144K	16.00	15.09	15.00	14.99	16.00	15.07	15.25	15.10	20.00	18.14	18.57	18.45
RMC 384K	16.00	15.10	14.98	14.98	16.00	15.05	15.26	15.12	20.00	18.45	18.59	18.46
HSDPA Subtest-1	15.00	13.05	13.23	13.56	15.00	13.82	14.29	14.02	19.00	17.64	17.59	17.69
HSDPA Subtest-2	15.00	13.01	13.22	13.50	15.00	13.83	14.33	14.05	19.00	17.67	17.65	17.63
HSDPA Subtest-3	14.50	12.51	12.77	13.16	14.50	13.32	13.84	13.78	18.50	17.18	17.12	17.24
HSDPA Subtest-4	14.50	12.52	12.78	12.97	14.50	13.30	13.81	13.76	18.50	17.21	17.13	17.18
HSUPA Subtest-1	15.00	13.14	13.36	13.59	15.00	13.45	13.72	13.47	19.00	17.40	17.38	17.43
HSUPA Subtest-2	14.50	12.75	13.31	13.17	14.50	12.78	13.31	13.01	18.50	16.70	16.63	16.69
HSUPA Subtest-3	14.00	12.15	12.50	12.45	14.00	12.04	12.58	12.30	18.00	16.19	16.17	16.10
HSUPA Subtest-4	15.00	13.02	13.07	13.15	15.00	13.31	13.77	13.53	19.00	17.15	17.27	17.14
HSUPA Subtest-5	15.00	13.18	13.31	13.42	15.00	13.82	14.32	14.03	19.00	17.69	17.76	17.65
DC-HSDPA Subtest-1	15.00	13.05	13.23	13.56	15.00	13.82	14.29	14.02	19.00	17.64	17.59	17.69
DC-HSDPA Subtest-2	15.00	13.01	13.22	13.50	15.00	13.83	14.33	14.05	19.00	17.67	17.65	17.63
DC-HSDPA Subtest-3	14.50	12.51	12.77	13.16	14.50	13.32	13.84	13.78	18.50	17.18	17.12	17.24
DC-HSDPA Subtest-4	14.50	12.52	12.78	12.97	14.50	13.30	13.81	13.76	18.50	17.21	17.13	17.18

8.1.1.2 SENSOR OFF CONDUCTED POWER MEASUREMENTS OF LTE

LTE FDD Band 2

Band / BW	Modulation	RB Size/Offset	Tune-up	CH18607	CH18900	CH19193	Band / BW	Modulation	RB Size/Offset	Tune-up	CH18615	CH18900	CH19185
				1850.7MHz	1880MHz	1909.3MHz					1851.5MHz	1880MHz	1908.5MHz
2 / 1.4M	QPSK	1/0	24.00	23.07	22.96	22.95	2 / 3M	QPSK	1/0	24.00	23.01	22.92	22.94
		1/2	24.00	22.96	23.02	23.07			1/7	24.00	23.07	23.09	22.93
		1/5	24.00	23.20	22.98	22.95			1/14	24.00	23.15	22.99	22.99
		3/0	24.00	22.93	22.78	22.84			8/0	23.00	21.88	21.82	21.91
		3/1	24.00	22.99	22.87	22.90			8/3	23.00	21.92	21.87	21.99
		3/3	24.00	22.99	22.88	22.96			8/7	23.00	21.92	21.84	21.90
		6/0	23.00	21.89	21.79	21.86			15/0	23.00	21.92	21.85	21.92
	16QAM	1/0	23.00	21.95	21.98	22.37		16QAM	1/0	23.00	21.89	22.37	21.91
		1/2	23.00	22.14	21.94	22.48			1/7	23.00	21.87	22.28	22.03
		1/5	23.00	22.00	22.01	22.28			1/14	23.00	21.95	22.31	22.01
		3/0	23.00	22.01	21.82	22.03			8/0	22.00	21.01	20.84	20.89
		3/1	23.00	22.05	21.90	22.06			8/3	22.00	21.02	20.89	20.94
		3/3	23.00	22.07	21.92	22.14			8/7	22.00	21.06	20.82	20.98
		6/0	22.00	21.06	20.90	20.82			15/0	22.00	20.94	20.86	20.86
Band / BW	Modulation	RB Size/Offset	Tune-up	CH18625	CH18900	CH19175	Band / BW	Modulation	RB Size/Offset	Tune-up	CH18650	CH18900	CH19150
				1852.5MHz	1880MHz	1907.5MHz					1855MHz	1880MHz	1905MHz
2 / 5M	QPSK	1/0	24.00	23.05	23.00	23.06	2 / 10M	QPSK	1/0	24.00	22.98	23.04	23.10
		1/12	24.00	23.09	22.93	23.11			1/24	24.00	22.94	22.90	22.97
		1/24	24.00	23.10	22.86	23.06			1/49	24.00	22.97	22.99	22.93
		12/0	23.00	21.90	21.77	21.90			25/0	23.00	21.95	21.91	21.92
		12/6	23.00	22.00	21.83	21.91			25/12	23.00	21.91	21.86	21.98
		12/13	23.00	21.91	21.80	21.92			25/25	23.00	21.92	21.85	21.88
		25/0	23.00	21.96	21.80	21.85			50/0	23.00	21.98	21.89	21.93
	16QAM	1/0	23.00	22.07	22.43	22.04		16QAM	1/0	23.00	22.07	22.21	22.69
		1/12	23.00	22.19	22.39	22.15			1/24	23.00	21.83	22.23	22.08
		1/24	23.00	22.18	22.34	22.05			1/49	23.00	22.03	22.22	22.10
		12/0	22.00	21.02	20.94	20.92			25/0	22.00	20.99	20.90	21.04
		12/6	22.00	21.08	20.99	20.95			25/12	22.00	20.94	20.90	21.04
		12/13	22.00	21.01	20.90	20.96			25/25	22.00	20.89	20.82	20.95
		25/0	22.00	21.00	20.84	20.82			50/0	22.00	20.92	20.87	20.92
Band / BW	Modulation	RB Size/Offset	Tune-up	CH18675	CH18900	CH19125	Band / BW	Modulation	RB Size/Offset	Tune-up	CH18700	CH18900	CH19100
				1857.5MHz	1880MHz	1902.5MHz					1860MHz	1880MHz	1900MHz
2 / 15M	QPSK	1/0	24.00	22.88	22.96	22.92	2 / 20M	QPSK	1/0	24.00	22.91	22.81	22.84
		1/37	24.00	22.88	22.86	23.14			1/50	24.00	22.92	22.82	23.26
		1/74	24.00	22.72	22.84	22.91			1/99	24.00	22.73	22.68	22.81
		36/0	23.00	21.76	22.84	21.91			50/0	23.00	21.82	21.89	21.96
		36/19	23.00	21.80	21.95	22.07			50/25	23.00	21.80	21.89	22.07
		36/39	23.00	21.80	21.93	22.05			50/50	23.00	21.82	21.85	21.95
		75/0	23.00	21.86	21.94	21.94			100/0	23.00	21.87	21.83	21.95
	16QAM	1/0	23.00	21.75	22.19	22.39		16QAM	1/0	23.00	22.34	22.76	22.17
		1/37	23.00	21.73	22.20	22.54			1/50	23.00	22.40	22.48	22.31
		1/74	23.00	21.70	22.17	22.32			1/99	23.00	22.15	22.10	22.21
		36/0	22.00	20.75	20.77	20.86			50/0	22.00	20.83	20.85	20.88
		36/19	22.00	20.75	20.89	21.02			50/25	22.00	20.82	20.84	21.01
		36/39	22.00	20.75	20.91	20.99			50/50	22.00	20.88	20.81	20.96
		75/0	22.00	20.81	20.82	20.99			100/0	22.00	20.87	20.80	21.00

LTE FDD Band 4

Band / BW	Modulation	RB Size/Offset	Tune-up	CH19957	CH20175	CH20393	Band / BW	Modulation	RB Size/Offset	Tune-up	CH19965	CH20175	CH20385
				1710.7MHz	1732.5MHz	1754.3MHz					1711.5MHz	1732.5MHz	1753.5MHz
4 / 1.4M	QPSK	1/0	24.00	23.15	22.99	23.17	4 / 3M	QPSK	1/0	24.00	23.19	23.06	23.02
		1/2	24.00	23.23	23.00	23.01			1/7	24.00	23.15	23.21	23.03
		1/5	24.00	23.19	22.89	23.16			1/14	24.00	23.21	23.05	23.06
		3/0	24.00	22.97	22.79	22.92			8/0	23.00	22.02	21.87	21.92
		3/1	24.00	23.07	22.88	22.99			8/3	23.00	22.02	21.81	21.95
		3/3	24.00	23.12	22.98	23.00			8/7	23.00	21.93	21.91	21.86
		6/0	23.00	21.91	21.81	21.89			15/0	23.00	22.01	21.87	21.93
	16QAM	1/0	23.00	22.09	22.08	22.40		16QAM	1/0	23.00	21.94	22.47	22.30
		1/2	23.00	22.25	22.00	22.52			1/7	23.00	21.92	22.38	22.25
		1/5	23.00	22.30	22.05	22.44			1/14	23.00	21.91	22.38	22.08
		3/0	23.00	22.08	21.88	22.05			8/0	22.00	21.07	21.02	20.87
		3/1	23.00	22.12	22.00	22.09			8/3	22.00	21.02	20.93	20.89
		3/3	23.00	22.25	21.99	22.13			8/7	22.00	21.04	21.00	20.90
		6/0	22.00	21.12	21.02	20.85			15/0	22.00	20.98	20.99	20.84

Band / BW	Modulation	RB Size/Offset	Tune-up	CH19975	CH20175	CH20375	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20000	CH20175	CH20350
				1712.5MHz	1732.5MHz	1752.5MHz					1715MHz	1732.5MHz	1750MHz
4 / 5M	QPSK	1/0	24.00	23.22	22.96	23.27	4 / 10M	QPSK	1/0	24.00	23.14	23.16	23.18
		1/12	24.00	23.24	23.05	23.28			1/24	24.00	23.18	23.03	23.01
		1/24	24.00	23.28	22.93	23.24			1/49	24.00	23.19	23.02	22.94
		12/0	23.00	22.00	21.85	22.09			25/0	23.00	21.99	21.83	21.81
		12/6	23.00	22.08	21.88	22.08			25/12	23.00	22.06	21.84	21.96
		12/13	23.00	21.94	21.87	22.03			25/25	23.00	22.11	21.92	21.91
		25/0	23.00	22.02	21.72	22.05			50/0	23.00	22.06	21.88	21.85
	16QAM	1/0	23.00	22.16	22.40	22.26		16QAM	1/0	23.00	22.16	22.30	22.50
		1/12	23.00	22.18	22.49	22.26			1/24	23.00	22.03	22.32	22.30
		1/24	23.00	22.27	22.39	22.09			1/49	23.00	22.16	22.29	22.34
		12/0	22.00	21.07	21.04	21.13			25/0	22.00	20.98	20.86	20.92
		12/6	22.00	21.10	21.06	21.11			25/12	22.00	21.05	20.88	21.02
		12/13	22.00	20.98	21.05	21.03			25/25	22.00	21.09	20.91	20.99
		25/0	22.00	21.03	20.83	20.96			50/0	22.00	20.98	20.88	20.87

Band / BW	Modulation	RB Size/Offset	Tune-up	CH20025	CH20175	CH20325	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20050	CH20175	CH20300
				1717.5MHz	1732.5MHz	1747.5MHz					1720MHz	1732.5MHz	1745MHz
4 / 15M	QPSK	1/0	24.00	23.22	23.19	23.16	4 / 20M	QPSK	1/0	24.00	23.32	23.13	23.09
		1/37	24.00	23.23	23.12	23.14			1/50	24.00	23.22	22.93	23.05
		1/74	24.00	23.14	23.00	22.98			1/99	24.00	23.05	22.97	22.84
		36/0	23.00	22.25	23.00	21.99			50/0	23.00	22.24	22.04	22.08
		36/19	23.00	22.24	22.09	22.02			50/25	23.00	22.25	22.13	22.06
		36/39	23.00	22.19	21.99	22.02			50/50	23.00	22.23	22.07	21.97
		75/0	23.00	22.24	22.07	21.98			100/0	23.00	22.19	22.01	21.98
	16QAM	1/0	23.00	22.19	22.41	22.51		16QAM	1/0	23.00	22.67	22.54	22.38
		1/37	23.00	22.16	22.39	22.63			1/50	23.00	22.84	21.17	22.39
		1/74	23.00	22.07	22.28	22.42			1/99	23.00	22.52	22.32	22.20
		36/0	22.00	21.12	21.28	20.94			50/0	22.00	21.20	21.00	21.02
		36/19	22.00	21.16	21.13	20.97			50/25	22.00	21.21	21.12	20.99
		36/39	22.00	21.05	21.02	20.93			50/50	22.00	21.17	21.06	20.94
		75/0	22.00	21.16	21.03	20.96			100/0	22.00	21.19	21.00	21.00

Band / BW	Modulation	RB Size/Offset	Tune-up	CH20407	CH20525	CH20643	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20415	CH20525	CH20635
				824.7MHz	836.5MHz	848.3MHz					825.5MHz	836.5MHz	847.5MHz
5 / 1.4M	QPSK	1/0	24.00	22.69	22.59	22.82	5 / 3M	QPSK	1/0	24.00	22.43	22.65	22.48
		1/2	24.00	22.52	22.54	22.67			1/7	24.00	22.60	22.59	22.53
		1/5	24.00	22.72	22.45	22.83			1/14	24.00	22.54	22.59	22.54
		3/0	24.00	22.43	22.39	22.48			8/0	23.00	21.45	21.55	21.46
		3/1	24.00	22.47	22.33	22.54			8/3	23.00	21.47	21.43	21.44
		3/3	24.00	22.48	22.40	22.56			8/7	23.00	21.46	21.42	21.46
		6/0	23.00	21.38	21.33	21.41			15/0	23.00	21.51	21.49	21.47
	16QAM	1/0	23.00	21.87	21.50	21.76		16QAM	1/0	23.00	21.54	22.06	21.60
		1/2	23.00	21.99	21.76	21.84			1/7	23.00	21.38	21.82	21.66
		1/5	23.00	21.91	21.51	21.84			1/14	23.00	21.61	22.09	21.53
		3/0	23.00	21.65	21.55	21.58			8/0	22.00	20.59	20.61	20.57
		3/1	23.00	21.63	21.53	21.68			8/3	22.00	20.66	20.50	20.57
		3/3	23.00	21.67	21.57	21.70			8/7	22.00	20.70	20.45	20.65
		6/0	22.00	20.38	20.51	20.70			15/0	22.00	20.57	20.51	20.51
Band / BW	Modulation	RB Size/Offset	Tune-up	CH20425	CH20525	CH20625	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20450	CH20525	CH20600
				826.5MHz	836.5MHz	846.5MHz					829MHz	836.5MHz	844MHz
5 / 5M	QPSK	1/0	24.00	22.57	22.55	22.44	5 / 10M	QPSK	1/0	24.00	22.46	22.85	22.54
		1/12	24.00	22.70	22.52	22.59			1/24	24.00	22.45	22.49	22.46
		1/24	24.00	22.60	22.51	22.59			1/49	24.00	22.37	22.59	22.53
		12/0	23.00	21.51	21.45	21.32			25/0	23.00	21.40	21.47	21.49
		12/6	23.00	21.50	21.39	21.40			25/12	23.00	21.43	21.50	21.48
		12/13	23.00	21.48	21.38	21.42			25/25	23.00	21.38	21.46	21.49
		25/0	23.00	21.55	21.39	21.32			50/0	23.00	21.38	21.48	21.51
	16QAM	1/0	23.00	21.76	22.13	21.53		16QAM	1/0	23.00	21.70	22.00	21.73
		1/12	23.00	21.83	22.07	21.79			1/24	23.00	21.47	21.81	21.43
		1/24	23.00	21.73	22.14	21.70			1/49	23.00	21.64	21.80	21.85
		12/0	22.00	20.63	20.63	20.48			25/0	22.00	20.58	20.51	20.61
		12/6	22.00	20.61	20.56	20.58			25/12	22.00	20.55	20.54	20.61
		12/13	22.00	20.63	20.56	20.62			25/25	22.00	20.56	20.46	20.60
		25/0	22.00	20.58	20.48	20.44			50/0	22.00	20.49	20.54	20.58

Band / BW	Modulation	RB Size/Offset	Tune-up	CH20775	CH21100	CH21425	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20800	CH21100	CH21400
				2502.5MHz	2535MHz	2567.5MHz					2505MHz	2535MHz	2565MHz
7 / 5M	QPSK	1/0	23.00	21.74	21.92	21.66	7 / 10M	QPSK	1/0	23.00	21.66	22.00	21.55
		1/12	23.00	21.85	22.01	21.80			1/24	23.00	21.80	21.84	21.65
		1/24	23.00	21.79	21.78	21.70			1/49	23.00	21.87	21.85	21.55
		12/0	22.00	20.63	20.80	20.61			25/0	22.00	20.66	20.92	20.58
		12/6	22.00	20.64	20.88	20.64			25/12	22.00	20.80	20.90	20.67
		12/13	22.00	20.63	20.84	20.67			25/25	22.00	20.70	20.85	20.66
		25/0	22.00	20.57	20.82	20.63			50/0	22.00	20.74	20.80	20.67
	16QAM	1/0	22.00	20.86	21.58	20.79		16QAM	1/0	22.00	20.99	21.36	20.78
		1/12	22.00	20.96	21.52	20.98			1/24	22.00	20.61	21.27	20.46
		1/24	22.00	20.93	21.50	20.77			1/49	22.00	20.99	21.19	20.73
		12/0	21.00	19.81	20.01	19.74			25/0	21.00	19.72	20.03	19.67
		12/6	21.00	19.79	20.05	19.85			25/12	21.00	19.80	19.98	19.77
		12/13	21.00	19.73	20.04	19.75			25/25	21.00	19.78	19.88	19.72
		25/0	21.00	19.67	19.94	19.66			50/0	21.00	19.71	19.76	19.73
Band / BW	Modulation	RB Size/Offset	Tune-up	CH20825	CH21100	CH21375	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20850	CH21100	CH21350
				2507.5MHz	2535MHz	2562.5MHz					2510MHz	2535MHz	2560MHz
7 / 15M	QPSK	1/0	23.00	21.72	21.99	21.54	7 / 20M	QPSK	1/0	23.00	21.81	21.97	21.62
		1/37	23.00	21.81	22.02	21.77			1/50	23.00	21.85	22.08	21.98
		1/74	23.00	21.85	21.78	21.61			1/99	23.00	21.81	21.65	21.77
		36/0	22.00	20.71	20.82	20.53			50/0	22.00	20.72	20.99	20.62
		36/19	22.00	20.80	21.01	20.70			50/25	22.00	20.79	21.02	20.69
		36/39	22.00	20.80	20.87	20.66			50/50	22.00	20.85	20.88	20.74
		75/0	22.00	20.74	20.97	20.57			100/0	22.00	20.83	20.87	20.68
	16QAM	1/0	22.00	20.43	21.22	20.79		16QAM	1/0	22.00	21.46	21.77	20.91
		1/37	22.00	20.62	21.35	20.73			1/50	22.00	21.47	21.93	21.02
		1/74	22.00	20.60	21.04	20.69			1/99	22.00	21.39	21.71	21.03
		36/0	21.00	19.73	20.02	19.49			50/0	21.00	19.78	20.11	19.60
		36/19	21.00	19.82	20.06	19.63			50/25	21.00	19.82	20.06	19.72
		36/39	21.00	19.83	19.88	19.65			50/50	21.00	19.94	19.91	19.78
		75/0	21.00	19.72	19.98	19.61			100/0	21.00	19.90	19.91	19.68

