FCC SAR TEST REPORT

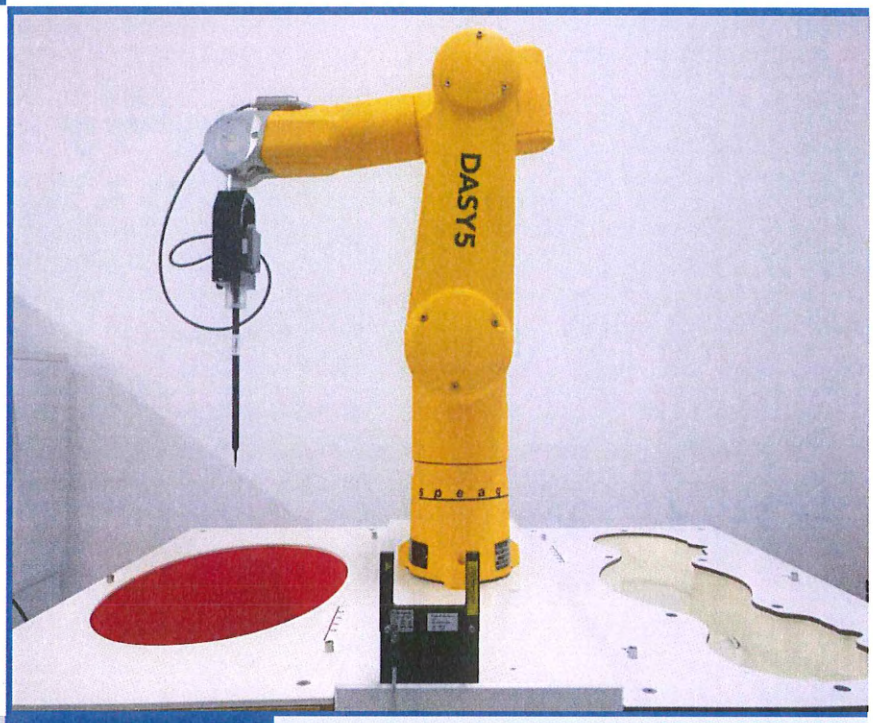
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

LTE module

ISSUED TO
Fibocom Wireless Inc.

5/F, Tower A, Technology Building II, 1057 Nanhai Blvd, Shenzhen, 518067 China



Tested by: Zong Liyao
Zong Liyao
(Engineer)
Date: Sep. 18, 2018

Approved by:
Wei Yahquan
(Chief Engineer)
Date: Sep. 18, 2018

Report No.:	BL-SZ1870481-701
EUT Name:	LTE module
Model	L850-GL
Brand Name:	Fibocom
FCC ID:	ZMOL850GL
Test Standard:	FCC 47 CFR Part 2.1093
	ANSI C95.1: 1999, IEEE 1528: 2013
Maximum SAR:	Body (1 g): 0.965 W/kg
Test Conclusion:	Pass
Test Date:	Aug. 13, 2018 ~ Sep. 10, 2018
Date of Issue:	Sep. 18, 2018

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Revision History

Version	Issue Date	Revisions Content
Rev. 01	Sep. 18, 2018	Initial Issue

TABLE OF CONTENTS

1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. The laboratory is a testing organization accredited by American Association for Laboratory Accreditation (A2LA) according to ISO/IEC 17025.The accreditation certificate is 4344.01. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Test Environment Condition

Ambient Temperature	21℃ to 23℃
Ambient Relative Humidity	37% to 48%
Ambient Pressure	100 KPa to 102 KPa

1.4 Announce

(1) The test report reference to the report template version v2.2.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Fibocom Wireless Inc.
Address	5/F, Tower A, Technology Building II, 1057 Nanhai Blvd, Shenzhen, 518067 China

2.2 Manufacturer Information

Manufacturer	Fibocom Wireless Inc.
Address	5/F, Tower A, Technology Building II, 1057 Nanhai Blvd, Shenzhen, 518067 China

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	LTE module
Model Name Under Test	L850-GL
Series Model Name	N/A
Description of Model Name Differentiation	N/A
Hardware Version	N/A
Software Version	N/A
WWAN Module Band Name	Fibocom
WWAN Module Model Name	L850-GL

2.4.1 Host information

Product Description	Tablet PC
Model Name	Lenovo ideapad D330-10IGM
Brand Name	Lenovo

Item	Manufacturer	Model Description	Specification
Battery	Simplo	L17M2PF3	DC7.68V, 39Wh
	Celxpert	L17C2PF1	DC7.7V, 39Wh
Adapter	Delta	ADP-450W B	Input: 100-240 V~; 50-60Hz Output: 20 V⎓ 2.25 A.
	Liteon	ADLX45YLC3A	Iuput: 100-240V~, 50-60Hz

		ADLX45YCC3A	Output: 20V⎓ 2.25A/ 15V⎓3A/ 9 V⎓ 2A/ 5V⎓ 2A
	Chicony	ADL45WCC	Input: 100-240 V~; 50-60Hz Output: 20V⎓ 2.25A.

Item	Brand Name	Model Name	Specification
WLAN Moduel	Qualcomm Atheros	QCNFA425	802.11 a/b/g/n/ac WLAN+ Bluetooth
	Intel	3162D2W	
	Intel	8265D2W	

Antenna type	Manufacture	Port	Part No.
PIFA	South Star	Main	N19-0355-R0A
		Aux	N19-0354-R0A
	Speed	Main	F-OG-XZ-0117-001-W0
		Aux	F-OG-XZ-0118-001-B0

2.5 Ancillary Equipment

Note: Not applicable.

2.6 Technical Information

Network and Wireless connectivity	3G Network WCDMA/HSDPA/HSUPA Band 2/ 4/ 5; 4G Network FDD LTE Band 2/ 4/ 5/ 7/ 12/ 13/ 17/ 26/ 30/ 66; TDD LTE Band 41; WLAN; Bluetooth; GPS; GLONASS

The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	WCDMA, FDD-LTE, 2.4G WLAN, 5G WLAN, Bluetooth		
Frequency Range	WCDMA Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	WCDMA Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	LTE Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 7	TX: 2500 ~ 2570 MHz	RX: 2620 ~ 2690 MHz
	LTE Band 12	TX: 699 ~ 716 MHz	RX: 729 ~ 746 MHz
	LTE Band 13	TX: 777 ~ 787 MHz	RX: 746 ~ 756 MHz
	LTE Band 17	TX: 704 ~ 716 MHz	RX: 734 ~ 746 MHz
	LTE Band 26	TX: 814 ~ 849 MHz	RX: 859 ~ 894 MHz
	LTE Band 30	TX: 2305 ~ 2315 MHz	RX: 2350 ~ 2360 MHz
	LTE Band 66	TX: 1710 ~ 1780 MHz	RX: 2110 ~ 2180 MHz
	LTE Band 41	TX: 2496 ~ 2690 MHz	RX: 2496 ~ 2690 MHz
	802.11b/g /n(HT20/HT40)	2400 ~ 2483.5 MHz	
	802.11a/ /n(HT20/HT40) /ac(VHT20/VHT40/ VHT80)	5150 ~ 5250 MHz	
		5250 ~ 5350 MHz	
		5470 ~ 5725 MHz	
		5725 ~ 5850 MHz	
	Bluetooth	2400 ~ 2483.5 MHz	
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna		
Hotspot Function	Support		
Power Reduction	Support The proximity sensor is only used for power reduction on 3G/4G antenna. The reduction power details please refer section 8.9.		
Exposure Category	General Population/Uncontrolled exposure		
EUT Stage	Portable Device		
Product	Type		
	☒ Production unit	☐ Identical prototype	

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	ANSI/IEEE Std. C95.1-1999	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	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
4	FCC KDB 447498 D01 v06	Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
5	FCC KDB 941225 D01 v03r01	3G SAR MEAUREMENT PROCEDURES
6	FCC KDB 941225 D05 v02r05	SAR Evaluation Considerations for LTE Devices
7	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
8	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
9	KDB 616217 D04v01r02	SAR for laptop and tablets
10	KDB 248227 D01 v02r02	SAR Guidance for IEEE 802.11 (Wi-Fi) Transmitters

3.2 Device Category and SAR Limit

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user.

Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

Table of Exposure Limits:

Body Position	SAR Value (W/Kg)	
	General Population/ Uncontrolled Exposure	Occupational/ ControlledExposure
Whole-Body SAR (averaged over the entire body)	0.08	0.4
Partial-Body SAR (averaged over any 1 gram of tissue)	1.60	8.0
SAR for hands, wrists, feet and ankles (averaged over any 10 grams of tissue)	4.0	20.0

NOTE:

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

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

3.3 Test Result Summary

3.3.1 Highest SAR (1 g Value)

Frequency Band		Maximum SAR (W/kg) 1 g	
		Body	
		Proximity Sensory on	Proximity Sensory off
WCDMA	Band 2	0.636	0.965
	Band 4	0.626	0.857
	Band 5	0.651	0.706
LTE	Band 2	0.745	0.800
	Band 5	0.706	0.511
	Band 7	0.610	0.929
	Band 12	0.723	0.186
	Band 13	0.749	0.510
	Band 26	0.726	0.599
	Band 30	0.651	0.812
	Band 41	0.709	0.661
	Band 66	0.645	0.784
WIFI (Intel 3165D2W)	2.4G WLAN Main	0.910	/
	2.4G WLAN Aux.	0.901	/
	5.3G WLAN Main	1.082	/
	5.3G WLAN Aux.	1.042	/
	5.6G WLAN Main.	0.987	/
	5.6G WLAN Aux.	1.072	/
	5.8G WLAN Main	0.841	/
	5.8G WLAN Aux.	1.074	/
WIFI (Intel 8265D2W)	2.4G WLAN Main	1.015	/
	2.4G WLAN Aux.	0.943	/
	5.3G WLAN Main	**1.155**	/
	5.3G WLAN Aux.	1.143	/
	5.6G WLAN Main.	1.046	/
	5.6G WLAN Aux.	0.677	/
	5.8G WLAN Main	1.045	/
	5.8G WLAN Aux.	0.830	/
WIFI (QCNFA425)	2.4G WLAN Main	0.861	/
	2.4G WLAN Aux.	0.783	/
	5.3G WLAN Main	1.147	/
	5.3G WLAN Aux.	0.901	/
	5.6G WLAN Main.	1.080	/
	5.6G WLAN Aux.	0.782	/
	5.8G WLAN Main	1.012	/
	5.8G WLAN Aux.	0.858	/
Bluetooth (Intel 3165D2W)	DH5 Aux.	0.088	/

Frequency Band		Maximum SAR (W/kg) 1 g	
		Body	
		Proximity Sensory on	Proximity Sensory off
Bluetooth (Intel 8265D2W)	DH5 Main	0.284	/
WIFI (QCNFA425)	2DH5 Main	0.095	/
	2DH5 Aux.	0.056	/
Limits (W/kg)		1.6	1.6
Test Verdict		Pass	

Note1: Power reduction is not applicable for WLAN.

