SAR TEST REPORT

Application No:	HR/2020/90016
Applicant:	A Beep, LLC
Manufacturer:	Quanzhou Tesunho Electronics Co., Ltd
Product Name:	Nationwide Radio
Model No. (EUT):	DTP9751
Trade Mark:	Diga-Talk
FCC ID:	2APPUDTP9751
Standards:	IEEE Std C95.1 – 1991
Date of Receipt:	2020-10-20
Date of Test:	2020-10-27 to 2020-10-27
Date of Issue:	2020-12-5
Test conclusion:	**PASS ***

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

Authorized Signature:

Derek Yang

Derek Yang

Wireless Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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REVISION HISTORY

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2020-12-5		Original

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TEST SUMMARY

Frequency Band	Test position	Max Reported SAR (W/kg)	Test position	Max Reported SAR (W/kg)	SAR limit (W/kg)	Verdict
WCDMA Band II	Next to the Mouth 1g	0.52	Body-worn	0.39	1.6	PASS
WCDMA Band IV	Next to the Mouth 1g	0.51	Body-worn	0.39	1.6	PASS
WCDMA Band V	Next to the Mouth 1g	0.54	Body-worn	0.41	1.6	PASS
LTE Band 2	Next to the Mouth 1g	0.49	Body-worn	0.37	1.6	PASS
LTE Band 4	Next to the Mouth 1g	0.46	Body-worn	0.35	1.6	PASS
LTE Band 5	Next to the Mouth 1g	0.57	Body-worn	0.43	1.6	PASS
LTE Band 12	Next to the Mouth 1g	0.16	Body-worn	0.12	1.6	PASS
LTE Band 13	Next to the Mouth 1g	0.44	Body-worn	0.33	1.6	PASS
LTE Band 14	Next to the Mouth 1g	0.56	Body-worn	0.42	1.6	PASS
LTE Band 66	Next to the Mouth 1g	0.25	Body-worn	0.19	1.6	PASS
LTE Band 71	Next to the Mouth 1g	0.12	Body-worn	0.09	1.6	PASS

Approved & Released by

Simon Ling

Simon Ling

SAR Manager

Tested by

Gavin Gao

Gavin Gao

SAR Engineer

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1 General Information

1.1 Details of Client

Applicant:	A Beep, LLC
Address:	710 W Jefferson St, Joliet Illinois 60435, USA
Manufacturer:	Quanzhou Tesunho Electronics Co., Ltd
Address:	2#, 5F E-19# Phase 2 Xunmei, Quanzhou, Fujian, China

1.2 Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Xi'an Branch
Address:	Single floor D, building 1, Kanghong orange square science and technology park, No.137 keyuan 3rd road, fengdong new town, Xi 'an city, shaanxi China
Post code:	710086
Telephone:	+86 (0) 29 6282 7885
Fax:	+86 (0) 29 6282 7885
E-mail:	ee.xian@sgs.com

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1.3 Test Facility

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

- **A2LA (Certificate No. 4854.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Xi'an Branch is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4854.01.

- **FCC –Designation Number: CN1271**

SGS-CSTC Standards Technical Services Co., Ltd., Xi'an Branch has been recognized as an accredited testing laboratory.

Designation Number: CN1271. Test Firm Registration Number: 637380.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Xi'an Branch has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0095

ISED#: 25613.

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1.4 General Description of EUT

Product Name:	Nationwide Radio		
Model No.(EUT):	DTP9751		
Trade Mark:	Diga-Talk+®		
Product Phase:	production unit		
Device Type :	portable device		
Exposure Category:	uncontrolled environment / general population		
Hardware Version:	A02L6000g0		
Software Version:	SZE05		
Antenna Type:	External Antenna		
Device Operating Configurations :			
Modulation Mode:	**WCDMA:** QPSK; **LTE:** QPSK,16QAM;		
Power Class:	3, tested with power control "all 1"(WCDMA Band II/IV/V)		
	3, tested with power control Max Power(LTE Band 2/4/512/13/14/66/71)		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	WCDMA Band II	1850~1910	1930~1990
	WCDMA Band IV	1710~1755	2110~2155
	WCDMA Band V	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 12	699~716	729~746
	LTE Band 13	777~787	746~756
	LTE Band 14	790.5~795.5	760.5~765.5
	LTE Band 66	1710~1780	2110~2200
	LTE Band 71	663~698	617~652
Battery Information1#:	Model: BL-3886		
	Rated capacity: 3.63V; 5200mAh		
	Manufacturer: Quanzhou Tesunho Electronics Co.,Ltd.		

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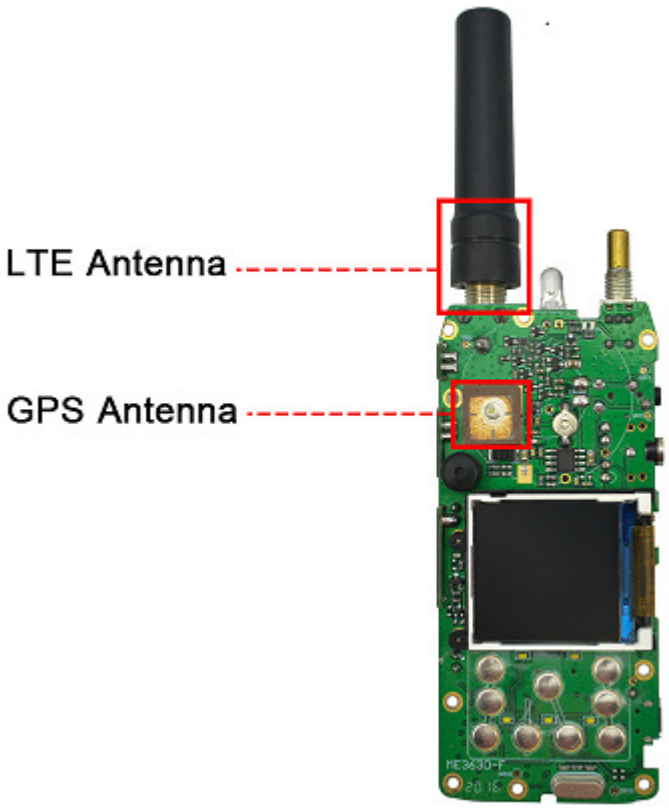
1.4.1 DUT Antenna Locations

Front View



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1.5 Test Specification

Identity	Document Title
IEEE Std C95.1 – 1991	Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 447498 D01 General RF Exposure Guidance v06	Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies
KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04	SAR Measurement Requirements for 100 MHz to 6 GHz
KDB 643646 D01 SAR Test for PTT Radios v01r03	SAR Test Reduction Considerations for Occupational PTT Radios
KDB 941225 D01 3G SAR Procedures v03r01	3G SAR Measurement Procedures
KDB 941225 D05 SAR for LTE Devices v02r05	SAR EVALUATION CONSIDERATIONS FOR LTE DEVICES
KDB447498 D03 Supplement C Cross-Reference v01	OET Bulletin 65, Supplement C Cross-Reference
KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04	SAR Measurement Requirements for 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting v01r02	RF Exposure Compliance Reporting and Documentation Considerations

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1.6 RF exposure limits

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

Notes:

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

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

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

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

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

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2 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
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.	

