FCC SAR TEST REPORT

Application No.:	SUCR2501000018TL
Applicant:	UCLOUDLINK（SINGAPORE）PTE.LTD
Manufacturer:	UCLOUDLINK（SINGAPORE）PTE.LTD
Product Name:	4G Wireless Data Terminal
Model No.(EUT):	GLMU24A01
Trade Mark:	GlocalMe
FCC ID:	2BB6E-GLMU24A01
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2025-01-07
Date of Test:	2025-01-13 to 2025-01-21
Date of Issue:	2025-03-07
Test conclusion:	**PASS ***

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

Revision Record			
Version	**Description**	**Date**	**Remark**
01	Original	2025-03-07	/

Authorized for issue by:		
Prepared By		 **Leon Liu/ Project Manager**
Approved By		 **Nick Hu/ Technical Manager**

TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)
	Hotspot 10mm
WCDMA Band II	1.40
WCDMA Band IV	**1.45**
WCDMA Band V	0.43
LTE Band 7	0.99
LTE Band 12 (17)	0.22
LTE Band 13	0.29
LTE Band 25 (2)	1.13
LTE Band 26 (5)	0.45
LTE Band 41 (38)	0.38
LTE Band 66 (4)	1.09
WI-FI (2.4GHz)	0.04
WI-FI (5GHz)	0.13
SAR Limited(W/kg)	1.6
Maximum Simultaneous Transmission SAR (W/kg)	
Scenario	**Hotspot 10mm**
Sum SAR	1.53
SPLSR	/
SPLSR Limited	0.04

Note: The Simultaneous transmission SAR is the same test position of the WWAN Antenna + WiFi/BT Antenna.
According to TCB workshop October,2014 RF Exposure Procedures Update (Overlapping Bands): SAR for LTE Band 2 (Frequency range:1850 - 1910 MHz)/LTE Band 4 (Frequency range:1710 - 1755 MHz)/LTE Band 5 (Frequency range:824 - 849 MHz)/ LTE band 17 (frequency range: 704-716 MHz)/LTE Band 38 (Frequency range: 2570-2620 MHz) is respectively covered by LTE Band 66 (Frequency range:1710 - 1780 MHz)/LTE Band 25 (Frequency range:1850 - 1915 MHz)/LTE Band 26 (Frequency range:814 - 849 MHz)/LTE band 12 (frequency range: 699-716 MHz)/LTE band 41 (frequency range: 2496-2690 MHz) due to similar frequency range, same maximum tune up limit and same channel bandwidth.
Because the frequency range is similar, the maximum tuning limit is the same, and the channel bandwidth and other operating parameters for the smaller band is fully supported by the larger band.

CONTENTS

1 General Information

1.1 Details of Client

Applicant:	UCLOUDLINK（SINGAPORE）PTE.LTD
Address:	80 ROBINSON ROAD #02-00 SINGAPORE(068898)
Manufacturer:	UCLOUDLINK（SINGAPORE）PTE.LTD
Address:	80 ROBINSON ROAD #02-00 SINGAPORE(068898)

1.2 Test Location

Company:	SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.
Address:	South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone
Post code:	215000
Test Engineer:	Koller Chen; Liu Leon-l

1.3 Test Facility

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

• **A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

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

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

• **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

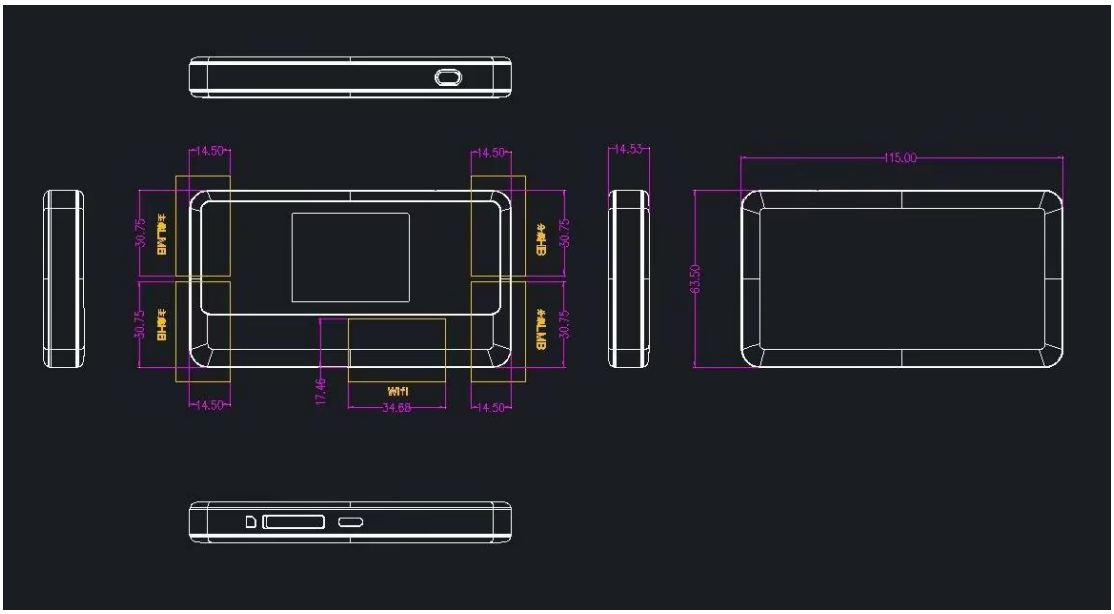
Test Firm Registration Number: 0031225543

1.4 General Description of EUT

Device Type :	portable device		
Exposure Category:	uncontrolled environment / general population		
Product Phase:	Production Unit		
Product Name:	4G Wireless Data Terminal		
Model No.(EUT):	GLMU24A01		
Trade Mark:	GlocalMe		
Hardware Version:	U40_MB_VB		
Software Version:	U40_TSV1.0.002.003.250115		
IMEI:	357878440003590		
Device Operating Configurations :			
Modulation Mode:	**WCDMA:** QPSK,16QAM; **LTE:** QPSK,16QAM; **WIFI:** DSSS, OFDM;		
Device Class:	B		
HSDPA UE Category:	24	HSUPA UE Category	6
Power Class	3, tested with power control “all 1”(WCDMA Band)		
	3, tested with power control Max Power(LTE Band)		
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 7	2500 - 2570	2620 - 2690
	LTE Band 12	699 - 716	729 - 746
	LTE Band 13	777 - 787	746 - 756
	LTE Band 17	704 - 716	734 - 746
	LTE Band 25	1850 - 1915	1930 - 1995
	LTE Band 26	814 – 849	859 – 894
	LTE Band 66	1710 – 1780	2110 – 2200
	LTE Band 38	2570 - 2620	2570 - 2620
	LTE Band 41	2496 - 2690	2496 - 2690
	Wi-Fi 2.4G	2412 - 2462	2412 - 2462
	Wi-Fi 5G	5150 - 5250	5150 - 5250
		5725 - 5850	5725 - 5850
RF Cable:	☒ Provided by the applicant ☐ Provided by the laboratory		
	Model:	U40	

Battery Information:	Normal Voltage:	DC3.85V
	Rated capacity:	3200mAh
	Battery Type:	Rechargeablte Li-ion Battery
	Manufacturer	Dongguan Veken Battery Co., Ltd.
Note: *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion. As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.		

1.4.1 DUT Antenna Locations



1.5 Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI/IEEE C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEC/IEEE 62209-1528:2020	Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)
KDB 941225 D01	3G SAR Measurement Procedures v03r01
KDB 941225 D05	SAR for LTE Devices v02r05
KDB 941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB 941225 D06	Hotspot Mode SAR v02r01
KDB 248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02r02
KDB 447498 D04	General RF Exposure Guidance v01
KDB 865664 D01	SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02	RF Exposure Reporting v01r02
KDB 690783 D01	SAR Listings on Grants v01r03

1.6 RF exposure limits

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

Notes:

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

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

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

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

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

2 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
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

3 SAR Measurements System Configuration

3.1 The SAR Measurement System

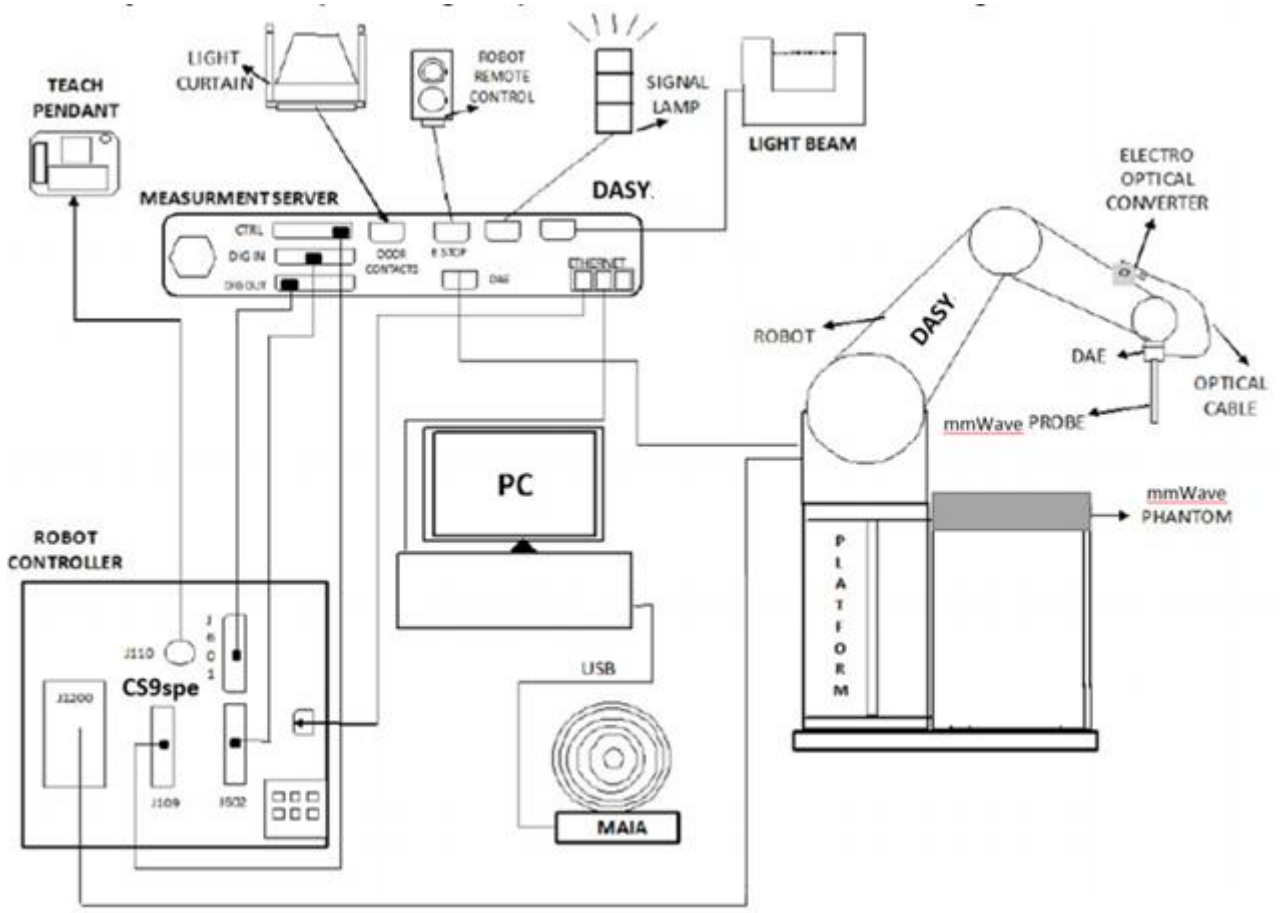
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

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

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

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

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



F-1. SAR Measurement System Configuration

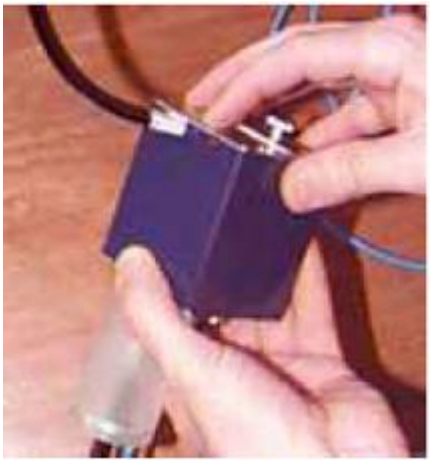
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 7.
- DASY5 software.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

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	DASY52 SAR and higher, EASY4/MRI

3.3 Data Acquisition Electronics (DAE)

Model	DAE
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

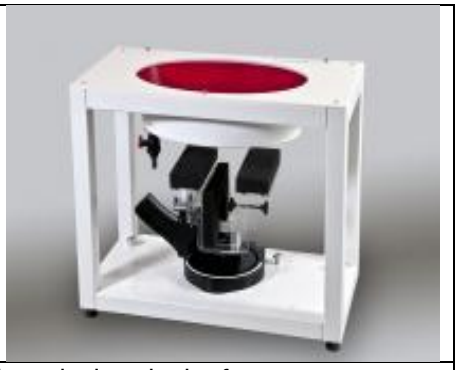
Material	Vinylester, glass fiber reinforced (VE-GF)
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)
Dimensions (incl. Wooden Support)	Length: 1000 mm Width: 500 mm Height: adjustable feet
Filling Volume	approx.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

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.

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.

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.

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

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 %

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], [°C], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

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)

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

E-field probes:

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

H-field probes:

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

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

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

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

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

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

with SAR = local specific absorption rate in mW/g
Etot = total field strength in V/m
σ= conductivity in [mho/m] or [Siemens/m]
ε= equivalent tissue density in g/cm3

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

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

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

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.

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.

IEC- 62209-1528 sets out the general test methods to be followed when carrying out an RF exposure compliance assessment of wireless devices implementing device-based time-averaging methods for the management and/or mitigation of specific absorption rate (SAR) in the 4 MHz to 6 GHz frequency band. It does not cover requirements that are based on power density above 6 GHz or requirements to protect against nerve stimulation for the frequency range from 3 kHz to 10MHz.