Note2: The proximity sensor is only used for power reduction on 3G/4G antenna.

Note3: This device supports both LTE Band 4/17 and Band 66/12. Since the supported frequency span for LTE Band 4/17 falls completely within the supports frequency span for LTE Band 66/12, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE Band 66/12.

3.3.2 Highest Simultaneous SAR

Position	Simultaneous Configuration	Simultaneous SAR (W/kg)	Limit (W/kg)	Verdict
Body	L850-GL + Intel 3165D2W	1.552	1.6	Pass
	L850-GL + Intel 8265D2W	1.490	1.6	Pass
	L850-GL + QCNFA425	**1.590**	1.6	Pass

3.4 Test Uncertainty

According to KDB 865664 D01, when the highest measured 1 g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis is not required in SAR reports submitted for equipment approval.

The maximum 1 g SAR for the EUT in this report is 1.155 W/kg, which is lower than 1.5 W/kg, so the extensive SAR measurement uncertainty analysis is not required in this report.

4 MEASUREMENT SYSTEM

4.1 Specific Absorption Rate (SAR) Definition

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

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

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

SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

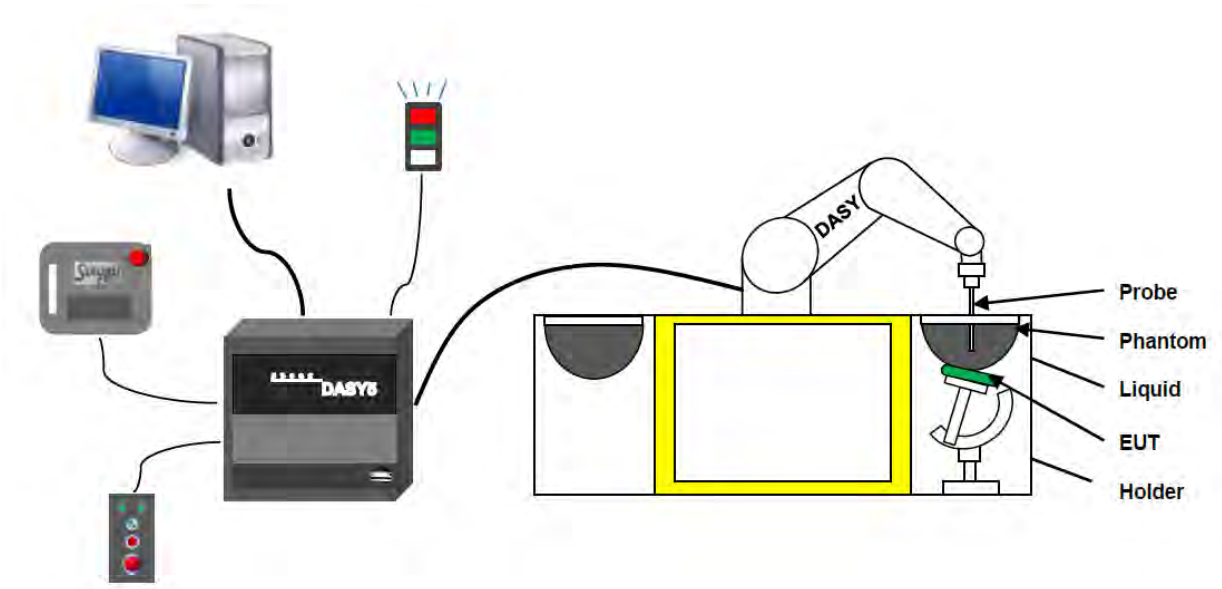
$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}\mathbf{E}^2}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue,

ρ is the mass density of the tissue and E is the RMS electrical field strength.

4.2 DASY SAR System

4.2.1 DASY SAR System Diagram



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. The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation.
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.

4.2.2 Robot

The Dasy SAR system uses the high precision robots. Symmetrical design with triangular core Built-in optical fiber for surface detection system For the 6-axis controller system, Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents). The robot series have many features that are important for our application:

- High precision
  (repeatability ±0.02 mm)
- High reliability
  (industrial design)
- Low maintenance costs
  (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements
  (brush less synchron motors; no stepper motors)
- Low ELF interference
  (motor control _elds shielded via the closed metallic construction shields)

4.2.3 E-Field Probe

The probe is specially designed and calibrated for use in liquids with high permittivities for the measurements the Specific Dosimetric E-Field Probe EX3DV4-SN:7510 with following specifications is used.

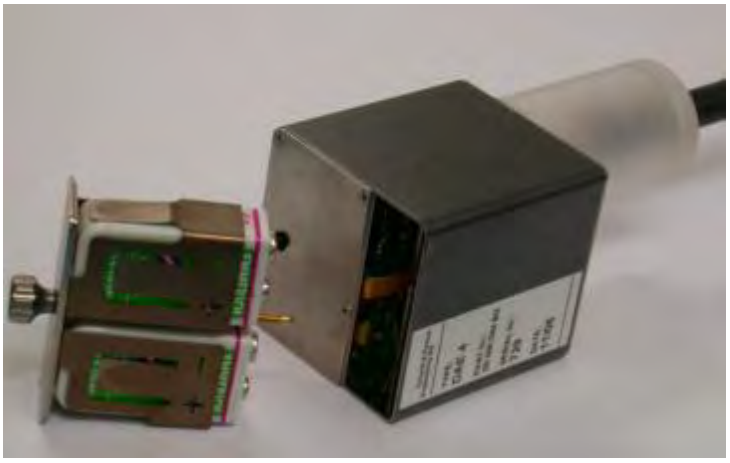
Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection systemBuilt-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycolether)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to 6 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ; ± 0.4 dB in HSL (rotation normal to probe axis)
Dynamic range	5 µW/g to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 337 mm (Tip: 9 mm) Tip diameter: 2.5 mm (Body: 10 mm) Distance from probe tip to dipole centers: 1.0 mm
Application	General dosimetry up to 3 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms (EX3DV4)

E-Field Probe Calibration Process

Probe calibration is realized, in compliance with CENELEC EN 62209-1/-2 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 62209-1/2 annexe technique using reference guide at the five frequencies.

4.2.4 Data Acquisition Electronics

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



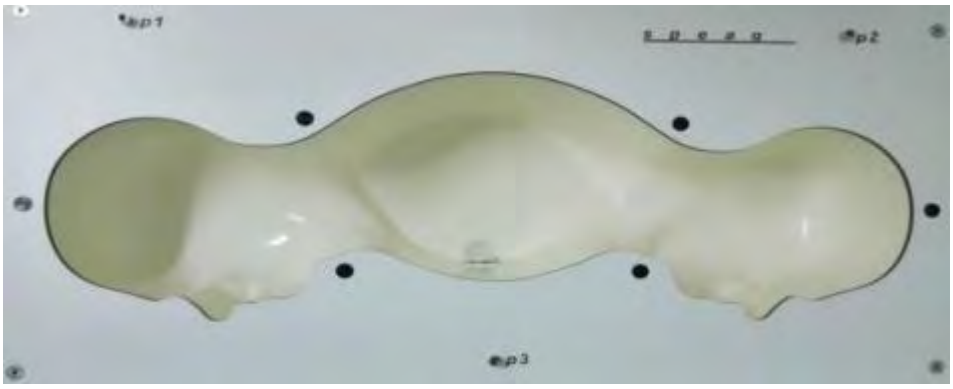
- Input Impedance: 200MOhm
- The Inputs: Symmetrical and Floating
- Commom Mode Rejection: Above 80dB

4.2.5 Phantoms

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.

- Left hand
- Right hand
- Flat phantom

Photo of Phantom SN1857



Serial Number	Material	Length	Height
SN 1857 SAM	Vinylester, glass fiber reinforced	1000	500

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with the latest draft of the standard IEC 62209 Part II and all known tissue simulating liquids. ELI4 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.

·Flat phantom

Photo of Phantom SN1012

Serial Number	Shell Thickness (mm)	Major ellipse axis (mm)	Minor axis (mm)
SN 1012 ELI4	2.0 ± 0.2	600	500

4.2.6 Device Holder

Mounting Device for Hand-Held Transmitter

The DASY5 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65°. The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. This device holder is used for standard mobile phones or PDA‟s only. If necessary an additional support of polystyrene material is used. Larger DUT‟s (e.g. notebooks) cannot be tested using this device holder. Instead a support of bigger polystyrene cubes and thin polystyrene plates is used to position the DUT in all relevant positions to find and measure spots with maximum SAR values. Therefore those devices are normally only tested at the flat part of the SAM.

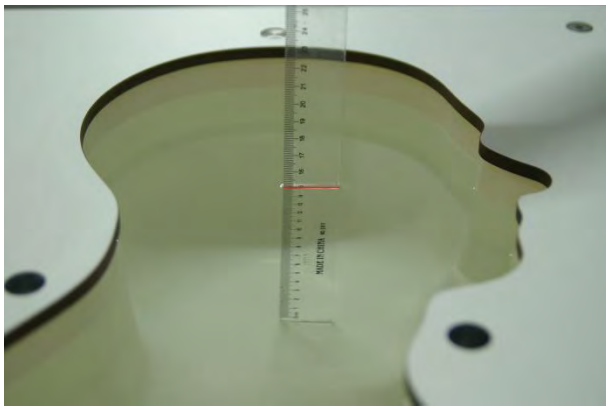
The positioning system allows obtaining cheek and tilting position with a very good accuracy. Incompliance with CENELEC, the tilt angle uncertainty is lower than 1°.

Mounting Device for Laptops and other Body-Worn Transmitters

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

4.2.7 Simulating Liquid

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5%.

Head Liquid Depth	Body Liquid Depth
	

The following table gives the recipes for tissue simulating liquid and the theoretical Conductivity/Permittivity.