Table 1： The Ambient Conditions

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3 SAR Measurements System Configuration

3.1 The SAR Measurement System

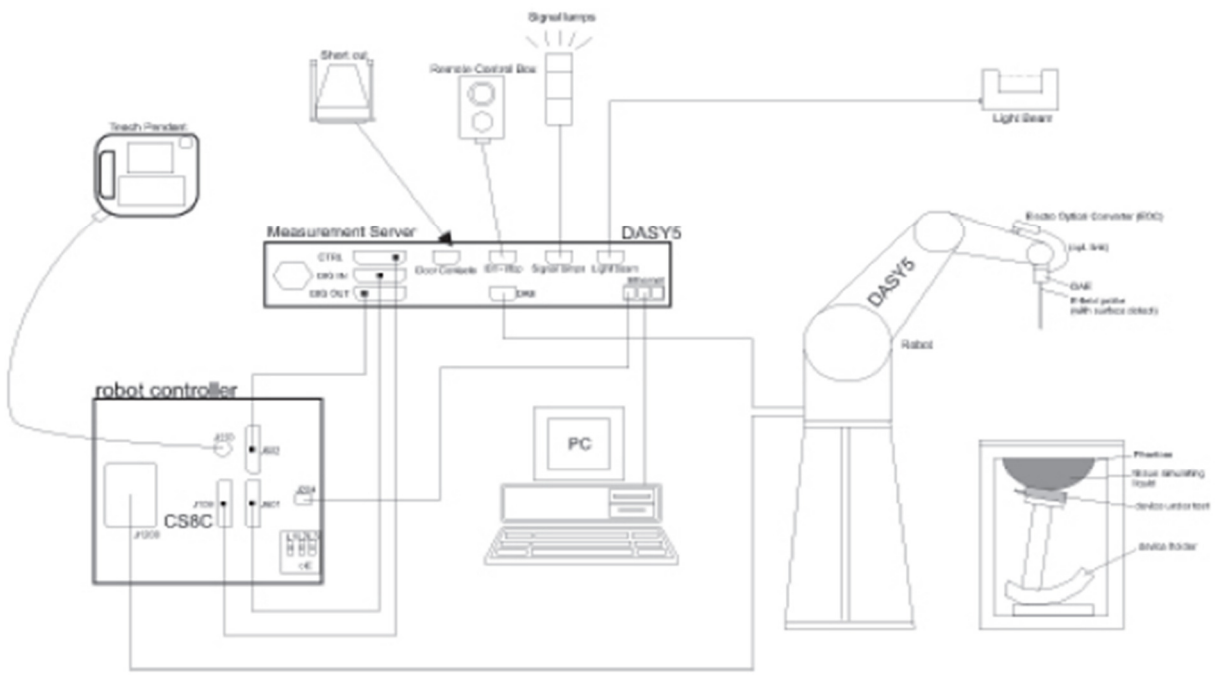
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY5 professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the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

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

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

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

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



F-1. SAR Measurement System Configuration

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

3.2 Isotropic E-field Probe EX3DV4

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

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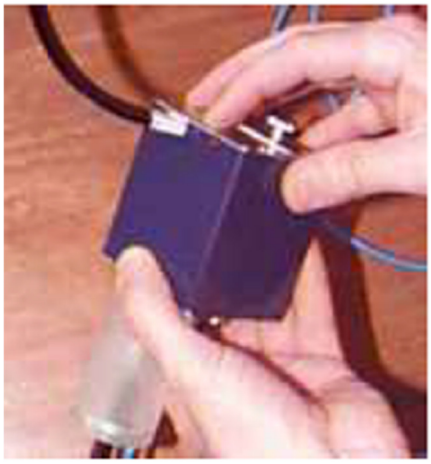
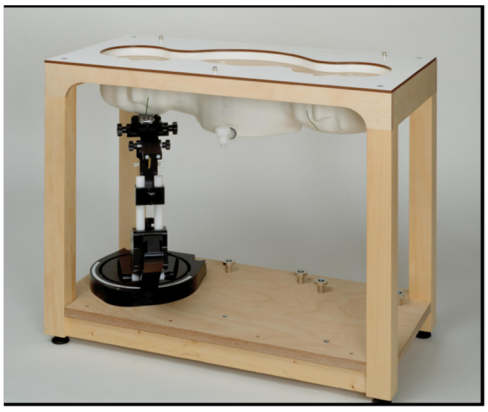
3.3 Data Acquisition Electronics (DAE)

Model	DAE4	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY4/5 embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.	
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV,400mV)	
Input Offset Voltage	< 5µV (with auto zero)	
Input Bias Current	< 50 f A	
Dimensions	60 x 60 x 68 mm	

3.4 SAM Twin Phantom

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

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.

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

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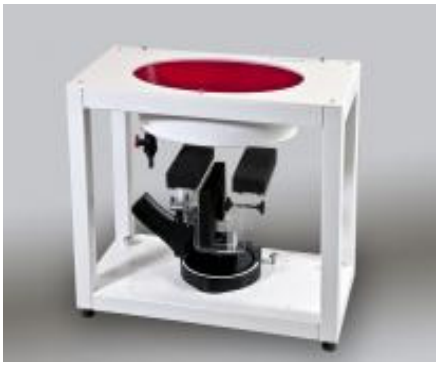
3.5 ELI Phantom

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

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.

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

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3.6 Device Holder for Transmitters

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

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

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3.7 Measurement procedure

3.7.1 Scanning procedure

Step 1: Power reference measurement

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

Step 2: *Area scan*

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

Step 3: *Zoom scan*

Around this point, a volume of 32mm*32mm*30mm (f≤2GHz), 30mm*30mm*30mm (f for 2-3GHz) and 24mm*24mm*22mm (f for 5-6GHz) was assessed by measuring 5x5x7 points (f≤2GHz), 7x7x7 points (f for 2-3GHz) and 7x7x12 points (f for 5-6GHz). On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

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

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

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

Step 4: Power reference measurement (drift)

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

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3.7.2 Data Storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".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], [℃], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

3.7.3 Data Evaluation by SEMCAD

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

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

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

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

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

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

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

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

cf = crest factor of exciting field (DASY parameter)

dcp i = diode compression point (DASY parameter)

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

E-field probes:

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

H-field probes:

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

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

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

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

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

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

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

with SAR = local specific absorption rate in mW/g

Etot = total field strength in V/m

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

ε= equivalent tissue density in g/cm3

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

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

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

Htot = total magnetic field strength in A/m

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4 SAR measurement variability and uncertainty

4.1 SAR measurement variability

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04, 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.

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4.2 SAR measurement uncertainty

Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE 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.

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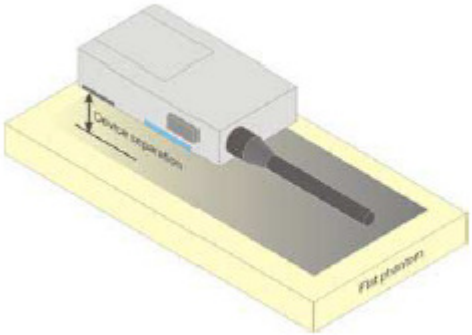
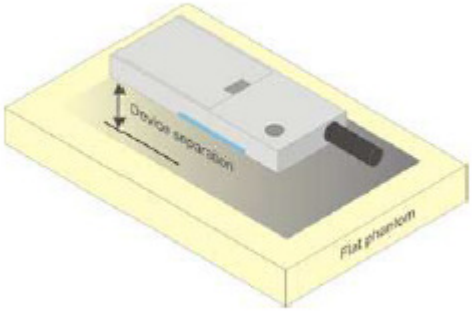
5 Description of Test Position

5.1 Next to the Mouth Exposure Condition

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.

Transmitters that are built-in within devices typically operate in speaker mode for voice communication, with the device positioned next to the mouth. When SAR evaluation is required, next to the mouth use is evaluated with the front of the device positioned at 25 mm from a flat phantom filled with head tissue-equivalent medium.