LTE FDD Band 12

Band / BW	Modulation	RB Size/Offset	Tune-up	CH23017	CH23095	CH23173	Band / BW	Modulation	RB Size/Offset	Tune-up	CH23025	CH23095	CH23165
				699.7MHz	707.5MHz	715.3MHz					700.5MHz	707.5MHz	714.5MHz
12 / 1.4M	QPSK	1/0	24.00	23.11	23.00	22.94	12 / 3M	QPSK	1/0	24.00	23.03	22.86	22.85
		1/2	24.00	23.06	22.91	23.01			1/7	24.00	23.04	23.12	22.73
		1/5	24.00	23.10	23.00	22.79			1/14	24.00	22.99	22.94	22.83
		3/0	24.00	22.94	22.69	22.71			8/0	23.00	21.93	21.81	21.86
		3/1	24.00	22.91	22.77	22.80			8/3	23.00	21.93	21.85	21.81
		3/3	24.00	23.00	22.85	22.76			8/7	23.00	21.86	21.76	21.81
		6/0	23.00	21.82	21.65	21.63			15/0	23.00	21.84	21.80	21.86
	16QAM	1/0	23.00	21.95	22.02	22.17		16QAM	1/0	23.00	21.91	22.40	21.99
		1/2	23.00	22.21	21.85	22.27			1/7	23.00	21.80	22.29	22.05
		1/5	23.00	21.95	22.11	22.16			1/14	23.00	21.91	22.36	21.79
		3/0	23.00	21.99	21.76	21.93			8/0	22.00	20.98	20.86	20.83
		3/1	23.00	21.96	21.80	21.91			8/3	22.00	20.97	20.91	20.78
		3/3	23.00	21.98	21.87	21.90			8/7	22.00	20.97	20.75	20.87
		6/0	22.00	21.00	20.80	20.56			15/0	22.00	20.89	20.81	20.74
Band / BW	Modulation	RB Size/Offset	Tune-up	CH23035	CH23095	CH23155	Band / BW	Modulation	RB Size/Offset	Tune-up	CH23060	CH23095	CH23130
				701.5MHz	707.5MHz	713.5MHz					704MHz	707.5MHz	711MHz
12 / 5M	QPSK	1/0	24.00	23.09	22.97	22.95	12 / 10M	QPSK	1/0	24.00	23.16	22.97	22.93
		1/12	24.00	23.08	22.93	23.04			1/24	24.00	22.91	22.92	22.92
		1/24	24.00	22.91	22.84	22.78			1/49	24.00	23.01	22.92	22.70
		12/0	23.00	21.77	21.79	21.83			25/0	23.00	21.91	21.77	21.78
		12/6	23.00	21.80	21.75	21.81			25/12	23.00	21.87	21.80	21.83
		12/13	23.00	21.83	21.77	21.83			25/25	23.00	21.77	21.86	21.84
		25/0	23.00	21.84	21.77	21.81			50/0	23.00	21.79	21.87	21.74
	16QAM	1/0	23.00	22.01	22.46	21.99		16QAM	1/0	23.00	22.16	22.16	22.12
		1/12	23.00	22.12	22.42	22.23			1/24	23.00	21.77	22.21	22.35
		1/24	23.00	21.98	22.37	21.85			1/49	23.00	22.01	22.16	21.95
		12/0	22.00	20.92	20.93	20.87			25/0	22.00	20.89	20.80	20.89
		12/6	22.00	20.91	20.87	20.86			25/12	22.00	20.86	20.82	20.89
		12/13	22.00	20.88	20.88	20.83			25/25	22.00	20.76	20.85	20.85
		25/0	22.00	20.88	20.79	20.75			50/0	22.00	20.73	20.85	20.76

LTE FDD Band 13

Band / BW	Modulation	RB Size/Offset	Tune-up	CH23205	CH23230	CH23255	Band / BW	Modulation	RB Size/Offset	Tune-up	CH23230
				779.5MHz	782MHz	784.5MHz					782MHz
13 / 5M	QPSK	1/0	24.00	22.54	22.52	22.62	13 / 10M	QPSK	1/0	24.00	22.76
		1/12	24.00	22.59	22.72	22.60			1/24	24.00	22.78
		1/24	24.00	22.44	22.62	22.47			1/49	24.00	22.74
		12/0	23.00	21.55	21.49	21.63			25/0	23.00	21.63
		12/6	23.00	21.53	21.63	21.68			25/12	23.00	21.68
		12/13	23.00	21.56	21.70	21.56			25/25	23.00	21.62
		25/0	23.00	21.64	21.66	21.72			50/0	23.00	21.68
	16QAM	1/0	23.00	21.69	22.22	21.93		16QAM	1/0	23.00	21.83
		1/12	23.00	21.84	22.31	21.99			1/24	23.00	21.67
		1/24	23.00	21.67	22.36	21.76			1/49	23.00	21.99
		12/0	22.00	20.68	20.71	20.72			25/0	22.00	20.70
		12/6	22.00	20.62	20.81	20.73			25/12	22.00	20.72
		12/13	22.00	20.61	20.81	20.62			25/25	22.00	20.64
		25/0	22.00	20.72	20.72	20.69			50/0	22.00	20.62

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26047	CH26365	CH26683	Band / BW	Modulation	RB Size/Offset	Tune-up	CH26055	CH26365	CH26675
				1850.7MHz	1882.5MHz	1914.3MHz					1851.5MHz	1882.5MHz	1913.5MHz
25 / 1.4M	QPSK	1/0	24.00	22.97	22.89	23.32	25 / 3M	QPSK	1/0	24.00	22.88	23.02	22.92
		1/2	24.00	22.87	23.08	22.95			1/7	24.00	22.84	23.32	22.89
		1/5	24.00	22.93	22.95	23.13			1/14	24.00	22.85	22.97	22.93
		3/0	24.00	22.67	22.76	23.00			8/0	23.00	21.80	21.85	21.89
		3/1	24.00	22.80	22.78	22.98			8/3	23.00	21.86	21.94	22.01
		3/3	24.00	22.84	22.95	23.04			8/7	23.00	21.81	21.93	21.95
		6/0	23.00	21.77	21.76	21.90			15/0	23.00	21.81	21.93	21.99
	16QAM	1/0	23.00	21.94	21.77	22.20		16QAM	1/0	23.00	21.89	22.38	21.88
		1/2	23.00	22.17	21.91	22.24			1/7	23.00	21.72	22.31	21.98
		1/5	23.00	21.98	21.93	22.22			1/14	23.00	21.75	22.24	21.93
		3/0	23.00	22.08	21.93	22.07			8/0	22.00	20.92	20.91	20.88
		3/1	23.00	22.14	22.00	22.16			8/3	22.00	20.99	20.99	20.97
		3/3	23.00	22.20	22.08	22.17			8/7	22.00	21.02	20.91	20.96
		6/0	22.00	20.85	20.85	21.09			15/0	22.00	20.89	20.94	20.90
Band / BW	Modulation	RB Size/Offset	Tune-up	CH26065	CH26365	CH26665	Band / BW	Modulation	RB Size/Offset	Tune-up	CH26090	CH26365	CH26640
				1852.5MHz	1882.5MHz	1912.5MHz					1855MHz	1882.5MHz	1910MHz
25 / 5M	QPSK	1/0	24.00	23.02	23.02	23.20	25 / 10M	QPSK	1/0	24.00	22.95	23.10	22.92
		1/12	24.00	23.04	23.10	23.23			1/24	24.00	22.74	23.26	22.94
		1/24	24.00	22.99	23.04	23.13			1/49	24.00	22.85	23.08	23.00
		12/0	23.00	21.89	21.88	22.01			25/0	23.00	21.89	21.87	21.86
		12/6	23.00	21.91	21.87	22.02			25/12	23.00	21.87	21.99	22.07
		12/13	23.00	21.90	21.91	22.10			25/25	23.00	21.91	21.95	22.08
		25/0	23.00	21.91	21.93	22.08			50/0	23.00	21.86	21.96	21.96
	16QAM	1/0	23.00	22.16	22.61	22.20		16QAM	1/0	23.00	22.07	22.45	21.69
		1/12	23.00	22.29	22.60	22.28			1/24	23.00	21.67	22.37	21.74
		1/24	23.00	22.16	22.53	22.18			1/49	23.00	21.80	22.30	22.26
		12/0	22.00	21.03	21.08	21.04			25/0	22.00	20.92	20.86	20.97
		12/6	22.00	21.06	21.02	21.09			25/12	22.00	20.88	21.00	21.10
		12/13	22.00	20.96	21.08	21.14			25/25	22.00	20.92	20.92	21.13
		25/0	22.00	20.91	20.97	21.04			50/0	22.00	20.77	20.97	20.95
Band / BW	Modulation	RB Size/Offset	Tune-up	CH26115	CH26365	CH26615	Band / BW	Modulation	RB Size/Offset	Tune-up	CH26140	CH26365	CH26590
				1857.5MHz	1882.5MHz	1907.5MHz					1860MHz	1882.5MHz	1905MHz
25 / 15M	QPSK	1/0	24.00	22.95	22.91	23.10	25 / 20M	QPSK	1/0	24.00	23.07	22.93	23.10
		1/37	24.00	22.94	23.00	23.16			1/50	24.00	23.14	22.94	23.36
		1/74	24.00	22.72	22.75	23.07			1/99	24.00	22.86	22.71	22.83
		36/0	23.00	21.99	22.75	22.03			50/0	23.00	21.93	21.90	22.01
		36/19	23.00	22.01	21.90	22.07			50/25	23.00	21.98	21.95	22.02
		36/39	23.00	21.87	21.82	21.93			50/50	23.00	21.94	21.83	22.05
		75/0	23.00	21.95	21.93	21.98			100/0	23.00	21.94	21.88	22.02
	16QAM	1/0	23.00	21.94	22.24	22.04		16QAM	1/0	23.00	22.54	22.55	22.39
		1/37	23.00	21.76	22.22	21.79			1/50	23.00	22.87	21.01	22.48
		1/74	23.00	21.57	22.07	22.24			1/99	23.00	22.37	22.22	22.18
		36/0	22.00	21.01	21.07	21.04			50/0	22.00	20.98	20.85	21.03
		36/19	22.00	21.02	20.95	21.00			50/25	22.00	21.08	20.90	21.13
		36/39	22.00	20.90	20.81	20.91			50/50	22.00	21.01	20.78	21.07
		75/0	22.00	20.93	20.84	21.07			100/0	22.00	20.97	20.84	21.07

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26697	CH26865	CH27033
				814.7MHz	831MHz	848.3MHz
26 / 1.4M	QPSK	1/0	24.00	22.83	22.69	22.62
		1/2	24.00	22.92	22.58	22.77
		1/5	24.00	22.88	22.61	22.67
		3/0	24.00	22.74	22.37	22.49
		3/1	24.00	22.86	22.50	22.51
		3/3	24.00	22.80	22.50	22.59
		6/0	23.00	21.71	21.41	21.47
	16QAM	1/0	23.00	21.78	21.78	21.93
		1/2	23.00	22.03	21.70	22.05
		1/5	23.00	21.78	21.77	21.95
		3/0	23.00	21.89	21.50	21.76
		3/1	23.00	22.05	21.62	21.79
		3/3	23.00	21.94	21.66	21.79
		6/0	22.00	20.91	20.58	20.37

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26705	CH26865	CH27025
				815.5MHz	831MHz	847.5MHz
26 / 3M	QPSK	1/0	24.00	22.64	22.72	22.64
		1/7	24.00	22.72	22.77	22.48
		1/14	24.00	22.71	22.74	22.60
		8/0	23.00	21.76	21.55	21.54
		8/3	23.00	21.67	21.56	21.59
		8/7	23.00	21.65	21.51	21.55
		15/0	23.00	21.64	21.50	21.56
	16QAM	1/0	23.00	21.79	22.14	21.54
		1/7	23.00	21.63	22.00	21.72
		1/14	23.00	21.67	22.08	21.50
		8/0	22.00	20.84	20.58	20.52
		8/3	22.00	20.76	20.58	20.60
		8/7	22.00	20.78	20.51	20.63
		15/0	22.00	20.67	20.52	20.48

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26715	CH26865	CH27015
				816.5MHz	831MHz	846.5MHz
26 / 5M	QPSK	1/0	24.00	22.81	22.63	22.62
		1/12	24.00	22.86	22.70	22.70
		1/24	24.00	22.75	22.52	22.60
		12/0	23.00	21.68	21.43	21.48
		12/6	23.00	21.72	21.52	21.52
		12/13	23.00	21.59	21.36	21.51
		25/0	23.00	21.64	21.45	21.47
	16QAM	1/0	23.00	21.98	22.20	21.66
		1/12	23.00	22.06	22.24	21.93
		1/24	23.00	22.01	22.11	21.65
		12/0	22.00	20.80	20.54	20.53
		12/6	22.00	20.79	20.58	20.56
		12/13	22.00	20.72	20.49	20.55
		25/0	22.00	20.61	20.51	20.43

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26740	CH26865	CH26990
				819MHz	831MHz	844MHz
26 / 10M	QPSK	1/0	24.00	22.85	22.92	22.54
		1/24	24.00	22.51	22.78	22.50
		1/49	24.00	22.71	22.76	22.50
		25/0	23.00	21.58	21.57	21.41
		25/12	23.00	21.54	21.56	21.48
		25/25	23.00	21.46	21.43	21.51
		50/0	23.00	21.59	21.49	21.51
	16QAM	1/0	23.00	21.93	21.97	21.80
		1/24	23.00	21.54	21.96	21.66
		1/49	23.00	21.73	21.79	21.72
		25/0	22.00	20.58	20.55	20.49
		25/12	22.00	20.57	20.57	20.50
		25/25	22.00	20.49	20.43	20.55
		50/0	22.00	20.50	20.50	20.54

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26765	CH26865	CH26965
				821.5MHz	831MHz	841.5MHz
26 / 15M	QPSK	1/0	24.00	22.89	22.94	22.75
		1/37	24.00	22.67	22.82	22.68
		1/74	24.00	22.73	22.73	22.58
		36/0	23.00	21.76	22.73	21.59
		36/19	23.00	21.70	21.68	21.67
		36/39	23.00	21.68	21.53	21.62
		75/0	23.00	21.80	21.69	21.68
	16QAM	1/0	23.00	21.90	22.12	22.08
		1/37	23.00	21.61	22.07	21.97
		1/74	23.00	21.68	21.92	21.74
		36/0	22.00	20.75	21.92	20.61
		36/19	22.00	20.68	20.70	20.59
		36/39	22.00	20.63	20.60	20.54
		75/0	22.00	20.75	20.75	20.67

LTE TDD Band 41

Band / BW	Modulation	RB Size/Offset	Tune-up	CH39675	CH40148	CH40620	CH41093	CH41565
				2498.5MHz	2545.8MHz	2593MHz	2640.3MHz	2687.5MHz
41 / 5M	QPSK	1/0	23.00	21.67	21.47	21.76	21.69	21.67
		1/12	23.00	21.83	21.68	21.75	21.71	21.74
		1/24	23.00	21.81	21.79	21.77	21.64	21.83
		12/0	22.00	20.71	20.66	20.73	20.55	20.49
		12/6	22.00	20.80	20.78	20.72	20.63	20.50
		12/13	22.00	20.80	20.69	20.77	20.49	20.59
		25/0	22.00	20.75	20.72	20.68	20.61	20.47
	16QAM	1/0	22.00	20.82	20.69	20.66	20.58	20.51
		1/12	22.00	21.03	20.84	20.74	20.61	20.57
		1/24	22.00	21.02	20.82	20.68	20.63	20.59
		12/0	21.00	19.76	19.58	19.73	19.58	19.41
		12/6	21.00	19.86	19.70	19.71	19.53	19.49
		12/13	21.00	19.87	19.73	19.66	19.59	19.52
		25/0	21.00	19.75	19.76	19.70	19.59	19.46

Band / BW	Modulation	RB Size/Offset	Tune-up	CH39700	CH40160	CH40620	CH41080	CH41540
				2501MHz	2547MHz	2593MHz	2639MHz	2685MHz
41 / 10M	QPSK	1/0	23.00	21.82	21.79	21.92	21.69	21.52
		1/24	23.00	21.87	21.75	21.90	21.64	21.48
		1/49	23.00	21.85	21.79	21.90	21.73	21.45
		25/0	22.00	20.78	20.71	20.76	20.61	20.49
		25/12	22.00	20.84	20.74	20.75	20.67	20.48
		25/25	22.00	20.85	20.71	20.80	20.73	20.51
		50/0	22.00	20.80	20.69	20.75	20.66	20.52
	16QAM	1/0	22.00	20.73	20.68	20.74	20.63	20.58
		1/24	22.00	20.93	20.74	20.86	20.77	20.57
		1/49	22.00	21.03	20.83	20.76	20.73	20.78
		25/0	21.00	19.81	19.71	19.74	19.79	19.43
		25/12	21.00	19.86	19.68	19.77	19.71	19.45
		25/25	21.00	19.87	19.64	19.80	19.51	19.41
		50/0	21.00	19.74	19.56	19.74	19.60	19.49

Band / BW	Modulation	RB Size/Offset	Tune-up	CH39725	CH40173	CH40620	CH41068	CH41515
				2503.5MHz	2548.3MHz	2593MHz	2637.8MHz	2682.5MHz
41 / 15M	QPSK	1/0	23.00	21.72	21.74	21.84	21.63	21.67
		1/37	23.00	21.83	21.79	21.86	21.74	21.77
		1/74	23.00	21.69	21.73	21.68	21.71	21.66
		36/0	22.00	20.78	20.74	20.79	20.59	20.68
		36/19	22.00	20.89	20.76	20.81	20.75	20.79
		36/39	22.00	20.72	20.63	20.71	20.76	20.72
		75/0	22.00	20.81	20.74	20.78	20.73	20.74
	16QAM	1/0	22.00	20.58	20.69	20.84	20.77	20.46
		1/37	22.00	20.79	20.73	20.76	20.67	20.51
		1/74	22.00	20.55	20.63	20.71	20.71	20.48
		36/0	21.00	19.76	19.66	19.76	19.64	19.65
		36/19	21.00	19.83	19.63	19.80	19.74	19.77
		36/39	21.00	19.74	19.78	19.70	19.73	19.69
		75/0	21.00	19.81	19.59	19.77	19.74	19.71

Band / BW	Modulation	RB Size/Offset	Tune-up	CH39750	CH40185	CH40620	CH41055	CH41490
				2506MHz	2549.5MHz	2593MHz	2636.5MHz	2680MHz
41 / 20M	QPSK	1/0	23.00	21.61	21.64	21.77	21.78	21.74
		1/50	23.00	21.93	21.89	21.95	21.92	21.94
		1/99	23.00	21.73	21.76	21.59	21.69	21.77
		50/0	22.00	20.73	20.66	20.74	20.63	20.65
		50/25	22.00	20.82	20.78	20.79	20.71	20.74
		50/50	22.00	20.68	20.59	20.80	20.73	20.78
		100/0	22.00	20.75	20.54	20.76	20.66	20.64
	16QAM	1/0	22.00	20.66	20.62	20.96	20.81	20.64
		1/50	22.00	20.60	20.55	20.90	20.75	20.82
		1/99	22.00	20.38	20.41	20.60	20.64	20.73
		50/0	21.00	19.66	19.69	19.72	19.67	19.62
		50/25	21.00	19.80	19.77	19.78	19.72	19.74
		50/50	21.00	19.63	19.58	19.79	19.71	19.79
		100/0	21.00	19.73	19.76	19.74	19.63	19.58