Head (Reference IEEE1528)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ε
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.4	40.0
2450	55.0	0	0	0.1	0	44.9	1.80	39.2
2600	54.9	0	0	0.1	0	45.0	1.96	39.0
Frequency (MHz)	Water (%)	Hexyl Carbitol (%)			Triton X-100 (%)		Conductivity σ (S/m)	Permittivity ε
5200	62.52	17.24			17.24		4.66	36.0
5800	62.52	17.24			17.24		5.27	35.3
Body (From instrument manufacturer)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ε
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
900	50.8	48.2	0	0.9	0.1	0	1.05	55.0
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0.1	0	31.3	1.95	52.7
2600	68.2	0	0	0.1	0	31.7	2.16	52.5
Frequency(MHz)	Water	DGBE (%)			Salt (%)		Conductivity σ (S/m)	Permittivity ε
5200	78.60	21.40			/		5.54	47.86
5800	78.50	21.40			0.1		6.0	48.20

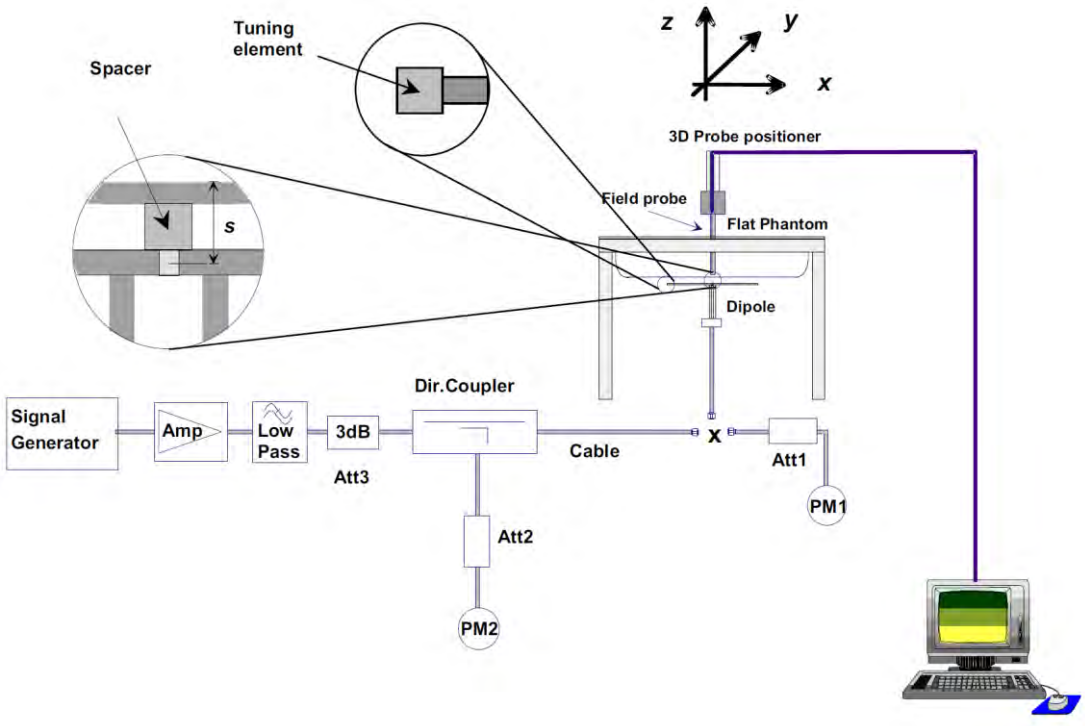
5 SYSTEM VERIFICATION

5.1 Purpose of System Check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source.This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

5.2 System Check Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:



6 TEST POSITION CONFIGURATIONS

According to KDB 648474 D04 Handset, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

6.1 Head Exposure Conditions

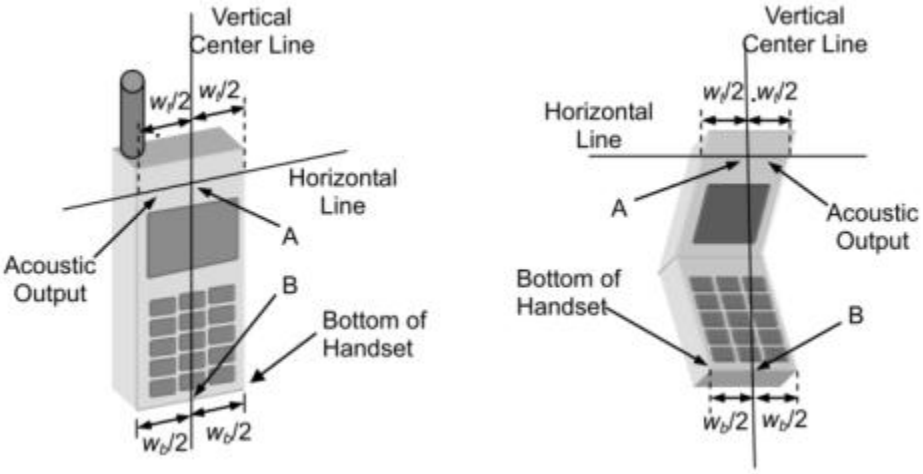
Head exposure is limited to next to the ear voice mode operations. Head SAR compliance is tested according to the test positions defined in IEEE Std 1528-2013 using the SAM phantom illustrated as below.

6.1.1 Two Imaginary Lines on the Handset

(a) The vertical center line passes through two points on the front side of the handset - the midpoint of the width w t of the handset at the level of the acoustic output, and the midpoint of the width w b of the bottom of the handset.

(b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

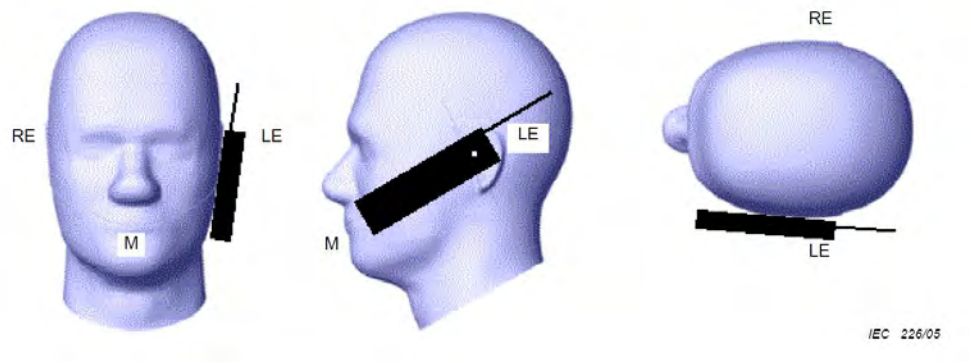
(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical center line is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.



6.1.2 Cheek Position

(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.

(b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.



6.1.3 Tilted Position

(a) To position the device in the “cheek” position described above.

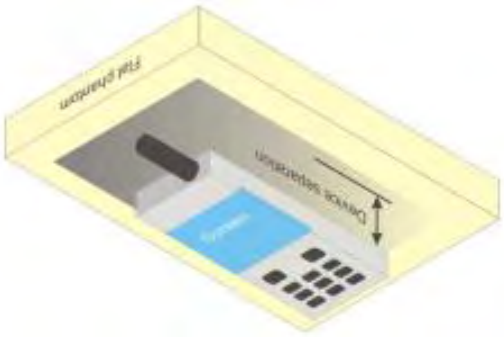
(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.

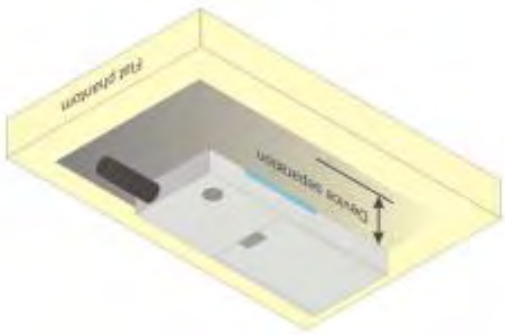
6.2 Body-worn Position Conditions

Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB 447498 are used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode. When the reported SAR for a body-worn accessory.

Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics. All body-worn accessories containing metallic components are tested in conjunction with the host device.

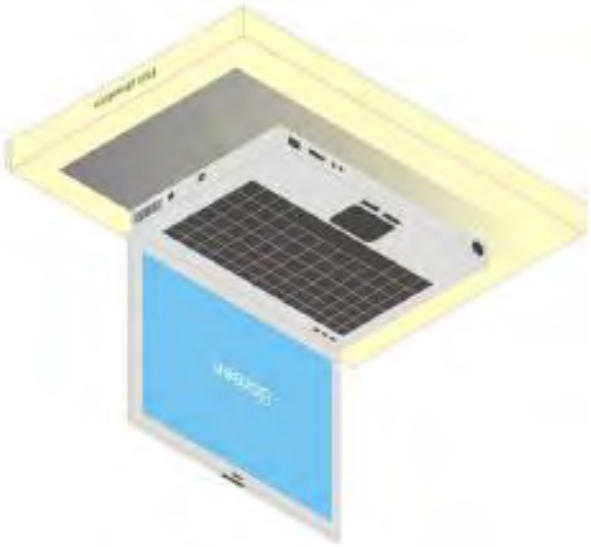
Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice only operations in its normal and expected use conditions, testing of data mode for body-worn compliance is not required. A conservative minimum test separation distance for supporting off-the-shelf body-worn accessories that may be acquired by users of consumer handsets is used to test for body-worn accessory SAR compliance. This distance is determined by the handset manufacturer, according to the requirements of Supplement C 01-01. Devices that are designed to operate on the body of users using lanyards and straps, or without requiring additional body-worn accessories, will be tested using a conservative minimum test separation distance <= 5 mm to support compliance.





6.3 Laptop Exposure Condition

This DUT should consider one position which is bottom of laptop touching with phantom 0 mm air gap and the screen portion of the device shall be an open position at a 90° angle.



6.4 Tablet Exposure Condition

This DUT was tested in four different positions. They are back side, left edge, Right edge and top edge in these positions.

