FCC SAR TEST REPORT

Application No.:	SZCR250300107201
Applicant:	Fujian Landi Commercial Equipment Co.,Ltd.
Address of Applicant:	Building 17, Area A, Software Park, No.89 Software Road, Gulou District, Fuzhou, 350003, Fujian, China
EUT Description:	Portable Data Terminal
Model No.:	M10SE
Trade Mark:	LANDI
FCC ID:	2AG6N-M10SE
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2025-03-21
Date of Test:	2025-03-25 to 2025-04-07
Date of Issue:	2025-04-16
Test Result :	**PASS ***

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

Keny Xu
EMC Laboratory Manager

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Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2025-04-16		Original

Authorized for issue by:				
		Calvin Weng **Calvin Weng/Project Engineer**		
		Eric Fu **Eric Fu/Reviewer**		

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TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)		
	Body-worn	Hotspot	Product specific 10g SAR
GSM850	0.77	0.77	/
GSM1900	0.74	0.74	/
WCDMA Band II	1.11	1.11	/
WCDMA Band IV	**1.39**	**1.39**	**3.22**
WCDMA Band V	0.53	0.53	/
LTE Band 7	0.76	0.76	/
LTE Band 12/17	0.48	0.48	/
LTE Band 13	0.57	0.57	/
LTE Band 25/2	1.02	1.02	/
LTE Band 26/5	0.67	0.67	/
LTE Band 41	0.32	0.32	/
LTE Band 66/4	1.25	1.25	1.70
LTE Band 71	0.52	0.52	/
WI-FI (2.4GHz)	0.23	0.23	/
WI-FI (5GHz)	0.16	0.19	0.52
BT	<0.10	<0.10	/
SAR Limited(W/kg)	1.6		4.0
Maximum Simultaneous Transmission SAR (W/kg)			
Scenario	Body-worn	Hotspot	Product specific 10g SAR
Sum SAR	1.59	1.59	3.37
SPLSR	/	/	/
SPLSR Limited	0.04		0.1

Note: The Simultaneous transmission SAR is the same test position of the WWAN Antenna + WiFi/BT Antenna
According to TCB workshop (Overlapping LTE Bands): SAR in LTE band 2 is covered by LTE band 25. SAR in LTE band 4 is covered by LTE band 66. SAR in LTE band 5 are covered by LTE band 26. SAR in LTE band 17 is covered by LTE band 12.

Remark: The EUT contains three different HVINs, for the difference, please refer to below table:

HVIN	M10SES0	M10SES3	M10SES4
Scan Engine Model	-	Scanner 1	Scanner 2

Contents

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1 General Information

1.1 General Description of EUT

Product Name:	Portable Data Terminal		
Model No.:	M10SE		
Trade Mark:	LAVDI		
Product Phase:	production unit		
Device Type:	portable device		
Exposure Category:	uncontrolled environment / general population		
IMEI:	860891060018406; 860891060019032; 860891060021830		
Hardware Version:	V01		
Software Version:	V1.0.7		
Antenna Type:	PIFA antenna		
Device Operating Configurations:			
Modulation Mode:	**GSM**:GMSK,8PSK; **WCDMA**:QPSK,16QAM **LTE**:QPSK,16QAM **WIFI**:DSSS,OFDM; **BT**:GFSK, π/4DQPSK,8DPSK		
Device Class:	B		
GPRS Multi-slots Class:	12	EGPRS Multi-slots Class:	12
HSDPA UE Category:	14	HSUPA UE Category:	6
DC-HSDPA UE Category:	/		

Frequency Bands:	Band	Tx(MHz)
	GSM850	824-849
	GSM1900	1850-1910
	WCDMA B2	1850-1910
	WCDMA B4	1710-1755
	WCDMA B5	824-849
	LTE Band 2	1850-1910
	LTE Band 4	1710-1755
	LTE Band 5	824-849
	LTE Band 7	2500-2570
	LTE Band 12	699-716
	LTE Band 13	777-787

	LTE Band 17	704-716
	LTE Band 25	1850-1915
	LTE Band 26	814-849
	LTE Band 41	2570-2620
	LTE Band 66	1710-1780
	LTE Band 71	663-698
	WIFI(2.4GHz)	2412~2462
	WIFI(5GHz)	5180~5825
	BT/BLE	2402~2480
	NFC	13.56MHz
RF Cable:	☒Provided by applicant ☐Provided by the laboratory	
Battery Information:	Model:	755060
	Normal Voltage:	DC3.7V
	Rated capacity:	3000mAh
	Manufacturer:	Shenzhen JiaYuanTondDa Technology 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.
Remark:
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.

1.1.1 DUT Antenna Locations (Back View)

The DUT Antenna Locations can be referred to Appendix D

1.2 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.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 941225 D01	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 D01	General RF Exposure Guidance v06
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

1.3 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.)

1.4 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.
Tel: +86 755 2601 2053 Fax: +86 755 2671 0594
No tests were sub-contracted.

1.5 Test Facility

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

• **A2LA (Certificate No. 3816.01)**

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

• **VCCI (Member No. 1937)**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• **FCC –Designation Number: CN1336**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.
Designation Number: CN1336. Test Firm Registration Number: 787754.

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

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.
CAB identifier: CN0006.
IC#: 4620C.

2 Laboratory Environment

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

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3 SAR Measurements System Configuraion

3.1 The SAR Measurement System

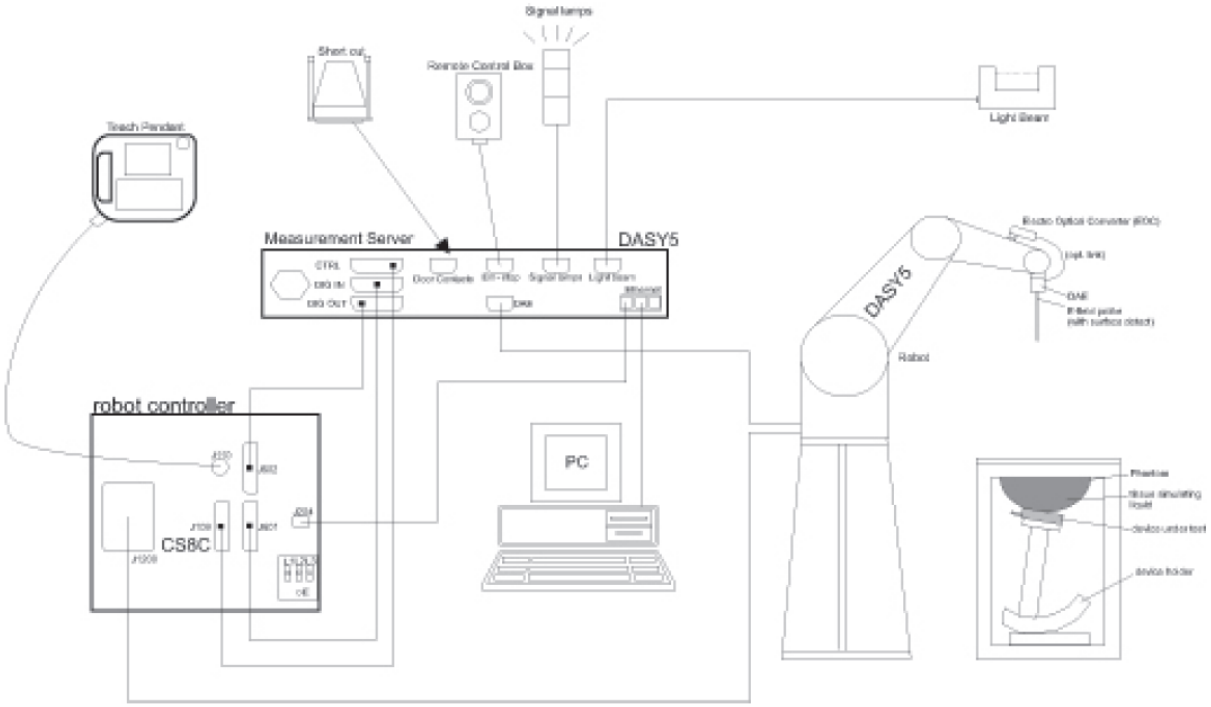
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

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

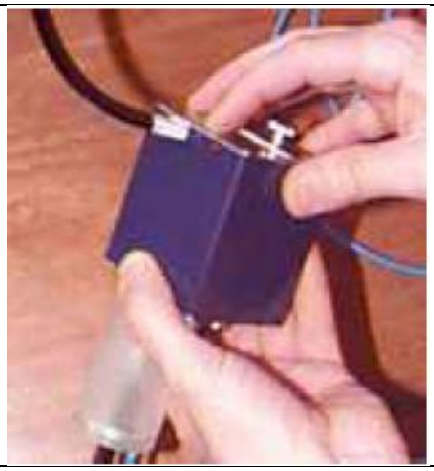
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows system.
- DASY 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 Proble 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	pprox.. 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	pprox.. 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 “DAE”. 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.

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

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 KDB 865664 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

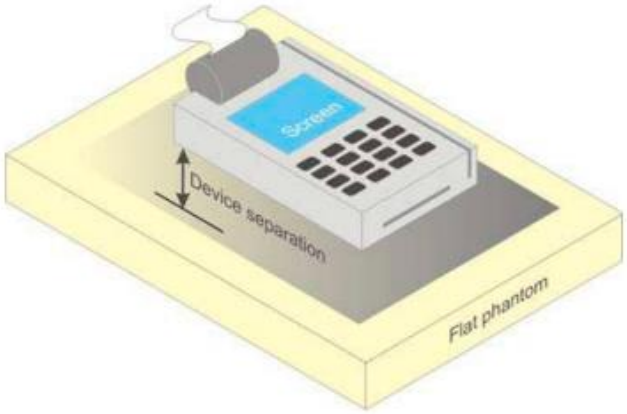
Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

5 Desciption of Test Position

5.1 The Body Test Position

Devices that are designed or intended for use on extremities, or mainly operated in extremity only exposure conditions, i.e., hands, wrists, feet and ankles, may require extremity SAR evaluation. When the device also operates in close proximity to the user's body, SAR compliance for the body is also required. The 1-g body and 10-g extremity SAR Test Exclusion Thresholds in 8.2 should be applied to determine SAR test requirements. When extremity SAR testing is required, a flat phantom must be used if the exposure condition is more conservative than the actual use conditions; otherwise, a KDB inquiry is required to determine the phantom and test requirements. Body SAR compliance is also tested with a flat phantom. For devices with irregular shapes or form factors that do not conform to a flat phantom, and/or unusual operating configurations and exposure conditions, a KDB inquiry is also required to determine the appropriate SAR measurement procedures. Unless it is specified differently in the published RF exposure KDB procedures, when simultaneous transmission applies to extremity exposure, the simultaneous transmission SAR test exclusion provisions should be applied. When simultaneous transmission SAR measurement is required, the enlarged zoom scan and volume scan post-processing procedures in KDB Publication 865664 D01 should be applied.

SAR can test the sides near the antenna, the surface of the device should be tested for SAR compliance with the device touching the phantom. The SAR Exclusion Threshold in KDB 447498 D01can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent device surface is used to determine if SAR testing is required for the adjacent surfaces, with the adjacent surface positioned against the phantom and the surface containing the antenna positioned perpendicular to the phantom.



F-1. **Test positions for hand-held supported devices**

6 SAR System Verificaion 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	700-1000	1700-2000	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 Water: De-ionized, 16 MΩ+ resistivity Tween: Polyoxyethylene (20) sorbitan monolaurate			Sucrose: 98+% Pure Sucrose HEC: Hydroxyethyl Cellulose		
HSL5GHz is composed of the following ingredients: (Manufactured by SPEAG) Water: 50-65% Mineral oil: 10-30% Emulsifiers: 8-25% Sodium salt: 0-1.5%					

Table 1： Recipe of Tissue Simulate Liquid

6.1.2 Measurement for Tissue Simulate Liquid

The Conductivity (σ) and Permittivity (εr) are listed in Table 2. For the SAR measurement given in this report.

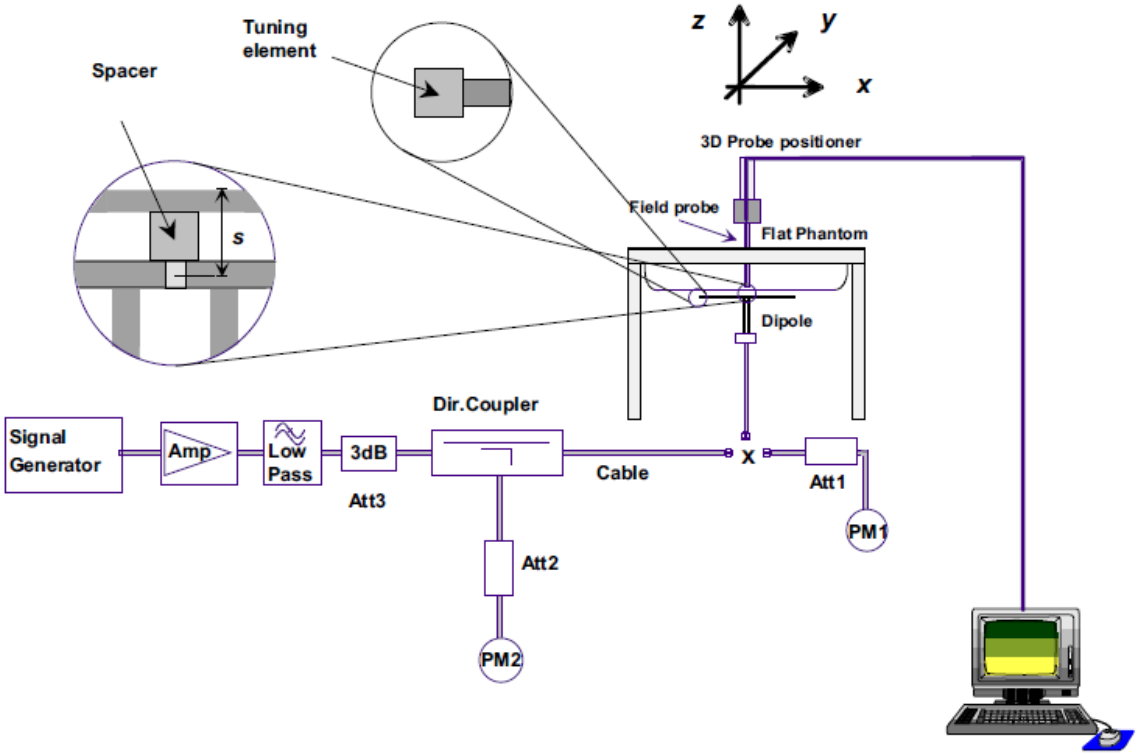
The temperature variation of the Tissue Simulate Liquids was 22±2°C.