8.1.1.3 SENSOR ON CONDUCTED POWER MEASUREMENTS OF LTE

LTE FDD Band 2

Band / BW	Modulation	RB Size/Offset	Tune-up	CH18607	CH18900	CH19193	Band / BW	Modulation	RB Size/Offset	Tune-up	CH18615	CH18900	CH19185
				1850.7MHz	1880MHz	1909.3MHz					1851.5MHz	1880MHz	1908.5MHz
2 / 1.4M	QPSK	1/0	18.00	17.20	16.92	16.81	2 / 3M	QPSK	1/0	18.00	16.95	16.98	16.87
		1/2	18.00	16.99	17.04	16.95			1/7	18.00	16.92	16.87	16.81
		1/5	18.00	17.06	16.92	16.80			1/14	18.00	16.91	17.07	16.86
		3/0	18.00	16.86	16.76	16.74			8/0	18.00	16.87	16.79	16.75
		3/1	18.00	16.92	16.85	16.76			8/3	18.00	16.88	16.85	16.81
		3/3	18.00	16.93	16.84	16.81			8/7	18.00	16.84	16.81	16.76
		6/0	18.00	16.82	16.75	16.70			15/0	18.00	16.84	16.81	16.80
	16QAM	1/0	18.00	17.03	17.31	16.84		16QAM	1/0	18.00	16.82	17.26	16.94
		1/2	18.00	17.04	17.33	16.98			1/7	18.00	16.82	17.25	16.93
		1/5	18.00	17.12	17.22	16.92			1/14	18.00	16.76	17.34	16.87
		3/0	18.00	16.86	16.93	16.87			8/0	18.00	16.93	16.86	16.79
		3/1	18.00	16.93	16.99	16.92			8/3	18.00	16.98	16.91	16.85
		3/3	18.00	16.91	17.04	16.93			8/7	18.00	17.00	16.86	16.83
		6/0	18.00	16.94	16.71	16.92			15/0	18.00	16.91	16.83	16.75
Band / BW	**Modulation**	**RB Size/Offset**	**Tune-up**	**CH18625**	**CH18900**	**CH19175**	**Band / BW**	**Modulation**	**RB Size/Offset**	**Tune-up**	**CH18650**	**CH18900**	**CH19150**
				1852.5MHz	**1880MHz**	**1907.5MHz**					**1855MHz**	**1880MHz**	**1905MHz**
2 / 5M	QPSK	1/0	18.00	17.08	16.89	16.93	2 / 10M	QPSK	1/0	18.00	16.97	17.02	17.04
		1/12	18.00	17.03	16.89	16.91			1/24	18.00	16.89	16.90	16.83
		1/24	18.00	16.92	16.83	16.90			1/49	18.00	16.87	16.99	16.76
		12/0	18.00	16.84	16.76	16.74			25/0	18.00	16.85	16.83	16.75
		12/6	18.00	16.94	16.80	16.78			25/12	18.00	16.84	16.81	16.84
		12/13	18.00	16.85	16.75	16.78			25/25	18.00	16.77	16.88	16.75
		25/0	18.00	16.93	16.77	16.70			50/0	18.00	16.91	16.84	16.77
	16QAM	1/0	18.00	16.98	17.33	16.90		16QAM	1/0	18.00	17.07	17.21	17.60
		1/12	18.00	17.00	17.37	17.04			1/24	18.00	16.80	17.14	17.08
		1/24	18.00	17.00	17.35	16.92			1/49	18.00	16.82	17.19	17.10
		12/0	18.00	16.94	16.89	16.81			25/0	18.00	16.83	16.89	16.92
		12/6	18.00	16.95	16.96	16.86			25/12	18.00	16.87	16.88	16.92
		12/13	18.00	16.94	16.89	16.84			25/25	18.00	16.82	16.88	16.82
		25/0	18.00	16.95	16.82	16.69			50/0	18.00	16.86	16.87	16.83
Band / BW	**Modulation**	**RB Size/Offset**	**Tune-up**	**CH18675**	**CH18900**	**CH19125**	**Band / BW**	**Modulation**	**RB Size/Offset**	**Tune-up**	**CH18700**	**CH18900**	**CH19100**
				1857.5MHz	**1880MHz**	**1902.5MHz**					**1860MHz**	**1880MHz**	**1900MHz**
2 / 15M	QPSK	1/0	18.00	16.89	16.96	17.02	2 / 20M	QPSK	1/0	18.00	17.01	16.93	17.15
		1/37	18.00	16.70	16.77	16.88			1/50	18.00	16.77	16.73	16.77
		1/74	18.00	16.61	16.92	16.89			1/99	18.00	16.90	16.93	16.93
		36/0	18.00	16.81	16.92	16.88			50/0	18.00	16.83	16.91	16.92
		36/19	18.00	16.77	16.80	16.95			50/25	18.00	16.72	16.86	16.89
		36/39	18.00	16.69	16.84	16.90			50/50	18.00	16.73	16.82	16.92
		75/0	18.00	16.77	16.84	16.88			100/0	18.00	16.83	16.92	16.96
	16QAM	1/0	18.00	16.87	17.24	17.63		16QAM	1/0	18.00	17.47	17.32	17.43
		1/37	18.00	16.70	17.09	17.56			1/50	18.00	17.30	16.82	17.22
		1/74	18.00	16.67	17.21	17.27			1/99	18.00	17.24	17.37	17.20
		36/0	18.00	16.80	17.21	16.89			50/0	18.00	16.89	16.88	16.82
		36/19	18.00	16.80	16.80	16.90			50/25	18.00	16.76	16.84	16.83
		36/39	18.00	16.65	16.89	16.88			50/50	18.00	16.82	16.82	16.89
		75/0	18.00	16.77	16.84	16.94			100/0	18.00	16.84	16.91	16.99

Band / BW	Modulation	RB Size/Offset	Tune-up	CH19957	CH20175	CH20393	Band / BW	Modulation	RB Size/Offset	Tune-up	CH19965	CH20175	CH20385
				1710.7MHz	1732.5MHz	1754.3MHz					1711.5MHz	1732.5MHz	1753.5MHz
4 / 1.4M	QPSK	1/0	16.00	15.08	14.96	15.01	4 / 3M	QPSK	1/0	16.00	14.99	15.10	14.93
		1/2	16.00	15.02	14.97	14.92			1/7	16.00	15.11	14.92	14.79
		1/5	16.00	15.04	14.90	15.04			1/14	16.00	15.04	15.04	14.82
		3/0	16.00	14.90	14.77	14.76			8/0	16.00	14.96	14.86	14.80
		3/1	16.00	15.00	14.85	14.86			8/3	16.00	15.07	14.79	14.80
		3/3	16.00	14.98	14.90	14.80			8/7	16.00	15.01	14.86	14.78
		6/0	16.00	14.91	14.78	14.73			15/0	16.00	15.03	14.88	14.82
	16QAM	1/0	16.00	14.99	15.02	14.89		16QAM	1/0	16.00	14.95	15.47	15.07
		1/2	16.00	15.06	15.19	15.07			1/7	16.00	15.03	15.11	15.11
		1/5	16.00	15.01	14.93	14.92			1/14	16.00	14.92	15.10	14.90
		3/0	16.00	15.00	15.00	14.91			8/0	16.00	15.07	14.98	14.89
		3/1	16.00	15.05	15.08	14.97			8/3	16.00	15.08	14.92	14.90
		3/3	16.00	15.01	15.12	14.98			8/7	16.00	15.05	14.98	14.87
		6/0	16.00	15.07	14.76	14.94			15/0	16.00	15.01	14.94	14.79
Band / BW	Modulation	RB Size/Offset	Tune-up	CH19975	CH20175	CH20375	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20000	CH20175	CH20350
				1712.5MHz	1732.5MHz	1752.5MHz					1715MHz	1732.5MHz	1750MHz
4 / 5M	QPSK	1/0	16.00	15.12	14.96	15.09	4 / 10M	QPSK	1/0	16.00	15.11	15.10	14.96
		1/12	16.00	15.15	15.03	15.13			1/24	16.00	14.97	14.97	14.82
		1/24	16.00	15.11	14.92	14.99			1/49	16.00	15.06	15.02	14.78
		12/0	16.00	14.93	14.91	14.97			25/0	16.00	15.01	14.92	14.78
		12/6	16.00	15.02	14.91	14.97			25/12	16.00	14.96	14.82	14.85
		12/13	16.00	14.96	14.87	14.91			25/25	16.00	14.99	14.89	14.83
		25/0	16.00	14.98	14.75	14.93			50/0	16.00	14.99	14.86	14.85
	16QAM	1/0	16.00	15.20	15.10	15.08		16QAM	1/0	16.00	15.17	15.16	15.15
		1/12	16.00	15.22	15.23	15.22			1/24	16.00	14.94	15.05	15.01
		1/24	16.00	15.17	15.18	15.03			1/49	16.00	15.07	15.05	15.09
		12/0	16.00	15.05	15.10	15.03			25/0	16.00	15.04	14.94	14.95
		12/6	16.00	15.07	15.05	15.02			25/12	16.00	15.04	14.88	14.96
		12/13	16.00	15.05	15.05	14.96			25/25	16.00	15.01	14.94	14.96
		25/0	16.00	15.02	14.85	14.91			50/0	16.00	14.98	14.95	14.91
Band / BW	Modulation	RB Size/Offset	Tune-up	CH20025	CH20175	CH20325	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20050	CH20175	CH20300
				1717.5MHz	1732.5MHz	1747.5MHz					1720MHz	1732.5MHz	1745MHz
4 / 15M	QPSK	1/0	16.00	15.04	15.18	15.11	4 / 20M	QPSK	1/0	16.00	**15.48**	**15.24**	**15.33**
		1/37	16.00	14.91	14.99	14.91			1/50	16.00	14.96	15.02	15.00
		1/74	16.00	14.97	15.04	14.94			1/99	16.00	15.07	14.91	14.96
		36/0	16.00	14.99	15.04	14.96			50/0	16.00	**15.14**	**15.08**	**15.01**
		36/19	16.00	15.00	14.96	14.96			50/25	16.00	15.08	15.00	14.93
		36/39	16.00	14.96	14.93	14.91			50/50	16.00	15.02	14.97	14.85
		75/0	16.00	14.89	14.94	14.94			100/0	16.00	**14.98**	14.97	14.88
	16QAM	1/0	16.00	15.03	15.15	15.13		16QAM	1/0	16.00	15.14	15.05	15.07
		1/37	16.00	14.90	14.99	15.02			1/50	16.00	15.08	15.05	15.08
		1/74	16.00	14.86	15.02	15.01			1/99	16.00	15.04	15.39	15.05
		36/0	16.00	14.95	15.12	14.86			50/0	16.00	15.12	15.00	14.88
		36/19	16.00	15.02	14.88	14.86			50/25	16.00	15.09	14.89	14.87
		36/39	16.00	14.93	14.89	14.81			50/50	16.00	15.05	14.89	14.77
		75/0	16.00	14.91	14.86	14.89			100/0	16.00	15.01	14.88	14.90

LTE FDD Band 5

Band / BW	Modulation	RB Size/Offset	Tune-up	CH20407	CH20525	CH20643	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20415	CH20525	CH20635
				824.7MHz	836.5MHz	848.3MHz					825.5MHz	836.5MHz	847.5MHz
5 / 1.4M	QPSK	1/0	20.00	18.49	18.65	18.76	5 / 3M	QPSK	1/0	20.00	18.23	18.62	18.56
		1/2	20.00	18.40	18.60	18.64			1/7	20.00	18.46	18.75	18.60
		1/5	20.00	18.54	18.63	18.77			1/14	20.00	18.31	18.91	18.61
		3/0	20.00	18.28	18.45	18.50			8/0	20.00	18.37	18.53	18.52
		3/1	20.00	18.34	18.47	18.58			8/3	20.00	18.44	18.56	18.54
		3/3	20.00	18.32	18.52	18.62			8/7	20.00	18.35	18.53	18.56
		6/0	20.00	18.30	18.43	18.47			15/0	20.00	18.47	18.49	18.52
	16QAM	1/0	20.00	18.35	18.70	18.98		16QAM	1/0	20.00	18.26	19.08	18.66
		1/2	20.00	18.51	18.59	19.08			1/7	20.00	18.43	18.98	18.65
		1/5	20.00	18.47	18.78	19.01			1/14	20.00	18.41	19.13	18.61
		3/0	20.00	18.50	18.49	18.80			8/0	20.00	18.50	18.65	18.57
		3/1	20.00	18.55	18.59	18.69			8/3	20.00	18.60	18.63	18.60
		3/3	20.00	18.58	18.60	18.75			8/7	20.00	18.52	18.59	18.61
		6/0	20.00	18.49	18.59	18.44			15/0	20.00	18.52	18.56	18.53
Band / BW	Modulation	RB Size/Offset	Tune-up	CH20425	CH20525	CH20625	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20450	CH20525	CH20600
				826.5MHz	836.5MHz	846.5MHz					829MHz	836.5MHz	844MHz
5 / 5M	QPSK	1/0	20.00	18.57	18.49	18.52	5 / 10M	QPSK	1/0	20.00	18.41	18.87	18.56
		1/12	20.00	18.62	18.66	18.72			1/24	20.00	18.30	19.02	18.59
		1/24	20.00	18.47	18.54	18.62			1/49	20.00	18.47	18.85	18.64
		12/0	20.00	18.38	18.50	18.44			25/0	20.00	18.38	18.48	18.63
		12/6	20.00	18.44	18.53	18.53			25/12	20.00	18.35	18.62	18.66
		12/13	20.00	18.45	18.47	18.48			25/25	20.00	18.31	18.59	18.64
		25/0	20.00	18.46	18.53	18.43			50/0	20.00	18.31	18.54	18.62
	16QAM	1/0	20.00	18.68	19.16	18.61		16QAM	1/0	20.00	18.56	18.87	18.76
		1/12	20.00	18.76	19.20	18.82			1/24	20.00	18.27	18.97	18.57
		1/24	20.00	18.61	19.22	18.70			1/49	20.00	18.58	19.02	18.86
		12/0	20.00	18.51	18.65	18.52			25/0	20.00	18.37	18.53	18.72
		12/6	20.00	18.55	18.71	18.57			25/12	20.00	18.38	18.68	18.74
		12/13	20.00	18.53	18.67	18.55			25/25	20.00	18.35	18.60	18.72
		25/0	20.00	18.47	18.60	18.42			50/0	20.00	18.28	18.57	18.71

Band / BW	Modulation	RB Size/Offset	Tune-up	CH20775 2502.5MHz	CH21100 2535MHz	CH21425 2567.5MHz	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20800 2505MHz	CH21100 2535MHz	CH21400 2565MHz
7 / 5M	QPSK	1/0	15.00	14.05	13.93	13.85	7 / 10M	QPSK	1/0	15.00	14.01	13.95	13.83
		1/12	15.00	14.19	13.86	13.91			1/24	15.00	14.08	13.77	13.80
		1/24	15.00	14.07	13.80	13.83			1/49	15.00	14.12	13.84	13.78
		12/0	15.00	13.92	13.82	13.75			25/0	15.00	13.97	13.80	13.71
		12/6	15.00	13.82	13.88	13.79			25/12	15.00	13.98	13.72	13.81
		12/13	15.00	13.90	13.89	13.79			25/25	15.00	13.85	13.75	13.79
		25/0	15.00	13.90	13.84	13.77			50/0	15.00	13.93	13.71	13.77
	16QAM	1/0	15.00	14.03	14.17	13.84		16QAM	1/0	15.00	14.02	14.21	13.84
		1/12	15.00	14.16	14.08	13.96			1/24	15.00	13.88	14.09	13.67
		1/24	15.00	14.08	14.02	13.86			1/49	15.00	13.94	14.13	13.79
		12/0	15.00	13.93	13.88	13.79			25/0	15.00	13.91	13.86	13.76
		12/6	15.00	13.83	13.89	13.80			25/12	15.00	13.91	13.80	13.79
		12/13	15.00	13.93	13.88	13.77			25/25	15.00	13.81	13.80	13.81
		25/0	15.00	13.86	13.74	13.66			50/0	15.00	13.83	13.77	13.73
Band / BW	Modulation	RB Size/Offset	Tune-up	CH20825 2507.5MHz	CH21100 2535MHz	CH21375 2562.5MHz	Band / BW	Modulation	RB Size/Offset	Tune-up	CH20850 2510MHz	CH21100 2535MHz	CH21350 2560MHz
7 / 15M	QPSK	1/0	15.00	14.23	14.12	13.86	7 / 20M	QPSK	1/0	15.00	**14.41**	**14.39**	**14.19**
		1/37	15.00	14.16	14.04	13.87			1/50	15.00	14.11	14.05	13.90
		1/74	15.00	14.07	14.06	13.91			1/99	15.00	14.13	13.97	13.97
		36/0	15.00	14.03	13.92	13.81			50/0	15.00	**14.18**	14.06	13.98
		36/19	15.00	14.02	13.96	13.87			50/25	15.00	13.97	14.00	13.87
		36/39	15.00	13.94	13.96	13.90			50/50	15.00	14.01	14.04	13.92
		75/0	15.00	13.99	13.93	13.86			100/0	15.00	**13.96**	13.95	13.88
	16QAM	1/0	15.00	13.66	14.12	13.94		16QAM	1/0	15.00	14.15	14.24	14.03
		1/37	15.00	13.69	14.09	13.86			1/50	15.00	14.14	14.41	13.97
		1/74	15.00	13.65	14.07	13.88			1/99	15.00	14.01	14.02	14.07
		36/0	15.00	13.84	13.80	13.59			50/0	15.00	13.89	13.88	13.70
		36/19	15.00	13.85	13.82	13.66			50/25	15.00	13.83	13.87	13.64
		36/39	15.00	13.78	13.83	13.69			50/50	15.00	13.89	13.85	13.70
		75/0	15.00	13.81	13.79	13.68			100/0	15.00	13.91	13.79	13.75

LTE FDD Band 12

Band / BW	Modulation	RB Size/Offset	Tune-up	CH23017	CH23095	CH23173	Band / BW	Modulation	RB Size/Offset	Tune-up	CH23025	CH23095	CH23165
				699.7MHz	707.5MHz	715.3MHz					700.5MHz	707.5MHz	714.5MHz
12 / 1.4M	QPSK	1/0	20.00	19.13	18.95	18.95	12 / 3M	QPSK	1/0	20.00	18.94	18.88	18.74
		1/2	20.00	19.12	18.96	18.77			1/7	20.00	19.01	19.08	18.82
		1/5	20.00	19.22	19.50	18.90			1/14	20.00	18.91	18.96	18.67
		3/0	20.00	18.86	18.66	18.63			8/0	20.00	18.95	18.77	18.76
		3/1	20.00	18.90	18.74	18.69			8/3	20.00	18.92	18.84	18.67
		3/3	20.00	18.85	18.82	18.66			8/7	20.00	18.86	18.77	18.70
		6/0	20.00	18.81	18.68	18.54			15/0	20.00	18.85	18.78	18.72
	16QAM	1/0	20.00	19.04	19.03	19.08		16QAM	1/0	20.00	18.90	19.39	19.04
		1/2	20.00	19.25	18.98	19.13			1/7	20.00	18.78	19.34	19.01
		1/5	20.00	19.01	19.09	19.12			1/14	20.00	18.78	19.37	18.83
		3/0	20.00	18.96	18.77	18.79			8/0	20.00	18.96	18.84	18.77
		3/1	20.00	19.01	18.78	18.83			8/3	20.00	19.00	18.93	18.71
		3/3	20.00	19.05	18.89	18.80			8/7	20.00	18.91	18.83	18.75
		6/0	20.00	19.01	18.80	18.54			15/0	20.00	18.86	18.85	18.69
Band / BW	Modulation	RB Size/Offset	Tune-up	CH23035	CH23095	CH23155	Band / BW	Modulation	RB Size/Offset	Tune-up	CH23060	CH23095	CH23130
				701.5MHz	707.5MHz	713.5MHz					704MHz	707.5MHz	711MHz
12 / 5M	QPSK	1/0	20.00	19.02	18.89	18.88	12 / 10M	QPSK	1/0	20.00	19.20	19.29	18.99
		1/12	20.00	18.99	19.00	19.06			1/24	20.00	**19.28**	**19.52**	**19.01**
		1/24	20.00	18.98	18.92	18.74			1/49	20.00	19.22	19.17	18.79
		12/0	20.00	18.79	18.73	18.66			25/0	20.00	19.06	19.07	19.04
		12/6	20.00	18.83	18.74	18.73			25/12	20.00	18.99	**19.09**	18.98
		12/13	20.00	18.80	18.79	18.70			25/25	20.00	18.99	19.02	18.96
		25/0	20.00	18.80	18.82	18.62			50/0	20.00	19.05	19.03	19.00
	16QAM	1/0	20.00	19.03	19.26	18.95		16QAM	1/0	20.00	19.42	19.50	19.31
		1/12	20.00	19.03	19.24	18.97			1/24	20.00	19.08	19.45	19.37
		1/24	20.00	19.01	19.20	18.77			1/49	20.00	19.38	19.41	19.20
		12/0	20.00	18.95	18.89	18.71			25/0	20.00	19.12	19.12	19.18
		12/6	20.00	18.87	18.92	18.81			25/12	20.00	19.06	19.19	19.13
		12/13	20.00	18.89	18.95	18.75			25/25	20.00	19.07	19.06	19.07
		25/0	20.00	18.84	18.93	18.61			50/0	20.00	18.98	19.09	19.05

