FCC SAR TEST REPORT

Application No.:	SZCR2312004019AT
Applicant:	KEYENCE CORPORATION
Address of Applicant:	1-3-14, Higashinakajima, Higashiyodogawa-ku, Osaka, 533-8555 Japan
Manufacturer:	KEYENCE CORPORATION
Address of Manufacturer:	1-3-14, Higashinakajima, Higashiyodogawa-ku, Osaka, 533-8555 Japan
Factory:	KEYENCE CORPORATION
Address of Factory:	1-3-14, Higashinakajima, Higashiyodogawa-ku, Osaka, 533-8555 Japan
EUT Description:	Handheld Terminal
Model No.:	BT-A600MGA
Trade Mark:	KEYENCE
FCC ID:	RF41761A
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2024-08-10
Date of Test:	2024-08-11 to 2024-09-09
Date of Issue:	2024-09-12
Test Result :	**PASS ***

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

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Revision History			
Report Number	***Revision***	***Description***	***Issue Date***
SZCR231200401913	01	Original	2024-09-12

Prepared By	Vito Wang **Vito Wang**
Checked By	Roman Pan **Roman Pan**

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Test Summary

Frequency Band	Maximum Reported SAR(W/kg)			
	Head	Body-worn	Hotspot	Product specific 10g SAR
GSM850	0.94	0.35	0.38	0.68
GSM1900	0.97	0.46	1.16	2.06
WCDMA Band II	1.04	0.79	1.35	2.82
WCDMA Band IV	1.17	0.69	1.14	3.25
WCDMA Band V	0.82	0.35	0.38	0.66
LTE Band 2	0.51	0.30	0.50	1.28
LTE Band 5	0.53	0.38	0.43	0.79
LTE Band 4	0.66	0.39	0.60	1.43
LTE Band 7	1.23	0.27	1.15	1.73
LTE Band 12	0.57	0.28	0.28	0.49
LTE Band 13	0.51	0.24	0.24	0.36
LTE Band 14	0.50	0.24	0.24	0.37
LTE Band 17	0.57	0.28	0.28	0.49
LTE Band 25	0.51	0.30	0.50	1.28
LTE Band 38	0.79	0.21	0.66	0.71
LTE Band 41	0.79	0.21	0.66	0.71
LTE Band 42	0.36	0.17	0.51	0.92
LTE Band 43	0.36	0.18	0.55	0.98
LTE Band 48	0.35	0.16	0.48	0.80
LTE Band 66	0.66	0.39	0.60	1.43
LTE Band 71	0.13	0.02	0.05	0.16
NR Band n2	0.91	0.47	0.75	1.47
NR Band n5	0.54	0.29	0.37	0.78
NR Band n12	0.56	0.32	0.32	0.49
NR Band n25	0.91	0.47	0.75	1.47
NR Band n38	0.57	0.39	0.57	1.58
NR Band n41	0.57	0.39	0.57	1.58
NR Band n48	0.62	0.26	0.67	1.50
NR Band n66	0.52	0.81	0.38	3.14
NR Band n71	0.12	0.04	0.05	0.19
NR Band n77	0.63	0.29	0.44	1.99
NR Band n78	0.63	0.29	0.44	1.99
WI-FI (2.4GHz)	0.33	0.27	0.58	1.07
WI-FI (5GHz)	0.28	0.14	0.27	0.52
WI-FI (6GHz)	0.11	0.05	/	0.31
BT	0.08	0.04	0.18	0.26
SAR Limited(W/kg)	1.6			4.0
Maximum Simultaneous Transmission SAR (W/kg)				
Scenario	Head	Body-worn	Hotspot	Product specific 10g SAR
Sum SAR	1.58	1.17	1.58	3.76
SPLSR	/	/	/	/
SPLSR Limited	0.04			0.1

Note:
1) According to TCB workshop October,2014 RF Exposure Procedures Update (Overlapping Bands): SAR for LTE Band 2 (Frequency range:1850 - 1910 MHz)/ LTE Band 4 (Frequency range:1710 - 1755 MHz)/LTE Band 17 (Frequency range:704-716 MHz)/LTE Band 38 (Frequency range:2570 - 2620 MHz)/B42(Frequency range:3550 - 3600 MHz)&B43(Frequency range:3600 - 3700 MHz)/n2(Frequency range:1850 - 1910 MHz)/ n38(Frequency range:2570 - 2620 MHz)/n78 (Frequency range:3450 – 3550/3550-3700/3700 - 3800 MHz is respectively covered by LTE Band 25 (Frequency range:1850 - 1915 MHz)/LTE Band66 (Frequency range:1710 - 1780 MHz)/ LTE Band 12 (Frequency range:699-716 MHz)/LTE Band41 (Frequency range:2496 - 2690 MHz)/LTE Band48 (Frequency range:3550 - 3700 MHz)/n25 (Frequency range:1850 - 1915 MHz)/n41 (Frequency range:2496 - 2690 MHz)/ n77 (Frequency range: 3450 – 3550/3550-3700/3700 - 3980 MHz) due to similar frequency range, same maximum tune up limit and same channel bandwidth.

2) For LTE band 4/5/12/13/17 and n5/n12/n41/n77 that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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1. General Information

1.1. Details of Client

Applicant:	KEYENCE CORPORATION
Address of Applicant:	1-3-14, Higashinakajima, Higashiyodogawa-ku, Osaka, 533-8555 Japan
Manufacturer:	KEYENCE CORPORATION
Address of Manufacturer:	1-3-14, Higashinakajima, Higashiyodogawa-ku, Osaka, 533-8555 Japan
Factory:	KEYENCE CORPORATION
Address of Factory:	1-3-14, Higashinakajima, Higashiyodogawa-ku, Osaka, 533-8555 Japan

1.2. Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China
Post code:	518057
Test engineer:	Bert Xu,Leon Xu

1.3. Test Facility

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

• A2LA (Certificate No. 3816.01)

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

• VCCI (Member No. 1937)

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

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

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1.4. General Description of EUT

Product Name:	Handheld Terminal		
Model No.:	BT-A600MGA		
Trade Mark:	KEYENCE		
Product Phase:	production unit		
Device Type:	portable device		
Exposure Category:	uncontrolled environment / general population		
IMEI:	004403170138525		
Hardware Version:	V1.03		
Software Version:	T48		
Antenna Type:	FPC Antenna		
Device Operating Configurations:			
Device Class:	B		
GPRS Multi-slots Class:	33	EGPRS Multi-slots Class:	33
HSDPA UE Category:	24	HSUPA UE Category	6
DC-HSDPA UE Category:	24		
Power Class	4,tested with power level 5(GSM850)		
	1,tested with power level 0(GSM1900)		
	3, tested with power control “all 1”(WCDMA Band)		
	3, tested with power control Max Power(LTE Band)		
Modulation Mode:	**GSM:** GMSK, 8PSK; **WCDMA:** QPSK,16QAM;		
	LTE: QPSK,16QAM,64QAM,256QAM;		
	5G NR: DFT-s-OFDM (PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM),		
	CP-OFDM (QPSK, 16QAM, 64QAM, 256QAM)		
	WIFI: DSSS, OFDM, OFDMA; **BT:** GFSK, π/4DQPSK,8DPSK **NFC:** ASK		

Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	GSM850	824-849	869-894
	GSM1900	1850-1910	1930-1990
	WCDMA Band II	1850-1910	1930-1990
	WCDMA Band IV	1710-1755	2110-2155

	WCDMA Band V	824-849	869-894
	LTE Band 2	1850 -1910	1930-1990
	LTE Band 4	1710-1755	2110-2155
	LTE Band 5	824-849	869-894
	LTE Band 7	2500-2570	2620-2690
	LTE Band 12	699-716	729-746
	LTE Band 13	777-787	746-756
	LTE Band 14	788-798	758-768
	LTE Band 17	704-716	734-746
	LTE Band 25	1850-1915	1930-1995
	LTE Band 38	2570-2620	2570-2620
	LTE Band 41	2496-2690	2496-2690
	LTE Band 42	3450-3550	3450-3550
		3550-3600	3550-3600
	LTE Band 43	3600-3700	3600-3700
		3700-3800	3700-3800
	LTE Band 48	3550-3700	3550-3700
	LTE Band 66	1710-1780	2110-2200
	LTE Band 71	663-698	617-652
	NR Band n2	1850-1910	1930-1990
	NR Band n5	824-849	869-894
	NR Band n12	699-716	729-746
	NR Band n25	1850-1915	1930-1995
	NR Band n38	2570-2620	2570-2620
	NR Band n41	2496~2690	2496~2690
	NR Band n48	3550-3700	3550-3700
	NR Band n66	1710~1780	2110~2200
	NR Band n71	663-698	617-652
	NR Band n77	3450~3550	3450~3550
		3550~3700	3550~3700
		3700~3980	3700~3980
	NR Band n78	3450~3550	3450~3550

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		3550~3700	3550~3700
		3700~3800	3700~3800
	Bluetooth	2400~2483.5	2400~2483.5
	Wi-Fi 2.4G	2402~2462	2402~2462
	Wi-Fi 5G	5150~5250	5150~5250
		5250~5350	5250~5350
		5470~5725	5470~5725
		5725~5850	5725~5850
	WIF 6E	5925-6425	5925-6425
		6425-6525	6425-6525
		6525-6875	6525-6875
		6875-7125	6875-7125
RF Cable:	☒Provided by applicant ☐Provided by the laboratory		
Battery Information:	Model:	DX-BC6	
	Normal Voltage:	DC 3.6V	
	Rated capacity:	6270mAh	
	Manufacturer:	Manufactured by Getac Technology(Kunshan) Co.,Ltd	

Note: *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.
Remark:
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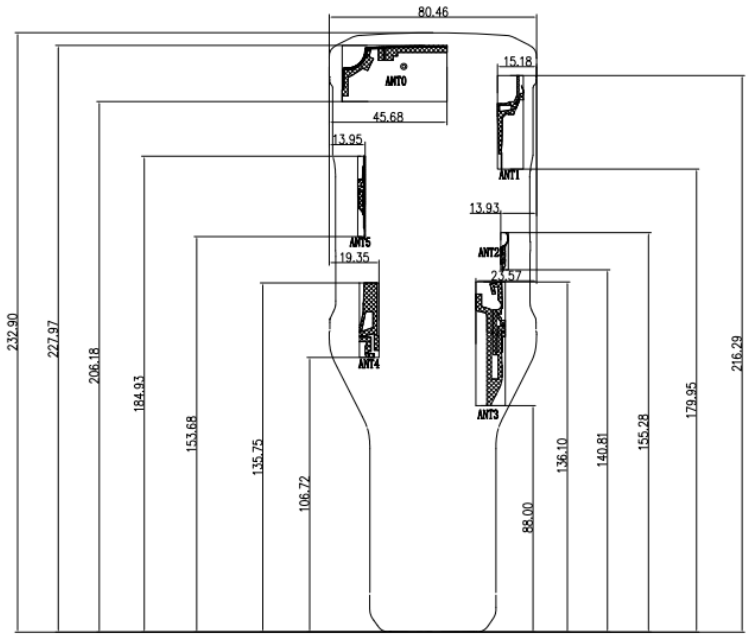
1.4.1.DUT Antenna Locations (Front View)



Antenna	Support Band
Ant 0	GSM:GSM850,GSM1900 WCDMA:B2,B4,B5 LTE :B2,B4,B5,B7,B12,B13,B14,B17,B25,B38,B41,B66,B71 5G NR:n2,n5,n12,n25,N38,n41,n66,n71
Ant 1	WIFI2.4G,WIFI5G,WIFI6G,BT
Ant 2	LTE:B48 5G NR:n48,n77,n78
Ant 4	LTE :B2,B66 5G NR:n25,n66,n41
Ant 5	WIFI2.4G,WIFI5G,WIFI6G,BT

Note:

1) The test device is a smart phone. The overall diagonal dimension of this device is 230mm. Per KDB 648474 D04, because the diagonal distance of this device is ⩾160mm, so it is a phablet.

According to the distance between 5G NR/LTE/WCDMA/GSM&WIFI&BT antennas and the sides of the EUT we can draw the conclusion that:

EUT Sides for SAR Testing							
Mode	Exposure Condition	Front	Back	Left	Right	Top	Bottom
Ant 0	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	Yes	No
Ant 1	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	Yes	No
Ant 2	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	No	No
Ant 4	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	No	No
Ant 5	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	No	No

Table 1： Distance of the Antenna to the EUT surface/edge

Note:

1) When the antenna-to-edge distance is greater than 25mm, such position does not need to be tested.

1.4.2.LTE CA additional specification

The device supports downlink LTE Carrier Aggregation (CA). When carrier aggregation applies, implementation and measurement details for the following are necessary.

a) Intra-band and inter-band carrier aggregation requirements for downlink.

The possible downlink and uplink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.101 V15.4.0. The conducted power measurement results of downlink LTE CA are provided in Section 8 of this report per 3GPP TS 36.521-1 V14.4.0. The downlink LTE CA SAR test is not required since the maximum output power for downlink LTE CA was not more than 0.25dB higher than the maximum output power for without downlink LTE CA.

2CC Downlink Carrier Aggregation	3CC Downlink Carrier Aggregation	4CC Downlink Carrier Aggregation
CA_12A-66A	CA_12A-66A-66A	CA_13A-48D
CA_13A-48A	CA_13A-66A-66A	CA_2A-48D
CA_13A-66A	CA_13A-66B	CA_48D-66A
CA_14A-66A	CA_13A-66C	CA_5A-5A-66A-66A
CA_2A-12A	CA_14A-66A-66A	CA_5B-66A-66A
CA_2A-13A	CA_2A-2A-12A	
CA_2A-14A	CA_2A-2A-13A	
CA_2A-2A	CA_2A-2A-14A	
CA_2A-48A	CA_2A-2A-5A	
CA_2A-5A	CA_2A-48C	
CA_2A-66A	CA_2A-5B	
CA_2A-71A	CA_2A-66B	

CA_48A-66A	CA_2A-66C	
CA_5A-5A	CA_2C-66A	
CA_5A-66A	CA_48C-66A	
CA_5A-66B	CA_5A-5A-66A	
CA_66A-66A	CA_5A-66A-66A	
	CA_5B-66A	
	CA_66A-66A-66A	

1.4.3.Power reduction specification

This device uses a single fixed level of power reduction through static table look-up for SAR compliance and it is triggered by a single event or operation

1) A fixed level power reduction is applied for some frequency bands when simultaneously transmitting with the other antennas in certain simultaneous transmission conditions. The standalone SAR compliance still uses the standalone SAR results tested at the maximum output power level without any power reduction

2) A fixed level power reduction is applied for some frequency bands when handset operate "held to the ear" condition, the power reduction triggered by audio receiver detection. The audio receiver detection is used to determine head or body scenario.

3) The proximity sensor is used to indicate when the device is held close to a user's body exposure condition. It utilizes the proximity sensor to reduce the output power in specific wireless and operating modes of main antenna to ensure SAR compliance (Refer to section 5.4 for detailed proximity Sensor information and validation data per KDB 616217).

The detailed power reduction information can be referred to Appendix E.

1.5. Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI/IEEE C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
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)
IEC/IEEE 63195-1:2022	Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body (frequency range of 6 GHz to 300 GHz) – Part 1: Measurement procedure
KDB 941225 D01	3G SAR Measurement Procedures v03r01
KDB 941225 D05	SAR for LTE Devices v02r05
KDB 941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB 941225 D06	Hotspot Mode SAR v02r01
KDB 248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02r02

KDB 648474 D04	Handset SAR v01r03
KDB 447498 D01	General RF Exposure Guidance v06
KDB 865664 D01	SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02	RF Exposure Reporting v01r02
KDB 690783 D01	SAR Listings on Grants v01r03
KDB 616217 D04	SAR for laptop and tablets v01r02

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1.6. RF exposure limits

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

Notes:
* The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time
** The Spatial Average value of the SAR averaged over the whole body.
*** The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.
Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation.)

2. Laboratory Environment

Temperature	Min. = 18℃, Max. = 25 ℃
Relative humidity	Min. = 30%, Max. = 70%
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

Table 2： The Ambient Conditions

3. SAR Measurements System Configuraion

3.1. The SAR Measurement System

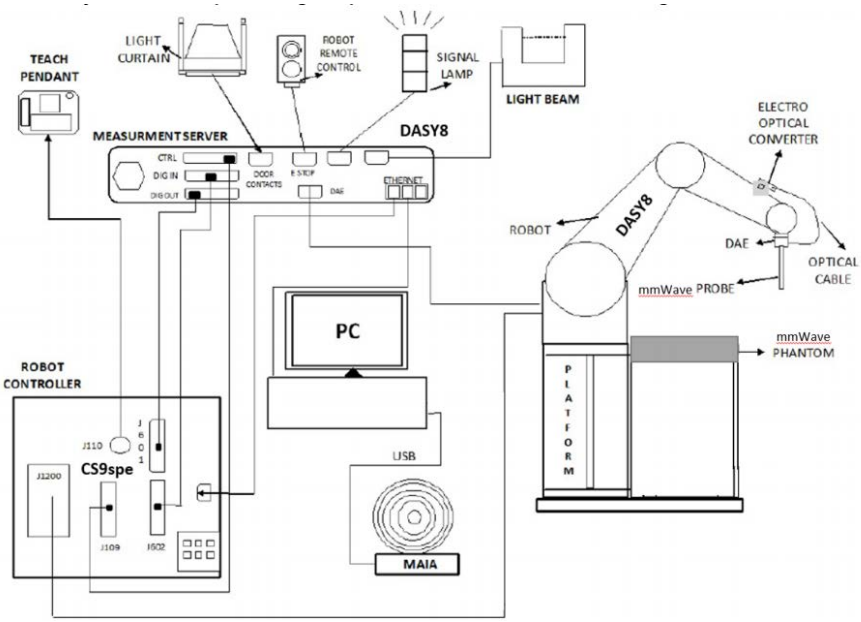
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

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

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

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

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



F-1. SAR Measurement System Configuration

- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 7.