Measurement for Tissue Simulate Liquid									
Tissue Type	Measured Frequency（MHz）	Measured Tissue		Target Tissue (±5%)		Deviation (Within ±5%)		Liquid Temp. (℃)	Test Date
		ε_r	σ(S/m)	ε_r	σ(S/m)	ε_r	σ(S/m)		
750 Head	750	42.729	0.886	41.90	0.89	1.98%	-0.45%	22.5	2025/3/25
835 Head	835	42.933	0.925	41.50	0.90	3.45%	2.78%	22.1	2025/4/2
1750 Head	1750	39.006	1.355	40.10	1.37	-2.73%	-1.09%	22.3	2025/3/26
1750 Head	1750	40.408	1.377	40.10	1.37	0.77%	0.51%	22.2	2025/4/5
1950 Head	1950	40.046	1.419	40.00	1.40	0.11%	1.36%	22.3	2025/4/2
1950 Head	1950	40.446	1.414	40.00	1.40	1.11%	1.00%	22.2	2025/4/3
2450 Head	2450	38.120	1.866	39.20	1.80	-2.76%	3.67%	21.9	2025/3/27
2600 Head	2600	38.948	2.031	39.00	1.96	-0.13%	3.62%	22.5	2025/4/1
5250 Head	5250	36.051	4.647	35.90	4.71	0.42%	-1.34%	22.1	2025/4/7
5600 Head	5600	35.183	5.026	35.50	5.07	-0.89%	-0.87%	22.1	2025/4/7
5750 Head	5750	35.002	5.217	35.40	5.22	-1.12%	-0.06%	22.1	2025/4/7

Table 2： 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-12.The microwave circuit arrangement used for SAR system Check

6.2.1 Justification for Extended SAR Dipole Calibrations

1) 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 20% of calibrated measurement;

d) Impedance is within 5Ω from the previous measurement.

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

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6.2.2 Summary System Check Result(s)

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	2.00	1.34	8.00	5.36	8.37	5.53	-4.42%	-3.07%	22.5	2025/3/25
D835V2	Head	2.51	1.66	10.04	6.64	9.53	6.29	5.35%	5.56%	22.1	2025/4/2
D1750V2	Head	9.54	5.16	38.16	20.64	36.60	19.30	4.26%	6.94%	22.3	2025/3/26
D1750V2	Head	9.41	5.06	37.64	20.24	36.60	19.30	2.84%	4.87%	22.2	2025/4/5
D1950V3	Head	10.90	5.66	43.60	22.64	40.50	20.80	7.65%	8.85%	22.3	2025/4/2
D1950V3	Head	10.50	5.52	42.00	22.08	40.50	20.80	3.70%	6.15%	22.2	2025/4/3
D2450V2	Head	13.60	6.38	54.40	25.52	52.20	24.30	4.21%	5.02%	21.9	2025/3/27
D2600V2	Head	15.20	6.94	60.80	27.76	57.70	25.80	5.37%	7.60%	22.5	2025/4/1
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)	7.59	2.17	75.90	21.70	77.30	22.10	-1.81%	-1.81%	22.1	2025/4/7
	Head(5.6GHz)	7.97	2.26	79.70	22.60	81.30	23.10	-1.97%	-2.16%	22.1	2025/4/7
	Head(5.75GHz)	7.54	2.17	75.40	21.70	77.10	21.30	-2.20%	1.88%	22.1	2025/4/7

Table 3： SAR System Check Result

6.2.3 Detailed System Check Results

Please see the Appendix A

7 Test Configuration

7.1 Operation Configurations

7.1.1 GSM Test Configuration

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power, the higher number time-slot configuration should be tested.

When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

7.1.2 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）. Head SAR

SAR for next to the ear head exposure 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 AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

3）. 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.

4）. HSDPA / HSUPA

RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power for production units in HSDPA / HSUPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest measured SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power of HSDPA / HSUPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.5 W/kg, SAR measurement is not required for HSDPA / HSUPA.

a) HSDPA

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

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

Note1: △ACK, △NACK and △CQI= 8 Ahs = βhs/βc=30/15 βhs=30/15*βc

Note2:For the HS-DPCCH power mask requirement test in clause 5.2C,5.7A,and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1.A,and HSDPA EVM with phase discontinuity in clause 5.13.1AA, △ACK and △NACK= 8 (Ahs=30/15) with βhs=30/15*βc,and △CQI= 7 (Ahs=24/15) with βhs=24/15*βc.

Note3: CM=1 forβc/βd =12/15, βhs/βc=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

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

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

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

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

Table 5： HSDPA UE category

b) HSUPA

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

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

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

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

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

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

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

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

Table 6： Subtests for UMTS Release 6 HSUPA

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

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

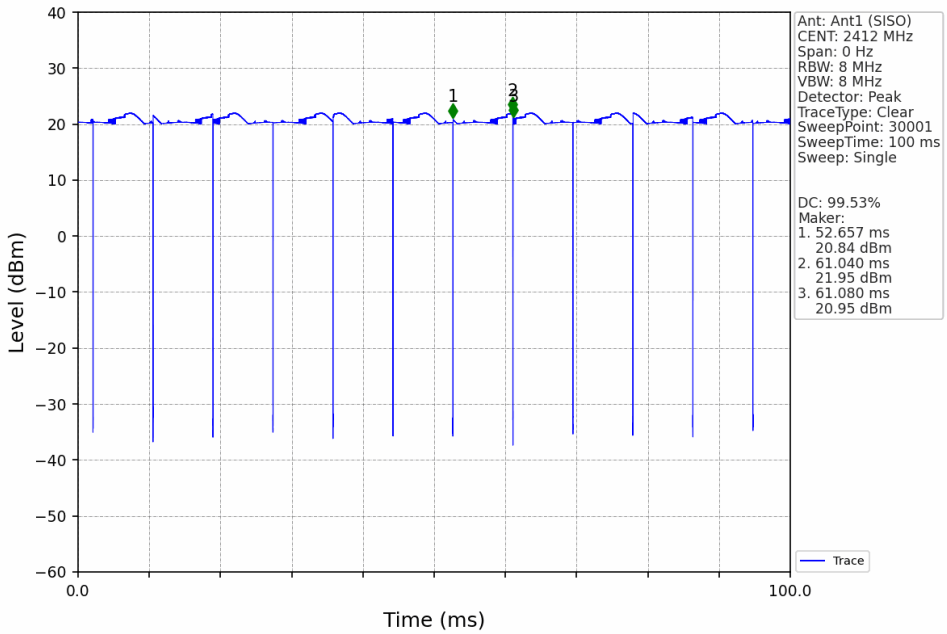
Table 7： HSUPA UE category

7.1.3 WIFI Test Configuration

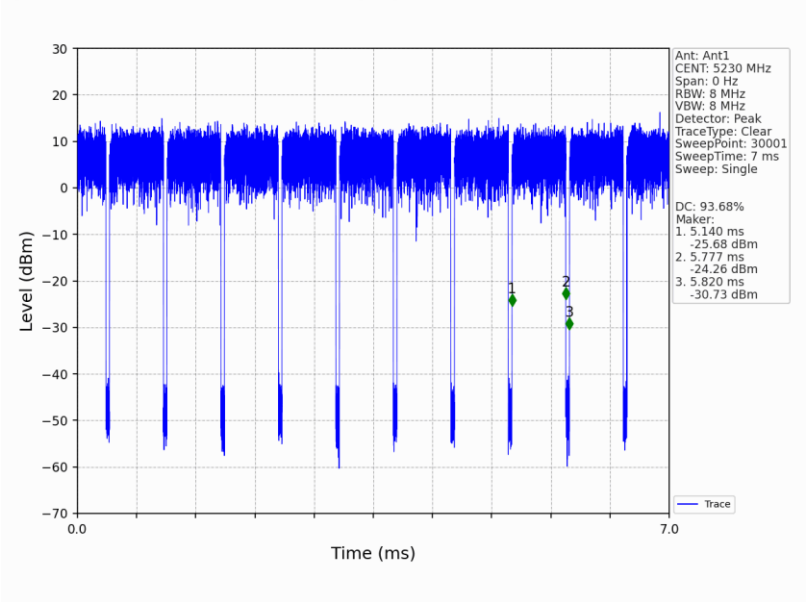
A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

7.1.3.1 Duty cycle

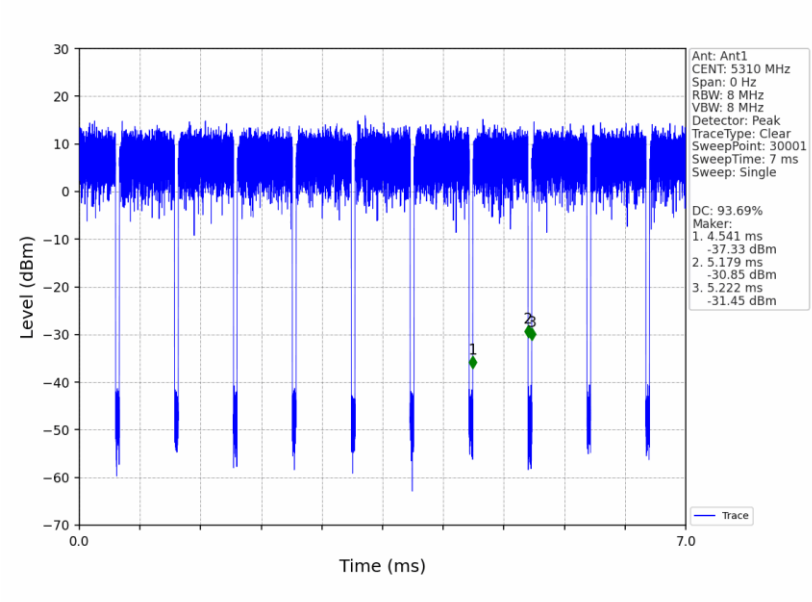
1) Wi-Fi 2.4GHz 802.11b:Duty cycle=99.53%



2) Wi-Fi 5GHz 802.11n40:Duty cycle=93.68%



3) Wi-Fi 5GHz 802.11n40:Duty cycle =99.19 %



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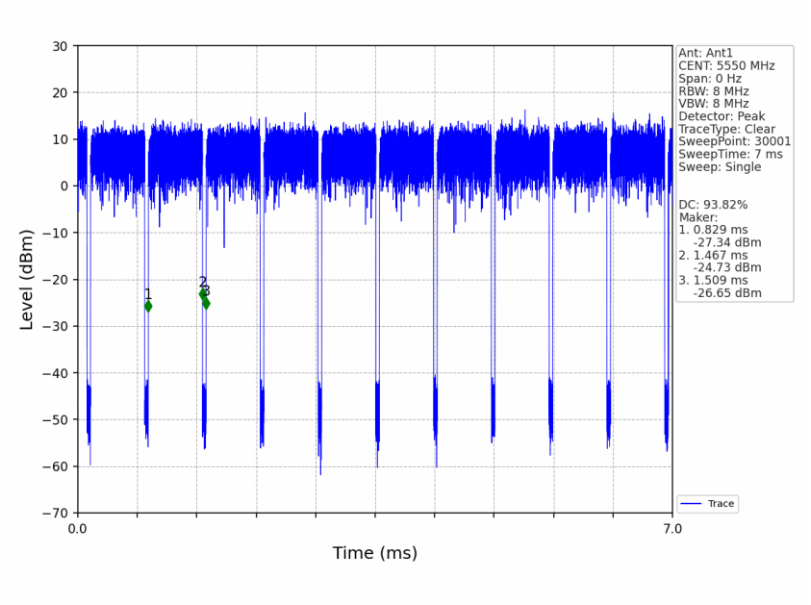
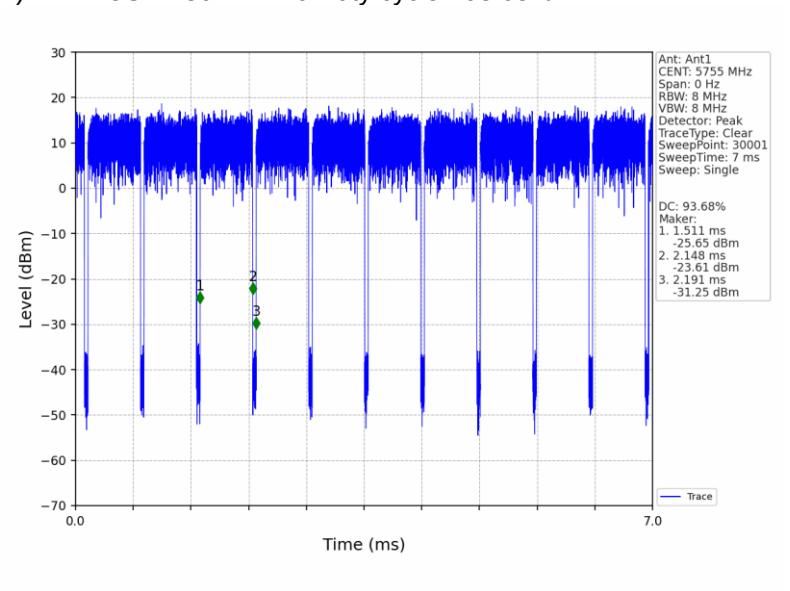
4) Wi-Fi 5GHz 802.11n40:Duty cycle =93.82%



4) Wi-Fi 5GHz 802.11n40:Duty cycle =93.68%

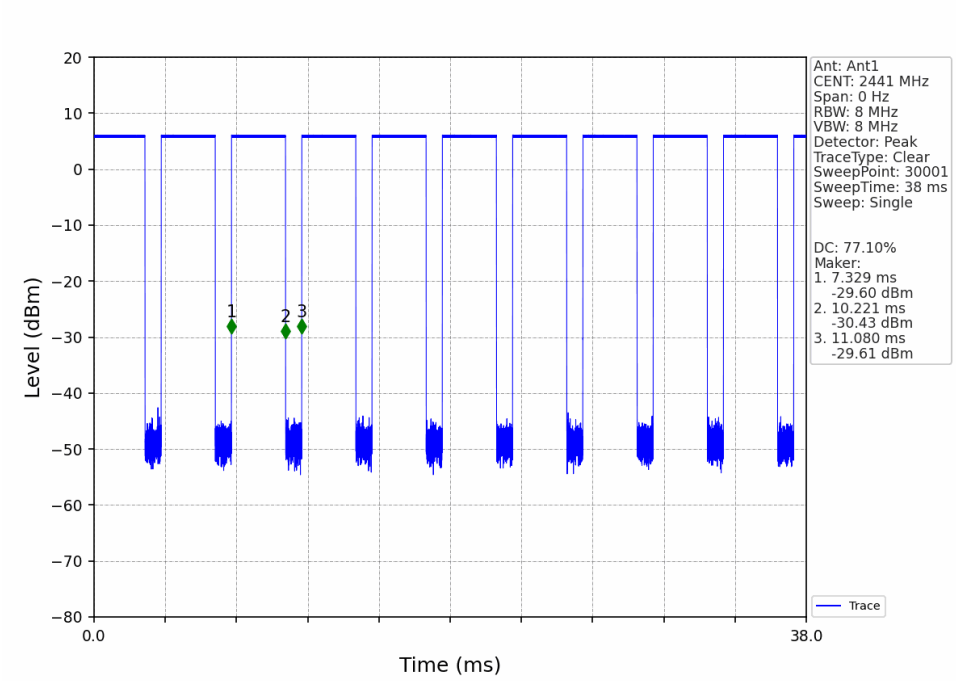


7.2 BluetoothTest Configuration

For the Bluetooth SAR tests, a communication link is set up with the test mode software for BT mode test. Bluetooth USES frequency hopping technology to divide the transmitted data into packets and transmit the packets respectively through 79 designated Bluetooth channels, 1MHz Bandwidth, frequency hops at 1600 hops/second per the Bluetooth standard. The Radio Frequency Channel Number (RFCN) is allocated to 0, 39 and 78 respectively in the case of 2402~2480 MHz during the test at each test frequency channel, the EUT is operated at the RF continuous emission mode.