Measurements and results are all in compliance with the standards listed. All measurements and results are recorded and maintained at the laboratory performing the tests and measurement uncertainties are taken into account when comparing measurements to pass/ fail criteria. The Expanded uncertainty (95% CONFIDENCE INTERVAL) is **23.34%**.

a	b	c	d	e = f(d,k)	g	i = C*g/e	K
Uncertainty Component	Section in P1528	Tol (%)	Prob.Dist.	Div.	Ci (1g)	1g ui (%)	Vi(Veff)

Measurement system							
Probe calibration	7.2.2.1	7.4	N	1	1	7.40	∞
Axial isotropy	7.2.2.2	1.2	R	$\sqrt{3}$	1	0.69	∞
hemispherical isotropy	7.2.2.2	3.2	R	$\sqrt{3}$	1	1.85	∞
Linearity	7.2.2.3	0.9	R	$\sqrt{3}$	1	0.52	∞
Probe modulation response	7.2.2.4	0	R	$\sqrt{3}$	1	0.00	∞
Detection limits	7.2.2.5	0.25	R	$\sqrt{3}$	1	0.14	∞
Boundary effect	7.2.2.6	1.0	R	$\sqrt{3}$	1	0.58	∞
Readout electronics	7.2.2.7	0.3	N	1	1	0.30	∞
Response time	7.2.2.8	0	R	$\sqrt{3}$	1	0.00	∞
Integration time	7.2.2.9	2.6	R	$\sqrt{3}$	1	1.50	∞
RF ambient conditions – noise	7.2.4.5	3	R	$\sqrt{3}$	1	1.73	∞
RF ambient conditions – reflections	7.2.4.5	3	R	$\sqrt{3}$	1	1.73	∞
Probe positioner mech. restrictions	7.2.3.1	1.5	R	$\sqrt{3}$	1	0.87	∞
Probe positioning with respect to phantom shell	7.2.3.3	2.9	R	$\sqrt{3}$	1	1.67	∞
Post-processing	7.2.5	1	R	$\sqrt{3}$	1	0.58	∞
Test sample related							
Device holder uncertainty	7.2.3.4.2	3.6	N	1	1	3.60	∞
Test sample positioning	7.2.3.4.3	3.7	N	1	1	3.70	9
Power scaling	L.3	5.0	R	$\sqrt{3}$	1	2.89	∞
Drift of output power (measured SAR drift)	7.2.2.10	5	R	$\sqrt{3}$	1	2.89	∞
Phantom and set-up							
Phantom uncertainty (shape and thickness tolerances)	7.2.3.2	4	R	$\sqrt{3}$	1	2.31	∞
Algorithm for correcting SAR for deviations in permittivity and conductivity	7.2.4.3	1.9	N	1	1	1.90	∞
Liquid conductivity (meas.)	7.2.4.3	5.78	N	1	0.78	4.51	4
Liquid permittivity (meas.)	7.2.4.3	0.62	N	1	0.23	0.14	5

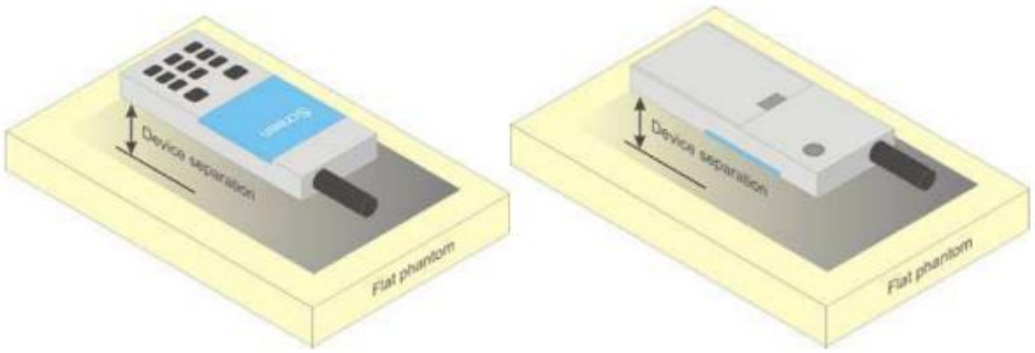
Liquid permittivity –temperature uncertainty	7.2.4.4	0.2	R	$\sqrt{3}$	0.78	0.09	∞
Liquid conductivity –temperature uncertainty	7.2.4.4	5.37	R	$\sqrt{3}$	0.23	0.71	∞
Combined standard uncertainty	**RSS**					11.67	417
Expanded uncertainty (95% CONFIDENCE INTERVAL)	**K=2**					**23.34**	

5 Description of Test Position

5.1 Body Exposure Condition

5.1.1 Wireless Router exposure conditions

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



F-1. **Test positions for body-worn devices.**

6 SAR System Verification 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	1750-2000	2300-2500	2500-2700
Water	38.56	40.30	55.24	55.00	54.92
Salt (NaCl)	3.95	1.38	0.31	0.2	0.23
Sucrose	56.32	57.90	0	0	0
HEC	0.98	0.24	0	0	0
Bactericide	0.19	0.18	0	0	0
Tween	0	0	44.45	44.80	44.85
Salt: 99+% Pure Sodium Chloride Sucrose: 98+% Pure Sucrose Water: De-ionized, 16 MΩ+ resistivity HEC: Hydroxyethyl Cellulose Tween: Polyoxyethylene (20) sorbitan monolaurate					
HSL13MHz is composed of the following ingredients： Water：50-90% Non-ionic detergents：5-50% Nacl：0-2% Preservative：0.03-0.1% HSL5GHz is composed of the following ingredients： Water：50-65% Mineral oil：10-30% Emulsifiers：8-25% Sodium salt：0-1.5%					

Table 2： Recipe of Tissue Simulate Liquid

6.1.2 Measurement for Tissue Simulate Liquid

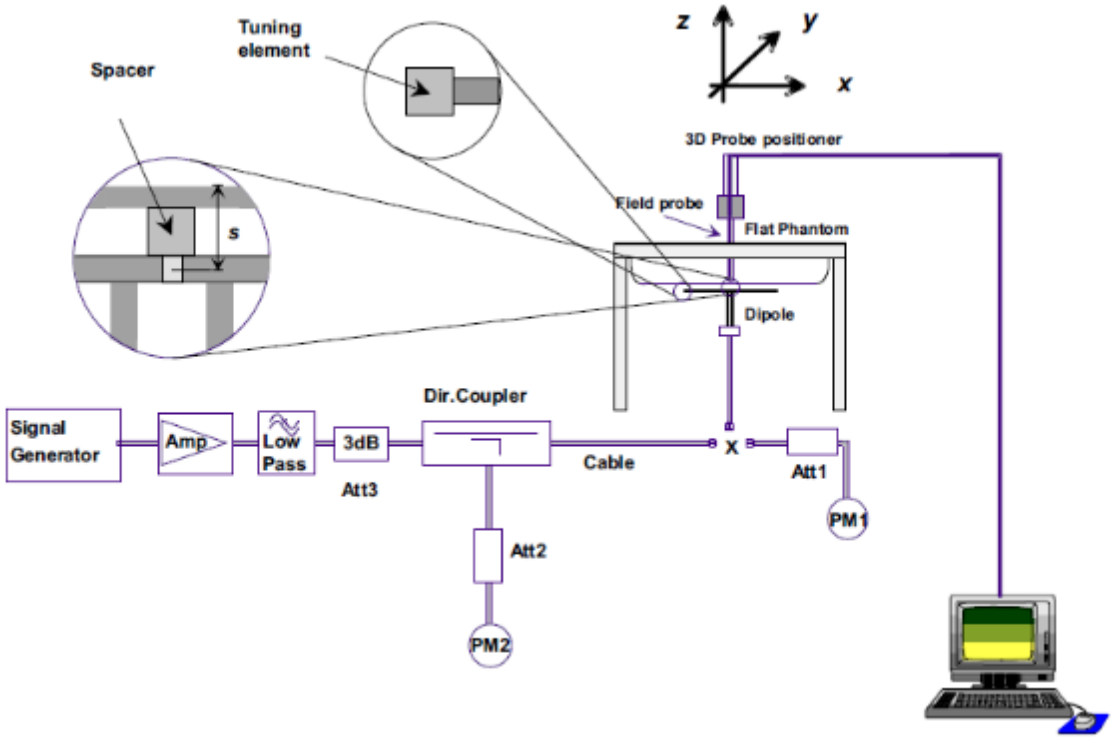
The Conductivity (σ) and Permittivity (ρ) are listed in bellow table. For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was 22±2°C.

Measurement for Tissue Simulate Liquid							
Tissue Type	Measured Frequency (MHz)	Target Tissue (±5%)		Measured Tissue		Liquid Temp.	Test Date
		ε_r	σ(S/m)	ε_r	σ(S/m)	(℃)	
750 Head	750	41.9	0.89	42.025	0.893	22.2	2025/1/13
835 Head	835	41.5	0.9	41.922	0.903	22.1	2025/1/14
1750 Head	1750	40.1	1.37	38.795	1.347	22.3	2025/1/16
1950 Head	1900	40.0	1.4	38.999	1.419	22.4	2025/1/17
2450 Head	2450	39.2	1.8	38.801	1.806	22.2	2025/1/19
2600 Head	2600	39.0	1.96	38.601	2.053	22.3	2025/1/20
5250 Head	5250	35.9	4.71	36.770	4.808	22.1	2025/1/21
5750 Head	5750	35.4	5.22	35.721	5.393	22.1	2025/1/21

Table 3： Measurement result of Tissue electric parameters.

6.2 SAR System Check

The microwave circuit arrangement for system Check is sketched in F-12. 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°C, 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-2. the microwave circuit arrangement used for SAR system check

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.

6.2.2 Summary System Check Result(s)

SAR System Validation 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)	Target SAR (normalized to 1W)	Deviation (Within ±10%)		Liquid Temp. (℃)	Test Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)	1-g(W/kg)	10-g(W/kg)		
D750V3	Head	2.12	1.37	8.48	5.48	8.40	5.52	0.95%	-0.72%	22.2	2025/1/13
D835V2	Head	2.38	1.55	9.52	6.20	9.60	6.16	-0.83%	0.65%	22.1	2025/1/14
D1750V2	Head	9.47	5.06	37.88	20.24	36.30	19.30	4.35%	4.87%	22.3	2025/1/16
D1950V3	Head	9.94	5.19	39.76	20.76	40.40	20.80	-1.58%	-0.19%	22.4	2025/1/17
D2450V2	Head	12.60	5.83	50.40	23.32	52.70	24.60	-4.36%	-5.20%	22.2	2025/1/19
D2600V2	Head	14.50	6.51	58.00	26.04	57.30	25.40	1.22%	2.52%	22.3	2025/1/20
Validation Kit		Measured SAR 100mW	Measured SAR 100mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W)	Target SAR (normalized to 1W)	Deviation (Within ±10%)		Liquid Temp. (℃)	Test Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)	1-g(W/kg)	10-g(W/kg)		
D5GHzV2	Head(5.25GHz)	7.51	2.15	75.10	21.50	77.20	21.90	-2.72%	-1.83%	22.1	2025/1/21
	Head(5.75GHz)	8.01	2.22	80.10	22.20	77.80	21.70	2.96%	2.30%	22.1	2025/1/21

Table 4： SAR System Check Result.

6.2.3 Detailed System Check Results

Please see the Appendix A

7 Test Configuration

7.1 3G SAR Test Reduction Procedure

According to KDB 941225D01, in the following procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

7.2 Operation Configurations

7.2.1 WCDMA Test Configuration

1）. Output Power Verification

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

2）. Body SAR

SAR for body configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreaing code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the handset, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

3）. HSDPA / HSUPA

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

a) HSDPA

HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors(βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) are set according to values indicated in the following table The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-test	βc	Bd	βd(SF)	βc/βd	βhs	CM(dB)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note1: △ACK, △NACK and △CQI= 8 Ahs = βhs/βc=30/15 βhs=30/15*βc
Note2:For the HS-DPCCH power mask requirement test in clause 5.2C,5.7A,and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1.A,and HSDPA EVM with phase discontinuity in clause 5.13.1AA, △ACK and △NACK= 8 (Ahs=30/15) with βhs=30/15*βc,and △CQI=
7 (Ahs=24/15) with βhs=24/15*βc.
Note3: CM=1 forβc/βd =12/15, βhs/βc=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

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

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

Table 5： settings of required H-Set 1 QPSK acc. to 3GPP 34.121

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

Table 6： HSDPA UE category

b) HSUPA

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

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	β_{ec}	β_{ed}	β_c (SF)	β_{ed} (code)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}:47/15 β_{ed2}:47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

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

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference

Note 3 : For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$

Note 4 : For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$

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

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

Table 7： Subtests for UMTS Release 6 HSUPA

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

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

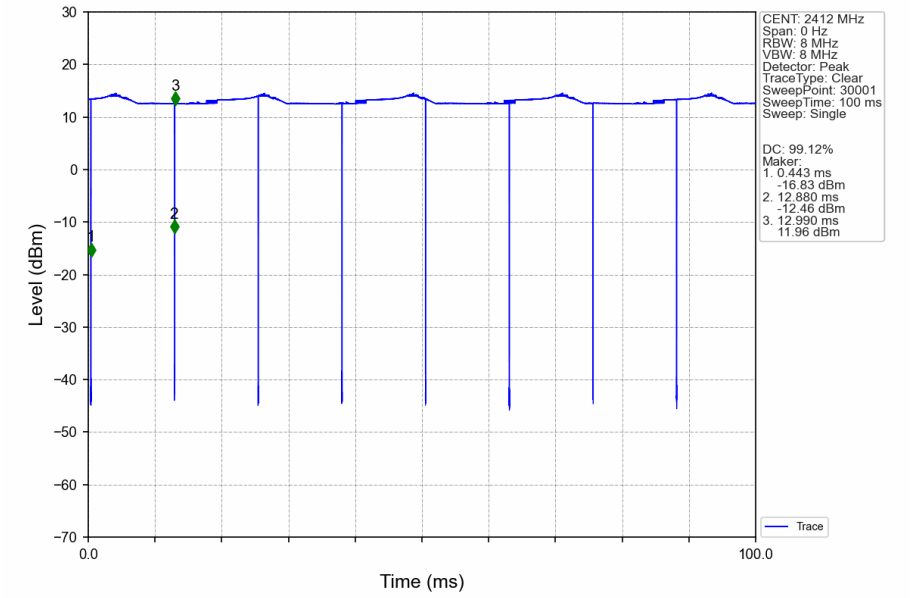
Table 8： HSUPA UE category

7.2.2 WiFi Test Configuration

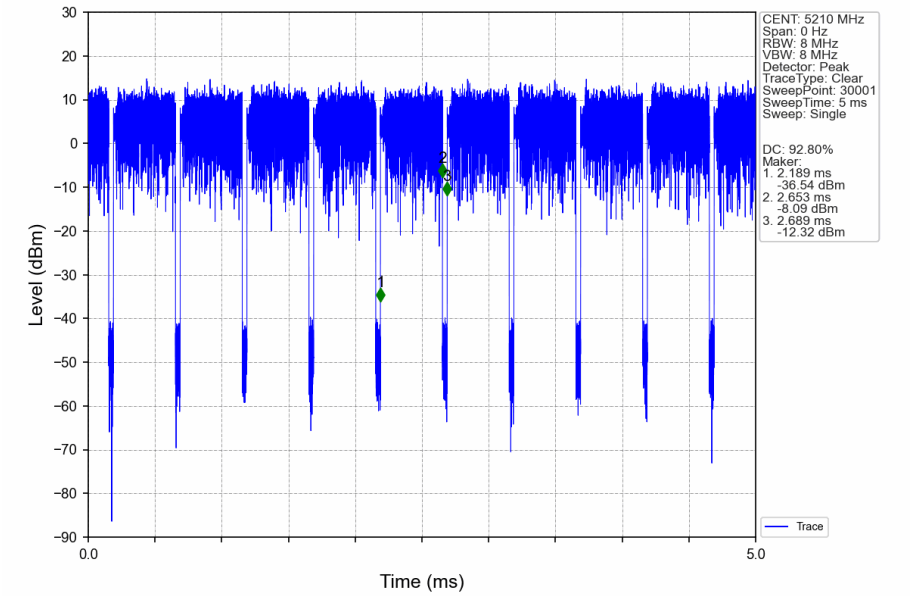
A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

7.2.3 Duty cycle

Wi-Fi 2.4GHz 802.11b:
Duty cycle= 99.12%



Wi-Fi 5GHz 802.11ac VHT80:
Duty cycle=92.80%



7.2.3.1 Initial Test Position SAR Test Reduction Procedure

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

1）. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other (remaining) test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band. SAR is also not required for that exposure configuration in the subsequent test configuration(s).
2）. When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest extrapolated or estimated 1-g SAR conditions determined by area scans or next closest/smallest test separation distance and maximum RF coupling test positions based on manufacturer justification, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions (left, right, touch, tilt or subsequent surfaces and edges) are tested.
3）. For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested. a) Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

7.2.3.2 Initial Test Configuration Procedures

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

7.2.3.3 Subsequent Test Configuration Procedures

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. The initial test position procedure is applied to next to the ear, UMPC mini-tablet and hotspot mode configurations. When the same maximum output power is specified for multiple transmission modes, additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. The subsequent test configuration and SAR measurement procedures are described in the following.