- DASY5 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand, right-hand and Body Worn usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validating the proper functioning of the system.

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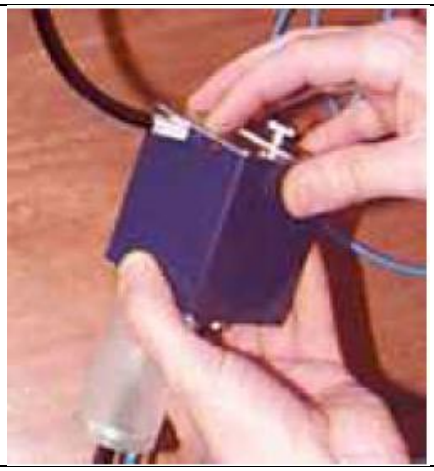
3.2. Isotropic E-field Proble EX3DV4

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

3.3. Data Acquisition Electronics (DAE)

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



3.4. SAM Twin Phantom

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

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.
Twin SAM V5.0 has the same shell geometry and is manufactured from the same material as Twin SAM V4.0, but has reinforced top structure.

3.5. ELI Phantom

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

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.
ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4 but has reinforced top structure.

3.6. Device Holder for Transmitters

F-2. Device Holder for Transmitters

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

3.7. Measurement Procedure

3.7.1.Scanning procedure

Step 1: Power reference measurement

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

Step 2: Area scan

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

Step 3: Zoom scan

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

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

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

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

Step 4: Power reference measurement (drift)

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

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3.7.2.Data storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension “DAE”. The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated. The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

3.7.3.Data Evaluation by SEMCAD

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

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

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

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

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

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

With Vi = compensated signal of channel I (I = x, y, z)
Ui = input signal of channel I (I = x, y, z)
cf = crest factor of exciting field (DASY parameter)
dcp I = diode compression point (DASY parameter)

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

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

H-field probes:

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

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

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

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

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

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

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

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

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

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

4. SAR measurement variability and uncertainty

4.1. SAR measurement variability

Per KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

4.2. SAR measurement uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

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5. Desciption of Test Position

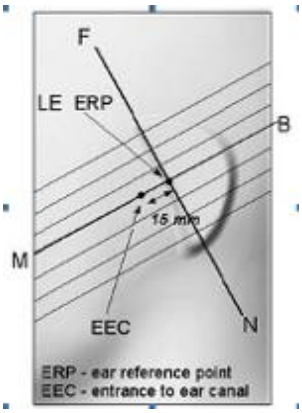
5.1. The Head Test Position

5.1.1.SAM Phantom Shape

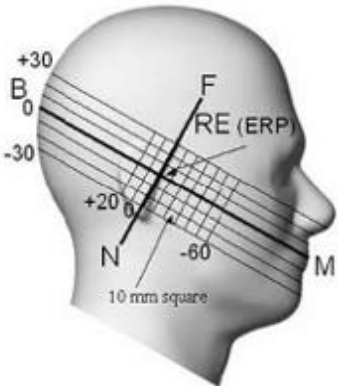
F-3. Front, back, and side views of SAM (model for the phantom shell). Full-head model is for illustration purposes only-procedures in this recommended practice are intended primarily for the phantom setup.

Note: The centre strip including the nose region has a different thickness tolerance.

F-4. Sagittally bisected phantom with extended perimeter (shown placed on its side as used for SAR measurements)

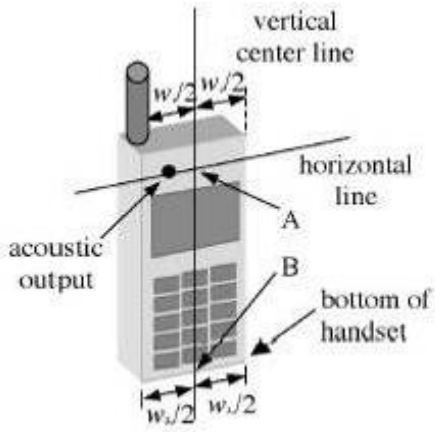


F-5. Close-up side view of phantom, showing the ear region, N-F and B-M lines, and seven cross-sectional plane locations

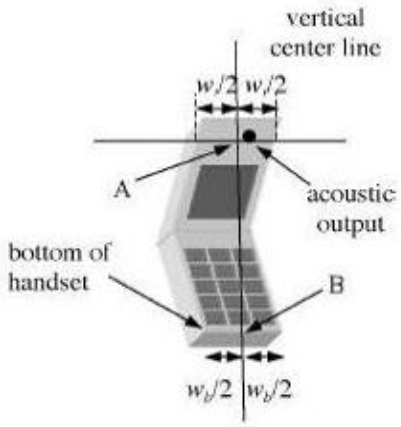


F-6.Side view of the phantom showing relevant markings and seven cross-sectional plane locations

5.1.2.EUT constructions



F-7. Handset vertical and horizontal reference lines- “fixed case”



F-8.Handset vertical and horizontal reference lines- “clam-shell case”

5.1.3.Definition of the “check” position

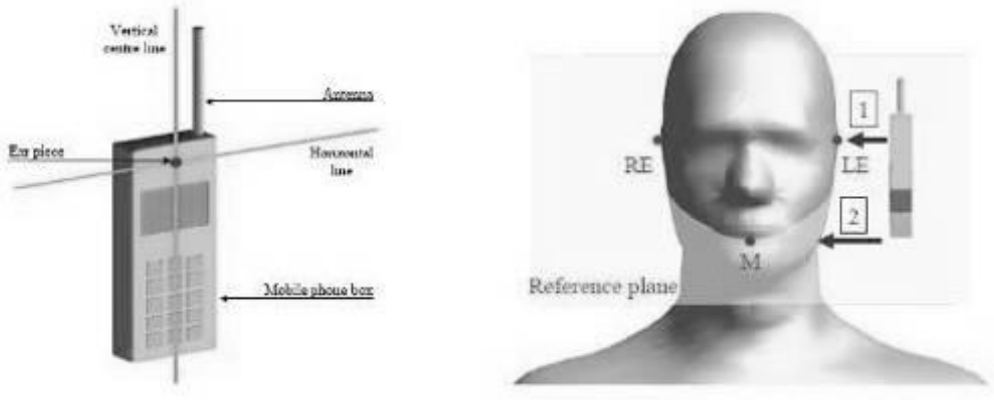
a) Position the device with the vertical centre line of the body of the device and the horizontal line crossing the centre of the ear piece in a plane parallel to the sagittal plane of the phantom (“initial position”). While maintaining the device in this plane, align the vertical centre line with the reference plane containing the three ear and mouth reference points (M, RE and LE) and align the centre of the ear piece with the line RE-LE.

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

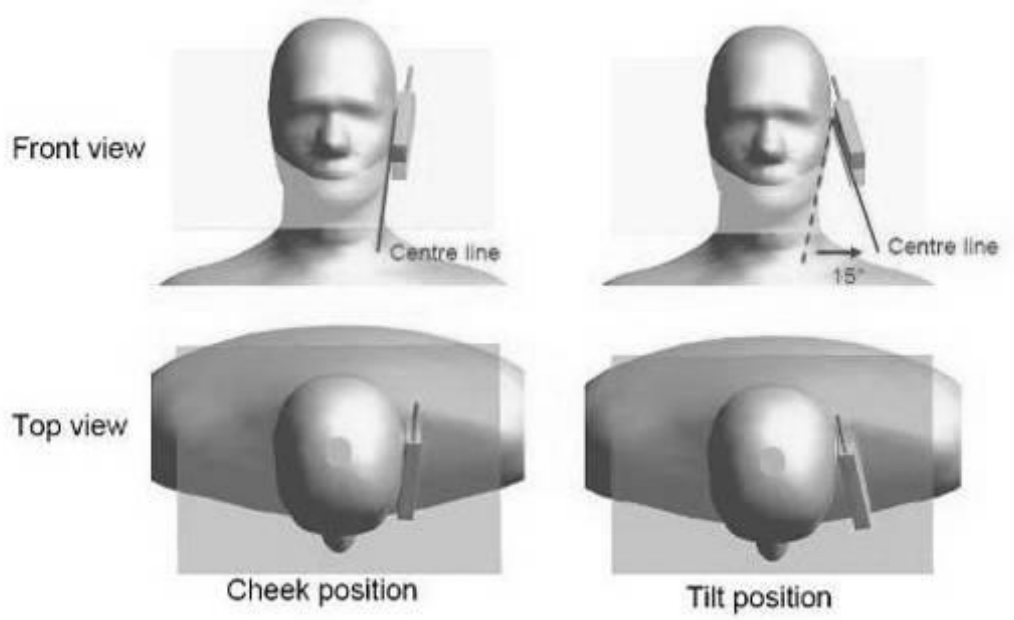
5.1.4.Definition of the “tilted” position

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

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



F-9.Definition of the reference lines and points, on the phone and on the phantom and initial position



F-10. “Cheek” and “tilt” positions of the mobile phone on the left side

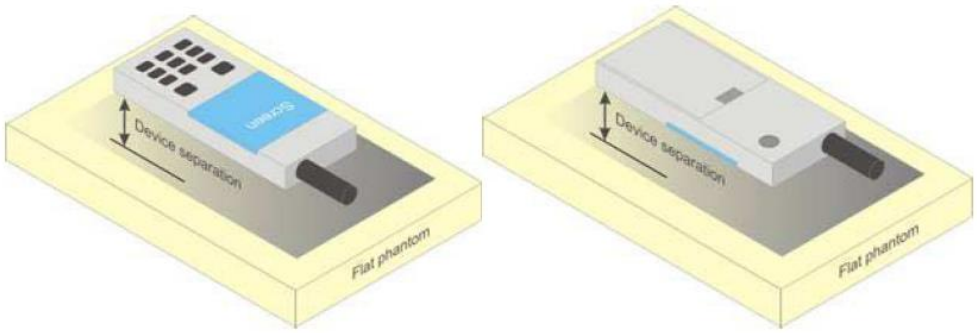
5.2. The Body Test Position

5.2.1.Body-worn accessory exposure conditions

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.
Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. Per FCC KDB Publication 648474 D04, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D04 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration. This device has a handheld scenario, with an evaluation test distance of 0mm and a limit of 10g and 4.0W/kg.



F-11.Test positions for body-worn devices

5.2.2.Wireless Router exposure conditions

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

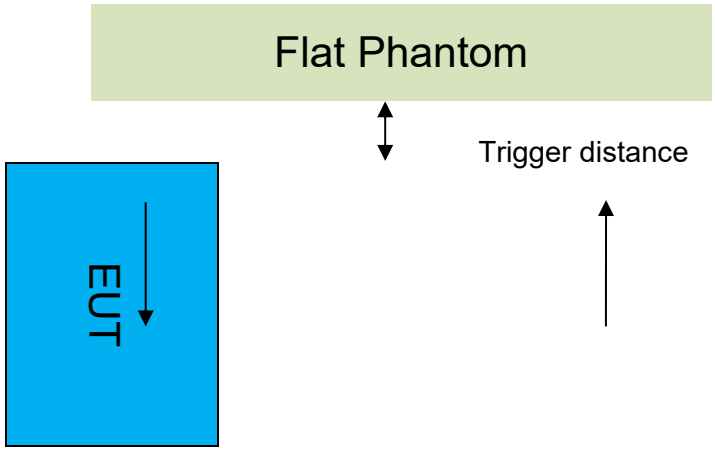
5.3. Extremity exposure conditions

Per FCC KDB 648474D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the device is marketed as “Phablet”.
The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for Product Specific 10-g SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

Due to the SAR result, only the following frequency bands need to test with 0mm for the Product Specific 10-g SAR, the others are not required.

5.4. Proximity Sensor Triggering Test

Proximity sensor triggering distances：
The Proximity sensor triggering was applied to WWAN antenna. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed.

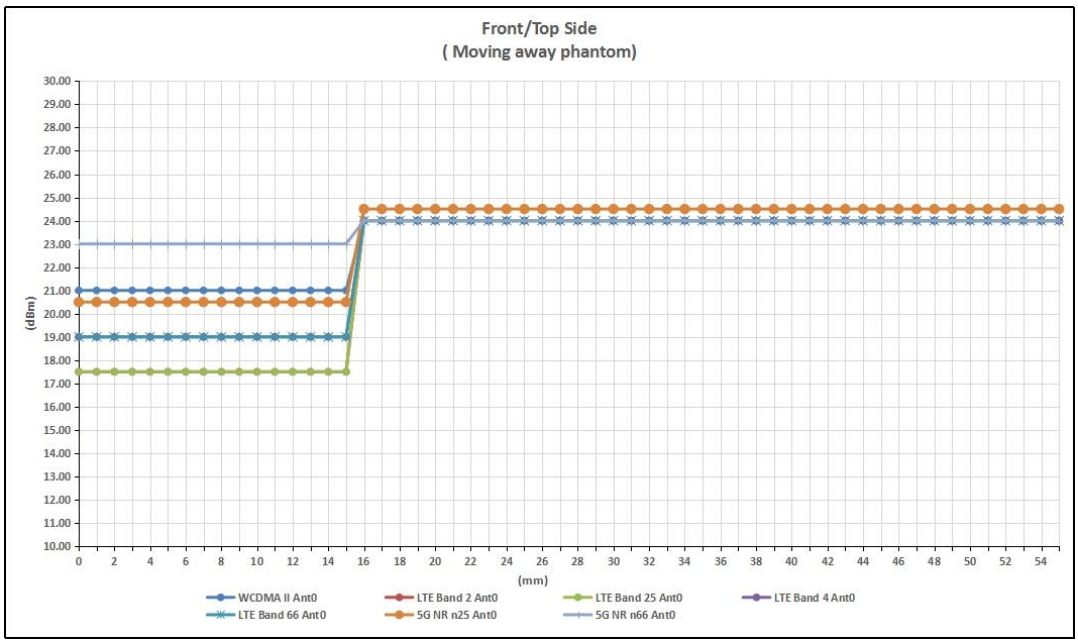


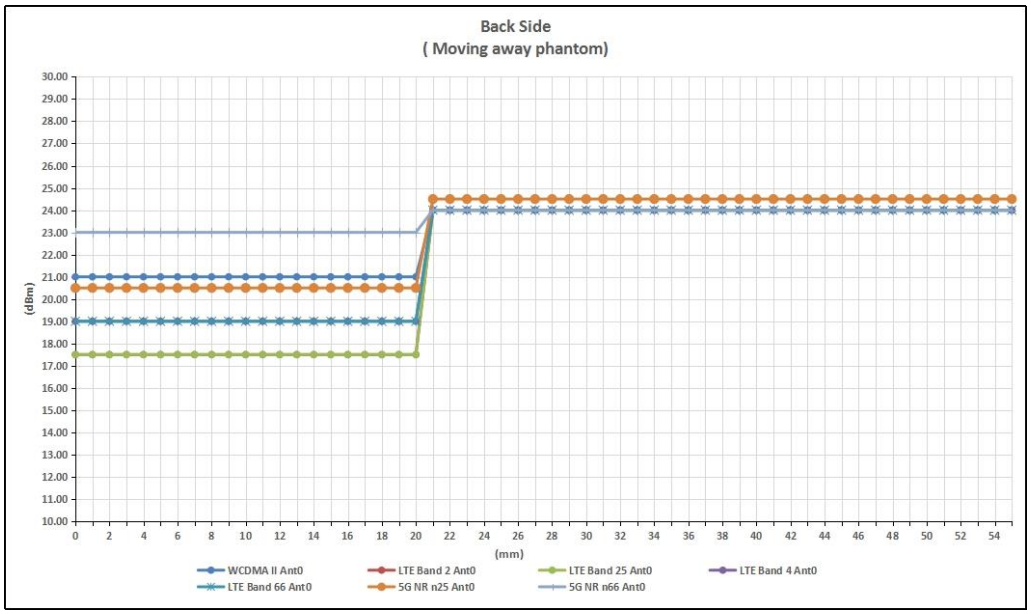
Proximity Sensor Triggering Distance(mm)			
Ant0			
Position	Front	Back	Top Side
Minimum	15	20	15
Required SAR Test	14	19	14

Note:

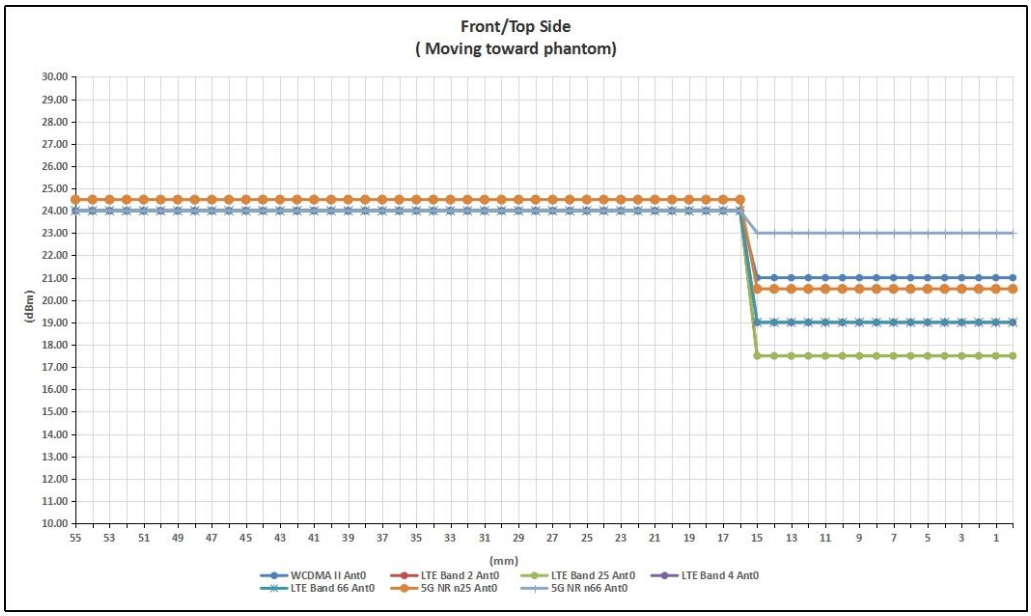
SAR tests with proximity sensor power reduction are only required for the sides of frequency bands in the table above. For the other sides or other frequency bands of the device, SAR is still tested at the maximum power level with sensor off.