7.2.1 Duty cycle

BT duty cycle: 77.10%



7.2.1.1 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.

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7.2.1.2 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”

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7.2.1.3 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.

7.2.1.4 5 GHz WiFi SAR Procedures

- **U-NII-1 and U-NII-2A Bands**
  For devices that operate in only one of the U-NII-1 and U-NII-2A bands, the normally required SAR procedures for OFDM configurations are applied. For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following：

1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, both bands are tested independently for SAR.
2) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, both bands are tested independently for SAR.
3) The two U-NII bands may be aggregated to support a 160 MHz channel on channel number 50. Without additional testing, the maximum output power for this is limited to the lower of the maximum output power certified for the two bands. When SAR measurement is required for at least one of the bands and the highest reported SAR adjusted by the ratio of specified maximum output power of aggregated to standalone band is > 1.2 W/kg, SAR is required for the 160 MHz channel. This procedure does not apply to an aggregated band with maximum output higher than the standalone band(s); the aggregated band must be tested independently for SAR. SAR is not required when the 160 MHz channel is operating at a reduced maximum power and also qualifies for SAR test exclusion.

- **U-NII-2C and U-NII-3 Bands**
  The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. when Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

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

OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements

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

1) The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.
4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n. After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.
    a) The channel closest to mid-band frequency is selected for SAR measurement.
    b) For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

- **SAR Test Requirements for OFDM configurations**

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

7.2.2 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 Radio Communication Analyzer 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:

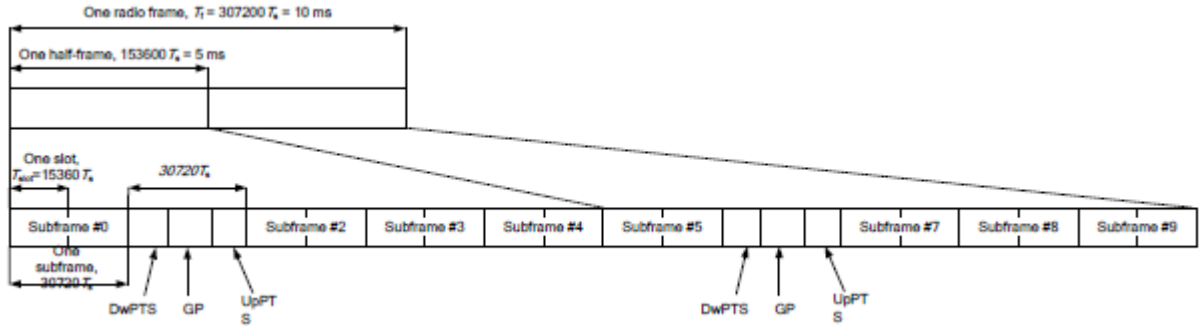

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

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

7	21952.Ts			25600.Ts		
8	24144.Ts			-	-	-
9	13168.Ts			-	-	-

Table 4.2-2: Uplink-downlink configurations.

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

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

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

A) Spectrum Plots for RB Configurations

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

B) MPR

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

Modulation	Channel bandwidth/Transmission bandwidth						MPR (dB)
	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	0
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	1
16QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	1

16QAM	> 5	> 4	> 8	> 12	> 16	> 18	2
64QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	2
64QAM	> 5	> 4	> 8	> 12	> 16	> 18	3
256QAM	≥1						5

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

8.1.1 Conducted Power of Bluebooth

BT			Average Conducted Power (dBm)	Tune up (dBm)
Modulation	Channel	Frequency(MHz)		
GFSK	0	2402	8.32	9
	39	2441	8.42	9
	78	2480	7.88	9
π/4DQPSK	0	2402	7.27	8
	39	2441	7.3	8
	78	2480	7.61	8
8DPSK	0	2402	7.25	8
	39	2441	7.28	8
	78	2480	7.61	8

BLE_1Mbps			Average Conducted Power (dBm)	Tune up (dBm)
Modulation	Channel	Frequency(MHz)		
GFSK	0	2402	-6.25	-5
	19	2440	-5.88	-5
	39	2480	-6.91	-5
BLE_2Mbps			Average Conducted Power (dBm)	Tune up (dBm)
Modulation	Channel	Frequency(MHz)		
GFSK	0	2402	-7.8	-6
	19	2440	-6.81	-6
	39	2480	-7.51	-6

8.1.2 Conducted Power of 2.4G Wifi

Mode	Channel	Frequency (MHz)	Data Rate(Mbps)	Average Power (dBm) Main Ant	Tune up
802.11b	1	2412	1	17.36	18
	6	2437		**17.24**	18
	11	2462		16.99	18
802.11g	1	2412	6	14.24	15
	6	2437		14.3	15
	11	2462		14.17	15
802.11n HT20 SISO	1	2412	6.5	14.27	15
	6	2437		14.36	15
	11	2462		13.91	15
802.11n HT40 SISO	3	2422	13	13.63	14
	6	2437		13.62	14
	9	2452		13.64	14

8.1.3 Conducted Power of 5G Wifi

5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11a	U-NII-1	36	5180	6	14.43	15
		40	5200		14.45	15
		48	5240		14.92	15
	U-NII-2A	52	5260		14.19	15
		60	5300		14.64	15
		64	5320		14.64	15
	U-NII-2C	100	5500		14.44	15
		116	5580		14.93	15
		140	5700		14.66	15
	U-NII-3	149	5745		14.36	15
		157	5785		14.06	15
		165	5825		13.69	15
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11n-HT20	U-NII-1	36	5180	MCS0	14.2	15
		40	5200		14.27	15
		48	5240		14.82	15
	U-NII-2A	52	5260		13.9	15
		60	5300		14.37	15
		64	5320		14.45	15
	U-NII-2C	100	5500		14.31	15
		116	5580		14.7	15
		140	5700		14.44	15
	U-NII-3	149	5745		14.22	15
		157	5785		13.89	15
		165	5825		13.55	15
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11n-HT40	U-NII-1	38	5190	MCS0	13.3	15
		46	5230		13.53	15
	U-NII-2A	54	5270		13.92	15
		62	5310		14.26	15
	U-NII-2C	102	5510		13.66	15
		110	5550		13.98	15
		134	5670		13.81	15
	U-NII-3	151	5755		13.91	15
		159	5795		13.65	15

5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11ac 20M	U-NII-1	36	5180	MCS0	13.35	15
		40	5200		13.2	15
		48	5240		13.66	15
	U-NII-2A	52	5260		13.72	15
		60	5300		14.22	15
		64	5320		14.44	15
	U-NII-2C	100	5500		13.33	15
		116	5580		13.9	15
		140	5700		13.44	15
	U-NII-3	149	5745		14.31	15
		157	5785		13.84	15
		165	5825		13.49	15
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11ac 40M	U-NII-1	38	5190	MCS0	12.73	14
		46	5230		13.15	14
	U-NII-2A	54	5270		12.42	14
		62	5310		12.72	14
	U-NII-2C	102	5510		12.76	14
		110	5550		12.97	14
		134	5670		12.74	14
	U-NII-3	151	5755		12.99	14
		159	5795		12.65	14
5GHz	mode	Channel	Frequency(MHz)	Data Rate(Mbps)	Average Power (dBm)	Tune up
802.11ac 80M	U-NII-1	42	5210	MCS0	12.27	14
	U-NII-2A	58	5290		12.95	14
	U-NII-2C	106	5530		13.21	14
		122	5610		13.45	14
	U-NII-3	155	5775		12.87	14

8.1.4 Conducted Power Of GSM

GSM 850										
Burst Output Power(dBm)					Tune up	Division Factors	Frame-Average Output Power(dBm)			Tune up
Channel		128	190	251			128	190	251	
GPRS/EGPRS (GMSK)	1 TX Slot	32.61	32.54	32.24	33.00	-9.03	23.58	23.51	23.21	23.97
	2 TX Slots	31.57	31.51	31.2	32.00	-6.02	25.55	25.49	25.18	25.98
	3 TX Slots	29.56	29.43	29.09	30.00	-4.26	25.3	25.17	24.83	25.74
	4 TX Slots	28.26	28.29	27.85	**29.00**	-3.01	25.25	25.28	24.84	**25.99**
EGPRS(8PSK)	1 TX Slot	27.52	27.5	28.38	29.00	-9.03	18.49	18.47	19.35	19.97
	2 TX Slots	25.42	25.22	25.03	26.00	-6.02	19.4	19.2	19.01	19.98
	3 TX Slots	22.97	22.9	23	24.00	-4.26	18.71	18.64	18.74	19.74
	4 TX Slots	22.01	21.74	21.68	23.00	-3.01	19	18.73	18.67	19.99
GSM 1900										
Burst Output Power(dBm)					Tune up	Division Factors	Frame-Average Output Power(dBm)			Tune up
Channel		512	661	810			512	661	810	
GPRS/EGPRS (GMSK)	1 TX Slot	29.84	28.83	28.49	30.00	-9.03	20.81	19.8	19.46	20.97
	2 TX Slots	28.78	27.78	27.42	29.00	-6.02	22.76	21.76	21.4	22.98
	3 TX Slots	26.8	25.77	25.36	27.00	-4.26	22.54	21.51	21.1	22.74
	4 TX Slots	25.59	24.51	24.1	26.00	-3.01	22.58	21.5	21.09	**22.99**
EGPRS(8PSK)	1 TX Slot	26.95	25.85	25.32	27.00	-9.03	17.92	16.82	16.29	17.97
	2 TX Slots	24.58	23.96	24.86	25.00	-6.02	18.56	17.94	18.84	18.98
	3 TX Slots	22.73	21.89	21.75	23.00	-4.26	18.47	17.63	17.49	18.74
	4 TX Slots	21.42	20.63	20.57	22.00	-3.01	18.41	17.62	17.56	18.99

8.1.5 Conducted Power Of WCDMA

WCDMA Band II					
Average Conducted Power(dBm)					
Channel		9262	9400	9538	Tune up
WCDMA	12.2kbps RMC	22.95	23	22.89	23.50
HSDPA	Subtest 1	20.87	20.66	20.74	22.00
	Subtest 2	20.91	20.65	20.74	22.00
	Subtest 3	20.92	20.70	20.73	22.00
	Subtest 4	20.91	20.66	20.73	22.00
HSUPA	Subtest 1	18.90	18.62	18.64	20.00
	Subtest 2	18.86	18.62	19.10	20.00
	Subtest 3	19.08	18.80	18.83	20.00
	Subtest 4	18.90	19.10	19.11	20.00
	Subtest 5	19.13	18.83	18.83	20.00

WCDMA Band IV					
Average Conducted Power(dBm)					
Channel		1312	1413	1513	Tune up
WCDMA	12.2kbps RMC	23.04	23.30	23.21	24.00
HSDPA	Subtest 1	20.76	21.00	20.74	22.00
	Subtest 2	20.78	20.99	20.72	22.00
	Subtest 3	20.76	20.97	20.73	22.00
	Subtest 4	20.74	21.00	20.72	22.00
HSUPA	Subtest 1	18.83	19.10	18.84	20.00
	Subtest 2	19.12	19.12	18.85	20.00
	Subtest 3	19.09	19.09	18.85	20.00
	Subtest 4	18.66	19.11	19.09	20.00
	Subtest 5	19.07	19.06	18.82	20.00

WCDMA Band V					
Average Conducted Power(dBm)					
Channel		4132	4183	4233	Tune up
WCDMA	12.2kbps RMC	23.12	23.17	22.99	24.00
HSDPA	Subtest 1	20.94	21.01	20.90	22.00
	Subtest 2	20.93	21.04	20.89	22.00
	Subtest 3	20.93	21.04	20.91	22.00
	Subtest 4	20.92	21.04	20.90	22.00
HSUPA	Subtest 1	18.86	19.14	19.04	20.00
	Subtest 2	19.09	18.96	18.82	20.00
	Subtest 3	19.32	19.13	19.26	20.00
	Subtest 4	18.88	19.39	19.29	20.00
	Subtest 5	19.00	19.33	18.93	20.00

8.1.6 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	22.97	22.07	22.71	23.50
		1	2	23.02	22.17	22.86	23.50
		1	5	22.90	22.07	22.75	23.50
		3	0	23.06	22.18	22.80	23.50
		3	2	23.01	22.21	22.71	23.50
		3	3	23.04	22.18	22.48	23.50
		6	0	22.06	21.13	21.65	22.50
	16QAM	1	0	22.11	21.07	21.26	22.50
		1	2	22.19	21.17	21.32	22.50
		1	5	22.08	21.09	21.26	22.50
		3	0	21.55	21.36	21.36	22.50
		3	2	21.93	21.39	21.36	22.50
		3	3	21.70	21.38	21.34	22.50
		6	0	20.79	20.20	20.26	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 18615	Channel 18900	Channel 19185	Tune up
3MHz	QPSK	1	0	23.02	22.19	22.33	23.50
		1	7	23.08	22.33	22.48	23.50
		1	14	22.83	22.17	22.30	23.50
		8	0	22.00	21.17	21.38	22.50
		8	4	22.05	21.19	21.39	22.50
		8	7	21.91	21.18	21.33	22.50
		15	0	21.88	21.17	21.34	22.50
	16QAM	1	0	22.23	21.22	21.55	22.50
		1	7	22.22	21.39	21.70	22.50
		1	14	21.92	21.17	21.47	22.50
		8	0	20.69	20.27	20.38	21.50
		8	4	20.73	20.30	20.41	21.50
		8	7	20.69	20.27	20.34	21.50
		15	0	20.59	20.27	20.36	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 18625	Channel 18900	Channel 19175	Tune up
5MHz	QPSK	1	0	22.40	22.09	22.30	23.50
		1	13	22.45	22.21	22.38	23.50
		1	24	22.22	22.17	22.22	23.50
		12	0	21.49	21.14	21.37	22.50
		12	6	21.49	21.23	21.42	22.50
		12	13	21.37	21.22	21.34	22.50
		25	0	21.41	21.19	21.36	22.50
	16QAM	1	0	21.33	21.23	21.62	22.50
		1	13	21.31	21.31	21.67	22.50
		1	24	21.12	21.20	21.49	22.50