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

2）. When the highest *reported* SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

3）. The number of channels in the initial test configuration and subsequent test configuration can be different due to differences in channel bandwidth. When SAR measurement is required for a subsequent test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel. This step requires additional power measurement to identify the highest maximum output power channel in the subsequent test configuration to determine SAR test reduction.

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

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

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

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

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

7.2.3.4 2.4 GHz WiFi SAR Procedures

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

- **802.11b DSSS SAR Test Requirements**

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

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

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

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

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

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

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

- **SAR Test Requirements for OFDM configurations**

When SAR measurement is required for 802.11 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

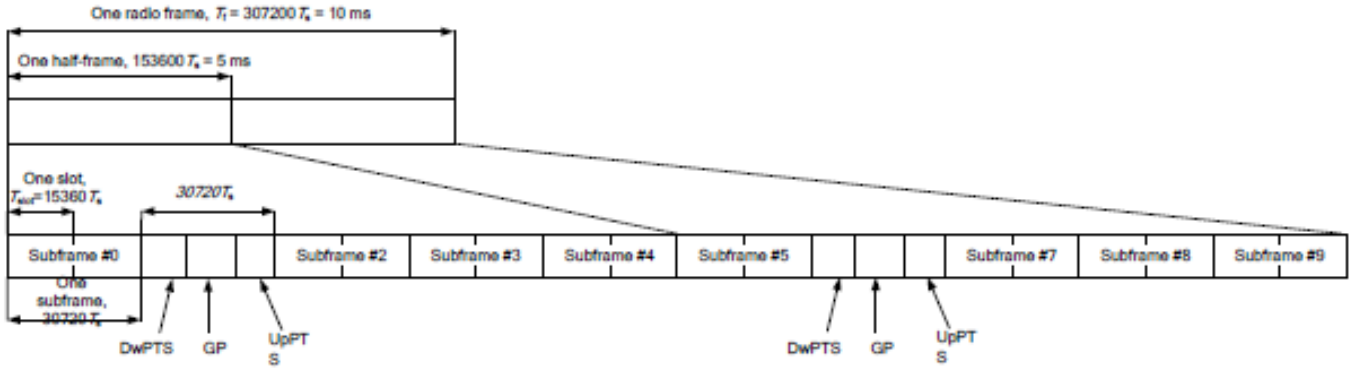
7.2.4 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The Anritsu MT8820C was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

TDD LTE test consideration

For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.
SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.
LTE TDD Band support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Frame structure type 2:



Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	6592.Ts	2192.Ts	2560.Ts	7680.Ts	2192.Ts	2560.Ts
1	19760.Ts			20480.Ts		
2	21952.Ts			23040.Ts		
3	24144.Ts			25600.Ts		
4	26336.Ts			7680.Ts	4384.Ts	5120.Ts
5	6592.Ts	4384.Ts	5120.Ts	20480.Ts		
6	19760.Ts			23040.Ts		
7	21952.Ts			25600.Ts		
8	24144.Ts			-	-	-
9	13168.Ts			-	-	-

Uplink-downlink configurations.

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

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

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

5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

A) Spectrum Plots for RB Configurations

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

B) MPR

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

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3

C) A-MPR

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

D) Largest channel bandwidth standalone SAR test requirements

1) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

2) QPSK with 50% RB allocation

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

3) QPSK with 100% RB allocation

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

4) Higher order modulations

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

E) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

8 Test Result

8.1 Measurement of RF Conducted Power

Note:

1）. For GSM SAR the time based average power is relevant. The difference in between depends on the duty cycle of the TDMA signal:

No. of timeslots	1	2	3	4
Duty Cycle	1:8.3	1:4.15	1:2.77	1:2.075
Time based avg. power compared to slotted avg. power	-9.19	-6.18	-4.42	-3.17

2）. The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:
Frame-averaged power = 10 x log (Burst-averaged power mW x Slot used / 8

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

4）. Conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR test exclusion per KDB 941225 D05A.Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive, therefore SAR evaluation with downlink carrier aggregation can be excluded.

5）. For conducted power of WIFI must be measured at each transmit antenna port according to the DSSS and OFDM transmission configurations in each standalone and aggregated frequency band. For each transmission mode configuration, power must be measured for the highest and lowest channels; and at the mid-band channel(s) when there are at least 3 channels. For configurations with multiple mid-band channels, due to an even number of channels, both channels should be measured. Power measurement is required for the transmission mode configuration with the highest maximum output power specified for production units.
1) When the same highest maximum output power specification applies to multiple transmission modes, the largest channel bandwidth configuration with the lowest order modulation and lowest data rate is measured.
2) When the same highest maximum output power is specified for multiple largest channel bandwidth configurations with the same lowest order modulation or lowest order modulation and lowest data rate, power measurement is required for all equivalent 802.11 configurations with the same maximum output power.

8.1.1 Conducted Power of WCDMA

WCDMA Band II					
Average Conducted Power(dBm)					
Channel		9262	9400	9538	Tune up
WCDMA	12.2kbps RMC	22.46	22.31	22.2	23.00
HSDPA	Subtest 1	21.17	21.36	21.55	22.00
	Subtest 2	20.65	20.92	21.10	21.50
	Subtest 3	20.60	20.96	21.03	21.50
	Subtest 4	20.62	20.75	21.08	21.50
HSUPA	Subtest 1	21.12	21.36	21.64	22.00
	Subtest 2	19.13	19.40	19.57	20.00
	Subtest 3	20.13	20.24	20.57	21.00
	Subtest 4	19.21	19.21	19.45	20.00
	Subtest 5	21.10	21.41	21.55	22.00

WCDMA Band IV					
Average Conducted Power(dBm)					
Channel		1312	1412	1513	Tune up
WCDMA	12.2kbps RMC	22.41	22.29	22.4	23.00
HSDPA	Subtest 1	21.20	21.34	21.43	22.00
	Subtest 2	20.66	20.91	21.04	21.50
	Subtest 3	20.65	20.99	20.98	21.50
	Subtest 4	20.58	20.83	21.06	21.50
HSUPA	Subtest 1	21.14	21.40	21.51	22.00
	Subtest 2	19.15	19.39	19.59	20.00
	Subtest 3	20.12	20.32	20.60	21.00
	Subtest 4	19.25	19.30	19.50	20.00
	Subtest 5	21.19	21.41	21.52	22.00

WCDMA Band V					
Average Conducted Power(dBm)					
Channel		4132	4182	4233	Tune up
WCDMA	12.2kbps RMC	23.32	23.23	23.37	23.50
HSDPA	Subtest 1	22.10	22.14	22.35	22.50
	Subtest 2	21.53	21.72	21.97	22.00
	Subtest 3	21.52	21.81	21.91	22.00
	Subtest 4	21.49	21.73	21.89	22.00
HSUPA	Subtest 1	21.98	22.28	22.36	22.50
	Subtest 2	20.02	20.33	20.46	20.50
	Subtest 3	20.85	21.11	21.37	21.50
	Subtest 4	19.96	20.07	20.39	20.50
	Subtest 5	21.95	22.30	22.47	22.50

8.1.2 Conducted Power of LTE

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	22.16	22.26	22.06	23.00
		1	2	22.21	22.06	22.16	23.00
		1	5	22.15	22.05	22.03	23.00
		3	0	22.16	22.07	22.15	23.00
		3	2	22.20	22.07	22.18	23.00
		3	3	22.14	22.14	22.11	23.00
		6	0	21.18	21.03	21.10	22.00
	16QAM	1	0	21.30	21.18	21.08	22.00
		1	2	21.41	21.18	21.06	22.00
		1	5	21.32	21.10	21.06	22.00
		3	0	21.14	21.12	21.27	22.00
		3	2	21.20	21.20	21.37	22.00
		3	3	21.15	21.10	21.33	22.00
		6	0	20.15	19.96	20.10	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 18615	Channel 18900	Channel 19185	Tune up
3MHz	QPSK	1	0	22.17	22.04	22.17	23.00
		1	7	22.31	22.29	22.11	23.00
		1	14	22.11	21.97	22.06	23.00
		8	0	21.21	21.07	21.12	22.00
		8	4	21.21	21.09	21.11	22.00
		8	7	21.17	21.05	21.11	22.00
		15	0	21.20	21.08	21.13	22.00
	16QAM	1	0	21.78	21.23	21.19	22.00
		1	7	21.74	21.22	21.18	22.00
		1	14	21.68	21.09	21.09	22.00
		8	0	20.37	20.03	20.20	21.00
		8	4	20.38	20.04	20.17	21.00
		8	7	20.33	20.02	20.14	21.00
		15	0	20.25	20.05	20.13	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 18625	Channel 18900	Channel 19175	Tune up
5MHz	QPSK	1	0	22.34	22.11	22.17	23.00
		1	13	22.27	22.03	22.15	23.00

		1	24	22.18	21.96	22.12	23.00
		12	0	21.25	21.10	21.12	22.00
		12	6	21.24	21.10	21.16	22.00
		12	13	21.17	21.00	21.13	22.00
		25	0	21.19	21.11	21.11	22.00
	16QAM	1	0	21.17	21.50	21.20	22.00
		1	13	21.10	21.37	21.31	22.00
		1	24	21.00	21.27	21.34	22.00
		12	0	20.23	20.18	20.11	21.00
		12	6	20.24	20.16	20.13	21.00
		12	13	20.18	20.08	20.10	21.00
		25	0	20.22	20.03	20.16	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18650	18900	19150	
10MHz	QPSK	1	0	22.27	22.07	22.07	23.00
		1	25	22.14	21.95	21.92	23.00
		1	49	22.16	22.07	22.04	23.00
		25	0	21.18	21.05	21.12	22.00
		25	13	21.13	21.05	21.09	22.00
		25	25	21.07	21.03	21.09	22.00
		50	0	21.12	21.04	21.13	22.00
	16QAM	1	0	21.85	21.28	21.23	22.00
		1	25	21.68	21.18	21.14	22.00
		1	49	21.67	21.21	21.25	22.00
		25	0	20.22	20.11	20.18	21.00
		25	13	20.17	20.08	20.19	21.00
		25	25	20.15	20.01	20.20	21.00
		50	0	20.14	20.03	20.14	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18675	18900	19125	
15MHz	QPSK	1	0	22.25	22.08	22.24	23.00
		1	38	22.00	21.94	22.05	23.00
		1	74	22.14	22.12	22.23	23.00
		36	0	21.07	21.14	21.12	22.00
		36	18	21.10	21.09	21.09	22.00
		36	39	21.11	21.02	21.01	22.00
		75	0	21.04	21.05	21.02	22.00
	16QAM	1	0	21.81	21.35	21.57	22.00
		1	38	21.58	21.19	21.24	22.00
		1	74	21.64	21.32	21.52	22.00

		36	0	20.15	20.13	20.08	21.00
		36	18	20.15	20.15	20.12	21.00
		36	39	20.17	20.01	20.04	21.00
		75	0	20.07	20.11	20.03	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18700	18900	19100	
20MHz	QPSK	1	0	22.33	22.36	22.34	23.00
		1	50	22.23	22.32	22.12	23.00
		1	99	21.95	22.01	21.95	23.00
		50	0	21.33	21.35	21.26	22.00
		50	25	21.37	21.32	21.31	22.00
		50	50	21.22	21.13	21.18	22.00
		100	0	21.34	21.24	21.18	22.00
	16QAM	1	0	21.43	21.18	21.67	22.00
		1	50	21.35	21.22	21.55	22.00
		1	99	21.06	20.94	21.30	22.00
		50	0	20.12	20.17	20.07	21.00
		50	25	20.17	20.15	20.05	21.00
		50	50	19.98	19.96	20.02	21.00
		100	0	20.13	20.05	20.04	21.00

LTE Band 4				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19957	20175	20393	
1.4MHz	QPSK	1	0	21.81	21.94	21.80	23.00
		1	2	21.79	22.08	21.89	23.00
		1	5	21.77	21.87	21.79	23.00
		3	0	21.91	21.96	21.88	23.00
		3	2	21.87	22.07	21.92	23.00
		3	3	21.85	21.84	21.87	23.00
		6	0	20.80	20.91	20.88	22.00
	16QAM	1	0	20.97	20.99	20.85	22.00
		1	2	21.00	21.08	20.88	22.00
		1	5	20.90	20.95	20.89	22.00
		3	0	20.85	20.96	21.04	22.00
		3	2	20.84	21.15	21.19	22.00
		3	3	20.85	20.94	21.09	22.00
		6	0	19.82	19.91	19.89	21.00