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6 SAR System Check Procedure

6.1 Tissue Simulate Liquid

6.1.1 Recipes for Tissue Simulate Liquid

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

Ingredients (% by weight)	Frequency (MHz)							
	450		700-900		1800-2000		2300-2700	
Tissue Type	**Head**	**Body**	**Head**	**Body**	**Head**	**Body**	**Head**	**Body**
Water	38.56	51.16	40.30	50.75	55.24	70.17	55.00	68.53
Salt (NaCl)	3.95	1.49	1.38	0.94	0.31	0.39	0.2	0.1
Sucrose	56.32	46.78	57.90	48.21	0	0	0	0
HEC	0.98	0.52	0.24	0	0	0	0	0
Bactericide	0.19	0.05	0.18	0.10	0	0	0	0
Tween	0	0	0	0	44.45	29.44	44.80	31.37
Salt: 99+% Pure Sodium Chloride Water: De-ionized, 16 MΩ+ resistivity Tween: Polyoxyethylene (20) sorbitan monolaurate					Sucrose: 98+% Pure Sucrose HEC: Hydroxyethyl Cellulose			

Table 2： Recipe of Tissue Simulate Liquid

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6.1.2 Measurement for Tissue Simulate Liquid

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

Tissue Type	Measured Frequency (MHz)	Target Tissue (±5%)		Measured Tissue		Liquid Temp. (℃)	Measured Date
		ε_r	σ(S/m)	ε_r	σ(S/m)		
750 Head	750	41.9 (39.81~44)	0.89 (0.85~0.94)	41.256	0.888	22.1	2020/10/27
835 Head	835	41.5 (39.43~43.58)	0.90 (0.86~0.95)	41.627	0.894	22.1	2020/10/27
1750 Head	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	38.894	1.353	21.9	2020/10/27
1900 Head	1900	40.0 (38.00~42.00)	1.40 (1.33~1.47)	40.358	1.385	22.3	2020/10/27

Table 3： Measurement result of Tissue electric parameters

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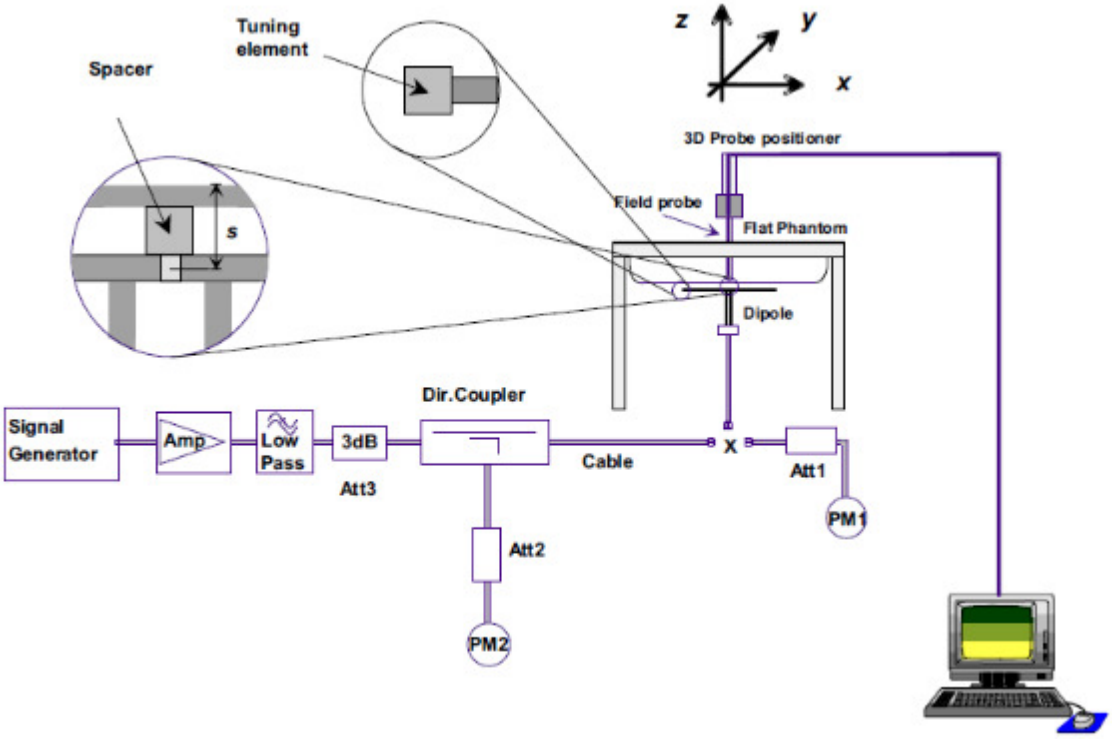
6.2 SAR System Check

The microwave circuit arrangement for system check is sketched in below figure. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the following table(A power level of 250mW (below 3GHz) or 100mW (3-6GHz) was input to the dipole antenna). During the tests, the ambient temperature of the laboratory was in the range 22±2℃, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15±0.5 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



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

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6.2.1 Justification for Extended SAR Dipole Calibrations

1) Referring to KDB865664 D01 requirements for dipole calibration, instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.

a) There is no physical damage on the dipole;
b) System check with specific dipole is within 10% of calibrated value;
c) Return-loss is within 10% of calibrated measurement;
d) Impedance is within 5Ω from the previous measurement.

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

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6.2.2 Summary System Check Result(s)

Validation Kit		Measured SAR 250mW	Measured SAR 250mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W) (±10%)	Target SAR (normalized to 1W) (±10%)	Liquid Temp. (℃)	Measured Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)		
D750V2	Head	2.17	1.42	8.68	5.68	8.39 (7.55~9.23)	5.63 (5.07~6.19)	22.1	2020/10/27
D835V2	Head	2.49	1.62	9.96	6.48	9.64 (8.68~10.60)	6.29 (5.66~6.92)	22.1	2020/10/27
D1750V2	Head	9.66	5.13	38.64	20.52	36.3 (32.67~39.93)	19.2 (17.28~21.12)	21.9	2020/10/27
D1900V2	Head	10.20	5.29	40.80	21.16	39.3 (35.37~43.23)	20.2 (18.18~22.22)	22.3	2020/10/27

Table 4： SAR System Check Result

6.2.3 Detailed System Check Results

Please see the Appendix A

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7 Test Result

7.1 Measurement of RF Conducted Power

7.1.1 Conducted Power of WCDMA Band 2

WCDMA Band 2					
Average Conducted Power(dBm)					
Channel		9262	9400	9538	Tune up
WCDMA	12.2kbps RMC	23.27	23.36	**23.46**	25.00
	12.2kbps AMR	23.21	23.31	23.11	25.00
HSDPA	Subtest 1	22.31	22.15	22.47	24.00
	Subtest 2	22.37	22.23	22.49	24.00
	Subtest 3	21.88	21.71	21.65	23.50
	Subtest 4	21.55	21.74	21.60	23.50
HSUPA	Subtest 1	22.31	22.25	22.51	24.00
	Subtest 2	20.37	20.20	20.48	22.00
	Subtest 3	21.36	21.26	21.51	23.00
	Subtest 4	20.33	20.25	20.54	22.00
	Subtest 5	22.37	22.26	22.46	24.00

7.1.2 Conducted Power of WCDMA Band 4

WCDMA Band 4					
Average Conducted Power(dBm)					
Channel		1312	1412	1513	Tune up
WCDMA	12.2kbps RMC	**23.37**	23.12	23.27	25.00
	12.2kbps AMR	23.31	23.00	23.21	25.00
HSDPA	Subtest 1	22.52	22.37	22.67	24.00
	Subtest 2	22.52	22.40	22.70	24.00
	Subtest 3	22.08	21.90	21.86	23.50
	Subtest 4	21.72	21.92	21.82	23.50
HSUPA	Subtest 1	22.53	22.42	22.69	24.00
	Subtest 2	20.59	20.39	20.64	22.00
	Subtest 3	21.56	21.41	21.70	23.00
	Subtest 4	20.53	20.46	20.75	22.00
	Subtest 5	22.57	22.49	22.68	24.00

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7.1.3 Conducted Power of WCDMA Band 5