LTE FDD Band 13

Band / BW	Modulation	RB Size/Offset	Tune-up	CH23205	CH23230	CH23255	Band / BW	Modulation	RB Size/Offset	Tune-up	CH23230
				779.5MHz	782MHz	784.5MHz					782MHz
13 / 5M	QPSK	1/0	18.00	16.71	16.73	16.59	13 / 10M	QPSK	1/0	18.00	**17.04**
		1/12	18.00	16.80	16.63	16.76			1/24	18.00	16.48
		1/24	18.00	16.51	16.62	16.71			1/49	18.00	16.60
		12/0	18.00	16.65	16.55	16.48			25/0	18.00	**16.63**
		12/6	18.00	16.64	16.52	16.55			25/12	18.00	16.52
		12/13	18.00	16.57	16.40	16.51			25/25	18.00	16.50
		25/0	18.00	16.65	16.53	16.48			50/0	18.00	16.64
	16QAM	1/0	18.00	16.77	16.86	16.62		16QAM	1/0	18.00	16.80
		1/12	18.00	16.96	16.80	16.78			1/24	18.00	16.49
		1/24	18.00	16.66	16.91	16.68			1/49	18.00	16.78
		12/0	18.00	16.74	16.70	16.52			25/0	18.00	16.66
		12/6	18.00	16.69	16.64	16.61			25/12	18.00	16.56
		12/13	18.00	16.64	16.48	16.49			25/25	18.00	16.52
		25/0	18.00	16.68	16.57	16.45			50/0	18.00	16.56

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26047	CH26365	CH26683	Band / BW	Modulation	RB Size/Offset	Tune-up	CH26055	CH26365	CH26675
				1850.7MHz	1882.5MHz	1914.3MHz					1851.5MHz	1882.5MHz	1913.5MHz
25 / 1.4M	QPSK	1/0	18.00	16.75	16.91	16.90	25 / 3M	QPSK	1/0	18.00	16.60	17.39	16.84
		1/2	18.00	16.74	16.93	16.87			1/7	18.00	16.81	17.23	16.80
		1/5	18.00	16.90	16.83	17.04			1/14	18.00	16.50	17.09	16.79
		3/0	18.00	16.48	17.12	16.82			8/0	18.00	16.76	16.92	16.82
		3/1	18.00	16.77	16.98	16.77			8/3	18.00	16.86	17.02	16.86
		3/3	18.00	16.72	16.92	16.83			8/7	18.00	16.70	16.97	16.76
		6/0	18.00	16.72	16.78	16.76			15/0	18.00	16.81	16.97	16.81
	16QAM	1/0	18.00	16.88	17.18	16.87		16QAM	1/0	18.00	16.66	17.21	16.69
		1/2	18.00	16.95	17.20	17.04			1/7	18.00	16.66	17.33	16.89
		1/5	18.00	16.96	17.15	16.87			1/14	18.00	16.66	17.22	16.82
		3/0	18.00	16.84	16.99	16.93			8/0	18.00	16.95	16.92	16.84
		3/1	18.00	16.93	17.06	16.89			8/3	18.00	17.04	17.02	16.85
		3/3	18.00	16.89	17.14	16.96			8/7	18.00	16.93	16.93	16.82
		6/0	18.00	16.97	16.67	16.97			15/0	18.00	16.89	16.99	16.78
Band / BW	Modulation	RB Size/Offset	Tune-up	CH26065	CH26365	CH26665	Band / BW	Modulation	RB Size/Offset	Tune-up	CH26090	CH26365	CH26640
				1852.5MHz	1882.5MHz	1912.5MHz					1855MHz	1882.5MHz	1910MHz
25 / 5M	QPSK	1/0	18.00	16.74	17.32	16.95	25 / 10M	QPSK	1/0	18.00	16.85	17.13	17.10
		1/12	18.00	17.12	16.97	17.10			1/24	18.00	16.64	17.23	16.73
		1/24	18.00	16.87	16.97	16.98			1/49	18.00	16.58	17.00	16.73
		12/0	18.00	16.72	16.95	16.81			25/0	18.00	16.74	16.87	16.77
		12/6	18.00	16.80	16.90	16.75			25/12	18.00	16.79	16.95	16.78
		12/13	18.00	16.78	16.94	16.83			25/25	18.00	16.78	16.87	16.81
		25/0	18.00	16.82	16.98	16.76			50/0	18.00	16.79	16.89	16.86
	16QAM	1/0	18.00	17.03	17.12	16.96		16QAM	1/0	18.00	16.89	17.35	16.72
		1/12	18.00	17.16	17.19	17.13			1/24	18.00	16.66	17.32	16.41
		1/24	18.00	17.11	17.22	16.95			1/49	18.00	16.76	17.22	17.02
		12/0	18.00	16.93	17.12	16.87			25/0	18.00	16.82	16.88	16.88
		12/6	18.00	16.97	17.07	16.83			25/12	18.00	16.89	16.99	16.88
		12/13	18.00	16.92	17.11	16.89			25/25	18.00	16.87	16.89	16.85
		25/0	18.00	16.85	16.97	16.74			50/0	18.00	16.83	17.01	16.92
Band / BW	Modulation	RB Size/Offset	Tune-up	CH26115	CH26365	CH26615	Band / BW	Modulation	RB Size/Offset	Tune-up	CH26140	CH26365	CH26590
				1857.5MHz	1882.5MHz	1907.5MHz					1860MHz	1882.5MHz	1905MHz
25 / 15M	QPSK	1/0	18.00	16.72	16.71	17.07	25 / 20M	QPSK	1/0	18.00	**17.31**	**17.22**	**17.53**
		1/37	18.00	16.51	16.80	16.91			1/50	18.00	16.75	16.70	16.90
		1/74	18.00	16.41	16.57	16.77			1/99	18.00	16.59	16.49	16.66
		36/0	18.00	16.71	16.57	16.81			50/0	18.00	16.72	16.78	**16.91**
		36/19	18.00	16.69	16.78	16.92			50/25	18.00	16.77	16.83	16.76
		36/39	18.00	16.71	16.78	16.78			50/50	18.00	16.70	16.83	16.75
		75/0	18.00	16.82	16.74	16.87			100/0	18.00	16.83	16.75	**16.89**
	16QAM	1/0	18.00	16.57	17.13	16.76		16QAM	1/0	18.00	17.44	17.29	17.29
		1/37	18.00	16.61	17.18	16.80			1/50	18.00	17.38	16.80	17.31
		1/74	18.00	16.13	17.02	17.01			1/99	18.00	17.30	17.24	17.03
		36/0	18.00	16.76	17.02	16.88			50/0	18.00	16.79	16.86	16.97
		36/19	18.00	16.81	16.82	16.88			50/25	18.00	16.84	16.89	16.92
		36/39	18.00	16.72	16.89	16.75			50/50	18.00	16.80	16.87	16.84
		75/0	18.00	16.80	16.77	16.94			100/0	18.00	16.85	16.80	16.92

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26697	CH26865	CH27033
				814.7MHz	831MHz	848.3MHz
26 / 1.4M	QPSK	1/0	20.00	18.79	18.50	18.59
		1/2	20.00	18.76	18.56	18.51
		1/5	20.00	18.74	18.46	18.69
		3/0	20.00	18.49	18.34	18.39
		3/1	20.00	18.67	18.35	18.46
		3/3	20.00	18.54	18.35	18.46
		6/0	20.00	18.56	18.27	18.36
	16QAM	1/0	20.00	18.64	18.70	18.67
		1/2	20.00	18.87	18.11	18.72
		1/5	20.00	18.77	18.93	18.66
		3/0	20.00	18.78	18.54	18.41
		3/1	20.00	18.90	18.17	18.47
		3/3	20.00	18.84	18.30	18.48
		6/0	20.00	18.74	18.36	18.48

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26705	CH26865	CH27025
				815.5MHz	831MHz	847.5MHz
26 / 3M	QPSK	1/0	20.00	18.63	18.61	18.49
		1/7	20.00	18.69	18.42	18.28
		1/14	20.00	18.75	18.62	18.48
		8/0	20.00	18.58	18.39	18.41
		8/3	20.00	18.67	18.37	18.44
		8/7	20.00	18.61	18.43	18.41
		15/0	20.00	18.56	18.43	18.44
	16QAM	1/0	20.00	18.60	19.05	18.70
		1/7	20.00	18.55	18.77	18.61
		1/14	20.00	18.77	18.99	18.51
		8/0	20.00	18.70	18.42	18.40
		8/3	20.00	18.78	18.44	18.49
		8/7	20.00	18.72	18.46	18.45
		15/0	20.00	18.65	18.47	18.37

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26715	CH26865	CH27015
				816.5MHz	831MHz	846.5MHz
26 / 5M	QPSK	1/0	20.00	18.61	18.60	18.66
		1/12	20.00	18.81	18.53	18.65
		1/24	20.00	18.69	18.40	18.47
		12/0	20.00	18.61	18.26	18.33
		12/6	20.00	18.72	18.44	18.40
		12/13	20.00	18.64	18.32	18.38
		25/0	20.00	18.62	18.30	18.38
	16QAM	1/0	20.00	18.78	19.10	18.56
		1/12	20.00	18.95	18.93	18.70
		1/24	20.00	18.78	18.81	18.52
		12/0	20.00	18.77	18.41	18.43
		12/6	20.00	18.79	18.59	18.51
		12/13	20.00	18.74	18.46	18.43
		25/0	20.00	18.68	18.36	18.33

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26740	CH26865	CH26990
				819MHz	831MHz	844MHz
26 / 10M	QPSK	1/0	20.00	18.57	18.90	18.29
		1/24	20.00	18.50	18.51	18.42
		1/49	20.00	18.50	18.58	18.35
		25/0	20.00	18.58	18.40	18.33
		25/12	20.00	18.57	18.37	18.46
		25/25	20.00	18.39	18.35	18.38
		50/0	20.00	18.52	18.39	18.39
	16QAM	1/0	20.00	18.75	18.81	18.66
		1/24	20.00	18.58	18.75	18.74
		1/49	20.00	18.55	18.56	18.64
		25/0	20.00	18.61	18.45	18.48
		25/12	20.00	18.59	18.44	18.55
		25/25	20.00	18.43	18.34	18.45
		50/0	20.00	18.46	18.40	18.45

Band / BW	Modulation	RB Size/Offset	Tune-up	CH26765	CH26865	CH26965
				821.5MHz	831MHz	841.5MHz
26 / 15M	QPSK	1/0	20.00	**19.12**	**18.88**	**18.82**
		1/37	20.00	18.78	18.76	18.64
		1/74	20.00	18.68	18.75	18.46
		36/0	20.00	**18.85**	18.75	18.65
		36/19	20.00	18.84	**18.76**	**18.67**
		36/39	20.00	18.67	18.70	18.55
		75/0	20.00	**18.83**	18.69	18.63
	16QAM	1/0	20.00	18.75	18.84	18.77
		1/37	20.00	18.75	18.82	18.80
		1/74	20.00	18.63	18.72	18.58
		36/0	20.00	18.86	18.72	18.68
		36/19	20.00	18.83	18.78	18.68
		36/39	20.00	18.68	18.73	18.52
		75/0	20.00	18.91	18.72	18.72

LTE TDD Band 41

Band / BW	Modulation	RB Size/Offset	Tune-up	CH39675	CH40148	CH40620	CH41093	CH41565
				2498.5MHz	2545.8MHz	2593MHz	2640.3MHz	2687.5MHz
41 / 5M	QPSK	1/0	17.00	15.91	15.47	15.96	15.69	15.69
		1/12	17.00	15.99	15.68	15.99	15.71	15.72
		1/24	17.00	15.84	15.79	15.95	15.64	15.72
		12/0	17.00	15.94	15.66	15.92	15.55	15.63
		12/6	17.00	16.04	15.78	15.93	15.63	15.58
		12/13	17.00	16.03	15.69	15.88	15.49	15.61
		25/0	17.00	15.99	15.72	15.89	15.61	15.56
	16QAM	1/0	17.00	15.95	15.69	16.00	15.58	16.00
		1/12	17.00	16.10	15.84	16.10	15.61	16.09
		1/24	17.00	15.96	15.82	16.02	15.63	15.96
		12/0	17.00	15.98	15.58	15.99	15.58	15.71
		12/6	17.00	16.05	15.70	15.97	15.53	15.74
		12/13	17.00	16.08	15.73	15.92	15.59	15.67
		25/0	17.00	15.96	15.76	15.93	15.59	15.57

Band / BW	Modulation	RB Size/Offset	Tune-up	CH39700	CH40160	CH40620	CH41080	CH41540
				2501MHz	2547MHz	2593MHz	2639MHz	2685MHz
41 / 10M	QPSK	1/0	17.00	15.88	15.79	16.09	15.69	15.54
		1/24	17.00	15.90	15.75	16.00	15.64	15.50
		1/49	17.00	15.87	15.79	16.03	15.73	15.40
		25/0	17.00	15.97	15.71	15.92	15.61	15.59
		25/12	17.00	15.96	15.74	15.92	15.67	15.59
		25/25	17.00	15.95	15.71	15.96	15.73	15.57
		50/0	17.00	15.93	15.69	15.94	15.66	15.58
	16QAM	1/0	17.00	16.09	15.68	16.07	15.63	16.06
		1/24	17.00	16.10	15.74	16.17	15.77	16.17
		1/49	17.00	16.07	15.83	16.34	15.73	16.10
		25/0	17.00	16.04	15.71	15.90	15.79	15.65
		25/12	17.00	16.00	15.68	15.95	15.71	15.63
		25/25	17.00	15.98	15.64	15.95	15.51	15.61
		50/0	17.00	15.90	15.56	15.98	15.60	15.65

Band / BW	Modulation	RB Size/Offset	Tune-up	CH39725	CH40173	CH40620	CH41068	CH41515
				2503.5MHz	2548.3MHz	2593MHz	2637.8MHz	2682.5MHz
41 / 15M	QPSK	1/0	17.00	15.81	15.74	16.17	15.63	15.84
		1/37	17.00	15.86	15.79	16.14	15.74	15.78
		1/74	17.00	15.73	15.73	15.99	15.71	15.68
		36/0	17.00	16.02	15.74	16.02	15.59	15.84
		36/19	17.00	16.00	15.76	16.07	15.75	15.79
		36/39	17.00	15.92	15.63	15.93	15.76	15.70
		75/0	17.00	15.92	15.74	16.01	15.73	15.76
	16QAM	1/0	17.00	16.08	15.69	16.08	15.77	15.97
		1/37	17.00	16.15	15.73	16.06	15.67	16.04
		1/74	17.00	15.96	15.63	16.33	15.71	15.80
		36/0	17.00	15.97	15.66	16.04	15.64	15.88
		36/19	17.00	16.00	15.63	16.07	15.74	15.80
		36/39	17.00	15.88	15.78	15.98	15.73	15.73
		75/0	17.00	15.96	15.59	16.04	15.74	15.77

Band / BW	Modulation	RB Size/Offset	Tune-up	CH39750	CH40185	CH40620	CH41055	CH41490
				2506MHz	2549.5MHz	2593MHz	2636.5MHz	2680MHz
41 / 20M	QPSK	1/0	17.00	16.06	15.84	16.11	15.98	16.00
		1/50	17.00	**16.09**	**16.11**	**16.38**	**16.12**	**16.06**
		1/99	17.00	15.99	15.96	16.02	15.89	15.80
		50/0	17.00	15.81	15.66	15.95	15.63	15.77
		50/25	17.00	15.91	15.78	**16.06**	15.71	15.79
		50/50	17.00	15.79	15.59	16.04	15.73	15.79
		100/0	17.00	15.87	15.54	16.02	15.66	15.78
	16QAM	1/0	17.00	16.04	15.62	16.08	15.81	16.06
		1/50	17.00	15.96	15.55	16.16	15.75	16.05
		1/99	17.00	15.60	15.41	16.02	15.64	15.99
		50/0	17.00	15.85	15.69	15.94	15.67	15.81
		50/25	17.00	15.94	15.77	16.03	15.72	15.82
		50/50	17.00	15.79	15.58	15.99	15.71	15.84
		100/0	17.00	15.91	15.76	16.01	15.63	15.80

8.2 SAR TEST RESULTS

General Notes:

1) Per KDB447498 D01, all measurement SAR results are scaled to the maximum tune-up tolerance limit to demonstrate compliant.

2) Per KDB447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:≤0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is≤100 MHz. 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.

3) Per KDB865664 D01,for each frequency band,repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg; if the deviation among the repeated measurement is ≤ 20%,and the measured SAR <1.45W/kg,only one repeated measurement is required.

4) Per KDB941225 D06, the DUT Dimension is bigger than 9 cm x 5 cm, so 10mm is chosen as the test separation distance for Hotspot mode. When the antenna-to-edge distance is greater than 2.5cm,such position does not need to be tested.

5) Per KDB648474 D04, SAR is evaluated without a headset connected to the device.When the standalone reported body-worn SAR is ≤1.2 W/kg, no additional SAR evaluations using a headset are required.

6) Per KDB865664 D02, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is > 1.5 W/kg, or > 7.0 W/kg for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing.

UMTS Notes:

Per KDB941225 D01, 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.

LTE notes:

1) The LTE test configurations are determined according to KDB941225 D05 SAR for LTE Devices.The general test procedures used for SAR testing can be found in Section 7.1.3.