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19965	20175	20385	
3MHz	QPSK	1	0	21.84	21.97	22.07	23.00
		1	7	22.04	21.99	21.95	23.00
		1	14	21.77	21.83	21.88	23.00
		8	0	20.87	20.96	20.98	22.00
		8	4	20.93	20.99	20.91	22.00
		8	7	20.88	20.88	20.87	22.00
		15	0	20.94	21.03	20.88	22.00
	16QAM	1	0	21.50	21.12	21.04	22.00
		1	7	21.52	21.20	20.89	22.00
		1	14	21.42	21.01	20.91	22.00
		8	0	20.02	19.96	20.03	21.00
		8	4	20.11	19.99	19.99	21.00
		8	7	20.04	19.84	19.94	21.00
		15	0	19.99	20.01	19.93	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19975	20175	20375	
5MHz	QPSK	1	0	21.98	22.07	22.03	23.00
		1	13	21.88	22.01	21.99	23.00
		1	24	21.87	21.92	21.91	23.00
		12	0	20.95	21.02	21.01	22.00
		12	6	20.94	21.00	20.98	22.00
		12	13	20.92	20.95	20.90	22.00
		25	0	20.89	21.05	20.97	22.00
	16QAM	1	0	20.84	21.32	21.07	22.00
		1	13	20.80	21.34	21.05	22.00
		1	24	20.76	21.15	21.01	22.00
		12	0	20.02	20.06	20.01	21.00
		12	6	19.93	20.08	20.00	21.00
		12	13	19.92	19.96	19.85	21.00
		25	0	19.98	20.01	20.00	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20000	20175	20350	
10MHz	QPSK	1	0	21.98	22.15	22.17	23.00
		1	25	21.83	21.93	21.82	23.00
		1	49	22.11	22.08	22.06	23.00
		25	0	20.89	20.98	20.96	22.00
		25	13	20.94	21.04	20.95	22.00
		25	25	20.94	21.05	21.02	22.00

		50	0	20.90	21.04	20.96	22.00
	16QAM	1	0	21.68	21.33	21.27	22.00
		1	25	21.50	21.12	21.01	22.00
		1	49	21.78	21.29	21.31	22.00
		25	0	19.96	20.02	19.99	21.00
		25	13	19.97	20.05	19.98	21.00
		25	25	19.97	20.04	20.00	21.00
		50	0	19.96	20.00	19.94	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20025	20175	20325	
15MHz	QPSK	1	0	22.13	22.26	22.12	23.00
		1	38	21.97	22.14	21.93	23.00
		1	74	22.19	22.23	22.21	23.00
		36	0	21.03	21.12	20.99	22.00
		36	18	20.99	21.14	20.95	22.00
		36	39	21.06	21.23	21.00	22.00
		75	0	21.05	21.14	21.01	22.00
	16QAM	1	0	21.33	21.71	21.69	22.00
		1	38	21.26	21.47	21.48	22.00
		1	74	21.54	21.73	21.75	22.00
		36	0	20.04	20.11	20.04	21.00
		36	18	20.07	20.13	20.03	21.00
		36	39	20.13	20.19	20.06	21.00
		75	0	20.01	20.16	19.97	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20050	20175	20300	
20MHz	QPSK	1	0	21.91	22.31	22.01	23.00
		1	50	21.93	22.28	21.89	23.00
		1	99	22.09	22.24	22.07	23.00
		50	0	20.99	21.19	21.17	22.00
		50	25	20.97	21.18	21.06	22.00
		50	50	21.03	21.20	21.10	22.00
		100	0	21.05	21.21	21.08	22.00
	16QAM	1	0	21.18	21.39	21.61	22.00
		1	50	21.19	21.35	21.50	22.00
		1	99	21.45	21.40	21.65	22.00
		50	0	20.00	20.16	20.16	21.00
		50	25	20.04	20.18	20.02	21.00
		50	50	20.08	20.15	20.12	21.00
		100	0	20.04	20.22	20.14	21.00

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	22.10	22.31	22.20	23.00
		1	2	22.15	22.28	22.18	23.00
		1	5	22.16	22.20	22.12	23.00
		3	0	22.12	22.15	22.23	23.00
		3	2	22.15	22.29	22.30	23.00
		3	3	22.13	22.22	22.17	23.00
		6	0	21.11	21.23	21.18	22.00
	16QAM	1	0	21.32	21.11	21.25	22.00
		1	2	21.34	21.24	21.19	22.00
		1	5	21.31	21.30	21.17	22.00
		3	0	21.12	21.17	21.39	22.00
		3	2	21.18	21.32	21.44	22.00
		3	3	21.18	21.20	21.38	22.00
		6	0	20.12	20.23	20.19	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 20415	Channel 20525	Channel 20635	Tune up
3MHz	QPSK	1	0	22.16	22.14	22.40	23.00
		1	7	22.23	22.27	22.36	23.00
		1	14	22.08	22.16	22.18	23.00
		8	0	21.15	21.15	21.22	22.00
		8	4	21.16	21.27	21.32	22.00
		8	7	21.07	21.23	21.23	22.00
		15	0	21.18	21.22	21.30	22.00
	16QAM	1	0	21.71	21.42	21.45	22.00
		1	7	21.86	21.39	21.36	22.00
		1	14	21.63	21.34	21.24	22.00
		8	0	20.36	20.15	20.29	21.00
		8	4	20.35	20.22	20.36	21.00
		8	7	20.25	20.20	20.27	21.00
		15	0	20.26	20.21	20.35	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 20425	Channel 20525	Channel 20625	Tune up
5MHz	QPSK	1	0	22.18	22.14	22.37	23.00
		1	13	22.11	22.27	22.32	23.00

		1	24	22.02	22.23	22.18	23.00
		12	0	21.18	21.17	21.37	22.00
		12	6	21.10	21.26	21.27	22.00
		12	13	21.15	21.18	21.25	22.00
		25	0	21.12	21.22	21.28	22.00
	16QAM	1	0	21.09	21.36	21.53	22.00
		1	13	21.02	21.51	21.39	22.00
		1	24	20.95	21.48	21.35	22.00
		12	0	20.19	20.24	20.41	21.00
		12	6	20.14	20.28	20.29	21.00
		12	13	20.16	20.20	20.32	21.00
		25	0	20.18	20.24	20.31	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 20450	Channel 20525	Channel 20600	Tune up
10MHz	QPSK	1	0	22.29	22.56	22.44	23.00
		1	25	22.06	22.18	22.41	23.00
		1	49	22.52	22.49	22.33	23.00
		25	0	21.16	21.18	21.42	22.00
		25	13	21.25	21.26	21.38	22.00
		25	25	21.18	21.39	21.36	22.00
		50	0	21.17	21.27	21.41	22.00
	16QAM	1	0	21.97	21.50	21.52	22.00
		1	25	21.69	21.34	21.28	22.00
		1	49	21.95	21.80	21.47	22.00
		25	0	20.22	20.20	20.48	21.00
		25	13	20.32	20.30	20.48	21.00
		25	25	20.28	20.39	20.49	21.00
		50	0	20.20	20.33	20.40	21.00

LTE Band 7				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 20775	Channel 21100	Channel 21425	Tune up
5MHz	QPSK	1	0	22.10	21.90	21.90	23.00
		1	13	22.05	21.83	21.86	23.00
		1	24	22.02	21.72	21.84	23.00
		12	0	21.08	20.89	20.90	22.00
		12	6	21.14	20.79	20.90	22.00
		12	13	21.06	20.76	20.90	22.00
		25	0	21.15	20.82	20.92	22.00
	16QAM	1	0	21.41	20.76	21.21	22.00
		1	13	21.37	20.73	21.21	22.00
		1	24	21.34	20.59	21.14	22.00
		12	0	20.18	19.91	19.98	21.00
		12	6	20.12	19.85	19.95	21.00
		12	13	20.11	19.79	19.95	21.00
		25	0	20.22	19.83	19.89	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 20800	Channel 21100	Channel 21400	Tune up
10MHz	QPSK	1	0	22.33	22.03	22.02	23.00
		1	25	22.09	21.74	21.74	23.00
		1	49	22.17	21.84	21.91	23.00
		25	0	21.23	20.88	20.93	22.00
		25	13	21.13	20.79	20.91	22.00
		25	25	21.05	20.77	20.92	22.00
		50	0	21.12	20.84	20.92	22.00
	16QAM	1	0	21.51	21.71	21.19	22.00
		1	25	21.20	21.36	21.00	22.00
		1	49	21.23	21.47	21.17	22.00
		25	0	20.25	19.95	19.92	21.00
		25	13	20.23	19.85	19.86	21.00
		25	25	20.16	19.85	19.91	21.00
		50	0	20.14	19.83	19.93	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 20825	Channel 21100	Channel 21375	Tune up
15MHz	QPSK	1	0	22.15	21.99	21.95	23.00
		1	38	22.14	21.91	21.90	23.00
		1	74	22.00	21.83	21.79	23.00

		36	0	21.27	21.06	20.88	22.00
		36	18	21.34	21.00	20.91	22.00
		36	39	21.19	20.91	20.90	22.00
		75	0	21.21	21.01	20.87	22.00
	16QAM	1	0	21.80	21.18	21.30	22.00
		1	38	21.71	21.18	21.22	22.00
		1	74	21.65	21.10	21.18	22.00
		36	0	20.41	20.06	19.90	21.00
		36	18	20.35	19.99	19.92	21.00
		36	39	20.22	19.93	19.91	21.00
		75	0	20.19	19.94	19.86	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 20850	Channel 21100	Channel 21350	Tune up
20MHz	QPSK	1	0	22.35	22.37	22.29	23.00
		1	50	22.13	21.95	21.78	23.00
		1	99	22.07	21.86	21.76	23.00
		50	0	21.22	21.05	20.97	22.00
		50	25	21.22	21.01	20.89	22.00
		50	50	21.08	20.96	20.89	22.00
		100	0	21.31	21.00	20.83	22.00
	16QAM	1	0	21.66	21.34	21.49	22.00
		1	50	21.45	21.41	21.46	22.00
		1	99	21.36	21.14	21.41	22.00
		50	0	20.21	20.00	19.94	21.00
		50	25	20.19	19.95	19.87	21.00
		50	50	20.10	19.93	19.88	21.00
		100	0	20.38	19.96	19.87	21.00

LTE Band 25				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 26047	Channel 26365	Channel 26683	Tune up
1.4MHz	QPSK	1	0	22.02	21.95	21.89	23.00
		1	2	22.07	22.01	22.05	23.00
		1	5	22.00	21.96	21.94	23.00
		3	0	22.01	21.94	21.96	23.00
		3	2	22.17	22.06	21.97	23.00
		3	3	22.10	22.05	21.89	23.00
		6	0	21.05	20.95	20.91	22.00
	16QAM	1	0	21.26	21.01	20.93	22.00
		1	2	21.23	21.06	20.93	22.00
		1	5	21.15	21.01	20.92	22.00
		3	0	21.07	21.08	21.15	22.00
		3	2	21.13	21.05	21.12	22.00
		3	3	21.06	21.06	21.10	22.00
		6	0	20.07	19.90	19.97	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 26055	Channel 26365	Channel 26675	Tune up
3MHz	QPSK	1	0	22.08	21.92	22.04	23.00
		1	7	22.03	22.00	22.05	23.00
		1	14	21.98	21.93	21.97	23.00
		8	0	21.10	21.08	20.98	22.00
		8	4	21.11	20.98	20.99	22.00
		8	7	21.06	20.97	20.96	22.00
		15	0	21.09	20.95	21.01	22.00
	16QAM	1	0	21.61	21.11	21.06	22.00
		1	7	21.63	21.17	21.06	22.00
		1	14	21.58	21.04	20.97	22.00
		8	0	20.28	19.97	20.03	21.00
		8	4	20.30	19.98	20.10	21.00
		8	7	20.25	19.90	20.04	21.00
		15	0	20.18	19.94	20.03	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 26065	Channel 26365	Channel 26665	Tune up
5MHz	QPSK	1	0	22.18	22.05	22.11	23.00
		1	13	22.11	21.98	21.93	23.00
		1	24	22.12	21.88	21.87	23.00

		12	0	21.12	21.03	21.02	22.00
		12	6	21.08	21.04	21.02	22.00
		12	13	21.05	21.00	20.96	22.00
		25	0	21.06	21.01	21.02	22.00
	16QAM	1	0	21.36	20.93	21.37	22.00
		1	13	21.32	20.85	21.27	22.00
		1	24	21.42	20.77	21.15	22.00
		12	0	20.07	19.98	20.05	21.00
		12	6	20.08	20.04	20.06	21.00
		12	13	20.09	19.89	19.97	21.00
		25	0	20.15	20.03	19.97	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26090	26365	26640	
10MHz	QPSK	1	0	22.24	22.19	22.30	23.00
		1	25	22.09	22.02	22.09	23.00
		1	49	22.27	22.10	22.06	23.00
		25	0	21.09	21.00	20.93	22.00
		25	13	21.10	21.03	21.01	22.00
		25	25	21.13	20.94	21.06	22.00
		50	0	21.16	21.07	21.01	22.00
	16QAM	1	0	21.36	21.59	21.07	22.00
		1	25	21.17	21.57	21.26	22.00
		1	49	21.27	21.61	21.25	22.00
		25	0	20.19	20.04	19.98	21.00
		25	13	20.23	20.04	19.97	21.00
		25	25	20.24	20.04	20.03	21.00
		50	0	20.18	20.05	20.06	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26115	26365	26615	
15MHz	QPSK	1	0	22.06	21.89	22.21	23.00
		1	38	22.13	21.96	21.92	23.00
		1	74	21.95	22.05	22.04	23.00
		36	0	21.13	21.10	21.00	22.00
		36	18	21.16	21.14	21.07	22.00
		36	39	21.11	21.18	21.09	22.00
		75	0	21.15	21.11	21.05	22.00
	16QAM	1	0	21.62	21.22	21.23	22.00
		1	38	21.69	21.25	21.27	22.00
		1	74	21.50	21.23	21.36	22.00
		36	0	20.16	20.02	20.00	21.00

		36	18	20.20	20.15	20.05	21.00
		36	39	20.11	20.18	20.10	21.00
		75	0	20.20	20.18	20.05	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26140	26365	26590	
20MHz	QPSK	1	0	22.30	22.35	22.28	23.00
		1	50	22.24	22.13	22.11	23.00
		1	99	22.10	21.99	21.98	23.00
		50	0	21.23	21.21	21.13	22.00
		50	25	21.17	21.29	21.20	22.00
		50	50	21.15	21.14	21.13	22.00
		100	0	21.24	21.24	21.22	22.00
	16QAM	1	0	21.44	21.30	21.39	22.00
		1	50	21.43	21.49	21.39	22.00
		1	99	21.12	21.09	21.11	22.00
		50	0	20.23	20.23	20.12	21.00
		50	25	20.21	20.29	20.17	21.00
		50	50	20.16	20.17	20.15	21.00
		100	0	20.28	20.25	20.26	21.00