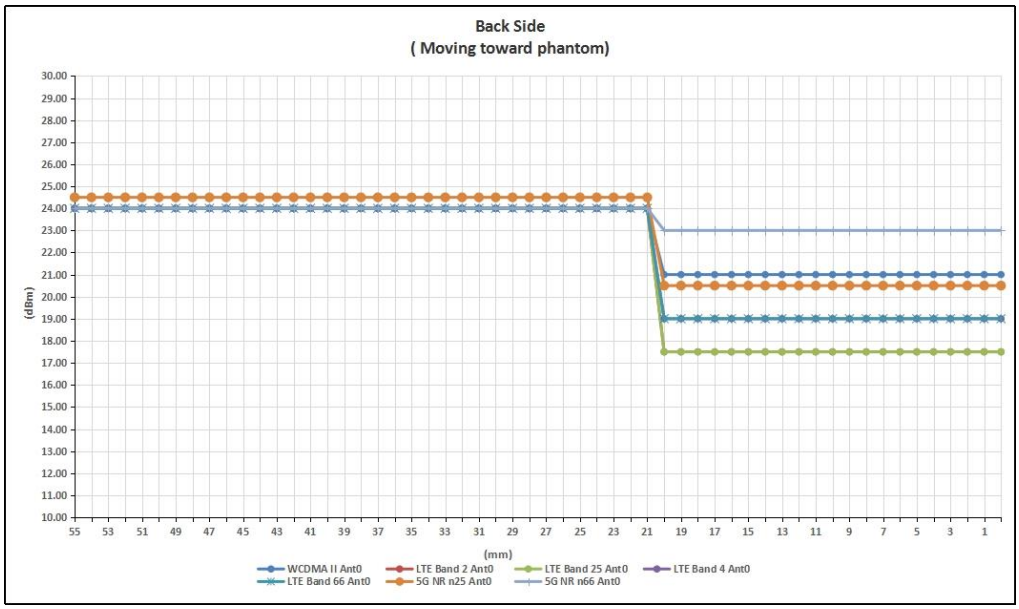
- Ant 0 DUT Moving away(Trigger)the Phantom





- Ant 0 DUT Moving toward(Trigger)the Phantom





Proximity sensor coverage

If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.

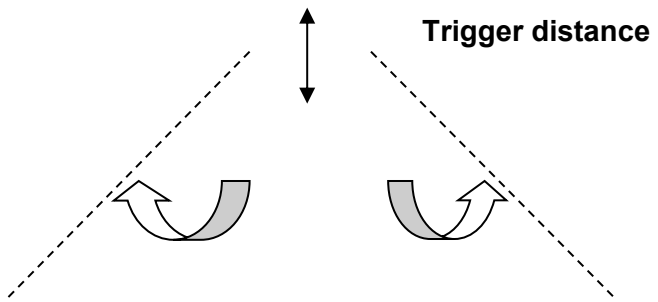
The proximity sensor and main antenna use same metallic electrode, so there is no spatial offset.

Device tilt angle influences to proximity sensor triggering

The influence of device tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom.

Rotating the tablet around the edge next to the phantom in ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.

Flat Phantom



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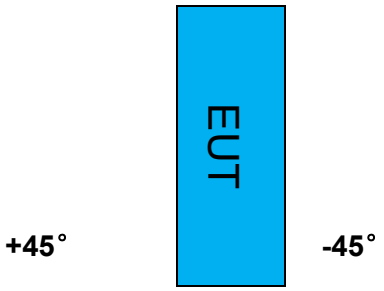


Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering for Top Side												
Band (MHz)	Minimum trigger distance Per KDB616217§6.2	Minimum trigger distance at which power reduction was maintained over ±45°	Power Reduction Status									
			-45°	-35°	-25°	-15°	-5°	0°	5°	15°	25°	35°	45°
Ant0	Bottom side:16mm	Bottom side:16mm	on	on	on	on	on	on	on	on	on	on	on

6. SAR System Verificaion Procedure

6.1. Tissue Simulate Liquid

6.1.1.Recipes for Tissue Simulate Liquid

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

Ingredients (% by weight)	Frequency (MHz)				
	450	700-1000	1700-2000	2300-2500	2500-2700
Water	38.56	40.30	55.24	55.00	54.92
Salt (NaCl)	3.95	1.38	0.31	0.2	0.23
Sucrose	56.32	57.90	0	0	0
HEC	0.98	0.24	0	0	0
Bactericide	0.19	0.18	0	0	0
Tween	0	0	44.45	44.80	44.85
Salt: 99+% Pure Sodium Chloride Water: De-ionized, 16 MΩ+ resistivity Tween: Polyoxyethylene (20) sorbitan monolaurate			Sucrose: 98+% Pure Sucrose HEC: Hydroxyethyl Cellulose		
HSL5GHz is composed of the following ingredients: (Manufactured by SPEAG) Water: 50-65% Mineral oil: 10-30% Emulsifiers: 8-25% Sodium salt: 0-1.5%					

Table 3： Recipe of Tissue Simulate Liquid

6.1.2.Measurement for Tissue Simulate Liquid

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

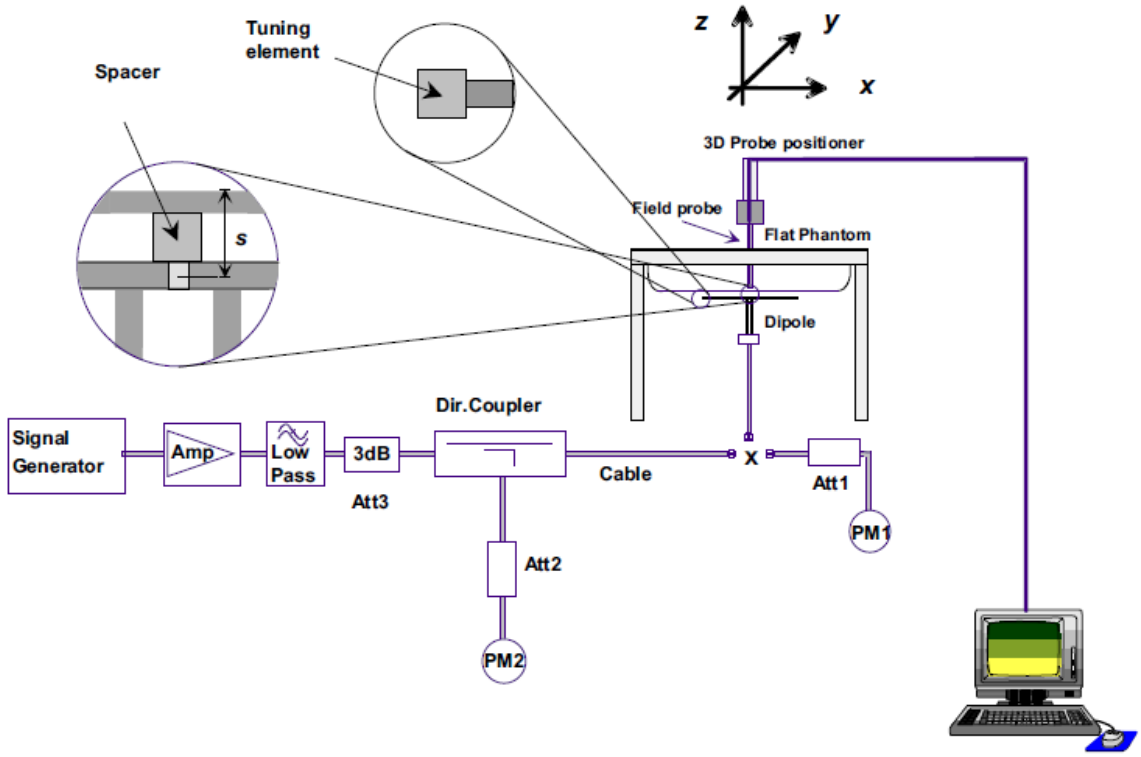
The temperature variation of the Tissue Simulate Liquids was 22±2°C.

Tissue Type	Measured Frequency (MHz)	Target Tissue (±5%)		Measured Tissue		Deviation (Within ±5%)		Liquid Temp. (℃)	Test Date
		ε_r	σ(S/m)	ε_r	σ(S/m)	ε_r	σ(S/m)		
750 Head	750	41.9	0.89	42.700	0.861	1.91%	-3.26%	22.2	2024-8-11
750 Head	750	41.9	0.89	42.094	0.888	0.46%	-0.22%	22.4	2024-9-3
835 Head	835	41.5	0.90	42.200	0.908	1.69%	0.89%	22.3	2024-8-14
835 Head	835	41.5	0.90	41.923	0.910	1.02%	1.11%	22.4	2024-9-2
1750 Head	1750	40.1	1.37	41.000	1.350	2.24%	-1.46%	22.3	2024-8-25
1750 Head	1750	40.1	1.37	39.370	1.369	-1.82%	-0.07%	22.3	2024-9-2
1950 Head	1950	40.0	1.40	40.400	1.430	1.00%	2.14%	22.2	2024-8-16
1950 Head	1950	40.0	1.40	39.500	1.419	-1.25%	1.36%	22.3	2024-9-6
2450 Head	2450	39.2	1.8	39.300	1.830	0.26%	1.67%	22.2	2024-8-17
2600 Head	2600	39.0	1.96	38.700	1.980	-0.77%	1.02%	22.2	2024-8-23
2600 Head	2600	39.0	1.96	37.972	1.984	-2.64%	1.22%	22.3	2024-8-27
3500 Head	3500	37.9	2.91	38.773	3.001	2.30%	3.13%	22.3	2024-9-8
3700 Head	3700	37.7	3.12	37.729	3.115	0.08%	-0.16%	22.3	2024-8-29
3900 Head	3900	37.5	3.32	37.101	3.473	-1.06%	4.61%	22.3	2024-9-9
5250 Head	5250	35.9	4.71	36.100	4.730	0.56%	0.42%	22.2	2024-8-19
5600 Head	5600	35.5	5.07	35.200	5.120	-0.85%	0.99%	22.2	2024-8-19
5750 Head	5750	35.4	5.22	34.800	5.290	-1.69%	1.34%	22.2	2024-8-19
6500 Head	6500	34.5	6.07	33.700	6.180	-2.32%	1.81%	22.2	2024-8-21

Table 4： Measurement result of Tissue electric parameters

6.2. SAR System Check

The microwave circuit arrangement for system Check is sketched in F-12. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the following table (A power level of 250mW (below 3GHz) or 100mW (3-6GHz) was input to the dipole antenna). During the tests, the ambient temperature of the laboratory was in the range 22±2°C, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15±0.5 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



F-12.The microwave circuit arrangement used for SAR system Check

6.2.1.Justification for Extended SAR Dipole Calibrations

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

a) There is no physical damage on the dipole;
b) System check with specific dipole is within 10% of calibrated value;
c) Return-loss is within 20% of calibrated measurement;
d) Impedance is within 5Ω from the previous measurement.

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

6.2.2.Summary System Check Results

Validation Kit		Measured SAR 250mW	Measured SAR 250mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W) (±10%)	Target SAR (normalized to 1W) (±10%)	Deviation (Within ±10%)	Liquid Temp. (℃)	Test Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)	1-g(W/kg)		
D750V3	Head	2.13	1.42	8.52	5.68	8.4	5.52	1.43%	22.2	2024-8-11
D750V3	Head	2.14	1.38	8.56	5.52	8.4	5.52	1.90%	22.4	2024-9-3
D835V2	Head	2.38	1.58	9.52	6.32	9.6	6.16	-0.83%	22.3	2024-8-14
D835V2	Head	2.43	1.59	9.72	6.36	9.6	6.16	1.25%	22.4	2024-9-2
D1750V2	Head	9.16	5.00	36.64	20.00	37	19.3	-0.97%	22.3	2024-8-25
D1750V2	Head	9.03	4.84	36.12	19.36	37	19.3	-2.38%	22.3	2024-9-2
D1950V3	Head	9.75	5.17	39.00	20.68	40.4	20.8	-3.47%	22.2	2024-8-16
D1950V3	Head	10.30	5.41	41.20	21.64	40.4	20.8	1.98%	22.3	2024-9-6
D2450V2	Head	12.40	5.97	49.60	23.88	52.7	24.6	-5.88%	22.2	2024-8-17
D2600V2	Head	14.20	6.51	56.80	26.04	57.3	25.4	-0.87%	22.2	2024-8-23
D2600V2	Head	14.70	6.58	58.80	26.32	57.3	25.4	2.62%	22.3	2024-8-27
Validation Kit		Measured SAR 100mW	Measured SAR 100mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W) (±10%)	Target SAR (normalized to 1W) (±10%)	Deviation (Within ±10%)	Liquid Temp. (℃)	Test Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)	1-g(W/kg)		
D3500V2	Head(3.5GHz)	6.60	2.49	66.00	24.90	65.9	24.7	0.15%	22.3	2024-9-8
D3700V2	Head(3.7GHz)	6.44	2.34	64.40	23.40	67.6	24.4	-4.73%	22.3	2024-8-29
D3900V2	Head(3.9GHz)	6.84	2.37	68.40	23.70	70.2	24.2	-2.56%	22.3	2024-9-9
D5GHzV2	Head(5.25GHz)	8.21	2.36	82.10	23.60	77.2	21.9	6.35%	22.2	2024-8-19
	Head(5.6GHz)	8.33	2.39	83.30	23.90	81.1	22.8	2.71%	22.2	2024-8-19
	Head(5.75GHz)	7.59	2.19	75.90	21.90	77.8	21.7	-2.44%	22.2	2024-8-19
D6500V2	Head(6.5GHz)	31.00	5.65	310.00	56.50	291	53.9	6.53%	22.2	2024-8-21

Table 5： SAR System Check Result

6.2.3.Detailed System Check Results

Please see the Appendix A

7. Test Configuration

7.1. 3G SAR Test Reduction Procedure

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

7.2. Operation Configurations

7.2.1.GSM Test Configuration

SAR tests for GSM 850 and GSM 1900, a communication link is set up with a base station by air link. Using CMW500 the power lever is set to “5”and “0” in SAR of GSM 850 and GSM 1900. The tests in the band of GSM 850 and GSM 1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 33 for this EUT, it has at most 4 timeslots in uplink and at most 5 timeslots in downlink, the maximum total timeslot is 6. The EGPRS class is 33 for this EUT, it has at most 4 timeslots in uplink, and at most 5 timeslots in downlink, the maximum total timeslot is 6.

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

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

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

7.2.2.WCDMA Test Configuration

1）. Output Power Verification

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

2）. Head SAR

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure

3）. Body SAR

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

4）. HSDPA / HSUPA / DC-HSDPA

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

a) HSDPA

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

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

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

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

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

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

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

Table 2: HSDPA UE category

b) HSUPA

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

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

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

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

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

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

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

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

Table 3: Subtests for UMTS Release 6 HSUPA

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

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

Table 4: HSUPA UE category

c) DC-HSDPA

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a Second serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.
The following tests were completed according to procedures in section 7.3.13 of 3GPP TS 34.108 v9.5.0.
A summary of these settings are illustrated below:
Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13.
The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.
The measurements were performed with a Fixed Reference Channel (FRC) H-Set 12 with QPSK.