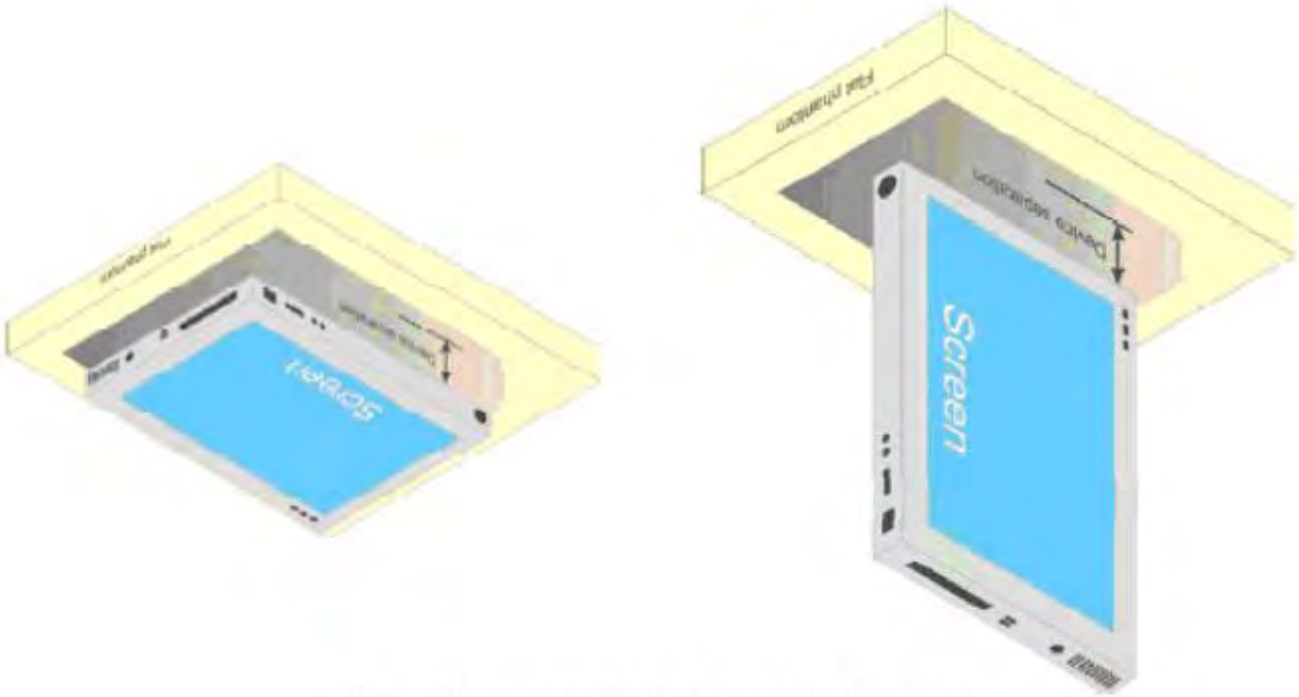
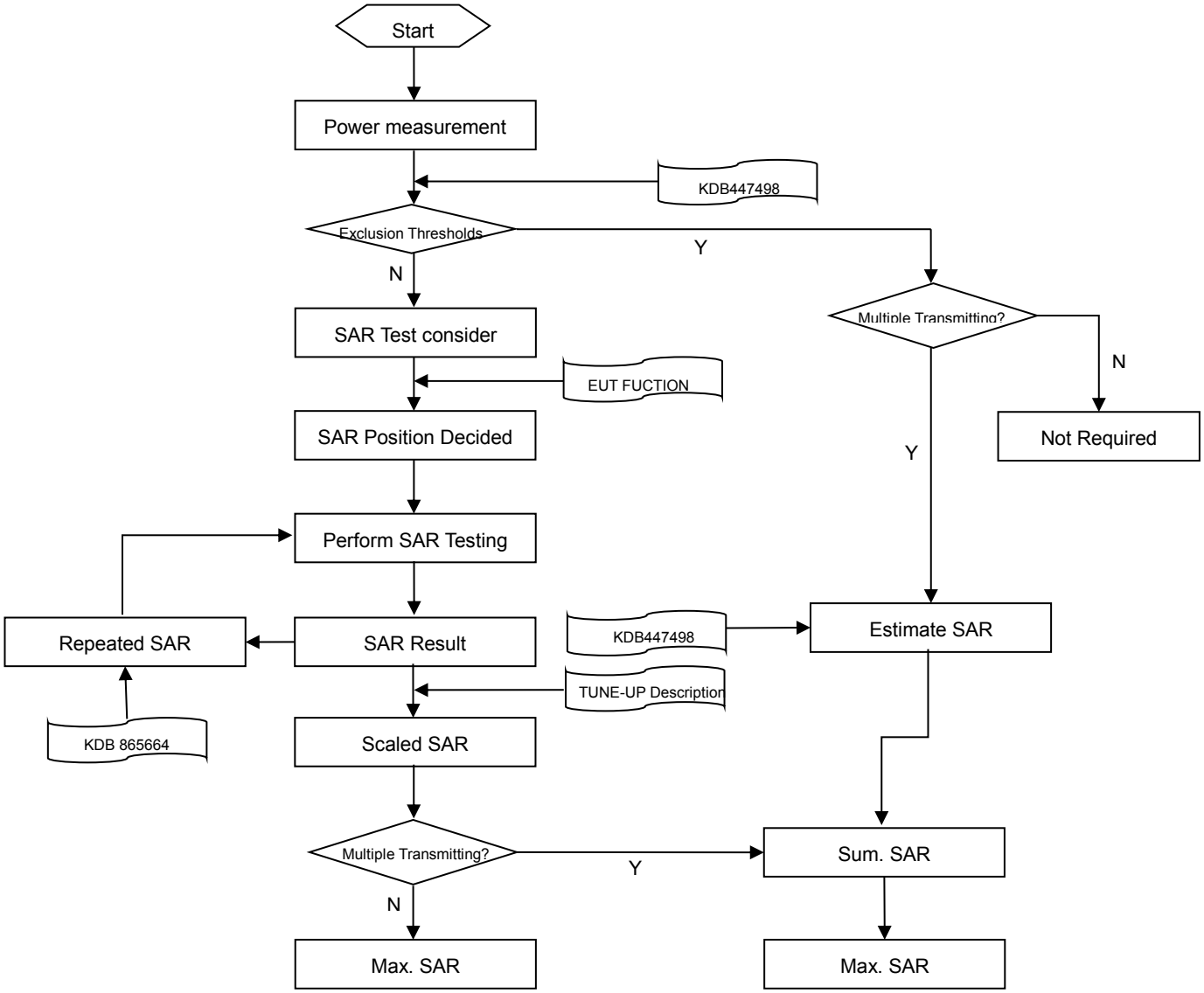


Fig Illustration for Lap-touching Position

7 MEASUREMENT PROCEDURE

7.1 Measurement Process Diagram



7.2 SAR Scan General Requirement

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

<table>
<tr><th colspan="3"></th><th>≤3GHz</th><th>>3GHz</th></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5±1 mm</td><td>½·δ·ln(2)±0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30°±1°</td><td>20°±1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx Area , Δy Area</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3–4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx Zoom , Δy Zoom</td><td>≤ 2 GHz: ≤ 8 mm
2 –3 GHz: ≤ 5 mm*</td><td>3–4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="7">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2" rowspan="3">uniform grid: Δz Zoom (n)</td><td rowspan="3">≤ 5 mm</td><td>3–4 GHz: ≤ 4 mm</td></tr>
<tr><td>4–5 GHz: ≤ 3 mm</td></tr>
<tr><td>5–6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="4">graded grid</td><td rowspan="3">Δz Zoom (1): between 1st two points closest to phantom surface</td><td rowspan="3">≤ 4 mm</td><td>3–4 GHz: ≤ 3 mm</td></tr>
<tr><td>4–5 GHz: ≤ 2.5 mm</td></tr>
<tr><td>5–6 GHz: ≤ 2 mm</td></tr>
<tr><td>Δz Zoom (n>1): between subsequent points</td><td colspan="2">≤ 1.5·Δz Zoom (n-1)</td></tr>
<tr><td rowspan="3">Minimum zoom scan volume</td><td colspan="2" rowspan="3">x, y, z</td><td rowspan="3">≥30 mm</td><td>3–4 GHz: ≥ 28 mm</td></tr>
<tr><td>4–5 GHz: ≥ 25 mm</td></tr>
<tr><td>5–6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note:
1. δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
2. * When zoom scan is required and the reported SAR from the area scan based 1 g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

7.3 Measurement Procedure

The following steps are used for each test position

a. Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface

b. Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.

c. Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.

d. Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 *32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

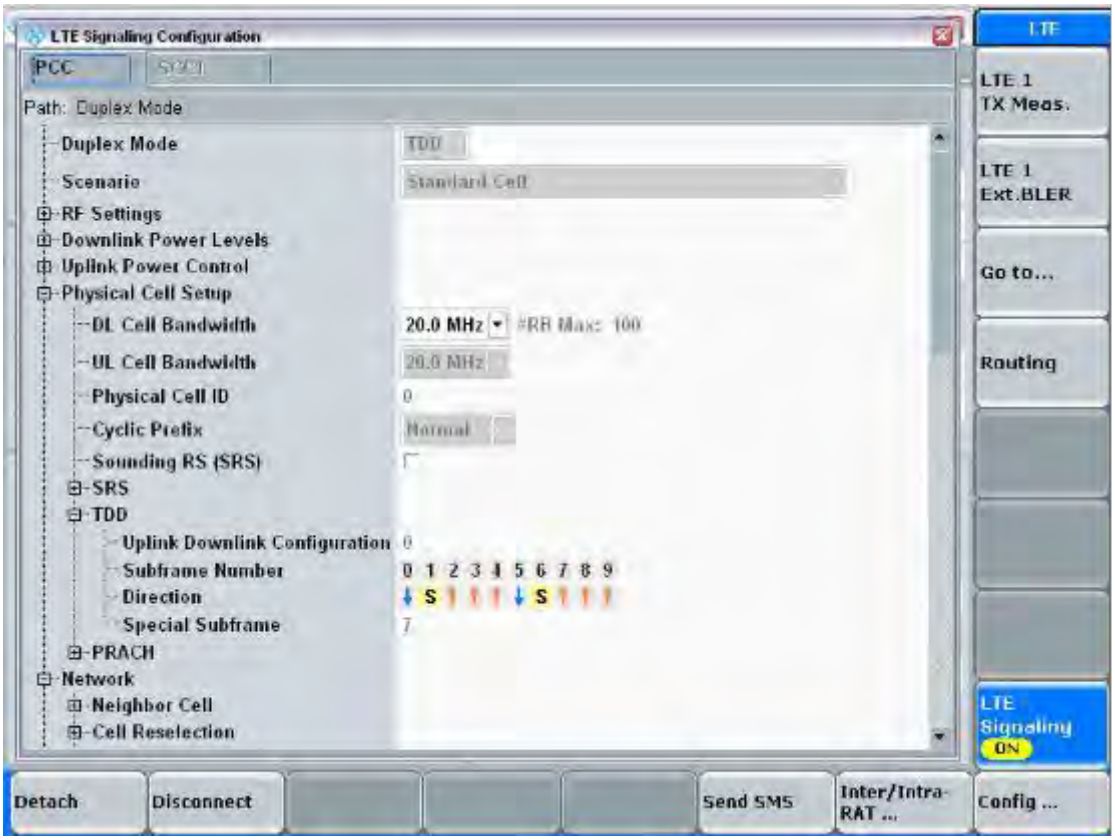
7.4 Area & Zoom Scan Procedure

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01v01r04 quoted below.

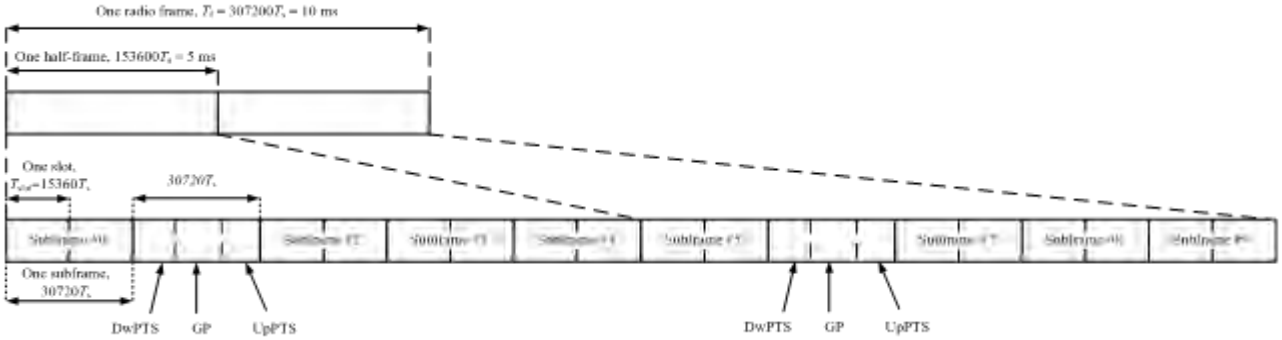
When the 1 g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

7.5 LTE (TDD) Considerations

During TDD-LTE SAR testing, the EUT was commanded to transmit on maximum output power and maximum transmitting bandwidth. The uplink and downlink slot configuration as below in one radio frame.