		12	0	20.52	20.14	20.45	21.50
		12	6	20.53	20.24	20.51	21.50
		12	13	20.39	20.28	20.42	21.50
		25	0	20.49	20.28	20.40	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18650	18900	19150	
10MHz	QPSK	1	0	22.54	22.11	22.48	23.50
		1	25	22.47	22.28	22.57	23.50
		1	49	22.06	22.20	22.28	23.50
		25	0	21.48	21.18	21.51	22.50
		25	13	21.33	21.22	21.48	22.50
		25	25	21.21	21.34	21.41	22.50
		50	0	21.34	21.27	21.50	22.50
	16QAM	1	0	21.50	21.30	22.03	22.50
		1	25	21.46	21.51	22.14	22.50
		1	49	21.04	21.42	21.85	22.50
		25	0	20.58	20.25	20.62	21.50
		25	13	20.46	20.31	20.59	21.50
		25	25	20.31	20.38	20.56	21.50
		50	0	20.41	20.32	20.52	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18675	18900	19125	
15MHz	QPSK	1	0	22.39	22.06	22.52	23.50
		1	38	22.09	22.15	22.42	23.50
		1	74	21.87	22.23	22.20	23.50
		36	0	21.40	21.20	21.65	22.50
		36	18	21.24	21.22	21.56	22.50
		36	39	21.07	21.32	21.47	22.50
		75	0	21.28	21.31	21.58	22.50
	16QAM	1	0	21.95	21.47	21.68	22.50
		1	38	21.61	21.60	21.65	22.50
		1	74	21.39	21.57	21.41	22.50
		36	0	20.43	20.16	20.66	21.50
		36	18	20.27	20.20	20.57	21.50
		36	39	20.10	20.32	20.51	21.50
		75	0	20.30	20.28	20.62	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18700	18900	19100	
20MHz	QPSK	1	0	22.21	21.85	22.26	23.50
		1	50	22.25	22.52	22.45	23.50
		1	99	21.85	22.16	22.08	23.50
		50	0	21.32	21.58	21.40	22.50
		50	25	21.05	21.27	21.56	22.50
		50	50	20.96	21.32	21.53	22.50
		100	0	21.17	21.50	21.42	22.50
	16QAM	1	0	21.43	21.20	21.81	22.50
		1	50	21.33	21.60	22.21	22.50

		1	99	21.02	21.45	21.62	22.50
		50	0	20.33	20.14	20.73	21.50
		50	25	20.11	20.30	20.65	21.50
		50	50	20.00	20.35	20.58	21.50
		100	0	20.17	20.36	20.74	21.50

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	22.19	22.30	22.20	23.50
		1	2	22.28	22.43	22.27	23.50
		1	5	22.19	22.29	22.21	23.50
		3	0	22.22	22.43	22.25	23.50
		3	2	22.26	22.43	22.24	23.50
		3	3	22.22	22.45	22.21	23.50
		6	0	21.22	21.38	21.27	22.50
	16QAM	1	0	21.13	21.51	21.11	22.50
		1	2	21.24	21.60	21.19	22.50
		1	5	21.20	21.53	21.10	22.50
		3	0	21.24	21.43	21.34	22.50
		3	2	21.23	21.44	21.36	22.50
		3	3	21.23	21.47	21.34	22.50
		6	0	20.19	20.47	20.27	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19965	20175	20385	
3MHz	QPSK	1	0	22.29	22.34	22.30	23.50
		1	7	22.39	22.50	22.39	23.50
		1	14	22.26	22.33	22.28	23.50
		8	0	21.25	21.38	21.27	22.50
		8	4	21.29	21.42	21.33	22.50
		8	7	21.26	21.37	21.27	22.50
		15	0	21.22	21.41	21.24	22.50
	16QAM	1	0	21.27	21.54	21.70	22.50
		1	7	21.39	21.69	21.77	22.50
		1	14	21.21	21.57	21.61	22.50
		8	0	20.31	20.43	20.40	21.50
		8	4	20.35	20.47	20.44	21.50
		8	7	20.33	20.43	20.41	21.50
		15	0	20.28	20.43	20.29	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19975	20175	20375	
5MHz	QPSK	1	0	22.18	22.21	22.22	23.50
		1	13	22.29	22.42	22.32	23.50
		1	24	22.17	22.34	22.18	23.50
		12	0	21.17	21.35	21.26	22.50
		12	6	21.31	21.43	21.30	22.50
		12	13	21.28	21.43	21.25	22.50

		25	0	21.23	21.40	21.23	22.50
	16QAM	1	0	21.23	21.59	21.04	22.50
		1	13	21.34	21.72	21.16	22.50
		1	24	21.22	21.60	20.98	22.50
		12	0	20.17	20.50	20.23	21.50
		12	6	20.27	20.51	20.29	21.50
		12	13	20.28	20.42	20.22	21.50
		25	0	20.26	20.45	20.28	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20000	20175	20350	
10MHz	QPSK	1	0	22.23	22.31	22.38	23.50
		1	25	22.37	22.50	22.48	23.50
		1	49	22.20	22.38	22.33	23.50
		25	0	21.18	21.43	21.33	22.50
		25	13	21.27	21.43	21.30	22.50
		25	25	21.31	21.44	21.30	22.50
		50	0	21.24	21.46	21.32	22.50
	16QAM	1	0	21.37	21.91	21.32	22.50
		1	25	21.57	22.17	21.42	22.50
		1	49	21.40	22.01	21.19	22.50
		25	0	20.23	20.56	20.45	21.50
		25	13	20.31	20.54	20.37	21.50
		25	25	20.36	20.59	20.38	21.50
		50	0	20.29	20.56	20.35	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20025	20175	20325	
15MHz	QPSK	1	0	22.19	22.19	22.34	23.50
		1	38	22.26	22.42	22.37	23.50
		1	74	22.16	22.24	22.18	23.50
		36	0	21.30	21.41	21.47	22.50
		36	18	21.35	21.45	21.45	22.50
		36	39	21.30	21.48	21.43	22.50
		75	0	21.32	21.47	21.46	22.50
	16QAM	1	0	21.47	21.39	21.96	22.50
		1	38	21.59	21.60	21.83	22.50
		1	74	21.56	21.47	21.60	22.50
		36	0	20.23	20.50	20.49	21.50
		36	18	20.31	20.49	20.44	21.50
		36	39	20.29	20.48	20.42	21.50
		75	0	20.29	20.49	20.42	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20050	20175	20300	
20MHz	QPSK	1	0	22.03	22.02	22.18	23.50
		1	50	22.37	22.56	22.51	23.50
		1	99	22.08	22.21	22.00	23.50
		50	0	21.19	21.51	21.49	22.50
		50	25	21.30	21.45	21.39	22.50

		50	50	21.21	21.45	21.32	22.50
		100	0	21.24	21.45	21.42	22.50
	16QAM	1	0	21.49	21.28	21.51	22.50
		1	50	21.94	21.80	21.79	22.50
		1	99	21.67	21.42	21.20	22.50
		50	0	20.20	20.51	20.54	21.50
		50	25	20.34	20.49	20.44	21.50
		50	50	20.29	20.47	20.37	21.50
		100	0	20.24	20.53	20.43	21.50

LTE Band 5				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20407	20525	20643	
1.4MHz	QPSK	1	0	22.29	22.28	22.12	23.50
		1	2	22.41	22.35	22.32	23.50
		1	5	22.31	22.28	22.15	23.50
		3	0	22.36	22.38	22.26	23.50
		3	2	22.39	22.38	22.33	23.50
		3	3	22.40	22.36	22.27	23.50
		6	0	21.39	21.35	21.22	22.50
	16QAM	1	0	21.34	21.41	21.17	22.50
		1	2	21.42	21.55	21.27	22.50
		1	5	21.35	21.44	21.25	22.50
		3	0	21.47	21.34	21.33	22.50
		3	2	21.44	21.39	21.32	22.50
		3	3	21.41	21.33	21.28	22.50
		6	0	20.31	20.39	20.20	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20415	20525	20635	
3MHz	QPSK	1	0	22.29	22.30	22.21	23.50
		1	7	22.45	22.48	22.35	23.50
		1	14	22.28	22.31	22.18	23.50
		8	0	21.34	21.31	21.22	22.50
		8	4	21.36	21.30	21.28	22.50
		8	7	21.32	21.25	21.18	22.50
		15	0	21.32	21.28	21.22	22.50
	16QAM	1	0	21.92	21.33	21.40	22.50
		1	7	22.03	21.50	21.51	22.50
		1	14	21.82	21.28	21.39	22.50
		8	0	20.56	20.42	20.25	21.50
		8	4	20.55	20.45	20.30	21.50
		8	7	20.55	20.37	20.21	21.50
		15	0	20.45	20.38	20.24	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20425	20525	20625	
5MHz	QPSK	1	0	22.22	22.18	22.13	23.50
		1	13	22.37	22.35	22.25	23.50

		1	24	22.22	22.20	22.14	23.50
		12	0	21.38	21.20	21.14	22.50
		12	6	21.37	21.32	21.24	22.50
		12	13	21.34	21.26	21.20	22.50
		25	0	21.36	21.25	21.16	22.50
	16QAM	1	0	21.37	21.43	21.03	22.50
		1	13	21.45	21.59	21.11	22.50
		1	24	21.35	21.47	21.01	22.50
		12	0	20.34	20.32	20.14	21.50
		12	6	20.40	20.43	20.30	21.50
		12	13	20.38	20.30	20.23	21.50
		25	0	20.44	20.29	20.25	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20450	20525	20600	
10MHz	QPSK	1	0	22.23	22.24	22.28	23.50
		1	25	22.43	22.42	22.42	23.50
		1	49	22.28	22.27	22.22	23.50
		25	0	21.31	21.37	21.35	22.50
		25	13	21.28	21.29	21.30	22.50
		25	25	21.34	21.22	21.33	22.50
		50	0	21.36	21.23	21.33	22.50
	16QAM	1	0	21.41	21.80	21.32	22.50
		1	25	21.60	22.01	21.40	22.50
		1	49	21.48	21.82	21.24	22.50
		25	0	20.39	20.40	20.47	21.50
		25	13	20.39	20.43	20.46	21.50
		25	25	20.50	20.37	20.52	21.50
		50	0	20.44	20.29	20.46	21.50

LTE Band 7				**Conducted Power(dBm)**			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20775	21100	21425	
5MHz	QPSK	1	0	21.98	21.81	22.05	23.00
		1	13	22.04	21.92	22.20	23.00
		1	24	21.87	21.80	22.01	23.00
		12	0	20.98	20.90	21.11	22.00
		12	6	21.02	20.92	21.19	22.00
		12	13	20.96	20.86	21.16	22.00
		25	0	20.97	20.88	21.12	22.00
	16QAM	1	0	21.06	21.12	20.96	22.00
		1	13	21.15	21.21	21.05	22.00
		1	24	20.92	21.09	20.90	22.00
		12	0	19.95	19.92	20.08	21.00
		12	6	20.02	19.97	20.16	21.00
		12	13	19.96	19.94	20.16	21.00
		25	0	19.99	19.92	20.19	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20800	21100	21400	

10MHz	QPSK	1	0	22.00	21.92	22.16	23.00
		1	25	22.09	22.00	22.28	23.00
		1	49	21.89	21.86	22.15	23.00
		25	0	21.03	20.92	21.22	22.00
		25	13	20.96	20.90	21.22	22.00
		25	25	20.93	20.98	21.24	22.00
		50	0	20.99	20.94	21.25	22.00
	16QAM	1	0	21.07	21.15	21.75	22.00
		1	25	21.08	21.23	21.82	22.00
		1	49	20.95	21.03	21.76	22.00
		25	0	20.16	19.96	20.28	21.00
		25	13	20.07	19.97	20.33	21.00
		25	25	20.01	20.00	20.36	21.00
		50	0	20.03	20.03	20.27	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20825	21100	21375	
15MHz	QPSK	1	0	21.91	21.91	22.06	23.00
		1	38	21.89	21.92	22.19	23.00
		1	74	21.75	21.78	22.04	23.00
		36	0	21.01	20.95	21.27	22.00
		36	18	20.98	20.97	21.23	22.00
		36	39	20.87	20.99	21.25	22.00
		75	0	20.93	20.94	21.25	22.00
	16QAM	1	0	21.12	21.63	21.45	22.00
		1	38	21.08	21.55	21.58	22.00
		1	74	20.95	21.39	21.45	22.00
		36	0	20.00	20.04	20.16	21.00
		36	18	19.96	19.99	20.20	21.00
		36	39	19.91	19.93	20.20	21.00
		75	0	20.00	19.99	20.19	21.00
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20850	21100	21350	
20MHz	QPSK	1	0	21.80	21.84	21.73	23.00
		1	50	22.01	22.03	22.02	23.00
		1	99	21.79	22.04	21.87	23.00
		50	0	20.93	20.88	21.14	22.00
		50	25	20.91	20.96	21.21	22.00
		50	50	20.90	21.23	20.95	22.00
		100	0	20.91	20.89	21.16	22.00
	16QAM	1	0	20.99	21.11	21.30	22.00
		1	50	21.19	21.34	21.86	22.00
		1	99	20.98	20.98	21.47	22.00
		50	0	19.96	19.92	20.09	21.00
		50	25	19.92	20.01	20.13	21.00
		50	50	19.90	19.95	20.23	21.00
		100	0	19.99	19.95	20.17	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	22.36	22.41	22.51	23.5
		1	2	22.47	22.49	22.65	23.5
		1	5	22.34	22.46	22.58	23.5
		3	0	22.44	22.51	22.7	23.5
		3	2	22.53	22.52	22.79	23.5
		3	3	22.45	22.54	22.74	23.5
		6	0	21.37	21.48	21.69	22.5
	16QAM	1	0	21.36	21.58	21.54	22.5
		1	2	21.45	21.72	21.67	22.5
		1	5	21.42	21.59	21.66	22.5
		3	0	21.52	21.5	21.87	22.5
		3	2	21.53	21.52	21.94	22.5
		3	3	21.49	21.56	21.91	22.5
		6	0	20.35	20.54	20.67	21.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23025	23095	23165	
3MHz	QPSK	1	0	22.37	22.47	22.58	23.5
		1	7	22.5	22.61	22.69	23.5
		1	14	22.3	22.49	22.66	23.5
		8	0	21.35	21.45	21.63	22.5
		8	4	21.38	21.52	21.68	22.5
		8	7	21.31	21.48	21.64	22.5
		15	0	21.35	21.47	21.61	22.5
	16QAM	1	0	21.95	21.51	21.76	22.5
		1	7	22.07	21.65	21.9	22.5
		1	14	21.87	21.48	21.85	22.5
		8	0	20.55	20.5	20.63	21.5
		8	4	20.57	20.59	20.66	21.5
		8	7	20.52	20.56	20.62	21.5
		15	0	20.43	20.55	20.58	21.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23035	23095	23155	
5MHz	QPSK	1	0	22.32	22.4	22.45	23.5
		1	13	22.4	22.48	22.64	23.5
		1	24	22.38	22.37	22.61	23.5
		12	0	21.43	21.38	21.74	22.5
		12	6	21.46	21.53	21.67	22.5
		12	13	21.28	21.6	21.58	22.5
		25	0	21.33	21.5	21.66	22.5
	16QAM	1	0	21.45	21.62	21.3	22.5
		1	13	21.52	21.77	21.51	22.5
		1	24	21.5	21.7	21.5	22.5
		12	0	20.4	20.44	20.74	21.5
		12	6	20.44	20.58	20.65	21.5
		12	13	20.26	20.64	20.55	21.5
		25	0	20.43	20.51	20.71	21.5
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23060	23095	23130	
10MHz	QPSK	1	0	22.34	22.37	22.43	23.5

		1	25	22.59	22.65	22.64	23.5
		1	49	22.4	22.51	22.57	23.5
		25	0	21.46	21.48	21.34	22.5
		25	13	21.45	21.55	21.54	22.5
		25	25	21.53	21.52	21.58	22.5
		50	0	21.55	21.49	21.38	22.5
	16QAM	1	0	21.51	21.97	21.46	22.5
		1	25	21.76	22.24	21.71	22.5
		1	49	21.62	22.13	21.68	22.5
		25	0	20.75	20.54	20.48	21.5
		25	13	20.5	20.6	20.7	21.5
		25	25	20.68	20.67	20.42	21.5
		50	0	20.7	20.6	20.41	21.5

