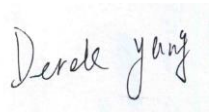
FCC SAR TEST REPORT

Report No:	ZR/2021/10049
Applicant:	HMD Global Oy
Manufacturer:	HMD Global Oy
Product Name:	TA-1344
Model No.(EUT):	smart phone
Brand Name:	Nokia
FCC ID:	2AJOTTA-1344
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2021-02-04
Date of Test:	2021-02-05 to 2021-03-05
Date of Issue:	2021-03-24
Test conclusion:	**PASS ***

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

Authorized Signature:



Derek Yang

Wireless Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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

REVISION HISTORY

Report Number	Revision	Description	Issue Date
ZR/2021/1004909	01	Original	2021-03-24

TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)			
	Head	Body-worn	Hotspot	Product specific 10gSAR
GSM850	0.14	0.28	0.39	NA
GSM1900	0.07	0.29	0.50	NA
WCDMA Band II	0.14	0.35	0.94	NA
WCDMA Band IV	0.14	0.43	0.68	NA
WCDMA Band V	0.13	0.31	0.31	NA
LTE Band 2	0.14	0.51	0.79	NA
LTE Band 4	0.12	0.48	0.70	NA
LTE Band 5	0.09	0.27	0.27	NA
LTE Band 7	0.23	0.49	0.49	NA
LTE Band 12	0.10	0.13	0.19	NA
LTE Band 66	0.19	0.45	0.66	NA
LTE Band 38	0.13	0.62	0.62	NA
LTE Band 41	0.10	0.49	0.49	NA
NR Band n2	0.13	0.60	0.95	NA
NR Band n5	0.13	0.32	0.32	NA
NR Band n7	0.18	0.41	0.41	NA
NR Band n38	0.04	0.21	0.21	NA
NR Band n41	0.03	0.27	0.27	NA
NR Band n66	0.15	0.50	0.59	NA
WI-FI (2.4GHz)	1.04	0.22	0.22	NA
WI-FI (5GHz)	0.69	0.57	0.31	1.01
BT	0.06	0.03	0.03	NA
Maximum Simultaneous SAR(W/kg)	1.30	1.34	1.30	1.01
SAR Limited(W/kg)	1.6			

Reviewed by

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CONTENTS

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1 General Information

1.1 Details of Client

Applicant:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Manufacturer:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland

1.2 Test Location

Company: SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab

Address: No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China

Post code: 518057

Telephone: +86 (0) 755 2601 2053

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E-mail: ee.shenzhen@sgs.com

1.3 Test Facility

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

• CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• 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

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• FCC –Designation Number: CN1178

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

Designation Number: CN1178. Test Firm Registration Number: 406779.

• Industry Canada (IC)

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.

1.4 General Description of EUT

Device Type :	portable device		
Exposure Category:	uncontrolled environment / general population		
Product Name:	smart phone		
Model No.(EUT):	TA-1344		
FCC ID:	2AJOTTA-1344		
Brand name:	Nokia		
Product Phase:	production unit		
IMEI:	355819290005761 / 355819290011059 / 355819290010010 / 355819290017163 / 355819290019169 / 355819290019029		
Hardware Version:	V1.0		
Software Version:	00WW_0_226		
Antenna Type:	PIFA Antenna		
Device Operating Configurations :			
Modulation Mode:	**GSM:** GMSK, 8PSK; **WCDMA:** QPSK; **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		
Device Class:	B		
GPRS Multi-slots Class:	33	EGPRS Multi-slots Class:	33
HSDPA UE Category:	14	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)		
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 38	2570~2620	2570~2620
	LTE Band 41	2496~2690	2496~2690
	LTE Band 66	1710~1780	2110~2200
	NR Band n2	1850~1910	1930~1990
	NR Band n5	824~849	869~894
	NR Band n7	2500~2570	2620~2690
	NR Band n38	2570~2620	2570~2620
	NR Band n41	2496~2690	2496~2690
	NR Band n66	1710~1780	2110~2200
	Bluetooth	2400~2483.5	2400~2483.5
	Wi-Fi 2.4G	2412~2462	2412~2462

	Wi-Fi 5G	5150~5250	5150~5250
		5250~5350	5250~5350
		5470~5725	5470~5725
		5725~5850	5725~5850

Remark:
According to the difference description by the manufacturer, for Sample2(Secondary Supply) is test at the worst case on the Sample1(Main Supply).
The difference between TA-1341 and TA-1344 as below:
TA-1341 has the Dual SIM tray, TA-1344 has the single SIM tray.
Except above, the others are the same.
According to the difference description above, TA-1344 shares the same test data of TA-1341(Report No.: ZR/2021/1004908).

