Prüfbericht-Nr.: *Test report no.:*	**CN2387AY 006**	**Auftrags-Nr.:** *Order no.:*	**168405109**	Seite 1 von 58 *Page 1 of* 58
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2023-01-04	
Auftraggeber: *Client:*	**Hillsdale Technology LLC** 3182 Campus Drive, Unit 266, San Mateo, United States			
Prüfgegenstand: *Test item:*	Jarvisen Translator 2			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	JT-2-BLACK			
Auftrags-Inhalt: *Order content*:	Test Report for FCC			
Prüfgrundlage: *Test specification:*	FCC 47 CFR § 2.1093 IEEE Std 1528-2013 Published RF exposure KDB procedures			

Wareneingangsdatum: *Date of sample receipt:*	2023-01-05	Please refer to Photo Document
Prüfmuster-Nr.: *Test sample no:*	A003399272-003	
Prüfzeitraum: *Testing period:*	2023-02-02 –2023-02-10	
Ort der Prüfung: *Place of testing:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüfergebnis*: *Test result*:*	Pass	

geprüft von: *tested by:*	Lin Lin	**genehmigt von:** *authorized by:*	Hardy Suo
Datum: *Date:* 2023-02-16		**Ausstellungsdatum:** *Issue date:* 2023-02-16	
Stellung / *Position:*	Senior Project Manager	**Stellung** / *Position:*	Reviewer

Sonstiges / *Other:* FCC ID: 2A94T-JT-2-BLACK

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Table of Contents

1. General Information

1.1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for the EUT are as follows:

Equipment Class	Mode	Highest Reported Body SAR_{1g} (1.0 cm Gap) (W/kg)	Highest Reported Extremity SAR_{10g} (0 cm Gap) (W/kg)
PCB	WCDMA II	1.17	2.80
	WCDMA IV	0.98	1.89
	WCDMA V	0.40	0.69
	LTE 4	1.19	2.52
	LTE 5	0.40	0.77
	LTE 7	0.72	3.60
	LTE 12/17	0.41	0.90
	LTE 25/2	1.06	2.35
	LTE 41/38	0.35	0.61
DTS	2.4G WLAN	0.33	0.89
NII	5.2G WLAN	1.19	2.13
	5.6G WLAN	0.72	1.20
	5.8G WLAN	0.37	0.79
DSS	Bluetooth	0.07	0.27
Highest Simultaneous Transmission SAR		Body (W/kg)	Extremity (W/kg)
PCB + DTS		1.19	N/A
PCB + NII		1.57	N/A
PCB + DSS		1.19	N/A

Note:

1. This device supports LTE B2 / B17 / B38 and B25 / B12 / B41.Since the supported frequency span for LTE B2 / B17 / B38 falls completely within the supports frequency span for LTE B25 / B12 / B41,both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore ,SAR was only assessed for LTE B25 / B12 / B41.
2. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6W/kg as averaged over any 1 gram of tissue; 10-gram SAR for Product Specific 10g SAR, limit: 4.0W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

1.2. Equipment Under Test (EUT) Information

1.2.1. General Information

Equipment Name	Jarvisen Translator2.0
FCC ID	2A94T-JT-2-BLACK
Model Name	JT-2-BLACK
HW Version	HW_LD_MB_V01
SW Version	1600
Antenna Type	Fixed Internal Antenna
Antenna Gain	1.65dBi for 2.4GHz, 0.8dBi for 5GHz WCDMA Band 2: 1.95dBi WCDMA Band 4: 2.25dBi WCDMA Band 5: 1.05dBi LTE Band 2: 2.05 dBi LTE Band 4: 2.18 dBi LTE Band 5: 1.05 dBi LTE Band 7: 1.80 dBi LTE Band 12: 0.50 dBi LTE Band 17: 0.50 dBi LTE Band 25: 2.05 dBi LTE Band 38: 1.87 dBi LTE Band 41: 1.87 dBi
EUT Stage	Identical Prototype

1.2.2. Wireless Technologies

Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2537.5 MHz ~ 2652.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.6GHz Band: 5500 MHz ~ 5700 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Uplink Modulations	WCDMA: BPSK, QPSK LTE: QPSK, 16QAM 802.11b: DSSS WLAN 2.4G 802.11g/n (HT20)/HT40: OFDM WLAN 5G 802.11a/n (HT20)/HT40 / ac(VHT80): OFDM Bluetooth® GFSK, π/4-DQPSK, 8-DPSK, LE

Note:

1. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

1.2.3. List of Accessory

Battery	**Brand Name**	IFLYTEK
	Model Name	LD200A
	Power Rating	3.85Vdc, 2000mAh
	Type	Li-ion

2. Test Sites

2.1. Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China

A2LA Cert. No.: 5162.01

FCC Registration No.: 694916

2.2. Ambient Condition

Ambient Temperature	21.0°C – 22.5°C
Relative Humidity	50% - 64%

2.3. List of Test and Measurement Instruments

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D750V3	1109	May. 17, 2021	3 years
System Validation Dipole	SPEAG	D835V2	4d242	May. 17, 2021	3 years
System Validation Dipole	SPEAG	D1750V2	1166	May. 17, 2021	3 years
System Validation Dipole	SPEAG	D1900V2	5d229	May. 20, 2021	3 years
System Validation Dipole	SPEAG	D2450V2	1014	May. 19, 2021	3 years
System Validation Dipole	SPEAG	D2600V2	1153	May. 19, 2021	3 years
System Validation Dipole	SPEAG	D5GHzV2	1280	May. 17, 2021	3 years
Dosimetric E-Field Probe	SPEAG	EX3DV4	7506	May. 31, 2022	1 year
Data Acquisition Electronics	SPEAG	DAE4	662	Mar. 24, 2022	1 year
Wideband Radio Communication Tester	R&S	CMW500	166305	Aug. 09, 2022	1 year
Signal Analyzer	R&S	FSV 7	103665	Aug. 09, 2022	1 year
Vector Network Analyzer	R&S	ZNB 8	107040	Aug. 09, 2022	1 year
Dielectric assessment Kit	SPEAG	DAK-3.5	1269	May. 30, 2022	1 year
Signal Generator	R&S	SMB 100A	180840	Aug. 09, 2022	1 year
EPM Series Power Meter	Keysight	N1914A	MY58240005	Nov. 21, 2022	1 year
Power Sensor	Keysight	N8481H	MY58250002	Nov. 21, 2022	1 year
Power Sensor	Keysight	N8481H	MY58250006	Nov. 21, 2022	1 year
DC Power Supply	Topward	3303D	809332	Nov. 21, 2022	1 year
Coaxial Directional Couper	Keysight	773D	MY52180552	Nov. 21, 2022	1 year
Coaxial Directional Couper	shhuaxiang	DTO-0.4/3.9-10	18052101	Nov. 21, 2022	1 year
Coaxial attenuator	Keysight	8491A	MY52463219	Nov. 21, 2022	1 year
Coaxial attenuator	Keysight	8491A	MY52463210	Nov. 21, 2022	1 year
Coaxial attenuator	Keysight	8491A	MY52463222	Nov. 21, 2022	1 year
Digital Thermometer	LKM	DTM3000	3116	Nov. 21, 2022	1 year
Power Amplifier Mini circuit	mini-circuits	ZHL-42W	SN002101809	N/A	N/A
Power Amplifier Mini circuit	mini-circuits	ZVE-8G	SN070501814	N/A	N/A
PHANTOM	SPEAG	ELI V8.0	2094	N/A	N/A
PHANTOM	SPEAG	SAM-Twin V8.0	1961	N/A	N/A

3. Measurement Uncertainty

Source of Uncertainty	Tolerance (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)	Vi Veff
Measurement System Errors								
Probe Calibration	±13.3%	Normal (k=2)	2	1	1	± 6.65 %	± 6.65 %	∞
Probe Calibration Drift	±1.7%	Rectangular	√3	1	1	±1.0%	±1.0%	∞
Probe Linearity	±4.7%	Rectangular	√3	1	1	±2.7%	±2.7%	∞
Broadband Signal	±3.0%	Rectangular	√3	1	1	±1.7%	±1.7%	∞
Probe Isotropy	±7.6%	Rectangular	√3	1	1	±4.4%	±4.4%	∞
Other Probe + Electronic	±0.7%	Normal	1	1	1	±0.7%	±0.7%	∞
RF Ambient	±1.8%	Normal	1	1	1	±1.8%	±1.8%	∞
Probe Positioning	±0.006mm	Normal	1	0.14	0.14	±0.10%	±0.10%	∞
Data Processing	±1.2%	Normal	1	1	1	±1.2%	±1.2%	∞
Phantom and Device Errors								
Conductivity (meas.)^{DAK}	±2.5%	Normal	1	0.78	0.71	±2.0%	±1.8%	100
Conductivity (temp.)^{BB}	±3.3%	Rectangular	√3	0.78	0.71	±1.5%	±1.4%	∞
Phantom Permittivity	±14.0%	Rectangular	√3	0	0	±0%	±0%	∞
Distance DUT – TSL	±2.0%	Normal	1	2	2	±4.0%	±4.0%	∞
Device Positioning	±2.4%/±2.8%	Normal	1	1	1	±2.8%	±2.8%	30
Device Holder	±3.4%/±3.5%	Normal	1	1	1	±3.5%	±3.5%	30
DUT Modulation^{m}	±2.4%	Rectangular	√3	1	1	±1.4%	±1.4%	∞
Time-average SAR	±1.7%	Rectangular	√3	1	1	±1.0%	±1.0%	∞
DUT drift	±2.5%	Normal	1	1	1	±2.5%	±2.5%	30
Val Antenna Unc.^{val}	±0.0%	Normal	1	1	1	±0%	±0%	
Unc. Input Power^{val}	±0.0%	Normal	1	1	1	±0%	±0%	
Correction to the SAR results								
C(ε,σ)	±1.9%	Normal	1	1	0.84	±1.9%	±1.6%	
SAR scaling^{p}	±0.0%	Rectangular	√3	1	1	±0%	±0%	
Combined Standard Uncertainty (K = 1)						±12.54%	±12.44%	
Expanded Uncertainty (K = 2)						**±25.1%**	**±24.9%**	

Uncertainty budget for frequency range 300 MHz to 3 GHz

Source of Uncertainty	Tolerance (± %)	Probability Distribution	Diviso r	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)	Vi Veff
Measurement System Errors								
Probe Calibration	±13.1%	Normal (k=2)	2	1	1	± 6.55 %	± 6.55 %	∞
Probe Calibration Drift	±1.7%	Rectangular	√3	1	1	±1.0%	±1.0%	∞
Probe Linearity	±4.7%	Rectangular	√3	1	1	±2.7%	±2.7%	∞
Broadband Signal	±2.6%	Rectangular	√3	1	1	±1.5%	±1.5%	∞
Probe Isotropy	±7.6%	Rectangular	√3	1	1	±4.4%	±4.4%	∞
Other Probe + Electronic	±1.2%	Normal	1	1	1	±1.2%	±1.2%	∞
RF Ambient	±1.8%	Normal	1	1	1	±1.8%	±1.8%	∞
Probe Positioning	±0.005mm	Normal	1	0.29	0.29	±0.15%	±0.15%	∞
Data Processing	±2.3%	Normal	1	1	1	±2.3%	±2.3%	∞
Phantom and Device Errors								
Conductivity (meas.)^{DAK}	±2.5%	Normal	1	0.78	0.71	±2.0%	±1.8%	60
Conductivity (temp.)^{BB}	±3.3%	Rectangular	√3	0.78	0.71	±1.5%	±1.4%	∞
Phantom Permittivity	±14.0%	Rectangular	√3	0.25	0.25	±2%	±2%	∞
Distance DUT – TSL	±2.0%	Normal	1	2	2	±4.0%	±4.0%	∞
Device Positioning	±2.4%/±2.8%	Normal	1	1	1	±2.8%	±2.8%	30
Device Holder	±3.4%/±3.5%	Normal	1	1	1	±3.5%	±3.5%	30
DUT Modulation^{m}	±2.4%	Rectangular	√3	1	1	±1.4%	±1.4%	∞
Time-average SAR	±1.7%	Rectangular	√3	1	1	±1.0%	±1.0%	∞
DUT drift	±2.5%	Normal	1	1	1	±2.5%	±2.5%	30
Val Antenna Unc.^{val}	±0.0%	Normal	1	1	1	±0%	±0%	
Unc. Input Power^{val}	±0.0%	Normal	1	1	1	±0%	±0%	
Correction to the SAR results								
Deviation to Target	±1.9%	Normal	1	1	0.84	±1.9%	±1.6%	
SAR scaling^{p}	±0.0%	Rectangular	√3	1	1	±0%	±0%	
Combined Standard Uncertainty (K = 1)						±12.8%	±12.7%	
Expanded Uncertainty (K = 2)						**±25.6%**	**±25.4%**	

Uncertainty budget for frequency range 3 GHz to 6 GHz

4. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE STD 1528- 2013, the following FCC Published RF exposure KDB procedures & manufacturer KDB inquiries:

- KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- KDB 865664 D02 RF Exposure Reporting v01r02
- KDB 248227 D01 802 11 Wi-Fi SAR v02r02
- KDB 447498 D01 General RF Exposure Guidance v06
- KDB 643646 D01 SAR Test for PTT Radios v01r03
- KDB 941225 D01 3G SAR Procedures v03r01
- KDB 941225 D05 SAR for LTE Devices v02r05
- KDB 447498 D04 Interim General RF Exposure Guidance v01
- IEC/IEEE 62209-1528:2020 Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)

In addition to the above, the following information was used:

- TCB workshop October, 2014; Page 36, RF Exposure Procedures Update (Overlapping LTE Bands)
- TCB workshop April, 2019; Page 19, Tissue Simulating Liquids(TSL)

5. SAR Measurement System

5.1. Definition of Specific Absorption Rate (SAR)

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

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

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

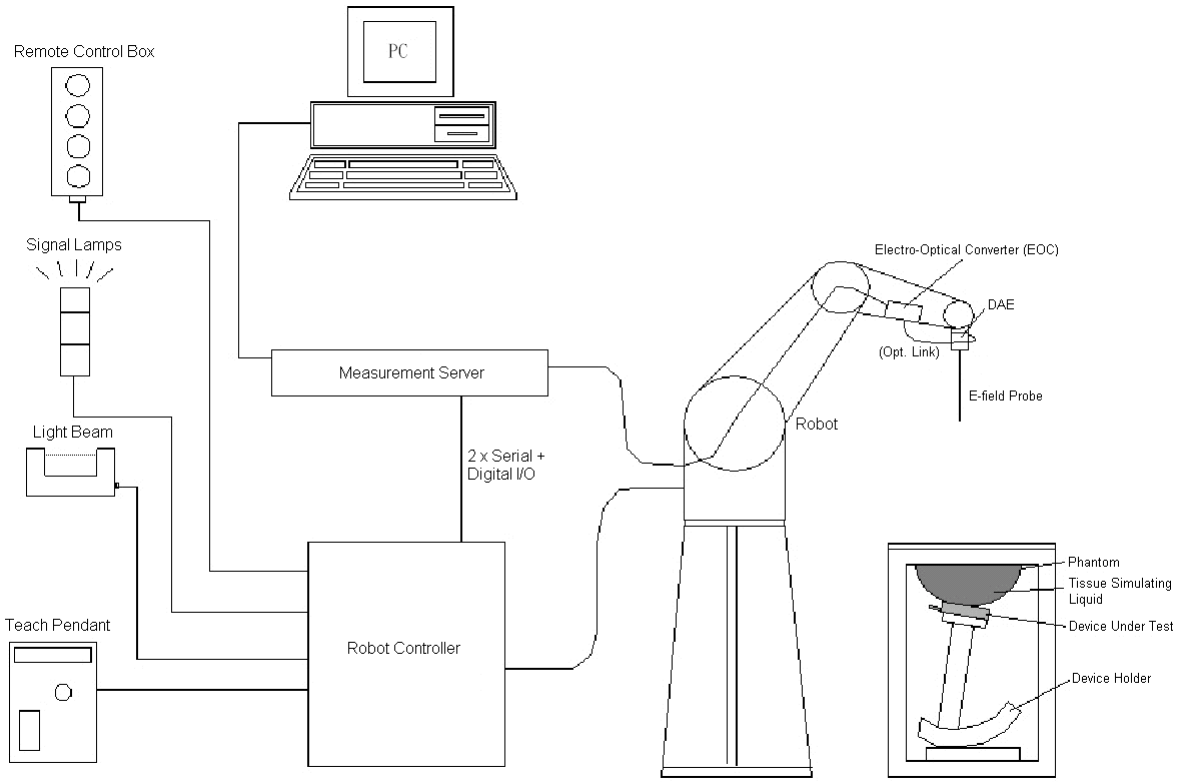
SAR is expressed in units of Watts per kilogram (W/kg)
SAR measurement can be related to the electrical field in the tissue by

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

5.2. SPEAG DASY System

DASY system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY5 software defined. The DASY software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion form the optical into digital electric signal of the DAE and transfers data to the PC.