2) A-MPR was disabled for all SAR test by setting NS_01 on the base station simulator.SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames(maximum TTI)

8.2.1 WWAN SAR MEASUREMENT RESULT

1. Tablet Mode SAR test results of UMTS

Sensor on

Test No.	Band	Mode	CH	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T05	UMTS B2	RMC12.2K	9400	Rear Face	0	16	14.97	0.06	0.515	0.653
T07	UMTS B2	RMC12.2K	9400	Top Side	0	16	14.97	0.05	0.188	0.238
T08	UMTS B2	RMC12.2K	9262	Rear Face	0	16	15.12	0.09	0.633	0.775
T09	UMTS B2	RMC12.2K	9538	Rear Face	0	16	14.96	0.1	0.683	**0.868**
T31	UMTS B4	RMC12.2K	1413	Rear Face	0	16	15.28	0.05	1.060	**1.251**
T33	UMTS B4	RMC12.2K	1413	Top Side	0	16	15.28	0.04	0.311	0.367
T34	UMTS B4	RMC12.2K	1312	Rear Face	0	16	15.08	-0.05	0.961	1.188
T35	UMTS B4	RMC12.2K	1513	Rear Face	0	16	15.1	0.02	0.998	1.228
T36	UMTS B4	RMC12.2K	1413	Rear Face (1st)	0	16	15.28	0.03	1.050	1.239
T56	UMTS B5	RMC12.2K	4182	Rear Face	0	20	18.61	-0.01	0.916	**1.262**
T58	UMTS B5	RMC12.2K	4182	Top Side	0	20	18.61	0.03	0.269	0.370
T59	UMTS B5	RMC12.2K	4132	Rear Face	0	20	18.43	0.05	0.827	1.187
T60	UMTS B5	RMC12.2K	4233	Rear Face	0	20	18.47	0.11	0.882	1.254
T61	UMTS B5	RMC12.2K	4182	Rear Face (1st)	0	20	18.61	0.03	0.903	1.244

2. Tablet Mode SAR test results of UMTS

Sensor off

Test No.	Band	Mode	CH	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T15	UMTS B2	RMC12.2K	9400	Rear Face	1.1	24	22.99	0.05	1.080	1.363
T16	UMTS B2	RMC12.2K	9400	Left Side	0	24	22.99	0.12	0.299	0.377
T18	UMTS B2	RMC12.2K	9400	Top Side	1	24	22.99	0.06	0.617	0.779
T20	UMTS B2	RMC12.2K	9262	Rear Face	1.1	24	23.21	-0.07	1.220	**1.463**
T21	UMTS B2	RMC12.2K	9538	Rear Face	1.1	24	23.14	-0.02	0.556	0.678
T22	UMTS B2	RMC12.2K	9262	Rear Face（1st repeated）	1.1	24	23.21	0.03	1.190	1.427
T23	UMTS B2	RMC12.2K	9262	Rear Face（2nd repeated）	1.1	24	23.21	0.05	1.210	1.451
T40	UMTS B4	RMC12.2K	1413	Rear Face	1.1	24	23.08	-0.12	1.100	1.360
T41	UMTS B4	RMC12.2K	1413	Left Side	0	24	23.08	0.06	0.220	0.272
T42	UMTS B4	RMC12.2K	1413	Top Side	1	24	23.08	0.13	1.130	1.397
T43	UMTS B4	RMC12.2K	1312	Top Side	1	24	23.16	0.16	1.160	**1.408**
T44	UMTS B4	RMC12.2K	1513	Top Side	1	24	23.03	0.13	1.100	1.375
T45	UMTS B4	RMC12.2K	1312	Top Side（1st repeated）	1	24	23.16	0.06	1.140	1.383
T65	UMTS B5	RMC12.2K	4182	Rear Face	1.1	24	22.46	0.13	0.426	0.607
T66	UMTS B5	RMC12.2K	4182	Left Side	0	24	22.46	0.15	0.541	**0.771**
T68	UMTS B5	RMC12.2K	4182	Top Side	1	24	22.46	0.06	0.320	0.456
T70	UMTS B5	RMC12.2K	4132	Left Side	0	24	22.44	0.05	0.511	0.732
T71	UMTS B5	RMC12.2K	4233	Left Side	0	24	22.57	-0.08	0.530	0.737

3. Tablet Mode SAR test results of LTE Band 4 and LTE Band 7.

Sensor on

Test No.	Band	Mode	CH	RB	offset	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T90	LTE B4	QPSK20M	20050	1	0	Rear Face	0	16	15.48	0.09	0.974	1.098
T92	LTE B4	QPSK20M	20050	1	0	Top Side	0	16	15.48	0.04	0.601	0.677
T93	LTE B4	QPSK20M	20050	50	0	Rear Face	0	16	15.14	-0.12	0.916	1.117
T95	LTE B4	QPSK20M	20050	50	0	Top Side	0	16	15.14	-0.02	0.578	0.705
T96	LTE B4	QPSK20M	20175	1	0	Rear Face	0	16	15.24	0.07	0.973	1.159
T97	LTE B4	QPSK20M	20300	1	0	Rear Face	0	16	15.33	0.07	1.000	**1.167**
T350	LTE B4	QPSK20M	20175	50	0	Rear Face	0	16	15.08	0.02	0.850	1.051
T351	LTE B4	QPSK20M	20300	50	0	Rear Face	0	16	15.01	0.09	0.845	1.061
T98	LTE B4	QPSK20M	20050	100	0	Rear Face	0	16	14.98	0.06	0.886	1.121
T99	LTE B4	QPSK20M	20300	1	0	Rear Face（1st repeated）	0	16	15.33	0.02	0.992	1.157
T121	LTE B7	QPSK20M	20850	1	0	Rear Face	0	15	14.41	0.02	1.010	**1.157**
T123	LTE B7	QPSK20M	20850	1	0	Top Side	0	15	14.41	-0.02	0.439	0.503
T124	LTE B7	QPSK20M	20850	50	0	Rear Face	0	15	14.18	0.09	0.952	1.150
T126	LTE B7	QPSK20M	20850	50	0	Top Side	0	15	14.18	0.01	0.402	0.486
T127	LTE B7	QPSK20M	21100	50	0	Rear Face	0	15	14.06	0.05	0.921	1.144
T128	LTE B7	QPSK20M	21350	50	0	Rear Face	0	15	13.98	0.09	0.908	1.148
T129	LTE B7	QPSK20M	21100	1	0	Rear Face	0	15	14.39	0.12	0.918	1.056
T130	LTE B7	QPSK20M	21350	1	0	Rear Face	0	15	14.19	0.08	0.916	1.104
T131	LTE B7	QPSK20M	20850	100	0	Rear Face	0	15	13.96	0.05	0.873	1.109
T132	LTE B7	QPSK20M	20850	1	0	Rear Face（1st repeated）	0	15	14.41	0.06	0.994	1.139

4. Tablet Mode SAR test results of LTE Band 4 and LTE Band 7.

Sensor off

Test No.	Band	Mode	CH	RB	offset	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T101	LTE B4	QPSK20M	20050	1	0	Rear Face	1.1	24	23.32	0.03	0.893	1.043
T102	LTE B4	QPSK20M	20050	1	0	Left Side	0	24	23.32	0.06	0.142	0.166
T103	LTE B4	QPSK20M	20050	1	0	Top Side	1	24	23.32	0.08	1.090	1.273
T104	LTE B4	QPSK20M	20050	50	25	Rear Face	1.1	23	22.25	0.07	0.759	0.902
T105	LTE B4	QPSK20M	20050	50	25	Left Side	0	23	22.25	-0.02	0.129	0.153
T106	LTE B4	QPSK20M	20050	50	25	Top Side	1	23	22.25	-0.05	0.843	1.002
T107	LTE B4	QPSK20M	20175	1	0	Top Side	1	24	23.13	0.19	1.110	**1.357**
T108	LTE B4	QPSK20M	20300	1	0	Top Side	1	24	23.09	-0.01	1.070	1.320
T352	LTE B4	QPSK20M	20175	50	25	Top Side	1	23	22.13	0.03	0.688	0.841
T353	LTE B4	QPSK20M	20300	50	0	Top Side	1	23	22.08	0.12	0.767	0.948
T109	LTE B4	QPSK20M	20050	100	0	Top Side	1	23	22.19	0.03	0.964	1.162
T110	LTE B4	QPSK20M	20175	1	0	Top Side (1st repeated)	1	24	23.13	0.07	1.080	1.320
T135	LTE B7	QPSK20M	21100	1	50	Rear Face	1.1	23	22.08	-0.02	0.672	**0.830**
T136	LTE B7	QPSK20M	21100	1	50	Left Side	0	23	22.08	0.06	0.070	0.086
T138	LTE B7	QPSK20M	21100	1	50	Top Side	1	23	22.08	0.04	0.401	0.495
T140	LTE B7	QPSK20M	21100	50	25	Rear Face	1.1	22	21.02	0.02	0.538	0.675
T141	LTE B7	QPSK20M	21100	50	25	Left Side	0	22	21.02	-0.05	0.060	0.075
T143	LTE B7	QPSK20M	21100	50	25	Top Side	1	22	21.02	0.01	0.338	0.424
T145	LTE B7	QPSK20M	20850	1	50	Rear Face	1.1	23	21.85	-0.05	0.614	0.801
T146	LTE B7	QPSK20M	21350	1	50	Rear Face	1.1	23	21.98	0.07	0.567	0.717
T147	LTE B7	QPSK20M	21100	100	0	Rear Face	1.1	22	20.87	0.03	0.621	0.806

5. Tablet Mode SAR test results of LTE Band 12 and Band 13.

Sensor on

Test No.	Band	Mode	CH	RB	offset	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T170	LTE B12	QPSK10M	23095	1	24	Rear Face	0	20	19.52	-0.02	0.408	0.455
T172	LTE B12	QPSK10M	23095	1	24	Top Side	0	20	19.52	0.02	0.109	0.122
T173	LTE B12	QPSK10M	23095	25	12	Rear Face	0	20	19.09	0.15	0.393	0.485
T175	LTE B12	QPSK10M	23095	25	12	Top Side	0	20	19.09	0.09	0.118	0.146
T176	LTE B12	QPSK10M	23060	1	24	Rear Face	0	20	19.28	0.01	0.389	0.459
T177	LTE B12	QPSK10M	23130	1	24	Rear Face	0	20	19.01	0.04	0.427	**0.536**
T215	LTE B13	QPSK10M	23230	1	0	Rear Face	0	18	17.04	-0.01	0.452	**0.564**
T216	LTE B13	QPSK10M	23230	1	0	Top Side	0	18	17.04	0.08	0.251	0.313
T217	LTE B13	QPSK10M	23230	25	0	Rear Face	0	18	16.63	0.05	0.409	0.561
T218	LTE B13	QPSK10M	23230	25	0	Top Side	0	18	16.63	0.04	0.213	0.292

6. Tablet Mode SAR test results of LTE Band 12 and Band 13.

Sensor off

Test No.	Band	Mode	CH	RB	offset	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T181	LTE B12	QPSK10M	23060	1	0	Rear Face	1.1	24	23.16	0.03	0.226	0.274
T182	LTE B12	QPSK10M	23060	1	0	Left Side	0	24	23.16	0.06	0.238	0.289
T184	LTE B12	QPSK10M	23060	1	0	Top Side	1	24	23.16	-0.05	0.058	0.070
T186	LTE B12	QPSK10M	23060	25	0	Rear Face	1.1	23	21.91	-0.04	0.171	0.220
T187	LTE B12	QPSK10M	23060	25	0	Left Side	0	23	21.91	0.09	0.195	0.251
T189	LTE B12	QPSK10M	23060	25	0	Top Side	1	23	21.91	0.02	0.045	0.058
T191	LTE B12	QPSK10M	23095	1	0	Left Side	0	24	22.97	-0.06	0.256	0.324
T192	LTE B12	QPSK10M	23130	1	0	Left Side	0	24	22.93	0.02	0.286	**0.366**
T220	LTE B13	QPSK10M	23230	1	24	Rear Face	1.1	24	22.78	0.07	0.319	0.422
T221	LTE B13	QPSK10M	23230	1	24	Left Side	0	24	22.78	0.01	0.382	**0.506**
T223	LTE B13	QPSK10M	23230	1	24	Top Side	1	24	22.78	-0.02	0.149	0.197
T225	LTE B13	QPSK10M	23230	25	12	Rear Face	1.1	23	21.68	-0.12	0.252	0.341
T226	LTE B13	QPSK10M	23230	25	12	Left Side	0	23	21.68	0.05	0.296	0.401
T228	LTE B13	QPSK10M	23230	25	12	Top Side	1	23	21.68	0.04	0.152	0.206

7. Tablet Mode SAR test results of LTE Band 25 and Band 26.

Sensor on

Test No.	Band	Mode	CH	RB	offset	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T246	LTE B25	QPSK20M	26590	1	0	Rear Face	0	18	17.53	0.05	0.883	**0.984**
T248	LTE B25	QPSK20M	26590	1	0	Top Side	0	18	17.53	-0.03	0.242	0.270
T249	LTE B25	QPSK20M	26590	50	0	Rear Face	0	18	16.91	0.06	0.608	0.781
T251	LTE B25	QPSK20M	26590	50	0	Top Side	0	18	16.91	0.18	0.256	0.329
T252	LTE B25	QPSK20M	26140	1	0	Rear Face	0	18	17.31	0.06	0.738	0.865
T253	LTE B25	QPSK20M	26365	1	0	Rear Face	0	18	17.22	0.03	0.704	0.843
T254	LTE B25	QPSK20M	26590	100	0	Rear Face	0	18	16.89	0.06	0.746	0.963
T255	LTE B25	QPSK20M	26590	1	0	Rear Face（1st repeated）	0	18	17.53	0.02	0.876	0.976
T290	LTE B26	QPSK15M	26765	1	0	Rear Face	0	20	19.12	0.04	0.820	1.004
T292	LTE B26	QPSK15M	26765	1	0	Top Side	0	20	19.12	0.01	0.552	0.676
T293	LTE B26	QPSK15M	26765	36	0	Rear Face	0	20	18.85	0.02	0.696	0.907
T295	LTE B26	QPSK15M	26765	36	0	Top Side	0	20	18.85	-0.09	0.514	0.670
T296	LTE B26	QPSK15M	26865	1	0	Rear Face	0	20	18.88	0.07	0.752	0.973
T297	LTE B26	QPSK15M	26965	1	0	Rear Face	0	20	18.82	0.01	0.860	**1.128**
T355	LTE B26	QPSK15M	26865	36	19	Rear Face	0	20	18.76	0.03	0.728	0.969
T356	LTE B26	QPSK15M	26965	36	19	Rear Face	0	20	18.67	0.09	0.742	1.008
T298	LTE B26	QPSK15M	26765	75	0	Rear Face	0	20	18.83	0.08	0.762	0.998
T299	LTE B26	QPSK15M	26965	1	0	Rear Face（1st repeated）	0	20	18.82	0.05	0.842	1.105

8. Tablet Mode SAR test results of LTE Band 25 and Band 26.

Sensor off

Test No.	Band	Mode	CH	RB	offset	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T260	LTE B25	QPSK20M	26590	1	50	Rear Face	1.1	24	23.36	-0.02	0.558	0.646
T261	LTE B25	QPSK20M	26590	1	50	Left Side	0	24	23.36	0.06	0.299	0.346
T263	LTE B25	QPSK20M	26590	1	50	Top Side	1	24	23.36	0.04	0.230	0.266
T265	LTE B25	QPSK20M	26590	50	50	Rear Face	1.1	23	22.05	-0.02	0.390	0.485
T266	LTE B25	QPSK20M	26590	50	50	Left Side	0	23	22.05	-0.06	0.264	0.328
T268	LTE B25	QPSK20M	26590	50	50	Top Side	1	23	22.05	0.05	0.178	0.221
T270	LTE B25	QPSK20M	26140	1	50	Rear Face	1.1	24	23.14	-0.05	0.959	**1.169**
T271	LTE B25	QPSK20M	26365	1	50	Rear Face	1.1	24	22.94	0.01	0.845	1.079
T272	LTE B25	QPSK20M	26590	100	0	Rear Face	1.1	23	22.02	0.05	0.512	0.642
T273	LTE B25	QPSK20M	26140	1	50	Rear Face（1st repeated）	1.1	24	23.14	-0.02	0.934	1.139
T301	LTE B26	QPSK15M	26865	1	0	Rear Face	1.1	24	22.94	0.01	0.464	0.592
T302	LTE B26	QPSK15M	26865	1	0	Left Side	0	24	22.94	0.14	0.487	0.621
T304	LTE B26	QPSK15M	26865	1	0	Top Side	1	24	22.94	0.04	0.343	0.438
T306	LTE B26	QPSK15M	26865	36	0	Rear Face	1.1	23	22.73	0.05	0.387	0.412
T307	LTE B26	QPSK15M	26865	36	0	Left Side	0	23	22.73	0.06	0.427	0.455
T309	LTE B26	QPSK15M	26865	36	0	Top Side	1	23	22.73	0.11	0.326	0.347
T311	LTE B26	QPSK15M	26765	1	0	Left Side	0	24	22.89	-0.05	0.471	0.609
T312	LTE B26	QPSK15M	26965	1	0	Left Side	0	24	22.75	0.06	0.516	**0.689**

9. Tablet Mode SAR test results of LTE Band 41.
Sensor on

Test No.	Band	Mode	CH	RB	offset	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T325	LTE B41	QPSK20M	40620	1	50	Rear Face	0	17	16.38	0.09	0.657	**0.758**
T326	LTE B41	QPSK20M	40620	1	50	Top Side	0	17	16.38	0.02	0.413	0.476
T327	LTE B41	QPSK20M	40620	50	25	Rear Face	0	17	16.06	0.03	0.606	0.752
T328	LTE B41	QPSK20M	40620	50	25	Top Side	0	17	16.06	-0.02	0.378	0.469
T345	LTE B41	QPSK20M	39750	1	50	Rear Face	0	17	16.09	0.04	0.604	0.746
T346	LTE B41	QPSK20M	40185	1	50	Rear Face	0	17	16.11	-0.03	0.611	0.750
T347	LTE B41	QPSK20M	41055	1	50	Rear Face	0	17	16.12	-0.01	0.608	0.745
T348	LTE B41	QPSK20M	41490	1	50	Rear Face	0	17	16.06	0.07	0.598	0.743

10. Tablet Mode SAR test results of LTE Band 41.
Sensor off

Test No.	Band	Mode	CH	RB	offset	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T330	LTE B41	QPSK20M	40620	1	50	Rear Face	1.1	23	21.95	0.06	0.284	0.361
T331	LTE B41	QPSK20M	40620	1	50	Left Side	0	23	21.95	0.03	0.037	0.047
T333	LTE B41	QPSK20M	40620	1	50	Top Side	1	23	21.95	-0.02	0.230	0.293
T335	LTE B41	QPSK20M	39750	50	25	Rear Face	1.1	22	20.82	0.19	0.317	0.416
T336	LTE B41	QPSK20M	39750	50	25	Left Side	0	22	20.82	0.01	0.043	0.056
T338	LTE B41	QPSK20M	39750	50	25	Top Side	1	22	20.82	0.07	0.208	0.273
T340	LTE B41	QPSK20M	39750	1	50	Rear Face	1.1	23	21.93	-0.11	0.342	**0.437**
T341	LTE B41	QPSK20M	40185	1	50	Rear Face	1.1	23	21.89	-0.03	0.224	0.289
T342	LTE B41	QPSK20M	41055	1	50	Rear Face	1.1	23	21.92	0.06	0.189	0.242
T343	LTE B41	QPSK20M	41490	1	50	Rear Face	1.1	23	21.94	0.09	0.186	0.237

11. NB SAR test results of UMTS.

Test No.	Band	Mode	CH	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T01	UMTS B2	RMC12.2K	9400	Back of Keyboard	0	24	22.99	0.02	0.021	0.026
T02	UMTS B2	RMC12.2K	9400	Back of Screen	2.5	24	22.99	0.04	0.167	0.211
T03	UMTS B2	RMC12.2K	9262	Back of Screen	2.5	24	23.21	0.06	0.218	**0.261**
T04	UMTS B2	RMC12.2K	9538	Back of Screen	2.5	24	23.14	0.01	0.085	0.104
T25	UMTS B4	RMC12.2K	1413	Back of Keyboard	0	24	23.08	0	0.039	0.048
T26	UMTS B4	RMC12.2K	1413	Back of Screen	2.5	24	23.08	0.04	0.228	0.282
T27	UMTS B4	RMC12.2K	1312	Back of Screen	2.5	24	23.16	0.02	0.222	0.269
T28	UMTS B4	RMC12.2K	1513	Back of Screen	2.5	24	23.03	-0.07	0.239	**0.299**
T50	UMTS B5	RMC12.2K	4182	Back of Keyboard	0	24	22.46	0.06	0.013	0.019
T51	UMTS B5	RMC12.2K	4182	Back of Screen	2.5	24	22.46	0.09	0.140	0.200
T52	UMTS B5	RMC12.2K	4132	Back of Screen	2.5	24	22.44	-0.03	0.154	**0.221**
T53	UMTS B5	RMC12.2K	4233	Back of Screen	2.5	24	22.57	0.04	0.121	0.168