1.4.1 DUT Antenna Locations(Back View)

Refer to Appendix D Photographs

Note:

1) The test device is a smart phone. The overall diagonal dimension of this device is 167 mm. 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
Ant1	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	Yes	No	Yes
Ant2	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	No	Yes
Ant3	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	No	Yes
Ant5	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	No	Yes
Ant10	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	No	Yes

Table 1： EUT Sides for SAR Testing

Note:

1) When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

1.4.2 LTE CA additional specification

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

a) Intra-band carrier aggregation requirements for uplink.

b) 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 and uplink 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.

SAR test procedure for intra-band contiguous UL LTE CA is as below:

1)Maximum output power is measured for each UL CA configuration for the required test channels described in KDB 941225 D05

- UL PCC configuration is determined by the required test channel

- SCC and subsequent CCs are added alternatively to either side of the PCC or within the transmission band for channels at the ends of a frequency band.

2)SAR for UL CA is required in each exposure condition and frequency band combination

3)For this device , as the maximum output for Intra-band uplink LTE CA is ≤ standalone LTE mode (without CA),

- PCC is configured according to the highest standalone SAR configuration tested.

- SCC and subsequent CCs are configured according to procedures used for power measurement and parameters (BW, RB etc.) similar to that used for the PCC

4)When the reported SAR for UL CA configuration, described above, is > 1.2 W/kg, UL CA SAR is also required for all required test channels (PCC based)

5)UL CA SAR is also required for standalone SAR configurations > 1.2 W/kg when they are scaled to the UL CA power level.

Intra-band contiguous CA operating bands：

E-UTRA CA Band	E-UTRA Band	Uplink (UL) operating band BS receive / UE transmit F_{UL_low} – F_{UL_high}			Downlink (DL) operating band BS transmit / UE receive F_{DL_low} – F_{DL_high}			Duplex Mode
CA_7	7	2500 MHz	–	2570 MHz	2620 MHz	–	2690 MHz	FDD
CA_38	38	2570 MHz	–	2620 MHz	2570 MHz	–	2620 MHz	TDD
CA_41	41	2496 MHz	–	2690 MHz	2496 MHz	–	2690 MHz	TDD

contiguous intra-band CA：

E-UTRA CA configuration / Bandwidth combination set					
Uplink CA configurations (NOTE 3)	Component carriers in order of increasing carrier frequency			Maximum aggregated bandwidth [MHz]	Bandwidth combination set
	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_7C	15	15		40	0
	20	20			
	10	20		40	1
	15	15, 20			
	20	10, 15, 20			
CA_38C	15	15		40	0
	20	20			
CA_41C	10	20		40	0
	15	15, 20			
	20	10, 15, 20			
	5, 10	20		40	1
	15	15, 20			
	20	5, 10, 15, 20			
	10	15, 20		40	2
	15	10, 15, 20			
	20	10, 15, 20			
	10	20		40	3
	20	20			
NOTE 1: The CA configuration refers to an operating band and a CA bandwidth class specified in Table 5.6A-1 (the indexing letter). Absence of a CA bandwidth class for an operating band implies support of all classes.					
NOTE 2: For the supported CC bandwidth combinations, the CC downlink and uplink bandwidths are equal.					
NOTE 3: Uplink CA configurations are the configurations supported by the present release of specifications.					

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 hotspot mode becomes active. When the hotspot is disabled, the power value will be recovered.

2) 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

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 following tables summarize the key power reduction information. The detailed full power which is the Max. power the state can use and reduced tune-up specifications and conducted power measurement results are provided in Appendix E.