WCDMA Band 5					
Average Conducted Power(dBm)					
Channel		4132	4182	4233	Tune up
WCDMA	12.2kbps RMC	23.61	**23.65**	23.59	25.00
	12.2kbps AMR	23.54	23.54	23.55	25.00
HSDPA	Subtest 1	22.85	22.70	23.02	24.00
	Subtest 2	22.84	22.72	23.03	24.00
	Subtest 3	22.39	22.23	22.17	23.50
	Subtest 4	22.03	22.22	22.15	23.50
HSUPA	Subtest 1	22.85	22.73	23.02	24.00
	Subtest 2	20.86	20.73	20.94	22.00
	Subtest 3	21.85	21.75	22.02	23.00
	Subtest 4	20.83	20.72	21.09	22.00
	Subtest 5	22.89	22.79	22.95	24.00

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7.1.4 Conducted Power of LTE Band 2

LTE Band 2				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 18607	Channel 18900	Channel 19193	Tune up
1.4MHz	QPSK	1	0	23.06	23.15	**23.44**	25.00
		1	2	23.02	23.05	23.28	25.00
		1	5	23.07	23.09	23.08	25.00
		3	0	23.01	23	23.34	25.00
		3	2	23.06	23.2	23.22	25.00
		3	3	23.17	23	23.23	25.00
		6	0	22.17	22.18	22.29	24.00
	16QAM	1	0	22.16	22.2	22.04	24.00
		1	2	22.23	22.04	22.2	24.00
		1	5	22.06	22.05	22.02	24.00
		3	0	22.26	22.13	22.14	24.00
		3	2	22.14	22.09	22.04	24.00
		3	3	22.02	22.08	22.19	24.00
		6	0	21.22	21.28	21.41	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 18615	Channel 18900	Channel 19185	Tune up
3MHz	QPSK	1	0	23.02	23.06	**23.39**	25.00
		1	7	23.01	23.01	23.28	25.00
		1	14	23.04	23.04	23.07	25.00
		8	0	22.06	22.1	22.36	24.00
		8	4	22.11	22.23	22.24	24.00
		8	7	22.2	22.02	22.25	24.00
		15	0	22.1	22.18	22.24	24.00
	16QAM	1	0	22.09	22.19	22.06	24.00
		1	7	22.16	22.04	22.1	24.00
		1	14	22.06	22.02	22.02	24.00
		8	0	21.28	21.19	21.18	23.00
		8	4	21.2	21.12	21.04	23.00
		8	7	21.03	21.17	21.29	23.00
		15	0	21.14	21.2	21.35	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 18625	Channel 18900	Channel 19175	Tune up
5MHz	QPSK	1	0	23.01	23.1	**23.36**	25.00
		1	13	23.06	23.04	23.19	25.00
		1	24	23.03	23.08	23.04	25.00
		12	0	22.05	22.1	22.28	24.00
		12	6	22.04	22.2	22.21	24.00
		12	13	22.1	22.02	22.16	24.00

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		25	0	22.02	22.12	22.14	24.00
	16QAM	1	0	22.02	22.13	22.08	24.00
		1	13	22.14	22.03	22.06	24.00
		1	24	22.04	22.01	22.04	24.00
		12	0	21.21	21.14	21.11	23.00
		12	6	21.16	21.09	21.03	23.00
		12	13	21.09	21.07	21.27	23.00
		25	0	21.14	21.18	21.3	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 18650	Channel 18900	Channel 19150	Tune up
10MHz	QPSK	1	0	23.07	23.01	**23.26**	25.00
		1	25	23.1	23.13	23.12	25.00
		1	49	23.06	23.06	23.02	25.00
		25	0	22.12	22.2	22.39	24.00
		25	13	22.15	22.19	22.26	24.00
		25	25	22	22.11	22.14	24.00
		50	0	22.13	22.22	22.27	24.00
	16QAM	1	0	22.21	22.05	22.37	24.00
		1	25	22.23	22.45	22.24	24.00
		1	49	22	22.09	22.02	24.00
		25	0	21.17	21.12	21.45	23.00
		25	13	21.23	21.38	21.52	23.00
		25	25	21.07	21.08	21.44	23.00
		50	0	21.25	21.25	21.33	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 18675	Channel 18900	Channel 19125	Tune up
15MHz	QPSK	1	0	23.01	23.17	23.21	25.00
		1	38	23.09	23.08	**23.31**	25.00
		1	74	23.23	23.17	23.03	25.00
		36	0	22.21	22.12	22.38	24.00
		36	18	22	22.19	22.38	24.00
		36	39	22.07	22.18	22.21	24.00
		75	0	22.11	22.16	22.4	24.00
	16QAM	1	0	22.04	22.01	22.32	24.00
		1	38	22.06	22.49	22.11	24.00
		1	74	22.08	22.02	22.04	24.00
		36	0	21.11	21.23	21.44	23.00
		36	18	21.08	21.23	21.49	23.00
		36	39	21.16	21.08	21.37	23.00
		75	0	21.27	21.24	21.37	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 18700	Channel 18900	Channel 19100	Tune up
20MHz	QPSK	1	0	23.14	23.24	23.3	25.00

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		1	50	23.04	23.25	**23.44**	25.00
		1	99	23.34	23.09	23.03	25.00
		50	0	22.09	22.29	22.41	24.00
		50	25	22.19	22.22	22.45	24.00
		50	50	22.19	22.17	22.43	24.00
		100	0	22.18	22.28	22.33	24.00
	16QAM	1	0	22.04	22.35	22.02	24.00
		1	50	22.03	22.5	22.43	24.00
		1	99	22.08	22.03	22.06	24.00
		50	0	21.13	21.3	21.39	23.00
		50	25	21.28	21.32	21.58	23.00
		50	50	21.22	21.22	21.39	23.00
		100	0	21.23	21.2	21.53	23.00

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7.1.5 Conducted Power of LTE Band 4

LTE Band 4				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 19957	Channel 20175	Channel 20393	Tune up
1.4MHz	QPSK	1	0	23.07	23.01	23.14	25.00
		1	2	23.01	23.06	23.05	25.00
		1	5	23.06	23.16	23.08	25.00
		3	0	23.12	23.08	**23.19**	25.00
		3	2	23.14	23.07	23.1	25.00
		3	3	23.03	23.14	23.04	25.00
		6	0	22.06	22.09	22.16	24.00
	16QAM	1	0	22.24	22.07	22.04	24.00
		1	2	22.04	22.13	22.05	24.00
		1	5	22.02	22.02	22.07	24.00
		3	0	22.24	22.05	22.03	24.00
		3	2	22.04	22.1	22.1	24.00
		3	3	22.19	22.07	22.09	24.00
		6	0	21.13	21.12	21.14	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 19965	Channel 20175	Channel 20385	Tune up
3MHz	QPSK	1	0	23.07	23.04	23.14	25.00
		1	7	23.01	23.06	23.01	25.00
		1	14	23.04	**23.16**	23.08	25.00
		8	0	22.12	22.09	22.19	24.00
		8	4	22.14	22.06	22.1	24.00
		8	7	22.03	22.14	22.04	24.00
		15	0	22.06	22.05	22.16	24.00
	16QAM	1	0	22.24	22.07	22.04	24.00
		1	7	22.04	22.13	22.05	24.00
		1	14	22.02	22.02	22.07	24.00
		8	0	21.24	21.05	21.03	23.00
		8	4	21.04	21.1	21.1	23.00
		8	7	21.19	21.07	21.09	23.00
		15	0	21.13	21.12	21.14	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 19975	Channel 20175	Channel 20375	Tune up
5MHz	QPSK	1	0	23.07	23.06	23.14	25.00
		1	13	23.01	23.06	23.01	25.00
		1	24	23.04	**23.16**	23.08	25.00
		12	0	22.12	22.09	22.19	24.00
		12	6	22.14	22.07	22.1	24.00
		12	13	22.03	22.14	22.04	24.00