LTE FDD Band 12				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23017	23095	23173	
1.4MHz	QPSK	1	0	22.34	22.56	22.27	23.00
		1	2	22.44	22.41	22.18	23.00
		1	5	22.23	22.14	22.11	23.00
		3	0	22.32	22.32	22.34	23.00
		3	2	22.38	22.32	22.37	23.00
		3	3	22.29	22.24	22.25	23.00
		6	0	21.27	21.22	21.25	22.00
	16QAM	1	0	21.44	21.39	21.10	22.00
		1	2	21.56	21.40	21.27	22.00
		1	5	21.35	21.47	21.23	22.00
		3	0	21.33	21.25	21.42	22.00
		3	2	21.26	21.27	21.44	22.00
		3	3	21.24	21.18	21.42	22.00
		6	0	20.26	20.27	20.15	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up

				23025	23095	23165	
3MHz	QPSK	1	0	22.31	22.22	22.35	23.00
		1	7	22.25	22.12	22.25	23.00
		1	14	22.18	22.15	22.22	23.00
		8	0	21.31	21.28	21.23	22.00
		8	4	21.38	21.29	21.26	22.00
		8	7	21.35	21.27	21.26	22.00
		15	0	21.38	21.32	21.31	22.00
	16QAM	1	0	21.83	21.38	21.36	22.00
		1	7	21.90	21.41	21.32	22.00
		1	14	21.92	21.43	21.22	22.00
		8	0	20.51	20.34	20.24	21.00
		8	4	20.59	20.28	20.36	21.00
		8	7	20.45	20.28	20.30	21.00
		15	0	20.49	20.26	20.34	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23035	23095	23155	
5MHz	QPSK	1	0	22.47	22.30	22.44	23.00
		1	13	22.50	22.16	22.20	23.00
		1	24	22.26	22.15	22.04	23.00
		12	0	21.39	21.33	21.31	22.00
		12	6	21.39	21.28	21.25	22.00
		12	13	21.38	21.35	21.32	22.00
		25	0	21.35	21.33	21.31	22.00
	16QAM	1	0	21.28	21.62	21.45	22.00
		1	13	21.34	21.53	21.26	22.00
		1	24	21.14	21.39	21.19	22.00
		12	0	20.42	20.41	20.31	21.00
		12	6	20.38	20.44	20.25	21.00
		12	13	20.35	20.39	20.31	21.00
		25	0	20.44	20.34	20.26	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23060	23095	23130	
10MHz	QPSK	1	0	22.73	22.75	22.69	23.00
		1	25	22.53	22.36	22.28	23.00
		1	49	22.30	22.22	22.15	23.00
		25	0	21.47	21.43	21.31	22.00
		25	13	21.43	21.38	21.36	22.00
		25	25	21.27	21.29	21.24	22.00
		50	0	21.42	21.31	21.32	22.00

	16QAM	1	0	21.97	21.92	21.76	22.00
		1	25	21.91	21.41	21.46	22.00
		1	49	21.87	21.59	21.27	22.00
		25	0	20.58	20.51	20.40	21.00
		25	13	20.48	20.43	20.45	21.00
		25	25	20.38	20.27	20.45	21.00
		50	0	20.43	20.37	20.29	21.00

LTE FDD Band 13				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23205	23230	23255	
5MHz	QPSK	1	0	21.79	22.19	22.05	23.00
		1	13	21.96	22.12	22.00	23.00
		1	24	21.94	21.99	21.91	23.00
		12	0	20.88	21.10	21.01	22.00
		12	6	20.96	21.00	20.90	22.00
		12	13	20.96	21.04	20.92	22.00
		25	0	20.91	21.01	20.96	22.00
	16QAM	1	0	20.70	21.31	21.14	22.00
		1	13	20.85	21.40	21.05	22.00
		1	24	20.85	21.16	21.03	22.00
		12	0	20.00	20.15	20.02	21.00
		12	6	20.03	20.05	19.93	21.00
		12	13	19.98	20.10	19.93	21.00
		25	0	19.86	19.97	19.95	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				/	23230	/	
10MHz	QPSK	1	0	/	22.37	/	23.00
		1	25	/	22.19	/	23.00
		1	49	/	22.11	/	23.00
		25	0	/	21.16	/	22.00
		25	13	/	21.12	/	22.00
		25	25	/	21.11	/	22.00
		50	0	/	21.17	/	22.00
	16QAM	1	0	/	21.76	/	22.00
		1	25	/	21.67	/	22.00
		1	49	/	21.62	/	22.00
		25	0	/	20.29	/	21.00
		25	13	/	20.13	/	21.00
		25	25	/	20.18	/	21.00
		50	0	/	20.16	/	21.00

LTE FDD Band 17				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23755	Channel 23790	Channel 23825	Tune up
5MHz	QPSK	1	0	22.47	22.52	22.50	23.00
		1	13	22.51	22.43	22.44	23.00
		1	24	22.38	22.32	22.23	23.00
		12	0	21.42	21.33	21.50	22.00
		12	6	21.40	21.31	21.52	22.00
		12	13	21.48	21.33	21.37	22.00
		25	0	21.54	21.39	21.37	22.00
	16QAM	1	0	21.84	21.51	21.36	22.00
		1	13	21.73	21.36	21.14	22.00
		1	24	21.63	21.46	21.08	22.00
		12	0	20.46	20.40	20.42	21.00
		12	6	20.42	20.32	20.46	21.00
		12	13	20.45	20.35	20.46	21.00
		25	0	20.48	20.44	20.37	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 23780	Channel 23790	Channel 23800	Tune up
10MHz	QPSK	1	0	22.61	22.64	22.59	23.00
		1	25	22.63	22.50	22.27	23.00
		1	49	22.40	22.29	22.23	23.00
		25	0	21.54	21.47	21.38	22.00
		25	13	21.36	21.52	21.32	22.00
		25	25	21.26	21.39	21.27	22.00
		50	0	21.33	21.38	21.42	22.00
	16QAM	1	0	21.84	21.82	21.89	22.00
		1	25	22.00	21.49	21.60	22.00
		1	49	22.00	21.52	21.35	22.00
		25	0	20.53	20.53	20.61	21.00
		25	13	20.45	20.42	20.53	21.00
		25	25	20.49	20.34	20.43	21.00
		50	0	20.34	20.35	20.45	21.00

LTE Band 26				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 26697	Channel 26865	Channel 27033	Tune up
1.4MHz	QPSK	1	0	22.18	22.33	22.20	23.50
		1	2	22.17	22.33	22.25	23.50
		1	5	22.15	22.30	22.04	23.50
		3	0	22.15	22.30	22.15	23.50
		3	2	22.21	22.59	22.14	23.50
		3	3	22.15	22.33	22.15	23.50
		6	0	21.18	21.35	21.21	22.50
	16QAM	1	0	21.29	21.38	21.41	22.50
		1	2	21.42	21.60	21.28	22.50
		1	5	21.20	21.50	21.14	22.50
		3	0	21.38	21.51	21.18	22.50
		3	2	21.29	21.45	21.22	22.50
		3	3	21.44	21.38	21.29	22.50
		6	0	20.26	20.38	20.15	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 26705	Channel 26865	Channel 27025	Tune up
3MHz	QPSK	1	0	22.26	22.57	22.25	23.50
		1	7	22.33	22.38	22.23	23.50
		1	14	22.31	22.48	22.04	23.50
		8	0	21.28	21.41	21.27	22.50
		8	4	21.30	21.43	21.22	22.50
		8	7	21.37	21.40	21.14	22.50
		15	0	21.36	21.39	21.19	22.50
	16QAM	1	0	21.41	21.96	21.46	22.50
		1	7	21.91	21.52	21.39	22.50
		1	14	21.36	21.61	21.25	22.50
		8	0	20.23	20.57	20.40	21.50
		8	4	20.51	20.47	20.30	21.50
		8	7	20.38	20.43	20.17	21.50
		15	0	20.26	20.35	20.26	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 26715	Channel 26865	Channel 27015	Tune up
5MHz	QPSK	1	0	22.31	22.54	22.35	23.50
		1	13	22.36	22.40	22.38	23.50
		1	24	22.30	22.51	22.09	23.50

		12	0	21.32	21.43	21.33	22.50
		12	6	21.35	21.37	21.25	22.50
		12	13	21.29	21.51	21.21	22.50
		25	0	21.36	21.41	21.26	22.50
	16QAM	1	0	21.42	21.24	21.55	22.50
		1	13	21.56	21.55	21.09	22.50
		1	24	21.15	21.68	21.33	22.50
		12	0	20.32	20.41	20.34	21.50
		12	6	20.34	20.35	20.22	21.50
		12	13	20.26	20.47	20.13	21.50
		25	0	20.34	20.43	20.21	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26740	26865	26990	
10MHz	QPSK	1	0	22.58	22.83	22.62	23.50
		1	25	22.30	22.31	22.29	23.50
		1	49	22.51	22.65	22.34	23.50
		25	0	21.31	21.41	21.47	22.50
		25	13	21.38	21.46	21.40	22.50
		25	25	21.38	21.48	21.32	22.50
		50	0	21.41	21.46	21.47	22.50
	16QAM	1	0	22.07	21.65	22.20	22.50
		1	25	21.76	21.53	21.91	22.50
		1	49	22.13	22.32	21.95	22.50
		25	0	20.45	20.47	20.47	21.50
		25	13	20.45	20.40	20.42	21.50
		25	25	20.44	20.60	20.35	21.50
		50	0	20.39	20.47	20.36	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26765	26865	26965	
15MHz	QPSK	1	0	22.92	22.96	22.89	23.50
		1	38	22.31	22.41	22.40	23.50
		1	74	22.80	22.91	22.67	23.50
		36	0	21.58	21.60	21.73	22.50
		36	18	21.42	21.42	21.49	22.50
		36	39	21.26	21.31	21.23	22.50
		75	0	21.41	21.49	21.55	22.50
	16QAM	1	0	22.09	21.73	22.23	22.50
		1	38	21.72	21.94	22.00	22.50
		1	74	22.12	22.22	22.23	22.50
		36	0	20.60	20.63	20.76	21.50

		36	18	20.40	20.46	20.56	21.50
		36	39	20.23	20.41	20.36	21.50
		75	0	20.41	20.45	20.55	21.50

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	22.29	22.17	22.24	23.00
		1	2	22.41	22.14	22.14	23.00
		1	5	22.29	22.15	22.25	23.00
		3	0	22.25	22.25	22.28	23.00
		3	1	22.41	22.15	22.27	23.00
		3	3	22.39	22.08	22.25	23.00
		6	0	21.24	21.12	21.14	22.00
	16QAM	1	0	21.31	21.14	21.27	22.00
		1	2	21.35	21.15	21.27	22.00
		1	5	21.35	21.07	21.22	22.00
		3	0	21.34	21.24	21.15	22.00
		3	1	21.41	21.40	21.09	22.00
		3	3	21.30	21.28	21.16	22.00
		6	0	20.28	20.23	20.25	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 131987	Channel 132322	Channel 132657	Tune up
3MHz	QPSK	1	0	22.36	22.32	22.25	23.00
		1	7	22.37	22.18	22.15	23.00
		1	14	22.25	22.04	22.11	23.00
		8	0	21.36	21.21	21.23	22.00
		8	4	21.31	21.19	21.23	22.00
		8	7	21.33	21.21	21.16	22.00
		15	0	21.37	21.17	21.28	22.00
	16QAM	1	0	21.86	21.34	21.34	22.00
		1	7	21.88	21.40	21.25	22.00
		1	14	21.84	21.25	21.20	22.00
		8	0	20.52	20.23	20.44	21.00
		8	4	20.55	20.29	20.39	21.00
		8	7	20.47	20.17	20.28	21.00
		15	0	20.42	20.20	20.28	21.00
Bandwidth	Modulation	RB size	RB offset	Channel 131997	Channel 132322	Channel 132647	Tune up
5MHz	QPSK	1	0	22.46	22.30	22.41	23.00
		1	13	22.33	22.21	22.07	23.00
		1	24	22.27	22.21	22.11	23.00

		12	0	21.42	21.25	21.31	22.00
		12	6	21.32	21.19	21.24	22.00
		12	13	21.32	21.21	21.24	22.00
		25	0	21.38	21.28	21.30	22.00
	16QAM	1	0	21.60	21.10	21.73	22.00
		1	13	21.49	21.00	21.43	22.00
		1	24	21.42	21.07	21.38	22.00
		12	0	20.39	20.32	20.39	21.00
		12	6	20.36	20.29	20.36	21.00
		12	13	20.36	20.20	20.35	21.00
		25	0	20.38	20.27	20.27	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				132022	132322	132622	
10MHz	QPSK	1	0	22.72	22.68	21.59	23.00
		1	25	22.34	22.22	22.19	23.00
		1	49	22.64	22.53	22.66	23.00
		25	0	21.29	21.21	21.28	22.00
		25	13	21.39	21.23	21.27	22.00
		25	25	21.48	21.33	21.32	22.00
		50	0	21.39	21.28	21.27	22.00
	16QAM	1	0	21.35	20.88	20.60	22.00
		1	25	21.86	21.56	21.37	22.00
		1	49	21.36	21.92	21.86	22.00
		25	0	20.30	20.20	20.28	21.00
		25	13	20.41	20.29	20.35	21.00
		25	25	20.50	20.42	20.40	21.00
		50	0	20.33	20.23	20.29	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				132047	132322	132597	
15MHz	QPSK	1	0	22.85	22.29	22.53	23.00
		1	38	22.18	22.21	22.04	23.00
		1	74	22.36	22.09	22.10	23.00
		36	0	21.16	21.08	21.20	22.00
		36	18	21.15	21.02	21.13	22.00
		36	39	21.09	21.04	21.16	22.00
		75	0	21.15	21.12	21.16	22.00
	16QAM	1	0	21.91	21.57	21.69	22.00
		1	38	21.82	21.19	21.40	22.00
		1	74	21.85	21.32	21.40	22.00
		36	0	20.23	20.11	20.17	21.00

		36	18	20.26	20.06	20.10	21.00
		36	39	20.14	20.07	20.10	21.00
		75	0	20.15	20.13	20.08	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				132072	132322	132572	
20MHz	QPSK	1	0	22.77	22.87	22.83	23.00
		1	50	22.79	22.73	22.66	23.00
		1	99	22.64	22.62	22.69	23.00
		50	0	21.09	21.04	21.16	22.00
		50	25	21.12	21.19	21.14	22.00
		50	50	21.17	21.18	21.19	22.00
		100	0	21.12	21.19	21.15	22.00
	16QAM	1	0	21.27	21.15	21.65	22.00
		1	50	21.39	21.23	21.77	22.00
		1	99	21.84	21.60	21.78	22.00
		50	0	20.14	20.04	20.15	21.00
		50	25	20.20	20.16	20.13	21.00
		50	50	20.26	20.13	20.25	21.00
		100	0	20.16	20.15	20.17	21.00