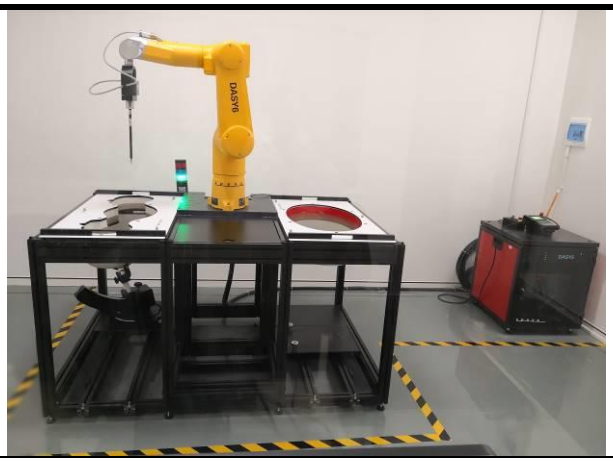


DASY System Setup

5.2.1.Robot

The DASY system uses the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY5: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)



DASY6

5.2.2.Probes

The SAR measurement is conducted with the dosimetric probe. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency.

Model	EX3DV4	
Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).	
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to 100 mW/g Linearity: ± 0.2 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	

5.2.3.Data Acquisition Electronics (DAE)

Model	DAE4	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY 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 fA	
Dimensions	60 x 60 x 68 mm	

5.2.4.Phantoms

Model	Twin SAM	
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEC/IEEE 62209-1528. 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.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)	
Dimensions	Length: 1000 mm Width: 500 mm Height: adjustable feet	
Filling Volume	approx. 25 liters	

Model	ELI	
Construction	The ELI phantom is used for compliance testing of handheld and body-mounted wireless devices in the frequency range of 4 MHz to 10 GHz. ELI is fully compatible with the IEC/IEEE 62209-1528 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 of SPEAG's dosimetric probes and dipoles.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2.0 ± 0.2 mm (bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	approx. 30 liters	

5.2.5.Device Holder

Model	Mounting Device	
Construction	In combination with the Twin SAM Phantom or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).	
Material	POM	

Model	Laptop Extensions Kit	
Construction	Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-1528 (e.g., laptops, cameras, etc.). It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner.	
Material	POM, Acrylic glass, Foam	

5.2.6.System Validation Dipoles

Model	D-Serial	
Construction	Symmetrical dipole with l/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.	
Frequency	750 MHz to 5800 MHz	
Return Loss	> 20 dB	
Power Capability	> 100 W (f < 1GHz), > 40 W (f > 1GHz)	

5.2.7.Tissue Simulating Liquids

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

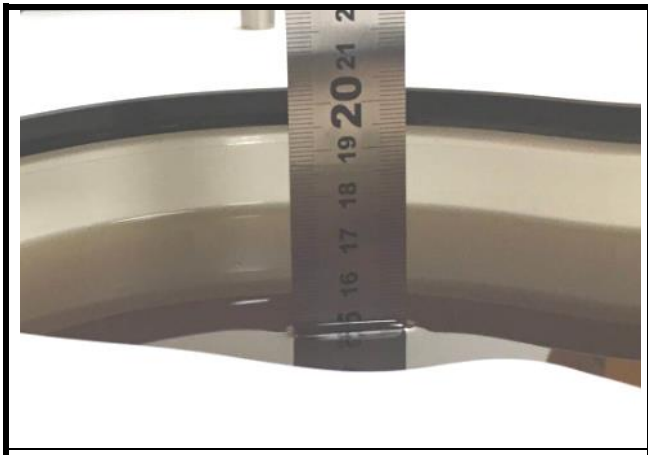
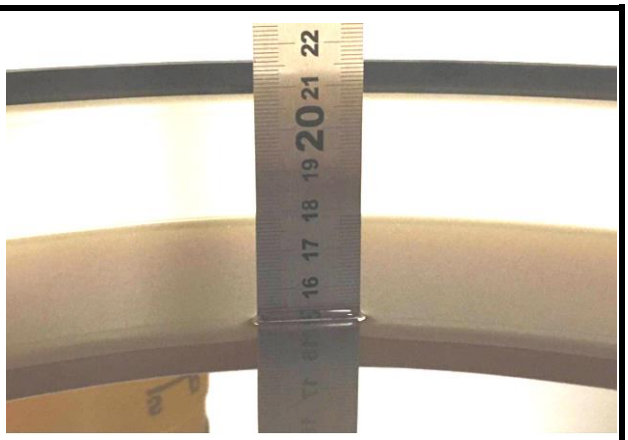
	

Photo of Liquid Height for Head Position	**Photo of Liquid Height for Body Position**

The dielectric properties of the head tissue simulating liquids are defined in IEEE 1528, and KDB 865664 D01 Appendix A. For the body tissue simulating liquids, the dielectric properties are defined in KDB 865664 D01 Appendix A. The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using a dielectric assessment kit and a network analyzer.

Targets of Tissue Simulating Liquid

Frequency (MHz)	Target Permittivity	Range of ±5%	Target Conductivity	Range of ±5%
For Head				
750	41.9	39.8 ~ 44.0	0.89	0.85 ~ 0.93
835	41.5	39.4 ~ 43.6	0.90	0.86 ~ 0.95
900	41.5	39.4 ~ 43.6	0.97	0.92 ~ 1.02
1450	40.5	38.5 ~ 42.5	1.20	1.14 ~ 1.26
1640	40.3	38.3 ~ 42.3	1.29	1.23 ~ 1.35
1750	40.1	38.1 ~ 42.1	1.37	1.30 ~ 1.44
1800	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
1900	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2000	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2300	39.5	37.5 ~ 41.5	1.67	1.59 ~ 1.75
2450	39.2	37.2 ~ 41.2	1.80	1.71 ~ 1.89
2600	39.0	37.1 ~ 41.0	1.96	1.86 ~ 2.06
3500	37.9	36.0 ~ 39.8	2.91	2.76 ~ 3.06
5200	36.0	34.2 ~ 37.8	4.66	4.43 ~ 4.89
5300	35.9	34.1 ~ 37.7	4.76	4.52 ~ 5.00
5500	35.6	33.8 ~ 37.4	4.96	4.71 ~ 5.21
5600	35.5	33.7 ~ 37.3	5.07	4.82 ~ 5.32
5800	35.3	33.5 ~ 37.1	5.27	5.01 ~ 5.53
For Body				
750	55.5	52.7 ~ 58.3	0.96	0.91 ~ 1.01
835	55.2	52.4 ~ 58.0	0.97	0.92 ~ 1.02
900	55.0	52.3 ~ 57.8	1.05	1.00 ~ 1.10
1450	54.0	51.3 ~ 56.7	1.30	1.24 ~ 1.37
1640	53.8	51.1 ~ 56.5	1.40	1.33 ~ 1.47
1750	53.4	50.7 ~ 56.1	1.49	1.42 ~ 1.56
1800	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
1900	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2000	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2300	52.9	50.3 ~ 55.5	1.81	1.72 ~ 1.90
2450	52.7	50.1 ~ 55.3	1.95	1.85 ~ 2.05
2600	52.5	49.9 ~ 55.1	2.16	2.05 ~ 2.27
3500	51.3	48.7 ~ 53.9	3.31	3.14 ~ 3.48
5200	49.0	46.6 ~ 51.5	5.30	5.04 ~ 5.57
5300	48.9	46.5 ~ 51.3	5.42	5.15 ~ 5.69
5500	48.6	46.2 ~ 51.0	5.65	5.37 ~ 5.93
5600	48.5	46.1 ~ 50.9	5.77	5.48 ~ 6.06
5800	48.2	45.8 ~ 50.6	6.00	5.70 ~ 6.30

The following table gives the recipes for tissue simulating liquids.

Recipes of Tissue Simulating Liquid

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
H750	0.2	-	0.2	1.5	56.0	-	42.1	-
H835	0.2	-	0.2	1.5	57.0	-	41.1	-
H900	0.2	-	0.2	1.4	58.0	-	40.2	-
H1450	-	43.3	-	0.6	-	-	56.1	-
H1640	-	45.8	-	0.5	-	-	53.7	-
H1750	-	47.0	-	0.4	-	-	52.6	-
H1800	-	44.5	-	0.3	-	-	55.2	-
H1900	-	44.5	-	0.2	-	-	55.3	-
H2000	-	44.5	-	0.1	-	-	55.4	-
H2300	-	44.9	-	0.1	-	-	55.0	-
H2450	-	45.0	-	0.1	-	-	54.9	-
H2600	-	45.1	-	0.1	-	-	54.8	-
H3500	-	8.0	-	0.2	-	20.0	71.8	-
H5G	-	-	-	-	-	17.2	65.5	17.3
B750	0.2	-	0.2	0.8	48.8	-	50.0	-
B835	0.2	-	0.2	0.9	48.5	-	50.2	-
B900	0.2	-	0.2	0.9	48.2	-	50.5	-
B1450	-	34.0	-	0.3	-	-	65.7	-
B1640	-	32.5	-	0.3	-	-	67.2	-
B1750	-	31.0	-	0.2	-	-	68.8	-
B1800	-	29.5	-	0.4	-	-	70.1	-
B1900	-	29.5	-	0.3	-	-	70.2	-
B2000	-	30.0	-	0.2	-	-	69.8	-
B2300	-	31.0	-	0.1	-	-	68.9	-
B2450	-	31.4	-	0.1	-	-	68.5	-
B2600	-	31.8	-	0.1	-	-	68.1	-
B3500	-	28.8	-	0.1	-	-	71.1	-
B5G	-	-	-	-	-	10.7	78.6	10.7

Simulating Head Liquid (HBBL600-6000MHz), Manufactured by SPEAG:

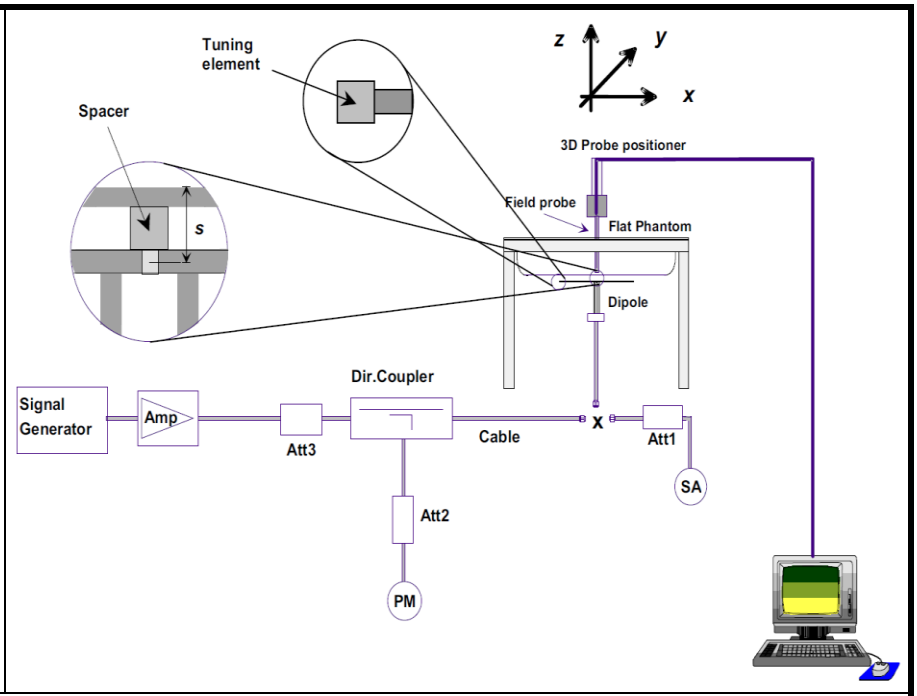
Water (% by weight)	Esters, Emulsifiers, Inhibitors (% by weight)	Sodium salt (% by weight)
50 - 65%	10 - 30%	8 - 25%

Simulating Body Liquid (MBBL600-6000MHz), Manufactured by SPEAG:

Water (% by weight)	Esters, Emulsifiers, Inhibitors (% by weight)	Sodium salt (% by weight)
60 - 80%	20 - 40%	0 – 1.5%

5.2.8.SAR System Verification

The system check verifies that the system operates within its specifications. It is performed daily or before every SAR measurement. The system check uses normal SAR measurements in the flat section of the phantom with a matched dipole at a specified distance. The system verification setup is shown as below.



System Verification Setup

The validation dipole is placed beneath the flat phantom with the specific spacer in place. The distance spacer is touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The spectrum analyzer measures the forward power at the location of the system check dipole connector. The signal generator is adjusted for the desired forward power (250 mW is used for 700 MHz to 3 GHz, 100 mW is used for 3.5 GHz to 6 GHz) at the dipole connector and the power meter is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter.

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10 %.

6. SAR Measurement Procedure

According to the SAR test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

The SAR measurement procedures for each of test conditions are as follows:

(a) Make EUT to transmit maximum output power
(b) Measure conducted output power through RF cable
(c) Place the EUT in the specific position of phantom
(d) Perform SAR testing steps on the DASY system
(e) Record the SAR value

6.1. Area & Zoom Scan Procedure

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. According to KDB 865664 D01, the resolution for Area and Zoom scan is specified in the table below.

Items	<= 2 GHz	2-3 GHz	3-4 GHz	4-5 GHz	5-6 GHz
Area Scan (Δx, Δy)	<= 15 mm	<= 12 mm	<= 12 mm	<= 10 mm	<= 10 mm
Zoom Scan (Δx, Δy)	<= 8 mm	<= 5 mm	<= 5 mm	<= 4 mm	<= 4 mm
Zoom Scan (Δz)	<= 5 mm	<= 5 mm	<= 4 mm	<= 3 mm	<= 2 mm
Zoom Scan Volume	>= 30 mm	>= 30 mm	>= 28 mm	>= 25 mm	>= 22 mm

Note:
When zoom scan is required and report SAR is <= 1.4 W/kg, the zoom scan resolution of Δx / Δy (2-3GHz: <= 8 mm, 3-4GHz: <= 7 mm, 4-6GHz: <= 5 mm) may be applied.

6.2. Volume Scan Procedure

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

6.3. Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

6.4. Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

6.5. SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard’s method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.

7. SAR Measurement Evaluation

7.1. EUT Configuration and Setting

<Connections between EUT and System Simulator>

For WWAN SAR testing, the EUT was linked and controlled by base station emulator (R&S_CMW500). Communication between the EUT and the emulator was established by air link. The distance between the EUT and the communicating antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT. The EUT was set from the emulator to radiate maximum output power during SAR testing.

<Considerations Related to WCDMA for Setup and Testing>

WCDMA Handsets 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.

WCDMA Handsets Body-worn SAR

SAR for body-worn 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 $DPDCH_n$ configurations supported by the handset with 12.2 kbps RMC as the primary mode.

Handsets with Release 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body-worn configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures in the “Release 5 HSDPA Data Devices”, for the highest reported SAR body-worn exposure configuration in 12.2 kbps RMC. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

Handsets with Release 6 HSUPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body-worn configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures in the “Release 6 HSPA Data Devices”, for the highest reported body-worn exposure SAR configuration in 12.2 kbps RMC. When VOIP is applicable for next to the ear head exposure in HSPA, the 3G SAR test reduction procedure is applied to HSPA with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body-worn measurements is tested for next to the ear head exposure.

Release 5 HSDPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in 12.2 kbps RMC without 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 (β_c, β_d), and HS-DPCCH power offset parameters (Δ_{ACK}, Δ_{NACK}, Δ_{CQI}) are set according to values indicated in below. 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	β_c	β_d	β_d (SF)	β_c / β_d	β_{hs} (1)	CM (dB)(2)	MPR
1	2 / 15	15 / 15	64	2 / 15	4 / 15	0.0	0
2	12 / 15 (3)	15 / 15 (3)	64	12 / 15 (3)	24 / 15	1.0	0
3	15 / 15	8 / 15	64	15 / 8	30 / 15	1.5	0.5
4	15 / 15	4 / 15	64	15 / 4	30 / 15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs} / \beta_c = 30 / 15 \Leftrightarrow \beta_{hs} = 30 / 15 * \beta_c$.
Note 2: CM = 1 for $\beta_c / \beta_d = 12 / 15$, $\beta_{hs} / \beta_c = 24 / 15$.
Note 3: For subtest 2 the β_c / β_d ratio of 12 / 15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11 / 15$ and $\beta_d = 15 / 15$.

Release 6 HSUPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode. Otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing. Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the β values indicated in below.

Sub-test	β_c	β_d	β_d (SF)	β_c / β_d	β_{hs} (1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	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 $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs} / \beta_c = 30 / 15 \Leftrightarrow \beta_{hs} = 30 / 15 * \beta_c$.
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 signaled 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 signaled 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} cannot be set directly; it is set by Absolute Grant Value.

<Considerations Related to LTE for Setup and Testing>

This device contains LTE transmitter which follows 3GPP standards, is category 3, supports both QPSK and 16QAM modulations, and supported LTE band and channel bandwidth is listed in below. The output power was tested per 3GPP TS 36.521-1 maximum transmit procedures for both QPSK and 16QAM modulation. The results please refer to section 4.6 of this report.