According to 3GPP Per 3GPP TS 36.211. Each radio frame of length (Tf=307200*TS =10ms) of two half-frames of length (153600*TS =5ms). Each half-frame consists of five sub-frames of length (30720*TS =1ms)



And the special sub-frame with the three fields DwPTS, GP and UpPTS.

The length of DwPTS and UpPTS is given by below table subject to the total length of DwPTS, GP and UpPTS being equal to 30720*T_S =1ms.

Configuration of special sub-frame (lengths of DwPTS/GP/UpPTS)

Special sub-frame 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·T_s	2192·T_s	2560·T_s	7680·T_s	2192·T_s	2560·T_s
1	19760·T_s			20480·T_s		
2	21592·T_s			23040·T_s		
3	24144·T_s			25600·T_s		
4	26336·T_s			7680·T_s	2560·T_s	5120·T_s
5	6592·T_s	4384·T_s	5120·T_s	20480·T_s		
6	19760·T_s			23040·T_s		
7	21592·T_s			12800·T_s		
8	24144·T_s			-	-	-
9	13168·T_s			-	-	-

For special sub-frame uplink time we used the largest cyclic prefix for duty cycle calculate;

Maximum uplink time of one special sub-frame=(largest cyclic prefix)/(one sub-frame of length)* time of one sub-frame=5120.Ts/30720.Ts*1ms=0.167ms

One radio frame with 6 uplink sub-frames and two special sub-frame,
there for the maximum Uplink time in one radio frame is: **6*1 ms+2*0.167 ms=6.334ms**
So, the duty cycle for TDD-LTE is: **6.334ms/10ms =1: 1.58**

8 CONDUCTED RF OUPUT POWER

8.1 WCDMA

WCDMA Band	Band 2			Band 4		
Channel	9262	9400	9538	1312	1412	1513
RMC 12.2Kbps	23.71	**23.81**	23.43	23.59	**23.81**	23.78
HSDPA Subtest-1	23.78	23.82	23.47	23.60	23.71	23.87
HSDPA Subtest-2	22.86	23.60	23.20	22.62	23.56	23.61
HSDPA Subtest-3	22.29	23.39	22.96	22.18	23.33	23.39
HSDPA Subtest-4	22.08	23.15	22.77	21.87	23.09	23.17
HSUPA Subtest-1	22.76	22.30	22.02	22.57	22.78	22.87
HSUPA Subtest-2	20.60	20.61	20.28	20.37	20.59	20.68
HSUPA Subtest-3	21.34	21.39	21.00	21.11	21.35	21.40
HSUPA Subtest-4	20.87	20.89	20.50	20.67	20.90	20.92
HSUPA Subtest-5	22.78	22.83	22.49	22.62	22.88	22.83
Band	Band 5			-		
Channel	4132	4182	4233	-	-	-
RMC 12.2Kbps	23.39	23.37	**23.46**	-	-	-
HSDPA Subtest-1	23.28	23.41	23.56	-	-	-
HSDPA Subtest-2	22.30	23.47	23.39	-	-	-
HSDPA Subtest-3	21.87	23.49	23.13	-	-	-
HSDPA Subtest-4	21.60	23.27	22.89	-	-	-
HSUPA Subtest-1	22.30	22.48	22.59	-	-	-
HSUPA Subtest-2	20.21	20.78	20.31	-	-	-
HSUPA Subtest-3	20.84	21.41	21.01	-	-	-
HSUPA Subtest-4	20.39	21.05	20.53	-	-	-
HSUPA Subtest-5	22.40	22.93	22.53	-	-	-

8.2 LTE

FDD LTE Band 2							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18700	18900	19100	18700	18900	19100
20MHz	1 (RB_Pos:0)	22.94	22.62	22.43	22.33	21.89	21.83
	1 (RB_Pos:49)	22.52	22.63	22.03	21.90	21.91	21.46
	1 (RB_Pos:99)	22.65	22.49	22.28	21.97	21.84	21.68
	50 (RB_Pos:0)	21.59	21.61	21.20	20.66	20.64	20.21
	50 (RB_Pos:24)	21.40	21.55	21.11	20.48	20.62	20.02
	50 (RB_Pos:49)	21.37	21.51	21.24	20.38	20.60	20.10
	100 (RB_Pos:0)	21.47	21.62	21.33	20.59	20.71	20.44
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18675	18900	19125	18675	18900	19125
15MHz	1 (RB_Pos:0)	22.84	22.68	22.16	22.44	22.31	21.41
	1 (RB_Pos:37)	22.69	22.65	22.14	22.22	22.31	21.40
	1 (RB_Pos:74)	22.39	22.56	22.25	21.97	22.26	21.45
	36 (RB_Pos:0)	21.67	21.67	21.07	20.73	20.71	20.17
	36 (RB_Pos:18)	21.61	21.62	21.18	20.68	20.69	20.27
	36 (RB_Pos:37)	21.46	21.59	21.23	20.49	20.67	20.28
	75 (RB_Pos:0)	21.69	21.63	21.29	20.56	20.68	20.37
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18650	18900	19150	18650	18900	19150
10MHz	1 (RB_Pos:0)	22.97	22.84	22.12	22.54	21.84	21.43
	1 (RB_Pos:24)	22.86	22.74	22.19	22.31	21.79	21.52
	1 (RB_Pos:49)	22.70	22.80	22.25	22.17	21.82	21.57
	25 (RB_Pos:0)	21.79	21.71	21.17	20.82	20.76	20.25
	25 (RB_Pos:12)	21.75	21.65	21.19	20.76	20.70	20.34
	25 (RB_Pos:24)	21.75	21.61	21.27	20.73	20.71	20.38
	50 (RB_Pos:0)	21.69	21.57	21.28	20.69	20.67	20.26
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18625	18900	19175	18625	18900	19175
5MHz	1 (RB_Pos:0)	22.76	22.71	22.23	22.13	21.86	21.44
	1 (RB_Pos:12)	22.63	22.57	22.19	22.07	21.73	21.42
	1 (RB_Pos:24)	22.61	22.58	22.25	21.95	21.75	21.47
	12 (RB_Pos:0)	21.69	21.56	21.19	20.77	20.69	20.23
	12 (RB_Pos:6)	21.62	21.53	21.18	20.70	20.65	20.22
	12 (RB_Pos:11)	21.57	21.55	21.21	20.63	20.66	20.25
	25 (RB_Pos:0)	21.63	21.55	21.15	20.66	20.63	20.14
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18615	18900	19185	18615	18900	19185

3MHz	1 (RB_Pos:0)	22.87	22.77	22.15	21.78	22.01	21.43
	1 (RB_Pos:7)	22.81	22.73	22.20	21.76	21.99	21.46
	1 (RB_Pos:14)	22.81	22.72	22.20	22.07	21.98	21.33
	8 (RB_Pos:0)	21.77	21.64	21.22	20.88	20.76	20.28
	8 (RB_Pos:4)	21.64	21.59	21.14	20.81	20.68	20.25
	8 (RB_Pos:7)	21.65	21.61	21.16	20.82	20.71	20.26
	15 (RB_Pos:0)	21.68	21.59	21.18	20.79	20.60	20.18
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	18607	18900	19193	18607	18900	19193
1.4MHz	1 (RB_Pos:0)	22.91	22.88	22.30	22.13	22.04	21.33
	1 (RB_Pos: 2)	22.84	22.61	22.16	22.12	21.95	21.30
	1 (RB_Pos:5)	22.93	22.68	22.23	22.08	22.12	21.22
	3 (RB_Pos:0)	22.77	22.73	22.19	21.94	21.71	21.26
	3 (RB_Pos:1)	22.73	22.65	22.24	21.95	21.64	21.28
	3 (RB_Pos:2)	22.76	22.67	22.19	21.77	21.74	21.29
	6 (RB_Pos:0)	21.74	21.56	21.17	20.87	20.70	20.34

FDD LTE Band 4							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20050	20175	20300	20050	20175	20300
20MHz	1 (RB_Pos:0)	22.91	22.98	22.68	22.29	22.26	22.19
	1 (RB_Pos:49)	23.06	22.74	22.69	22.48	22.01	22.23
	1 (RB_Pos:99)	22.92	22.72	23.07	22.37	21.94	22.53
	50 (RB_Pos:0)	21.96	21.82	21.69	20.91	20.84	20.68
	50 (RB_Pos:24)	21.94	21.77	21.78	20.88	20.76	20.81
	50 (RB_Pos:49)	21.84	21.68	21.98	20.83	20.64	20.96
	100 (RB_Pos:0)	22.08	21.82	21.98	21.00	20.85	20.98
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20025	20175	20325	20025	20175	20325
15MHz	1 (RB_Pos:0)	22.94	23.01	22.80	22.36	22.18	22.10
	1 (RB_Pos:37)	23.06	22.89	22.90	22.53	22.02	22.26
	1 (RB_Pos:74)	23.01	22.77	23.13	22.48	21.95	22.48
	36 (RB_Pos:0)	21.86	21.81	21.73	20.89	20.88	20.77
	36 (RB_Pos:18)	21.95	21.76	21.84	21.00	20.81	20.92
	36 (RB_Pos:37)	21.91	21.64	21.94	20.96	20.68	21.04
	75 (RB_Pos:0)	21.94	21.80	21.90	20.94	20.78	20.93
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20000	20175	20350	20000	20175	20350
10MHz	1 (RB_Pos:0)	22.63	23.04	22.92	21.87	22.22	21.95
	1 (RB_Pos:24)	22.83	22.93	23.13	22.07	22.13	22.11
	1 (RB_Pos:49)	22.83	22.86	23.29	22.16	22.04	22.22

	25 (RB_Pos:0)	21.76	21.88	21.94	20.83	20.98	20.96
	25 (RB_Pos:12)	21.88	21.80	22.02	20.92	20.92	21.10
	25 (RB_Pos:24)	21.88	21.74	22.09	20.95	20.86	21.20
	50 (RB_Pos:0)	21.88	21.78	21.94	20.92	20.81	21.01
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	19975	20175	20375	19975	20175	20375
5MHz	1 (RB_Pos:0)	22.71	22.85	23.02	21.82	22.33	22.40
	1 (RB_Pos:12)	22.78	22.69	23.03	21.87	22.18	22.46
	1 (RB_Pos:24)	22.81	22.68	23.10	21.98	22.17	22.45
	12 (RB_Pos:0)	21.57	21.81	21.94	20.61	21.00	21.03
	12 (RB_Pos:6)	21.64	21.76	22.00	20.68	20.92	21.12
	12 (RB_Pos:11)	21.68	21.73	21.99	20.72	20.92	21.11
	25 (RB_Pos:0)	21.65	21.75	22.10	20.70	20.84	21.15
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	19965	20175	20385	19965	20175	20385
3.0MHz	1 (RB_Pos:0)	22.58	22.76	23.02	21.97	22.55	22.32
	1 (RB_Pos:7)	22.56	22.71	23.07	22.01	22.06	22.34
	1 (RB_Pos:14)	22.64	22.66	23.04	22.04	22.45	22.23
	8 (RB_Pos:0)	21.61	21.79	22.09	20.65	20.91	21.18
	8 (RB_Pos:4)	21.62	21.77	22.06	20.65	20.78	21.12
	8 (RB_Pos:7)	21.70	21.72	22.09	20.71	20.86	21.14
	15 (RB_Pos:0)	21.61	21.71	22.04	20.64	20.77	21.13
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	19957	20175	20393	19957	20175	20393
1.4MHz	1 (RB_Pos:0)	22.69	23.01	23.15	21.85	22.05	22.44
	1 (RB_Pos:2)	22.55	22.96	23.15	21.99	22.00	22.29
	1 (RB_Pos:5)	22.62	22.95	23.12	22.03	22.04	22.50
	3 (RB_Pos:0)	22.65	22.81	23.12	21.77	21.94	22.12
	3 (RB_Pos:1)	22.64	22.76	23.07	21.53	21.86	22.13
	3 (RB_Pos:2)	22.66	22.81	23.10	21.78	21.83	22.24
	6 (RB_Pos:0)	21.62	21.75	22.09	20.64	20.86	21.16