Main antenna(Ant2) Power Level(dBm)		
Power Reduction Scenario	WCDMA Band II	LTE Band 7
Full power/Sensor off	24.00	24.00
Sensor on	22.00	16.00

ENDC(Ant3) Power Level(dBm)	
Power Reduction Scenario	LTE Band 7
Full power/Sensor off	24.00
Sensor on	17.00

NR(Ant2/3) Power Level(dBm)		
Power Reduction Scenario	SA N7	NSA N7
Full power/Sensor off	23.50	23.50
Sensor on	17.50	17.50

Uplink CA Power Level(dBm)	
Power Reduction Scenario	CA_7C
Full power/Sensor off	24.00
Sensor on	16.00

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
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

1.6 RF exposure limits

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

Notes:

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

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

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

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

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

2 Laboratory Environment

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

Table 2： The Ambient Conditions

3 SAR Measurements System Configuration

3.1 The SAR Measurement System

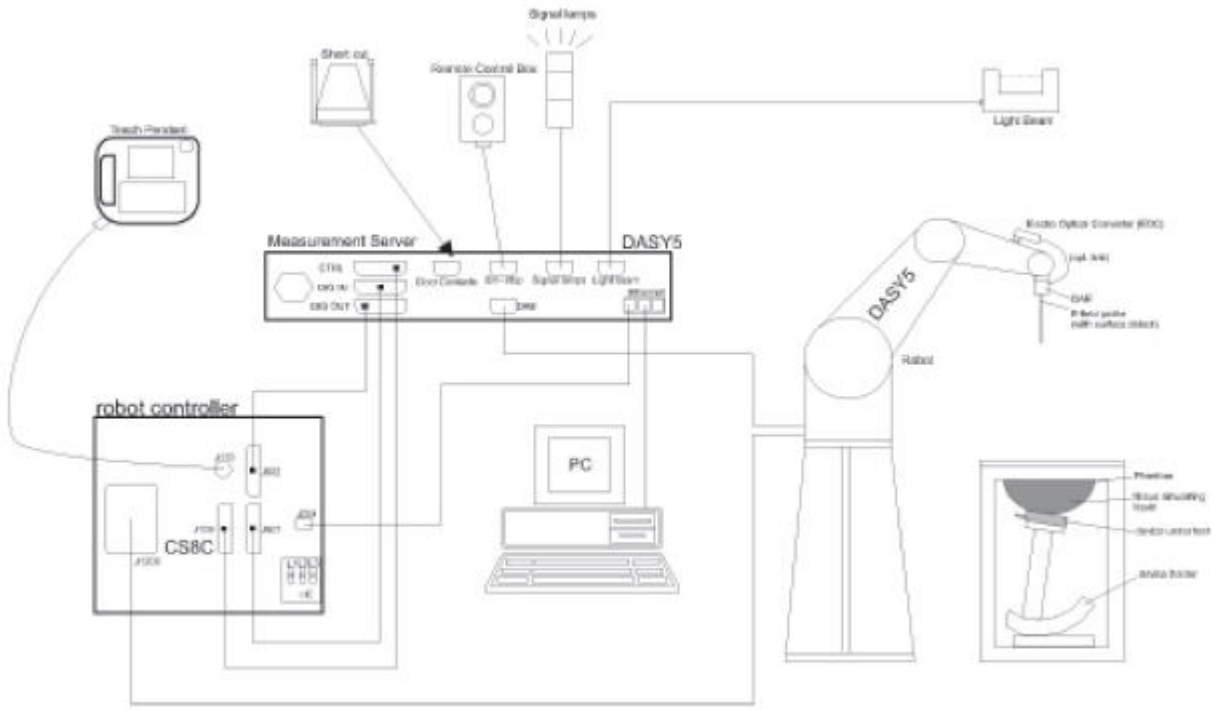
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY5 professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the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

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

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

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

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



F-1. SAR Measurement System Configuration

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

3.2 Isotropic E-field Probe EX3DV4

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

3.3 Data Acquisition Electronics (DAE)

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

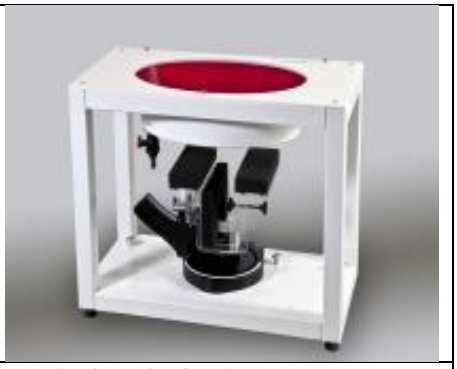
3.4 SAM Twin Phantom

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

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

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

3.5 ELI Phantom

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

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

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

3.6 Device Holder for Transmitters

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

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

3.7 Measurement procedure

3.7.1 Scanning procedure

Step 1: Power reference measurement

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

Step 2: *Area scan*

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

Step 3: *Zoom scan*

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

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

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

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

Step 4: Power reference measurement (drift)