EUT Supported LTE Band and Channel Bandwidth						
LTE Band	**BW 1.4 MHz**	**BW 3 MHz**	**BW 5 MHz**	**BW 10 MHz**	**BW 15 MHz**	**BW 20 MHz**
2	**V**	**V**	**V**	**V**	**V**	**V**
4	**V**	**V**	**V**	**V**	**V**	**V**
5	**V**	**V**	**V**	**V**		
7			**V**	**V**	**V**	**V**
12	**V**	**V**	**V**	**V**		
17			**V**	**V**		
25	**V**	**V**	**V**	**V**	**V**	**V**
38			**V**	**V**	**V**	**V**
41			**V**	**V**	**V**	**V**

The LTE maximum power reduction (MPR) in accordance with 3GPP TS 36.101 is active all times during LTE operation. The allowed MPR for the maximum output power is specified in below.

Modulation	**Channel Bandwidth / RB Configurations**						**LTE MPR Setting (dB)**
	BW 1.4 MHz	**BW 3 MHz**	**BW 5 MHz**	**BW 10 MHz**	**BW 15 MHz**	**BW 20 MHz**	
QPSK	**> 5**	**> 4**	**> 8**	**> 12**	**> 16**	**> 18**	**1**
16QAM	**<= 5**	**<= 4**	**<= 8**	**<= 12**	**<= 16**	**<= 18**	**1**
16QAM	**> 5**	**> 4**	**> 8**	**> 12**	**> 16**	**> 18**	**2**

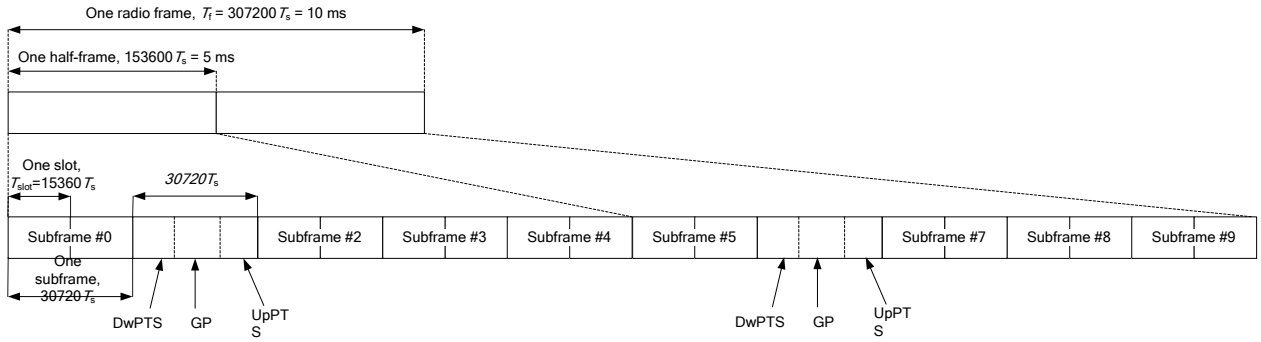
Note: MPR is according to the standard and implemented in the circuit (mandatory).

In addition, the device is compliant with additional maximum power reduction (A-MPR) requirements defined in 3GPP TS 36.101 section 6.2.4 that was disabled for all FCC compliance testing.

During LTE SAR testing, the related parameters of operating band, channel bandwidth, uplink channel number, modulation type, and RB was set in base station simulator. When the EUT has registered and communicated to base station simulator, the simulator set to make EUT transmitting the maximum radiated power.

TDD-LTE Setup Configurations

According to KDB 941225 D05, SAR testing for TDD-LTE device 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 TDD-LTE configurations. The TDD-LTE of this device supports frame structure type 2 defined in 3GPP TS 36.211 section 4.2, and the frame structure configuration can be referred to below.



3GPP TS 36.211 Frame Structure Type 2

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			12800 • Ts		
8	24144 • Ts			-	-	-
9	13168 • Ts			-	-	-

3GPP TS 36.211 Configuration of Special Subframe

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

3GPP TS 36.211 Uplink-Downlink Configurations

The variety of different TD-LTE uplink-downlink configurations allows a network operator to allocate the network's capacity between uplink and downlink traffic to meet the needs of the network. The uplink duty cycle of these seven configurations can readily be computed and shown in below.

UL-DL Configuration	0	1	2	3	4	5	6
Highest Duty-Cycle	63.33%	43.33%	23.33%	31.67%	21.67%	11.67%	53.33%

Considering the highest transmission duty cycle, TDD-LTE was tested using Uplink-Downlink Configuration 0 with 6 uplink subframe and 2 special subframe. The special subframe was set to special subframe configuration 7 using extended cyclic prefix uplink. Therefore, SAR testing for TDD-LTE was performed at the maximum output power with highest transmission duty cycle of 63.33%.

<Considerations Related to WLAN for Setup and Testing>

In general, various vendor specific external test software and chipset based internal test modes are typically used for SAR measurement. These chipset based test mode utilities are generally hardware and manufacturer dependent, and often include substantial flexibility to reconfigure or reprogram a device. 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. The test frequencies established using test mode must correspond to the actual channel frequencies. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. In addition, a periodic transmission duty factor is required for current generation SAR systems to measure SAR correctly. The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

According to KDB 248227 D01, this device has installed WLAN engineering testing software which can provide continuous transmitting RF signal. During WLAN SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

Initial Test Configuration

An initial test configuration is determined for OFDM transmission modes in 2.4 GHz and 5 GHz bands according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.

Subsequent Test Configuration

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. Additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. When the highest reported SAR for the initial test configuration 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.

SAR Test Configuration and Channel Selection

When multiple channel bandwidth configurations in a frequency band have the same specified maximum output power, the initial test configuration is using largest channel bandwidth, lowest order modulation, lowest data rate, and lowest order 802.11 mode (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.

1) The channel closest to mid-band frequency is selected for SAR measurement.
2) 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.

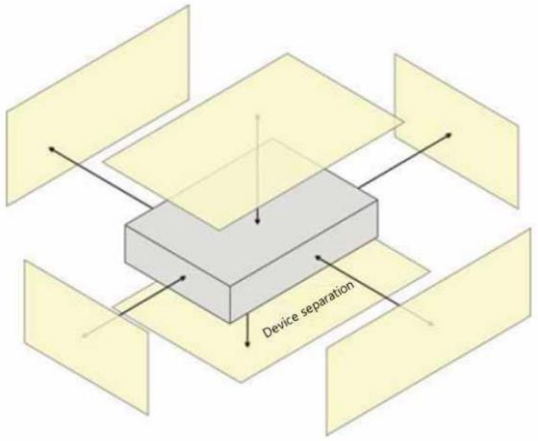
Test Reduction for U-NII-1 (5.2 GHz) and U-NII-2A (5.3 GHz) Bands
For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following.
1) When the same maximum output power is specified for both bands, begin SAR measurement 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).
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.

<Considerations Related to Bluetooth for Setup and Testing>
This device has installed Bluetooth engineering testing software which can provide continuous transmitting RF signal. During Bluetooth SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

7.2. EUT Testing Position

7.2.1. Body Exposure Conditions

For this device, SAR evaluation is required on all sides and edges with a transmitting antenna within 25 mm from that surface or edge, at 10mm separation from a flat phantom, for the data modes, wireless technologies and frequency bands supported by the device to determine SAR compliance. Added Extremity SAR for worst location and the 10-g extremity SAR test exclusions may be applied.



7.3. Simultaneous Transmission Possibilities

The simultaneous transmission possibilities for this device are listed as below.

Simultaneous TX Combination	Capable Transmit Configurations	Body Exposure Condition
1	WCDMA II (Data) + WLAN (Data)	Yes
2	WCDMA IV (Data) + WLAN (Data)	Yes
3	WCDMA V (Data) + WLAN (Data)	Yes
4	LTE 2 (Data) + WLAN (Data)	Yes
5	LTE 4 (Data) + WLAN (Data)	Yes
6	LTE 5 (Data) + WLAN (Data)	Yes
7	LTE 7 (Data) + WLAN (Data)	Yes
8	LTE 12 (Data) + WLAN (Data)	Yes
9	LTE 17 (Data) + WLAN (Data)	Yes
10	LTE 25 (Data) + WLAN (Data)	Yes
11	LTE 38 (Data) + WLAN (Data)	Yes
12	LTE 41 (Data) + WLAN (Data)	Yes
13	WCDMA II (Data) + BT (Data)	Yes
14	WCDMA IV (Data) + BT (Data)	Yes
15	WCDMA V (Data) + BT (Data)	Yes
16	LTE 2 (Data) + BT (Data)	Yes
17	LTE 4 (Data) + BT (Data)	Yes
18	LTE 5 (Data) + BT (Data)	Yes
19	LTE 7 (Data) + BT (Data)	Yes
20	LTE 12 (Data) + BT (Data)	Yes
21	LTE 17 (Data) + BT (Data)	Yes
22	LTE 25 (Data) + BT (Data)	Yes
23	LTE 38 (Data) + BT (Data)	Yes
24	LTE 41 (Data) + BT (Data)	Yes

Note :

1. The 2.4G WLAN and 5G WLAN cannot transmit simultaneously.
2. The WLAN and Bluetooth cannot transmit simultaneously, so there is no co-location test requirement for WLAN and Bluetooth.

7.4. Tissue Verification

The measuring results for tissue simulating liquid are shown as below.

Test Date	Tissue Type	Frequency (MHz)	Measured Conductivity (σ)	Measured Permittivity (ε_r)	Target Conductivity (σ)	Target Permittivity (ε_r)	Conductivity Deviation (%)	Permittivity Deviation (%)
Feb. 04. 2023	H750	750	0.891	41.112	0.90	42.00	-1.00	-2.11
		711	0.877	41.215	0.89	42.10	-1.13	-2.10
Feb. 04. 2023	H835	835	0.922	40.887	0.90	41.50	2.44	-1.48
		826.4	0.918	40.903	0.90	41.54	2.23	-1.53
		829	0.920	40.900	0.90	41.52	2.34	-1.49
Feb. 03. 2023	H1750	1750	1.374	40.158	1.37	40.10	0.29	0.14
		1712.4	1.351	40.240	1.34	40.16	0.67	0.20
		1720	1.356	40.230	1.35	40.15	0.52	0.20
		1732.5	1.364	40.200	1.36	40.13	0.59	0.17
		1732.6	1.364	40.200	1.36	40.13	0.52	0.17
		1745	1.371	40.170	1.37	40.10	0.37	0.17
Feb. 02. 2023	H1900	1900	1.448	39.937	1.40	40.00	3.43	-0.16
		1852.4	1.425	39.950	1.40	40.00	1.79	-0.12
		1860	1.428	39.940	1.40	38.90	2.00	2.67
		1880	1.442	39.940	1.40	40.00	3.00	-0.15
		1882.5	1.439	39.940	1.40	40.00	2.79	-0.15
		1905	1.451	39.940	1.40	40.00	3.64	-0.15
		1907	1.452	39.940	1.40	40.00	3.71	-0.15
Feb. 10. 2023	H2450	2450	1.872	38.152	1.80	39.20	4.00	-2.67
		2437	1.862	38.180	1.79	39.22	4.14	-2.65
		2441	1.865	38.171	1.79	39.21	4.07	-2.65
Feb. 05. 2023	H2600	2600	1.994	37.895	1.96	39.00	1.73	-2.83
		2510	1.919	38.060	1.86	39.12	2.95	-2.71
		2535	1.940	38.026	1.89	39.08	2.65	-2.70
		2545	1.948	38.007	1.90	39.07	2.47	-2.72
		2560	1.960	37.980	1.92	39.05	2.24	-2.74
Feb. 07. 2023	H5G	5250	4.734	36.297	4.71	35.90	0.51	1.11
		5180	4.664	36.400	4.64	36.02	0.54	1.05
		5240	4.724	36.310	4.70	35.96	0.51	0.97
Feb. 07. 2023	H5G	5600	5.092	35.786	5.07	35.50	0.43	0.81
		5700	5.200	35.640	5.17	35.40	0.58	0.68
Feb. 07. 2023	H5G	5800	5.305	35.499	5.27	35.30	0.66	0.56
		5785	5.286	35.520	5.26	35.31	0.59	0.59

Note:

The dielectric properties of the tissue simulating liquid must be measured within 24 hours before the SAR testing and within ±5% of the target values. Liquid temperature during the SAR testing must be within ±2 ℃.

7.5. System Validation

The SAR measurement system was validated according to procedures in KDB 865664 D01. The validation status in tabulated summary is as below.

Test Date	Probe S/N	Calibration Point		Measured Conductivity (σ)	Measured Permittivity (ε_r)	Validation for CW			Validation for Modulation		
						Sensitivity Range	Probe Linearity	Probe Isotropy	Modulation Type	Duty Factor	PAR
Feb. 04. 2023	7506	Head	750	0.891	41.112	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 04. 2023	7506	Head	835	0.922	40.887	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 03. 2023	7506	Head	1750	1.374	40.158	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 02. 2023	7506	Head	1900	1.448	39.937	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 10. 2023	7506	Head	2450	1.872	38.152	Pass	Pass	Pass	OFDM	N/A	Pass
Feb. 05. 2023	7506	Head	2600	1.994	37.895	Pass	Pass	Pass	N/A	N/A	N/A
Feb. 07. 2023	7506	Head	5250	4.734	36.297	Pass	Pass	Pass	OFDM	N/A	Pass
Feb. 07. 2023	7506	Head	5600	5.092	35.786	Pass	Pass	Pass	OFDM	N/A	Pass
Feb. 07. 2023	7506	Head	5800	5.305	35.499	Pass	Pass	Pass	OFDM	N/A	Pass

7.6. System Verification

The measuring result for system verification is tabulated as below.

Test Date	Mode	Frequency (MHz)	1W Target SAR-1g (W/kg)	Measured SAR-1g (W/kg)	Normalized to 1W SAR-1g (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N
Feb. 04. 2023	Head	750	8.39	2.14	8.56	2.03	1109	7506	662
Feb. 04. 2023	Head	835	9.60	2.34	9.36	-2.50	4d242	7506	662
Feb. 03. 2023	Head	1750	36.80	9.48	37.92	3.04	1166	7506	662
Feb. 02. 2023	Head	1900	39.90	10.60	42.40	6.27	5d229	7506	662
Feb. 10. 2023	Head	2450	51.80	13.50	54.00	4.25	1014	7506	662
Feb. 05. 2023	Head	2600	54.80	14.90	59.60	8.76	1153	7506	662
Feb. 07. 2023	Head	5250	79.20	8.33	83.30	5.18	1280	7506	662
Feb. 07. 2023	Head	5600	83.60	8.68	86.80	3.83	1280	7506	662
Feb. 07. 2023	Head	5800	80.60	8.56	85.60	6.20	1280	7506	662

Note:

Comparing to the reference SAR value provided by SPEAG, the validation data should be within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots can be referred to Appendix A of this report.

8. Maximum Output Power

8.1. Maximum Conducted Power

The maximum conducted average power (Unit: dBm) including tune-up tolerance is shown as below.