Parameter	Value
Nominal average inf. bit rate	60 kbit/s
Inter-TTI Distance	1 TTI's
Number of HARQ Processes	6 Processes
Information Bit Payload	120 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	960 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	3200 SMLs
Coding Rate	0.15
Number of Physical Channel Codes	1

Table 5: settings of required H-Set 12 QPSK acc. to 3GPP 34.121

Note:
1. The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table above.
2. Maximum number of transmission is limited to 1,i.e.,retransmission is not allowed. The redundancy and constellation version 0 shall be used.

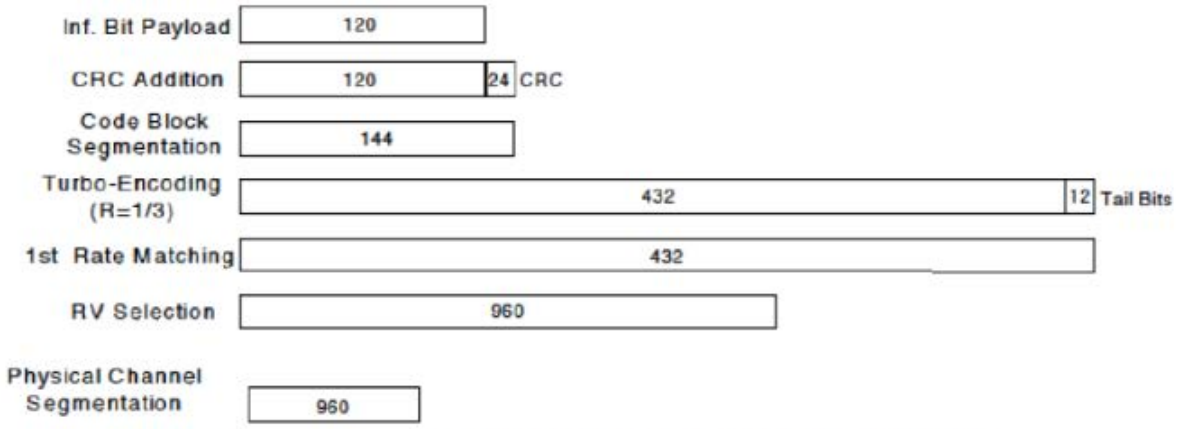


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 5 procedures. A summary of subtest settings are illustrated below:

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	CM(dB)(2)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$
Note 2: CM=1 for β_c/β_d= 12/15, β_{hs}/β_c = 24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
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 signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15

Up commands are set continuously to set the UE to Max power.
Note:
1. The Dual Carriers transmission only applies to HSDPA physical channels
2. The Dual Carriers belong to the same Node and are on adjacent carriers.
3. The Dual Carriers do not support MIMO to serve UEs configured for dual cell operation
4. The Dual Carriers operate in the same frequency band.
5. The device doesn't support the modulation of 16QAM in uplink but 64QAM in downlink for DC-HSDPA mode.
6. The device doesn’t support carrier aggregation for it just can operate in Release 8.

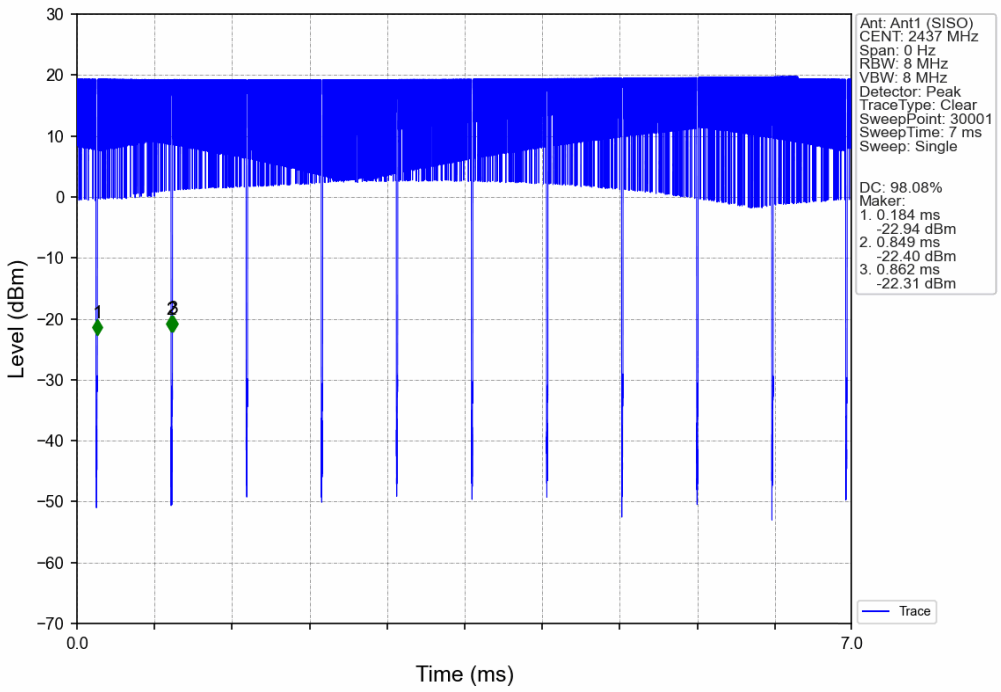
7.3. WIFI Test Configuration

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

7.3.1.1 Duty cycle

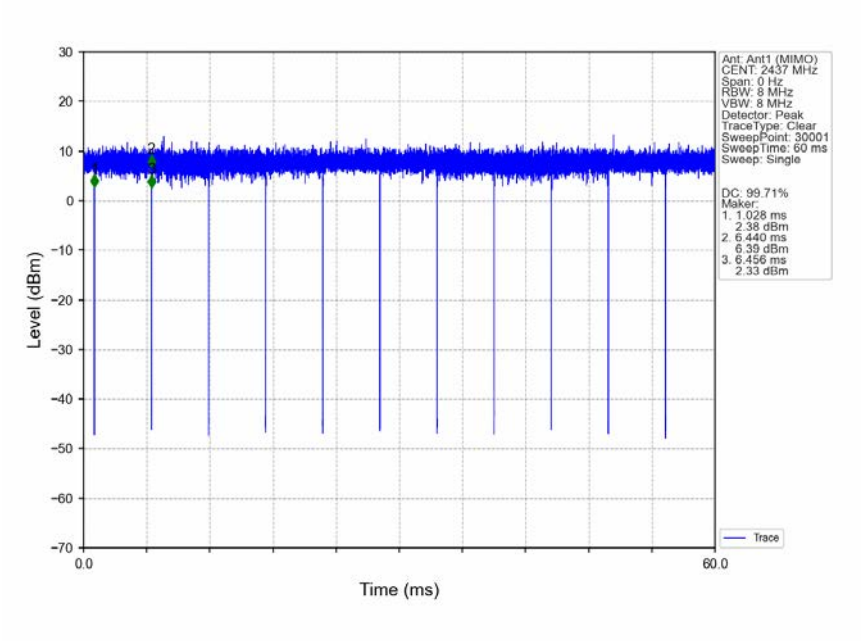
1) Wi-Fi 2.4GHz 802.11b Ant1&Ant5:

Duty cycle=98.08%



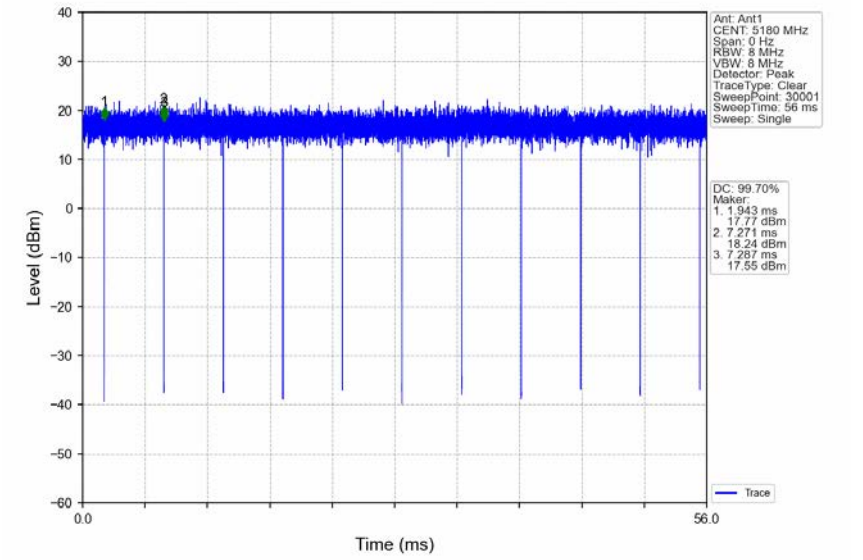
2) Wi-Fi 2.4GHz 802.11n 40M Ant1&Ant5:

Duty cycle=99.71%



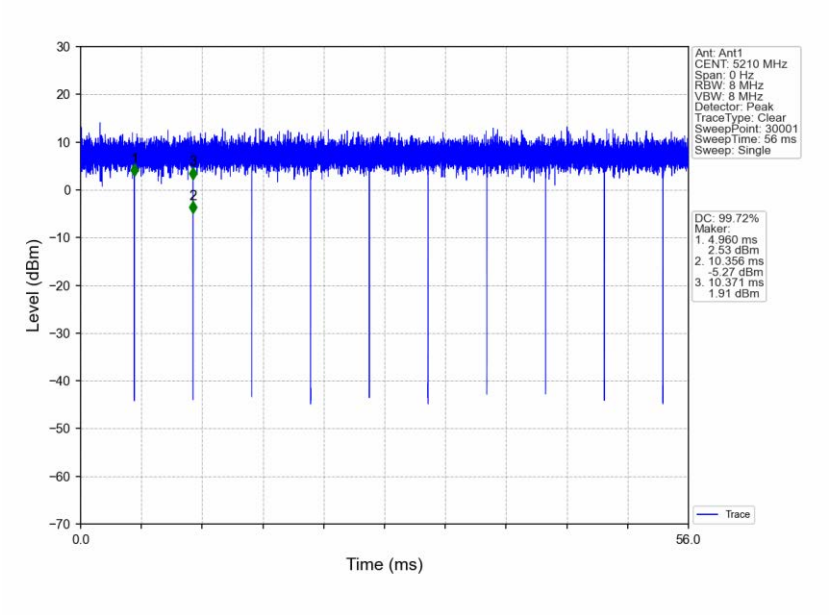
3) Wi-Fi 5GHz 802.11n20 Ant1&Ant5:

Duty cycle=99.70%



4) Wi-Fi 5GHz 802.11ac VHT80 Ant1&Ant5:

Duty cycle=99.72%



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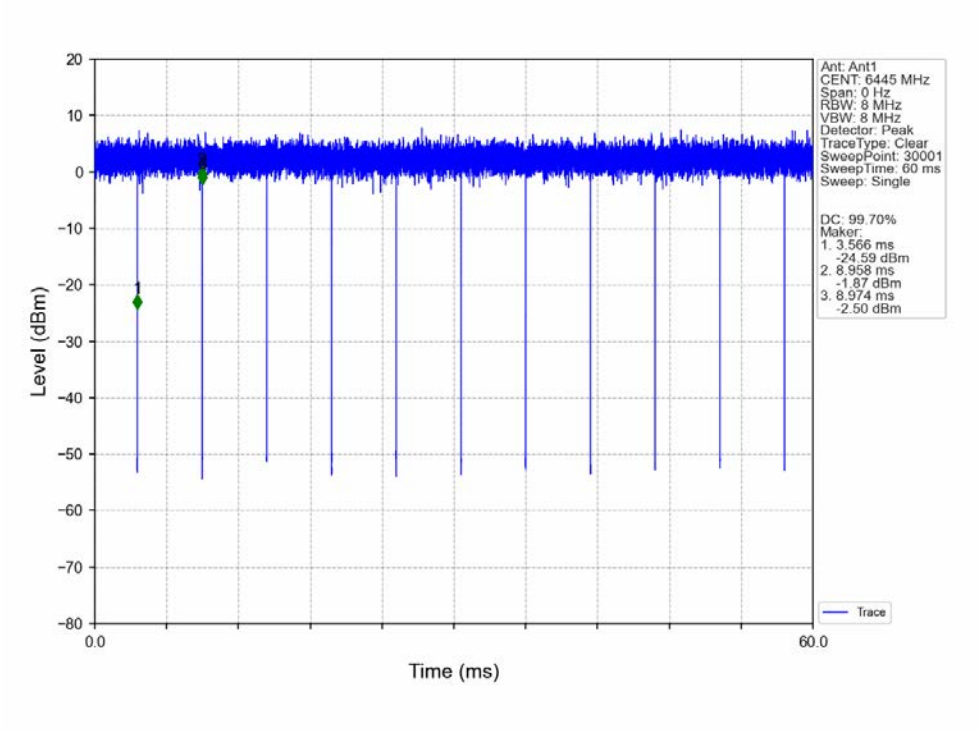
3) Wi-Fi 6GHz 802.11ax40 Ant1&Ant5:

Duty cycle=99.70 %



7.3.2.Initial Test Position SAR Test Reduction Procedure

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

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

7.3.3.Subsequent Test Configuration Procedures

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

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

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

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

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

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

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

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

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

7.3.4.2.4 GHz WiFi SAR Procedures

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

- **802.11b DSSS SAR Test Requirements**

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

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

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

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

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

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

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

- **SAR Test Requirements for OFDM configurations**

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

7.3.5.5 GHz WiFi SAR Procedures

- **U-NII-1 and U-NII-2A Bands**

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

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

operating at a reduced maximum power and also qualifies for SAR test exclusion.

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

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

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

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

- **SAR Test Requirements for OFDM configurations**

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

7.4. NR Band Test Configuration

1. NR Band n2/n5/n12/n25/n38/n41/n66/n71/n77/n78 support SA mode and n2/n5/n25/n41/n48/n66/n71/n77 support NSA mode. LTE+NR Band operations are possible only with LTE under EN-DC mode and the operations are possible as following table:

Band/Antenna		LTE Band 2		LTE Band 5	LTE Band 12	LTE Band 13	LTE Band 14	LTE Band 48	LTE Band 66	
		Ant0	Ant4	Ant0	Ant0	Ant0	Ant0	Ant2	Ant2	Ant2
n2	Ant0	×	×	×	×	×	×	×	√	√

	Ant4	×	×	√	√	√	√	×	√	√
n5	Ant0	√	√	×	×	×	×	√	√	√
n25	Ant0	×	×	×	×	×	×	√	√	√
	Ant4	×	×	×	√	×	×	×	√	√
N66	Ant0	×	×	×	×	×	×	√	×	×
	Ant4	√	×	√	√	√	√	×	×	×
n41	Ant0	√	√	×	×	×	×	×	×	×
	Ant4	√	√	×	×	×	×	×	×	×
n48	Ant2	√	×	×	×	×	×	×	√	×
n71	Ant0	√	√	×	×	×	×	×	√	√
n77	Ant2	×	×	√	√	√	√	×	√	√

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1. The general information supported by the NR band is as following table:

Band			n2	n5	n12	n25	n38	n41	n66	n71	n77	n78
Modulation	DFT-s-OFDM	PI/2 BPSK	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		QPSK	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	CP-OFDM	QPSK	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Duty Cycle			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Band	SCS	Bandwidth												
		5Mhz	10Mhz	15Mhz	20Mhz	25Mhz	30Mhz	40Mhz	50Mhz	60Mhz	70Mhz	80Mhz	90Mhz	100Mhz
N2	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N5	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N12	15KHZ	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N25	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N38	30KHZ	N/A	N/A	N/A	Yes	N/A	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
N41	30KHZ	N/A	N/A	N/A	Yes	N/A	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes
N48	30KHZ	N/A	Yes	N/A	Yes	N/A	N/A	Yes	N/A	N/A	N/A	N/A	N/A	N/A
N66	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N71	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n77	30KHZ	N/A	N/A	N/A	Yes	N/A	Yes	Yes	N/A	Yes	N/A	Yes	N/A	Yes
n78	30KHZ	N/A	N/A	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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2. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 3GPP 38.101 maximum power reduction for power class 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
   b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 3, for PI/2 BPSK/16QAM/64QMA/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the PI/2 BPSK/16QAM/64QMA/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
   c. SAR testing start with the largest SCS and largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
   d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
   e. 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.
   f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK/16QAM/64QAM/256QAM SAR testing are not required.
   g. Smaller SCS/bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device

3. MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS 38.101-1 Section 6.2.2 under Table 6.2.2 -1.

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	PI/2 BPSK	≤ 3.5[1]	≤ 1.2[1]	≤ 0.2[1]
		≤ 0.5[2]	≤ 0.5[2]	0[2]
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM	≤ 2.5		
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability powerBoosting-pi2BPSK and if the IE powerBoostPi2BPSK is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n41, n77, n78. The reference power of 0 dB MPR is 26dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n41, n77, n78 with Pi/2 BPSK modulation and if the IE powerBoostPi2BPSK is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n41, n77, n78.