LTE Band 38				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				37775	38000	38225	
5MHz	QPSK	1	0	22.32	22.41	22.24	23.00
		1	13	22.34	22.23	22.24	23.00
		1	24	22.26	22.24	22.16	23.00
		12	0	21.38	21.25	21.31	22.00
		12	6	21.35	21.24	21.17	22.00
		12	13	21.33	21.21	21.27	22.00
		25	0	21.35	21.31	21.32	22.00
	16QAM	1	0	21.53	21.37	21.68	22.00
		1	13	21.33	21.27	21.12	22.00
		1	24	21.41	21.28	21.21	22.00
		12	0	20.31	20.37	20.36	21.00
		12	6	20.27	20.32	20.22	21.00
		12	13	20.31	20.28	20.31	21.00
		25	0	20.27	20.31	20.33	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up

				37800	38000	38200	
10MHz	QPSK	1	0	22.69	22.73	22.57	23.00
		1	25	22.32	22.45	22.32	23.00
		1	49	22.58	22.34	22.53	23.00
		25	0	21.42	21.36	21.33	22.00
		25	13	21.30	21.39	21.30	22.00
		25	25	21.39	21.43	21.36	22.00
		50	0	21.32	21.38	21.38	22.00
	16QAM	1	0	21.82	21.46	21.23	22.00
		1	25	21.11	21.19	21.51	22.00
		1	49	21.40	21.48	21.55	22.00
		25	0	20.49	20.42	20.32	21.00
		25	13	20.39	20.39	20.34	21.00
		25	25	20.41	20.39	20.40	21.00
		50	0	20.34	20.40	20.34	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				37825	38000	38175	
15MHz	QPSK	1	0	22.67	22.63	22.71	23.00
		1	38	22.40	22.15	22.07	23.00
		1	74	22.45	22.41	22.53	23.00
		36	0	21.28	21.15	21.09	22.00
		36	18	21.35	21.24	21.13	22.00
		36	39	21.36	21.25	21.22	22.00
		75	0	21.41	21.26	21.16	22.00
	16QAM	1	0	21.58	21.85	21.45	22.00
		1	38	21.24	21.21	21.07	22.00
		1	74	21.41	21.62	21.56	22.00
		36	0	20.29	20.17	20.12	21.00
		36	18	20.31	20.18	20.09	21.00
		36	39	20.31	20.30	20.21	21.00
		75	0	20.40	20.26	20.14	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				37850	38000	38150	
20MHz	QPSK	1	0	22.77	22.85	22.84	23.00
		1	50	22.26	22.21	22.07	23.00
		1	99	22.62	22.46	22.45	23.00
		50	0	21.32	21.20	21.18	22.00
		50	25	21.35	21.23	21.11	22.00
		50	50	21.34	21.38	21.26	22.00
		100	0	21.32	21.32	21.21	22.00

	16QAM	1	0	21.85	21.16	21.47	22.00
		1	50	21.67	21.36	21.20	22.00
		1	99	21.65	21.65	21.53	22.00
		50	0	20.37	20.24	20.27	21.00
		50	25	20.36	20.21	20.12	21.00
		50	50	20.32	20.38	20.25	21.00
		100	0	20.37	20.28	20.20	21.00

LTE Band 41 2496 - 2690				Conducted Power(dBm)					
Bandwidth	Modulation	RB size	RB offset	Channel 39675	Channel 40148	Channel 40620	Channel 41093	Channel 41565	Tune up
5MHz	QPSK	1	0	22.85	22.51	22.67	22.78	22.63	23.50
		1	13	22.78	22.43	22.62	22.64	22.53	23.50
		1	24	22.67	22.35	22.42	22.55	22.49	23.50
		12	0	21.84	21.46	21.58	21.71	21.63	22.50
		12	6	21.81	21.54	21.54	21.74	21.57	22.50
		12	13	21.82	21.49	21.45	21.63	21.64	22.50
		25	0	21.83	21.66	21.59	21.71	21.69	22.50
	16QAM	1	0	21.92	21.76	21.94	21.83	21.84	22.50
		1	13	21.82	21.57	21.67	21.68	21.76	22.50
		1	24	21.86	21.53	21.72	21.74	21.69	22.50
		12	0	20.87	20.52	20.59	20.71	20.63	21.50
		12	6	20.79	20.65	20.51	20.62	20.71	21.50
		12	13	20.82	20.41	20.34	20.61	20.57	21.50
		25	0	20.82	20.48	20.52	20.74	20.63	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 39700	Channel 40160	Channel 40620	Channel 41080	Channel 41540	Tune up
10MHz	QPSK	1	0	22.76	22.72	22.84	22.76	22.82	23.50
		1	25	22.71	22.53	22.69	22.52	22.62	23.50
		1	49	22.73	22.61	22.73	22.54	22.77	23.50
		25	0	21.85	21.57	21.59	21.44	21.66	22.50
		25	13	21.87	21.58	21.57	21.44	21.65	22.50
		25	25	21.74	21.55	21.55	21.35	21.69	22.50
		50	0	21.84	21.59	21.59	21.44	21.69	22.50
	16QAM	1	0	22.14	22.05	21.73	21.58	22.12	22.50
		1	25	21.79	21.25	21.42	21.32	21.33	22.50
		1	49	21.98	21.89	21.62	21.54	22.04	22.50
		25	0	20.86	20.63	20.66	20.52	20.72	21.50
		25	13	20.82	20.52	20.62	20.42	20.65	21.50
		25	25	20.77	20.49	20.46	20.44	20.69	21.50
		50	0	20.85	20.47	20.61	20.43	20.64	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 39725	Channel 40173	Channel 40620	Channel 41068	Channel 41515	Tune up
15MHz	QPSK	1	0	22.71	22.64	22.69	22.62	22.58	23.50
		1	38	22.68	22.44	22.59	22.44	22.53	23.50
		1	74	21.9	22.17	21.58	22.45	21.81	23.50

		36	0	21.83	21.41	21.47	21.49	21.52	22.50
		36	18	21.76	21.44	21.47	21.42	21.58	22.50
		36	39	21.36	21.33	20.99	21.33	21.12	22.50
		75	0	21.54	21.37	21.29	21.37	21.39	22.50
	16QAM	1	0	21.44	21.47	20.99	21.62	21.59	22.50
		1	38	21.86	21.51	21.09	21.15	21.53	22.50
		1	74	20.69	21.32	20.23	21.52	20.76	22.50
		36	0	20.83	20.39	20.46	20.45	20.59	21.50
		36	18	20.78	20.41	20.49	20.35	20.58	21.50
		36	39	20.39	20.38	20.04	20.42	20.17	21.50
		75	0	20.55	20.46	20.27	20.38	20.39	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Channel	Channel	Tune up
				39750	40185	40620	41055	41490	
20MHz	QPSK	1	0	22.89	22.84	22.93	22.88	22.82	23.50
		1	50	22.52	22.49	22.72	22.58	22.51	23.50
		1	99	22.62	22.29	22.66	22.31	22.52	23.50
		50	0	21.66	21.56	21.77	21.59	21.61	22.50
		50	25	21.65	21.49	21.75	21.49	21.52	22.50
		50	50	21.57	21.47	21.75	21.54	21.52	22.50
		100	0	21.67	21.48	21.75	21.47	21.56	22.50
	16QAM	1	0	21.72	21.56	21.88	21.52	21.79	22.50
		1	50	21.81	21.63	21.88	21.62	21.22	22.50
		1	99	21.54	21.43	21.73	21.43	21.69	22.50
		50	0	20.57	20.49	20.77	20.49	20.64	21.50
		50	25	20.58	20.51	20.75	20.58	20.55	21.50
		50	50	20.61	20.57	20.78	20.41	20.48	21.50
		100	0	20.58	20.55	20.76	20.38	20.54	21.50

8.1.3 Conducted Power of LTE UL CA

CA_7C										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
20850	21048	QPSK	1	99	1	0	2	0	22.21	23.00
21100	21298	QPSK	1	99	1	0	2	0	22.24	23.00
21350	21152	QPSK	1	0	1	99	2	0	22.19	23.00

CA_41C										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
39790	39988	QPSK	1	99	1	0	2	0	22.74	23.50
39750	39948	QPSK	1	99	1	0	2	0	22.69	23.50
40185	40383	QPSK	1	99	1	0	2	0	22.71	23.50
40620	40818	QPSK	1	99	1	0	2	0	22.78	23.50
41055	41253	QPSK	1	99	1	0	2	0	22.73	23.50
41490	41292	QPSK	1	0	1	99	2	0	22.65	23.50

8.1.4 Conducted Power of LTE DL CA

CA List	PCC							SCC1				Power	
	LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx. Power (dBm)	Without CA Tx. Power (dBm)
CA_2A-2A	Band 2	20M	1880	18900	QPSK	1	0	Band 2	5M	1987.5	1175	22.29	22.36
CA_2A-4A	Band 2	20M	2535	21100	QPSK	1	0	Band 4	20M	2132.5	2175	22.24	22.36
	Band 4	20M	1732.5	20175	QPSK	1	0	Band 2	20M	1960	900	22.21	22.31
CA_2A-7A	Band 2	20M	2535	21100	QPSK	1	0	Band 7	20M	2655	3100	22.25	22.36
	Band 4	20M	2535	21100	QPSK	1	0	Band 2	20M	1960	900	22.22	22.31
CA_2A-12A	Band 2	20M	1880	18900	QPSK	1	0	Band 12	10M	737.5	5095	22.31	22.36
	Band 12	10M	707.5	23095	QPSK	1	0	Band 2	20M	1960	900	22.66	22.75
CA_2A-13A	Band 2	20M	1880	18900	QPSK	1	0	Band 13	10M	751	5230	22.28	22.36
	Band 13	10M	782	23230	QPSK	1	0	Band 2	20M	1960	900	22.23	22.37
CA_2A-17A	Band 2	20M	1880	18900	QPSK	1	0	Band 17	10M	740	5790	22.24	22.36
	Band 17	10M	710	23790	QPSK	1	0	Band 2	20M	1960	900	22.58	22.64
CA_2A-66A	Band 2	20M	1880	18900	QPSK	1	0	Band 66	20M	2164.8	66984	22.29	22.36
	Band 66	20M	1745	132322	QPSK	1	0	Band 2	20M	1960	900	22.75	22.87
CA_2C	Band 2	20M	1880	18900	QPSK	1	0	Band 2	20M	1979.8	1098	22.19	22.36
CA_4A-4A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 4	5M	2152.5	2375	22.18	22.31
CA_4A-7A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 7	20M	2655	3100	22.22	22.31
	Band 7	20M	2535	21100	QPSK	1	0	Band 4	5M	2152.5	2375	22.26	22.37
CA_4A-12A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 12	10M	737.5	5095	22.19	22.31
	Band 12	10M	707.5	23095	QPSK	1	0	Band 4	20M	2132.5	2175	22.56	22.75
CA_4A-13A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 13	10M	751	5230	22.14	22.31
	Band 13	10M	782	23230	QPSK	1	0	Band 4	20M	2132.5	2175	22.21	22.37
CA_4A-17A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 17	10M	740	5790	22.12	22.31
	Band 17	10M	710	23790	QPSK	1	0	Band 4	20M	2132.5	2175	22.51	22.64
CA_5A-5A	Band 5	10M	836.5	20525	QPSK	1	0	Band 5	5M	891.5	2625	22.44	22.56
CA_5A-7A	Band 5	10M	836.5	20525	QPSK	1	0	Band 7	20M	2655	3100	22.44	22.56
	Band 7	20M	2535	21100	QPSK	1	0	Band 5	10M	889	2600	22.19	22.37
CA_5A-38A	Band 5	10M	836.5	20525	QPSK	1	0	Band 38	20M	2595	38000	22.45	22.56
CA_5A-41A	Band 5	10M	836.5	20525	QPSK	1	0	Band 41	20M	2593	40620	22.47	22.56
CA_5B	Band 5	10M	834.1	20501	QPSK	1	0	Band 5	10M	889	2600	22.38	22.56
	Band 5	10M	834.1	20501	QPSK	1	0	Band 5	10M	889	2600	22.44	22.56

CA_7A-7A	Band 7	20M	2535	21100	QPSK	1	0	Band 7	5M	2687.5	3425	22.33	22.37
CA_7A-12A	Band 7	20M	2535	21100	QPSK	1	0	Band 12	10M	737.5	5095	22.19	22.37
	Band 12	10M	707.5	23095	QPSK	1	0	Band 7	20M	2655	3100	22.63	22.75
CA_7A-66A	Band 7	20M	2535	21100	QPSK	1	0	Band 66	20M	2155	66886	22.23	22.37
	Band 66	20M	1745	132322	QPSK	1	0	Band 7	20M	2655	3100	22.71	22.87
CA_7B	Band 7	15M	2535	21100	QPSK	1	0	Band 7	5M	2544.3	3193	21.86	21.99
CA_7C	Band 7	20M	2535	21100	QPSK	1	0	Band 7	20M	2554.8	3298	22.22	22.37
CA_12A-12A	Band 12	10M	707.5	23095	QPSK	1	0	Band 12	5M	744.5	5165	22.57	22.75
CA_12A-25A	Band 12	10M	707.5	23095	QPSK	1	0	Band 25	20M	1960	8340	22.68	22.75
	Band 25	20M	1880	26340	QPSK	1	0	Band 12	10M	737.5	5095	22.24	22.35
CA_12A-66A	Band 12	10M	707.5	23095	QPSK	1	0	Band 66	20M	2145	66786	22.55	22.75
	Band 66	20M	1745	132322	QPSK	1	0	Band 12	10M	737.5	5095	22.78	22.87
CA_12B	Band 12	10M	707.5	23095	QPSK	1	0	Band 12	5M	743.5	5155	22.69	22.75
CA_13A-66A	Band 13	10M	782	23230	QPSK	1	0	Band 66	20M	2145	66786	22.32	22.37
	Band 66	20M	1745	132322	QPSK	1	0	Band 13	10M	751	5230	22.79	22.87
CA_25A-25A	Band 25	20M	1880	26340	QPSK	1	0	Band 25	5M	1891.7	8457	22.17	22.35
CA_25A-41A	Band 25	20M	1880	26340	QPSK	1	0	Band 41	20M	2593	40620	22.28	22.35
	Band 41	20M	2593	40620	QPSK	1	0	Band 25	20M	1960	8340	22.81	22.93
CA_26A-41A	Band 26	15M	831.5	26865	QPSK	1	0	Band 41	20M	2593	40620	22.84	22.96
CA_38C	Band 38	20M	2580	37850	QPSK	1	0	Band 38	20M	2599.8	38048	22.74	22.85
CA_41A-41A	Band 41	20M	2593	40620	QPSK	1	0	Band 41	5M	2687.5	41565	22.76	22.93
CA_41C	Band 41	20M	2506	39750	QPSK	1	0	Band 41	20M	2525.8	39948	22.72	22.89
CA_66A-66A	Band 66	20M	1745	132322	QPSK	1	0	Band 66	5M	2197.5	67311	22.68	22.87
CA_66B	Band 66	15M	1745	132322	QPSK	1	0	Band 66	5M	2164.3	66979	22.17	22.29
CA_66C	Band 66	20M	1745	132322	QPSK	1	0	Band 66	20M	2164.8	66984	22.74	22.87