Mode	WCDMA Band II	WCDMA Band IV	WCDMA Band V
RMC 12.2K	23.0	21.5	24.0
HSDPA	22.5	21.0	23.0
HSUPA	22.5	21.0	23.5

Mode	LTE 2	LTE 4	LTE 5
QPSK / 16QAM	22.5	23.0	24.0

Mode	LTE 7	LTE 12	LTE 17
QPSK / 16QAM	24.0	24.0	24.0

Mode	LTE 25	LTE 38	LTE 41
QPSK / 16QAM	22.5	23.0	23.0

Mode	2.4G WLAN	5.2G WLAN	5.3G WLAN	5.6G WLAN	5.8G WLAN
802.11b	16.0	N/A	N/A	N/A	N/A
802.11g	14.0	N/A	N/A	N/A	N/A
802.11a	N/A	15.5	15.0	15.0	15.0
802.11n HT20	13.0	13.5	13.0	13.5	13.5
802.11n HT40	13.5	13.5	13.0	13.5	13.5
802.11ac VHT80	N/A	11.0	11.5	11.0	110.0

Mode	2.4G Bluetooth
GFSK	5.0
8DPSK	1.5
LE 1M	-2.43
LE 2M	-2.48

8.2. Measured Conducted Power Result

Band	WCDMA Band II			WCDMA Band IV			WCDMA Band V			3GPP MPR (dB)
Channel	9262	9400	9538	1312	1413	1513	4132	4182	4233	
Frequency (MHz)	1852.4	1880.0	1907.6	1712.4	1732.6	1752.6	826.4	836.4	846.6	
RMC 12.2K	**22.84**	22.73	22.65	**21.18**	21.03	21.08	**23.55**	23.37	23.28	-
HSDPA Subtest-1	22.26	22.15	22.07	20.60	20.45	20.50	22.97	22.79	22.70	0
HSDPA Subtest-2	22.19	22.08	22.00	20.53	20.38	20.43	22.90	22.72	22.63	0
HSDPA Subtest-3	21.73	21.62	21.54	20.07	19.92	19.97	22.44	22.26	22.17	0.5
HSDPA Subtest-4	21.67	21.56	21.48	20.01	19.86	19.91	22.38	22.20	22.11	0.5
HSUPA Subtest-1	22.25	22.14	22.06	20.59	20.44	20.49	22.96	22.78	22.69	0
HSUPA Subtest-2	20.49	20.38	20.30	18.83	18.68	18.73	21.20	21.02	20.93	2
HSUPA Subtest-3	21.37	21.26	21.18	19.71	19.56	19.61	22.08	21.90	21.81	1
HSUPA Subtest-4	20.31	20.20	20.12	18.65	18.50	18.55	21.02	20.84	20.75	2
HSUPA Subtest-5	22.41	22.30	22.22	20.75	20.60	20.65	23.12	22.94	22.85	0

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18607	Mid CH 18900	High CH 19193		Low CH 18607	Mid CH 18900	High CH 19193	
			1850.7 MHz	1880.0 MHz	1909.3 MHz		1850.7 MHz	1880.0 MHz	1909.3 MHz	
2 / 1.4M	1	0	21.78	21.59	21.55	0	21.31	21.17	21.19	1
	1	2	21.84	21.79	21.76	0	21.35	21.29	21.11	1
	1	5	21.42	21.11	21.25	0	20.79	20.92	20.60	1
	3	0	22.06	21.82	21.79	0	20.83	20.74	20.67	1
	3	1	21.74	21.47	21.61	0	20.69	20.65	20.51	1
	3	3	21.63	21.39	21.40	0	20.40	20.46	20.36	1
	6	0	20.80	20.77	20.80	1	19.59	19.79	19.46	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18615	Mid CH 18900	High CH 19185		Low CH 18615	Mid CH 18900	High CH 19185	
			1851.5 MHz	1880.0 MHz	1908.5 MHz		1851.5 MHz	1880.0 MHz	1908.5 MHz	
2 / 3M	1	0	21.64	21.49	21.47	0	21.32	21.17	21.03	1
	1	7	21.78	21.72	21.71	0	21.27	21.35	21.09	1
	1	14	21.26	21.12	21.12	0	20.70	20.94	20.71	1
	8	0	20.96	20.81	20.89	1	19.72	19.85	19.66	2
	8	3	20.70	20.62	20.55	1	19.65	19.72	19.48	2
	8	7	20.51	20.49	20.54	1	19.46	19.48	19.36	2
	15	0	20.79	20.63	20.75	1	19.72	19.62	19.56	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18625	Mid CH 18900	High CH 19175		Low CH 18625	Mid CH 18900	High CH 19175	
			1852.5 MHz	1880.0 MHz	1907.5 MHz		1852.5 MHz	1880.0 MHz	1907.5 MHz	
2 / 5M	1	0	21.79	21.51	21.54	0	21.25	21.10	21.04	1
	1	12	21.89	21.62	21.76	0	21.17	21.39	21.17	1
	1	24	21.37	21.11	21.21	0	20.72	20.78	20.74	1
	12	0	20.89	20.77	20.90	1	19.82	19.89	19.57	2
	12	6	20.77	20.55	20.51	1	19.57	19.70	19.60	2
	12	13	20.68	20.43	20.43	1	19.49	19.37	19.36	2
	25	0	20.89	20.67	20.74	1	19.69	19.67	19.58	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18650	Mid CH 18900	High CH 19150		Low CH 18650	Mid CH 18900	High CH 19150	
			1855.0 MHz	1880.0 MHz	1905.0 MHz		1855.0 MHz	1880.0 MHz	1905.0 MHz	
2 / 10M	1	0	21.73	21.53	21.59	0	21.20	21.19	21.21	1
	1	24	21.94	21.65	21.72	0	21.18	21.24	21.20	1
	1	49	21.33	21.27	21.19	0	20.70	20.77	20.71	1
	25	0	21.04	20.74	20.82	1	19.70	19.90	19.73	2
	25	12	20.71	20.55	20.54	1	19.66	19.74	19.44	2
	25	25	20.57	20.40	20.48	1	19.42	19.50	19.25	2
	50	0	20.84	20.76	20.80	1	19.55	19.69	19.58	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18675	Mid CH 18900	High CH 19125		Low CH 18675	Mid CH 18900	High CH 19125	
			1857.5 MHz	1880.0 MHz	1902.5 MHz		1857.5 MHz	1880.0 MHz	1902.5 MHz	
2 / 15M	1	0	21.72	21.58	21.54	0	21.18	21.18	21.16	1
	1	37	21.76	21.76	21.71	0	21.34	21.31	21.20	1
	1	74	21.44	21.27	21.18	0	20.84	20.82	20.66	1
	36	0	21.01	20.89	20.79	1	19.78	19.87	19.71	2
	36	19	20.69	20.57	20.61	1	19.53	19.72	19.48	2
	36	39	20.56	20.48	20.45	1	19.48	19.54	19.34	2
	75	0	20.76	20.75	20.69	1	19.54	19.61	19.56	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18700	Mid CH 18900	High CH 19100		Low CH 18700	Mid CH 18900	High CH 19100	
			1860.0 MHz	1880.0 MHz	1900.0 MHz		1860.0 MHz	1880.0 MHz	1900.0 MHz	
2 / 20M	1	0	21.80	21.64	21.66	0	21.33	21.29	21.21	1
	1	50	**21.96**	21.80	21.82	0	21.36	21.42	21.24	1
	1	99	21.45	21.29	21.31	0	20.89	20.95	20.78	1
	50	0	21.09	20.93	20.95	1	19.88	19.94	19.77	2
	50	25	20.80	20.64	20.66	1	19.72	19.78	19.61	2
	50	50	20.71	20.55	20.57	1	19.51	19.57	19.40	2
	100	0	20.95	20.79	20.81	1	19.74	19.80	19.63	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 19957	Mid CH 20175	High CH 20393		Low CH 19957	Mid CH 20175	High CH 20393	
			1710.7 MHz	1732.5 MHz	1754.3 MHz		1710.7 MHz	1732.5 MHz	1754.3 MHz	
4 / 1.4M	1	0	22.59	22.69	22.66	0	21.35	21.30	21.63	1
	1	2	22.70	22.84	22.82	0	21.30	21.23	21.46	1
	1	5	22.56	22.54	22.69	0	21.58	21.70	21.58	1
	3	0	22.43	22.48	22.46	0	21.51	21.41	21.74	1
	3	1	22.41	22.43	22.58	0	21.45	21.40	21.66	1
	3	3	22.51	22.56	22.58	0	21.39	21.44	21.74	1
	6	0	21.34	21.60	21.64	1	20.49	20.68	20.75	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 19965	Mid CH 20175	High CH 20385		Low CH 19965	Mid CH 20175	High CH 20385	
			1711.5 MHz	1732.5 MHz	1753.5 MHz		1711.5 MHz	1732.5 MHz	1753.5 MHz	
4 / 3M	1	0	22.45	22.59	22.58	0	21.36	21.30	21.47	1
	1	7	22.64	22.77	22.77	0	21.22	21.29	21.44	1
	1	14	22.40	22.55	22.56	0	21.49	21.72	21.69	1
	8	0	21.33	21.47	21.56	1	20.40	20.52	20.73	2
	8	3	21.37	21.58	21.52	1	20.41	20.47	20.63	2
	8	7	21.39	21.66	21.72	1	20.45	20.46	20.74	2
	15	0	21.33	21.46	21.59	1	20.62	20.51	20.85	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 19975	Mid CH 20175	High CH 20375		Low CH 19975	Mid CH 20175	High CH 20375	
			1712.5 MHz	1732.5 MHz	1752.5 MHz		1712.5 MHz	1732.5 MHz	1752.5 MHz	
4 / 5M	1	0	22.60	22.61	22.65	0	21.29	21.23	21.48	1
	1	12	22.75	22.67	22.82	0	21.12	21.33	21.52	1
	1	24	22.51	22.54	22.65	0	21.51	21.56	21.72	1
	12	0	21.26	21.43	21.57	1	20.50	20.56	20.64	2
	12	6	21.44	21.51	21.48	1	20.33	20.45	20.75	2
	12	13	21.56	21.60	21.61	1	20.48	20.35	20.74	2
	25	0	21.43	21.50	21.58	1	20.59	20.56	20.87	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 20000	Mid CH 20175	High CH 20350		Low CH 20000	Mid CH 20175	High CH 20350	
			1715.0 MHz	1732.5 MHz	1750.0 MHz		1715.0 MHz	1732.5 MHz	1750.0 MHz	
4 / 10M	1	0	22.54	22.63	22.70	0	21.24	21.32	21.65	1
	1	24	22.80	22.70	22.78	0	21.13	21.18	21.55	1
	1	49	22.47	22.70	22.63	0	21.49	21.55	21.69	1
	25	0	21.41	21.40	21.49	1	20.38	20.57	20.80	2
	25	12	21.38	21.51	21.51	1	20.42	20.49	20.59	2
	25	25	21.45	21.57	21.66	1	20.41	20.48	20.63	2
	50	0	21.38	21.59	21.64	1	20.45	20.58	20.87	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 20025	Mid CH 20175	High CH 20325		Low CH 20025	Mid CH 20175	High CH 20325	
			1717.5 MHz	1732.5 MHz	1747.5 MHz		1717.5 MHz	1732.5 MHz	1747.5 MHz	
4 / 15M	1	0	22.53	22.68	22.65	0	21.22	21.31	21.60	1
	1	37	22.62	22.81	22.77	0	21.29	21.25	21.55	1
	1	74	22.58	22.70	22.62	0	21.63	21.60	21.64	1
	36	0	21.38	21.55	21.46	1	20.46	20.54	20.78	2
	36	19	21.36	21.53	21.58	1	20.29	20.47	20.63	2
	36	39	21.44	21.65	21.63	1	20.47	20.52	20.72	2
	75	0	21.30	21.58	21.53	1	20.44	20.50	20.85	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 20050	Mid CH 20175	High CH 20300		Low CH 20050	Mid CH 20175	High CH 20300	
			1720.0 MHz	1732.5 MHz	1745.0 MHz		1720.0 MHz	1732.5 MHz	1745.0 MHz	
4 / 20M	1	0	22.61	22.74	22.77	0	21.37	21.42	21.65	1
	1	50	22.82	22.85	**22.88**	0	21.31	21.36	21.59	1
	1	99	22.59	22.72	22.75	0	21.68	21.73	21.76	1
	50	0	21.46	21.59	21.62	1	20.56	20.61	20.84	2
	50	25	21.47	21.60	21.63	1	20.48	20.53	20.76	2
	50	50	21.59	21.72	21.75	1	20.50	20.55	20.78	2
	100	0	21.49	21.62	21.65	1	20.64	20.69	20.92	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 20407	Mid CH 20525	High CH 20643		Low CH 20407	Mid CH 20525	High CH 20643	
			824.7 MHz	836.5 MHz	848.3 MHz		824.7 MHz	836.5 MHz	848.3 MHz	
5 / 1.4M	1	0	23.40	23.48	23.34	0	22.80	22.49	22.59	1
	1	2	23.68	23.51	23.56	0	22.78	22.50	22.65	1
	1	5	23.45	23.50	23.41	0	22.77	22.47	22.53	1
	3	0	23.56	23.71	23.61	0	22.97	22.73	22.78	1
	3	1	23.62	23.59	23.44	0	22.92	22.64	22.75	1
	3	3	23.61	23.46	23.61	0	22.91	22.68	22.73	1
	6	0	22.63	22.52	22.57	1	21.84	21.58	21.67	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 20415	Mid CH 20525	High CH 20635		Low CH 20415	Mid CH 20525	High CH 20635	
			825.5 MHz	836.5 MHz	847.5 MHz		825.5 MHz	836.5 MHz	847.5 MHz	
5 / 3M	1	0	23.47	23.50	23.43	0	22.64	22.37	22.55	1
	1	7	23.55	23.53	23.46	0	22.88	22.67	22.83	1
	1	14	23.54	23.44	23.39	0	22.80	22.48	22.56	1
	8	0	22.64	22.57	22.59	1	21.85	21.70	21.87	2
	8	3	22.59	22.48	22.54	1	21.85	21.63	21.70	2
	8	7	22.53	22.47	22.45	1	21.88	21.73	21.75	2
	15	0	22.58	22.53	22.51	1	21.91	21.61	21.79	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 20425	Mid CH 20525	High CH 20625		Low CH 20425	Mid CH 20525	High CH 20625	
			826.5 MHz	836.5 MHz	846.5 MHz		826.5 MHz	836.5 MHz	846.5 MHz	
5 / 5M	1	0	23.37	23.38	23.51	0	22.74	22.43	22.52	1
	1	12	23.62	23.59	23.56	0	22.89	22.53	22.82	1
	1	24	23.52	23.49	23.47	0	22.78	22.51	22.64	1
	12	0	22.70	22.66	22.52	1	21.93	21.71	21.84	2
	12	6	22.52	22.62	22.48	1	21.95	21.57	21.81	2
	12	13	22.59	22.55	22.47	1	21.94	21.63	21.80	2
	25	0	22.48	22.54	22.62	1	21.74	21.62	21.80	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 20450	Mid CH 20525	High CH 20600		Low CH 20450	Mid CH 20525	High CH 20600	
			829.0 MHz	836.5 MHz	844.0 MHz		829.0 MHz	836.5 MHz	844.0 MHz	
5 / 10M	1	0	23.55	23.53	23.51	0	22.81	22.57	22.71	1
	1	24	**23.70**	23.68	23.66	0	22.94	22.70	22.84	1
	1	49	23.56	23.54	23.52	0	22.81	22.57	22.71	1
	25	0	22.73	22.71	22.69	1	22.03	21.79	21.93	2
	25	12	22.68	22.66	22.64	1	22.00	21.76	21.90	2
	25	25	22.65	22.63	22.61	1	21.98	21.74	21.88	2
	50	0	22.68	22.66	22.64	1	21.93	21.69	21.83	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 20775	Mid CH 21100	High CH 21425		Low CH 20775	Mid CH 21100	High CH 21425	
			2502.5 MHz	2535.0 MHz	2567.5 MHz		2502.5 MHz	2535.0 MHz	2567.5 MHz	
7 / 5M	1	0	23.29	23.47	23.24	0	22.44	22.71	22.40	1
	1	12	23.36	23.52	23.21	0	22.77	22.78	22.69	1
	1	24	23.29	23.34	23.01	0	22.51	22.59	22.48	1
	12	0	22.20	22.45	22.17	1	21.15	21.39	21.04	2
	12	6	22.27	22.50	22.23	1	21.21	21.48	21.27	2
	12	13	22.26	22.34	22.23	1	21.38	21.40	21.37	2
	25	0	22.36	22.44	22.13	1	21.34	21.35	21.25	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 20800	Mid CH 21100	High CH 21400		Low CH 20800	Mid CH 21100	High CH 21400	
			2505.0 MHz	2535.0 MHz	2565.0 MHz		2505.0 MHz	2535.0 MHz	2565.0 MHz	
7 / 10M	1	0	23.31	23.37	23.30	0	22.48	22.61	22.45	1
	1	24	23.47	23.51	23.25	0	22.66	22.78	22.57	1
	1	49	23.28	23.41	23.14	0	22.48	22.60	22.32	1
	25	0	22.28	22.47	22.11	1	21.13	21.30	21.14	2
	25	12	22.28	22.41	22.16	1	21.31	21.44	21.11	2
	25	25	22.25	22.33	22.27	1	21.37	21.48	21.37	2