4. For FDD NR Band operation does not have the fixed UL/DL frame structure, but during the transmitting/ receiving it can be operated in the slot structure of 100% UL duty cycle, we are proposing the conservative way to evaluate SAR at 100% duty cycle. For the purpose of test NR Band standalone SAR, and also test SAR level at 100% TX duty cycle.
5. For 5G NR Sub6GHz SISO Mode, SAR Test plan as below:

1) For 5G NR NSA mode with the same UL EN_DC combination but different DL EN_DC combinations,

eg: EN-DC configuration: UL DC_7A_n5 (UL two bands) with DL DC_7C_n5 (DL two bands)

a) The UL EN-DC configuration, including the Tx antenna configuration, RF path, the channel bandwidth and other operating parameters are the same.

b) The maximum output power, including tolerance, for the UL EN-DC configuration with DL two or more bands must be ≤ the same UL EN-DC configuration with DL two bands only to qualify for the SAR test exclusion.

6. For EN-DC SAR, as the existing SAR test system cannot test the multiple different frequency bands simultaneous Transmission SAR at the same time, we suggest that the conservative “max + max” multi-Tx and SAR scaling method can be used to evaluate the inter-band Uplink EN-DC SAR from standalone SAR test results of each LTE and NR EN-DC component band and the conservative “max + max” multi-Tx method to combine the scaled SAR value from each EN-DC component band as the inter-band Uplink EN-DC SAR. All Simultaneous Transmission Scenarios will be evaluated independently in the final SAR report.
7. When the reported SAR for and EN DC configuration is greater than 1.2 W/kg, EN DC SAR is also required for other NR based test channels.

8. EN DC SAR is also required for standalone NR configurations greater than 1.2 W/kg when scaled to the EN DC power level.

8. Test Result

8.1. Measurement of RF Conducted Power

The detailed conducted power table can refer to Appendix E.

Note:

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

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

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

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

4）. According to FCC guidance, the output power with uplink CA active was measured for the high / middle / low channel configuration with the highest reported SAR for each exposure condition, the power was measured with wideband signal integration over both component carriers.

5）.In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs.

6）.Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05.

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

The possible downlink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.101 V15.4.0. The detailed conducted power measurement results of downlink LTE CA are provided in the SAR report per 3GPP TS 36.521-1 V14.4.0. According to KDB 941225 D05A, the downlink only carrier aggregation conditions for this device can be excluded from SAR testing.
The conducted power measurement results of downlink LTE CA Conducted Power are as Appendix E conducted RF output power, so the downlink only carrier aggregation conditions for this device can be excluded from SAR testing

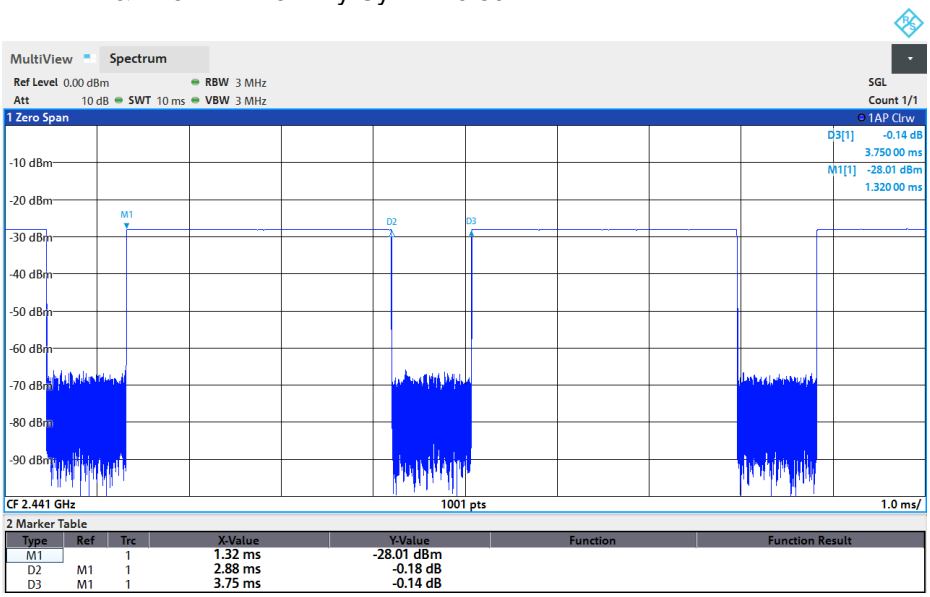
8）.For conducted power of WIFI must be measured at each transmit antenna port according to the DSSS and OFDM transmission configurations in each standalone and aggregated frequency band. For each transmission mode configuration, power must be measured for the highest and lowest channels; and at the mid-band channel(s) when there are at least 3 channels. For configurations with multiple mid-band channels,

due to an even number of channels, both channels should be measured. Power measurement is required for the transmission mode configuration with the highest maximum output power specified for production units.

1) When the same highest maximum output power specification applies to multiple transmission modes, the largest channel bandwidth configuration with the lowest order modulation and lowest data rate is measured.

2) When the same highest maximum output power is specified for multiple largest channel bandwidth configurations with the same lowest order modulation or lowest order modulation and lowest data rate, power measurement is required for all equivalent 802.11 configurations with the same maximum output power.

9）.The conducted power of BT is measured with RMS detector.
Ant1&Ant5 BT DH5 Duty Cycle=76.80%



8.2. Measurement of SAR Data

Note:

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

2) Per KDB447498 D04, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

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

3) The simultaneous transmission is reduced by XdB (the detailed power reduced can be referred to Conducted Power Appendix E), therefore, those SAR of simultaneous transmission mode are estimated based on standalone results.

WiFi 2.4G:

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

WiFi 5G:

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

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

8.2.1.SAR Result of GSM850

GSM850 SAR Test Record										
Ant 0 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data										
Left cheek	GPRS 2TS	190/836.6	1:4.15	0.648	-0.10	28.48	29.50	1.265	0.820	22.3
Left tilted	GPRS 2TS	190/836.6	1:4.15	0.451	0.11	28.48	29.50	1.265	0.570	22.3
Right cheek	GPRS 2TS	190/836.6	1:4.15	0.739	-0.01	28.48	29.50	1.265	**0.935**	22.3
Right cheek	GPRS 2TS	128/824.2	1:4.15	0.642	0.18	28.09	29.50	1.384	0.888	22.3
Right cheek	GPRS 2TS	251/848.8	1:4.15	0.714	0.17	28.41	29.50	1.285	0.918	22.3
Right tilted	GPRS 2TS	190/836.6	1:4.15	0.488	0.17	28.48	29.50	1.265	0.617	22.3
Body worn Test data(Separate 10mm)										
Front side	GPRS 2TS	190/836.6	1:4.15	0.276	-0.16	28.48	29.50	1.265	**0.349**	22.3
Back side	GPRS 2TS	190/836.6	1:4.15	0.100	0.02	28.48	29.50	1.265	0.126	22.3
Hotspot Test data(Separate 10mm)										
Front side	GPRS 2TS	190/836.6	1:4.15	0.276	-0.16	28.48	29.50	1.265	0.349	22.3
Back side	GPRS 2TS	190/836.6	1:4.15	0.100	0.02	28.48	29.50	1.265	0.126	22.3
Left side	GPRS 2TS	190/836.6	1:4.15	0.297	-0.02	28.48	29.50	1.265	**0.376**	22.3
Top side	GPRS 2TS	190/836.6	1:4.15	0.138	0.16	28.48	29.50	1.265	0.175	22.3
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)
Product specific 10g SAR Test data(Separate 0mm)										
Front side	GPRS 2TS	190/836.6	1:4.15	0.516	-0.12	28.48	29.50	1.265	0.653	22.3
Back side	GPRS 2TS	190/836.6	1:4.15	0.159	-0.05	28.48	29.50	1.265	0.201	22.3
Left side	GPRS 2TS	190/836.6	1:4.15	0.536	-0.04	28.48	29.50	1.265	**0.678**	22.3
Top side	GPRS 2TS	190/836.6	1:4.15	0.464	-0.01	28.48	29.50	1.265	0.587	22.3

Table 6： SAR of GSM850 for Head, Body.

8.2.2.SAR Result of GSM1900

GSM1900 SAR Test Record										
Ant 0 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data										
Left cheek	GPRS 2TS	661/1880	1:4.15	0.516	0.05	23.83	25.00	1.309	0.676	22.2
Left tilted	GPRS 2TS	661/1880	1:4.15	0.501	-0.11	23.83	25.00	1.309	0.656	22.2
Right cheek	GPRS 2TS	661/1880	1:4.15	0.741	0.09	23.83	25.00	1.309	**0.970**	22.2
Right cheek	GPRS 2TS	512/1850.2	1:4.15	0.685	-0.15	23.71	25.00	1.346	0.922	22.2
Right cheek	GPRS 2TS	810/1909.8	1:4.15	0.723	-0.14	23.80	25.00	1.318	0.953	22.2
Right tilted	GPRS 2TS	661/1880	1:4.15	0.713	-0.17	23.83	25.00	1.309	0.933	22.2
Body worn Test data(Separate 10mm)										
Front side	GPRS 2TS	661/1880	1:4.15	0.411	0.01	27.51	28.00	1.119	**0.460**	22.2
Back side	GPRS 2TS	661/1880	1:4.15	0.099	-0.02	27.51	28.00	1.119	0.111	22.2
Hotspot Test data(Separate 10mm)										
Front side	GPRS 2TS	661/1880	1:4.15	0.411	0.01	27.51	28.00	1.119	0.460	22.2

Back side	GPRS 2TS	661/1880	1:4.15	0.099	-0.02	27.51	28.00	1.119	0.111	22.2
Left side	GPRS 2TS	661/1880	1:4.15	0.194	0.03	27.51	28.00	1.119	0.217	22.2
Top side	GPRS 2TS	661/1880	1:4.15	1.040	-0.05	27.51	28.00	1.119	**1.164**	22.2
Top side-repeated	GPRS 2TS	661/1880	1:4.15	1.010	-0.17	27.51	28.00	1.119	1.131	22.2
Top side	GPRS 2TS	512/1850.2	1:4.15	0.982	0.15	27.33	28.00	1.167	1.146	22.2
Top side	GPRS 2TS	810/1909.8	1:4.15	0.963	-0.09	27.45	28.00	1.135	1.093	22.2
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm)										
Front side	GPRS 2TS	661/1880	1:4.15	0.766	-0.04	27.51	28.00	1.119	0.857	22.2
Back side	GPRS 2TS	661/1880	1:4.15	0.107	0.10	27.51	28.00	1.119	0.120	22.2
Left side	GPRS 2TS	661/1880	1:4.15	0.338	0.17	27.51	28.00	1.119	0.378	22.2
Top side	GPRS 2TS	661/1880	1:4.15	1.840	-0.01	27.51	28.00	1.119	**2.060**	22.2
Top side	GPRS 2TS	512/1850.2	1:4.15	1.710	0.02	27.33	28.00	1.167	1.995	22.2
Top side	GPRS 2TS	810/1909.8	1:4.15	1.780	-0.16	27.45	28.00	1.135	2.020	22.2

Table 7： SAR of GSM1900 for Head, Body.

Test Position	**Channel/ Frequency**	**Measured SAR (1g)**	**1st Repeated**	**Ratio**	**2nd Repeated**	**3rd Repeated**
	(MHz)		**SAR (1g)**		**SAR (1g)**	**SAR (1g)**
Top side	661/1880	1.040	1.010	1.02970297	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

8.2.3.SAR Result of WCDMA II

W B2 SAR Test Record									
Ant 0 Test Record									
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Head Test Data									
Left cheek	RMC	9400/1880	1:1	0.451	0.09	18.54	19.50	0.563	22.2
Left tilted	RMC	9400/1880	1:1	0.408	0.14	18.54	19.50	0.509	22.2
Right cheek	RMC	9400/1880	1:1	0.835	-0.16	18.54	19.50	**1.042**	22.2
Right cheek	RMC	9262/1852.4	1:1	0.762	-0.03	18.31	19.50	1.002	22.2
Right cheek	RMC	9538/1907.6	1:1	0.788	0.09	18.44	19.50	1.006	22.2
Right tilted	RMC	9400/1880	1:1	0.630	-0.12	18.54	19.50	0.786	22.2
Body worn Test data(Separate 10mm)									
Front side	RMC	9400/1880	1:1	0.648	0.01	23.13	24.00	**0.792**	22.2
Back side	RMC	9400/1880	1:1	0.231	-0.08	23.13	24.00	0.282	22.2
Hotspot Test data(Separate 10mm)									
Front side	RMC	9400/1880	1:1	0.410	-0.16	19.74	20.50	0.488	22.2
Back side	RMC	9400/1880	1:1	0.101	-0.15	19.74	20.50	0.120	22.2
Left side	RMC	9400/1880	1:1	0.205	0.08	19.74	20.50	0.244	22.2
Top side	RMC	9400/1880	1:1	1.130	-0.01	19.74	20.50	**1.346**	22.2

Top side-repeated	RMC	9400/1880	1:1	1.080	-0.05	19.74	20.50	1.287	22.2
Top side	RMC	9262/1852.4	1:1	0.991	-0.12	19.68	20.50	1.197	22.2
Top side	RMC	9538/1907.6	1:1	1.030	-0.17	19.63	20.50	1.258	22.2
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm) Sensor on									
Front side	RMC	9400/1880	1:1	1.010	-0.08	20.36	21.00	1.170	22.2
Back side	RMC	9400/1880	1:1	0.147	0.01	20.36	21.00	0.170	22.2
Left side	RMC	9400/1880	1:1	0.500	-0.15	20.36	21.00	0.579	22.2
Top side	RMC	9400/1880	1:1	2.430	-0.06	20.36	21.00	**2.816**	22.2
Top side-repeated	RMC	9400/1880	1:1	2.370	0.16	20.36	21.00	2.746	22.2
Top side	RMC	9262/1852.4	1:1	2.230	0.08	20.32	21.00	2.608	22.2
Top side	RMC	9538/1907.6	1:1	2.310	-0.10	20.29	21.00	2.720	22.2
Product specific 10g SAR Test data Sensor off									
Front side-14mm	RMC	9400/1880	1:1	0.659	0.03	23.13	24.00	0.805	22.2
Back side-19mm	RMC	9400/1880	1:1	0.087	-0.01	23.13	24.00	0.106	22.2
Top side-14mm	RMC	9400/1880	1:1	1.680	0.09	23.13	24.00	2.053	22.2

Table 8： SAR of WCDMA II for Head, Body.

Test Position	**Channel/ Frequency (MHz)**	**Measured SAR (1g) SAR (1g)**	**1st Repeated SAR (1g)**	**Ratio**	**2nd Repeated SAR (1g)**	**3rd Repeated SAR (1g)**
Top side	9400/1880	1.130	1.080	1.046296296	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						
Test Position	**Channel/ Frequency (MHz)**	**Measured SAR (10g) SAR (10g)**	**1st Repeated SAR (10g)**	**Ratio**	**2nd Repeated SAR (10g)**	**3rd Repeated SAR (10g)**
Top side	9400/1880	2.430	2.370	1.025316456	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 2.0 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 3.65 W/kg (~ 10% from the 10-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 3.75 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 2.0 W/kg						

8.2.4.SAR Result of WCDMA IV

W B4 SAR Test Record									
Ant 0 Test Record									
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**

Head Test Data										
Left cheek	RMC	1412/1732.4	1:1	0.535	0.16	19.06	20.00	1.242	0.664	22.2
Left tilted	RMC	1412/1732.4	1:1	0.504	-0.01	19.06	20.00	1.242	0.626	22.2
Right cheek	RMC	1412/1732.4	1:1	0.939	0.03	19.06	20.00	1.242	**1.166**	22.2
Right cheek	RMC	1312/1712.4	1:1	0.845	0.18	18.86	20.00	1.300	1.099	22.2
Right cheek	RMC	1513/1752.6	1:1	0.872	-0.18	18.92	20.00	1.282	1.118	22.2
Right tilted	RMC	1412/1732.4	1:1	0.792	0.09	19.06	20.00	1.242	0.983	22.2
Right tilted	RMC	1312/1712.4	1:1	0.738	0.01	18.86	20.00	1.300	0.960	22.2
Right tilted	RMC	1513/1752.6	1:1	0.755	0.11	18.92	20.00	1.282	0.968	22.2
Body worn Test data(Separate 10mm)										
Front side	RMC	1412/1732.4	1:1	0.585	0.12	22.76	23.50	1.186	**0.694**	22.3
Back side	RMC	1412/1732.4	1:1	0.135	-0.11	22.76	23.50	1.186	0.160	22.3
Hotspot Test data(Separate 10mm)										
Front side	RMC	1412/1732.4	1:1	0.455	-0.06	20.93	21.50	1.140	0.667	22.3
Back side	RMC	1412/1732.4	1:1	0.102	0.03	20.93	21.50	1.140	0.154	22.3
Left side	RMC	1412/1732.4	1:1	0.239	-0.11	20.93	21.50	1.140	0.273	22.3
Top side	RMC	1412/1732.4	1:1	1.000	-0.02	20.93	21.50	1.140	**1.140**	22.3
Top side-repeated	RMC	1412/1732.4	1:1	0.986	0.04	20.93	21.50	1.140	1.124	22.3
Top side	RMC	1312/1712.4	1:1	0.914	-0.05	20.67	21.50	1.211	1.106	22.3
Top side	RMC	1513/1752.6	1:1	0.947	-0.17	20.74	21.50	1.191	1.128	22.3
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm)										
Front side	RMC	1412/1732.4	1:1	1.184	0.13	22.76	23.50	1.186	1.404	
Back side	RMC	1412/1732.4	1:1	0.101	-0.17	22.76	23.50	1.186	0.120	22.3
Left side	RMC	1412/1732.4	1:1	0.631	-0.15	22.76	23.50	1.186	0.748	22.3
Top side	RMC	1412/1732.4	1:1	2.740	-0.04	22.76	23.50	1.186	**3.249**	22.3
Top side-repeatd	RMC	1412/1732.4	1:1	2.670	0.15	22.76	23.50	1.186	3.166	22.3
Top side	RMC	1312/1712.4	1:1	2.630	-0.03	22.66	23.50	1.213	3.191	22.3
Top side	RMC	1513/1752.6	1:1	2.690	0.13	22.69	23.50	1.205	3.242	22.3

Table 9： SAR of WCDMA IV for Head, Body.