12. NB Mode SAR test results of LTE Band 4, Band 7, Band 12 and Band 13.

Test No.	Band	Mode	CH	RB	offset	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T80	LTE B4	QPSK20M	20050	1	0	Back of Keyboard	0	24	23.32	0	0.025	0.029
T81	LTE B4	QPSK20M	20050	1	0	Back of Screen	2.5	24	23.32	0.03	0.214	0.250
T82	LTE B4	QPSK20M	20050	50	25	Back of Keyboard	0	23	22.25	0	0.020	0.024
T83	LTE B4	QPSK20M	20050	50	25	Back of Screen	2.5	23	22.25	0.04	0.166	0.197
T84	LTE B4	QPSK20M	20175	1	0	Back of Screen	2.5	24	23.13	-0.02	0.209	0.255
T85	LTE B4	QPSK20M	20300	1	0	Back of Screen	2.5	24	23.09	0.06	0.223	**0.275**
T111	LTE B7	QPKS20M	21100	1	50	Back of Keyboard	0	23	22.08	0	0.011	0.014
T112	LTE B7	QPKS20M	21100	1	50	Back of Screen	2.5	23	22.08	0.03	0.153	**0.189**
T113	LTE B7	QPKS20M	21100	50	25	Back of Keyboard	0	22	21.02	0	0.000	0.000
T114	LTE B7	QPKS20M	21100	50	25	Back of Screen	2.5	22	21.02	0.02	0.107	0.134
T115	LTE B7	QPKS20M	20850	1	50	Back of Screen	2.5	23	21.85	-0.05	0.116	0.151
T116	LTE B7	QPKS20M	21350	1	50	Back of Screen	2.5	23	21.98	0.15	0.130	0.164
T151	LTE B12	QPSK10M	23060	1	0	Back of Keyboard	0	24	23.16	0	0.000	0.000
T152	LTE B12	QPSK10M	23060	1	0	Back of Screen	2.5	24	23.16	0.03	0.067	0.081
T153	LTE B12	QPSK10M	23060	25	0	Back of Keyboard	0	23	21.91	0	0.000	0.000
T154	LTE B12	QPSK10M	23060	25	0	Back of Screen	2.5	23	21.91	0.01	0.054	0.069
T155	LTE B12	QPSK10M	23095	1	0	Back of Screen	2.5	24	22.97	0.05	0.069	0.087
T156	LTE B12	QPSK10M	23130	1	0	Back of Screen	2.5	24	22.93	0.09	0.070	**0.090**
T196	LTE B13	QPSK10M	23230	1	24	Back of Keyboard	0	24	22.78	0	0.000	0.000
T197	LTE B13	QPSK10M	23230	1	24	Back of Screen	2.5	24	22.78	-0.03	0.133	**0.176**
T198	LTE B13	QPSK10M	23230	25	12	Back of Keyboard	0	23	21.68	0	0.000	0.000
T199	LTE B13	QPSK10M	23230	25	12	Back of Screen	2.5	23	21.68	0.03	0.105	0.142

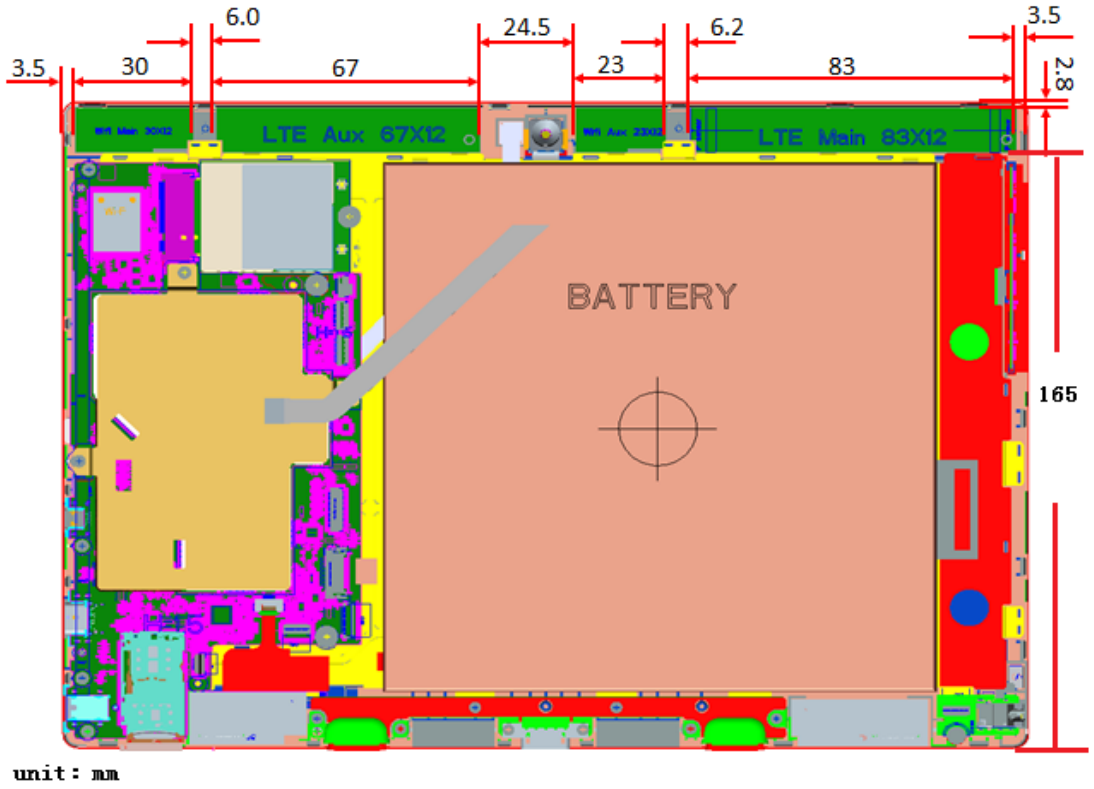
13. NB Mode SAR test results of LTE Band 25, Band 26 and Band 41.

Test No.	Band	Mode	CH	RB	offset	Test Position	Separation Distance (cm)	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift (dB)	SAR Value (W/kg)1-g	Reported SAR
T235	LTE B25	QPSK20M	26590	1	50	Back of Keyboard	0	24	23.36	0	0.000	0.000
T236	LTE B25	QPSK20M	26590	1	50	Back of Screen	2.5	24	23.36	0.05	0.096	0.111
T237	LTE B25	QPSK20M	26590	50	50	Back of Keyboard	0	23	22.05	0	0.000	0.000
T238	LTE B25	QPSK20M	26590	50	50	Back of Screen	2.5	23	22.05	0.08	0.071	0.088
T239	LTE B25	QPSK20M	26140	1	50	Back of Screen	2.5	24	23.14	-0.13	0.185	**0.226**
T240	LTE B25	QPSK20M	26365	1	50	Back of Screen	2.5	24	22.94	0.02	0.141	0.180
T278	LTE B26	QPSK15M	26865	1	0	Back of Keyboard	0	24	22.94	0	0.000	0.000
T279	LTE B26	QPSK15M	26865	1	0	Back of Screen	2.5	24	22.94	0.06	0.116	0.148
T280	LTE B26	QPSK15M	26865	36	0	Back of Keyboard	0	23	22.73	0	0.000	0.000
T281	LTE B26	QPSK15M	26865	36	0	Back of Screen	2.5	23	22.73	-0.02	0.094	0.100
T282	LTE B26	QPSK15M	26765	1	0	Back of Screen	2.5	24	22.89	0.07	0.144	**0.186**
T283	LTE B26	QPSK15M	26965	1	0	Back of Screen	2.5	24	22.75	0.01	0.117	0.156
T316	LTE B41	QPSK20M	40620	1	50	Back of Keyboard	0	23	21.95	0	0.000	0.000
T317	LTE B41	QPSK20M	40620	1	50	Back of Screen	2.5	23	21.95	-0.03	0.054	**0.068**
T318	LTE B41	QPSK20M	39750	50	25	Back of Keyboard	0	22	20.82	0	0.000	0.000
T319	LTE B41	QPSK20M	39750	50	25	Back of Screen	2.5	22	20.82	0.06	0.041	0.054
T320	LTE B41	QPSK20M	39750	1	50	Back of Screen	2.5	23	21.93	0.08	0.051	0.066
T321	LTE B41	QPSK20M	40185	1	50	Back of Screen	2.5	23	21.89	0.02	0.046	0.059
T322	LTE B41	QPSK20M	41055	1	50	Back of Screen	2.5	23	21.92	0.06	0.050	0.064
T323	LTE B41	QPSK20M	41490	1	50	Back of Screen	2.5	23	21.94	0.01	0.043	0.055

8.3 MULTIPLE TRANSMITTER EVALUATION

The following tables list information which is relevant for the decision if a simultaneous transmit evaluation is necessary according to FCC KDB 447498D01 General RF Exposure Guidance v06.

The location of the antennas inside the pad is shown as below picture:



Per FCC KDB 447498D01, SAR compliance for simultaneous transmission must be considered when the maximum duration of overlapping transmissions, including network hand-offs, is greater than 30 seconds.This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis.

WWAN / WiFi / BT transmit simultaneously

No.	Configuration	Body
1	2.4G/5GWiFi Ant(Main)+2.4G/5G WiFi Ant(Aux)	Yes
2	2.4G/5GWiFi Ant(Main)+BT	Yes
3	5G WiFi Ant(Aux)+BT	Yes
4	5GWiFi Ant(Main)+5G WiFi Ant(Aux)+BT	Yes
5	WWAN(UMTS/LTE)+BT	Yes
6	WWAN(UMTS/LTE)+2.4G/5GWiFi Ant(Main)	Yes
7	WWAN(UMTS/LTE)+2.4G/5G WiFi Ant(Aux)	Yes
8	WWAN(UMTS/LTE)+2.4G/5GWiFi Ant(Main)+ 2.4G/5G WiFi Ant(Aux)	Yes
9	WWAN(UMTS/LTE)+2.4G/5GWiFi Ant(Main)+BT	Yes
10	WWAN(UMTS/LTE)+5GWiFi Ant(Main)+ 5G WiFi Ant(Aux)+BT	Yes

Note: 1). The WiFi Ant(Main) and WiFi Ant(Aux) are for Intel 9560 NGW Module
2). The WWAN Ant is for Sierra Wireless EM7455 Module Card.
3). BT antenna only supports the aux antenna.
4). The module has support the MIMO Tx.

8.3.1 SAR SUMMATION SCENARIO

About WWAN and WLAN
7455+3165

Position	Tablet					Notebook	
	Rear Face	Left Side	Right Side	Top Side	Bottom Side	Back of Keyboard	Back of Screen
UMTS B2	1.463	0.377	0.101	0.779	0.052	0.026	0.261
UMTS B4	1.360	0.272	-	1.408	-	0.048	0.299
UMTS B5	1.262	1.023	0.044	0.456	0.080	0.019	0.221
LTE B4	1.167	0.166	-	1.357	-	0.029	0.275
LTE B7	1.157	0.086	0.054	0.503	0.063	0.014	0.189
LTE B12	0.536	0.366	0.061	0.122	0.085	0.000	0.090
LTE B13	0.564	0.506	0.090	0.313	0.048	0.000	0.176
LTE B25	1.169	0.346	0.063	0.329	0.021	0.000	0.226
LTE B26	1.128	0.689	0.050	0.676	0.075	0.000	0.186
LTE B41	0.758	0.056	0.000	0.476	0.000	0.000	0.068
802.11b/g	1.190	-	0.240	0.480	-	0.400	0.400
5G	1.260	-	0.810	0.980	-	0.400	0.400
802.11b/g	0.640	-	-	0.370	-	0.400	0.400
5G	1.300	-	-	1.350	-	0.400	0.400
Bluetooth	**0.580**	**-**	**0.130**	**0.230**	**-**	**0.400**	**0.400**
Max. SAR Summation	**4.02**	**1.02**	**1.04**	**3.74**	**0.08**	**0.85**	**1.10**

Note: This test report only records the test results of the WWAN SAR, the test data of WLAN SAR, please refer to test report SAR.20170107, which is issued by Intel Mobile Communication.

7455+8265

Position	Tablet					Notebook	
	Rear Face	Left Side	Right Side	Top Side	Bottom Side	Rear Face	Bottom Side
UMTS B2	1.463	0.377	0.101	0.779	0.052	0.026	0.261
UMTS B4	1.360	0.272	-	1.408	-	0.048	0.299
UMTS B5	1.262	1.023	0.044	0.456	0.080	0.019	0.221
LTE B4	1.167	0.166	-	1.357	-	0.029	0.275
LTE B7	1.157	0.086	0.054	0.503	0.063	0.014	0.189
LTE B12	0.536	0.366	0.061	0.122	0.085	0.000	0.090
LTE B13	0.564	0.506	0.090	0.313	0.048	0.000	0.176
LTE B25	1.169	0.346	0.063	0.329	0.021	0.000	0.226
LTE B26	1.128	0.689	0.050	0.676	0.075	0.000	0.186
LTE B41	0.758	0.056	0.000	0.476	0.000	0.000	0.068
802.11b/g	1.120	-	0.240	0.480	-	0.400	0.400
5G	1.230	-	1.230	1.250	-	0.400	0.400
802.11b/g	0.780	-	-	0.560	-	0.400	0.400
5G	1.280	-	-	1.150	-	0.400	0.400
Bluetooth	**0.560**	**-**	**0.120**	**0.260**	**-**	**0.400**	**0.400**
Max. SAR Summation	**3.97**	**1.02**	**1.45**	**3.81**	**0.08**	**0.85**	**1.10**

Note: This test report only records the test results of the WWAN SAR, the test data of WLAN SAR, please refer to test report SAR.20170108, which is issued by Intel Mobile Communication.

8.3.1.1 SIMULTANEOUS TRANSMISSION CONLCUSION

According to KDB447498 D01, When the sum of SAR is larger than limit, SAR test exclusion isdetermined by the SAR to peak location separation ratio(SPLSR).When the SAR to peak location ratio for each pair of antennas is 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion. When 10-g SAR applies, the ratio must be ≤ 0.10.
When SAR is measured for both antennas in the pair the peak location separation distance is computed by the followingformula:

$$\text{Distance}_{Tx1\text{-}Tx2} = R_i = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

$$\text{SPLS Ratio} = (SAR_1 + SAR_2)^{1.5}/R_i$$

When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna. Due to curvatures on the SAM phantom, when SAR is estimated for one of the antennas in an antenna pair, the measured peak SAR location should be translated onto the test device to determine the peak location separation for the antenna pair. The ERP location on the phantom is aligned with the ERP location on the handset, with 6mm separation in the z coordinate due to the ear spacer. A measured peak location can be translated onto the handset, with respect to the ERP location, by ignoring the 6 mm offset in the z coordinate. The assumed peak location of the antenna with estimated SAR can also be determined with respect to the ERP location on the handset. The peak location separation distance is estimated by the x and y coordinated of the peaks, referenced to the ERP location. While flat phantoms are not expected to have these issues, the same peak translation approach should be applied to determine peak location separation.

Test No.	Position	Band	1-g SAR	X(m)	Y(m)	Z(m)
T20	Rear	UTMS B2	1.51	0.0555	-0.0765	-0.18
T40	Rear	UTMS B4	1.36	0.0555	-0.0675	-0.181
T56	Rear	UTMS B5	1.06	0.06	-0.081	-0.18
T97	Rear	LTE B4	1.33	0.056	-0.0645	-0.18
T121	Rear	LTE B7	1.25	0.054	-0.0615	-0.18
T177	Rear	LTE B12	0.504	0.059	-0.067	-0.18
T215	Rear	LTE B13	0.572	0.047	-0.075	-0.18
T270	Rear	LTE B25	1.16	0.0465	-0.0765	-0.181
T297	Rear	LTE B26	1.1	0.058	-0.0775	-0.18
T325	Rear	LTE B41	0.945	0.0405	-0.0635	-0.18
T400	Rear	2.4G ANT A	1.76	0.0375	0.178	-0.179
T401	Rear	2.4G ANT B	1.43	0.066	0.054	-0.18
T402	Rear	BT	0.0653	0.0435	0.06	-0.179
T403	Rear	5G ANT A	1.15	0.0435	0.158	-0.177
T404	Rear	5G ANT B	1.79	0.0455	0.054	-0.18
T500	Rear	2.4G ANT A	1.76	0.0375	0.178	-0.179
T501	Rear	2.4G ANT B	1.43	0.066	0.054	-0.18
T502	Rear	BT	0.0653	0.0435	0.06	-0.179
T503	Rear	5G ANT A	1.15	0.0435	0.158	-0.177
T504	Rear	5G ANT B	1.79	0.0455	0.054	-0.18

T18	Top	UTMS B2	0.759	-0.0075	-0.0645	-0.181
T43	Top	UTMS B4	1.38	-0.003	-0.0745	-0.182
T68	Top	UTMS B5	0.42	-0.006	-0.072	-0.181
T107	Top	LTE B4	1.32	-0.0015	-0.0795	-0.182
T123	Top	LTE B7	0.606	0.006	-0.096	-0.18
T172	Top	LTE B12	0.157	-0.0015	-0.092	-0.181
T216	Top	LTE B13	0.419	-0.003	-0.0825	-0.181
T251	Top	LTE B25	0.306	-0.0045	-0.0555	-0.181
T292	Top	LTE B26	0.691	-0.003	-0.0795	-0.181
T326	Top	LTE B41	0.591	8.74E-11	-0.0635	-0.18
T420	Top	2.4G ANT A	0.996	-0.0075	0.0965	-0.181
T421	Top	2.4G ANT B	1.01	-0.0075	0.0495	-0.18
T422	Top	BT	0.0491	-0.0045	-0.009	-0.181
T423	Top	5G ANT A	0.783	-0.012	0.151	-0.178
T424	Top	5G ANT B	0.614	-0.0045	0.0485	-0.179
T520	Top	2.4G ANT A	0.996	-0.0075	0.0965	-0.181
T521	Top	2.4G ANT B	1.01	-0.0075	0.0495	-0.18
T522	Top	BT	0.0491	-0.0045	-0.009	-0.181
T523	Top	5G ANT A	0.783	-0.012	0.151	-0.178
T524	Top	5G ANT B	0.614	-0.0045	0.0485	-0.179

7455+3165:

Configure	T1	T2	SAR Peak 1 (m)			SAR Peak 2 (m)			mm	SAR 1 (mW/g)	SAR 2 (mW/g)	SAR1+SAR2 (mW/g)	SPLSR
			X1	Y1	Z1	X2	Y2+Y	Z2+ Z					
WIFI A+B	T400	T401	0.0375	0.178	-0.179	0.066	0.054	-0.18	127.2	1.19	0.64	1.83	**0.019**
	T403	T404	0.0435	0.158	-0.177	0.0455	0.054	-0.18	104.1	1.26	1.30	2.56	**0.039**
WIFI A+BT	T400	T402	0.0375	0.178	-0.179	0.0435	0.06	-0.179	118.2	1.19	0.58	1.77	**0.020**
2.4G WIFI B +WWAN	T401	T20	0.066	0.054	-0.18	0.0555	-0.0765	-0.18	130.9	0.64	1.46	2.10	**0.023**
	T401	T40	0.066	0.054	-0.18	0.0555	-0.0675	-0.181	122.0	0.64	1.36	2.00	**0.023**
	T401	T56	0.066	0.054	-0.18	0.06	-0.081	-0.18	135.1	0.64	1.26	1.90	**0.019**
	T401	T97	0.066	0.054	-0.18	0.056	-0.0645	-0.18	118.9	0.64	1.17	1.81	**0.020**
	T401	T121	0.066	0.054	-0.18	0.054	-0.0615	-0.18	116.1	0.64	1.16	1.80	**0.021**
	T401	B12	0.066	0.054	-0.18	0.059	-0.067	-0.18	121.2	0.64	0.54	1.18	**0.011**
	T401	T215	0.066	0.054	-0.18	0.047	-0.075	-0.18	130.4	0.64	0.56	1.20	**0.010**
	T401	T270	0.066	0.054	-0.18	0.0465	-0.0765	-0.181	132.0	0.64	1.17	1.81	**0.018**
	T401	T297	0.066	0.054	-0.18	0.058	-0.0775	-0.18	131.7	0.64	1.13	1.77	**0.018**
	T401	B41	0.066	0.054	-0.18	0.0405	-0.0635	-0.18	120.2	0.64	0.76	1.40	**0.014**
2.4G WIFI A +WWAN	T400	T20	0.0375	0.178	-0.179	0.0555	-0.0765	-0.18	255.1	1.19	1.46	2.65	**0.017**
	T400	T40	0.0375	0.178	-0.179	0.0555	-0.0675	-0.181	246.2	1.19	1.36	2.55	**0.017**
	T400	T56	0.0375	0.178	-0.179	0.06	-0.081	-0.18	260.0	1.19	1.26	2.45	**0.015**
	T400	T97	0.0375	0.178	-0.179	0.056	-0.0645	-0.18	243.2	1.19	1.17	2.36	**0.015**
	T400	T121	0.0375	0.178	-0.179	0.054	-0.0615	-0.18	240.1	1.19	1.16	2.35	**0.015**
	T400	B12	0.0375	0.178	-0.179	0.059	-0.067	-0.18	245.9	1.19	0.54	1.73	**0.009**
	T400	T215	0.0375	0.178	-0.179	0.047	-0.075	-0.18	253.2	1.19	0.56	1.75	**0.009**
	T400	T270	0.0375	0.178	-0.179	0.0465	-0.0765	-0.181	254.7	1.19	1.17	2.36	**0.014**
	T400	T297	0.0375	0.178	-0.179	0.058	-0.0775	-0.18	256.3	1.19	1.13	2.32	**0.014**
	T400	B41	0.0375	0.178	-0.179	0.0405	-0.0635	-0.18	241.5	1.19	0.76	1.95	**0.011**
BT+WWAN	T402	T20	0.0435	0.06	-0.179	0.0555	-0.0765	-0.18	137.0	0.58	1.46	2.04	**0.021**
	T402	T40	0.0435	0.06	-0.179	0.0555	-0.0675	-0.181	128.1	0.58	1.36	1.94	**0.021**
	T402	T56	0.0435	0.06	-0.179	0.06	-0.081	-0.18	142.0	0.58	1.26	1.84	**0.018**
	T402	T97	0.0435	0.06	-0.179	0.056	-0.0645	-0.18	125.1	0.58	1.17	1.75	**0.018**
	T402	T121	0.0435	0.06	-0.179	0.054	-0.0615	-0.18	122.0	0.58	1.16	1.74	**0.019**
	T402	B12	0.0435	0.06	-0.179	0.059	-0.067	-0.18	127.9	0.58	0.54	1.12	**0.009**
	T402	T215	0.0435	0.06	-0.179	0.047	-0.075	-0.18	135.0	0.58	0.56	1.14	**0.009**
	T402	T270	0.0435	0.06	-0.179	0.0465	-0.0765	-0.181	136.5	0.58	1.17	1.75	**0.017**
	T402	T297	0.0435	0.06	-0.179	0.058	-0.0775	-0.18	138.3	0.58	1.13	1.71	**0.016**
	T402	B41	0.0435	0.06	-0.179	0.0405	-0.0635	-0.18	123.5	0.58	0.76	1.34	**0.013**

5G WIFI B +WWAN	T404	T20	0.0455	0.054	-0.18	0.0555	-0.0765	-0.18	130.9	1.3	1.46	2.76	**0.035**
	T404	T40	0.0455	0.054	-0.18	0.0555	-0.0675	-0.181	121.9	1.3	1.36	2.66	**0.036**
	T404	T56	0.0455	0.054	-0.18	0.06	-0.081	-0.18	135.8	1.3	1.26	2.56	**0.030**
	T404	T97	0.0455	0.054	-0.18	0.056	-0.0645	-0.18	119.0	1.3	1.17	2.47	**0.033**
	T404	T121	0.0455	0.054	-0.18	0.054	-0.0615	-0.18	115.8	1.3	1.16	2.46	**0.033**
	T404	B12	0.0455	0.054	-0.18	0.059	-0.067	-0.18	121.8	1.3	0.54	1.84	**0.020**
	T404	T215	0.0455	0.054	-0.18	0.047	-0.075	-0.18	129.0	1.3	0.56	1.86	**0.020**
	T404	T270	0.0455	0.054	-0.18	0.0465	-0.0765	-0.181	130.5	1.3	1.17	2.47	**0.030**
	T404	T297	0.0455	0.054	-0.18	0.058	-0.0775	-0.18	132.1	1.3	1.13	2.43	**0.029**
	T404	B41	0.0455	0.054	-0.18	0.0405	-0.0635	-0.18	117.6	1.3	0.76	2.06	**0.025**
5G WIFI A +WWAN	T403	T20	0.0435	0.158	-0.177	0.0555	-0.0765	-0.18	234.8	1.26	1.46	2.72	**0.019**
	T403	T40	0.0435	0.158	-0.177	0.0555	-0.0675	-0.181	225.9	1.26	1.36	2.62	**0.019**
	T403	T56	0.0435	0.158	-0.177	0.06	-0.081	-0.18	239.6	1.26	1.26	2.52	**0.017**
	T403	T97	0.0435	0.158	-0.177	0.056	-0.0645	-0.18	222.9	1.26	1.17	2.43	**0.017**
	T403	T121	0.0435	0.158	-0.177	0.054	-0.0615	-0.18	219.8	1.26	1.16	2.42	**0.017**
	T403	B12	0.0435	0.158	-0.177	0.059	-0.067	-0.18	225.6	1.26	0.54	1.80	**0.011**
	T403	T215	0.0435	0.158	-0.177	0.047	-0.075	-0.18	233.0	1.26	0.56	1.82	**0.011**
	T403	T270	0.0435	0.158	-0.177	0.0465	-0.0765	-0.181	234.6	1.26	1.17	2.43	**0.016**
	T403	T297	0.0435	0.158	-0.177	0.058	-0.0775	-0.18	236.0	1.26	1.13	2.39	**0.016**
	T403	B41	0.0435	0.158	-0.177	0.0405	-0.0635	-0.18	221.5	1.26	0.76	2.02	**0.013**
WIFI A+B	T420	T421	-0.0075	0.0965	-0.181	-0.0075	0.0495	-0.18	47.0	0.48	0.37	0.85	**0.017**
	T423	T424	-0.012	0.151	-0.178	-0.0045	0.0485	-0.179	102.8	0.98	1.35	2.33	**0.035**
WIFI A+BT	T420	T422	-0.0075	0.0965	-0.181	-0.0045	-0.009	-0.181	105.5	0.48	0.23	0.71	**0.006**
2.4G WIFI B +WWAN	T421	T18	-0.0075	0.0495	-0.18	-0.0075	-0.0645	-0.181	114.0	0.37	0.78	1.15	**0.011**
	T421	T43	-0.0075	0.0495	-0.18	-0.003	-0.0745	-0.182	124.1	0.37	1.41	1.78	**0.019**
	T421	T107	-0.0075	0.0495	-0.18	-0.0015	-0.0795	-0.182	129.2	0.37	1.36	1.73	**0.018**
2.4G WIFI A +WWAN	T420	T18	-0.0075	0.0965	-0.181	-0.0075	-0.0645	-0.181	161.0	0.48	0.78	1.26	**0.009**
	T420	T43	-0.0075	0.0965	-0.181	-0.003	-0.0745	-0.182	171.1	0.48	1.41	1.89	**0.015**
	T420	T107	-0.0075	0.0965	-0.181	-0.0015	-0.0795	-0.182	176.1	0.48	1.36	1.84	**0.014**
BT +WWAN	T422	T43	-0.0045	-0.009	-0.181	-0.003	-0.0745	-0.182	65.5	0.23	1.41	1.64	**0.032**
	T422	T107	-0.0045	-0.009	-0.181	-0.0015	-0.0795	-0.182	70.6	0.23	1.36	1.59	**0.028**
5G WIFI B +WWAN	T424	T18	-0.0045	0.0485	-0.179	-0.0075	-0.0645	-0.181	113.1	1.35	0.78	2.13	**0.027**
	T424	T43	-0.0045	0.0485	-0.179	-0.003	-0.0745	-0.182	123.0	1.35	1.41	2.76	**0.037**
	T424	T68	-0.0045	0.0485	-0.179	-0.006	-0.072	-0.181	120.5	1.35	0.46	1.81	**0.020**
	T424	T107	-0.0045	0.0485	-0.179	-0.0015	-0.0795	-0.182	128.1	1.35	1.36	2.71	**0.035**
	T424	T123	-0.0045	0.0485	-0.179	0.006	-0.096	-0.18	144.9	1.35	0.50	1.85	**0.017**
	T424	B12	-0.0045	0.0485	-0.179	-0.0015	-0.092	-0.181	140.5	1.35	0.12	1.47	**0.013**
	T424	T216	-0.0045	0.0485	-0.179	-0.003	-0.0825	-0.181	131.0	1.35	0.31	1.66	**0.016**
	T424	T251	-0.0045	0.0485	-0.179	-0.0045	-0.0555	-0.181	104.0	1.35	0.33	1.68	**0.021**
	T424	T292	-0.0045	0.0485	-0.179	-0.003	-0.0795	-0.181	128.0	1.35	0.68	2.03	**0.023**

	T424	B41	-0.0045	0.0485	-0.179	8.74E-11	-0.0635	-0.18	112.1	1.35	0.48	1.83	**0.022**
5G WIFI A +WWAN	T423	T18	-0.012	0.151	-0.178	-0.0075	-0.0645	-0.181	215.6	0.98	0.78	1.76	**0.011**
	T423	T43	-0.012	0.151	-0.178	-0.003	-0.0745	-0.182	225.7	0.98	1.41	2.39	**0.016**
	T423	T68	-0.012	0.151	-0.178	-0.006	-0.072	-0.181	223.1	0.98	0.46	1.44	**0.008**
	T423	T107	-0.012	0.151	-0.178	-0.0015	-0.0795	-0.182	230.8	0.98	1.36	2.34	**0.015**
	T423	T123	-0.012	0.151	-0.178	0.006	-0.096	-0.18	247.7	0.98	0.50	1.48	**0.007**
	T423	B12	-0.012	0.151	-0.178	-0.0015	-0.092	-0.181	243.2	0.98	0.12	1.10	**0.005**
	T423	T216	-0.012	0.151	-0.178	-0.003	-0.0825	-0.181	233.7	0.98	0.31	1.29	**0.006**
	T423	T251	-0.012	0.151	-0.178	-0.0045	-0.0555	-0.181	206.7	0.98	0.33	1.31	**0.007**
	T423	T292	-0.012	0.151	-0.178	-0.003	-0.0795	-0.181	230.7	0.98	0.68	1.66	**0.009**
	T423	B41	-0.012	0.151	-0.178	8.74E-11	-0.0635	-0.18	214.8	0.98	0.48	1.46	**0.008**

The SPLSR is under 0.04, the Simultaneous SAR is not required.

7455+8265:

Configure	T1	T2	SAR Peak 1 (m)			SAR Peak 2 (m)			mm	SAR 1 (mW/g)	SAR 2 (mW/g)	SAR1+SAR2 (mW/g)	SPLSR
			X1	Y1	Z1	X2	Y2+Y	Z2+ Z					
WIFI A+B	T500	T501	0.0375	0.178	-0.179	0.066	0.054	-0.18	127.2	1.12	0.78	1.90	**0.021**
	T503	T504	0.0435	0.158	-0.177	0.0455	0.054	-0.18	104.1	1.23	1.28	2.51	**0.038**
WIFI A+BT	T500	T502	0.0375	0.178	-0.179	0.0435	0.06	-0.179	118.2	1.12	0.56	1.68	**0.018**
2.4G WIFI B +WWAN	T501	T20	0.066	0.054	-0.18	0.0555	-0.0765	-0.18	130.9	0.78	1.46	2.24	**0.026**
	T501	T40	0.066	0.054	-0.18	0.0555	-0.0675	-0.181	122.0	0.78	1.36	2.14	**0.026**
	T501	T56	0.066	0.054	-0.18	0.06	-0.081	-0.18	135.1	0.78	1.26	2.04	**0.022**
	T501	T97	0.066	0.054	-0.18	0.056	-0.0645	-0.18	118.9	0.78	1.10	1.88	**0.022**
	T501	T121	0.066	0.054	-0.18	0.054	-0.0615	-0.18	116.1	0.78	1.16	1.94	**0.023**
	T501	B12	0.066	0.054	-0.18	0.059	-0.067	-0.18	121.2	0.78	0.54	1.32	**0.012**
	T501	T215	0.066	0.054	-0.18	0.047	-0.075	-0.18	130.4	0.78	0.56	1.34	**0.012**
	T501	T270	0.066	0.054	-0.18	0.0465	-0.0765	-0.181	132.0	0.78	1.17	1.95	**0.021**
	T501	T297	0.066	0.054	-0.18	0.058	-0.0775	-0.18	131.7	0.78	1.13	1.91	**0.020**
	T501	B41	0.066	0.054	-0.18	0.0405	-0.0635	-0.18	120.2	0.78	0.76	1.54	**0.016**
2.4G WIFI A +WWAN	T500	T20	0.0375	0.178	-0.179	0.0555	-0.0765	-0.18	255.1	1.12	1.46	2.58	**0.016**
	T500	T40	0.0375	0.178	-0.179	0.0555	-0.0675	-0.181	246.2	1.12	1.36	2.48	**0.016**
	T500	T56	0.0375	0.178	-0.179	0.06	-0.081	-0.18	260.0	1.12	1.26	2.38	**0.014**
	T500	T97	0.0375	0.178	-0.179	0.056	-0.0645	-0.18	243.2	1.12	1.10	2.22	**0.014**
	T500	T121	0.0375	0.178	-0.179	0.054	-0.0615	-0.18	240.1	1.12	1.16	2.28	**0.014**
	T500	B12	0.0375	0.178	-0.179	0.059	-0.067	-0.18	245.9	1.12	0.54	1.66	**0.009**
	T500	T215	0.0375	0.178	-0.179	0.047	-0.075	-0.18	253.2	1.12	0.56	1.68	**0.009**
	T500	T270	0.0375	0.178	-0.179	0.0465	-0.0765	-0.181	254.7	1.12	1.17	2.29	**0.014**
	T500	T297	0.0375	0.178	-0.179	0.058	-0.0775	-0.18	256.3	1.12	1.13	2.25	**0.013**
	T500	B41	0.0375	0.178	-0.179	0.0405	-0.0635	-0.18	241.5	1.12	0.76	1.88	**0.011**
BT+WWAN	T502	T20	0.0435	0.06	-0.179	0.0555	-0.0765	-0.18	137.0	0.56	1.46	2.02	**0.021**
	T502	T40	0.0435	0.06	-0.179	0.0555	-0.0675	-0.181	128.1	0.56	1.36	1.92	**0.021**
	T502	T56	0.0435	0.06	-0.179	0.06	-0.081	-0.18	142.0	0.56	1.26	1.82	**0.017**
	T502	T97	0.0435	0.06	-0.179	0.056	-0.0645	-0.18	125.1	0.56	1.10	1.66	**0.017**
	T502	T121	0.0435	0.06	-0.179	0.054	-0.0615	-0.18	122.0	0.56	1.16	1.72	**0.018**
	T502	B12	0.0435	0.06	-0.179	0.059	-0.067	-0.18	127.9	0.56	0.54	1.10	**0.009**
	T502	T215	0.0435	0.06	-0.179	0.047	-0.075	-0.18	135.0	0.56	0.56	1.12	**0.009**
	T502	T270	0.0435	0.06	-0.179	0.0465	-0.0765	-0.181	136.5	0.56	1.17	1.73	**0.017**
	T502	T297	0.0435	0.06	-0.179	0.058	-0.0775	-0.18	138.3	0.56	1.13	1.69	**0.016**
	T502	B41	0.0435	0.06	-0.179	0.0405	-0.0635	-0.18	123.5	0.56	0.76	1.32	**0.012**

5G WIFI B +WWAN	T504	T20	0.0455	0.054	-0.18	0.0555	-0.0765	-0.18	130.9	1.28	1.46	2.74	**0.035**
	T504	T40	0.0455	0.054	-0.18	0.0555	-0.0675	-0.181	121.9	1.28	1.36	2.64	**0.035**
	T504	T56	0.0455	0.054	-0.18	0.06	-0.081	-0.18	135.8	1.28	1.26	2.54	**0.030**
	T504	T97	0.0455	0.054	-0.18	0.056	-0.0645	-0.18	119.0	1.28	1.10	2.38	**0.031**
	T504	T121	0.0455	0.054	-0.18	0.054	-0.0615	-0.18	115.8	1.28	1.16	2.44	**0.033**
	T504	B12	0.0455	0.054	-0.18	0.059	-0.067	-0.18	121.8	1.28	0.54	1.82	**0.020**
	T504	T215	0.0455	0.054	-0.18	0.047	-0.075	-0.18	129.0	1.28	0.56	1.84	**0.019**
	T504	T270	0.0455	0.054	-0.18	0.0465	-0.0765	-0.181	130.5	1.28	1.17	2.45	**0.029**
	T504	T297	0.0455	0.054	-0.18	0.058	-0.0775	-0.18	132.1	1.28	1.13	2.41	**0.028**
	T504	B41	0.0455	0.054	-0.18	0.0405	-0.0635	-0.18	117.6	1.28	0.76	2.04	**0.025**
5G WIFI A +WWAN	T503	T20	0.0435	0.158	-0.177	0.0555	-0.0765	-0.18	234.8	1.23	1.46	2.69	**0.019**
	T503	T40	0.0435	0.158	-0.177	0.0555	-0.0675	-0.181	225.9	1.23	1.36	2.59	**0.018**
	T503	T56	0.0435	0.158	-0.177	0.06	-0.081	-0.18	239.6	1.23	1.26	2.49	**0.016**
	T503	T97	0.0435	0.158	-0.177	0.056	-0.0645	-0.18	222.9	1.23	1.10	2.33	**0.016**
	T503	T121	0.0435	0.158	-0.177	0.054	-0.0615	-0.18	219.8	1.23	1.16	2.39	**0.017**
	T503	B12	0.0435	0.158	-0.177	0.059	-0.067	-0.18	225.6	1.23	0.54	1.77	**0.010**
	T503	T215	0.0435	0.158	-0.177	0.047	-0.075	-0.18	233.0	1.23	0.56	1.79	**0.010**
	T503	T270	0.0435	0.158	-0.177	0.0465	-0.0765	-0.181	234.6	1.23	1.17	2.40	**0.016**
	T503	T297	0.0435	0.158	-0.177	0.058	-0.0775	-0.18	236.0	1.23	1.13	2.36	**0.015**
	T503	B41	0.0435	0.158	-0.177	0.0405	-0.0635	-0.18	221.5	1.23	0.76	1.99	**0.013**
WIFI A+B	T520	T521	-0.0075	0.0965	-0.181	-0.0075	0.0495	-0.18	47.0	0.48	0.56	1.04	**0.023**
	T523	T524	-0.012	0.151	-0.178	-0.0045	0.0485	-0.179	102.8	1.25	1.15	2.40	**0.036**
WIFI A+BT	T520	T522	-0.0075	0.0965	-0.181	-0.0045	-0.009	-0.181	105.5	0.48	0.26	0.74	**0.006**
2.4G WIFI B +WWAN	T521	T18	-0.0075	0.0495	-0.18	-0.0075	-0.0645	-0.181	114.0	0.56	0.78	1.34	**0.014**
	T521	T43	-0.0075	0.0495	-0.18	-0.003	-0.0745	-0.182	124.1	0.56	1.41	1.97	**0.022**
	T521	T107	-0.0075	0.0495	-0.18	-0.0015	-0.0795	-0.182	129.2	0.56	1.36	1.92	**0.021**
	T521	T292	-0.0075	0.0495	-0.18	-0.003	-0.0795	-0.181	129.1	0.56	0.68	1.24	**0.011**
2.4G WIFI A +WWAN	T520	T18	-0.0075	0.0965	-0.181	-0.0075	-0.0645	-0.181	161.0	0.48	0.78	1.26	**0.009**
	T520	T43	-0.0075	0.0965	-0.181	-0.003	-0.0745	-0.182	171.1	0.48	1.41	1.89	**0.015**
	T520	T107	-0.0075	0.0965	-0.181	-0.0015	-0.0795	-0.182	176.1	0.48	1.36	1.84	**0.014**
	T520	T292	-0.0075	0.0965	-0.181	-0.003	-0.0795	-0.181	176.1	0.48	0.68	1.16	**0.007**
BT +WWAN	T522	T43	-0.0045	-0.009	-0.181	-0.003	-0.0745	-0.182	65.5	0.26	1.41	1.67	**0.033**
	T522	T107	-0.0045	-0.009	-0.181	-0.0015	-0.0795	-0.182	70.6	0.26	1.36	1.62	**0.029**
5G WIFI B +WWAN	T524	T18	-0.0045	0.0485	-0.179	-0.0075	-0.0645	-0.181	113.1	1.15	0.78	1.93	**0.024**
	T524	T43	-0.0045	0.0485	-0.179	-0.003	-0.0745	-0.182	123.0	1.15	1.41	2.56	**0.033**
	T524	T68	-0.0045	0.0485	-0.179	-0.006	-0.072	-0.181	120.5	1.15	0.46	1.61	**0.017**
	T524	T107	-0.0045	0.0485	-0.179	-0.0015	-0.0795	-0.182	128.1	1.15	1.36	2.51	**0.031**
	T524	T123	-0.0045	0.0485	-0.179	0.006	-0.096	-0.18	144.9	1.15	0.50	1.65	**0.015**
	T524	B12	-0.0045	0.0485	-0.179	-0.0015	-0.092	-0.181	140.5	1.15	0.12	1.27	**0.010**
	T524	T216	-0.0045	0.0485	-0.179	-0.003	-0.0825	-0.181	131.0	1.15	0.31	1.46	**0.014**