	50	0	22.40	22.30	22.26	1	21.28	21.48	21.19	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 20825	Mid CH 21100	High CH 21375		Low CH 20825	Mid CH 21100	High CH 21375	
			2507.5 MHz	2535.0 MHz	2562.5 MHz		2507.5 MHz	2535.0 MHz	2562.5 MHz	
7 / 15M	1	0	23.25	23.41	23.28	0	22.59	22.65	22.44	1
	1	37	23.36	23.62	23.32	0	22.76	22.94	22.74	1
	1	74	23.33	23.28	23.11	0	22.44	22.64	22.37	1
	36	0	22.27	22.39	22.23	1	21.12	21.39	21.19	2
	36	19	22.40	22.44	22.16	1	21.35	21.44	21.22	2
	36	39	22.40	22.35	22.30	1	21.40	21.42	21.19	2
	75	0	22.30	22.32	22.10	1	21.27	21.35	21.22	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 20850	Mid CH 21100	High CH 21350		Low CH 20850	Mid CH 21100	High CH 21350	
			2510.0 MHz	2535.0 MHz	2560.0 MHz		2510.0 MHz	2535.0 MHz	2560.0 MHz	
7 / 20M	1	0	23.44	23.53	23.31	0	22.60	22.75	22.55	1
	1	50	23.54	**23.63**	23.41	0	22.80	22.95	22.75	1
	1	99	23.33	23.42	23.20	0	22.55	22.70	22.50	1
	50	0	22.38	22.47	22.25	1	21.28	21.43	21.23	2
	50	25	22.41	22.50	22.28	1	21.35	21.50	21.30	2
	50	50	22.43	22.52	22.30	1	21.43	21.58	21.38	2
	100	0	22.41	22.50	22.28	1	21.35	21.50	21.30	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 23017	Mid CH 23095	High CH 23173		Low CH 23017	Mid CH 23095	High CH 23173	
			699.7 MHz	707.5 MHz	715.3 MHz		699.7 MHz	707.5 MHz	715.3 MHz	
12 / 1.4M	1	0	23.59	23.57	23.46	0	22.74	22.76	22.84	1
	1	2	23.73	23.77	23.74	0	22.61	22.75	22.73	1
	1	5	23.47	23.68	23.70	0	22.51	22.57	22.47	1
	3	0	23.41	23.53	23.60	0	22.35	22.45	22.45	1
	3	1	23.59	23.67	23.60	0	22.55	22.51	22.49	1
	3	3	23.62	23.69	23.56	0	22.41	22.66	22.46	1
	6	0	22.49	22.59	22.56	1	21.54	21.66	21.48	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 23025	Mid CH 23095	High CH 23165		Low CH 23025	Mid CH 23095	High CH 23165	
			700.5 MHz	707.5 MHz	714.5 MHz		700.5 MHz	707.5 MHz	714.5 MHz	
12 / 3M	1	0	23.51	23.62	23.60	0	22.81	22.89	22.86	1
	1	7	23.65	23.76	23.69	0	22.61	22.79	22.72	1
	1	14	23.63	23.62	23.56	0	22.48	22.51	22.57	1
	8	0	22.53	22.55	22.51	1	21.38	21.52	21.37	2
	8	3	22.58	22.51	22.68	1	21.46	21.65	21.42	2
	8	7	22.55	22.69	22.55	1	21.41	21.68	21.60	2
	15	0	22.56	22.64	22.66	1	21.55	21.53	21.49	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 23035	Mid CH 23095	High CH 23155		Low CH 23035	Mid CH 23095	High CH 23155	
			701.5 MHz	707.5 MHz	713.5 MHz		701.5 MHz	707.5 MHz	713.5 MHz	
12 / 5M	1	0	23.52	23.44	23.44	0	22.71	22.86	22.72	1
	1	12	23.64	23.83	23.83	0	22.62	22.82	22.61	1
	1	24	23.66	23.55	23.54	0	22.42	22.56	22.39	1
	12	0	22.59	22.62	22.47	1	21.44	21.54	21.52	2
	12	6	22.57	22.60	22.60	1	21.44	21.62	21.59	2
	12	13	22.52	22.71	22.68	1	21.48	21.61	21.45	2
	25	0	22.57	22.58	22.62	1	21.52	21.58	21.44	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 23060	Mid CH 23095	High CH 23130		Low CH 23060	Mid CH 23095	High CH 23130	
			704.0 MHz	707.5 MHz	711.0 MHz		704.0 MHz	707.5 MHz	711.0 MHz	
12 / 10M	1	0	23.60	23.63	23.64	0	22.84	22.94	22.87	1
	1	24	23.83	23.86	**23.87**	0	22.74	22.84	22.77	1
	1	49	23.67	23.70	23.71	0	22.56	22.66	22.59	1
	25	0	22.60	22.63	22.64	1	21.51	21.61	21.54	2
	25	12	22.65	22.68	22.69	1	21.57	21.67	21.60	2
	25	25	22.68	22.71	22.72	1	21.59	21.69	21.62	2
	50	0	22.66	22.69	22.70	1	21.57	21.67	21.60	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 23755	Mid CH 23790	High CH 23825		Low CH 23755	Mid CH 23790	High CH 23825	
			706.5 MHz	710.0 MHz	713.5 MHz		706.5 MHz	710.0 MHz	713.5 MHz	
17 / 5M	1	0	23.34	23.50	23.39	0	22.84	22.66	22.71	1
	1	12	23.66	23.56	23.66	0	22.80	22.78	22.74	1
	1	24	23.38	23.41	23.48	0	22.48	22.44	22.44	1
	12	0	22.32	22.41	22.55	1	21.51	21.48	21.58	2
	12	6	22.44	22.47	22.41	1	21.52	21.50	21.50	2
	12	13	22.44	22.33	22.34	1	21.55	21.52	21.46	2
	25	0	22.34	22.47	22.53	1	21.60	21.46	21.62	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 23780	Mid CH 23790	High CH 23800		Low CH 23780	Mid CH 23790	High CH 23800	
			709.0 MHz	710.0 MHz	711.0 MHz		709.0 MHz	710.0 MHz	711.0 MHz	
17 / 10M	1	0	23.50	23.53	23.55	0	22.88	22.83	22.85	1
	1	24	23.69	23.72	**23.74**	0	22.87	22.82	22.84	1
	1	49	23.54	23.57	23.59	0	22.67	22.62	22.64	1
	25	0	22.52	22.55	22.57	1	21.63	21.58	21.60	2
	25	12	22.50	22.53	22.55	1	21.57	21.52	21.54	2
	25	25	22.46	22.49	22.51	1	21.62	21.57	21.59	2
	50	0	22.51	22.54	22.56	1	21.66	21.61	21.63	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26047	Mid CH 26365	High CH 26683		Low CH 26047	Mid CH 26365	High CH 26683	
			1850.7 MHz	1882.5 MHz	1914.3 MHz		1850.7 MHz	1882.5 MHz	1914.3 MHz	
25 / 1.4M	1	0	22.20	22.09	21.73	0	20.88	20.70	20.58	1
	1	2	21.83	21.81	21.51	0	21.16	20.88	20.77	1
	1	5	21.99	21.70	21.66	0	20.70	20.51	20.35	1
	3	0	21.97	21.65	21.51	0	20.93	20.66	20.68	1
	3	1	21.78	21.56	21.29	0	20.86	20.56	20.58	1
	3	3	21.65	21.74	21.63	0	20.48	20.32	20.25	1
	6	0	20.83	20.67	20.71	1	19.87	19.64	19.59	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26055	Mid CH 26365	High CH 26675		Low CH 26055	Mid CH 26365	High CH 26675	
			1851.5 MHz	1882.5 MHz	1913.5 MHz		1851.5 MHz	1882.5 MHz	1913.5 MHz	
25 / 3M	1	0	22.15	22.01	21.73	0	20.90	20.77	20.72	1
	1	7	21.88	21.77	21.55	0	21.00	20.86	20.75	1
	1	14	21.87	21.67	21.66	0	20.57	20.52	20.36	1
	8	0	21.01	20.70	20.42	1	19.99	19.74	19.53	2
	8	3	20.63	20.49	20.43	1	19.81	19.66	19.61	2
	8	7	20.76	20.73	20.57	1	19.64	19.44	19.27	2
	15	0	20.78	20.72	20.75	1	19.75	19.58	19.59	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26065	Mid CH 26365	High CH 26665		Low CH 26065	Mid CH 26365	High CH 26665	
			1852.5 MHz	1882.5 MHz	1912.5 MHz		1852.5 MHz	1882.5 MHz	1912.5 MHz	
25 / 5M	1	0	22.21	21.99	21.74	0	20.83	20.69	20.65	1
	1	12	21.85	21.89	21.66	0	21.14	20.92	20.71	1
	1	24	21.80	21.81	21.51	0	20.62	20.56	20.35	1
	12	0	20.89	20.76	20.51	1	19.91	19.73	19.60	2
	12	6	20.71	20.55	20.38	1	19.71	19.53	19.47	2
	12	13	20.68	20.85	20.54	1	19.62	19.39	19.31	2
	25	0	20.86	20.73	20.75	1	19.74	19.52	19.45	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26090	Mid CH 26365	High CH 26640		Low CH 26090	Mid CH 26365	High CH 26640	
			1855.0 MHz	1882.5 MHz	1910.0 MHz		1855.0 MHz	1882.5 MHz	1910.0 MHz	
25 / 10M	1	0	22.05	22.09	21.75	0	21.01	20.69	20.66	1
	1	24	21.95	21.86	21.57	0	21.12	20.97	20.72	1
	1	49	21.92	21.73	21.60	0	20.56	20.47	20.32	1
	25	0	20.98	20.75	20.57	1	19.80	19.64	19.58	2
	25	12	20.67	20.52	20.32	1	19.82	19.60	19.44	2
	25	25	20.68	20.65	20.68	1	19.64	19.32	19.35	2
	50	0	20.94	20.77	20.67	1	19.88	19.54	19.59	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26115	Mid CH 26365	High CH 26615		Low CH 26115	Mid CH 26365	High CH 26615	
			1857.5 MHz	1882.5 MHz	1907.5 MHz		1857.5 MHz	1882.5 MHz	1907.5 MHz	
25 / 15M	1	0	22.04	21.93	21.84	0	20.93	20.77	20.59	1
	1	37	21.97	21.82	21.54	0	21.13	20.89	20.74	1
	1	74	21.95	21.72	21.60	0	20.61	20.51	20.29	1
	36	0	20.92	20.75	20.56	1	19.85	19.74	19.53	2
	36	19	20.70	20.60	20.36	1	19.78	19.59	19.51	2
	36	39	20.80	20.72	20.60	1	19.66	19.34	19.26	2
	75	0	20.83	20.82	20.80	1	19.84	19.60	19.50	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26140	Mid CH 26365	High CH 26590		Low CH 26140	Mid CH 26365	High CH 26590	
			1860.0 MHz	1882.5 MHz	1905.0 MHz		1860.0 MHz	1882.5 MHz	1905.0 MHz	
25 / 20M	1	0	**22.22**	22.10	21.90	0	21.03	20.86	20.75	1
	1	50	22.02	21.90	21.70	0	21.17	21.00	20.89	1
	1	99	21.99	21.87	21.67	0	20.76	20.59	20.48	1
	50	0	21.04	20.82	20.62	1	20.00	19.83	19.72	2
	50	25	20.80	20.68	20.48	1	19.90	19.73	19.62	2
	50	50	20.82	20.85	20.71	1	19.67	19.50	19.39	2
	100	0	20.94	20.82	20.85	1	19.89	19.72	19.61	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 37775	Mid CH 38000	High CH 38225		Low CH 37775	Mid CH 38000	High CH 38225	
			2572.5 MHz	2595 MHz	2617.5M Hz		2572.5 MHz	2595 MHz	2617.5M Hz	
38/ 5M	1	0	22.42	22.38	22.23	0	21.26	21.20	21.17	1
	1	12	22.51	22.42	22.24	0	21.61	21.56	21.52	1
	1	24	22.34	22.24	22.18	0	21.21	21.20	21.03	1
	12	0	21.25	21.22	21.15	1	20.43	20.29	20.17	2
	12	6	21.27	21.27	21.10	1	20.39	20.31	20.22	2
	12	13	21.18	21.23	21.03	1	20.30	20.18	20.18	2
	25	0	21.38	21.29	21.07	1	20.30	20.24	20.25	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 37800	Mid CH 38000	High CH 38200		Low CH 37800	Mid CH 38000	High CH 38200	
			2575 MHz	2595 MHz	2615 MHz		2575 MHz	2595 MHz	2615 MHz	
38/ 10	1	0	22.27	22.21	22.21	0	21.34	21.22	21.06	1
	1	24	22.40	22.47	22.25	0	21.56	21.58	21.51	1
	1	49	22.28	22.15	22.07	0	21.22	21.11	21.06	1
	25	0	21.39	21.28	21.28	1	20.48	20.38	20.31	2
	25	12	21.33	21.30	21.08	1	20.47	20.20	20.11	2
	25	25	21.23	21.28	21.08	1	20.31	20.25	20.19	2
	50	0	21.21	21.22	21.07	1	20.38	20.25	20.06	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 37825	Mid CH 38000	High CH 38175		Low CH 37825	Mid CH 38000	High CH 38175	
			2577.5 MHz	2595 MHz	2612.5M Hz		2577.5 MHz	2595 MHz	2612.5M Hz	
38/ 15	1	0	22.27	22.33	22.13	0	21.32	21.20	21.03	1
	1	37	22.53	22.40	22.28	0	21.66	21.48	21.36	1
	1	74	22.20	22.27	22.18	0	21.20	21.24	21.07	1
	36	0	21.35	21.36	21.20	1	20.36	20.42	20.32	2
	36	19	21.26	21.22	21.06	1	20.46	20.25	20.24	2
	36	39	21.27	21.29	21.17	1	20.30	20.24	20.16	2
	75	0	21.21	21.26	21.11	1	20.35	20.34	20.15	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 37850	Mid CH 38000	High CH 38150		Low CH 37850	Mid CH 38000	High CH 38150	
			2580 MHz	2595 MHz	2610 MHz		2580 MHz	2595 MHz	2610 MHz	
38/ 20	1	0	22.43	22.39	22.29	0	21.41	21.31	21.20	1
	1	50	**22.57**	22.53	22.43	0	21.75	21.65	21.54	1
	1	99	22.34	22.30	22.20	0	21.36	21.26	21.15	1
	50	0	21.43	21.39	21.29	1	20.56	20.46	20.35	2
	50	25	21.39	21.35	21.25	1	20.50	20.40	20.29	2
	50	50	21.36	21.32	21.22	1	20.47	20.37	20.26	2
	100	0	21.39	21.35	21.25	1	20.46	20.36	20.25	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 40065	Mid CH 40640	High CH 41215		Low CH 40065	Mid CH 40640	High CH 41215	
			2537.5 MHz	2595 MHz	2652.5 MHz		2537.5 MHz	2595 MHz	2652.5 MHz	
41/ 5	1	0	22.60	22.53	22.40	0	21.67	21.57	21.39	1
	1	12	22.54	22.41	22.21	0	21.66	21.51	21.35	1
	1	24	22.56	22.45	22.45	0	21.39	21.40	21.34	1
	12	0	21.61	21.46	21.37	1	20.45	20.24	20.07	2
	12	6	21.62	21.42	21.28	1	20.40	20.14	20.10	2
	12	13	21.44	21.28	21.21	1	20.18	20.10	20.09	2
	25	0	21.38	21.26	21.11	1	20.20	20.27	20.04	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 40090	Mid CH 40640	High CH 41190		Low CH 40090	Mid CH 40640	High CH 41190	
			2540 MHz	2595 MHz	2650 MHz		2540 MHz	2595 MHz	2650 MHz	
41/ 10	1	0	22.62	22.44	22.41	0	21.63	21.59	21.39	1
	1	24	22.57	22.44	22.29	0	21.67	21.52	21.46	1
	1	49	22.58	22.36	22.28	0	21.53	21.38	21.19	1
	25	0	21.64	21.45	21.27	1	20.33	20.31	20.17	2
	25	12	21.49	21.32	21.28	1	20.29	20.12	20.02	2
	25	25	21.47	21.19	21.14	1	20.19	20.23	19.97	2
	50	0	21.25	21.16	21.10	1	20.29	20.25	20.06	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 40115	Mid CH 40640	High CH 41165		Low CH 40115	Mid CH 40640	High CH 41165	
			2542.5 MHz	2595 MHz	2647.5 MHz		2542.5 MHz	2595 MHz	2647.5 MHz	
41/ 15	1	0	22.67	22.45	22.45	0	21.58	21.61	21.35	1
	1	37	22.51	22.40	22.27	0	21.57	21.46	21.45	1
	1	74	22.56	22.43	22.36	0	21.54	21.32	21.29	1
	36	0	21.58	21.49	21.40	1	20.31	20.24	20.20	2
	36	19	21.46	21.36	21.27	1	20.30	20.24	20.12	2
	36	39	21.32	21.26	21.26	1	20.26	20.19	20.14	2
	75	0	21.39	21.15	21.03	1	20.32	20.26	20.06	2