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		25	0	22.06	22.04	22.16	24.00
	16QAM	1	0	22.24	22.07	22.04	24.00
		1	13	22.05	22.13	22.05	24.00
		1	24	22.02	22.02	22.07	24.00
		12	0	21.24	21.05	21.03	23.00
		12	6	21.04	21.1	21.1	23.00
		12	13	21.19	21.07	21.09	23.00
		25	0	21.13	21.12	21.14	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 20000	Channel 20175	Channel 20350	Tune up
10MHz	QPSK	1	0	23.07	23.03	**23.12**	25.00
		1	25	23.04	23.05	**23.12**	25.00
		1	49	23.01	23.04	23.02	25.00
		25	0	22	22.09	22.08	24.00
		25	13	22.08	22.02	22.07	24.00
		25	25	22.03	22	22.04	24.00
		50	0	22.01	22.05	22.01	24.00
	16QAM	1	0	22.18	22.04	22.04	24.00
		1	25	22.03	22.05	22.02	24.00
		1	49	22.02	22.01	22.03	24.00
		25	0	21.02	21.03	21.15	23.00
		25	13	21.13	21.11	21.25	23.00
		25	25	21.07	21.07	21	23.00
		50	0	21.09	21	21.15	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 20025	Channel 20175	Channel 20325	Tune up
15MHz	QPSK	1	0	23.06	23.06	23.21	25.00
		1	38	23.04	23.12	**23.24**	25.00
		1	74	23.08	23.07	23.09	25.00
		36	0	22.11	22.04	22.22	24.00
		36	18	22.04	22	22.08	24.00
		36	39	22.01	22.09	22.1	24.00
		75	0	22.01	22	22.22	24.00
	16QAM	1	0	22.06	22.17	22.64	24.00
		1	38	22.06	22.11	22.04	24.00
		1	74	22.03	22.02	22.04	24.00
		36	0	21.08	21.04	21.27	23.00
		36	18	21.08	21.05	21.2	23.00
		36	39	21.07	21.18	21.03	23.00
		75	0	21.03	21.06	21.22	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 20050	Channel 20175	Channel 20300	Tune up
20MHz	QPSK	1	0	23.26	23.14	23.22	25.00

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		1	50	23.07	23.23	**23.31**	25.00
		1	99	23.04	23.07	23.04	25.00
		50	0	22.19	22.03	22.27	24.00
		50	25	22	22.04	22.06	24.00
		50	50	22.07	22.05	22.09	24.00
		100	0	22.01	22.01	22.2	24.00
	16QAM	1	0	22.07	22.01	22.41	24.00
		1	50	22.04	22.35	22.08	24.00
		1	99	22.02	22.25	22.07	24.00
		50	0	21.26	21.14	21.46	23.00
		50	25	21.13	21.08	21.21	23.00
		50	50	21.04	21.11	21.14	23.00
		100	0	21.07	21.05	21.27	23.00

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7.1.6 Conducted Power of LTE Band 5

LTE Band 5				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 20407	Channel 20525	Channel 20643	Tune up
1.4MHz	QPSK	1	0	23.47	23.43	23.47	25.00
		1	2	23.34	23.35	23.44	25.00
		1	5	23.45	23.3	23.4	25.00
		3	0	23.71	23.74	23.7	25.00
		3	2	23.69	23.74	**23.8**	25.00
		3	3	23.66	23.65	23.71	25.00
		6	0	22.75	22.74	22.65	24.00
	16QAM	1	0	22.31	22.09	22.4	24.00
		1	2	22.31	22.65	22.62	24.00
		1	5	22.55	22.42	22.3	24.00
		3	0	22.82	22.63	22.65	24.00
		3	2	22.42	22.66	22.82	24.00
		3	3	22.38	22.61	22.81	24.00
		6	0	21.7	21.58	21.79	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 20415	Channel 20525	Channel 20635	Tune up
3MHz	QPSK	1	0	**23.47**	23.43	**23.47**	25.00
		1	7	23.34	23.35	23.44	25.00
		1	14	23.45	23.3	23.4	25.00
		8	0	22.71	22.74	22.7	24.00
		8	4	22.69	22.74	22.8	24.00
		8	7	22.66	22.65	22.71	24.00
		15	0	22.75	22.74	22.65	24.00
	16QAM	1	0	22.31	22.08	22.4	24.00
		1	7	22.31	22.65	22.62	24.00
		1	14	22.55	22.42	22.3	24.00
		8	0	21.82	21.63	21.65	23.00
		8	4	21.42	21.66	21.82	23.00
		8	7	21.38	21.61	21.81	23.00
		15	0	21.7	21.58	21.79	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 20425	Channel 20525	Channel 20625	Tune up
5MHz	QPSK	1	0	**23.47**	23.43	**23.47**	25.00
		1	13	23.34	23.35	23.44	25.00
		1	24	23.45	23.3	23.4	25.00
		12	0	22.71	22.74	22.7	24.00
		12	6	22.69	22.74	22.8	24.00
		12	13	22.66	22.65	22.71	24.00

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		25	0	22.75	22.74	22.65	24.00
	16QAM	1	0	22.31	22.11	22.4	24.00
		1	13	22.31	22.65	22.62	24.00
		1	24	22.55	22.42	22.3	24.00
		12	0	21.82	21.63	21.65	23.00
		12	6	21.42	21.66	21.82	23.00
		12	13	21.38	21.61	21.81	23.00
		25	0	21.7	21.58	21.79	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 20450	Channel 20525	Channel 20600	Tune up
10MHz	QPSK	1	0	23.67	23.33	23.57	25.00
		1	25	23.61	**23.73**	23.41	25.00
		1	49	23.53	23.39	23.52	25.00
		25	0	22.78	22.84	22.74	24.00
		25	13	22.79	22.8	22.73	24.00
		25	25	22.73	22.72	22.69	24.00
		50	0	22.72	22.67	22.7	24.00
	16QAM	1	0	22.76	22.68	22.33	24.00
		1	25	22.77	22.81	22.69	24.00
		1	49	22.06	22.18	22.19	24.00
		25	0	21.83	21.92	21.76	23.00
		25	13	21.67	21.77	21.71	23.00
		25	25	21.76	21.53	21.76	23.00
		50	0	21.77	21.52	21.71	23.00

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7.1.7 Conducted Power of LTE Band 12

LTE Band 12				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23017	Channel 23095	Channel 23173	Tune up
1.4MHz	QPSK	1	0	23.57	23.78	23.81	25.00
		1	2	23.88	23.77	24	25.00
		1	5	23.87	**24.07**	23.84	25.00
		3	0	23.75	23.88	23.97	25.00
		3	2	24	23.96	23.85	25.00
		3	3	23.82	24.02	23.92	25.00
		6	0	22.96	22.98	22.93	24.00
	16QAM	1	0	22.8	23.1	22.79	24.00
		1	2	22.5	23.04	22.97	24.00
		1	5	22.69	22.93	22.72	24.00
		3	0	22.84	23.06	23.1	24.00
		3	2	22.9	22.98	22.91	24.00
		3	3	22.74	23.18	22.97	24.00
		6	0	21.96	22.09	21.87	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 23025	Channel 23095	Channel 23165	Tune up
3MHz	QPSK	1	0	23.6	23.84	23.81	25.00
		1	7	23.8	23.79	23.94	25.00
		1	14	23.84	**24.01**	23.84	25.00
		8	0	22.85	22.91	22.98	24.00
		8	4	23.05	23	22.91	24.00
		8	7	22.89	23.03	22.98	24.00
		15	0	22.89	22.98	22.96	24.00
	16QAM	1	0	22.75	23.12	22.8	24.00
		1	7	22.46	23.09	22.96	24.00
		1	14	22.68	22.92	22.69	24.00
		8	0	21.85	22.09	22.15	23.00
		8	4	21.93	22.05	22	23.00
		8	7	21.76	22.25	22.06	23.00
		15	0	21.95	22.02	21.92	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 23035	Channel 23095	Channel 23155	Tune up
5MHz	QPSK	1	0	23.56	23.74	23.81	25.00
		1	13	23.78	23.72	23.91	25.00
		1	24	23.82	**23.98**	23.77	25.00
		12	0	22.81	22.89	22.96	24.00
		12	6	22.97	22.9	22.89	24.00