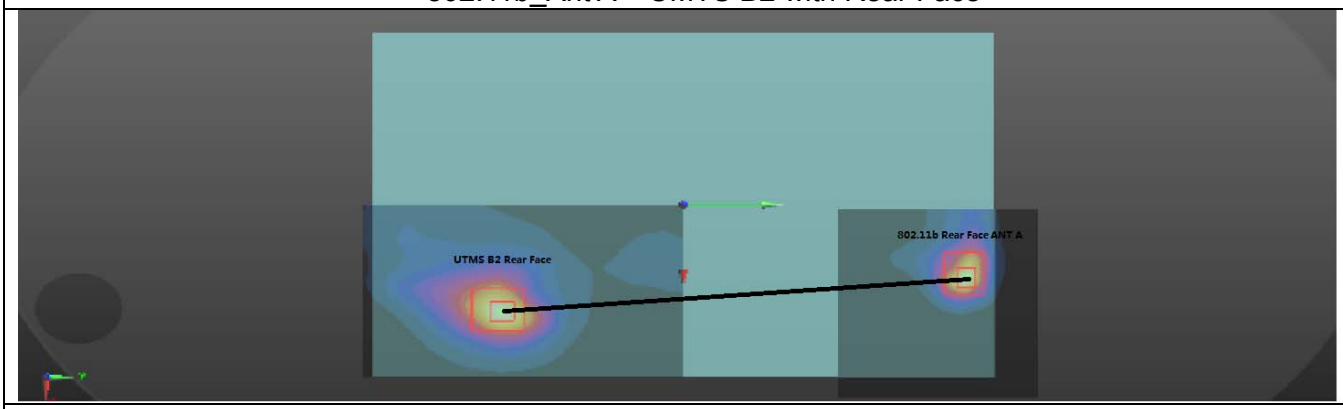
	T524	T251	-0.0045	0.0485	-0.179	-0.0045	-0.0555	-0.181	104.0	1.15	0.33	1.48	**0.017**
	T524	T292	-0.0045	0.0485	-0.179	-0.003	-0.0795	-0.181	128.0	1.15	0.68	1.83	**0.019**
	T524	B41	-0.0045	0.0485	-0.179	8.74E-11	-0.0635	-0.18	112.1	1.15	0.48	1.63	**0.019**
5G WIFI A +WWAN	T523	T18	-0.012	0.151	-0.178	-0.0075	-0.0645	-0.181	215.6	1.25	0.78	2.03	**0.013**
	T523	T43	-0.012	0.151	-0.178	-0.003	-0.0745	-0.182	225.7	1.25	1.41	2.66	**0.019**
	T523	T68	-0.012	0.151	-0.178	-0.006	-0.072	-0.181	223.1	1.25	0.46	1.71	**0.010**
	T523	T107	-0.012	0.151	-0.178	-0.0015	-0.0795	-0.182	230.8	1.25	1.36	2.61	**0.018**
	T523	T123	-0.012	0.151	-0.178	0.006	-0.096	-0.18	247.7	1.25	0.50	1.75	**0.009**
	T523	B12	-0.012	0.151	-0.178	-0.0015	-0.092	-0.181	243.2	1.25	0.12	1.37	**0.007**
	T523	T216	-0.012	0.151	-0.178	-0.003	-0.0825	-0.181	233.7	1.25	0.31	1.56	**0.008**
	T523	T251	-0.012	0.151	-0.178	-0.0045	-0.0555	-0.181	206.7	1.25	0.33	1.58	**0.010**
	T523	T292	-0.012	0.151	-0.178	-0.003	-0.0795	-0.181	230.7	1.25	0.68	1.93	**0.012**
	T523	B41	-0.012	0.151	-0.178	8.74E-11	-0.0635	-0.18	214.8	1.25	0.48	1.73	**0.011**

The SPLSR is under 0.04, the Simultaneous SAR is not required.

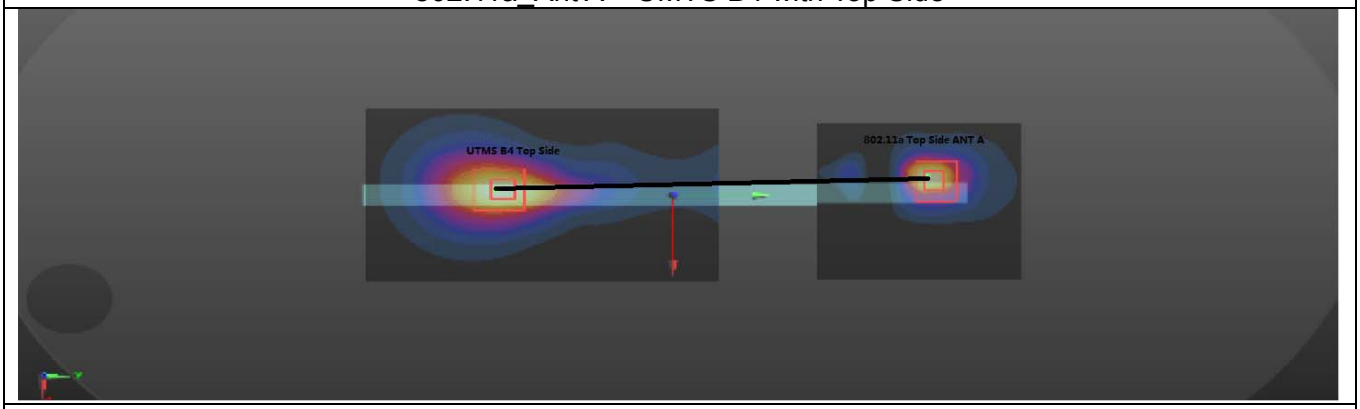
8.3.1.2 SPLSR CONLCUSION FIGURE

The picture is only show the worst value of the SPLSR.

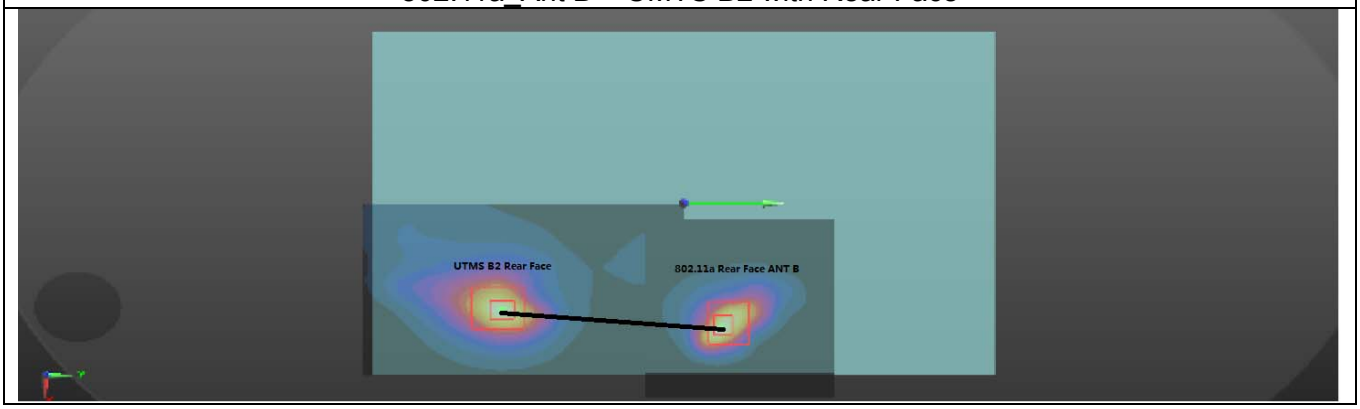
802.11b_Ant A + UMTS B2 with Rear Face



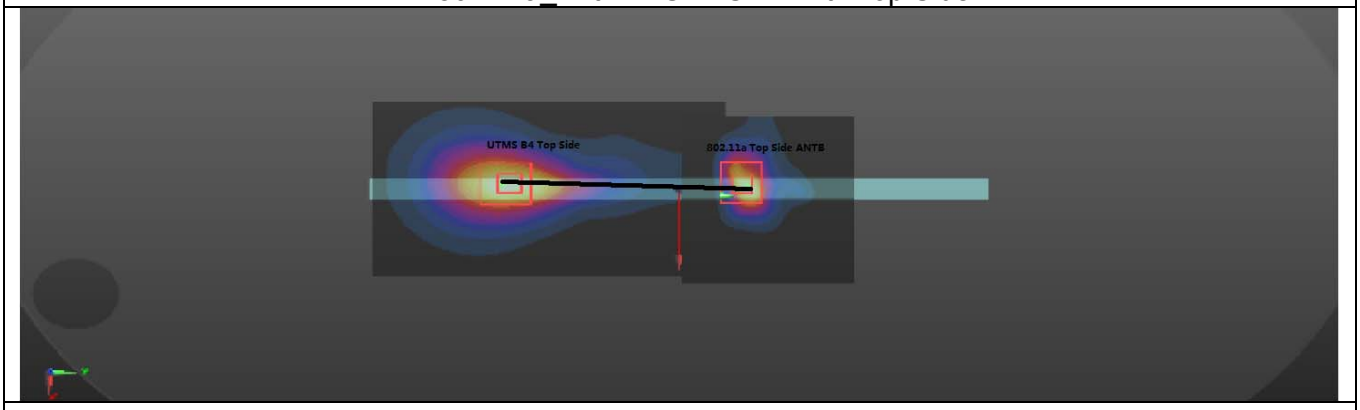
802.11a_Ant A + UMTS B4 with Top Side



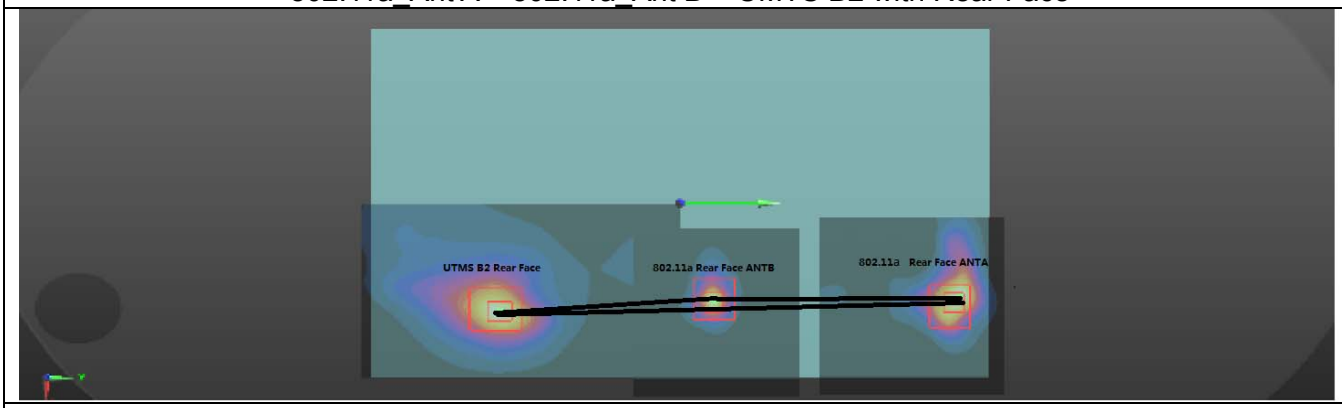
802.11a_Ant B + UMTS B2 with Rear Face



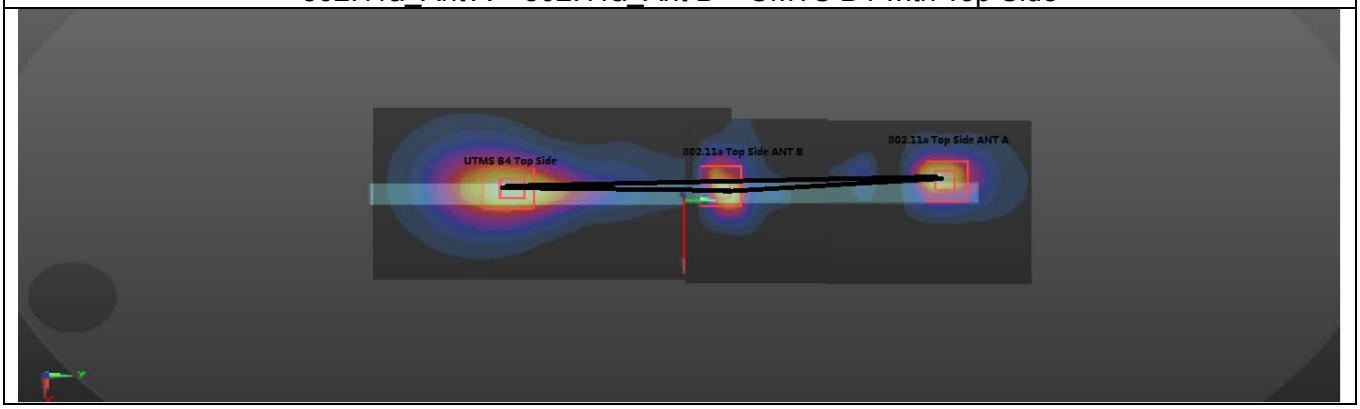
802.11a_Ant B + UMTS B4 with Top Side



802.11a_Ant A + 802.11a_Ant B + UMTS B2 with Rear Face



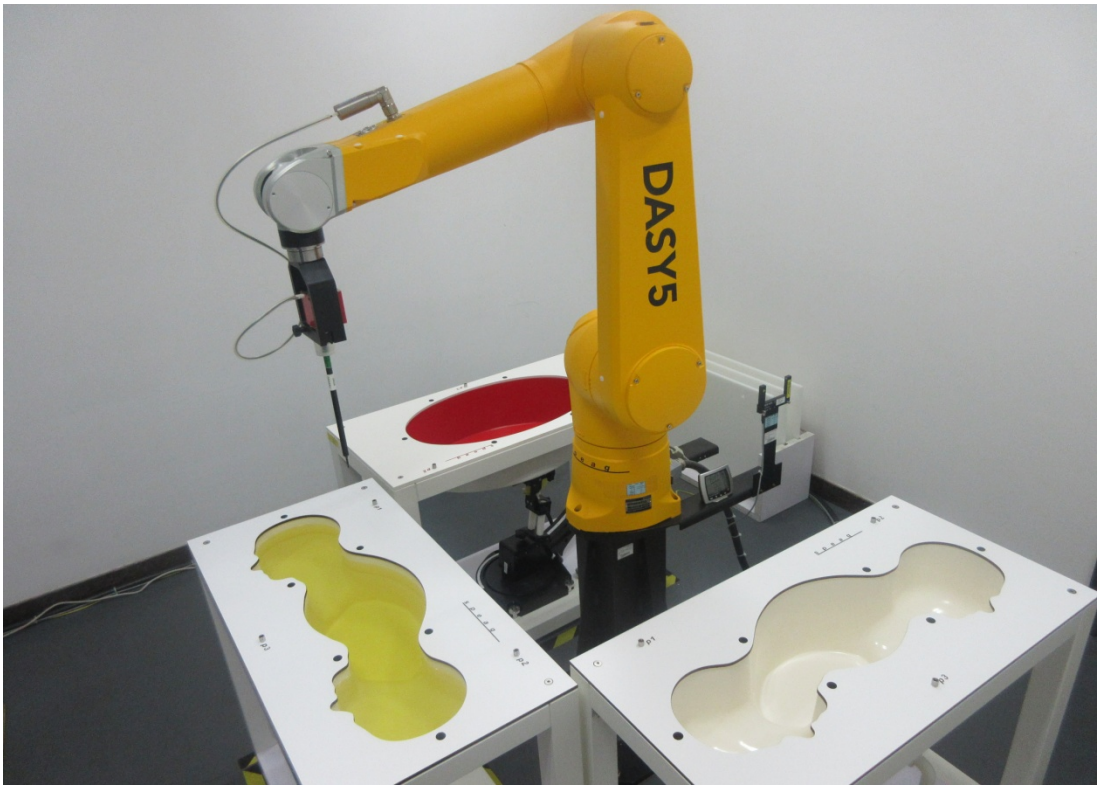
802.11a_Ant A + 802.11a_Ant B + UMTS B4 with Top Side



APPENDIX

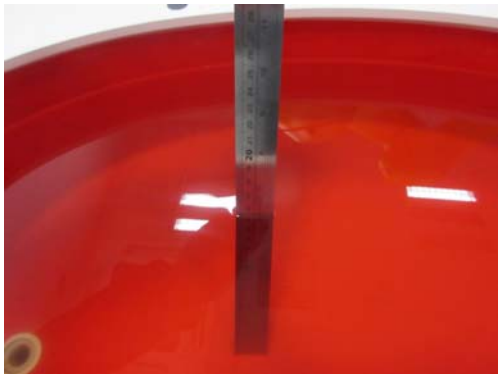
1. Test Layout

Specific Absorption Rate Test Layout

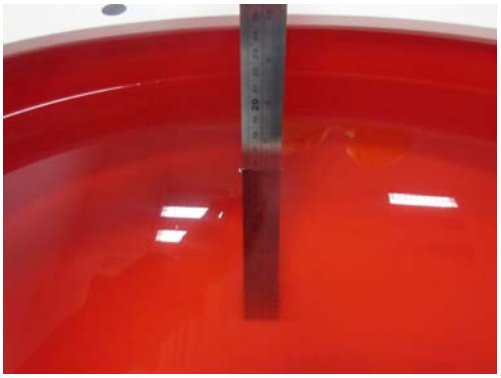


Liquid depth in the flat Phantom (≥15cm depth)

MSL750_15.7cm

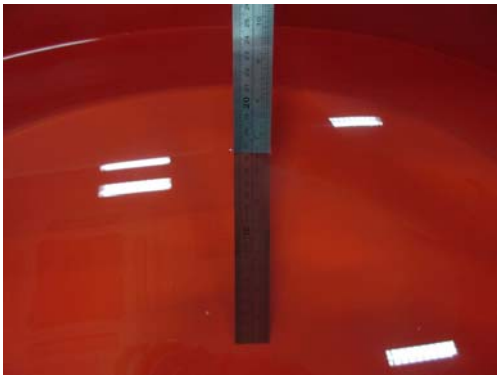


MSL835~900_15.6cm



MSL1750_15.5cm

MSL1900~3800_16.5cm



Appendix A. SAR Plots of System Verification

(Pls See Appendix A.)

Appendix B. SAR Plots of SAR Measurement

(Pls See Appendix B.)

Appendix C. Calibration Certificate for Probe and Dipole

(Pls See Appendix C.)

Appendix D. Photographs of the Test Set-Up

(Pls See Appendix D.)

End