Test Position	**Channel/ Frequency (MHz)**	**Measured SAR (1g)**	**1st Repeated SAR (1g)**	**Ratio**	**2nd Repeated SAR (1g)**	**3rd Repeated SAR (1g)**
Top side	1412/1732.4	1.000	0.986	1.014198783	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						
Test Position	**Channel/ Frequency (MHz)**	**Measured SAR (10g)**	**1st Repeated SAR (10g)**	**Ratio**	**2nd Repeated SAR (10g)**	**3rd Repeated SAR (10g)**
Top side	9400/1880	2.740	2.670	1.026217228	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 2.0 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 3.65 W/kg (~ 10% from the 10-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 3.75 W/kg and the						

ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 2.0 W/kg

8.2.5.SAR Result of WCDMA V

W B5 SAR Test Record										
Ant 0 Test Record										
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Head Test Data										
Left cheek	RMC	4182/836.4	1:1	0.562	-0.07	20.83	21.50	1.167	0.656	22.3
Left tilted	RMC	4182/836.4	1:1	0.399	0.02	20.83	21.50	1.167	0.466	22.3
Right cheek	RMC	4182/836.4	1:1	0.703	0.03	20.83	21.50	1.167	**0.820**	22.3
Right cheek	RMC	4132/826.4	1:1	0.659	-0.04	20.71	21.50	1.199	0.790	22.3
Right cheek	RMC	4233/846.6	1:1	0.682	-0.11	20.77	21.50	1.183	0.807	22.3
Right tilted	RMC	4182/836.4	1:1	0.549	-0.15	20.83	21.50	1.167	0.641	22.3
Body worn Test data(Separate 10mm)										
Front side	RMC	4182/836.4	1:1	0.301	0.17	22.83	23.50	1.167	**0.351**	22.3
Back side	RMC	4182/836.4	1:1	0.116	-0.14	22.83	23.50	1.167	0.135	22.3
Hotspot Test data(Separate 10mm)										
Front side	RMC	4182/836.4	1:1	0.301	0.17	22.83	23.50	1.167	0.351	22.3
Back side	RMC	4182/836.4	1:1	0.116	-0.14	22.83	23.50	1.167	0.135	22.3
Left side	RMC	4182/836.4	1:1	0.321	0.01	22.83	23.50	1.167	**0.375**	22.3
Top side	RMC	4182/836.4	1:1	0.164	0.05	22.83	23.50	1.167	0.191	22.3
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm)										
Front side	RMC	4182/836.4	1:1	0.479	0.18	22.83	23.50	1.167	0.559	22.3
Back side	RMC	4182/836.4	1:1	0.166	0.17	22.83	23.50	1.167	0.194	22.3
Left side	RMC	4182/836.4	1:1	0.563	-0.04	22.83	23.50	1.167	**0.657**	22.3
Top side	RMC	4182/836.4	1:1	0.536	-0.15	22.83	23.50	1.167	0.625	22.3

Table 10：SAR of WCDMA V for Head, Body.

8.2.6.SAR Result of LTE Band 2

LTE Band 2 SAR Test Record											
Ant 4 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	18900/1880	1:1	0.073	-0.19	23.29	24.00	1.178	**0.086**	22.2
Left tilted	20	QPSK 1_0	18900/1880	1:1	0.017	0.06	23.29	24.00	1.178	0.020	22.2
Right cheek	20	QPSK 1_0	18900/1880	1:1	0.047	0.01	23.29	24.00	1.178	0.055	22.2
Right tilted	20	QPSK 1_0	18900/1880	1:1	0.014	-0.16	23.29	24.00	1.178	0.016	22.2
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	18900/1880	1:1	0.066	-0.13	22.44	23.00	1.138	0.075	22.2
Left tilted	20	QPSK 50_0	18900/1880	1:1	0.009	0.03	22.44	23.00	1.138	0.010	22.2
Right cheek	20	QPSK 50_0	18900/1880	1:1	0.044	-0.17	22.44	23.00	1.138	0.050	22.2

Right tilted	20	QPSK 50_0	18900/1880	1:1	0.009	-0.14	22.44	23.00	1.138	0.010	22.2
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	18900/1880	1:1	0.065	-0.09	23.29	24.00	1.178	**0.077**	22.2
Back side	20	QPSK 1_0	18900/1880	1:1	0.049	0.15	23.29	24.00	1.178	0.058	22.2
Body worn Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	18900/1880	1:1	0.059	0.01	22.44	23.00	1.138	0.067	22.2
Back side	20	QPSK 50_0	18900/1880	1:1	0.045	-0.16	22.44	23.00	1.138	0.051	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	18900/1880	1:1	0.065	-0.09	23.29	24.00	1.178	0.077	22.2
Back side	20	QPSK 1_0	18900/1880	1:1	0.049	0.15	23.29	24.00	1.178	0.058	22.2
Left side	20	QPSK 1_0	18900/1880	1:1	0.127	-0.15	23.29	24.00	1.178	**0.150**	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	18900/1880	1:1	0.059	0.01	22.44	23.00	1.138	0.067	22.2
Back side	20	QPSK 50_0	18900/1880	1:1	0.045	-0.16	22.44	23.00	1.138	0.051	22.2
Left side	20	QPSK 50_0	18900/1880	1:1	0.124	-0.01	22.44	23.00	1.138	0.141	22.2
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm 1RB)											
Front side	20	QPSK 1_0	18900/1880	1:1	0.061	0.11	23.29	24.00	1.178	0.072	22.2
Back side	20	QPSK 1_0	18900/1880	1:1	0.055	0.09	23.29	24.00	1.178	0.065	22.2
Left side	20	QPSK 1_0	18900/1880	1:1	0.227	-0.14	23.29	24.00	1.178	**0.267**	22.2
Product specific 10g SAR Test data(Separate 0mm 50%RB)											
Front side	20	QPSK 50_0	18900/1880	1:1	0.058	-0.10	22.44	23.00	1.138	0.066	22.2
Back side	20	QPSK 50_0	18900/1880	1:1	0.053	-0.05	22.44	23.00	1.138	0.060	22.2
Left side	20	QPSK 50_0	18900/1880	1:1	0.221	0.07	22.44	23.00	1.138	0.251	22.2

Table 11：SAR of LTE Band 2 for Head, Body.

8.2.7.SAR Result of LTE Band 5

LTE Band 5 SAR Test Record											
Ant 0 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Head Test Data(1RB)											
Left cheek	10	QPSK 1_0	20525/836.5	1:1	0.367	0.10	21.17	22.00	1.211	0.444	22.4
Left tilted	10	QPSK 1_0	20525/836.5	1:1	0.284	-0.15	21.17	22.00	1.211	0.344	22.4
Right cheek	10	QPSK 1_0	20525/836.5	1:1	0.439	0.06	21.17	22.00	1.211	**0.531**	22.4
Right tilted	10	QPSK 1_0	20525/836.5	1:1	0.315	-0.01	21.17	22.00	1.211	0.381	22.4
Head Test Data(50%RB)											
Left cheek	10	QPSK 25_0	20525/836.5	1:1	0.299	0.11	21.03	22.00	1.250	0.374	22.4
Left tilted	10	QPSK 25_0	20525/836.5	1:1	0.212	0.00	21.03	22.00	1.250	0.265	22.4
Right cheek	10	QPSK 25_0	20525/836.5	1:1	0.370	0.14	21.03	22.00	1.250	0.463	22.4
Right tilted	10	QPSK 25_0	20525/836.5	1:1	0.252	-0.07	21.03	22.00	1.250	0.315	22.4
Body worn Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	20525/836.5	1:1	0.279	0.15	22.67	24.00	1.358	**0.379**	22.3
Back side	10	QPSK 1_0	20525/836.5	1:1	0.098	-0.14	22.67	24.00	1.358	0.133	22.3
Body worn Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	20525/836.5	1:1	0.217	-0.07	21.64	23.00	1.368	0.297	22.3
Back side	10	QPSK 25_0	20525/836.5	1:1	0.085	-0.19	21.64	23.00	1.368	0.116	22.3
Hotspot Test data(Separate 10mm 1RB)											

Front side	10	QPSK 1_0	20525/836.5	1:1	0.279	0.15	22.67	24.00	1.358	0.379	22.3
Back side	10	QPSK 1_0	20525/836.5	1:1	0.098	-0.14	22.67	24.00	1.358	0.133	22.3
Left side	10	QPSK 1_0	20525/836.5	1:1	0.315	0.01	22.67	24.00	1.358	**0.428**	22.3
Top side	10	QPSK 1_0	20525/836.5	1:1	0.155	0.04	22.67	24.00	1.358	0.211	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	20525/836.5	1:1	0.217	-0.07	21.64	23.00	1.368	0.297	22.3
Back side	10	QPSK 25_0	20525/836.5	1:1	0.085	-0.19	21.64	23.00	1.368	0.116	22.3
Left side	10	QPSK 25_0	20525/836.5	1:1	0.258	-0.12	21.64	23.00	1.368	0.353	22.3
Top side	10	QPSK 25_0	20525/836.5	1:1	0.136	0.01	21.64	23.00	1.368	0.186	22.3
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm 1RB)											
Front side	10	QPSK 1_0	20525/836.5	1:1	0.464	-0.15	22.67	24.00	1.358	0.630	22.3
Back side	10	QPSK 1_0	20525/836.5	1:1	0.141	-0.09	22.67	24.00	1.358	0.192	22.3
Left side	10	QPSK 1_0	20525/836.5	1:1	0.581	0.01	22.67	24.00	1.358	**0.789**	22.3
Top side	10	QPSK 1_0	20525/836.5	1:1	0.524	0.11	22.67	24.00	1.358	0.712	22.3
Product specific 10g SAR Test data(Separate 0mm 50%RB)											
Front side	10	QPSK 25_0	20525/836.5	1:1	0.373	0.17	21.64	23.00	1.368	0.510	22.3
Back side	10	QPSK 25_0	20525/836.5	1:1	0.081	0.15	21.64	23.00	1.368	0.111	22.3
Left side	10	QPSK 25_0	20525/836.5	1:1	0.449	0.01	21.64	23.00	1.368	0.614	22.3
Top side	10	QPSK 25_0	20525/836.5	1:1	0.382	0.13	21.64	23.00	1.368	0.522	22.3

Table 12：SAR of LTE Band 5 for Head, Body.

8.2.8.SAR Result of LTE Band 7

LTE Band 7 SAR Test Record											
Ant 0 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	21100/2535	1:1	0.773	-0.03	22.43	23.00	1.140	0.881	22.3
Left cheek	20	QPSK 1_0	20850/2510	1:1	0.655	-0.08	22.32	23.00	1.169	0.766	22.3
Left cheek	20	QPSK 1_0	21350/2560	1:1	0.671	0.15	22.39	23.00	1.151	0.772	22.3
Left tilted	20	QPSK 1_0	21100/2535	1:1	0.736	0.02	22.43	23.00	1.140	0.839	22.3
Left tilted	20	QPSK 1_0	20850/2510	1:1	0.622	-0.02	22.32	23.00	1.169	0.727	22.3
Left tilted	20	QPSK 1_0	21350/2560	1:1	0.631	0.00	22.39	23.00	1.151	0.726	22.3
Right cheek	20	QPSK 1_0	21100/2535	1:1	1.080	-0.07	22.43	23.00	1.140	**1.231**	22.3
Right cheek-repeated	20	QPSK 1_0	21100/2535	1:1	1.030	0.08	22.32	23.00	1.169	1.205	22.3
Right cheek	20	QPSK 1_0	20850/2510	1:1	0.895	0.16	22.39	23.00	1.151	1.030	22.3
Right cheek	20	QPSK 1_0	21350/2560	1:1	0.924	0.10	22.43	23.00	1.140	1.054	22.3
Right tilted	20	QPSK 1_0	21100/2535	1:1	0.846	-0.16	22.43	23.00	1.140	0.965	22.3
Right tilted	20	QPSK 1_0	20850/2510	1:1	0.755	0.10	22.32	23.00	1.169	0.883	22.3
Right tilted	20	QPSK 1_0	21350/2560	1:1	0.763	0.19	22.39	23.00	1.151	0.878	22.3
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_25	21100/2535	1:1	0.632	0.11	22.30	23.00	1.175	0.743	22.3
Left tilted	20	QPSK 50_25	21100/2535	1:1	0.580	0.15	22.30	23.00	1.175	0.681	22.3
Right cheek	20	QPSK 50_25	21100/2535	1:1	0.989	-0.02	22.30	23.00	1.175	1.162	22.3
Right cheek	20	QPSK 50_25	20850/2510	1:1	0.864	-0.07	22.14	23.00	1.219	1.053	22.3
Right cheek	20	QPSK 50_25	21350/2560	1:1	0.917	0.05	22.22	23.00	1.197	1.097	22.3

Right tilted	20	QPSK 50_25	21100/2535	1:1	0.694	0.15	22.30	23.00	1.175	0.815	22.3
Right tilted	20	QPSK 50_25	20850/2510	1:1	0.632	-0.14	22.14	23.00	1.219	0.770	22.3
Right tilted	20	QPSK 50_25	21350/2560	1:1	0.659	-0.10	22.22	23.00	1.197	0.789	22.3
Head Test Data(100%RB)											
Left cheek	20	QPSK 100_0	21100/2535	1:1	0.741	-0.05	22.31	23.00	1.172	0.869	22.3
Left tilted	20	QPSK 100_0	21100/2535	1:1	0.695	0.01	22.31	23.00	1.172	0.815	22.3
Right cheek	20	QPSK 100_0	21100/2535	1:1	0.926	-0.06	22.31	23.00	1.172	1.085	22.3
Right tilted	20	QPSK 100_0	21100/2535	1:1	0.824	0.02	22.31	23.00	1.172	0.966	22.3
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	21100/2535	1:1	0.394	0.10	23.17	24.00	1.211	**0.477**	22.2
Back side	20	QPSK 1_0	21100/2535	1:1	0.183	0.12	23.17	24.00	1.211	0.222	22.2
Body worn Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_25	21100/2535	1:1	0.369	-0.07	21.98	23.00	1.265	0.261	22.2
Back side	20	QPSK 50_25	21100/2535	1:1	0.140	0.04	21.98	23.00	1.265	0.099	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	21100/2535	1:1	0.394	0.10	23.17	24.00	1.211	0.477	22.2
Back side	20	QPSK 1_0	21100/2535	1:1	0.183	0.12	23.17	24.00	1.211	0.222	22.2
Left side	20	QPSK 1_0	21100/2535	1:1	0.267	-0.06	23.17	24.00	1.211	0.323	22.2
Top side	20	QPSK 1_0	21100/2535	1:1	0.952	-0.04	23.17	24.00	1.211	**1.152**	22.2
Top side	20	QPSK 1_0	20850/2510	1:1	0.867	0.13	22.87	24.00	1.297	1.125	22.2
Top side	20	QPSK 1_0	21350/2560	1:1	0.907	-0.02	22.97	24.00	1.268	1.150	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_25	21100/2535	1:1	0.369	-0.07	21.98	23.00	1.265	0.467	22.2
Back side	20	QPSK 50_25	21100/2535	1:1	0.140	0.04	21.98	23.00	1.265	0.177	22.2
Left side	20	QPSK 50_25	21100/2535	1:1	0.243	-0.16	21.98	23.00	1.265	0.307	22.2
Top side	20	QPSK 50_25	21100/2535	1:1	0.900	-0.10	21.98	23.00	1.265	1.138	22.2
Top side	20	QPSK 50_25	20850/2510	1:1	0.854	0.05	21.94	23.00	1.276	1.090	22.2
Top side	20	QPSK 50_25	21350/2560	1:1	0.866	0.14	21.81	23.00	1.315	1.139	22.2
Hotspot Test data(Separate 10mm 100%RB)											
Top side	20	QPSK 100_0	21100/2535	1:1	0.862	-0.17	22.02	23.00	1.253	1.080	22.2
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm 1RB)											
Front side	20	QPSK 1_0	21100/2535	1:1	0.388	-0.04	23.17	24.00	1.211	0.470	22.2
Back side	20	QPSK 1_0	21100/2535	1:1	0.059	-0.02	23.17	24.00	1.211	0.071	22.2
Left side	20	QPSK 1_0	21100/2535	1:1	0.517	-0.04	23.17	24.00	1.211	0.626	22.2
Top side	20	QPSK 1_0	21100/2535	1:1	1.430	-0.02	23.17	24.00	1.211	**1.731**	22.2
Product specific 10g SAR Test data(Separate 0mm 50%RB)											
Front side	20	QPSK 50_25	21100/2535	1:1	0.408	-0.02	21.98	23.00	1.265	0.516	22.2
Back side	20	QPSK 50_25	21100/2535	1:1	0.049	-0.18	21.98	23.00	1.265	0.062	22.2
Left side	20	QPSK 50_25	21100/2535	1:1	0.445	0.08	21.98	23.00	1.265	0.563	22.2
Top side	20	QPSK 50_25	21100/2535	1:1	1.300	0.01	21.98	23.00	1.265	1.644	22.2

Table 13：SAR of LTE Band 7 for Head, Body.