FDD LTE Band 5							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20450	20525	20600	20450	20525	20600
10 MHz	1 (RB_Pos:0)	22.67	22.69	22.72	21.80	21.98	22.10
	1 (RB_Pos:25)	22.65	22.65	22.69	21.71	22.00	22.00
	1 (RB_Pos:49)	22.76	22.64	22.79	21.85	21.98	22.21
	25 (RB_Pos:0)	21.44	21.58	21.63	20.52	20.69	20.75
	25 (RB_Pos:12)	21.54	21.66	21.66	20.61	20.77	20.82
	25 (RB_Pos:25)	21.65	21.66	21.68	20.71	20.75	20.81
	50 (RB_Pos:0)	21.72	21.67	21.72	20.71	20.77	20.76
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20425	20525	20625	20425	20525	20625
5MHz	1 (RB_Pos:0)	22.54	22.69	22.71	21.86	22.01	21.98
	1 (RB_Pos:13)	22.41	22.68	22.66	21.70	22.07	21.91
	1 (RB_Pos:24)	22.51	22.63	22.81	21.81	22.05	22.13
	12 (RB_Pos:0)	21.42	21.55	21.53	20.43	20.71	20.75
	12 (RB_Pos:6)	21.39	21.58	21.51	20.43	20.71	20.74
	12 (RB_Pos:13)	21.49	21.55	21.57	20.48	20.67	20.81
	25 (RB_Pos:0)	21.48	21.60	21.70	20.45	20.66	20.76
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20415	20525	20635	20415	20525	20635
3.0 MHz	1 (RB_Pos:0)	22.46	22.57	22.44	21.94	21.98	21.75
	1 (RB_Pos:8)	22.36	22.63	22.81	21.80	21.91	21.86
	1 (RB_Pos:14)	22.37	22.59	22.64	21.83	21.99	21.90
	8 (RB_Pos:0)	21.45	21.55	21.54	20.42	20.62	20.59
	8 (RB_Pos:3)	21.33	21.59	21.56	20.34	20.66	20.91
	8 (RB_Pos:7)	21.37	21.54	21.60	20.38	20.59	20.68
	15 (RB_Pos:0)	21.31	21.57	21.79	20.32	20.57	20.78
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20407	20525	20643	20407	20525	20643
1.4MHz	1 (RB_Pos:0)	22.81	22.99	22.86	21.98	22.01	21.97
	1 (RB_Pos:3)	22.71	22.96	22.86	22.03	21.97	21.96
	1 (RB_Pos:5)	22.67	22.96	22.88	21.99	22.03	22.04
	3 (RB_Pos:0)	22.77	22.71	22.66	21.73	22.03	21.77
	3 (RB_Pos:1)	22.67	22.65	22.67	21.69	22.01	22.04
	3 (RB_Pos:3)	22.68	22.68	22.70	21.75	22.04	21.82
	6 (RB_Pos:0)	21.66	21.70	21.71	20.79	20.74	21.10

FDD LTE Band 7							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20850	21100	21350	20850	21100	21350
20MHz	1 (RB_Pos:0)	23.36	22.43	22.37	22.00	21.66	21.68
	1 (RB_Pos:49)	22.65	22.31	22.49	21.83	21.57	21.84
	1 (RB_Pos:99)	22.70	22.27	22.22	21.93	21.61	21.62
	50 (RB_Pos:0)	21.76	21.43	21.46	20.71	20.43	20.45
	50 (RB_Pos:24)	21.63	21.28	21.60	20.66	20.34	20.58
	50 (RB_Pos:49)	21.63	21.28	21.48	20.59	20.37	20.47
	100 (RB_Pos:0)	21.79	21.47	21.73	20.78	20.48	20.76
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20825	21100	21375	20825	21100	21375
15MHz	1 (RB_Pos:0)	22.53	22.32	22.35	21.95	21.51	21.48
	1 (RB_Pos:37)	22.57	22.20	22.42	21.97	21.44	21.54
	1 (RB_Pos:74)	22.48	22.15	22.11	21.90	21.43	21.25
	36 (RB_Pos:0)	21.64	21.40	21.52	20.71	20.40	20.57
	36 (RB_Pos:18)	21.65	21.34	21.50	20.63	20.35	20.55
	36 (RB_Pos:37)	21.63	21.32	21.38	20.61	20.35	20.44
	75 (RB_Pos:0)	21.68	21.34	21.56	20.63	20.41	20.56
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20800	21100	21400	20800	21100	21400
10MHz	1 (RB_Pos:0)	22.52	22.38	22.53	21.98	21.55	21.66
	1 (RB_Pos:24)	22.54	22.30	22.46	21.99	21.48	21.58
	1 (RB_Pos:49)	22.62	22.27	22.31	22.08	21.52	21.41
	25 (RB_Pos:0)	21.71	21.37	21.54	20.69	20.37	20.64
	25 (RB_Pos:12)	21.70	21.37	21.45	20.69	20.38	20.55
	25 (RB_Pos:24)	21.67	21.30	21.42	20.71	20.38	20.52
	50 (RB_Pos:0)	21.67	21.31	21.52	20.71	20.43	20.49
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	20775	21100	21425	20775	21100	21425
5MHz	1 (RB_Pos:0)	22.62	22.32	22.44	21.87	21.25	21.67
	1 (RB_Pos:12)	22.58	22.23	22.36	21.77	21.31	21.51
	1 (RB_Pos:24)	22.63	22.27	22.22	21.90	21.34	21.46
	12 (RB_Pos:0)	21.63	21.25	21.42	20.67	20.24	20.47
	12 (RB_Pos:6)	21.62	21.29	21.33	20.72	20.29	20.43
	12 (RB_Pos:11)	21.63	21.29	21.26	20.66	20.30	20.36
	25 (RB_Pos:0)	21.67	21.31	21.40	20.69	20.39	20.46

FDD LTE Band 12							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	23060	23095	23130	23060	23095	23130
10MHz	1 (RB_Pos:0)	22.58	22.81	22.69	21.93	22.17	22.26
	1 (RB_Pos:25)	22.76	22.73	22.53	22.15	22.09	22.14
	1 (RB_Pos:49)	22.64	22.60	22.67	22.04	21.93	22.30
	25 (RB_Pos:0)	21.84	21.76	21.64	20.82	20.87	20.72
	25 (RB_Pos:12)	21.81	21.77	21.62	20.87	20.82	20.76
	25 (RB_Pos:25)	21.72	21.77	21.56	20.86	20.70	20.73
	50 (RB_Pos:0)	21.75	21.77	21.66	20.88	20.81	20.94
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	23035	23095	23155	23035	23095	23155
5MHz	1 (RB_Pos:0)	22.69	22.70	22.56	21.96	22.24	21.92
	1 (RB_Pos:13)	22.74	22.58	22.57	22.09	22.14	22.00
	1 (RB_Pos:24)	22.80	22.59	22.63	22.23	22.12	22.06
	12 (RB_Pos:0)	21.49	21.63	21.47	20.44	20.74	20.54
	12 (RB_Pos:6)	21.60	21.63	21.50	20.65	20.74	20.63
	12 (RB_Pos:13)	21.71	21.56	21.58	20.80	20.67	20.69
	25 (RB_Pos:0)	21.67	21.66	21.50	20.70	20.75	20.64
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	23025	23095	23165	23025	23095	23165
3.0MHz	1 (RB_Pos:0)	22.52	22.77	22.52	22.18	21.90	21.90
	1 (RB_Pos:8)	22.61	22.70	22.55	22.28	21.91	21.74
	1 (RB_Pos:14)	22.64	22.68	22.47	22.37	21.81	21.91
	8 (RB_Pos:0)	21.51	21.68	21.52	20.44	20.72	20.55
	8 (RB_Pos:3)	21.53	21.65	21.61	20.47	20.68	20.59
	8 (RB_Pos:7)	21.61	21.59	21.56	20.57	20.63	20.69
	15 (RB_Pos:0)	21.52	21.68	21.69	20.66	20.73	20.57
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	23017	23095	23173	23017	23095	23173
1.4MHz	1 (RB_Pos:0)	22.91	22.89	22.79	22.03	21.77	21.92
	1 (RB_Pos:3)	22.85	22.79	22.78	22.06	21.72	21.90
	1 (RB_Pos:5)	22.86	22.83	22.62	22.02	22.03	22.12
	3 (RB_Pos:0)	22.71	22.82	22.67	21.80	21.89	21.72
	3 (RB_Pos:1)	22.71	22.73	22.68	21.86	21.85	21.72
	3 (RB_Pos:3)	22.70	22.81	22.63	21.76	21.86	21.69
	6 (RB_Pos:0)	21.73	21.80	21.62	20.77	20.82	20.83

FDD LTE Band 13							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	23230			23230		
10MHz	1 (RB_Pos:0)	22.86			22.31		
	1 (RB_Pos:25)	22.79			22.39		
	1 (RB_Pos:49)	22.67			22.38		
	25 (RB_Pos:0)	21.97			21.14		
	25 (RB_Pos:12)	21.79			20.99		
	25 (RB_Pos:25)	21.75			20.89		
	50 (RB_Pos:0)	21.86			20.87		
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	23205	23230	23255	23205	23230	23255
5MHz	1 (RB_Pos:0)	22.76	23.06	22.83	21.87	22.30	22.32
	1 (RB_Pos:13)	22.99	22.83	22.66	22.21	22.08	22.16
	1 (RB_Pos:24)	22.80	22.70	22.77	22.06	22.06	22.26
	12 (RB_Pos:0)	21.88	21.73	21.68	20.94	20.76	20.78
	12 (RB_Pos:6)	21.86	21.67	21.57	20.89	20.70	20.61
	12 (RB_Pos:13)	21.78	21.75	21.62	20.76	20.81	20.70
	25 (RB_Pos:0)	21.89	21.72	21.63	20.98	20.82	20.72