8.1.5 Conducted Power of WIFI

Mode	Channel	Frequency (MHz)	Data Rate(Mbps)	Average Power (dBm) Main Ant	Tune up
802.11b	1	2412	1	13.89	14.50
	6	2437		13.46	14.50
	11	2462		13.57	14.50
802.11g	1	2412	6	14.43	14.50
	6	2437		13.74	14.50
	11	2462		14.47	14.50
802.11n HT20 SISO	1	2412	6.5	14.45	14.50
	6	2437		13.76	14.50
	11	2462		14.46	14.50
802.11n HT40 SISO	3	2422	13	13.69	14.50
	6	2437		13.45	14.50
	9	2452		14.15	14.50

5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11a	U-NII-1	36	5180	6	12.56	13.50
		40	5200		12.87	13.50
		48	5240		13.08	13.50
	U-NII-3	149	5745		8.87	9.50
		157	5785		8.85	9.50
		165	5825		8.54	9.50
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11n-HT20	U-NII-1	36	5180	MCS0	12.44	13.50
		40	5200		12.73	13.50
		48	5240		12.93	13.50
	U-NII-3	149	5745		8.72	9.50
		157	5785		8.7	9.50
		165	5825		8.37	9.50
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11n-HT40	U-NII-1	38	5190	MCS0	13.57	14.50
		46	5230		13.9	14.50
	U-NII-3	151	5755		9.64	10.50
		159	5795		9.75	10.50
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11ac 20M	U-NII-1	36	5180	MCS0	12.37	13.50
		40	5200		12.66	13.50
		48	5240		12.84	13.50
	U-NII-3	149	5745		8.64	9.50
		157	5785		8.55	9.50
		165	5825		8.18	9.50
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11ac 40M	U-NII-1	38	5190	MCS0	13.45	14.50
		46	5230		13.75	14.50
	U-NII-3	151	5755		9.51	10.50
		159	5795		9.69	10.50
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11ac 80M	U-NII-1	42	5210	MCS0	13.25	14.50
	U-NII-3	155	5775		9.47	10.50

8.2 Measurement of SAR Data

Note:

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

2) Per KDB447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

- ≤ 0.8W/kg for 1-g or 2.0W/kg for 10-g respectively, when the transmission band is ≤ 100MHz.
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz.

3) Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

WiFi 2.4G:

1) When the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ⩽ 1.2 W/kg, SAR test for the other 802.11 modes are not required.

WiFi 5G:

1) When the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ⩽ 1.2 W/kg, SAR test for the other 802.11 modes are not required.

8.2.1 SAR Result of WCDMA Band II

WCDMA Band II SAR Test Record										
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)	Liquid Temp.(℃)
Hotspot Test data(Separate 10mm)										
Front side	RMC	9400/1880	1:1	1.030	0.09	22.31	23.00	1.172	1.207	22.4
Front side	RMC	9262/1852.4	1:1	1.050	0.05	22.46	23.00	1.132	1.189	22.4
Front side	RMC	9538/1907.6	1:1	0.996	0.11	22.20	23.00	1.202	1.197	22.4
Back side	RMC	9400/1880	1:1	1.190	-0.03	22.31	23.00	1.172	1.395	22.4
Back side	RMC	9262/1852.4	1:1	1.130	0.07	22.46	23.00	1.132	1.280	22.4
Back side	RMC	9538/1907.6	1:1	1.150	-0.04	22.20	23.00	1.202	1.383	22.4
Left side	RMC	9400/1880	1:1	0.289	0.05	22.31	23.00	1.172	0.339	22.4
Top side	RMC	9400/1880	1:1	0.716	0.11	22.31	23.00	1.172	0.839	22.4
Top side	RMC	9262/1852.4	1:1	0.708	0.02	22.46	23.00	1.132	0.802	22.4
Top side	RMC	9538/1907.6	1:1	0.711	0.03	22.20	23.00	1.202	0.855	22.4
Back side-Repeat SAR	RMC	9400/1880	1:1	1.150	0.14	22.31	23.00	1.172	1.348	22.4

Table 9： SAR of WCDMA Band II for Hotspot.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back side	9400/1880	1.19	1.15	1.034783	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

8.2.2 SAR Result of WCDMA Band IV

WCDMA Band IV SAR Test Record										
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)	Liquid Temp.(℃)
Hotspot Test data(Separate 10mm)										
Front side	RMC	1412/1732.4	1:1	0.974	0.09	22.29	23.00	1.178	1.147	22.3
Front side	RMC	1312/1712.4	1:1	0.969	0.14	22.41	23.00	1.146	1.110	22.3
Front side	RMC	1513/1752.6	1:1	0.945	0.05	22.40	23.00	1.148	1.085	22.3
Back side	RMC	1412/1732.4	1:1	1.230	-0.03	22.29	23.00	1.178	1.448	22.3
Back side	RMC	1312/1712.4	1:1	1.170	0.05	22.41	23.00	1.146	1.340	22.3
Back side	RMC	1513/1752.6	1:1	1.080	-0.03	22.40	23.00	1.148	1.240	22.3
Left side	RMC	1412/1732.4	1:1	0.230	0.16	22.29	23.00	1.178	0.271	22.3
Top side	RMC	1412/1732.4	1:1	0.699	0.01	22.29	23.00	1.178	0.823	22.3
Top side	RMC	1312/1712.4	1:1	0.642	0.14	22.41	23.00	1.146	0.735	22.3
Top side	RMC	1513/1752.6	1:1	0.650	0.11	22.40	23.00	1.148	0.746	22.3
Back side-Repeat SAR	RMC	1412/1732.4	1:1	1.160	0.09	22.29	23.00	1.178	1.366	22.3

Table 10： SAR of WCDMA Band IV for Hotspot.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back side	1412/1732.4	1.23	1.16	1.060345	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

8.2.3 SAR Result of WCDMA Band V

WCDMA Band V SAR Test Record										
Ant 0 Test Record										
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)	Liquid Temp.(℃)
Hotspot Test data(Separate 10mm)										
Front side	RMC	4182/836.4	1:1	0.375	0.02	23.23	23.50	1.064	0.399	22.1
Back side	RMC	4182/836.4	1:1	0.406	-0.08	23.23	23.50	1.064	0.432	22.1
Left side	RMC	4182/836.4	1:1	0.070	0.03	23.23	23.50	1.064	0.074	22.1
Top side	RMC	4182/836.4	1:1	0.207	0.05	23.23	23.50	1.064	0.220	22.1

Table 11： SAR of WCDMA Band V for Hotspot.

8.2.4 SAR Result of LTE Band 7

LTE Band 7 SAR Test Record											
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 1-g (W/kg)	Liquid Temp.(℃)
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	21100/2535	1:1	0.839	0.11	22.37	23.00	1.156	0.970	22.3
Front side	20	QPSK 1_0	20850/2510	1:1	0.816	0.04	22.35	23.00	1.161	0.948	22.3
Front side	20	QPSK 1_0	21350/2560	1:1	0.810	0.02	22.29	23.00	1.178	0.954	22.3
Back side	20	QPSK 1_0	21100/2535	1:1	0.857	-0.06	22.37	23.00	1.156	0.991	22.3
Back side	20	QPSK 1_0	20850/2510	1:1	0.842	0.10	22.35	23.00	1.161	0.978	22.3
Back side	20	QPSK 1_0	21350/2560	1:1	0.837	0.14	22.29	23.00	1.178	0.986	22.3
Left side	20	QPSK 1_0	21100/2535	1:1	0.570	0.04	22.37	23.00	1.156	0.659	22.3
Bottom side	20	QPSK 1_0	21100/2535	1:1	0.438	0.05	22.37	23.00	1.156	0.506	22.3
Back side-7C	20	QPSK 1_99/1_0	21100/21298	1:1	0.829	-0.03	22.24	23.00	1.191	0.988	22.3
Back side-Repeat SAR	20	QPSK 1_0	21100/2535	1:1	0.847	0.07	22.37	23.00	1.156	0.979	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	21100/2535	1:1	0.658	0.11	21.05	22.00	1.245	0.819	22.3
Front side	20	QPSK 50_0	20850/2510	1:1	0.635	0.03	21.22	22.00	1.197	0.760	22.3
Front side	20	QPSK 50_0	21350/2560	1:1	0.616	-0.03	20.97	22.00	1.268	0.781	22.3
Back side	20	QPSK 50_0	21100/2535	1:1	0.628	0.03	21.05	22.00	1.245	0.782	22.3
Left side	20	QPSK 50_0	21100/2535	1:1	0.455	0.02	21.05	22.00	1.245	0.566	22.3
Bottom side	20	QPSK 50_0	21100/2535	1:1	0.334	-0.01	21.05	22.00	1.245	0.416	22.3
Hotspot Test data(Separate 10mm 100%RB)											
Front side	20	QPSK 100_0	21100/2535	1:1	0.574	0.11	21.00	22.00	1.259	0.723	22.3
Back side	20	QPSK 100_0	21100/2535	1:1	0.589	0.02	21.00	22.00	1.259	0.742	22.3

Table 12： SAR of LTE Band 7 for Hotspot.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back side	21100/2535	0.857	0.847	1.011806375	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

8.2.5 SAR Result of LTE Band 12

LTE Band 12 SAR Test Record											
Ant 2 Test Record											
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 1-g (W/kg)	Liquid Temp.(℃)
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	23095/707.5	1:1	0.190	0.03	22.75	23.00	1.059	0.201	22.2
Back side	10	QPSK 1_0	23095/707.5	1:1	0.208	-0.02	22.75	23.00	1.059	0.220	22.2
Left side	10	QPSK 1_0	23095/707.5	1:1	0.042	0.02	22.75	23.00	1.059	0.044	22.2
Top side	10	QPSK 1_0	23095/707.5	1:1	0.084	-0.01	22.75	23.00	1.059	0.089	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	23095/707.5	1:1	0.171	0.03	21.43	22.00	1.140	0.195	22.2
Back side	10	QPSK 25_0	23095/707.5	1:1	0.196	0.05	21.43	22.00	1.140	0.223	22.2
Left side	10	QPSK 25_0	23095/707.5	1:1	0.023	0.09	21.43	22.00	1.140	0.026	22.2
Top side	10	QPSK 25_0	23095/707.5	1:1	0.053	0.11	21.43	22.00	1.140	0.060	22.2

Table 13： SAR of LTE Band 12 for Hotspot is covering LTE Band 17.

8.2.6 SAR Result of LTE Band 13

LTE Band 13 SAR Test Record											
Ant 2 Test Record											
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 1-g (W/kg)	Liquid Temp.(℃)
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	23230/782	1:1	0.224	0.01	22.37	23.00	1.156	0.259	22.2
Back side	10	QPSK 1_0	23230/782	1:1	0.251	-0.06	22.37	23.00	1.156	0.290	22.2
Left side	10	QPSK 1_0	23230/782	1:1	0.032	0.03	22.37	23.00	1.156	0.037	22.2
Top side	10	QPSK 1_0	23230/782	1:1	0.119	0.09	22.37	23.00	1.156	0.138	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	23230/782	1:1	0.191	0.11	21.16	22.00	1.213	0.232	22.2
Back side	10	QPSK 25_0	23230/782	1:1	0.212	-0.14	21.16	22.00	1.213	0.257	22.2
Left side	10	QPSK 25_0	23230/782	1:1	0.017	0.02	21.16	22.00	1.213	0.021	22.2
Top side	10	QPSK 25_0	23230/782	1:1	0.090	0.09	21.16	22.00	1.213	0.109	22.2

Table 14： SAR of LTE Band 13 for Hotspot.

8.2.7 SAR Result of LTE Band 25

LTE Band 25 SAR Test Record											
Ant 2 Test Record											
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 1-g (W/kg)	Liquid Temp.(℃)
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	26365/1882.5	1:1	0.973	-0.12	22.35	23.00	1.161	1.130	22.4
Front side	20	QPSK 1_0	26140/1860	1:1	0.961	0.04	22.30	23.00	1.175	1.129	22.4
Front side	20	QPSK 1_0	26590/1905	1:1	0.954	0.11	22.28	23.00	1.180	1.126	22.4
Back side	20	QPSK 1_0	26365/1882.5	1:1	0.919	0.03	22.35	23.00	1.161	1.067	22.4
Back side	20	QPSK 1_0	26140/1860	1:1	0.903	-0.09	22.30	23.00	1.175	1.061	22.4
Back side	20	QPSK 1_0	26590/1905	1:1	0.894	0.11	22.28	23.00	1.180	1.055	22.4
Left side	20	QPSK 1_0	26365/1882.5	1:1	0.153	0.05	22.35	23.00	1.161	0.178	22.4
Top side	20	QPSK 1_0	26365/1882.5	1:1	0.638	0.09	22.35	23.00	1.161	0.741	22.4
Front side-Repeat SAR	20	QPSK 1_0	26365/1882.5	1:1	0.966	0.02	22.35	23.00	1.161	1.122	22.4
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	26365/1882.5	1:1	0.802	0.05	21.21	22.00	1.199	0.962	22.4
Front side	20	QPSK 50_0	26140/1860	1:1	0.784	-0.03	21.23	22.00	1.194	0.936	22.4
Front side	20	QPSK 50_0	26590/1905	1:1	0.771	0.14	21.13	22.00	1.222	0.942	22.4
Back side	20	QPSK 50_0	26365/1882.5	1:1	0.736	0.03	21.21	22.00	1.199	0.883	22.4
Back side	20	QPSK 50_0	26140/1860	1:1	0.708	-0.14	21.23	22.00	1.194	0.845	22.4
Back side	20	QPSK 50_0	26590/1905	1:1	0.719	0.02	21.13	22.00	1.222	0.878	22.4
Left side	20	QPSK 50_0	26365/1882.5	1:1	0.103	0.01	21.21	22.00	1.199	0.124	22.4
Top side	20	QPSK 50_0	26365/1882.5	1:1	0.501	0.11	21.21	22.00	1.199	0.601	22.4
Hotspot Test data(Separate 10mm 100%RB)											
Front side	20	QPSK 100_0	26365/1882.5	1:1	0.771	0.05	21.24	22.00	1.191	0.918	22.4
Back side	20	QPSK 100_0	26365/1882.5	1:1	0.729	0.09	21.24	22.00	1.191	0.868	22.4

Table 15： SAR of LTE Band 25 for Hotspot is covering LTE Band 2.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Front side	26365/1882.5	0.973	0.966	1.007246377	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

8.2.8 SAR Result of LTE Band 26

LTE Band 26 SAR Test Record											
Ant 2 Test Record											
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 1-g (W/kg)	Liquid Temp.(℃)
Hotspot Test data(Separate 10mm 1RB)											
Front side	15	QPSK 1_0	26865/831.5	1:1	0.351	-0.11	22.96	23.50	1.132	0.397	22.1
Back side	15	QPSK 1_0	26865/831.5	1:1	0.397	-0.02	22.96	23.50	1.132	0.450	22.1
Left side	15	QPSK 1_0	26865/831.5	1:1	0.060	0.14	22.96	23.50	1.132	0.068	22.1
Top side	15	QPSK 1_0	26865/831.5	1:1	0.201	0.03	22.96	23.50	1.132	0.228	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	15	QPSK 36_0	26865/831.5	1:1	0.264	0.10	21.60	22.50	1.230	0.325	22.1
Back side	15	QPSK 36_0	26865/831.5	1:1	0.342	0.02	21.60	22.50	1.230	0.421	22.1
Left side	15	QPSK 36_0	26865/831.5	1:1	0.039	0.05	21.60	22.50	1.230	0.048	22.1
Top side	15	QPSK 36_0	26865/831.5	1:1	0.161	-0.03	21.60	22.50	1.230	0.198	22.1

Table 16： SAR of LTE Band 26 for Hotspot is covering LTE Band 5.