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		12	13	22.86	22.95	22.91	24.00
		25	0	22.88	22.91	22.9	24.00
	16QAM	1	0	22.75	23.03	22.71	24.00
		1	13	22.44	23.04	22.88	24.00
		1	24	22.61	22.86	22.62	24.00
		12	0	21.75	22.01	22.12	23.00
		12	6	21.91	22.03	21.97	23.00
		12	13	21.69	22.17	22.05	23.00
		25	0	21.9	21.99	21.87	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 23060	Channel 23095	Channel 23130	Tune up
10MHz	QPSK	1	0	23.58	23.54	23.56	25.00
		1	25	23.67	23.9	**24.16**	25.00
		1	49	23.83	23.67	23.88	25.00
		25	0	22.91	22.85	23.04	24.00
		25	13	22.88	22.92	23.05	24.00
		25	25	22.93	22.96	22.96	24.00
		50	0	22.82	22.88	23.05	24.00
	16QAM	1	0	22.73	22.96	23.17	24.00
		1	25	23.41	23.13	23.18	24.00
		1	49	23.45	23.03	22.7	24.00
		25	0	21.99	21.97	22.06	23.00
		25	13	21.98	21.87	22.21	23.00
		25	25	22.04	21.97	22.03	23.00
		50	0	21.82	21.97	22.04	23.00

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7.1.8 Conducted Power of LTE Band 13

LTE Band 13				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23205	Channel 23230	Channel 23255	Tune up
5MHz	QPSK	1	0	23.64	**23.84**	23.76	25.00
		1	13	23.6	23.55	23.58	25.00
		1	24	23.5	23.69	23.78	25.00
		12	0	22.9	22.93	22.79	24.00
		12	6	22.97	22.81	22.95	24.00
		12	13	22.94	22.82	22.84	24.00
		25	0	22.84	22.87	22.9	24.00
	16QAM	1	0	22.37	22.51	22.76	24.00
		1	13	22.94	22.51	22.62	24.00
		1	24	22.58	22.5	22.43	24.00
		12	0	21.83	21.63	21.82	23.00
		12	6	21.88	21.78	21.76	23.00
		12	13	21.88	21.86	21.75	23.00
		25	0	21.96	21.82	21.93	23.00
Bandwidth	Modulation	RB size	RB offset	Channel NA	Channel 23230	Channel NA	Tune up
10MHz	QPSK	1	0	NA	**23.86**	NA	25.00
		1	25	NA	23.51	NA	25.00
		1	49	NA	23.83	NA	25.00
		25	0	NA	22.87	NA	24.00
		25	13	NA	22.83	NA	24.00
		25	25	NA	22.89	NA	24.00
		50	0	NA	22.94	NA	24.00
	16QAM	1	0	NA	22.88	NA	24.00
		1	25	NA	23.02	NA	24.00
		1	49	NA	22.87	NA	24.00
		25	0	NA	22.02	NA	23.00
		25	13	NA	21.88	NA	23.00
		25	25	NA	21.84	NA	23.00
		50	0	NA	21.77	NA	23.00

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7.1.9 Conducted Power of LTE Band 14

LTE Band 14				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23305	Channel 23330	Channel 23355	Tune up
5MHz	QPSK	1	0	23.69	**23.8**	23.74	25.00
		1	13	23.58	23.69	23.76	25.00
		1	24	23.79	23.72	23.5	25.00
		12	0	22.75	22.89	22.89	24.00
		12	6	22.88	22.89	22.92	24.00
		12	13	22.89	22.84	22.82	24.00
		25	0	22.87	22.86	22.87	24.00
	16QAM	1	0	22.61	22.91	22.65	24.00
		1	13	22.5	22.51	22.55	24.00
		1	24	22.94	22.6	22.76	24.00
		12	0	21.69	21.73	21.66	23.00
		12	6	21.74	21.72	21.71	23.00
		12	13	21.81	21.66	21.61	23.00
		25	0	21.68	21.82	21.81	23.00
Bandwidth	Modulation	RB size	RB offset	Channel NA	Channel 23330	Channel NA	Tune up
10MHz	QPSK	1	0	NA	23.58	NA	25.00
		1	25	NA	23.57	NA	25.00
		1	49	NA	**23.83**	NA	25.00
		25	0	NA	22.9	NA	24.00
		25	13	NA	22.92	NA	24.00
		25	25	NA	22.87	NA	24.00
		50	0	NA	22.87	NA	24.00
	16QAM	1	0	NA	22.96	NA	24.00
		1	25	NA	22.98	NA	24.00
		1	49	NA	22.57	NA	24.00
		25	0	NA	21.9	NA	23.00
		25	13	NA	21.92	NA	23.00
		25	25	NA	21.88	NA	23.00
		50	0	NA	21.78	NA	23.00

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7.1.10 Conducted Power of LTE Band 66

LTE Band 66				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 131979	Channel 132322	Channel 132665	Tune up
1.4MHz	QPSK	1	0	23.02	23.04	23.12	25.00
		1	2	23.05	23.01	23.01	25.00
		1	5	23.01	23.07	23	25.00
		3	0	23.07	23.01	**23.14**	25.00
		3	1	23.08	23.04	23.05	25.00
		3	3	23.03	23.1	23.09	25.00
		6	0	22.01	22.05	22.11	24.00
	16QAM	1	0	22.24	22	22.02	24.00
		1	2	22	22.08	22.04	24.00
		1	5	22.04	22.01	22.03	24.00
		3	0	22.2	22.01	22.04	24.00
		3	1	22.01	22.04	22.05	24.00
		3	3	22.13	22.04	22.03	24.00
		6	0	21.07	21.09	21.06	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 131987	Channel 132322	Channel 132657	Tune up
3MHz	QPSK	1	0	**23.14**	23.04	23.09	25.00
		1	7	23.05	23.01	23.09	25.00
		1	14	23.07	23.06	23.01	25.00
		8	0	23.11	23.04	**23.14**	24.00
		8	4	23.07	23.07	23.04	24.00
		8	7	23.04	23.1	23.09	24.00
		15	0	22.04	22.09	22.07	24.00
	16QAM	1	0	22.23	22	22.06	24.00
		1	7	22.01	22.07	22.03	24.00
		1	14	22.02	22.03	22.05	24.00
		8	0	22.21	22.04	22.05	23.00
		8	4	22.02	22.04	22.04	23.00
		8	7	22.13	22.07	22	23.00
		15	0	21.06	21.11	21.05	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 131997	Channel 132322	Channel 132647	Tune up
5MHz	QPSK	1	0	23.14	23.05	23.09	25.00
		1	13	23.05	23.02	23	25.00
		1	24	23.03	23.08	23.07	25.00
		12	0	23.11	23	**23.15**	24.00
		12	6	23.1	23.06	23.07	24.00
		12	13	23.05	23.12	23.08	24.00