FDD LTE Band 17							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	23780	23790	23800	23780	23790	23800
10MHz	1 (RB_Pos:0)	22.86	22.80	22.71	22.23	22.26	21.84
	1 (RB_Pos:25)	22.76	22.62	22.53	22.07	22.07	21.62
	1 (RB_Pos:49)	22.66	22.67	22.72	22.12	22.27	21.84
	25 (RB_Pos:0)	21.91	21.78	21.64	20.87	20.85	20.79
	25 (RB_Pos:12)	21.80	21.70	21.56	20.88	20.78	20.79
	25 (RB_Pos:25)	21.74	21.61	21.62	20.86	20.67	20.71
	50 (RB_Pos:0)	21.68	21.74	21.64	20.80	20.64	20.70
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	23755	23790	23825	23755	23790	23825
5MHz	1 (RB_Pos:0)	22.87	22.68	22.57	22.23	22.07	21.68
	1 (RB_Pos:13)	22.77	22.54	22.62	22.11	21.95	21.76
	1 (RB_Pos:24)	22.68	22.49	22.69	22.04	21.92	21.82
	12 (RB_Pos:0)	21.84	21.49	21.45	20.92	20.74	20.46
	12 (RB_Pos:6)	21.77	21.43	21.61	20.85	20.69	20.61
	12 (RB_Pos:13)	21.76	21.42	21.63	20.80	20.70	20.77
	25 (RB_Pos:0)	21.74	21.61	21.58	20.80	20.65	20.64

FDD LTE Band 26							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	26765	26865	26965	26765	26865	26965
15MHz	1 (RB_Pos:0)	22.06	22.27	22.33	21.58	21.80	21.53
	1 (RB_Pos:37)	22.32	22.38	22.31	21.87	21.88	21.52
	1 (RB_Pos:74)	22.21	22.35	22.39	21.73	21.99	21.61
	36 (RB_Pos:0)	21.35	21.28	21.30	20.39	20.38	20.40
	36 (RB_Pos:18)	21.32	21.36	21.26	20.41	20.53	20.38
	36 (RB_Pos:37)	21.14	21.31	21.26	20.21	20.50	20.41
	75 (RB_Pos:0)	21.43	21.51	21.22	20.50	20.56	20.45
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	26740	26865	26990	26740	26865	26990
10MHz	1 (RB_Pos:0)	22.09	22.36	22.48	21.62	21.79	21.67
	1 (RB_Pos:24)	22.37	22.45	22.41	21.89	21.91	21.63
	1 (RB_Pos:49)	22.37	22.52	22.54	21.86	22.01	21.83
	25 (RB_Pos:0)	21.44	21.40	21.32	20.42	20.52	20.45
	25 (RB_Pos:12)	21.49	21.51	21.32	20.47	20.61	20.41
	25 (RB_Pos:24)	21.49	21.52	21.45	20.47	20.61	20.49
	50 (RB_Pos:0)	21.46	21.51	21.42	20.54	20.56	20.40
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	26715	26865	27015	26715	26865	27015
5MHz	1 (RB_Pos:0)	22.17	22.38	22.37	21.62	21.79	21.84
	1 (RB_Pos:12)	22.33	22.45	22.34	21.80	21.90	21.87
	1 (RB_Pos:24)	22.48	22.54	22.55	21.88	22.04	22.11
	12 (RB_Pos:0)	21.23	21.33	21.39	20.20	20.35	20.29
	12 (RB_Pos:6)	21.37	21.39	21.43	20.37	20.41	20.33
	12 (RB_Pos:11)	21.38	21.41	21.48	20.43	20.44	20.41
	25 (RB_Pos:0)	21.36	21.47	21.54	20.41	20.42	20.56
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	26705	26865	27025	26705	26865	27025
3.0MHz	1 (RB_Pos:0)	22.17	22.42	22.37	21.70	21.50	21.75
	1 (RB_Pos:7)	22.17	22.51	22.50	21.85	21.60	21.91
	1 (RB_Pos:14)	22.40	22.43	22.55	21.91	21.94	21.67
	8 (RB_Pos:0)	21.19	21.28	21.28	20.23	20.41	20.44
	8 (RB_Pos:4)	21.26	21.34	21.33	20.30	20.48	20.50
	8 (RB_Pos:7)	21.33	21.44	21.40	20.40	20.49	20.64
	15 (RB_Pos:0)	21.14	21.42	21.43	20.21	20.49	20.47
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	26697	26865	27033	26697	26865	27033
1.4MHz	1 (RB_Pos:0)	22.38	22.53	22.57	21.42	21.49	21.82

	1 (RB_Pos:2)	22.29	22.54	22.57	21.53	21.96	21.78
	1 (RB_Pos:5)	22.38	22.54	22.64	21.48	21.55	21.90
	3 (RB_Pos:0)	22.15	22.34	22.44	21.07	21.67	21.47
	3 (RB_Pos:1)	22.15	22.36	22.46	21.23	21.62	21.47
	3 (RB_Pos:2)	22.17	22.39	22.47	21.15	21.68	21.71
	6 (RB_Pos:0)	21.13	21.43	21.36	20.29	20.31	20.54

FDD LTE Band 30							
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	27710			27710		
10MHz	1 (RB_Pos:0)	22.43			21.76		
	1 (RB_Pos:25)	22.41			21.76		
	1 (RB_Pos:49)	22.41			21.73		
	25 (RB_Pos:0)	21.41			20.48		
	25 (RB_Pos:12)	21.49			20.54		
	25 (RB_Pos:25)	21.43			20.47		
	50 (RB_Pos:0)	21.60			20.57		
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	27685	27710	27735	27685	27710	27735
5MHz	1 (RB_Pos:0)	22.56	22.42	22.41	21.63	21.60	21.64
	1 (RB_Pos:13)	22.43	22.37	22.25	21.57	21.60	21.53
	1 (RB_Pos:24)	22.48	22.35	22.33	21.57	21.50	21.64
	12 (RB_Pos:0)	21.45	21.2	21.21	20.28	20.19	20.30
	12 (RB_Pos:6)	21.39	21.31	21.09	20.30	20.31	20.21
	12 (RB_Pos:13)	21.44	21.38	21.22	20.33	20.33	20.28
	25 (RB_Pos:0)	21.33	21.38	21.23	20.39	20.37	20.25

FDD LTE Band 41											
Bandwidth (MHz)	RB Set	Power (dBm)									
		QPSK					16QAM				
	Channel	39750	40185	40620	41055	41490	39750	40185	40620	41055	41490
20MHz	1 (RB_Pos:0)	22.68	22.46	22.46	22.26	22.05	22.18	22.17	21.71	21.62	21.31
	1 (RB_Pos:50)	22.74	22.48	22.30	22.30	21.97	22.28	22.19	21.55	21.62	21.23
	1 (RB_Pos:99)	22.68	22.53	22.06	22.26	21.96	22.30	22.24	21.38	21.56	21.24
	50 (RB_Pos:0)	21.58	21.26	21.28	21.15	21.03	20.64	20.31	20.33	20.23	20.03
	50 (RB_Pos:25)	21.58	21.30	21.18	21.19	20.96	20.62	20.37	20.26	20.29	19.95
	50 (RB_Pos:50)	21.50	21.34	21.12	21.13	20.95	20.60	20.40	20.18	20.27	19.95
	100 (RB_Pos:0)	21.55	21.32	21.16	21.17	20.99	20.62	20.38	20.26	20.20	20.06
Bandwidth (MHz)	RB Set	Power (dBm)									
		QPSK					16QAM				
	Channel	39725	40160	40620	41080	41515	39725	40160	40620	41080	41515
15MHz	1 (RB_Pos:0)	22.28	22.25	22.33	22.14	22.23	21.64	21.41	21.87	21.74	21.44
	1 (RB_Pos:38)	22.39	22.25	22.16	22.14	22.17	21.74	21.41	21.76	21.81	21.37
	1 (RB_Pos:74)	22.39	22.26	21.99	22.04	22.03	21.73	21.45	21.59	21.72	21.26
	36 (RB_Pos:0)	21.58	21.36	21.31	21.22	21.04	20.69	20.36	20.47	20.35	20.19
	36 (RB_Pos:20)	21.60	21.38	21.25	21.21	21.00	20.71	20.36	20.41	20.39	20.16
	36 (RB_Pos:39)	21.63	21.37	21.16	21.19	20.97	20.68	20.41	20.33	20.35	20.15
	75 (RB_Pos:0)	21.58	21.32	21.23	21.18	21.09	20.56	20.37	20.31	20.25	19.95
Bandwidth (MHz)	RB Set	Power (dBm)									
		QPSK					16QAM				
	Channel	39700	40135	40620	41105	41540	39700	40135	40620	41105	41540
10MHz	1 (RB_Pos:0)	22.56	22.43	22.32	22.32	21.92	21.52	21.97	22.01	21.88	21.60
	1 (RB_Pos:25)	22.65	22.35	22.16	22.27	21.87	21.57	21.95	21.93	21.83	21.54
	1 (RB_Pos:49)	22.72	22.41	22.12	22.16	21.80	21.64	21.93	21.92	21.79	21.47
	25 (RB_Pos:0)	21.55	21.53	21.35	21.37	21.08	20.58	20.53	20.49	20.42	20.26
	25 (RB_Pos:12)	21.59	21.52	21.26	21.35	21.06	20.58	20.52	20.41	20.37	20.24
	25 (RB_Pos:25)	21.55	21.49	21.21	21.32	21.06	20.55	20.53	20.35	20.33	20.23
	50 (RB_Pos:0)	21.53	21.47	21.24	21.25	21.02	20.58	20.52	20.33	20.40	20.05
Bandwidth (MHz)	RB Set	Power (dBm)									
		QPSK					16QAM				
	Channel	39675	40110	40620	41130	41565	39675	40110	40620	41130	41565
5MHz	1 (RB_Pos:0)	22.50	22.59	22.48	22.64	22.13	22.01	22.22	22.08	21.55	21.47
	1 (RB_Pos:13)	22.50	22.60	22.44	22.59	22.07	22.01	22.23	22.02	21.50	21.41
	1 (RB_Pos:24)	22.55	22.67	22.37	22.59	22.00	22.11	22.28	22.01	21.46	21.38
	12 (RB_Pos:0)	21.47	21.65	21.28	21.48	21.02	20.54	20.73	20.38	20.49	20.09
	12 (RB_Pos:6)	21.48	21.63	21.26	21.43	21.00	20.55	20.64	20.38	20.47	20.07
	12 (RB_Pos:13)	21.47	21.60	21.28	21.38	20.99	20.59	20.64	20.39	20.42	20.08
	25 (RB_Pos:0)	21.43	21.59	21.30	21.45	20.98	20.54	20.55	20.43	20.51	20.01