Test Position	**Channel/ Frequency**	**Measured SAR (1g)**	**1st Repeated**	**Ratio**	**2nd Repeated**	**3rd Repeated**
	(MHz)		**SAR (1g)**		**SAR (1g)**	**SAR (1g)**
Right cheek	21100/2535	1.080	1.030	1.048543689	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

8.2.9.SAR Result of LTE Band 12

LTE Band 12 SAR Test Record											
Ant 0 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Head Test Data(1RB)											
Left cheek	10	QPSK 1_0	23095/707.5	1:1	0.359	-0.04	22.76	24.00	1.330	0.478	22.4
Left tilted	10	QPSK 1_0	23095/707.5	1:1	0.257	0.04	22.76	24.00	1.330	0.342	22.4
Right cheek	10	QPSK 1_0	23095/707.5	1:1	0.429	0.03	22.76	24.00	1.330	***0.571***	22.4
Right tilted	10	QPSK 1_0	23095/707.5	1:1	0.289	-0.09	22.76	24.00	1.330	0.385	22.4
Head Test Data(50%RB)											
Left cheek	10	QPSK 25_0	23095/707.5	1:1	0.354	0.02	21.83	23.00	1.309	0.463	22.4
Left tilted	10	QPSK 25_0	23095/707.5	1:1	0.176	-0.11	21.83	23.00	1.309	0.230	22.4
Right cheek	10	QPSK 25_0	23095/707.5	1:1	0.378	0.08	21.83	23.00	1.309	0.495	22.4
Right tilted	10	QPSK 25_0	23095/707.5	1:1	0.285	-0.10	21.83	23.00	1.309	0.373	22.4
Body worn Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	23095/707.5	1:1	0.212	0.03	22.76	24.00	1.330	**0.282**	22.2
Back side	10	QPSK 1_0	23095/707.5	1:1	0.054	-0.16	22.76	24.00	1.330	0.072	22.2
Body worn Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	23095/707.5	1:1	0.181	0.18	21.83	23.00	1.309	0.237	22.2
Back side	10	QPSK 25_0	23095/707.5	1:1	0.041	0.17	21.83	23.00	1.309	0.054	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	23095/707.5	1:1	0.212	0.03	22.76	24.00	1.330	**0.282**	22.2
Back side	10	QPSK 1_0	23095/707.5	1:1	0.054	-0.16	22.76	24.00	1.330	0.072	22.2
Left side	10	QPSK 1_0	23095/707.5	1:1	0.149	0.06	22.76	24.00	1.330	0.198	22.2
Top side	10	QPSK 1_0	23095/707.5	1:1	0.179	0.11	22.76	24.00	1.330	0.238	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	23095/707.5	1:1	0.181	0.18	21.83	23.00	1.309	0.237	22.2
Back side	10	QPSK 25_0	23095/707.5	1:1	0.041	0.17	21.83	23.00	1.309	0.054	22.2
Left side	10	QPSK 25_0	23095/707.5	1:1	0.127	0.08	21.83	23.00	1.309	0.166	22.2
Top side	10	QPSK 25_0	23095/707.5	1:1	0.104	0.02	21.83	23.00	1.309	0.136	22.2
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm 1RB)											
Front side	10	QPSK 1_0	23095/707.5	1:1	0.346	0.18	22.76	24.00	1.330	0.460	22.2
Back side	10	QPSK 1_0	23095/707.5	1:1	0.076	-0.10	22.76	24.00	1.330	0.101	22.2
Left side	10	QPSK 1_0	23095/707.5	1:1	0.357	0.06	22.76	24.00	1.330	0.475	22.2
Top side	10	QPSK 1_0	23095/707.5	1:1	0.370	-0.02	22.76	24.00	1.330	**0.492**	22.2
Product specific 10g SAR Test data(Separate 0mm 50%RB)											
Front side	10	QPSK 25_0	23095/707.5	1:1	0.290	0.15	21.83	23.00	1.309	0.380	22.2
Back side	10	QPSK 25_0	23095/707.5	1:1	0.065	-0.17	21.83	23.00	1.309	0.085	22.2
Left side	10	QPSK 25_0	23095/707.5	1:1	0.287	0.18	21.83	23.00	1.309	0.376	22.2
Top side	10	QPSK 25_0	23095/707.5	1:1	0.327	-0.18	21.83	23.00	1.309	0.428	22.2

Table 14：SAR of LTE Band 12 for Head, Body.

8.2.10.SAR Result of LTE Band 13

LTE Band 13 SAR Test Record											
Ant 0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data(1RB)											
Left cheek	10	QPSK 1_0	23230/782	1:1	0.326	-0.09	22.44	23.50	1.276	0.416	22.2
Left tilted	10	QPSK 1_0	23230/782	1:1	0.223	-0.07	22.44	23.50	1.276	0.285	22.2
Right cheek	10	QPSK 1_0	23230/782	1:1	0.396	0.01	22.44	23.50	1.276	**0.505**	22.2
Right tilted	10	QPSK 1_0	23230/782	1:1	0.238	-0.09	22.44	23.50	1.276	0.304	22.2
Head Test Data(50%RB)											
Left cheek	10	QPSK 25_0	23230/782	1:1	0.252	-0.09	21.48	22.50	1.265	0.319	22.2
Left tilted	10	QPSK 25_0	23230/782	1:1	0.176	-0.06	21.48	22.50	1.265	0.223	22.2
Right cheek	10	QPSK 25_0	23230/782	1:1	0.335	0.11	21.48	22.50	1.265	0.424	22.2
Right tilted	10	QPSK 25_0	23230/782	1:1	0.233	-0.17	21.48	22.50	1.265	0.295	22.2
Body worn Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	23230/782	1:1	0.187	-0.01	22.44	23.50	1.276	**0.239**	22.2
Back side	10	QPSK 1_0	23230/782	1:1	0.041	0.12	22.44	23.50	1.276	0.052	22.2
Body worn Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	23230/782	1:1	0.151	-0.13	21.48	22.50	1.265	0.191	22.2
Back side	10	QPSK 25_0	23230/782	1:1	0.038	-0.13	21.48	22.50	1.265	0.048	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	23230/782	1:1	0.187	-0.01	22.44	23.50	1.276	**0.239**	22.2
Back side	10	QPSK 1_0	23230/782	1:1	0.041	0.12	22.44	23.50	1.276	0.052	22.2
Left side	10	QPSK 1_0	23230/782	1:1	0.129	-0.03	22.44	23.50	1.276	0.165	22.2
Top side	10	QPSK 1_0	23230/782	1:1	0.128	-0.16	22.44	23.50	1.276	0.163	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	23230/782	1:1	0.151	-0.13	21.48	22.50	1.265	0.191	22.2
Back side	10	QPSK 25_0	23230/782	1:1	0.038	-0.13	21.48	22.50	1.265	0.048	22.2
Left side	10	QPSK 25_0	23230/782	1:1	0.108	-0.07	21.48	22.50	1.265	0.137	22.2
Top side	10	QPSK 25_0	23230/782	1:1	0.103	0.08	21.48	22.50	1.265	0.130	22.2
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)
Product specific 10g SAR Test data(Separate 0mm 1RB)											
Front side	10	QPSK 1_0	23230/782	1:1	0.215	-0.19	22.44	23.50	1.276	0.274	22.2
Back side	10	QPSK 1_0	23230/782	1:1	0.065	-0.02	22.44	23.50	1.276	0.083	22.2
Left side	10	QPSK 1_0	23230/782	1:1	0.206	-0.16	22.44	23.50	1.276	0.263	22.2
Top side	10	QPSK 1_0	23230/782	1:1	0.284	-0.03	22.44	23.50	1.276	**0.363**	22.2
Product specific 10g SAR Test data(Separate 0mm 50%RB)											
Front side	10	QPSK 25_0	23230/782	1:1	0.175	0.05	21.48	22.50	1.265	0.221	22.2
Back side	10	QPSK 25_0	23230/782	1:1	0.053	0.17	21.48	22.50	1.265	0.067	22.2
Left side	10	QPSK 25_0	23230/782	1:1	0.166	-0.03	21.48	22.50	1.265	0.210	22.2
Top side	10	QPSK 25_0	23230/782	1:1	0.241	-0.06	21.48	22.50	1.265	0.305	22.2

Table 15：SAR of LTE Band 13 for Head, Body.

8.2.11.SAR Result of LTE Band 14

LTE Band 14 SAR Test Record											
Ant 0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data(1RB)											
Left cheek	10	QPSK 1_0	23330/793	1:1	0.283	-0.15	22.45	23.50	1.274	0.360	22.2
Left tilted	10	QPSK 1_0	23330/793	1:1	0.209	-0.07	22.45	23.50	1.274	0.266	22.2
Right cheek	10	QPSK 1_0	23330/793	1:1	0.394	0.01	22.45	23.50	1.274	**0.502**	22.2
Right tilted	10	QPSK 1_0	23330/793	1:1	0.260	0.03	22.45	23.50	1.274	0.331	22.2
Head Test Data(50%RB)											
Left cheek	10	QPSK 25_0	23330/793	1:1	0.265	-0.06	21.43	22.50	1.279	0.339	22.2
Left tilted	10	QPSK 25_0	23330/793	1:1	0.175	0.07	21.43	22.50	1.279	0.224	22.2
Right cheek	10	QPSK 25_0	23330/793	1:1	0.321	0.17	21.43	22.50	1.279	0.411	22.2
Right tilted	10	QPSK 25_0	23330/793	1:1	0.232	0.06	21.43	22.50	1.279	0.297	22.2
Body worn Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	23330/793	1:1	0.187	0.02	22.45	23.50	1.274	**0.238**	22.2
Back side	10	QPSK 1_0	23330/793	1:1	0.065	0.02	22.45	23.50	1.274	0.083	22.2
Body worn Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	23330/793	1:1	0.171	0.13	21.43	22.50	1.279	0.219	22.2
Back side	10	QPSK 25_0	23330/793	1:1	0.045	0.03	21.43	22.50	1.279	0.058	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	23330/793	1:1	0.187	0.02	22.45	23.50	1.274	**0.238**	22.2
Back side	10	QPSK 1_0	23330/793	1:1	0.065	0.02	22.45	23.50	1.274	0.083	22.2
Left side	10	QPSK 1_0	23330/793	1:1	0.131	0.03	22.45	23.50	1.274	0.167	22.2
Top side	10	QPSK 1_0	23330/793	1:1	0.114	0.10	22.45	23.50	1.274	0.145	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	23330/793	1:1	0.171	0.13	21.43	22.50	1.279	0.219	22.2
Back side	10	QPSK 25_0	23330/793	1:1	0.045	0.03	21.43	22.50	1.279	0.058	22.2
Left side	10	QPSK 25_0	23330/793	1:1	0.114	-0.05	21.43	22.50	1.279	0.146	22.2
Top side	10	QPSK 25_0	23330/793	1:1	0.074	-0.08	21.43	22.50	1.279	0.095	22.2
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)
Product specific 10g SAR Test data(Separate 0mm 1RB)											
Front side	10	QPSK 1_0	23330/793	1:1	0.206	-0.12	22.45	23.50	1.274	0.262	22.2
Back side	10	QPSK 1_0	23330/793	1:1	0.063	-0.03	22.45	23.50	1.274	0.080	22.2
Left side	10	QPSK 1_0	23330/793	1:1	0.203	0.10	22.45	23.50	1.274	0.259	22.2
Top side	10	QPSK 1_0	23330/793	1:1	0.291	0.01	22.45	23.50	1.274	**0.371**	22.2
Product specific 10g SAR Test data(Separate 0mm 50%RB)											
Front side	10	QPSK 25_0	23330/793	1:1	0.198	0.15	21.43	22.50	1.279	0.253	22.2
Back side	10	QPSK 25_0	23330/793	1:1	0.050	-0.01	21.43	22.50	1.279	0.064	22.2
Left side	10	QPSK 25_0	23330/793	1:1	0.187	-0.01	21.43	22.50	1.279	0.239	22.2
Top side	10	QPSK 25_0	23330/793	1:1	0.272	-0.09	21.43	22.50	1.279	0.348	22.2

Table 16：SAR of LTE Band 14 for Head, Body.

8.2.12.SAR Result of LTE Band 25

LTE Band 25 SAR Test Record
Ant 0 Test Record

Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	26365/1882.5	1:1	0.324	0.07	15.57	16.50	1.239	0.401	22.2
Left tilted	20	QPSK 1_0	26365/1882.5	1:1	0.317	0.10	15.57	16.50	1.239	0.393	22.2
Right cheek	20	QPSK 1_0	26365/1882.5	1:1	0.412	-0.04	15.57	16.50	1.239	0.510	22.2
Right tilted	20	QPSK 1_0	26365/1882.5	1:1	0.401	0.18	15.57	16.50	1.239	0.497	22.2
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	26365/1882.5	1:1	0.246	-0.12	15.46	16.50	1.271	0.313	22.2
Left tilted	20	QPSK 50_0	26365/1882.5	1:1	0.190	-0.18	15.46	16.50	1.271	0.241	22.2
Right cheek	20	QPSK 50_0	26365/1882.5	1:1	0.402	0.15	15.46	16.50	1.271	**0.511**	22.2
Right tilted	20	QPSK 50_0	26365/1882.5	1:1	0.347	0.08	15.46	16.50	1.271	0.441	22.2
Body worn Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1_0	26365/1882.5	1:1	0.260	0.12	16.86	17.50	1.159	**0.301**	22.2
Back side	20	QPSK 1_0	26365/1882.5	1:1	0.096	-0.18	16.86	17.50	1.159	0.111	22.2
Body worn Test data(Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50_0	26365/1882.5	1:1	0.251	0.15	16.79	17.50	1.178	0.296	22.2
Back side	20	QPSK 50_0	26365/1882.5	1:1	0.088	-0.06	16.79	17.50	1.178	0.104	22.2
Body worn Test data (1RB) Sensor off											
Front side-14mm	20	QPSK 1_0	26365/1882.5	1:1	0.245	0.01	23.19	24.00	1.205	0.295	22.2
Back side-19mm	20	QPSK 1_0	26365/1882.5	1:1	0.087	-0.07	23.19	24.00	1.205	0.105	22.2
Body worn Test data (50%RB) Sensor off											
Front side-14mm	20	QPSK 50_0	26365/1882.5	1:1	0.233	0.03	22.06	23.00	1.242	0.289	22.2
Back side-19mm	20	QPSK 50_0	26365/1882.5	1:1	0.072	0.09	22.06	23.00	1.242	0.089	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	26365/1882.5	1:1	0.137	0.05	15.17	16.00	1.211	0.166	22.2
Back side	20	QPSK 1_0	26365/1882.5	1:1	0.035	-0.10	15.17	16.00	1.211	0.042	22.2
Left side	20	QPSK 1_0	26365/1882.5	1:1	0.063	0.17	15.17	16.00	1.211	0.076	22.2
Top side	20	QPSK 1_0	26365/1882.5	1:1	0.412	0.01	15.17	16.00	1.211	**0.499**	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	26365/1882.5	1:1	0.131	0.01	15.14	16.00	1.219	0.160	22.2
Back side	20	QPSK 50_0	26365/1882.5	1:1	0.034	0.05	15.14	16.00	1.219	0.041	22.2
Left side	20	QPSK 50_0	26365/1882.5	1:1	0.056	0.13	15.14	16.00	1.219	0.068	22.2
Top side	20	QPSK 50_0	26365/1882.5	1:1	0.398	0.13	15.14	16.00	1.219	0.485	22.2
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm 1RB) Sensor on											
Front side	20	QPSK 1_0	26365/1882.5	1:1	0.800	0.03	16.86	17.50	1.159	0.927	22.2
Back side	20	QPSK 1_0	26365/1882.5	1:1	0.236	-0.11	16.86	17.50	1.159	0.273	22.2
Left side	20	QPSK 1_0	26365/1882.5	1:1	0.707	-0.10	16.86	17.50	1.159	0.819	22.2
Top side	20	QPSK 1_0	26365/1882.5	1:1	1.090	0.10	16.86	17.50	1.159	1.263	22.2
Product specific 10g SAR Test data(Separate 0mm 50%RB) Sensor on											
Front side	20	QPSK 50_0	26365/1882.5	1:1	0.700	-0.04	16.79	17.50	1.178	0.824	22.2
Back side	20	QPSK 50_0	26365/1882.5	1:1	0.190	-0.15	16.79	17.50	1.178	0.224	22.2
Left side	20	QPSK 50_0	26365/1882.5	1:1	0.530	-0.11	16.79	17.50	1.178	0.624	22.2
Top side	20	QPSK 50_0	26365/1882.5	1:1	1.090	0.10	16.79	17.50	1.178	**1.284**	22.2
Product specific 10g SAR Test data(1RB) Sensor off											
Front side-14mm	20	QPSK 1_0	26365/1882.5	1:1	0.132	0.01	23.19	24.00	1.205	0.159	22.2
Back side-19mm	20	QPSK 1_0	26365/1882.5	1:1	0.068	-0.07	23.19	24.00	1.205	0.082	22.2
Top side-14mm	20	QPSK 1_0	26365/1882.5	1:1	0.455	0.09	23.19	24.00	1.205	0.548	22.2
Product specific 10g SAR Test data(50%RB) Sensor off											

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Front side-14mm	20	QPSK 50_0	26365/1882.5	1:1	0.115	0.03	22.06	23.00	1.242	0.143	22.2
Back side-19mm	20	QPSK 50_0	26365/1882.5	1:1	0.056	0.09	22.06	23.00	1.242	0.070	22.2
Top side-14mm	20	QPSK 50_0	26365/1882.5	1:1	0.431	0.07	22.06	23.00	1.242	0.535	22.2

Table 17：SAR of LTE Band 25 for Head, Body.