LTE Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 40140	Mid CH 40640	High CH 41140		Low CH 40140	Mid CH 40640	High CH 41140	
			2545 MHz	2595 MHz	2645 MHz		2545 MHz	2595 MHz	2645 MHz	
41/ 20	1	0	**22.75**	22.61	22.54	0	21.73	21.65	21.51	1
	1	50	22.61	22.47	22.40	0	21.72	21.64	21.50	1
	1	99	22.68	22.54	22.47	0	21.57	21.49	21.35	1
	50	0	21.65	21.51	21.44	1	20.48	20.40	20.26	2
	50	25	21.63	21.49	21.42	1	20.40	20.32	20.18	2
	50	50	21.49	21.35	21.28	1	20.37	20.29	20.15	2
	100	0	21.43	21.29	21.22	1	20.38	20.30	20.16	2

All Rate have been tested, the Worst average power (Unit: dBm) is shown as below.

<WLAN 2.4G>

Mode	**802.11b (1Mbps)**		
Channel / Frequency (MHz)	**1 (2412)**	**6 (2437)**	**11 (2462)**
Average Power	15.70	**15.90**	15.86
Mode	**802.11g (6Mbps)**		
Channel / Frequency (MHz)	**1 (2412)**	**6 (2437)**	**11 (2462)**
Average Power	13.64	13.75	**13.79**
Mode	**802.11n (HT20) (MCS0)**		
Channel / Frequency (MHz)	**1 (2412)**	**6 (2437)**	**11 (2462)**
Average Power	12.50	12.51	**12.60**
Mode	**802.11n (HT40) (MCS0)**		
Channel / Frequency (MHz)	**3 (2422)**	**6 (2437)**	**9 (2452)**
Average Power	13.27	13.23	**13.32**

<WLAN 5.2G>

Mode	**802.11a (6Mbps)**			
Channel / Frequency (MHz)	**36 (5180)**	**40 (5200)**	**44 (5220)**	**48 (5240)**
Average Power	**15.18**	14.70	14.61	14.94
Mode	**802.11n (HT20) (MCS0)**			
Channel / Frequency (MHz)	**36 (5180)**	**40 (5200)**	**44 (5220)**	**48 (5240)**
Average Power	**13.07**	12.95	12.93	12.97
Mode	**802.11n (HT40) (MCS0)**			
Channel / Frequency (MHz)	**38 (5190)**		**46 (5230)**	
Average Power	**13.14**		12.75	
Mode	**802.11ac (VHT80) (MCS0)**			
Channel / Frequency (MHz)	**42 (5210)**			
Average Power	**10.95**			

<WLAN 5.3G>

Mode	**802.11a (6Mbps)**			
Channel / Frequency (MHz)	**52 (5260)**	**56 (5280)**	**60 (5300)**	**64 (5320)**
Average Power	**14.86**	14.52	14.60	14.74
Mode	**802.11n (HT20) (MCS0)**			
Channel / Frequency (MHz)	**52 (5260)**	**56 (5280)**	**60 (5300)**	**64 (5320)**
Average Power	12.72	12.65	12.54	**12.89**
Mode	**802.11n (HT40) (MCS0)**			
Channel / Frequency (MHz)	**54 (5270)**		**62 (5310)**	
Average Power	**12.92**		12.78	
Mode	**802.11ac (VHT80) (MCS0)**			
Channel / Frequency (MHz)	**58 (5290)**			
Average Power	**11.20**			

<WLAN 5.6G>

Mode	802.11a (6Mbps)							
Channel / Frequency (MHz)	100 (5500)	104 (5520)	108 (5540)	112 (5560)	116 (5580)	132 (5660)	136 (5680)	140 (5700)
Average Power	14.79	14.73	14.80	14.79	14.85	14.81	14.79	**14.90**
Mode	**802.11n (HT20) (MCS0)**							
Channel / Frequency (MHz)	**100 (5500)**	**104 (5520)**	**108 (5540)**	**112 (5560)**	**116 (5580)**	**132 (5660)**	**136 (5680)**	**140 (5700)**
Average Power	12.90	12.92	12.94	12.96	**13.40**	13.30	13.29	13.29
Mode	**802.11n (HT40) (MCS0)**							
Channel / Frequency (MHz)	**102 (5510)**				**134 (5670)**			
Average Power	**13.27**				12.61			
Mode	**802.11ac (VHT80) (MCS0)**							
Channel / Frequency (MHz)	**106 (5530)**							
Average Power	**10.76**							

<WLAN 5.8G>

Mode	802.11a (6Mbps)				
Channel / Frequency (MHz)	149 (5745)	153 (5765)	157 (5785)	161 (5805)	165 (5825)
Average Power	14.74	14.72	**14.83**	14.70	14.77
Mode	**802.11n (HT20) (MCS0)**				
Channel / Frequency (MHz)	**149 (5745)**	**153 (5765)**	**157 (5785)**	**161 (5805)**	**165 (5825)**
Average Power	**13.17**	12.99	12.97	12.98	13.04
Mode	**802.11n (HT40) (MCS0)**				
Channel / Frequency (MHz)	**151 (5755)**		**159 (5795)**		
Average Power	12.69		**13.07**		
Mode	**802.11ac (VHT80) (MCS0)**				
Channel / Frequency (MHz)	**155 (5775)**				
Average Power	**10.79**				

<Bluetooth>

Mode	Bluetooth GFSK		
Channel / Frequency (MHz)	0 (2402)	39 (2441)	78 (2480)
Average Power	4.01	**4.51**	4.07
Mode	**Bluetooth 8DPSK**		
Channel / Frequency (MHz)	**0 (2402)**	**39 (2441)**	**78 (2480)**
Average Power	0.57	**1.16**	0.84
Mode	**Bluetooth LTE (1M)**		
Channel / Frequency (MHz)	**0 (2402)**	**39 (2441)**	**78 (2480)**
Average Power	-2.77	**-2.43**	-3.04
Mode	**Bluetooth LE (2M)**		
Channel / Frequency (MHz)	**0 (2402)**	**19 (2440)**	**39 (2480)**
Average Power	-2.71	**-2.48**	-3.11

8.3. SAR Testing Results

8.3.1. SAR Test Reduction Considerations

<KDB 447498 D01, General RF Exposure Guidance>

Testing of other required channels within the operating mode of a frequency band is not required when the reported SAR for the mid-band or highest output power channel is:

(1) ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz

(2) ≤ 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

(3) ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

<KDB 941225 D01, 3G SAR Measurement Procedures>

The mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ 1/4 dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

<KDB 941225 D05, SAR Evaluation Considerations for LTE Devices>

(1) QPSK with 1 RB and 50% RB allocation

Start with the largest channel bandwidth and measure SAR, using the RB offset and required test channel combination with the highest maximum output power among 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; 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 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 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.

(3) Higher order modulations

SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > 1/2 dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

(4) Other channel bandwidth

SAR is required when the highest maximum output power of the smaller channel bandwidth is > 1/2 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.

<KDB 248227 D01, SAR Guidance for Wi-Fi Transmitters>

(1) For handsets operating next to ear, hotspot mode or mini-tablet configurations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When the reported SAR of initial test position is <= 0.4 W/kg, SAR testing for remaining test positions is not required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is <= 0.8 W/kg or all test positions are measured.

(2) For WLAN 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is <= 0.8 W/kg, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is <= 1.2 W/kg.

(3) For WLAN 5 GHz, the initial test configuration was selected according to the transmission mode with the highest maximum output power. When the reported SAR of initial test configuration is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SAR result is <= 1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and it is <= 1.2 W/kg.

8.3.2.SAR Results for Body Exposure Condition (Separation Distance is 1.0 cm Gap)

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WCDMA II	RMC12.2K	Front Face	1	9262	23.0	22.84	1.04	-0.09	0.666	0.69
	WCDMA II	RMC12.2K	Rear Face	1	9262	23.0	22.84	1.04	0.10	0.554	0.57
	WCDMA II	RMC12.2K	Left Side	1	9262	23.0	22.84	1.04	0.03	0.116	0.12
	WCDMA II	RMC12.2K	Right Side	1	9262	23.0	22.84	1.04	-0.07	0.054	0.06
1	WCDMA II	RMC12.2K	Bottom Side	1	9262	23.0	22.84	1.04	0.05	1.130	**1.17**
	WCDMA II	RMC12.2K	Bottom Side	1	9400	23.0	22.73	1.06	0.03	1.100	1.17
	WCDMA II	RMC12.2K	Bottom Side	1	9538	23.0	22.65	1.08	0.02	1.080	1.17
	WCDMA II	RMC12.2K	Bottom Side	1	9262	23.0	22.74	1.06	0.06	1.100	1.17
	WCDMA IV	RMC12.2K	Front Face	1	1312	21.5	21.18	1.08	-0.07	0.657	0.71
	WCDMA IV	RMC12.2K	Rear Face	1	1312	21.5	21.18	1.08	-0.11	0.539	0.58
	WCDMA IV	RMC12.2K	Left Side	1	1312	21.5	21.18	1.08	-0.14	0.124	0.13
	WCDMA IV	RMC12.2K	Right Side	1	1312	21.5	21.18	1.08	-0.06	0.117	0.13
	WCDMA IV	RMC12.2K	Bottom Side	1	1312	21.5	21.18	1.08	0.07	0.867	0.93
2	WCDMA IV	RMC12.2K	Bottom Side	1	1413	21.5	21.03	1.11	0.03	0.878	**0.98**
	WCDMA IV	RMC12.2K	Bottom Side	1	1513	21.5	21.08	1.10	0.05	0.836	0.92
	WCDMA IV	RMC12.2K	Bottom Side	1	1413	21.5	21.03	1.11	0.06	0.851	0.95
3	WCDMA V	RMC12.2K	Front Face	1	4132	24.0	23.55	1.11	-0.03	0.360	**0.40**
	WCDMA V	RMC12.2K	Rear Face	1	4132	24.0	23.55	1.11	-0.04	0.330	0.37
	WCDMA V	RMC12.2K	Left Side	1	4132	24.0	23.55	1.11	-0.05	0.321	0.36
	WCDMA V	RMC12.2K	Right Side	1	4132	24.0	23.55	1.11	-0.03	0.359	0.40
	WCDMA V	RMC12.2K	Bottom Side	1	4132	24.0	23.55	1.11	-0.01	0.053	0.06

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	LTE 4	QPSK20M	Front Face	1	20300	1	50	23.0	22.88	1.03	-0.07	0.905	0.93
	LTE 4	QPSK20M	Rear Face	1	20300	1	50	23.0	22.88	1.03	-0.05	0.677	0.70
	LTE 4	QPSK20M	Left Side	1	20300	1	50	23.0	22.88	1.03	-0.08	0.158	0.16
	LTE 4	QPSK20M	Right Side	1	20300	1	50	23.0	22.88	1.03	0.02	0.140	0.14
	LTE 4	QPSK20M	Bottom Side	1	20300	1	50	23.0	22.88	1.03	0.00	1.080	1.11
	LTE 4	QPSK20M	Front Face	1	20300	50	50	22.0	21.75	1.06	0.03	0.733	0.78
	LTE 4	QPSK20M	Rear Face	1	20300	50	50	22.0	21.75	1.06	0.08	0.548	0.58
	LTE 4	QPSK20M	Left Side	1	20300	50	50	22.0	21.75	1.06	0.01	0.128	0.14
	LTE 4	QPSK20M	Right Side	1	20300	50	50	22.0	21.75	1.06	0.09	0.113	0.12
	LTE 4	QPSK20M	Bottom Side	1	20300	50	50	22.0	21.75	1.06	0.01	0.854	0.90
	LTE 4	QPSK20M	Front Face	1	20050	1	50	23.0	22.82	1.04	0.02	0.955	1.00
	LTE 4	QPSK20M	Front Face	1	20175	1	50	23.0	22.85	1.04	0.05	0.905	0.94
4	LTE 4	QPSK20M	Bottom Side	1	20050	1	50	23.0	22.82	1.04	0.06	1.140	**1.19**
	LTE 4	QPSK20M	Bottom Side	1	20175	1	50	23.0	22.85	1.04	0.01	1.080	1.12
	LTE 4	QPSK20M	Bottom Side	1	20050	50	50	22.0	21.59	1.10	0.03	0.904	0.99
	LTE 4	QPSK20M	Bottom Side	1	20175	50	50	22.0	21.72	1.07	0.08	0.851	0.91
	LTE 4	QPSK20M	Front Face	1	20300	100	0	22.0	21.65	1.08	0.06	0.748	0.81
	LTE 4	QPSK20M	Bottom Side	1	20300	100	0	22.0	21.65	1.08	0.07	0.903	0.98
	LTE 4	QPSK20M	Bottom Side	1	20050	1	50	23.0	22.82	1.04	0.03	1.090	1.14
5	LTE 5	QPSK10M	Front Face	1	20450	1	24	24.0	23.70	1.07	0.02	0.369	**0.40**
	LTE 5	QPSK10M	Rear Face	1	20450	1	24	24.0	23.70	1.07	-0.01	0.357	0.38
	LTE 5	QPSK10M	Left Side	1	20450	1	24	24.0	23.70	1.07	-0.09	0.336	0.36
	LTE 5	QPSK10M	Right Side	1	20450	1	24	24.0	23.70	1.07	-0.05	0.365	0.39
	LTE 5	QPSK10M	Bottom Side	1	20450	1	24	24.0	23.70	1.07	0.02	0.057	0.06
	LTE 5	QPSK10M	Front Face	1	20450	25	0	23.0	22.73	1.06	0.02	0.303	0.32
	LTE 5	QPSK10M	Rear Face	1	20450	25	0	23.0	22.73	1.06	0.09	0.294	0.31
	LTE 5	QPSK10M	Left Side	1	20450	25	0	23.0	22.73	1.06	0.06	0.276	0.29
	LTE 5	QPSK10M	Right Side	1	20450	25	0	23.0	22.73	1.06	0.02	0.285	0.30
	LTE 5	QPSK10M	Bottom Side	1	20450	25	0	23.0	22.73	1.06	0.03	0.046	0.05
	LTE 7	QPSK20M	Front Face	1	21100	1	50	24.0	23.63	1.09	-0.05	0.287	0.31
6	LTE 7	QPSK20M	Rear Face	1	21100	1	50	24.0	23.63	1.09	-0.13	0.660	**0.72**
	LTE 7	QPSK20M	Left Side	1	21100	1	50	24.0	23.63	1.09	0.00	0.218	0.24

	LTE 7	QPSK20M	Right Side	1	21100	1	50	24.0	23.63	1.09	-0.06	0.191	0.21
	LTE 7	QPSK20M	Bottom Side	1	21100	1	50	24.0	23.63	1.09	0.09	0.342	0.37
	LTE 7	QPSK20M	Front Face	1	21100	50	50	23.0	22.52	1.12	0.06	0.236	0.26
	LTE 7	QPSK20M	Rear Face	1	21100	50	50	23.0	22.52	1.12	0.08	0.542	0.61
	LTE 7	QPSK20M	Left Side	1	21100	50	50	23.0	22.52	1.12	-0.06	0.179	0.20
	LTE 7	QPSK20M	Right Side	1	21100	50	50	23.0	22.52	1.12	0.02	0.157	0.18
	LTE 7	QPSK20M	Bottom Side	1	21100	50	50	23.0	22.52	1.12	-0.01	0.263	0.29
7	LTE 12	QPSK10M	Front Face	1	23130	1	24	24.0	23.87	1.03	-0.06	0.401	**0.41**
	LTE 12	QPSK10M	Rear Face	1	23130	1	24	24.0	23.87	1.03	-0.07	0.327	0.34
	LTE 12	QPSK10M	Left Side	1	23130	1	24	24.0	23.87	1.03	-0.03	0.282	0.29
	LTE 12	QPSK10M	Right Side	1	23130	1	24	24.0	23.87	1.03	-0.03	0.301	0.31
	LTE 12	QPSK10M	Bottom Side	1	23130	1	24	24.0	23.87	1.03	-0.05	0.063	0.07
	LTE 12	QPSK10M	Front Face	1	23130	25	25	23.0	22.72	1.07	0.06	0.326	0.35
	LTE 12	QPSK10M	Rear Face	1	23130	25	25	23.0	22.72	1.07	0.08	0.266	0.28
	LTE 12	QPSK10M	Left Side	1	23130	25	25	23.0	22.72	1.07	-0.05	0.230	0.25
	LTE 12	QPSK10M	Right Side	1	23130	25	25	23.0	22.72	1.07	-0.01	0.245	0.26
	LTE 12	QPSK10M	Bottom Side	1	23130	25	25	23.0	22.72	1.07	0.05	0.051	0.05
	LTE 25	QPSK20M	Front Face	1	26140	1	0	22.5	22.22	1.07	-0.10	0.645	0.69
	LTE 25	QPSK20M	Rear Face	1	26140	1	0	22.5	22.22	1.07	-0.14	0.517	0.55
	LTE 25	QPSK20M	Left Side	1	26140	1	0	22.5	22.22	1.07	0.03	0.108	0.12
	LTE 25	QPSK20M	Right Side	1	26140	1	0	22.5	22.22	1.07	0.09	0.051	0.05
8	LTE 25	QPSK20M	Bottom Side	1	26140	1	0	22.5	22.22	1.07	0.03	0.992	**1.06**
	LTE 25	QPSK20M	Front Face	1	26140	50	0	21.5	21.04	1.11	-0.06	0.566	0.63
	LTE 25	QPSK20M	Rear Face	1	26140	50	0	21.5	21.04	1.11	0.05	0.454	0.50
	LTE 25	QPSK20M	Left Side	1	26140	50	0	21.5	21.04	1.11	0.01	0.095	0.11
	LTE 25	QPSK20M	Right Side	1	26140	50	0	21.5	21.04	1.11	0.00	0.045	0.05
	LTE 25	QPSK20M	Bottom Side	1	26140	50	0	21.5	21.04	1.11	0.08	0.871	0.97
	LTE 25	QPSK20M	Bottom Side	1	26365	1	0	22.5	22.10	1.10	0.04	0.961	1.05
	LTE 25	QPSK20M	Bottom Side	1	26590	1	0	22.5	21.90	1.15	0.02	0.894	1.03
	LTE 25	QPSK20M	Bottom Side	1	26365	50	0	21.5	20.82	1.17	0.02	0.864	1.01
	LTE 25	QPSK20M	Bottom Side	1	26590	50	0	21.5	20.62	1.22	-0.09	0.772	0.95
	LTE 25	QPSK20M	Bottom Side	1	26140	100	0	21.5	20.94	1.14	0.03	0.903	1.03
	LTE 25	QPSK20M	Bottom Side	1	26140	1	0	22.5	22.22	1.07	0.03	0.969	1.03
	LTE 41	QPSK20M	Front Face	1	40140	1	0	23.0	22.75	1.06	0.02	0.148	0.16
9	LTE 41	QPSK20M	Rear Face	1	40140	1	0	23.0	22.75	1.06	-0.09	0.331	**0.35**
	LTE 41	QPSK20M	Left Side	1	40140	1	0	23.0	22.75	1.06	0.01	0.093	0.10
	LTE 41	QPSK20M	Right Side	1	40140	1	0	23.0	22.75	1.06	-0.10	0.007	0.01
	LTE 41	QPSK20M	Bottom Side	1	40140	1	0	23.0	22.75	1.06	-0.09	0.152	0.16
	LTE 41	QPSK20M	Front Face	1	40140	50	0	22.0	21.65	1.08	0.06	0.093	0.10
	LTE 41	QPSK20M	Rear Face	1	40140	50	0	22.0	21.65	1.08	-0.10	0.207	0.22
	LTE 41	QPSK20M	Left Side	1	40140	50	0	22.0	21.65	1.08	0.08	0.075	0.08
	LTE 41	QPSK20M	Right Side	1	40140	50	0	22.0	21.65	1.08	0.02	0.006	0.01
	LTE 41	QPSK20M	Bottom Side	1	40140	50	0	22.0	21.65	1.08	0.01	0.123	0.13