LTE FDD Band 13				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23205	Channel 23230	Channel 23255	Tune up
5MHz	QPSK	1	0	22.75	22.67	22.57	23.5
		1	13	22.77	22.68	22.62	23.5
		1	24	22.6	22.57	22.54	23.5
		12	0	21.76	21.49	21.69	22.5
		12	6	21.83	21.71	21.74	22.5
		12	13	22.08	21.72	21.37	22.5
		25	0	21.93	21.61	21.56	22.5
	16QAM	1	0	21.85	21.95	21.51	22.5
		1	13	21.88	21.98	21.52	22.5
		1	24	21.8	21.89	21.45	22.5
		12	0	20.73	20.53	20.74	21.5
		12	6	20.8	20.8	20.7	21.5
		12	13	20.98	20.72	20.33	21.5
		25	0	20.92	20.64	20.63	21.5
Bandwidth	Modulation	RB size	RB offset	Channel /	Channel 23230	Channel /	Tune up
10MHz	QPSK	1	0	/	22.8	/	23.5
		1	25	/	22.76	/	23.5
		1	49	/	22.61	/	23.5
		25	0	/	21.58	/	22.5
		25	13	/	21.52	/	22.5
		25	25	/	21.47	/	22.5
		50	0	/	21.42	/	22.5
	16QAM	1	0	/	21.93	/	22.5
		1	25	/	22.03	/	22.5
		1	49	/	21.82	/	22.5
		25	0	/	20.47	/	21.5
		25	13	/	20.77	/	21.5
		25	25	/	20.46	/	21.5
		50	0	/	20.46	/	21.5

LTE Band 17				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 23755	Channel 23790	Channel 23825	Tune up
5MHz	QPSK	1	0	22.39	22.47	22.5	23.5
		1	13	22.55	22.56	22.71	23.5
		1	24	22.46	22.54	22.64	23.5
		12	0	21.5	21.42	21.81	22.5
		12	6	21.53	21.62	21.74	22.5
		12	13	21.69	21.49	21.61	22.5
		25	0	21.6	21.45	21.7	22.5
	16QAM	1	0	21.54	21.72	21.36	22.5
		1	13	21.67	21.84	21.56	22.5
		1	24	21.6	21.81	21.53	22.5
		12	0	20.48	20.47	20.77	21.5
		12	6	20.53	20.67	20.71	21.5
		12	13	20.68	20.53	20.55	21.5
		25	0	20.62	20.47	20.78	21.5
Bandwidth	Modulation	RB size	RB offset	Channel 23780	Channel 23790	Channel 23800	Tune up
10MHz	QPSK	1	0	22.45	22.48	22.46	23.5
		1	25	22.62	22.71	22.69	23.5
		1	49	22.58	22.64	22.68	23.5
		25	0	21.39	21.31	21.41	22.5
		25	13	21.57	21.56	21.6	22.5
		25	25	21.44	21.32	21.41	22.5
		50	0	21.44	21.33	21.4	22.5
	16QAM	1	0	22.04	21.45	21.66	22.5
		1	25	22.27	21.73	21.89	22.5
		1	49	22.16	21.68	21.86	22.5
		25	0	20.44	20.43	20.47	21.5
		25	13	20.67	20.67	20.63	21.5
		25	25	20.53	20.39	20.42	21.5
		50	0	20.49	20.42	20.42	21.5

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	22.75	22.44	22.63	23.50
		1	2	22.85	22.56	22.77	23.50
		1	5	22.73	22.47	22.59	23.50
		3	0	22.77	22.59	22.65	23.50
		3	2	22.82	22.61	22.65	23.50
		3	3	22.79	22.57	22.63	23.50
		6	0	21.79	21.54	21.72	22.50
	16QAM	1	0	21.71	21.65	21.48	22.50
		1	2	21.82	21.77	21.60	22.50
		1	5	21.74	21.67	21.51	22.50
		3	0	21.84	21.58	21.71	22.50
		3	2	21.83	21.56	21.76	22.50
		3	3	21.80	21.59	21.71	22.50
		6	0	20.75	20.59	20.66	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 26055	Channel 26365	Channel 26675	Tune up
3MHz	QPSK	1	0	22.80	22.58	22.66	23.50
		1	7	22.83	22.72	22.81	23.50
		1	14	22.64	22.61	22.75	23.50
		8	0	21.74	21.56	21.72	22.50
		8	4	21.78	21.59	21.77	22.50
		8	7	21.68	21.57	21.69	22.50
		15	0	21.72	21.55	21.68	22.50
	16QAM	1	0	22.32	21.66	21.76	22.50
		1	7	22.35	21.75	21.89	22.50
		1	14	22.14	21.58	21.79	22.50
		8	0	20.94	20.66	20.69	21.50
		8	4	20.95	20.70	20.71	21.50
		8	7	20.89	20.69	20.64	21.50
		15	0	20.81	20.64	20.63	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 26065	Channel 26365	Channel 26665	Tune up
5MHz	QPSK	1	0	22.71	22.44	22.54	23.50
		1	13	22.72	22.59	22.71	23.50
		1	24	22.48	22.51	22.62	23.50
		12	0	21.73	21.51	21.75	22.50
		12	6	21.77	21.57	21.68	22.50
		12	13	21.63	21.61	21.53	22.50
		25	0	21.65	21.57	21.61	22.50
	16QAM	1	0	21.81	21.72	21.37	22.50
		1	13	21.76	21.89	21.47	22.50
		1	24	21.59	21.80	21.39	22.50
		12	0	20.74	20.60	20.76	21.50
		12	6	20.73	20.66	20.66	21.50
		12	13	20.64	20.65	20.52	21.50

		25	0	20.69	20.61	20.67	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26090	26365	26640	
10MHz	QPSK	1	0	22.76	22.58	22.65	23.50
		1	25	22.69	22.76	22.73	23.50
		1	49	22.42	22.70	22.74	23.50
		25	0	21.71	21.59	21.68	22.50
		25	13	21.59	21.62	21.62	22.50
		25	25	21.49	21.68	21.43	22.50
		50	0	21.62	21.68	21.55	22.50
	16QAM	1	0	22.30	21.62	21.80	22.50
		1	25	22.19	21.75	21.93	22.50
		1	49	21.86	21.68	21.77	22.50
		25	0	20.79	20.71	20.74	21.50
		25	13	20.67	20.76	20.68	21.50
		25	25	20.58	20.83	20.44	21.50
		50	0	20.67	20.73	20.60	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26115	26365	26615	
15MHz	QPSK	1	0	22.71	22.51	22.78	23.50
		1	38	22.49	22.60	22.67	23.50
		1	74	22.26	22.67	22.73	23.50
		36	0	21.72	21.67	21.81	22.50
		36	18	21.61	21.69	21.73	22.50
		36	39	21.50	21.76	21.61	22.50
		75	0	21.64	21.72	21.67	22.50
	16QAM	1	0	21.86	22.07	22.16	22.50
		1	38	21.61	22.16	22.05	22.50
		1	74	21.42	22.17	21.86	22.50
		36	0	20.70	20.69	20.83	21.50
		36	18	20.57	20.70	20.73	21.50
		36	39	20.46	20.79	20.53	21.50
		75	0	20.65	20.70	20.70	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26140	26365	26590	
20MHz	QPSK	1	0	22.51	22.31	22.69	23.50
		1	50	22.56	22.71	22.70	23.50
		1	99	22.23	22.78	22.54	23.50
		50	0	21.61	21.58	21.72	22.50
		50	25	21.46	21.77	21.77	22.50
		50	50	21.34	21.64	21.41	22.50
		100	0	21.46	21.65	21.64	22.50
	16QAM	1	0	21.82	21.85	21.90	22.50
		1	50	21.77	22.27	22.08	22.50
		1	99	21.48	22.08	21.56	22.50
		50	0	20.62	20.61	20.92	21.50
		50	25	20.50	20.71	20.86	21.50
		50	50	20.33	20.67	20.45	21.50
		100	0	20.50	20.74	20.72	21.50

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	22.50	22.55	22.42	23.50
		1	2	22.60	22.66	22.54	23.50
		1	5	22.52	22.52	22.51	23.50
		3	0	22.61	22.65	22.56	23.50
		3	2	22.62	22.67	22.57	23.50
		3	3	22.61	22.65	22.55	23.50
		6	0	21.56	21.57	21.53	22.50
	16QAM	1	0	21.57	21.69	21.66	22.50
		1	2	21.78	21.68	21.58	22.50
		1	5	21.60	21.67	21.50	22.50
		3	0	21.79	21.72	21.54	22.50
		3	2	21.62	21.86	21.57	22.50
		3	3	21.67	21.66	21.62	22.50
		6	0	20.64	20.59	20.57	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 26705	Channel 26865	Channel 27025	Tune up
3MHz	QPSK	1	0	22.48	22.62	22.59	23.50
		1	7	22.58	22.75	22.42	23.50
		1	14	22.67	22.72	22.53	23.50
		8	0	21.51	21.46	21.41	22.50
		8	4	21.53	21.47	21.46	22.50
		8	7	21.46	21.44	21.40	22.50
		15	0	21.63	21.76	21.72	22.50
	16QAM	1	0	21.49	21.53	21.51	22.50
		1	7	21.75	21.75	21.58	22.50
		1	14	21.42	21.47	21.34	22.50
		8	0	20.68	20.58	20.46	21.50
		8	4	20.59	20.69	20.59	21.50
		8	7	20.59	20.51	20.63	21.50
		15	0	20.72	20.42	20.70	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 26715	Channel 26865	Channel 27015	Tune up
5MHz	QPSK	1	0	22.39	22.49	22.54	23.50
		1	13	22.44	22.81	22.65	23.50
		1	24	22.37	22.43	22.48	23.50
		12	0	21.56	21.43	21.40	22.50
		12	6	21.53	21.54	21.50	22.50
		12	13	21.55	21.43	21.43	22.50
		25	0	21.68	21.73	21.51	22.50
	16QAM	1	0	21.43	21.50	21.75	22.50
		1	13	21.87	21.71	21.61	22.50
		1	24	21.73	21.48	21.54	22.50
		12	0	20.64	20.50	20.41	21.50
		12	6	20.56	20.65	20.55	21.50
		12	13	20.55	20.47	20.50	21.50
		25	0	20.49	20.54	20.46	21.50

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26740	26865	26990	
10MHz	QPSK	1	0	22.40	22.45	22.56	23.50
		1	25	22.79	22.77	22.36	23.50
		1	49	22.51	22.66	22.36	23.50
		25	0	21.56	21.44	21.65	22.50
		25	13	21.51	21.51	21.56	22.50
		25	25	21.62	21.45	21.62	22.50
		50	0	21.62	21.65	21.37	22.50
	16QAM	1	0	21.75	21.76	21.56	22.50
		1	25	21.68	21.65	21.41	22.50
		1	49	21.69	21.70	21.49	22.50
		25	0	20.65	20.57	20.71	21.50
		25	13	20.65	20.65	20.66	21.50
		25	25	20.71	20.52	20.73	21.50
		50	0	20.60	20.75	20.46	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26765	26865	26965	
15MHz	QPSK	1	0	22.45	22.44	22.34	23.50
		1	38	22.53	22.44	22.61	23.50
		1	74	22.41	22.44	22.41	23.50
		36	0	21.52	21.45	21.67	22.50
		36	18	21.57	21.47	21.60	22.50
		36	39	21.50	21.59	21.65	22.50
		75	0	21.51	21.47	21.67	22.50
	16QAM	1	0	21.63	21.97	21.69	22.50
		1	38	21.93	21.63	21.93	22.50
		1	74	21.95	21.79	21.74	22.50
		36	0	20.61	20.51	20.63	21.50
		36	18	20.59	20.51	20.59	21.50
		36	39	20.58	20.58	20.70	21.50
		75	0	20.61	20.53	20.72	21.50

LTE Band 41				Conducted Power(dBm)					
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Channel	Channel	Tune up
				39675	40148	40620	41093	41565	
5MHz	QPSK	1	0	21.95	22.29	22.36	22.24	21.96	23.50
		1	13	22.13	22.42	22.2	22.15	22.38	23.50
		1	24	22.14	22.17	22.14	21.97	22.17	23.50
		12	0	21.02	21.22	21.46	20.99	21.17	22.50
		12	6	21.02	21.39	21.24	21.17	21.37	22.50
		12	13	21	21.22	21.38	20.95	21.29	22.50
		25	0	21.3	21.45	21.17	21.02	21.11	22.50
	16QAM	1	0	21.1	21.29	20.96	21.08	21.25	22.50
		1	13	21.17	21.36	21.17	21.17	21.5	22.50
		1	24	21.08	21.36	21.13	21.06	21.05	22.50
		12	0	20.09	20.4	20.26	20.08	20.28	21.50
		12	6	20.05	20.1	20.06	20.25	20.16	21.50
		12	13	20.22	20.25	20.09	19.9	20.11	21.50