8.2.13.SAR Result of LTE Band 41

LTE Band 41 SAR Test Record											
Ant 0 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	40620/2593	1:1.58	0.470	-0.11	23.13	24.00	1.222	0.574	22.2
Left tilted	20	QPSK 1_0	40620/2593	1:1.58	0.375	0.17	23.13	24.00	1.222	0.458	22.2
Right cheek	20	QPSK 1_0	40620/2593	1:1.58	0.646	0.02	23.13	24.00	1.222	**0.789**	22.2
Right cheek	20	QPSK 1_0	39750/2506	1:1.58	0.542	0.14	22.88	24.00	1.294	0.701	22.2
Right cheek	20	QPSK 1_0	40185/2549.5	1:1.58	0.563	-0.10	22.98	24.00	1.265	0.712	22.2
Right cheek	20	QPSK 1_0	41055/2636.5	1:1.58	0.517	0.07	22.93	24.00	1.279	0.661	22.2
Right cheek	20	QPSK 1_0	41490/2680	1:1.58	0.590	-0.04	23.08	24.00	1.236	0.729	22.2
Right tilted	20	QPSK 1_0	40620/2593	1:1.58	0.494	0.05	23.13	24.00	1.222	0.604	22.2
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	40620/2593	1:1.58	0.432	0.02	21.95	23.00	1.274	0.550	22.2
Left tilted	20	QPSK 50_0	40620/2593	1:1.58	0.371	0.10	21.95	23.00	1.274	0.472	22.2
Right cheek	20	QPSK 50_0	40620/2593	1:1.58	0.603	0.03	21.95	23.00	1.274	0.768	22.2
Right tilted	20	QPSK 50_0	40620/2593	1:1.58	0.466	-0.15	21.95	23.00	1.274	0.593	22.2
Head Test Data(100%RB)											
Right cheek	20	QPSK 100_0	40620/2593	1:1.58	0.596	0.02	21.98	23.00	1.265	0.754	22.2
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	40620/2593	1:1.58	0.174	-0.11	23.13	24.00	1.222	**0.213**	22.2
Back side	20	QPSK 1_0	40620/2593	1:1.58	0.087	0.09	23.13	24.00	1.222	0.106	22.2
Body worn Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	40620/2593	1:1.58	0.145	-0.11	21.95	23.00	1.274	0.185	22.2
Back side	20	QPSK 50_0	40620/2593	1:1.58	0.068	-0.12	21.95	23.00	1.274	0.087	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	40620/2593	1:1.58	0.174	-0.11	23.13	24.00	1.222	0.213	22.2
Back side	20	QPSK 1_0	40620/2593	1:1.58	0.087	0.09	23.13	24.00	1.222	0.106	22.2
Left side	20	QPSK 1_0	40620/2593	1:1.58	0.155	0.01	23.13	24.00	1.222	0.189	22.2
Top side	20	QPSK 1_0	40620/2593	1:1.58	0.542	-0.14	23.13	24.00	1.222	**0.662**	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	40620/2593	1:1.58	0.145	-0.11	21.95	23.00	1.274	0.185	22.2
Back side	20	QPSK 50_0	40620/2593	1:1.58	0.068	-0.12	21.95	23.00	1.274	0.087	22.2
Left side	20	QPSK 50_0	40620/2593	1:1.58	0.132	0.02	21.95	23.00	1.274	0.168	22.2
Top side	20	QPSK 50_0	40620/2593	1:1.58	0.518	0.01	21.95	23.00	1.274	0.660	22.2
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm 1RB)											
Front side	20	QPSK 1_0	40620/2593	1:1.58	0.138	-0.08	23.13	24.00	1.222	0.169	22.2
Back side	20	QPSK 1_0	40620/2593	1:1.58	0.023	0.16	23.13	24.00	1.222	0.028	22.2
Left side	20	QPSK 1_0	40620/2593	1:1.58	0.186	0.00	23.13	24.00	1.222	0.227	22.2
Top side	20	QPSK 1_0	40620/2593	1:1.58	0.582	-0.17	23.13	24.00	1.222	**0.711**	22.2

Product specific 10g SAR Test data(Separate 0mm 50%RB)											
Front side	20	QPSK 50_0	40620/2593	1:1.58	0.125	0.05	21.95	23.00	1.274	0.159	22.2
Back side	20	QPSK 50_0	40620/2593	1:1.58	0.000	-0.01	21.95	23.00	1.274	0.000	22.2
Left side	20	QPSK 50_0	40620/2593	1:1.58	0.164	0.17	21.95	23.00	1.274	0.209	22.2
Top side	20	QPSK 50_0	40620/2593	1:1.58	0.540	-0.07	21.95	23.00	1.274	0.688	22.2

Table 18：SAR of LTE Band 41 for Head, Body.

8.2.14.SAR Result of LTE Band 42a

LTE Band 42a SAR Test Record											
Ant 2 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	42190/3460	1:1.58	0.178	-0.06	19.11	20.00	1.227	0.218	22.3
Left tilted	20	QPSK 1_0	42190/3460	1:1.58	0.049	-0.02	19.11	20.00	1.227	0.060	22.3
Right cheek	20	QPSK 1_0	42190/3460	1:1.58	0.291	0.19	19.11	20.00	1.227	**0.357**	22.3
Right tilted	20	QPSK 1_0	42190/3460	1:1.58	0.046	-0.17	19.11	20.00	1.227	0.056	22.3
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	42190/3460	1:1.58	0.173	-0.13	18.89	20.00	1.291	0.223	22.3
Left tilted	20	QPSK 50_0	42190/3460	1:1.58	0.071	-0.03	18.89	20.00	1.291	0.092	22.3
Right cheek	20	QPSK 50_0	42190/3460	1:1.58	0.253	0.04	18.89	20.00	1.291	0.327	22.3
Right tilted	20	QPSK 50_0	42190/3460	1:1.58	0.026	-0.18	18.89	20.00	1.291	0.034	22.3
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	42190/3460	1:1.58	0.127	0.10	20.34	21.50	1.306	**0.166**	22.3
Back side	20	QPSK 1_0	42190/3460	1:1.58	0.073	-0.18	20.34	21.50	1.306	0.095	22.3
Body worn Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	42190/3460	1:1.58	0.088	0.14	19.26	20.50	1.330	0.117	22.3
Back side	20	QPSK 50_0	42190/3460	1:1.58	0.057	0.14	19.26	20.50	1.330	0.076	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	42190/3460	1:1.58	0.083	-0.16	18.51	19.50	1.256	0.104	22.3
Back side	20	QPSK 1_0	42190/3460	1:1.58	0.038	0.03	18.51	19.50	1.256	0.048	22.3
Right side	20	QPSK 1_0	42190/3460	1:1.58	0.405	-0.14	18.51	19.50	1.256	0.509	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	42190/3460	1:1.58	0.068	0.11	18.29	19.50	1.321	0.090	22.3
Back side	20	QPSK 50_0	42190/3460	1:1.58	0.045	-0.02	18.29	19.50	1.321	0.059	22.3
Right side	20	QPSK 50_0	42190/3460	1:1.58	0.389	0.08	18.29	19.50	1.321	**0.514**	22.3
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm 1RB)											
Front side	20	QPSK 1_0	42190/3460	1:1.58	0.209	0.16	20.34	21.50	1.306	0.273	22.3
Back side	20	QPSK 1_0	42190/3460	1:1.58	0.119	-0.10	20.34	21.50	1.306	0.155	22.3
Right side	20	QPSK 1_0	42190/3460	1:1.58	0.705	-0.14	20.34	21.50	1.306	**0.921**	22.3
Product specific 10g SAR Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	42190/3460	1:1.58	0.142	-0.15	19.26	20.50	1.330	0.189	22.3
Back side	20	QPSK 50_0	42190/3460	1:1.58	0.083	-0.18	19.26	20.50	1.330	0.110	22.3
Right side	20	QPSK 50_0	42190/3460	1:1.58	0.645	0.06	19.26	20.50	1.330	0.858	22.3

Table 19：SAR of LTE Band 42a for Head, Body.

8.2.15.SAR Result of LTE Band 43d

LTE Band 43d SAR Test Record											
Ant 2 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	45090/3750	1:1.58	0.196	-0.06	18.99	20.00	1.262	0.247	22.3
Left tilted	20	QPSK 1_0	45090/3750	1:1.58	0.073	0.12	18.99	20.00	1.262	0.092	22.3
Right cheek	20	QPSK 1_0	45090/3750	1:1.58	0.282	-0.09	18.99	20.00	1.262	**0.356**	22.3
Right tilted	20	QPSK 1_0	45090/3750	1:1.58	0.061	0.02	18.99	20.00	1.262	0.077	22.3
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	45090/3750	1:1.58	0.163	0.17	18.86	20.00	1.300	0.212	22.3
Left tilted	20	QPSK 50_0	45090/3750	1:1.58	0.060	0.11	18.86	20.00	1.300	0.078	22.3
Right cheek	20	QPSK 50_0	45090/3750	1:1.58	0.244	-0.19	18.86	20.00	1.300	0.317	22.3
Right tilted	20	QPSK 50_0	45090/3750	1:1.58	0.040	-0.10	18.86	20.00	1.300	0.052	22.3
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	45090/3750	1:1.58	0.138	-0.01	20.24	21.50	1.337	**0.184**	22.3
Back side	20	QPSK 1_0	45090/3750	1:1.58	0.083	-0.10	20.24	21.50	1.337	0.111	22.3
Body worn Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	45090/3750	1:1.58	0.110	0.18	19.18	20.50	1.355	0.149	22.3
Back side	20	QPSK 50_0	45090/3750	1:1.58	0.092	-0.06	19.18	20.50	1.355	0.125	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	45090/3750	1:1.58	0.097	0.05	20.24	21.50	1.337	0.130	22.3
Back side	20	QPSK 1_0	45090/3750	1:1.58	0.051	-0.14	20.24	21.50	1.337	0.068	22.3
Right side	20	QPSK 1_0	45090/3750	1:1.58	0.387	0.01	20.24	21.50	1.337	0.517	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	45090/3750	1:1.58	0.064	-0.10	19.18	20.50	1.355	0.087	22.3
Back side	20	QPSK 50_0	45090/3750	1:1.58	0.038	-0.01	19.18	20.50	1.355	0.051	22.3
Right side	20	QPSK 50_0	45090/3750	1:1.58	0.407	0.02	19.18	20.50	1.355	**0.552**	22.3
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)
Product specific 10g SAR Test data(Separate 0mm 1RB)											
Front side	20	QPSK 1_0	45090/3750	1:1.58	0.195	0.18	20.24	21.50	1.337	0.261	22.3
Back side	20	QPSK 1_0	45090/3750	1:1.58	0.166	-0.03	20.24	21.50	1.337	0.222	22.3
Right side	20	QPSK 1_0	45090/3750	1:1.58	0.732	0.09	20.24	21.50	1.337	**0.978**	22.3
Product specific 10g SAR Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	45090/3750	1:1.58	0.133	0.08	19.18	20.50	1.355	0.180	22.3
Back side	20	QPSK 50_0	45090/3750	1:1.58	0.088	0.02	19.18	20.50	1.355	0.119	22.3
Right side	20	QPSK 50_0	45090/3750	1:1.58	0.629	-0.10	19.18	20.50	1.355	0.852	22.3

Table 20：SAR of LTE Band 43d for Head, Body.

8.2.16.SAR Result of LTE Band 48

LTE Band 48 SAR Test Record											
Ant 2 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty	SAR	Power	Conducted	Tune up	Scaled	Scaled	Liquid

				Cycle	(W/kg) 1-g	drift (dB)	Power(dBm)	Limit(dBm)	factor	SAR 1-g (W/kg)	Temp.(℃)
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	55830/3609	1:1.58	0.197	-0.17	19.30	20.00	1.175	0.231	22.3
Left tilted	20	QPSK 1_0	55830/3609	1:1.58	0.092	0.01	19.30	20.00	1.175	0.108	22.3
Right cheek	20	QPSK 1_0	55830/3609	1:1.58	0.296	-0.09	19.30	20.00	1.175	**0.348**	22.3
Right tilted	20	QPSK 1_0	55830/3609	1:1.58	0.080	0.10	19.30	20.00	1.175	0.094	22.3
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	55830/3609	1:1.58	0.181	0.12	19.22	20.00	1.197	0.217	22.3
Left tilted	20	QPSK 50_0	55830/3609	1:1.58	0.086	-0.15	19.22	20.00	1.197	0.103	22.3
Right cheek	20	QPSK 50_0	55830/3609	1:1.58	0.269	0.15	19.22	20.00	1.197	0.322	22.3
Right tilted	20	QPSK 50_0	55830/3609	1:1.58	0.068	0.13	19.22	20.00	1.197	0.081	22.3
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	55830/3609	1:1.58	0.155	-0.05	21.25	21.50	1.059	**0.164**	22.3
Back side	20	QPSK 1_0	55830/3609	1:1.58	0.099	0.17	21.25	21.50	1.059	0.105	22.3
Body worn Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	55830/3609	1:1.58	0.135	-0.13	20.09	20.50	1.099	0.148	22.3
Back side	20	QPSK 50_0	55830/3609	1:1.58	0.097	0.05	20.09	20.50	1.099	0.107	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	55830/3609	1:1.58	0.105	-0.09	18.97	19.50	1.130	0.119	22.3
Back side	20	QPSK 1_0	55830/3609	1:1.58	0.067	-0.08	18.97	19.50	1.130	0.076	22.3
Right side	20	QPSK 1_0	55830/3609	1:1.58	0.415	0.13	18.97	19.50	1.130	0.469	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	55830/3609	1:1.58	0.091	-0.19	18.85	19.50	1.161	0.106	22.3
Back side	20	QPSK 50_0	55830/3609	1:1.58	0.066	0.18	18.85	19.50	1.161	0.077	22.3
Right side	20	QPSK 50_0	55830/3609	1:1.58	0.410	-0.17	18.85	19.50	1.161	**0.476**	22.3
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10g SAR Test data(Separate 0mm 1RB)											
Front side	20	QPSK 1_0	55830/3609	1:1.58	0.211	0.14	21.25	21.50	1.059	0.224	22.3
Back side	20	QPSK 1_0	55830/3609	1:1.58	0.168	-0.06	21.25	21.50	1.059	0.178	22.3
Right side	20	QPSK 1_0	55830/3609	1:1.58	0.753	-0.05	21.25	21.50	1.059	**0.798**	22.3
Product specific 10g SAR Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	55830/3609	1:1.58	0.158	-0.19	20.09	20.50	1.099	0.174	22.3
Back side	20	QPSK 50_0	55830/3609	1:1.58	0.093	-0.14	20.09	20.50	1.099	0.102	22.3
Right side	20	QPSK 50_0	55830/3609	1:1.58	0.645	-0.02	20.09	20.50	1.099	0.709	22.3

Table 21：SAR of LTE Band 48 for Head, Body.

8.2.17.SAR Result of LTE Band 66

LTE Band 66 SAR Test Record											
Ant 0 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	132322/1745	1:1	0.266	0.03	16.17	17.50	1.358	0.361	22.2
Left tilted	20	QPSK 1_0	132322/1745	1:1	0.242	0.06	16.17	17.50	1.358	0.329	22.2
Right cheek	20	QPSK 1_0	132322/1745	1:1	0.482	-0.01	16.17	17.50	1.358	**0.655**	22.2
Right tilted	20	QPSK 1_0	132322/1745	1:1	0.460	-0.19	16.17	17.50	1.358	0.625	22.2