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	802.11b	-	Front Face	1	6	16.0	15.90	1.02	-0.02	0.083	0.09
10	802.11b	-	Rear Face	1	6	16.0	15.90	1.02	-0.16	0.324	**0.33**
	802.11b	-	Right Side	1	6	16.0	15.90	1.02	-0.03	0.197	0.20
	802.11b	-	Top Side	1	6	16.0	15.90	1.02	0.00	0.139	0.14
	802.11a	-	Front Face	1	36	15.5	15.18	1.08	-0.17	0.104	0.11
11	802.11a	-	Rear Face	1	36	15.5	15.18	1.08	-0.10	1.110	**1.19**
	802.11a	-	Right Side	1	36	15.5	15.18	1.08	-0.02	0.328	0.35
	802.11a	-	Top Side	1	36	15.5	15.18	1.08	-0.08	0.229	0.25
	802.11a	-	Rear Face	1	48	15.5	14.94	1.14	0.17	1.050	1.19
	802.11a	-	Rear Face	1	36	15.5	15.18	1.08	0.03	1.060	1.14
	802.11a	-	Front Face	1	140	15.0	14.90	1.02	-0.01	0.039	0.04
12	802.11a	-	Rear Face	1	140	15.0	14.90	1.02	-0.05	0.706	**0.72**
	802.11a	-	Right Side	1	140	15.0	14.90	1.02	-0.09	0.174	0.18
	802.11a	-	Top Side	1	140	15.0	14.90	1.02	-0.08	0.126	0.13
	802.11a	-	Front Face	1	157	15.0	14.83	1.04	0.03	0.034	0.04
13	802.11a	-	Rear Face	1	157	15.0	14.83	1.04	-0.03	0.355	**0.37**
	802.11a	-	Left Side	1	157	15.0	14.83	1.04	-0.06	0.060	0.06
	802.11a	-	Right Side	1	157	15.0	14.83	1.04	-0.05	0.081	0.08
	802.11a	-	Top Side	1	157	15.0	14.83	1.04	-0.06	0.078	0.08
	BT	-	Front Face	1	39	5.0	4.51	1.12	0.03	0.016	0.02
14	BT	-	Rear Face	1	39	5.0	4.51	1.12	0.04	0.060	**0.07**
	BT	-	Right Side	1	39	5.0	4.51	1.12	0.06	0.037	0.04
	BT	-	Top Side	1	39	5.0	4.51	1.12	0.01	0.026	0.03

8.3.3.SAR Results for Extremity Exposure Condition (Separation Distance is 0 cm Gap)

Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-10g (W/kg)	Scaled SAR-10g (W/kg)
15	WCDMA II	RMC12.2K	Bottom Side	9262	-	-	23.0	22.84	1.04	0.15	2.700	2.80
16	WCDMA IV	RMC12.2K	Bottom Side	1413	-	-	21.5	21.03	1.11	0.13	1.700	1.89
17	WCDMA V	RMC12.2K	Front Face	4132	-	-	24.0	23.55	1.11	-0.13	0.619	0.69
18	LTE 4	QPSK20M	Bottom Side	20050	1	50	23.0	22.82	1.04	0.14	2.420	**2.52**
19	LTE 5	QPSK10M	Front Face	20450	1	24	24.0	23.70	1.07	0.08	0.723	0.77
20	LTE 7	QPSK20M	Rear Face	21100	1	50	24.0	23.63	1.09	-0.06	3.310	3.60
	LTE 7	QPSK20M	Rear Face	20850	1	50	24.0	23.54	1.11	-0.03	3.120	3.47
	LTE 7	QPSK20M	Rear Face	21350	1	50	24.0	23.41	1.15	-0.09	3.050	3.49
21	LTE 12	QPSK10M	Front Face	23130	1	24	24.0	23.87	1.03	0.01	0.874	0.90
22	LTE 25	QPSK20M	Bottom Side	26140	1	0	22.5	22.22	1.07	0.12	2.200	2.35
23	LTE 41	QPSK20M	Rear Face	40140	1	0	23.0	22.75	1.06	0.12	0.576	0.61
24	802.11b	-	Rear Face	6	-	-	16.0	15.90	1.02	0.02	0.869	0.89
25	802.11a	-	Rear Face	36	-	-	15.5	15.18	1.08	-0.06	1.980	2.13
26	802.11a	-	Rear Face	140	-	-	15.0	14.90	1.02	-0.04	1.170	1.20
27	802.11a	-	Rear Face	157	-	-	15.0	14.83	1.04	-0.09	0.763	0.79
28	BT	-	Rear Face	39	-	-	5.0	4.51	1.12	0.00	0.243	0.27

8.3.4. SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10, the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. These 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.

SAR repeated measurement procedure:

1. When the highest measured SAR is < 0.80 W/kg, repeated measurement is not required.
2. When the highest measured SAR is >= 0.80 W/kg, repeat that measurement once.
3. 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, perform a second repeated measurement.
4. If the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20, and the original, first or second repeated measurement is >= 1.5 W/kg, perform a third repeated measurement.

Band	Mode	Test Position	Ch.	Original Measured SAR-1g (W/kg)	1st Repeated SAR-1g (W/kg)	L/S Ratio	2nd Repeated SAR-1g (W/kg)	L/S Ratio	3rd Repeated SAR-1g (W/kg)	L/S Ratio
WCDMA II	RMC12.2K	Bottom Side	9262	1.130	1.100	1.03	N/A	N/A	N/A	N/A
WCDMA IV	RMC12.2K	Bottom Side	1413	0.878	0.851	1.03	N/A	N/A	N/A	N/A
LTE 4	QPSK20M	Bottom Side	20050	1.140	1.090	1.05	N/A	N/A	N/A	N/A
LTE 25	QPSK20M	Bottom Side	26140	0.992	0.969	1.02	N/A	N/A	N/A	N/A
802.11a	-	Rear Face	36	1.110	1.060	1.05	N/A	N/A	N/A	N/A

8.3.5.Simultaneous Multi-band Transmission Evaluation

<SAR Summation Analysis>

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR_{1g} of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR_{1g} 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR_{1g} is greater than the SAR limit (SAR_{1g} 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

No.	Conditions (SAR1 + SAR2)	Exposure Condition	Test Position	Max. SAR1	Max. SAR2	SAR Summation	SPLSR Analysis
1	WCDMA II + WLAN(DTS)	Body	Front Face	0.69	0.09	**0.78**	ΣSAR < 1.6, Not required
			Rear Face	0.57	0.33	**0.90**	ΣSAR < 1.6, Not required
			Left Side	0.12	0.03	**0.15**	ΣSAR < 1.6, Not required
			Right Side	0.06	0.02	**0.08**	ΣSAR < 1.6, Not required
			Top Side		0.14	**0.14**	ΣSAR < 1.6, Not required
			Bottom Side	1.17		**1.17**	ΣSAR < 1.6, Not required
2	WCDMA IV + WLAN(DTS)	Body	Front Face	0.71	0.09	**0.80**	ΣSAR < 1.6, Not required
			Rear Face	0.58	0.33	**0.91**	ΣSAR < 1.6, Not required
			Left Side	0.13	0.03	**0.16**	ΣSAR < 1.6, Not required
			Right Side	0.13	0.02	**0.15**	ΣSAR < 1.6, Not required
			Top Side		0.14	**0.14**	ΣSAR < 1.6, Not required
			Bottom Side	0.98		**0.98**	ΣSAR < 1.6, Not required
3	WCDMA V + WLAN(DTS)	Body	Front Face	0.40	0.09	**0.49**	ΣSAR < 1.6, Not required
			Rear Face	0.37	0.33	**0.70**	ΣSAR < 1.6, Not required
			Left Side	0.36	0.03	**0.39**	ΣSAR < 1.6, Not required
			Right Side	0.40	0.02	**0.42**	ΣSAR < 1.6, Not required
			Top Side		0.14	**0.14**	ΣSAR < 1.6, Not required
			Bottom Side	0.06		**0.06**	ΣSAR < 1.6, Not required
4	LTE 4 + WLAN(DTS)	Body	Front Face	1.00	0.09	**1.09**	ΣSAR < 1.6, Not required
			Rear Face	0.70	0.33	**1.03**	ΣSAR < 1.6, Not required
			Left Side	0.16	0.03	**0.19**	ΣSAR < 1.6, Not required
			Right Side	0.14	0.02	**0.16**	ΣSAR < 1.6, Not required
			Top Side		0.14	**0.14**	ΣSAR < 1.6, Not required
			Bottom Side	1.19		**1.19**	ΣSAR < 1.6, Not required
5	LTE 5 + WLAN(DTS)	Body	Front Face	0.40	0.09	**0.49**	ΣSAR < 1.6, Not required
			Rear Face	0.38	0.33	**0.71**	ΣSAR < 1.6, Not required
			Left Side	0.36	0.03	**0.39**	ΣSAR < 1.6, Not required

			Right Side	0.39	0.02	**0.41**	Σ SAR < 1.6, Not required
			Top Side		0.14	**0.14**	Σ SAR < 1.6, Not required
			Bottom Side	0.06		**0.06**	Σ SAR < 1.6, Not required
6	**LTE 7 + WLAN(DTS)**	Body	Front Face	0.31	0.09	**0.40**	Σ SAR < 1.6, Not required
			Rear Face	0.72	0.33	**1.05**	Σ SAR < 1.6, Not required
			Left Side	0.24	0.03	**0.27**	Σ SAR < 1.6, Not required
			Right Side	0.21	0.02	**0.23**	Σ SAR < 1.6, Not required
			Top Side		0.14	**0.14**	Σ SAR < 1.6, Not required
			Bottom Side	0.37		**0.37**	Σ SAR < 1.6, Not required
7	**LTE 12 + WLAN(DTS)**	Body	Front Face	0.41	0.09	**0.50**	Σ SAR < 1.6, Not required
			Rear Face	0.34	0.33	**0.67**	Σ SAR < 1.6, Not required
			Left Side	0.29	0.03	**0.32**	Σ SAR < 1.6, Not required
			Right Side	0.31	0.02	**0.33**	Σ SAR < 1.6, Not required
			Top Side		0.14	**0.14**	Σ SAR < 1.6, Not required
			Bottom Side	0.07		**0.07**	Σ SAR < 1.6, Not required
8	**LTE 25 + WLAN(DTS)**	Body	Front Face	0.69	0.09	**0.78**	Σ SAR < 1.6, Not required
			Rear Face	0.55	0.33	**0.88**	Σ SAR < 1.6, Not required
			Left Side	0.12	0.03	**0.15**	Σ SAR < 1.6, Not required
			Right Side	0.05	0.02	**0.07**	Σ SAR < 1.6, Not required
			Top Side		0.14	**0.14**	Σ SAR < 1.6, Not required
			Bottom Side	1.06		**1.06**	Σ SAR < 1.6, Not required
9	**LTE 41 + WLAN(DTS)**	Body	Front Face	0.16	0.09	**0.25**	Σ SAR < 1.6, Not required
			Rear Face	0.35	0.33	**0.68**	Σ SAR < 1.6, Not required
			Left Side	0.10	0.03	**0.13**	Σ SAR < 1.6, Not required
			Right Side	0.01	0.02	**0.03**	Σ SAR < 1.6, Not required
			Top Side		0.14	**0.14**	Σ SAR < 1.6, Not required
			Bottom Side	0.16		**0.16**	Σ SAR < 1.6, Not required
10	**WCDMA II + WLAN(NII)**	Body	Front Face	0.69	0.11	**0.80**	Σ SAR < 1.6, Not required
			Rear Face	0.57	1.19	**1.76**	**Analyzed as below**
			Left Side	0.12	0.21	**0.33**	Σ SAR < 1.6, Not required
			Right Side	0.06	0.35	**0.41**	Σ SAR < 1.6, Not required
			Top Side		0.25	**0.25**	Σ SAR < 1.6, Not required
			Bottom Side	1.17		**1.17**	Σ SAR < 1.6, Not required
11	**WCDMA IV + WLAN(NII)**	Body	Front Face	0.71	0.11	**0.82**	Σ SAR < 1.6, Not required
			Rear Face	0.58	1.19	**1.77**	**Analyzed as below**
			Left Side	0.13	0.21	**0.34**	Σ SAR < 1.6,

							Not required
			Right Side	0.13	0.35	**0.48**	Σ SAR < 1.6, Not required
			Top Side		0.25	**0.25**	Σ SAR < 1.6, Not required
			Bottom Side	0.98		**0.98**	Σ SAR < 1.6, Not required
12	**WCDMA V + WLAN(NII)**	Body	Front Face	0.40	0.11	**0.51**	Σ SAR < 1.6, Not required
			Rear Face	0.37	1.19	**1.56**	Σ SAR < 1.6, Not required
			Left Side	0.36	0.21	**0.57**	Σ SAR < 1.6, Not required
			Right Side	0.40	0.35	**0.75**	Σ SAR < 1.6, Not required
			Top Side		0.25	**0.25**	Σ SAR < 1.6, Not required
			Bottom Side	0.06		**0.06**	Σ SAR < 1.6, Not required
13	**LTE 4 + WLAN(NII)**	Body	Front Face	1.00	0.11	**1.11**	Σ SAR < 1.6, Not required
			Rear Face	0.70	1.19	**1.89**	**Analyzed as below**
			Left Side	0.16	0.21	**0.37**	Σ SAR < 1.6, Not required
			Right Side	0.14	0.35	**0.49**	Σ SAR < 1.6, Not required
			Top Side		0.25	**0.25**	Σ SAR < 1.6, Not required
			Bottom Side	1.19		**1.19**	Σ SAR < 1.6, Not required
14	**LTE 5 + WLAN(NII)**	Body	Front Face	0.40	0.11	**0.51**	Σ SAR < 1.6, Not required
			Rear Face	0.38	1.19	**1.57**	Σ SAR < 1.6, Not required
			Left Side	0.36	0.21	**0.57**	Σ SAR < 1.6, Not required
			Right Side	0.39	0.35	**0.74**	Σ SAR < 1.6, Not required
			Top Side		0.25	**0.25**	Σ SAR < 1.6, Not required
			Bottom Side	0.06		**0.06**	Σ SAR < 1.6, Not required
15	**LTE 7 + WLAN(NII)**	Body	Front Face	0.31	0.11	**0.42**	Σ SAR < 1.6, Not required
			Rear Face	0.72	1.19	**1.91**	**Analyzed as below**
			Left Side	0.24	0.21	**0.45**	Σ SAR < 1.6, Not required
			Right Side	0.21	0.35	**0.56**	Σ SAR < 1.6, Not required
			Top Side		0.25	**0.25**	Σ SAR < 1.6, Not required
			Bottom Side	0.37		**0.37**	Σ SAR < 1.6, Not required
16	**LTE 12 + WLAN(NII)**	Body	Front Face	0.41	0.11	**0.52**	Σ SAR < 1.6, Not required
			Rear Face	0.34	1.19	**1.53**	Σ SAR < 1.6, Not required
			Left Side	0.29	0.21	**0.50**	Σ SAR < 1.6, Not required
			Right Side	0.31	0.35	**0.66**	Σ SAR < 1.6, Not required
			Top Side		0.25	**0.25**	Σ SAR < 1.6, Not required
			Bottom Side	0.07		**0.07**	Σ SAR < 1.6, Not required
17	**LTE 25 + WLAN(NII)**	Body	Front Face	0.69	0.11	**0.80**	Σ SAR < 1.6, Not required
			Rear Face	0.55	1.19	**1.74**	**Analyzed as below**