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		25	0	22.03	22.1	22.07	24.00
	16QAM	1	0	22.26	22.01	22.02	24.00
		1	13	22.01	22.05	22.02	24.00
		1	24	22.05	22.03	22.04	24.00
		12	0	22.2	22.05	22.01	23.00
		12	6	22.02	22	22.05	23.00
		12	13	22.14	22.09	22.02	23.00
		25	0	21.03	21.07	21.06	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 132022	Channel 132322	Channel 132622	Tune up
10MHz	QPSK	1	0	23.09	23	23.1	25.00
		1	25	23.06	23.01	23.02	25.00
		1	49	23	23.05	23.01	25.00
		25	0	23.06	23.03	**23.13**	24.00
		25	13	23.11	23.05	23.07	24.00
		25	25	23.03	23.09	23.07	24.00
		50	0	22.02	22.07	22.12	24.00
	16QAM	1	0	22.24	22	22.06	24.00
		1	25	22.04	22.05	22.02	24.00
		1	49	22.02	22.02	22.08	24.00
		25	0	22.23	22.01	22.02	23.00
		25	13	22.04	22.04	22.08	23.00
		25	25	22.11	22.08	22	23.00
		50	0	21.06	21.06	21.02	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 132047	Channel 132322	Channel 132597	Tune up
15MHz	QPSK	1	0	23.13	23.04	23.11	25.00
		1	38	23.05	23.08	23.01	25.00
		1	74	23.01	23.04	23.02	25.00
		36	0	23.06	23.02	**23.14**	24.00
		36	18	23.06	23.05	23.09	24.00
		36	39	23.04	23.08	23.11	24.00
		75	0	22	22.07	22.07	24.00
	16QAM	1	0	22.26	22.02	22.03	24.00
		1	38	22	22.09	22.06	24.00
		1	74	22.05	22.03	22.03	24.00
		36	0	22.21	22.01	22.06	23.00
		36	18	22.01	22.03	22.09	23.00
		36	39	22.12	22.05	22.01	23.00
		75	0	21.03	21.06	21.04	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 132072	Channel 132322	Channel 132572	Tune up
20MHz	QPSK	1	0	23.19	23.2	23.29	25.00

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		1	50	**23.31**	23.17	23.19	25.00
		1	99	23.18	23.23	23.17	25.00
		50	0	23.26	23.2	22.22	24.00
		50	25	23.26	23.22	23.24	24.00
		50	50	23.29	23.27	23.27	24.00
		100	0	22.19	22.25	22.27	24.00
	16QAM	1	0	22.41	22.18	22.21	24.00
		1	50	22.2	22.24	22.21	24.00
		1	99	22.21	22.21	22.23	24.00
		50	0	22.39	22.21	22.21	23.00
		50	25	22.2	22.2	22.24	23.00
		50	50	22.29	22.24	22.19	23.00
		100	0	21.22	21.26	21.22	23.00

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7.1.11 Conducted Power of LTE Band 71

LTE Band 71				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 133147	Channel 133247	Channel 133447	Tune up
5MHz	QPSK	1	0	23.4	23.1	23.31	25.00
		1	13	23.33	**23.45**	23.16	25.00
		1	24	23.29	23.14	23.25	25.00
		12	0	22.53	22.58	22.48	24.00
		12	6	22.58	22.56	22.5	24.00
		12	13	22.46	22.49	22.48	24.00
		25	0	22.43	22.43	22.47	24.00
	16QAM	1	0	22.52	22.43	22.11	24.00
		1	13	22.51	22.57	22.44	24.00
		1	24	22.01	22.03	22.07	24.00
		12	0	21.56	21.65	21.46	23.00
		12	6	21.41	21.55	21.47	23.00
		12	13	21.53	21.24	21.5	23.00
		25	0	21.54	21.23	21.47	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 133172	Channel 133272	Channel 133422	Tune up
10MHz	QPSK	1	0	23.44	23.11	23.32	25.00
		1	25	23.35	**23.45**	23.13	25.00
		1	49	23.3	23.12	23.25	25.00
		25	0	22.56	22.58	22.45	24.00
		25	13	22.55	22.58	22.46	24.00
		25	25	22.5	22.51	22.44	24.00
		50	0	22.42	22.44	22.46	24.00
	16QAM	1	0	22.54	22.47	22.06	24.00
		1	25	22.54	22.57	22.43	24.00
		1	49	22.03	22.08	22.04	24.00
		25	0	21.53	21.68	21.5	23.00
		25	13	21.43	21.56	21.48	23.00
		25	25	21.54	21.26	21.5	23.00
		50	0	21.51	21.24	21.47	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 133197	Channel 133297	Channel 133397	Tune up
15MHz	QPSK	1	0	23.41	23.09	23.31	25.00
		1	38	23.33	**23.48**	23.13	25.00
		1	74	23.32	23.11	23.23	25.00
		36	0	22.51	22.6	22.49	24.00
		36	18	22.53	22.56	22.46	24.00
		36	39	22.49	22.46	22.45	24.00

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		75	0	22.45	22.46	22.47	24.00
	16QAM	1	0	22.54	22.43	22.08	24.00
		1	38	22.52	22.57	22.45	24.00
		1	74	22.01	22.04	22.07	24.00
		36	0	21.55	21.7	21.51	23.00
		36	18	21.45	21.52	21.51	23.00
		36	39	21.54	21.27	21.49	23.00
		75	0	21.49	21.24	21.45	23.00
Bandwidth	Modulation	RB size	RB offset	Channel 133222	Channel 133322	Channel 133372	Tune up
20MHz	QPSK	1	0	23.49	23.17	23.38	25.00
		1	50	23.41	**23.54**	23.23	25.00
		1	99	23.37	23.21	23.33	25.00
		50	0	22.61	22.68	22.55	24.00
		50	25	22.63	22.65	22.56	24.00
		50	50	22.56	22.56	22.53	24.00
		100	0	22.52	22.51	22.52	24.00
	16QAM	1	0	22.61	22.53	22.16	24.00
		1	50	22.61	22.63	22.52	24.00
		1	99	22.03	22.01	22.01	24.00
		50	0	21.63	21.75	21.56	23.00
		50	25	21.51	21.61	21.56	23.00
		50	50	21.6	21.33	21.57	23.00
		100	0	21.59	21.32	21.55	23.00

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7.2 Measurement of SAR Data

7.2.1 SAR Result of WCDMA Band 2

Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)
Body Test data (Separate 25mm)									
Front side	RMC	9400/1880	1:1	0.355	0.04	23.36	25.00	1.459	0.518
Body Test data (Separate 0mm)									
Back side	RMC	9400/1880	1:1	0.268	0.14	23.36	25.00	1.459	0.392

Table 5： SAR of WCDMA Band 2

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B
2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

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7.2.2 SAR Result of WCDMA Band 4

Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)
Body Test data (Separate 25mm)									
Front side	RMC	1412/1732.4	1:1	0.333	0.09	23.12	25.00	1.542	0.513
Body Test data (Separate 0mm)									
Back side	RMC	1412/1732.4	1:1	0.252	0.14	23.12	25.00	1.542	0.388

Table 6： SAR of WCDMA Band 4

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B
2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

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7.2.3 SAR Result of WCDMA Band 5

Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)
Body Test data (Separate 25mm)									
Front side	RMC	4182/836.4	1:1	0.398	0.01	23.65	25.00	1.365	0.543
Body Test data (Separate 0mm)									
Back side	RMC	4182/836.4	1:1	0.301	0.03	23.65	25.00	1.365	0.411

Table 7： SAR of WCDMA Band 5

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B
2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

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7.2.4 SAR Result of LTE Band 2

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)
Body Test data (Separate 25mm 1RB)										
Front side	20	QPSK 1RB_50	19100/1900	1:1	0.344	0.00	23.44	25.00	1.432	0.493
Body Test data (Separate 25mm 50%RB)										
Front side	20	QPSK 50RB_25	19100/1900	1:1	0.268	0.01	22.45	24.00	1.429	0.383
Body Test data (Separate 0mm 1RB)										
Back side	20	QPSK 1RB_50	19100/1900	1:1	0.260	0.05	23.44	25.00	1.432	0.372
Body Test data (Separate 0mm 50%RB)										
Back side	20	QPSK 50RB_25	19100/1900	1:1	0.203	0.16	22.45	24.00	1.429	0.290

Table 8： SAR of LTE Band 2

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B
2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

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7.2.5 SAR Result of LTE Band 4

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)
Body Test data (Separate 25mm 1RB)										
Front side	20	QPSK 1RB_50	20300/1745	1:1	0.310	0.06	23.31	25.00	1.476	0.457
Body Test data (Separate 25mm 50%RB)										
Front side	20	QPSK 50RB_0	20300/1745	1:1	0.241	0.09	22.27	24.00	1.489	0.359
Body Test data (Separate 0mm 1RB)										
Back side	20	QPSK 1RB_50	20300/1745	1:1	0.234	0.13	23.31	25.00	1.476	0.346
Body Test data (Separate 0mm 50%RB)										
Back side	20	QPSK 50RB_0	20300/1745	1:1	0.182	0.11	22.27	24.00	1.489	0.271