8.2.9 SAR Result of LTE Band 41

LTE Band 41 SAR Test Record											
Ant 2 Test Record											
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 1-g (W/kg)	Liquid Temp.(℃)
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	40620/2593	1:1.58	0.332	-0.11	22.93	23.50	1.140	0.379	22.3
Back side	20	QPSK 1_0	40620/2593	1:1.58	0.324	0.02	22.93	23.50	1.140	0.369	22.3
Left side	20	QPSK 1_0	40620/2593	1:1.58	0.269	0.14	22.93	23.50	1.140	0.307	22.3
Bottom side	20	QPSK 1_0	40620/2593	1:1.58	0.233	0.05	22.93	23.50	1.140	0.266	22.3
Front side-41C	20	QPSK 1_99/1_0	40620/40818	1:1.58	0.312	0.07	22.78	23.50	1.180	0.368	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	40620/2593	1:1.58	0.247	-0.03	21.77	22.50	1.183	0.292	22.3
Back side	20	QPSK 50_0	40620/2593	1:1.58	0.237	0.02	21.77	22.50	1.183	0.280	22.3
Left side	20	QPSK 50_0	40620/2593	1:1.58	0.215	-0.05	21.77	22.50	1.183	0.254	22.3
Bottom side	20	QPSK 50_0	40620/2593	1:1.58	0.198	0.09	21.77	22.50	1.183	0.234	22.3

Table 17： SAR of LTE Band 41 for Hotspot is covering LTE Band 38.

8.2.10 SAR Result of LTE Band 66

LTE Band 66 SAR Test Record											
Ant 2 Test Record											
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 1-g (W/kg)	Liquid Temp.(℃)
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	132322/1745	1:1	0.886	0.01	22.87	23.00	1.030	0.913	22.3
Front side	20	QPSK 1_0	132072/1720	1:1	0.859	-0.01	22.77	23.00	1.054	0.906	22.3
Front side	20	QPSK 1_0	132572/1770	1:1	0.864	0.02	22.83	23.00	1.040	0.898	22.3
Back side	20	QPSK 1_0	132322/1745	1:1	1.060	0.07	22.87	23.00	1.030	1.092	22.3
Back side	20	QPSK 1_0	132072/1720	1:1	0.972	-0.03	22.77	23.00	1.054	1.025	22.3
Back side	20	QPSK 1_0	132572/1770	1:1	0.985	0.05	22.83	23.00	1.040	1.024	22.3
Left side	20	QPSK 1_0	132322/1745	1:1	0.273	0.14	22.87	23.00	1.030	0.281	22.3
Top side	20	QPSK 1_0	132322/1745	1:1	0.610	0.02	22.87	23.00	1.030	0.629	22.3
Back side-Repeat SAR	20	QPSK 1_0	132322/1745	1:1	1.030	-0.16	22.87	23.00	1.030	1.061	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	132322/1745	1:1	0.650	0.16	21.04	22.00	1.247	0.811	22.3
Front side	20	QPSK 50_0	132072/1720	1:1	0.632	0.03	21.09	22.00	1.233	0.779	22.3
Front side	20	QPSK 50_0	132572/1770	1:1	0.647	0.02	21.16	22.00	1.213	0.785	22.3
Back side	20	QPSK 50_0	132322/1745	1:1	0.672	-0.14	21.04	22.00	1.247	0.838	22.3
Back side	20	QPSK 50_0	132072/1720	1:1	0.662	0.09	21.09	22.00	1.233	0.816	22.3
Back side	20	QPSK 50_0	132572/1770	1:1	0.673	0.05	21.16	22.00	1.213	0.817	22.3
Left side	20	QPSK 50_0	132322/1745	1:1	0.230	0.02	21.04	22.00	1.247	0.287	22.3
Top side	20	QPSK 50_0	132322/1745	1:1	0.410	0.08	21.04	22.00	1.247	0.511	22.3
Hotspot Test data(Separate 10mm 100%RB)											
Front side	20	QPSK 100_0	132322/1745	1:1	0.631	-0.09	21.19	22.00	1.205	0.760	22.3
Back side	20	QPSK 100_0	132322/1745	1:1	0.659	0.02	21.19	22.00	1.205	0.794	22.3

Table 18： SAR of LTE Band 66 for Hotspot is covering LTE Band 4.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Back side	132322/1745	1.06	1.03	1.029126214	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

8.2.11 SAR Result of WIFI 2.4G

Wi-Fi 2.4G SAR Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Hotspot Test data (Separate 10mm)											
Front side	802.11b	1/2412	99.12%	1.009	0.032	0.06	13.89	14.50	1.151	0.037	22.2
Back side	802.11b	1/2412	99.12%	1.009	0.001	0.11	13.89	14.50	1.151	0.001	22.2
Right side	802.11b	1/2412	99.12%	1.009	0.001	0.04	13.89	14.50	1.151	0.001	22.2
Bottom side	802.11b	1/2412	99.12%	1.009	0.001	-0.03	13.89	14.50	1.151	0.001	22.2

Table 19：SAR of WIFI 2.4G for Hotspot.

Note: When the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR test for the other 802.11 modes are not required.

8.2.12 SAR Result of WIFI 5G

Wi-Fi 5G SAR Test Record											
Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Hotspot Test data of U-NII-1(Separate 10mm)											
Front side	802.11ac 80M	42/5210	92.80%	1.078	0.090	-0.04	13.25	14.50	1.334	0.129	22.1
Back side	802.11ac 80M	42/5210	92.80%	1.078	0.007	0.16	13.25	14.50	1.334	0.010	22.1
Right side	802.11ac 80M	42/5210	92.80%	1.078	0.065	0.02	13.25	14.50	1.334	0.093	22.1
Bottom side	802.11ac 80M	42/5210	92.80%	1.078	0.085	0.05	13.25	14.50	1.334	0.122	22.1
Hotspot Test data of U-NII-3(Separate 10mm)											
Front side	802.11ac 80M	155/5775	92.80%	1.078	0.095	0.06	9.47	10.50	1.268	0.130	22.1
Back side	802.11ac 80M	155/5775	92.80%	1.078	0.057	-0.03	9.47	10.50	1.268	0.078	22.1
Right side	802.11ac 80M	155/5775	92.80%	1.078	0.070	-0.11	9.47	10.50	1.268	0.096	22.1
Bottom side	802.11ac 80M	155/5775	92.80%	1.078	0.086	0.02	9.47	10.50	1.268	0.117	22.1

Table 20： SAR of WIFI 5G for Hotspot.

Note: As the 802.11a highest reported SAR is smaller than 1.2 W/kg , and the tune-up of the other 802.11 modes are not higher than 802.11a,therefore the adjusted SAR is ≤ 1.2 W/kg for other 802.11 modes, SAR test for the other 802.11 modes are not required. For Product specific 10gSAR the highest reported SAR is smaller than 3.0 W/kg, SAR test for the other 802.11 modes are also not required.

8.3 Multiple Transmitter Evaluation

8.3.1 Simultaneous SAR test evaluation

•Simultaneous Transmission Possibilities

No.	Simultaneous Tx Combination	Hotspot
1	WWAN + WLAN 2.4GHz	Yes
2	WWAN + WLAN 5GHz	Yes

Note:

1) For Wi-Fi 5G, U-NII-1 (5150–5250 MHz) and U-NII-3 (5725-5850 MHz) bands does support hotspot function.
2) Per FCC KDB Publication 648474 D04 Handset SAR, Phablet SAR tests were not required it wireless router 1g SAR(Scaled to the maximum output power ,including tolerance) ＜ 1.2 W/Kg. Therefore, no further analysis beyond tables included in this section was required to determine that possible Simultaneous transmission scenarios would not exceed the SAR limit.

8.3.2 Simultaneous Transmission SAR Summation Scenario

Hotspot:

Test position		SARmax (W/kg)			Summed SAR	
		WWAN	WiFi 2.4G	WiFi 5G		
		1	2	3	1+2	1+3
WCDMA B2	Front side	1.207	0.037	0.130	1.244	1.337
	Back side	1.395	0.001	0.078	1.396	1.473
	Left side	0.339	0.000	0.000	0.339	0.339
	Top side	0.855	0.000	0.000	0.855	0.855
	Bottom side	0.000	0.001	0.122	0.001	0.122
WCDMA B4	Front side	1.147	0.037	0.130	1.184	1.277
	Back side	1.448	0.001	0.078	1.449	1.526
	Left side	0.271	0.000	0.000	0.271	0.271
	Top side	0.823	0.000	0.000	0.823	0.823
	Bottom side	0.000	0.001	0.122	0.001	0.122
WCDMA B5	Front side	0.399	0.037	0.130	0.436	0.529
	Back side	0.432	0.001	0.078	0.433	0.510
	Left side	0.074	0.000	0.000	0.074	0.074
	Top side	0.220	0.000	0.000	0.220	0.220
	Bottom side	0.000	0.001	0.122	0.001	0.122
LTE B7	Front side	0.970	0.037	0.130	1.007	1.100
	Back side	0.991	0.001	0.078	0.992	1.069
	Left side	0.659	0.000	0.000	0.659	0.659
	Top side	0.000	0.000	0.000	0.000	0.000
	Bottom side	0.506	0.001	0.122	0.507	0.628
LTE B12	Front side	0.201	0.037	0.130	0.238	0.331
	Back side	0.223	0.001	0.078	0.224	0.301
	Left side	0.044	0.000	0.000	0.044	0.044
	Top side	0.089	0.000	0.000	0.089	0.089
	Bottom side	0.000	0.001	0.122	0.001	0.122
LTE B13	Front side	0.259	0.037	0.130	0.296	0.389
	Back side	0.290	0.001	0.078	0.291	0.368
	Left side	0.037	0.000	0.000	0.037	0.037
	Top side	0.138	0.000	0.000	0.138	0.138
	Bottom side	0.000	0.001	0.122	0.001	0.122
LTE B25	Front side	1.130	0.037	0.130	1.167	1.260
	Back side	1.067	0.001	0.078	1.068	1.145
	Left side	0.178	0.000	0.000	0.178	0.178
	Top side	0.741	0.000	0.000	0.741	0.741

	Bottom side	0.000	0.001	0.122	0.001	0.122
LTE B26	Front side	0.397	0.037	0.130	0.434	0.527
	Back side	0.450	0.001	0.078	0.451	0.528
	Left side	0.068	0.000	0.000	0.068	0.068
	Top side	0.228	0.000	0.000	0.228	0.228
	Bottom side	0.000	0.001	0.122	0.001	0.122
LTE B41	Front side	0.379	0.037	0.130	0.416	0.509
	Back side	0.369	0.001	0.078	0.370	0.447
	Left side	0.307	0.000	0.000	0.307	0.307
	Top side	0.000	0.000	0.000	0.000	0.000
	Bottom side	0.266	0.001	0.122	0.267	0.388
LTE B66	Front side	0.913	0.037	0.130	0.950	1.043
	Back side	1.092	0.001	0.078	1.093	1.170
	Left side	0.287	0.000	0.000	0.287	0.287
	Top side	0.629	0.000	0.000	0.629	0.629
	Bottom side	0.000	0.001	0.122	0.001	0.122

9 Equipment list

Test Platform	SPEAG DASY5 Professional
Description	SAR Test System (Frequency range 10MHz-10GHz)
Software Reference	DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Hardware Reference

	Equipment	Manufacturer	Model	Serial Number	Calibration Date	Due date of calibration
☒	Twin Phantom	SPEAG	SAM8	1824	NCR	NCR
☒	DAE	SPEAG	DAE4	1484	2024-10-15	2025-10-14
☒	E-Field Probe	SPEAG	EX3DV4	3982	2024-04-29	2025-04-28
☒	Validation Kits	SPEAG	D750V3	1188	2022-03-29	2025-03-28
☒	Validation Kits	SPEAG	D835V2	4d161	2023-08-25	2026-08-24
☒	Validation Kits	SPEAG	D1750V2	1105	2023-11-03	2026-11-02
☒	Validation Kits	SPEAG	D1950V3	1218	2023-05-04	2026-05-03
☒	Validation Kits	SPEAG	D2450V2	922	2023-08-28	2026-08-27
☒	Validation Kits	SPEAG	D2600V2	1158	2022-03-31	2025-03-30
☒	Validation Kits	SPEAG	D5GHzV2	1174	2023-08-23	2026-08-22
☒	Dielectric parameter probes	SPEAG	DAKS-3.5	1102	N/A	N/A
☒	Universal Radio Communication Tester	R&S	CMW500	111637	2024-09-16	2025-09-15
☒	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
☒	Signal Generator	R&S	SMB100A	182393	2024-02-05	2025-02-04
☒	Preamplifier	Qiji	YX28980933	202104001	NCR	NCR
☒	Power Sensor	Keysight	U2002H	121251	2024-09-10	2025-09-09
☒	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	LKM	DTM3000	NA	2024-09-16	2025-09-15
☒	Humidity and Temperature Indicator	MingGao	MingGao	NA	2024-09-16	2025-09-15

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

10 Calibration certificate

Please see the Appendix C

11 Photographs

Please see the Appendix D

Appendix A: Detailed System Check Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

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