		25	0	20.28	20.26	20.41	20.07	20.35	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 39700	Channel 40160	Channel 40620	Channel 41080	Channel 41540	Tune up
10MHz	QPSK	1	0	22.04	22.1	22.3	22.31	22.21	23.50
		1	25	21.99	22.28	22.23	22.3	22.57	23.50
		1	49	22.25	21.98	22.35	22.13	22.23	23.50
		25	0	21.08	21.17	21.38	21.12	21.35	22.50
		25	13	21.06	21.19	21.19	21.03	21.17	22.50
		25	25	21.02	21.15	21.49	21.24	21.24	22.50
		50	0	20.97	21.48	21.24	21.23	21.4	22.50
	16QAM	1	0	21.2	21.23	21.17	20.94	21.19	22.50
		1	25	21.23	21.56	21.39	21.2	21.51	22.50
		1	49	21.04	21.13	21.37	20.91	21.23	22.50
		25	0	20.17	20.25	20.4	19.92	20.22	21.50
		25	13	20.08	20.22	20.17	20.21	20.16	21.50
		25	25	20.08	20.13	20.23	20.09	20.17	21.50
		50	0	20.12	20.33	20.23	20.37	20.1	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 39725	Channel 40173	Channel 40620	Channel 41068	Channel 41515	Tune up
15MHz	QPSK	1	0	21.97	22.19	22.31	22.12	22.14	23.50
		1	38	22.01	22.22	22.4	21.99	22.58	23.50
		1	74	21.96	22.29	22.13	22.22	22.13	23.50
		36	0	21.21	21.39	21.52	21.11	21.24	22.50
		36	18	21.3	21.19	21.25	21.13	21.28	22.50
		36	39	21.11	21.25	21.28	21.23	21.42	22.50
		75	0	20.99	21.31	21.19	21.33	21.24	22.50
	16QAM	1	0	20.91	21.08	21.09	21.01	21.08	22.50
		1	38	21.21	21.56	21.32	21	21.34	22.50
		1	74	20.91	21.06	21.35	20.85	21.35	22.50
		36	0	19.99	20.09	20.23	19.89	20.16	21.50
		36	18	20.14	20.32	20.32	20.17	20.42	21.50
		36	39	19.96	20.42	20.26	20.16	20.44	21.50
		75	0	20.23	20.38	20.21	20.2	20.15	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 39750	Channel 40185	Channel 40620	Channel 41055	Channel 41490	Tune up
20MHz	QPSK	1	0	22.08	22.04	22.18	21.98	21.94	23.50
		1	50	22.27	22.34	22.4	22.21	22.44	23.50
		1	99	21.97	22.23	22.28	21.98	22.08	23.50
		50	0	20.93	21.31	21.52	21.13	21.56	22.50
		50	25	21.08	21.24	21.3	21.22	21.53	22.50
		50	50	21.17	21.15	21.37	21.13	21.29	22.50
		100	0	21.21	21.28	21.1	21.04	21.35	22.50
	16QAM	1	0	20.89	21.09	20.96	21.09	21.13	22.50
		1	50	20.98	21.28	21.38	20.99	21.29	22.50
		1	99	21.15	21.44	21.06	21.15	21.26	22.50
		50	0	20.23	20.22	20.2	20.26	20.37	21.50
		50	25	20.22	20.33	20.44	20.4	20.13	21.50
		50	50	20.01	20.16	20.08	19.86	20.29	21.50
		100	0	20.28	20.29	20.14	20.07	20.37	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	22.74	22.77	22.70	23.50
		1	2	22.93	22.96	22.93	23.50
		1	5	22.71	22.76	22.73	23.50
		3	0	22.72	22.88	22.80	23.50
		3	2	22.73	22.90	22.75	23.50
		3	3	22.75	22.95	22.83	23.50
		6	0	21.79	21.89	21.79	22.50
	16QAM	1	0	21.58	21.84	22.04	22.50
		1	2	21.76	21.88	22.21	22.50
		1	5	21.53	21.78	22.03	22.50
		3	0	21.58	21.98	21.80	22.50
		3	2	21.56	21.93	21.76	22.50
		3	3	21.62	21.97	21.83	22.50
		6	0	20.78	20.96	20.79	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 131987	Channel 132322	Channel 132657	Tune up
3MHz	QPSK	1	0	22.81	22.82	22.74	23.50
		1	7	22.70	22.70	22.63	23.50
		1	14	22.80	22.77	22.78	23.50
		8	0	21.68	21.81	21.73	22.50
		8	4	21.75	21.87	21.72	22.50
		8	7	21.64	21.81	21.68	22.50
		15	0	21.63	21.79	21.65	22.50
	16QAM	1	0	21.62	21.88	22.03	22.50
		1	7	21.53	21.70	21.91	22.50
		1	14	21.60	21.81	22.13	22.50
		8	0	20.68	20.85	20.77	21.50
		8	4	20.72	20.86	20.82	21.50
		8	7	20.63	20.78	20.75	21.50
		15	0	20.67	20.77	20.74	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 131997	Channel 132322	Channel 132647	Tune up
5MHz	QPSK	1	0	22.60	22.78	22.59	23.50
		1	13	22.68	22.80	22.67	23.50
		1	24	22.59	22.72	22.63	23.50
		12	0	21.60	21.85	21.68	22.50
		12	6	21.70	21.83	21.70	22.50
		12	13	21.72	21.79	21.69	22.50
		25	0	21.65	21.83	21.66	22.50
	16QAM	1	0	21.68	21.71	21.96	22.50
		1	13	21.69	21.76	22.04	22.50
		1	24	21.66	21.63	22.01	22.50
		12	0	20.61	20.89	20.67	21.50
		12	6	20.70	20.92	20.71	21.50
		12	13	20.73	20.85	20.66	21.50
		25	0	20.65	20.97	20.70	21.50

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				132022	132322	132622	
10MHz	QPSK	1	0	22.78	22.95	22.71	23.50
		1	25	22.87	23.01	22.77	23.50
		1	49	22.80	22.85	22.68	23.50
		25	0	21.64	21.92	21.72	22.50
		25	13	21.75	21.88	21.73	22.50
		25	25	21.79	21.88	21.71	22.50
		50	0	21.70	21.89	21.70	22.50
	16QAM	1	0	22.04	21.86	21.59	22.50
		1	25	22.12	21.90	21.74	22.50
		1	49	22.15	21.67	21.72	22.50
		25	0	20.70	21.00	20.77	21.50
		25	13	20.78	20.96	20.77	21.50
		25	25	20.84	20.95	20.77	21.50
		50	0	20.76	20.94	20.70	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				132047	132322	132597	
15MHz	QPSK	1	0	22.74	22.96	22.65	23.50
		1	38	22.78	22.90	22.66	23.50
		1	74	22.68	22.76	22.59	23.50
		36	0	21.75	21.94	21.77	22.50
		36	18	21.78	21.93	21.79	22.50
		36	39	21.78	21.92	21.74	22.50
		75	0	21.76	21.92	21.76	22.50
	16QAM	1	0	21.61	21.84	21.49	22.50
		1	38	21.71	21.82	21.64	22.50
		1	74	21.62	21.55	21.61	22.50
		36	0	20.72	20.94	20.69	21.50
		36	18	20.77	20.92	20.70	21.50
		36	39	20.77	20.86	20.68	21.50
		75	0	20.76	20.92	20.71	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				132072	132322	132572	
20MHz	QPSK	1	0	22.49	22.72	22.59	23.50
		1	50	22.83	22.91	22.80	23.50
		1	99	22.64	22.49	22.45	23.50
		50	0	21.59	21.93	21.60	22.50
		50	25	21.73	21.84	21.63	22.50
		50	50	21.74	21.77	21.64	22.50
		100	0	21.64	21.83	21.57	22.50
	16QAM	1	0	21.85	21.83	21.34	22.50
		1	50	22.18	21.91	21.59	22.50
		1	99	22.04	21.41	21.30	22.50
		50	0	20.63	20.96	20.56	21.50
		50	25	20.74	20.89	20.61	21.50
		50	50	20.76	20.85	20.65	21.50
		100	0	20.65	20.91	20.59	21.50

LTE Band 71	Conducted Power(dBm)

Bandwidth	Modulation	RB size	RB offset	Channel 133147	Channel 133297	Channel 133447	Tune up
5MHz	QPSK	1	0	22.72	22.74	22.48	23.50
		1	13	22.84	22.80	22.56	23.50
		1	24	22.73	22.63	22.43	23.50
		12	0	21.59	21.68	21.49	22.50
		12	6	21.83	21.84	21.56	22.50
		12	13	21.82	21.81	21.57	22.50
		25	0	21.73	21.80	21.57	22.50
	16QAM	1	0	21.66	22.17	21.58	22.50
		1	13	21.78	22.24	21.70	22.50
		1	24	21.67	22.11	21.55	22.50
		12	0	20.61	20.68	20.50	21.50
		12	6	20.85	20.81	20.55	21.50
		12	13	20.88	20.79	20.57	21.50
		25	0	20.82	20.77	20.55	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 133172	Channel 133297	Channel 133422	Tune up
10MHz	QPSK	1	0	22.76	22.78	22.61	23.50
		1	25	22.88	22.78	22.67	23.50
		1	49	22.83	22.61	22.54	23.50
		25	0	21.56	21.67	21.77	22.50
		25	13	21.80	21.80	21.58	22.50
		25	25	21.61	21.73	21.70	22.50
		50	0	21.59	21.71	21.72	22.50
	16QAM	1	0	21.73	21.86	21.93	22.50
		1	25	21.83	21.84	21.99	22.50
		1	49	21.78	21.69	21.97	22.50
		25	0	20.62	20.74	20.78	21.50
		25	13	20.86	20.85	20.61	21.50
		25	25	20.67	20.80	20.73	21.50
		50	0	20.56	20.71	20.76	21.50
Bandwidth	Modulation	RB size	RB offset	Channel 133197	Channel 133297	Channel 133397	Tune up
15MHz	QPSK	1	0	22.75	22.70	22.63	23.50
		1	38	22.80	22.72	22.59	23.50
		1	74	22.77	22.50	22.49	23.50
		36	0	21.67	21.72	21.87	22.50
		36	18	21.84	21.77	21.64	22.50
		36	39	21.81	21.64	21.67	22.50
		75	0	21.71	21.69	21.77	22.50
	16QAM	1	0	21.62	21.79	21.60	22.50
		1	38	21.76	21.79	21.52	22.50
		1	74	21.72	21.56	21.45	22.50
		36	0	20.68	20.66	20.87	21.50
		36	18	20.83	20.74	20.61	21.50
		36	39	20.78	20.59	20.64	21.50
		75	0	20.77	20.69	20.81	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up

				133222	133322	133372	
20MHz	QPSK	1	0	22.54	22.57	22.55	23.50
		1	50	22.86	22.76	22.64	23.50
		1	99	22.54	22.31	22.30	23.50
		50	0	21.84	21.47	21.75	22.50
		50	25	21.82	21.69	21.66	22.50
		50	50	22.03	21.25	21.47	22.50
		100	0	21.91	21.35	21.68	22.50
	16QAM	1	0	21.41	22.03	21.59	22.50
		1	50	21.71	22.20	21.69	22.50
		1	99	21.43	21.77	21.37	22.50
		50	0	20.85	20.51	20.78	21.50
		50	25	20.88	20.70	20.66	21.50
		50	50	21.02	20.27	20.49	21.50
		100	0	20.94	20.40	20.69	21.50

8.2 Measurement of SAR Data

Note:

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

2) Per KDB447498 D04, 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.

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 same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. As the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration.
2) For Wi-Fi 5G, U-NII-2A (5250-5350 MHz) and U-NII-2C (5470-5725 MHz) bands does not support hotspot function.

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 GSM850

GSM850 SAR Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data(Separate 10mm)											
Front side	GPRS 4TS	190/836.6	1:2.075	0.438	0.311	-0.01	28.29	29.00	1.178	0.516	21.8
Back side	GPRS 4TS	190/836.6	1:2.075	0.653	0.463	-0.19	28.29	29.00	1.178	**0.769**	21.8
Left side	GPRS 4TS	190/836.6	1:2.075	0.237	0.156	0.09	28.29	29.00	1.178	0.279	21.8
Right side	GPRS 4TS	190/836.6	1:2.075	0.257	0.173	0.03	28.29	29.00	1.178	0.303	21.8
Bottom side	GPRS 4TS	190/836.6	1:2.075	0.234	0.125	0.17	28.29	29.00	1.178	0.276	21.8

8.2.2 SAR Result of GSM1900

GSM1900 SAR Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data(Separate 10mm)											
Front side	GPRS 4TS	512/1850.2	1:2.075	0.416	0.259	0.15	25.59	26.00	1.099	0.457	22.1
Back side	GPRS 4TS	512/1850.2	1:2.075	0.671	0.458	-0.06	25.59	26.00	1.099	**0.737**	22.1
Left side	GPRS 4TS	512/1850.2	1:2.075	0.380	0.207	0.01	25.59	26.00	1.099	0.418	22.1
Right side	GPRS 4TS	512/1850.2	1:2.075	0.161	0.097	-0.18	25.59	26.00	1.099	0.177	22.1
Bottom side	GPRS 4TS	512/1850.2	1:2.075	0.055	0.035	-0.05	25.59	26.00	1.099	0.060	22.1

8.2.3 SAR Result of WCDMA Band II

WB2 SAR Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data(Separate 10mm)											
Front side	RMC	9400/1880	1:1	0.575	0.347	0.09	23.00	23.50	1.122	0.645	22.3
Back side	RMC	9400/1880	1:1	0.990	0.666	0.08	23.00	23.50	1.122	**1.111**	22.3
Back side-Repeated	RMC	9400/1880	1:1	0.968	0.608	0.02	23.00	23.50	1.122	1.086	22.3
Left side	RMC	9400/1880	1:1	0.542	0.301	0.15	23.00	23.50	1.122	0.608	22.3
Right side	RMC	9400/1880	1:1	0.248	0.149	-0.05	23.00	23.50	1.122	0.278	22.3
Bottom side	RMC	9400/1880	1:1	0.237	0.147	-0.02	23.00	23.50	1.122	0.266	22.3
Back side	RMC	9262/1852.4	1:1	0.946	0.587	0.03	22.95	23.50	1.135	1.074	22.3
Back side	RMC	9538/1907.6	1:1	0.793	0.505	-0.02	22.89	23.50	1.151	0.913	22.3

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	0.990	0.968	1.023	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						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

8.2.4 SAR Result of WCDMA Band IV

WB4 SAR Test Record											
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body worn&Hotspot Test data(Separate 10mm)											
Front side	RMC	1412/1732.4	1:1	0.985	0.630	0.11	23.30	24.00	1.175	1.157	22.6
Back side	RMC	1412/1732.4	1:1	1.170	0.796	-0.01	23.30	24.00	1.175	1.375	22.6
Back side-Repeated	RMC	1412/1732.4	1:1	1.110	0.761	0.05	23.30	24.00	1.175	1.304	22.6
Left side	RMC	1412/1732.4	1:1	0.607	0.378	0.03	23.30	24.00	1.175	0.713	22.6
Right side	RMC	1412/1732.4	1:1	0.207	0.126	0.08	23.30	24.00	1.175	0.243	22.6
Bottom side	RMC	1412/1732.4	1:1	0.275	0.159	-0.10	23.30	24.00	1.175	0.323	22.6
Front side	RMC	1312/1712.4	1:1	0.946	0.610	-0.11	23.04	24.00	1.247	1.180	22.6
Front side	RMC	1513/1752.6	1:1	1.030	0.666	-0.10	23.21	24.00	1.199	1.235	22.6
Back side	RMC	1312/1712.4	1:1	1.060	0.739	-0.02	23.04	24.00	1.247	1.322	22.6
Back side	RMC	1513/1752.6	1:1	1.160	0.796	0.05	23.21	24.00	1.199	**1.391**	22.6
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data (Separate 0mm)											
Front side	RMC	1412/1732.4	1:1	4.360	2.390	0.05	23.30	24.00	1.175	2.808	22.6
Back side	RMC	1412/1732.4	1:1	2.650	1.560	-0.05	23.30	24.00	1.175	1.833	22.6
Front side	RMC	1312/1712.4	1:1	3.970	2.190	0.13	23.30	24.00	1.175	2.573	22.6
Front side	RMC	1513/1752.6	1:1	5.060	2.740	0.15	23.30	24.00	1.175	**3.219**	22.6
Front side-Repeated	RMC	1513/1752.6	1:1	4.950	2.680	0.03	23.30	24.00	1.175	3.149	22.6

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	1.170	1.110	1.054	N/A	N/A
Test Position	**Channel/ Frequency (MHz)**	**Measured SAR (10g)**	**1st Repeated SAR (10g)**	**Ratio**	**2nd Repeated SAR (10g)**	**3rd Repeated SAR (10g)**
Front side	1513/1752.6	2.740	2.680	1.022	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

5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.