Table 9： SAR of LTE Band 4

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B
2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

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7.2.6 SAR Result of LTE Band 5

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)
Body Test data (Separate 25mm 1RB)										
Front side	10	QPSK 1RB_25	20525/836.5	1:1	0.426	0.07	23.73	25.00	1.340	**0.571**
Body Test data (Separate 25mm 50%RB)										
Front side	10	QPSK 25RB_0	20525/836.5	1:1	0.353	0.05	22.84	24.00	1.306	0.461
Body Test data (Separate 0mm 1RB)										
Back side	10	QPSK 1RB_25	20525/836.5	1:1	0.322	0.12	23.73	25.00	1.340	0.431
Body Test data (Separate 0mm 50%RB)										
Back side	10	QPSK 25RB_0	20525/836.5	1:1	0.267	0.01	22.84	24.00	1.306	0.349

Table 10：SAR of LTE Band 5

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B
2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

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7.2.7 SAR Result of LTE Band 12

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)
Body Test data (Separate 25mm 1RB)										
Front side	10	QPSK 1RB_25	23130/711	1:1	0.131	0.01	24.16	25.00	1.213	**0.159**
Body Test data (Separate 25mm 50%RB)										
Front side	10	QPSK 25RB_13	23130/711	1:1	0.108	-0.06	23.05	24.00	1.245	0.134
Body Test data (Separate 0mm 1RB)										
Back side	10	QPSK 1RB_25	23130/711	1:1	0.099	0.09	24.16	25.00	1.213	0.120
Body Test data (Separate 0mm 50%RB)										
Back side	10	QPSK 25RB_13	23130/711	1:1	0.082	0.05	23.05	24.00	1.245	0.102

Table 11：SAR of LTE Band 12

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B
2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

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7.2.8 SAR Result of LTE Band 13

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)
Body Test data (Separate 25mm 1RB)										
Front side	10	QPSK 1RB_0	23230/782	1:1	0.339	0.03	23.86	25.00	1.300	**0.441**
Body Test data (Separate 25mm 50%RB)										
Front side	10	QPSK 25RB_25	23230/782	1:1	0.341	0.00	22.89	24.00	1.291	0.440
Body Test data (Separate 0mm 1RB)										
Back side	10	QPSK 1RB_0	23230/782	1:1	0.256	0.03	23.86	25.00	1.300	0.333
Body Test data (Separate 0mm 50%RB)										
Back side	10	QPSK 25RB_25	23230/782	1:1	0.258	0.00	22.89	24.00	1.291	0.333

Table 12：SAR of LTE Band 13

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B
2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

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7.2.9 SAR Result of LTE Band 14

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)
Body Test data (Separate 25mm 1RB)										
Front side	10	QPSK 1RB_49	23330/793	1:1	0.428	0.02	23.83	25.00	1.309	**0.560**
Body Test data (Separate 25mm 50%RB)										
Front side	10	QPSK 25RB_13	23330/793	1:1	0.354	0.07	22.92	24.00	1.282	0.454
Body Test data (Separate 0mm 1RB)										
Back side	10	QPSK 1RB_49	23330/793	1:1	0.324	0.01	23.83	25.00	1.309	0.424
Body Test data (Separate 0mm 50%RB)										
Back side	10	QPSK 25RB_13	23330/793	1:1	0.268	0.15	22.92	24.00	1.282	0.343

Table 13：SAR of LTE Band 14

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B
2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

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7.2.10SAR Result of LTE Band 66

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)
Body Test data (Separate 25mm 1RB)										
Front side	20	QPSK 1RB_50	132072/1720	1:1	0.172	0.07	23.31	25.00	1.476	**0.254**
Body Test data (Separate 25mm 50%RB)										
Front side	20	QPSK 50RB_50	132072/1720	1:1	0.140	0.05	23.29	24.00	1.178	0.165
Body Test data (Separate 0mm 1RB)										
Back side	20	QPSK 1RB_50	132072/1720	1:1	0.130	0.06	23.31	25.00	1.476	0.192
Body Test data (Separate 0mm 50%RB)										
Back side	20	QPSK 50RB_50	132072/1720	1:1	0.106	0.12	23.29	24.00	1.178	0.125

Table 14：SAR of LTE Band 66

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B
2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

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7.2.11SAR Result of LTE Band 71

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)
Body Test data (Separate 25mm 1RB)										
Front side	20	QPSK 1RB_50	133322/683	1:1	0.088	0.04	23.54	25.00	1.400	**0.123**
Body Test data (Separate 25mm 50%RB)										
Front side	20	QPSK 50RB_0	133322/683	1:1	0.071	-0.04	22.68	24.00	1.355	0.097
Body Test data (Separate 0mm 1RB)										
Back side	20	QPSK 1RB_50	133322/683	1:1	0.067	0.11	23.54	25.00	1.400	0.093
Body Test data (Separate 0mm 50%RB)										
Back side	20	QPSK 50RB_0	133322/683	1:1	0.054	-0.09	22.68	24.00	1.355	0.073

Table 15：SAR of LTE Band 71

Note:

1) The maximum Scaled SAR value is marked in bold. Graph Results refer to Appendix B
2) Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

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8 Equipment list

Test Platform	SPEAG DASY5 Professional					
Description	SAR Test System (Frequency range 300MHz-6GHz)					
Software Reference	DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)					
Hardware Reference						
Equipment		Manufacturer	Model	Serial Number	Calibration Date	Due date of calibration
☒	Twin Phantom	SPEAG	SAM 7	1702	NCR	NCR
☒	DAE	SPEAG	DAE3	414	2019-12-17	2020-12-16
☒	E-Field Probe	SPEAG	EX3DV4	3789	2020-06-16	2021-06-15
☒	Validation Kits	SPEAG	D750V3	1160	2019-05-22	2022-05-21
☒	Validation Kits	SPEAG	D835V2	4d105	2019-12-17	2022-12-16
☒	Validation Kits	SPEAG	D1750V2	1149	2019-05-21	2022-05-20
☒	Validation Kits	SPEAG	D1900V2	5d028	2019-12-17	2022-12-16
☒	Agilent Network Analyzer	Agilent	E5071C	MY46523590	2020-04-02	2021-04-01
☒	Dielectric Probe Kit	Agilent	85070E	US01440210	NCR	NCR
☒	Universal Radio Communication Tester	R&S	CMW500	124587	2020-04-02	2021-04-01
☒	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
☒	Signal Generator	Agilent	N5171B	MY53050736	2020-04-15	2021-04-14
☒	Preamplifier	Mini-Circuits	ZHL-42W	15542	NCR	NCR
☒	Preamplifier	Compliance Directions Systems Inc.	AMP28-3W	073501433	NCR	NCR
☒	Power Meter	Agilent	E4416A	GB41292095	2020-04-15	2021-04-14
☒	Power Sensor	Agilent	8481H	MY41091234	2020-04-15	2021-04-14
☒	Power Sensor	R&S	NRP-Z92	100025	2020-04-16	2021-04-15
☒	Attenuator	SHX	TS2-3dB	30704	NCR	NCR
☒	Coaxial low pass filter	Mini-Circuits	VLF-2500(+)	NA	NCR	NCR
☒	Coaxial low pass filter	Microlab Fxr	LA-F13	NA	NCR	NCR
☒	DC POWER SUPPLY	SAKO	SK1730SL5A	NA	NCR	NCR
☒	Speed reading thermometer	MingGao	T809	NA	2020-04-15	2021-04-14

Note: All the equipments are within the valid period when the tests are performed.

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Appendix A: Detailed System Check Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

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