			Left Side	0.12	0.21	**0.33**	Σ SAR < 1.6, Not required
			Right Side	0.05	0.35	**0.40**	Σ SAR < 1.6, Not required
			Top Side		0.25	**0.25**	Σ SAR < 1.6, Not required
			Bottom Side	1.06		**1.06**	Σ SAR < 1.6, Not required
18	**LTE 41 + WLAN(NII)**	Body	Front Face	0.16	0.11	**0.27**	Σ SAR < 1.6, Not required
			Rear Face	0.35	1.19	**1.54**	Σ SAR < 1.6, Not required
			Left Side	0.10	0.21	**0.31**	Σ SAR < 1.6, Not required
			Right Side	0.01	0.35	**0.36**	Σ SAR < 1.6, Not required
			Top Side		0.25	**0.25**	Σ SAR < 1.6, Not required
			Bottom Side	0.16		**0.16**	Σ SAR < 1.6, Not required
19	**WCDMA II + WLAN(DSS)**	Body	Front Face	0.69	0.02	**0.71**	Σ SAR < 1.6, Not required
			Rear Face	0.57	0.07	**0.64**	Σ SAR < 1.6, Not required
			Left Side	0.12	0.01	**0.13**	Σ SAR < 1.6, Not required
			Right Side	0.06	0.04	**0.10**	Σ SAR < 1.6, Not required
			Top Side		0.03	**0.03**	Σ SAR < 1.6, Not required
			Bottom Side	1.17		**1.17**	Σ SAR < 1.6, Not required
20	**WCDMA IV + WLAN(DSS)**	Body	Front Face	0.71	0.02	**0.73**	Σ SAR < 1.6, Not required
			Rear Face	0.58	0.07	**0.65**	Σ SAR < 1.6, Not required
			Left Side	0.13	0.01	**0.14**	Σ SAR < 1.6, Not required
			Right Side	0.13	0.04	**0.17**	Σ SAR < 1.6, Not required
			Top Side		0.03	**0.03**	Σ SAR < 1.6, Not required
			Bottom Side	0.98		**0.98**	Σ SAR < 1.6, Not required
21	**WCDMA V + WLAN(DSS)**	Body	Front Face	0.40	0.02	**0.42**	Σ SAR < 1.6, Not required
			Rear Face	0.37	0.07	**0.44**	Σ SAR < 1.6, Not required
			Left Side	0.36	0.01	**0.37**	Σ SAR < 1.6, Not required
			Right Side	0.40	0.04	**0.44**	Σ SAR < 1.6, Not required
			Top Side		0.03	**0.03**	Σ SAR < 1.6, Not required
			Bottom Side	0.06		**0.06**	Σ SAR < 1.6, Not required
22	**LTE 4 + WLAN(DSS)**	Body	Front Face	1.00	0.02	**1.02**	Σ SAR < 1.6, Not required
			Rear Face	0.70	0.07	**0.77**	Σ SAR < 1.6, Not required
			Left Side	0.16	0.01	**0.17**	Σ SAR < 1.6, Not required
			Right Side	0.14	0.04	**0.18**	Σ SAR < 1.6, Not required
			Top Side		0.03	**0.03**	Σ SAR < 1.6, Not required
			Bottom Side	1.19		**1.19**	Σ SAR < 1.6, Not required
23	**LTE 5**	Body	Front Face	0.40	0.02	**0.42**	Σ SAR < 1.6, Not required

	+ WLAN(DSS)		Rear Face	0.38	0.07	**0.45**	Σ SAR < 1.6, Not required
			Left Side	0.36	0.01	**0.37**	Σ SAR < 1.6, Not required
			Right Side	0.39	0.04	**0.43**	Σ SAR < 1.6, Not required
			Top Side		0.03	**0.03**	Σ SAR < 1.6, Not required
			Bottom Side	0.06		**0.06**	Σ SAR < 1.6, Not required
24	**LTE 7 + WLAN(DSS)**	Body	Front Face	0.31	0.02	**0.33**	Σ SAR < 1.6, Not required
			Rear Face	0.72	0.07	**0.79**	Σ SAR < 1.6, Not required
			Left Side	0.24	0.01	**0.25**	Σ SAR < 1.6, Not required
			Right Side	0.21	0.04	**0.25**	Σ SAR < 1.6, Not required
			Top Side		0.03	**0.03**	Σ SAR < 1.6, Not required
			Bottom Side	0.37		**0.37**	Σ SAR < 1.6, Not required
25	**LTE 12 + WLAN(DSS)**	Body	Front Face	0.41	0.02	**0.43**	Σ SAR < 1.6, Not required
			Rear Face	0.34	0.07	**0.41**	Σ SAR < 1.6, Not required
			Left Side	0.29	0.01	**0.30**	Σ SAR < 1.6, Not required
			Right Side	0.31	0.04	**0.35**	Σ SAR < 1.6, Not required
			Top Side		0.03	**0.03**	Σ SAR < 1.6, Not required
			Bottom Side	0.07		**0.07**	Σ SAR < 1.6, Not required
26	**LTE 25 + WLAN(DSS)**	Body	Front Face	0.69	0.02	**0.71**	Σ SAR < 1.6, Not required
			Rear Face	0.55	0.07	**0.62**	Σ SAR < 1.6, Not required
			Left Side	0.12	0.01	**0.13**	Σ SAR < 1.6, Not required
			Right Side	0.05	0.04	**0.09**	Σ SAR < 1.6, Not required
			Top Side		0.03	**0.03**	Σ SAR < 1.6, Not required
			Bottom Side	1.06		**1.06**	Σ SAR < 1.6, Not required
27	**LTE 41 + WLAN(DSS)**	Body	Front Face	0.16	0.02	**0.18**	Σ SAR < 1.6, Not required
			Rear Face	0.35	0.07	**0.42**	Σ SAR < 1.6, Not required
			Left Side	0.10	0.01	**0.11**	Σ SAR < 1.6, Not required
			Right Side	0.01	0.04	**0.05**	Σ SAR < 1.6, Not required
			Top Side		0.03	**0.03**	Σ SAR < 1.6, Not required
			Bottom Side	0.16		**0.16**	Σ SAR < 1.6, Not required

<SAR to Peak Location Separation Ratio Analysis>

The simultaneous transmitting antennas in each operating mode and exposure condition combination are considered one pair at a time to determine the SPLSR. When SAR is measured for both antennas in the pair, the peak location separation distance is computed by the following formula.

$$\text{Peak Location Separation Distance} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

Where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the area or zoom scans.

When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna. Due to curvatures on the SAM phantom, when SAR is estimated for one of the antennas in an antenna pair, the measured peak SAR location will be translated onto the test device to determine the peak location separation for the antenna pair.

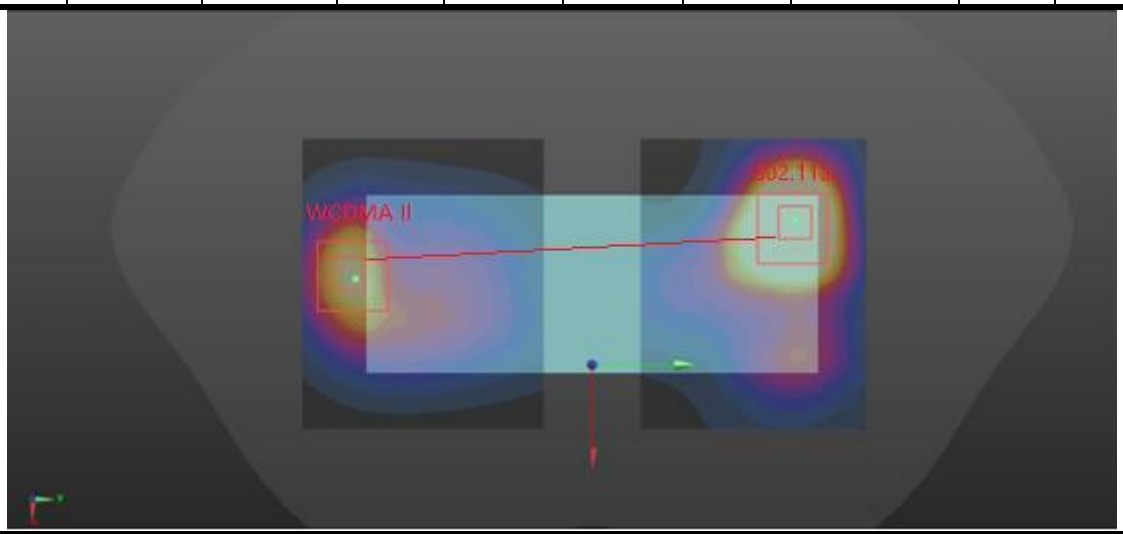
The SPLSR is determined by the following formula.

$$\text{SPLSR} = \frac{(\text{SAR}_1 + \text{SAR}_2)^{1.5}}{R_i}$$

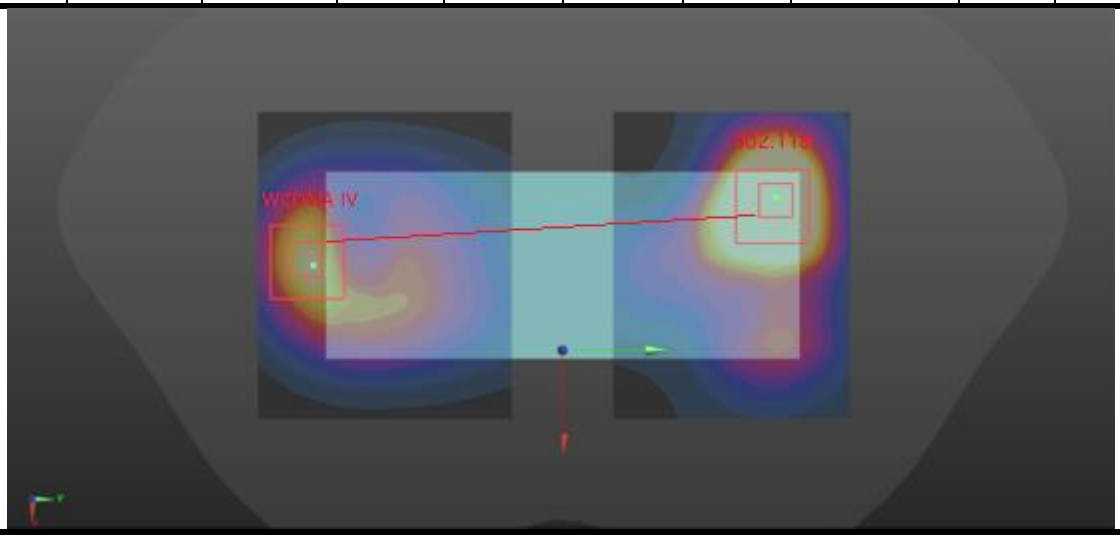
Where SAR_1 and SAR_2 are the highest reported or estimated SAR for each antenna in the pair, and R_i is the separation distance between the peak SAR locations for the antenna pair in mm.

When the SPLSR is <= 0.04, the simultaneous transmission SAR is not required. Otherwise, the enlarged zoom scan and volume scan post-processing procedures will be performed.

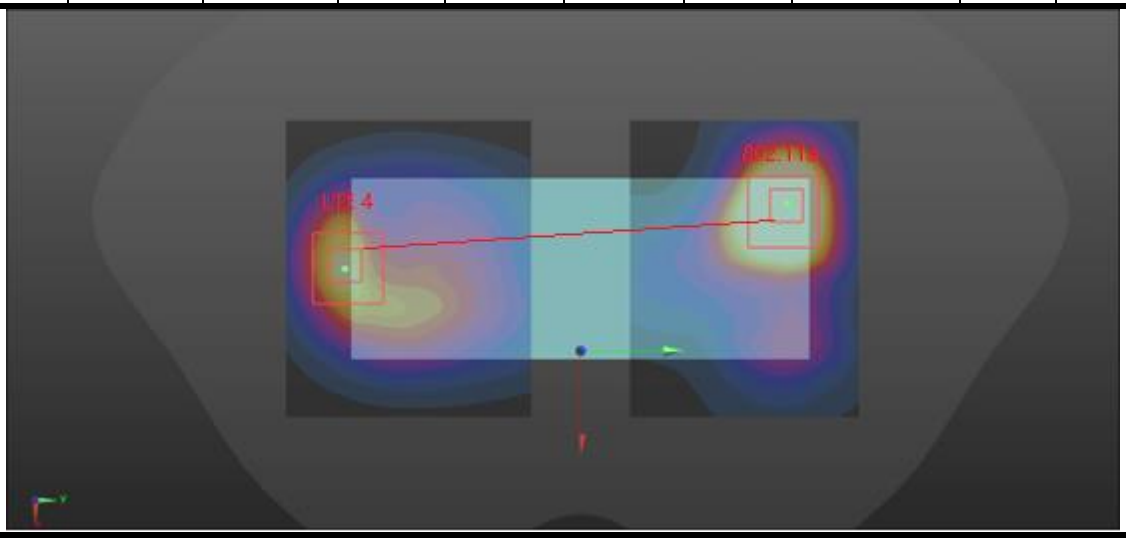
Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
WCDMA II Ch9262	Body	Rear Face	0.57	-3.1	-75.1	-4.3	139.4	0.017	SPLSR < 0.04,Not Required
802.11a Ch36			1.19	-18.8	63.4	-4.5			



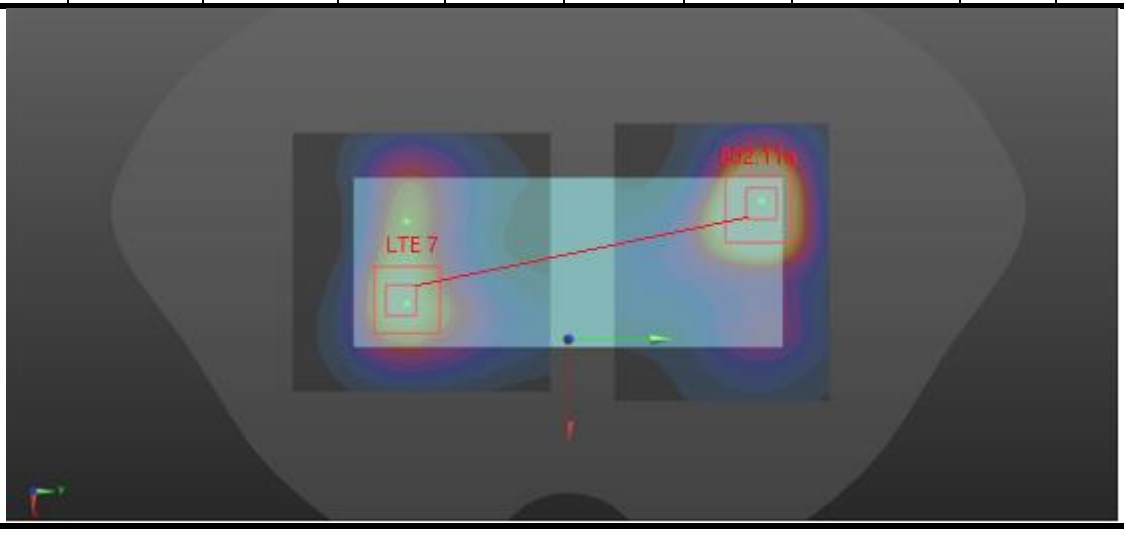
Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
WCDMA IV Ch1312	Body	Rear Face	0.58	-1.6	-75.1	-4.3	139.6	0.017	SPLSR < 0.04,Not Required
802.11a Ch36			1.19	-18.8	63.4	-4.5			



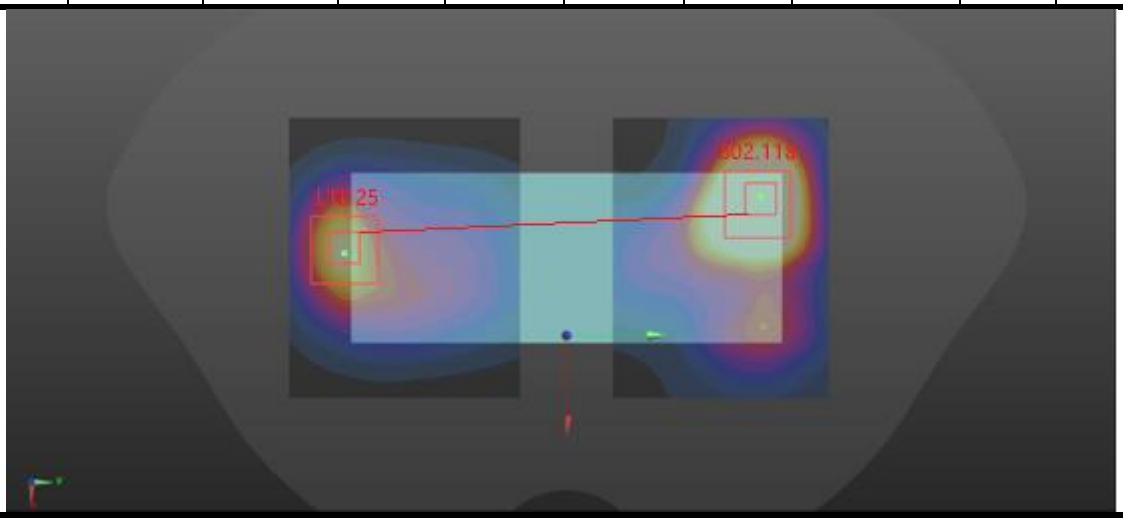
Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 4 CH20300	Body	Rear Face	0.70	-1.6	-72.0	-4.3	136.5	0.019	SPLSR < 0.04,Not Required
802.11a Ch36			1.19	-18.8	63.4	-4.5			



Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 7 CH21100	Body	Rear Face	0.72	12.2	-55.8	-4.3	123.2	0.021	SPLSR < 0.04,Not Required
802.11a Ch36			1.19	-18.8	63.4	-4.5			



Conditions	Exposure Condition	Test Position	SAR Value (W/kg)	Coordinates			Peak Location Separation Distance (R_i, mm)	SPLSR	Simultaneous Transmission SAR Test
				x	y	z			
LTE 25 CH26140	Body	Rear Face	0.55	-3.1	-72.0	-4.3	136.3	0.017	SPLSR < 0.04,Not Required
802.11a Ch36			1.19	-18.8	63.4	-4.3			



Test Engineer： Warren Xiong,

Appendixes

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: SAR Plots of System Verification

The plots for system verification with largest deviation for each SAR system combination are shown as follows.

Appendix B: SAR Plots of SAR Measurement

The SAR plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination, and measured SAR > 1.5 W/kg are shown as follows.

Appendix C: Calibration Certificate for probe and Dipole

Appendix D: Photographs of EUT and setup