8.2.5 SAR Result of WCDMA Band V

WB5 SAR Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data(Separate 10mm)											
Front side	RMC	4182/836.4	1:1	0.324	0.232	-0.11	23.17	24.00	1.211	0.392	22.3
Back side	RMC	4182/836.4	1:1	0.434	0.294	-0.07	23.17	24.00	1.211	**0.525**	22.3
Left side	RMC	4182/836.4	1:1	0.233	0.153	0.08	23.17	24.00	1.211	0.282	22.3
Right side	RMC	4182/836.4	1:1	0.301	0.203	-0.05	23.17	24.00	1.211	0.364	22.3
Bottom side	RMC	4182/836.4	1:1	0.162	0.090	0.15	23.17	24.00	1.211	0.196	22.3

8.2.6 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	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data (Separate 10mm 1RB)												
Front side	20	QPSK 1_99	21100/2535	1:1	0.348	0.187	-0.09	22.04	23.00	1.247	0.434	22.5
Back side	20	QPSK 1_99	21100/2535	1:1	0.547	0.258	0.03	22.04	23.00	1.247	0.682	22.5
Left side	20	QPSK 1_99	21100/2535	1:1	0.175	0.093	0.17	22.04	23.00	1.247	0.218	22.5
Right side	20	QPSK 1_99	21100/2535	1:1	0.163	0.091	-0.10	22.04	23.00	1.247	0.203	22.5
Bottom side	20	QPSK 1_99	21100/2535	1:1	0.539	0.268	-0.06	22.04	23.00	1.247	0.672	22.5
Body worn&Hotspot Test data (Separate 10mm 50%RB)												
Front side	20	QPSK 50_50	21100/2535	1:1	0.362	0.191	-0.02	21.23	22.00	1.194	0.432	22.5
Back side	20	QPSK 50_50	21100/2535	1:1	0.639	0.297	0.01	21.23	22.00	1.194	**0.763**	22.5
Left side	20	QPSK 50_50	21100/2535	1:1	0.200	0.105	-0.07	21.23	22.00	1.194	0.239	22.5
Right side	20	QPSK 50_50	21100/2535	1:1	0.145	0.084	0.16	21.23	22.00	1.194	0.173	22.5
Bottom side	20	QPSK 50_50	21100/2535	1:1	0.618	0.311	0.11	21.23	22.00	1.194	0.738	22.5

8.2.7 SAR Result of LTE Band 12

LTE Band 12 SAR Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data (Separate 10mm 1RB)												
Front side	10	QPSK 1_25	23095/707.5	1:1	0.250	0.179	-0.08	22.65	23.50	1.216	0.304	22.5
Back side	10	QPSK 1_25	23095/707.5	1:1	0.398	0.306	0.02	22.65	23.50	1.216	**0.484**	22.5
Left side	10	QPSK 1_25	23095/707.5	1:1	0.189	0.129	0.07	22.65	23.50	1.216	0.230	22.5
Right side	10	QPSK 1_25	23095/707.5	1:1	0.223	0.152	0.07	22.65	23.50	1.216	0.271	22.5
Bottom side	10	QPSK 1_25	23095/707.5	1:1	0.035	0.021	-0.14	22.65	23.50	1.216	0.042	22.5
Body worn&Hotspot Test data (Separate 10mm 50%RB)												
Front side	10	QPSK 25_25	23130/711	1:1	0.191	0.137	0.01	21.58	22.50	1.236	0.236	22.5
Back side	10	QPSK 25_25	23130/711	1:1	0.276	0.196	0.11	21.58	22.50	1.236	0.341	22.5
Left side	10	QPSK 25_25	23130/711	1:1	0.141	0.095	-0.15	21.58	22.50	1.236	0.174	22.5
Right side	10	QPSK 25_25	23130/711	1:1	0.168	0.114	-0.04	21.58	22.50	1.236	0.208	22.5
Bottom side	10	QPSK 25_25	23130/711	1:1	0.027	0.016	0.06	21.58	22.50	1.236	0.033	22.5

8.2.8 SAR Result of LTE Band 13

LTE Band 13 SAR Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data (Separate 10mm 1RB)												
Front side	10	QPSK 1_0	23230/782	1:1	0.333	0.238	-0.10	22.80	23.50	1.175	0.391	22.5
Back side	10	QPSK 1_0	23230/782	1:1	0.486	0.375	-0.06	22.80	23.50	1.175	**0.571**	22.5
Left side	10	QPSK 1_0	23230/782	1:1	0.196	0.132	0.07	22.80	23.50	1.175	0.230	22.5
Right side	10	QPSK 1_0	23230/782	1:1	0.272	0.184	-0.02	22.80	23.50	1.175	0.320	22.5
Bottom side	10	QPSK 1_0	23230/782	1:1	0.108	0.056	-0.05	22.80	23.50	1.175	0.127	22.5
Body worn&Hotspot Test data (Separate 10mm 50%RB)												
Front side	10	QPSK 25_0	23230/782	1:1	0.240	0.171	-0.12	21.58	22.50	1.236	0.297	22.5
Back side	10	QPSK 25_0	23230/782	1:1	0.347	0.246	-0.16	21.58	22.50	1.236	0.429	22.5
Left side	10	QPSK 25_0	23230/782	1:1	0.147	0.100	-0.14	21.58	22.50	1.236	0.182	22.5
Right side	10	QPSK 25_0	23230/782	1:1	0.214	0.144	-0.10	21.58	22.50	1.236	0.264	22.5
Bottom side	10	QPSK 25_0	23230/782	1:1	0.080	0.046	0.07	21.58	22.50	1.236	0.098	22.5

8.2.9 SAR Result of LTE Band 25

LTE Band 25 SAR Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data (Separate 10mm 1RB)												
Front side	20	QPSK 1_99	26365/1882.5	1:1	0.468	0.280	0.09	22.78	23.50	1.180	0.552	22.3
Back side	20	QPSK 1_99	26365/1882.5	1:1	0.728	0.483	-0.07	22.78	23.50	1.180	0.859	22.3
Left side	20	QPSK 1_99	26365/1882.5	1:1	0.556	0.306	0.13	22.78	23.50	1.180	0.656	22.3
Right side	20	QPSK 1_99	26365/1882.5	1:1	0.174	0.107	0.05	22.78	23.50	1.180	0.205	22.3
Bottom side	20	QPSK 1_99	26365/1882.5	1:1	0.213	0.131	-0.01	22.78	23.50	1.180	0.251	22.3
Back side	20	QPSK 1_50	26140/1860	1:1	0.825	0.552	0.03	22.56	23.50	1.242	**1.024**	22.3
Back side-Repeated	20	QPSK 1_50	26140/1860	1:1	0.817	0.547	-0.05	22.56	23.50	1.242	1.014	22.3
Back side	20	QPSK 1_50	26590/1905	1:1	0.767	0.516	0.18	22.70	23.50	1.202	0.922	22.3
Body worn&Hotspot Test data (Separate 10mm 50%RB)												
Front side	20	QPSK 50_25	26365/1882.5	1:1	0.405	0.247	0.18	21.77	22.50	1.183	0.479	22.3
Back side	20	QPSK 50_25	26365/1882.5	1:1	0.600	0.399	-0.14	21.77	22.50	1.183	0.710	22.3
Left side	20	QPSK 50_25	26365/1882.5	1:1	0.430	0.242	0.05	21.77	22.50	1.183	0.509	22.3
Right side	20	QPSK 50_25	26365/1882.5	1:1	0.171	0.104	-0.17	21.77	22.50	1.183	0.202	22.3
Bottom side	20	QPSK 50_25	26365/1882.5	1:1	0.162	0.096	0.06	21.77	22.50	1.183	0.192	22.3
Body worn&Hotspot Test data (Separate 10mm 50%RB)												
Back side	20	QPSK 100_0	26365/1882.5	1:1	0.628	0.420	-0.09	21.65	22.50	1.216	0.764	22.3

Test Position	Channel/ Frequency	Measured SAR (1g)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
	(MHz)		SAR (1g)		SAR (1g)	SAR (1g)
Back side	26140/1860	0.825	0.817	1.010	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						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

8.2.10 SAR Result of LTE Band 26

LTE Band 26 SAR Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data (Separate 10mm 1RB)												
Front side	15	QPSK 1_38	26965/841.5	1:1	0.336	0.238	-0.16	22.61	23.50	1.227	0.412	22.1
Back side	15	QPSK 1_38	26965/841.5	1:1	0.548	0.420	-0.07	22.61	23.50	1.227	**0.673**	22.1
Left side	15	QPSK 1_38	26965/841.5	1:1	0.183	0.123	0.04	22.61	23.50	1.227	0.225	22.1
Right side	15	QPSK 1_38	26965/841.5	1:1	0.328	0.219	0.11	22.61	23.50	1.227	0.403	22.1
Bottom side	15	QPSK 1_38	26965/841.5	1:1	0.139	0.081	0.05	22.61	23.50	1.227	0.171	22.1
Body worn&Hotspot Test data (Separate 10mm 50%RB)												
Front side	15	QPSK 36_0	26965/841.5	1:1	0.271	0.193	0.15	21.67	22.50	1.211	0.328	22.1
Back side	15	QPSK 36_0	26965/841.5	1:1	0.425	0.311	0.01	21.67	22.50	1.211	0.515	22.1
Left side	15	QPSK 36_0	26965/841.5	1:1	0.135	0.091	0.00	21.67	22.50	1.211	0.164	22.1
Right side	15	QPSK 36_0	26965/841.5	1:1	0.270	0.180	0.04	21.67	22.50	1.211	0.327	22.1
Bottom side	15	QPSK 36_0	26965/841.5	1:1	0.119	0.069	-0.05	21.67	22.50	1.211	0.144	22.1

8.2.11 SAR Result of LTE Band 41

LTE Band 41 SAR Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data (Separate 10mm 1RB)												
Front side	20	QPSK 1_50	41490/2680	1:1.58	0.228	0.117	0.06	22.44	23.50	1.276	0.291	22.5
Back side	20	QPSK 1_50	41490/2680	1:1.58	0.200	0.095	-0.03	22.44	23.50	1.276	0.255	22.5
Left side	20	QPSK 1_50	41490/2680	1:1.58	0.161	0.083	0.02	22.44	23.50	1.276	0.206	22.5
Right side	20	QPSK 1_50	41490/2680	1:1.58	0.073	0.041	0.19	22.44	23.50	1.276	0.093	22.5
Bottom side	20	QPSK 1_50	41490/2680	1:1.58	0.247	0.127	-0.10	22.44	23.50	1.276	**0.315**	22.5
Body worn&Hotspot Test data (Separate 10mm 50%RB)												
Front side	20	QPSK 50_0	41490/2680	1:1.58	0.160	0.080	-0.09	21.56	22.50	1.242	0.199	22.5
Back side	20	QPSK 50_0	41490/2680	1:1.58	0.142	0.067	-0.11	21.56	22.50	1.242	0.176	22.5
Left side	20	QPSK 50_0	41490/2680	1:1.58	0.109	0.055	0.05	21.56	22.50	1.242	0.135	22.5
Right side	20	QPSK 50_0	41490/2680	1:1.58	0.062	0.035	0.06	21.56	22.50	1.242	0.077	22.5
Bottom side	20	QPSK 50_0	41490/2680	1:1.58	0.223	0.108	-0.11	21.56	22.50	1.242	0.277	22.5

8.2.12 SAR Result of LTE Band 66

LTE Band 66 SAR Test Record												
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body worn&Hotspot Test data (Separate 10mm 1RB)												
Front side	20	QPSK 1_50	132322/1745	1:1	0.865	0.560	-0.07	22.91	23.50	1.146	0.991	22.5
Back side	20	QPSK 1_50	132322/1745	1:1	1.090	0.742	0.03	22.91	23.50	1.146	**1.249**	22.3
Back side-repeated	20	QPSK 1_50	132322/1745	1:1	1.030	0.711	0.02	22.91	23.50	1.146	1.180	22.5
Left side	20	QPSK 1_50	132322/1745	1:1	0.630	0.386	0.10	22.91	23.50	1.146	0.722	22.5
Right side	20	QPSK 1_50	132322/1745	1:1	0.179	0.110	0.05	22.91	23.50	1.146	0.205	22.5
Bottom side	20	QPSK 1_50	132322/1745	1:1	0.353	0.219	-0.04	22.91	23.50	1.146	0.404	22.3
Front side	20	QPSK 1_50	132072/1720	1:1	0.811	0.522	0.04	22.83	23.50	1.167	0.946	22.5
Front side	20	QPSK 1_50	132572/1770	1:1	0.737	0.475	-0.01	22.80	23.50	1.175	0.866	22.5
Back side	20	QPSK 1_50	132072/1720	1:1	0.930	0.623	-0.17	22.83	23.50	1.167	1.085	22.5
Back side	20	QPSK 1_50	132572/1770	1:1	1.010	0.685	0.04	22.80	23.50	1.175	1.187	22.5
Body worn&Hotspot Test data (Separate 10mm 50%RB)												
Front side	20	QPSK 50_0	132322/1745	1:1	0.700	0.451	-0.07	21.93	22.50	1.140	0.798	22.5
Back side	20	QPSK 50_0	132322/1745	1:1	0.896	0.564	-0.01	21.93	22.50	1.140	1.022	22.5
Left side	20	QPSK 50_0	132322/1745	1:1	0.532	0.319	-0.09	21.93	22.50	1.140	0.607	22.5
Right side	20	QPSK 50_0	132322/1745	1:1	0.140	0.087	0.12	21.93	22.50	1.140	0.160	22.5
Bottom side	20	QPSK 50_0	132322/1745	1:1	0.241	0.141	0.03	21.93	22.50	1.140	0.275	22.5
Back side	20	QPSK 50_0	132072/1720	1:1	0.766	0.502	0.01	21.74	22.50	1.191	0.912	22.5
Back side	20	QPSK 50_0	132572/1770	1:1	0.857	0.561	0.05	21.64	22.50	1.219	1.045	22.5
Body worn&Hotspot Test data (Separate 10mm 100%RB)												
Front side	20	QPSK 100_0	132322/1745	1:1	0.736	0.507	0.06	21.83	22.50	1.167	0.859	22.5
Back side	20	QPSK 100_0	132322/1745	1:1	0.917	0.588	-0.06	21.83	22.50	1.167	1.070	22.5
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data (Separate 0mm 1RB)												
Back side	20	QPSK 1_50	132322/1745	1:1	2.600	1.480	0.13	22.91	23.50	1.146	**1.695**	22.6
Product specific 10g SAR Test data (Separate 0mm 50%RB)												
Back side	20	QPSK 50_0	132322/1745	1:1	2.090	1.190	0.09	21.93	22.50	1.140	1.357	22.6

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	1.090	1.030	1.058	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						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

8.2.13 SAR Result of LTE Band 71

LTE Band 71 SAR Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data (Separate 10mm 1RB)												
Front side	20	QPSK 1_50	133222/673	1:1	0.293	0.208	0.13	22.86	23.50	1.159	0.340	22.2
Back side	20	QPSK 1_50	133222/673	1:1	0.452	0.347	-0.08	22.86	23.50	1.159	**0.524**	22.2
Left side	20	QPSK 1_50	133222/673	1:1	0.263	0.179	0.01	22.86	23.50	1.159	0.305	22.2
Right side	20	QPSK 1_50	133222/673	1:1	0.281	0.192	-0.08	22.86	23.50	1.159	0.326	22.2
Bottom side	20	QPSK 1_50	133222/673	1:1	0.059	0.033	0.04	22.86	23.50	1.159	0.068	22.2
Body worn&Hotspot Test data (Separate 10mm 50%RB)												
Front side	20	QPSK 50_50	133222/673	1:1	0.259	0.183	0.17	22.03	22.50	1.114	0.289	22.2
Back side	20	QPSK 50_50	133222/673	1:1	0.370	0.284	-0.04	22.03	22.50	1.114	0.412	22.2
Left side	20	QPSK 50_50	133222/673	1:1	0.230	0.158	-0.01	22.03	22.50	1.114	0.256	22.2
Right side	20	QPSK 50_50	133222/673	1:1	0.248	0.170	0.17	22.03	22.50	1.114	0.276	22.2
Bottom side	20	QPSK 50_50	133222/673	1:1	0.052	0.029	-0.10	22.03	22.50	1.114	0.058	22.2