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Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	132072	132322	132572	132072	132322	132572
20MHz	1 (RB_Pos:0)	23.10	22.86	23.31	22.36	22.33	22.59
	1 (RB_Pos:49)	23.16	22.83	22.80	22.47	22.33	22.07
	1 (RB_Pos:99)	23.07	23.20	23.25	22.39	22.71	22.56
	50 (RB_Pos:0)	22.12	21.90	21.91	21.05	20.84	20.86
	50 (RB_Pos:24)	22.06	21.96	21.77	21.02	20.91	20.67
	50 (RB_Pos:49)	21.98	22.16	21.86	20.93	21.08	20.82
	100 (RB_Pos:0)	22.24	22.23	22.08	21.21	21.19	21.03
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	132047	132322	132597	132047	132322	132597
15MHz	1 (RB_Pos:0)	22.96	22.97	22.88	21.99	22.17	22.32
	1 (RB_Pos:37)	23.18	23.06	22.63	22.25	22.24	22.16
	1 (RB_Pos:74)	23.05	23.26	23.13	22.14	22.44	22.53
	36 (RB_Pos:0)	22.04	21.78	21.78	20.93	20.75	20.58
	36 (RB_Pos:18)	22.15	21.92	21.78	21.05	20.90	20.69
	36 (RB_Pos:37)	22.09	22.08	21.96	20.98	20.99	21.00
	75 (RB_Pos:0)	22.18	22.04	21.99	21.17	21.07	20.91
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	132022	132322	132622	132022	132322	132622
10MHz	1 (RB_Pos:0)	22.82	23.10	22.87	22.00	22.10	22.15
	1 (RB_Pos:24)	22.95	23.09	22.87	22.15	22.11	22.14
	1 (RB_Pos:49)	23.09	23.33	23.19	22.29	22.31	22.47
	25 (RB_Pos:0)	21.97	21.83	21.74	20.94	20.82	20.64
	25 (RB_Pos:12)	22.02	21.89	21.84	20.95	20.85	20.83
	25 (RB_Pos:24)	22.05	21.95	22.02	21.03	20.88	21.02
	50 (RB_Pos:0)	22.09	22.02	21.98	21.03	20.96	20.99
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	131997	132322	132647	131997	132322	132647
5MHz	1 (RB_Pos:0)	22.94	22.82	23.04	22.39	22.35	22.10
	1 (RB_Pos:12)	23.04	22.90	23.22	22.47	22.36	22.37
	1 (RB_Pos:24)	23.07	22.92	23.28	22.58	22.43	22.40
	12 (RB_Pos:0)	21.67	21.73	21.87	20.52	20.55	20.59
	12 (RB_Pos:6)	21.74	21.77	21.93	20.54	20.59	20.61
	12 (RB_Pos:11)	21.80	21.78	22.09	20.57	20.61	20.73
	25 (RB_Pos:0)	21.94	21.95	22.11	20.82	20.87	20.93
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	131987	132322	132657	131987	132322	132657
3.0MHz	1 (RB_Pos:0)	22.52	23.05	23.25	21.57	21.75	22.52

	1 (RB_Pos:7)	22.81	23.02	23.41	22.07	21.86	22.11
	1 (RB_Pos:14)	22.63	23.01	23.31	22.13	22.30	22.00
	8 (RB_Pos:0)	21.73	21.60	21.83	20.54	20.65	20.85
	8 (RB_Pos:4)	21.66	21.68	21.95	20.60	20.88	20.93
	8 (RB_Pos:7)	21.86	21.72	21.99	20.67	20.73	20.99
	15 (RB_Pos:0)	21.79	21.78	22.21	20.78	20.59	21.08
Bandwidth (MHz)	RB Set	Power (dBm)					
		QPSK			16QAM		
	Channel	131979	132322	132665	131979	132322	132665
1.4MHz	1 (RB_Pos:0)	23.17	23.17	23.14	22.13	22.20	22.84
	1 (RB_Pos:2)	23.08	22.62	23.31	22.03	22.26	22.66
	1 (RB_Pos:5)	23.25	23.17	23.08	21.65	21.83	22.82
	3 (RB_Pos:0)	22.81	22.76	23.00	21.94	21.85	22.11
	3 (RB_Pos:1)	22.83	22.76	23.01	21.94	21.92	22.41
	3 (RB_Pos:2)	22.80	22.76	23.04	22.01	21.69	22.06
	6 (RB_Pos:0)	21.89	21.67	21.82	20.82	20.62	21.24

8.3 WIFI for Module (Intel 3165D2W)

8.3.1 2.4G WIFI (Main Antenna)

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	**14.70**	15.00	Yes
		6	2437	14.60	15.00	Yes
		11	2462	14.60	15.00	Yes
	802.11g	1	2412	13.80	15.00	No
		6	2437	13.70	15.00	No
		11	2462	14.00	15.00	No
	802.11n(HT20)	1	2412	13.80	15.00	No
		6	2437	13.60	15.00	No
		11	2462	13.80	15.00	No
	802.11n(HT40)	3	2422	13.70	15.00	No
		6	2437	13.90	15.00	No
		9	2452	13.90	15.00	No

8.3.2 2.4G WIFI (Auxiliary Antenna)

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	14.50	15.00	Yes
		6	2437	14.60	15.00	Yes
		11	2462	**14.70**	15.00	Yes
	802.11g	1	2412	14.20	15.00	No
		6	2437	14.10	15.00	No
		11	2462	14.00	15.00	No
	802.11n(HT20)	1	2412	14.00	15.00	No
		6	2437	14.10	15.00	No
		11	2462	14.00	15.00	No
	802.11n(HT40)	3	2422	13.80	15.00	No
		6	2437	14.00	15.00	No
		9	2452	13.90	15.00	No

8.3.3 5G WIFI (Main Antenna)

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	14.00	14.50	No
		40	5200	13.90	14.50	No
		48	5240	13.80	14.50	No
	802.11n(HT20)	36	5180	13.50	14.50	No
		40	5200	13.60	14.50	No
		48	5240	13.70	14.50	No
	802.11n(HT40)	38	5190	13.70	14.50	No
		46	5230	13.60	14.50	No
	802.11ac(VHT20)	36	5180	13.50	14.50	No
		40	5200	13.60	14.50	No
		48	5240	13.60	14.50	No
	802.11ac(VHT40)	38	5190	13.70	14.50	No
		46	5230	13.60	14.50	No
	802.11ac(VHT80)	42	5210	13.50	14.50	No
5.3 (5.25~5.35)	802.11a	52	5260	14.20	14.50	No
		60	5300	14.10	14.50	No
		64	5320	14.10	14.50	No
	802.11n(HT20)	52	5260	13.60	14.50	No
		60	5300	13.70	14.50	No
		64	5320	13.50	14.50	No
	802.11n(HT40)	54	5270	13.60	14.50	No
		62	5310	13.60	14.50	No
	802.11ac(VHT20)	52	5260	13.60	14.50	No
		60	5300	13.60	14.50	No
		64	5320	13.50	14.50	No
	802.11ac(VHT40)	54	5270	13.50	14.50	No
		62	5310	13.50	14.50	No
	802.11ac(VHT80)	58	5290	**13.60**	14.50	Yes
5.6 (5.47~5.725)	802.11a	100	5500	12.90	14.50	No
		116	5580	13.20	14.50	No
		140	5700	13.00	14.50	No
		144	5720	13.10	14.50	No
	802.11n(HT20)	100	5500	12.90	14.50	No
		116	5580	13.20	14.50	No
		140	5700	13.10	14.50	No
		144	5720	13.10	14.50	No
	802.11n(HT40)	102	5510	13.00	14.50	No
		118	5590	13.20	14.50	No
		134	5670	13.10	14.50	No
		142	5710	13.20	14.50	No
	802.11ac(VHT20)	100	5500	13.20	14.50	No
		116	5580	13.20	14.50	No

		140	5700	13.10	14.50	No
		144	5720	13.20	14.50	No
	802.11ac(VHT40)	102	5510	13.10	14.50	No
		118	5590	13.20	14.50	No
		134	5670	13.00	14.50	No
		142	5710	13.00	14.50	No
	802.11ac(VHT80)	106	5530	13.00	14.50	Yes
		122	5610	13.10	14.50	Yes
		138	5690	**13.20**	14.50	Yes
5.8 (5.725~5.850)	802.11a	149	5745	14.00	14.50	No
		157	5785	14.00	14.50	No
		165	5825	14.20	14.50	No
	802.11n(HT20)	149	5745	13.60	14.50	No
		157	5785	13.70	14.50	No
		165	5825	13.70	14.50	No
	802.11n(HT40)	151	5755	13.50	14.50	No
		159	5795	13.60	14.50	No
	802.11ac(VHT20)	149	5745	13.60	14.50	No
		157	5785	13.70	14.50	No
		165	5825	13.70	14.50	No
	802.11ac(VHT40)	151	5755	13.60	14.50	No
		159	5795	13.60	14.50	No
	802.11ac(VHT80)	155	5775	**13.50**	14.50	Yes

8.3.4 5G WIFI (Auxiliary Antenna)

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	14.20	14.50	No
		40	5200	14.00	14.50	No
		48	5240	13.90	14.50	No
	802.11n(HT20)	36	5180	13.60	14.50	No
		40	5200	13.80	14.50	No
		48	5240	13.30	14.50	No
	802.11n(HT40)	38	5190	13.70	14.50	No
		46	5230	13.50	14.50	No
	802.11ac(VHT20)	36	5180	13.50	14.50	No
		40	5200	13.80	14.50	No
		48	5240	13.40	14.50	No
	802.11ac(VHT40)	38	5190	13.70	14.50	No
		46	5230	13.50	14.50	No
	802.11ac(VHT80)	42	5210	13.60	14.50	No
5.3 (5.25~5.35)	802.11a	52	5260	14.30	14.50	No
		60	5300	14.10	14.50	No
		64	5320	14.00	14.50	No
	802.11n(HT20)	52	5260	13.70	14.50	No
		60	5300	13.80	14.50	No
		64	5320	13.50	14.50	No
	802.11n(HT40)	54	5270	13.60	14.50	No
		62	5310	13.50	14.50	No
	802.11ac(VHT20)	52	5260	13.60	14.50	No
		60	5300	13.70	14.50	No
		64	5320	13.50	14.50	No
	802.11ac(VHT40)	54	5270	13.60	14.50	No
		62	5310	13.50	14.50	No
	802.11ac(VHT80)	58	5290	**13.80**	14.50	Yes
5.6 (5.47~5.725)	802.11a	100	5500	13.30	14.50	No
		116	5580	13.10	14.50	No
		140	5700	13.10	14.50	No
		144	5720	13.00	14.50	No
	802.11n(HT20)	100	5500	13.30	14.50	No
		116	5580	13.30	14.50	No
		140	5700	13.10	14.50	No
		144	5720	13.20	14.50	No
	802.11n(HT40)	102	5510	13.20	14.50	No
		118	5590	13.10	14.50	No
		134	5670	13.00	14.50	No
		142	5710	13.10	14.50	No
	802.11ac(VHT20)	100	5500	13.20	14.50	No
		116	5580	13.30	14.50	No