8.2.14 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	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data (Separate 10mm)												
Front side	802.11b	1/2412	99.53%	1.005	0.081	0.047	0.02	17.36	18.00	1.159	0.094	21.9
Back side	802.11b	1/2412	99.53%	1.005	0.169	0.092	0.07	17.36	18.00	1.159	0.197	21.9
Right side	802.11b	1/2412	99.53%	1.005	0.196	0.108	-0.04	17.36	18.00	1.159	**0.228**	21.9
Top side	802.11b	1/2412	99.53%	1.005	0.056	0.031	0.02	17.36	18.00	1.159	0.065	21.9

8.2.15 SAR Result of WIFI 5G

Wi-Fi 5G SAR Test Record												
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body worn Test data of U-NII-2A(Separate 10mm)												
Front side	802.11n-HT40	62/5310	93.69%	1.067	0.095	0.039	-0.16	14.26	15.00	1.186	0.120	22.3
Back side	802.11n-HT40	62/5310	93.69%	1.067	0.129	0.048	0.00	14.26	15.00	1.186	**0.163**	22.3
Body worn Test data of U-NII-2C(Separate 10mm)												
Front side	802.11n-HT40	110/5550	93.82%	1.066	0.099	0.041	0.07	13.98	15.00	1.265	0.133	22.3
Back side	802.11n-HT40	110/5550	93.82%	1.066	0.118	0.045	-0.16	13.98	15.00	1.265	0.159	22.3
Body worn Test data of U-NII-3 (Separate 10mm)												
Front side	802.11n-HT40	151/5755	93.68%	1.067	0.063	0.021	-0.03	13.91	15.00	1.285	0.086	22.3
Back side	802.11n-HT40	151/5755	93.68%	1.067	0.095	0.035	0.00	13.91	15.00	1.285	0.130	22.3
Hotspot Test data of U-NII-1 (Separate 10mm)												
Front side	802.11n-HT40	46/5230	93.68%	1.067	0.115	0.039	0.17	13.53	15.00	1.403	0.172	22.3
Back side	802.11n-HT40	46/5230	93.68%	1.067	0.125	0.045	0.00	13.53	15.00	1.403	**0.187**	22.3
Right side	802.11n-HT40	46/5230	93.68%	1.067	0.117	0.049	0.07	13.53	15.00	1.403	0.175	22.3
Top side	802.11n-HT40	46/5230	93.68%	1.067	0.045	0.019	-0.07	13.53	15.00	1.403	0.067	22.3
Hotspot Test data of U-NII-3 (Separate 10mm)												
Front side	802.11n-HT40	151/5755	93.68%	1.067	0.063	0.021	-0.03	13.91	15.00	1.285	0.086	22.3
Back side	802.11n-HT40	151/5755	93.68%	1.067	0.095	0.035	0.00	13.91	15.00	1.285	0.130	22.3
Right side	802.11n-HT40	151/5755	93.68%	1.067	0.112	0.048	-0.17	13.91	15.00	1.285	0.154	22.3
Top side	802.11n-HT40	151/5755	93.68%	1.067	0.019	0.008	0.00	13.91	15.00	1.285	0.027	22.3
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10gSAR Test data of U-NII-2A (Separate 0mm)												
Front side	802.11n-HT40	62/5310	93.69%	1.067	0.360	0.120	-0.19	14.26	15.00	1.186	0.152	22.3
Back side	802.11n-HT40	62/5310	93.69%	1.067	1.080	0.344	-0.02	14.26	15.00	1.186	0.435	22.3
Right side	802.11n-HT40	62/5310	93.69%	1.067	0.527	0.185	0.12	14.26	15.00	1.186	0.234	22.3
Top side	802.11n-HT40	62/5310	93.69%	1.067	0.073	0.031	-0.08	14.26	15.00	1.186	0.039	22.3
Product specific 10gSAR Test data of U-NII-2C (Separate 0mm)												
Front side	802.11n-HT40	110/5550	93.82%	1.066	0.309	0.098	0.08	13.98	15.00	1.265	0.132	22.3
Back side	802.11n-HT40	110/5550	93.82%	1.066	0.941	0.276	0.00	13.98	15.00	1.265	0.372	22.3
Right side	802.11n-HT40	110/5550	93.82%	1.066	1.860	0.388	0.06	13.98	15.00	1.265	**0.523**	22.3
Top side	802.11n-HT40	110/5550	93.82%	1.066	0.093	0.037	0.08	13.98	15.00	1.265	0.050	22.3

8.2.16 SAR Result of BT

Bluetooth SAR Test Record												
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Body worn&Hotspot Test data (Separate 10mm)												
Front side	DH5	39/2441	77.10%	1.297	0.012	0.007	0.07	8.42	9.00	1.143	0.018	21.9
Back side	DH5	39/2441	77.10%	1.297	0.024	0.010	0.04	8.42	9.00	1.143	**0.036**	21.9
Right side	DH5	39/2441	77.10%	1.297	0.015	0.008	0.04	8.42	9.00	1.143	0.022	21.9
Top side	DH5	39/2441	77.10%	1.297	0.011	0.005	-0.08	8.42	9.00	1.143	0.016	21.9

8.3 Multiple Transmitter Evaluation

8.3.1 Simultaneous SAR test evaluation

No.	Simultaneous Tx Combination	Body	Hotspot	Product Specific 10-g (0mm)
1	WWAN + WLAN 2.4GHz	Yes	Yes	Yes
2	WWAN + WLAN 5GHz	Yes	Yes	Yes
3	WWAN + BT	Yes	Yes	Yes

Note:
1) The device does not support DTM function.
2) For WiFi 5G,U-NII-2A and U-NII-2C band does not support hotspot function.

8.3.2 Simultaneous Transmission SAR Summation Scenario

Body:

Test position		SARmax (W/kg)				Summed SAR		
		WWAN	WiFi 2.4G	WiFi 5G	BT			
		1	2	3	4	1+2	1+3	1+4
GSM 850	Front side	0.516	0.094	0.172	0.018	0.610	0.688	0.534
	Back side	0.769	0.197	0.187	0.036	0.966	0.956	0.805
	Left side	0.279	/	/	/	0.279	0.279	0.279
	Right side	0.303	0.228	0.175	0.022	0.531	0.478	0.325
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.276	/	/	/	0.276	0.276	0.276
GSM 1900	Front side	0.457	0.094	0.172	0.018	0.551	0.629	0.475
	Back side	0.737	0.197	0.187	0.036	0.934	0.924	0.773
	Left side	0.418	/	/	/	0.418	0.418	0.418
	Right side	0.177	0.228	0.175	0.022	0.405	0.352	0.199
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.060	/	/	/	0.060	0.060	0.060
WCDMA B2	Front side	0.645	0.094	0.172	0.018	0.739	0.817	0.663
	Back side	1.111	0.197	0.187	0.036	1.308	1.298	1.147
	Left side	0.608	/	/	/	0.608	0.608	0.608
	Right side	0.278	0.228	0.175	0.022	0.506	0.453	0.300
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.266	/	/	/	0.266	0.266	0.266
WCDMA B4	Front side	1.235	0.094	0.172	0.018	1.329	1.407	1.253
	Back side	1.391	0.197	0.187	0.036	1.588	1.578	1.427
	Left side	0.713	/	/	/	0.713	0.713	0.713
	Right side	0.243	0.228	0.175	0.022	0.471	0.418	0.265
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.323	/	/	/	0.323	0.323	0.323
WCDMA B5	Front side	0.392	0.094	0.172	0.018	0.486	0.564	0.410
	Back side	0.525	0.197	0.187	0.036	0.722	0.712	0.561
	Left side	0.282	/	/	/	0.282	0.282	0.282
	Right side	0.364	0.228	0.175	0.022	0.592	0.539	0.386
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.196	/	/	/	0.196	0.196	0.196
LTE Band7	Front side	0.434	0.094	0.172	0.018	0.528	0.606	0.452
	Back side	0.763	0.197	0.187	0.036	0.960	0.950	0.799
	Left side	0.239	/	/	/	0.239	0.239	0.239
	Right side	0.203	0.228	0.175	0.022	0.431	0.378	0.225
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.738	/	/	/	0.738	0.738	0.738
LTE Band12	Front side	0.304	0.094	0.172	0.018	0.398	0.476	0.322
	Back side	0.484	0.197	0.187	0.036	0.681	0.671	0.520
	Left side	0.230	/	/	/	0.230	0.230	0.230
	Right side	0.271	0.228	0.175	0.022	0.499	0.446	0.293
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.042	/	/	/	0.042	0.042	0.042

LTE Band13	Front side	0.391	0.094	0.172	0.018	0.485	0.563	0.409
	Back side	0.571	0.197	0.187	0.036	0.768	0.758	0.607
	Left side	0.230	/	/	/	0.230	0.230	0.230
	Right side	0.320	0.228	0.175	0.022	0.548	0.495	0.342
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.127	/	/	/	0.127	0.127	0.127
LTE Band25	Front side	0.552	0.094	0.172	0.018	0.646	0.724	0.570
	Back side	1.024	0.197	0.187	0.036	1.221	1.211	1.060
	Left side	0.656	/	/	/	0.656	0.656	0.656
	Right side	0.205	0.228	0.175	0.022	0.433	0.380	0.227
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.251	/	/	/	0.251	0.251	0.251
LTE Band26	Front side	0.412	0.094	0.172	0.018	0.506	0.584	0.430
	Back side	0.673	0.197	0.187	0.036	0.870	0.860	0.709
	Left side	0.225	/	/	/	0.225	0.225	0.225
	Right side	0.403	0.228	0.175	0.022	0.631	0.578	0.425
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.171	/	/	/	0.171	0.171	0.171
LTE Band41	Front side	0.291	0.094	0.172	0.018	0.385	0.463	0.309
	Back side	0.255	0.197	0.187	0.036	0.452	0.442	0.291
	Left side	0.206	/	/	/	0.206	0.206	0.206
	Right side	0.093	0.228	0.175	0.022	0.321	0.268	0.115
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.315	/	/	/	0.315	0.315	0.315
LTE Band66	Front side	0.991	0.094	0.172	0.018	1.085	1.163	1.009
	Back side	1.249	0.197	0.187	0.036	1.446	1.436	1.285
	Left side	0.722	/	/	/	0.722	0.722	0.722
	Right side	0.205	0.228	0.175	0.022	0.433	0.380	0.227
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.404	/	/	/	0.404	0.404	0.404
LTE Band71	Front side	0.340	0.094	0.172	0.018	0.434	0.512	0.358
	Back side	0.524	0.197	0.187	0.036	0.721	0.711	0.560
	Left side	0.305	/	/	/	0.305	0.305	0.305
	Right side	0.326	0.228	0.175	0.022	0.554	0.501	0.348
	Top side	/	0.065	0.067	0.016	0.065	0.067	0.016
	Bottom side	0.068	/	/	/	0.068	0.068	0.068

0MM:

Test position		SARmax (W/kg)		Summed SAR
		WWAN	WiFi 5G	
		1	2	1+2
WCDMA B4	Front side	3.219	0.152	3.371
	Back side	1.833	0.435	2.268
	Left side	/	/	/
	Right side	/	0.523	0.523
	Top side	/	0.050	0.050
	Bottom side	/	/	/
LTE Band66	Front side	/	0.152	0.152
	Back side	1.695	0.435	2.130
	Left side	/	/	/
	Right side	/	0.523	0.523
	Top side	/	0.050	0.050
	Bottom side	/	/	/

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9 Equipment list

Test Platform		SPEAG DASY Professional				
Description		SAR Test System				
Software Reference		DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)				
Hardware Reference						
Equipment		Manufacturer	Model	Inventory No.	Calibration Date	Due date of calibration
☒	Test Phantom	SPEAG	SAM Twin	SZ-WSR-A-025	NCR	NCR
☒	Test Phantom	SPEAG	SAM Twin	SZ-WSR-A-031	NCR	NCR
☒	DAE	SPEAG	DAE4	SZ-WSR-M-028	2024/04/16	2025/04/15
☒	DAE	SPEAG	DAE4	SZ-WSR-M-100	2024/12/31	2025/12/30
☒	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-068	2025/01/15	2026/01/14
☒	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-027	2024/07/17	2025/07/16
☒	Validation Kits	SPEAG	D750V3	SZ-WSR-M-032	2022/06/06	2025/06/05
☒	Validation Kits	SPEAG	D835V2	SZ-WSR-M-033	2022/11/02	2025/11/01
☒	Validation Kits	SPEAG	D1750V2	SZ-WSR-M-035	2022/06/17	2025/06/16
☒	Validation Kits	SPEAG	D1950V3	SZ-WSR-M-037	2022/10/31	2025/10/30
☒	Validation Kits	SPEAG	D2450V2	SZ-WSR-M-039	2022/11/02	2025/11/01
☒	Validation Kits	SPEAG	D2600V2	SZ-WSR-M-040	2022/06/14	2025/06/13
☒	Validation Kits	SPEAG	D5GHzV2	SZ-WSR-M-046	2022/11/01	2025/10/31
☒	Dielectric parameter probes	SPEAG	DAKS-3.5	SZ-WSR-M-053	2024/06/26	2025/06/25
☒	Vector Network Analyzer and Vector Reflectometer	SPEAG	DAKS_VNA R140	SZ-WSR-M-054	2024/06/26	2025/06/25
☒	Radio Communication Analyzer	Anritsu	MT8820C	SZ-WSR-M-005	2025/01/08	2026/01/07
☒	Radio Communication Analyzer	Anritsu	MT8820C	SZ-WSR-M-018	2024/05/24	2025/05/23
☒	Radio Communication Analyzer	Anritsu	MT8820C	SZ-WSR-M-020	2024/08/19	2025/08/18
☒	RF Bi-Directional Coupler	Agilent	86205-60001	SZ-WSR-A-004	NCR	NCR
☒	Signal Generator	Agilent	N5171B	SZ-WSR-M-006	2025/01/07	2026/01/06
☒	Preamplifier	Mini-Circuits	ZHL-42W	SZ-WSR-A-001	NCR	NCR
☒	Preamplifier	Compliance Directions Systems Inc.	AMP28-3W	SZ-WSR-A-002	NCR	NCR
☒	Power Meter	Agilent	E4416A	SZ-WSR-M-007	2025/01/07	2026/01/06
☒	Power Sensor	Agilent	8481H	SZ-WSR-M-008	2025/01/07	2026/01/06
☒	Power Sensor	R&S	NRP-Z92	SZ-WSR-M-009	2025/01/08	2026/01/07
☒	Attenuator	SHX	TS2-3dB	SZ-WSR-A-012	NCR	NCR
☒	Speed reading	Zhengzhou	TP3001	SZ-WSR-M-014	2024/05/30	2025/05/29

	thermometer	Boyang Instrument				
☒	Temperature	MingGao	T809	SZ-WSR-M-015	2024/05/30	2025/05/29
☒	Temperature	MingGao	T809	SZ-WSR-M-016	2024/05/30	2025/05/29
☒	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-013	2024/05/28	2025/05/27
☒	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-012	2024/05/28	2025/05/27
☒	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-011	2024/05/28	2025/05/27

Note: All the equipment 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

--- End of report ---

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