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

3.7.2 Data Storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DAE4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated. The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

3.7.3 Data Evaluation by SEMCAD

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

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

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

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

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

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

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

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

E-field probes:

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

H-field probes:

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

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

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

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

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

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

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

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

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

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

4 SAR measurement variability and uncertainty

4.1 SAR measurement variability

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

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

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

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

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

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

4.2 SAR measurement uncertainty

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

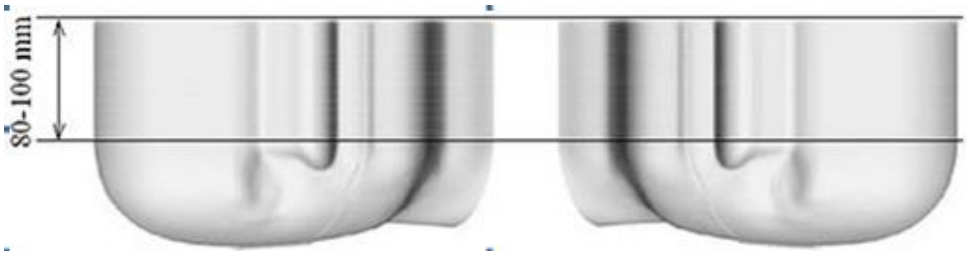
5 Description of Test Position

5.1 Head Exposure Condition

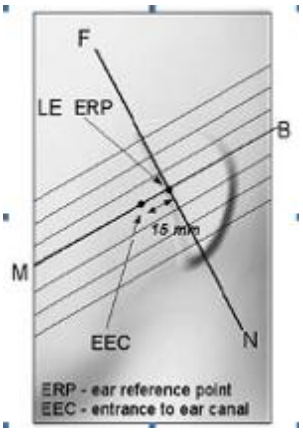
5.1.1 SAM Phantom Shape

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.

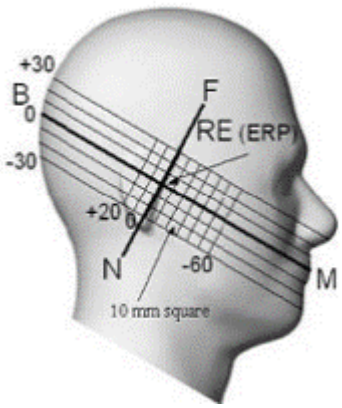
Note: The centre strip including the nose region has a different thickness tolerance.



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

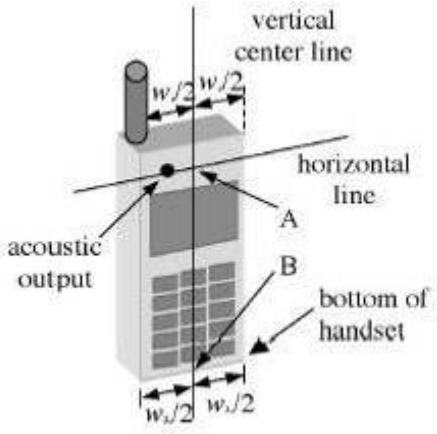


F-5. Close-up side view of phantom, showing the ear region, N-F and B-M lines, and seven cross-sectional plane locations

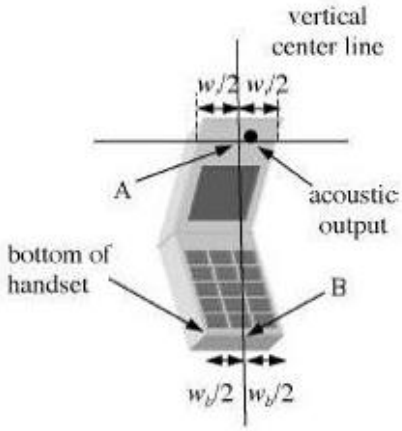


F-6. Side view of the phantom showing relevant markings and seven cross-sectional plane locations

5.1.2 EUT constructions



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



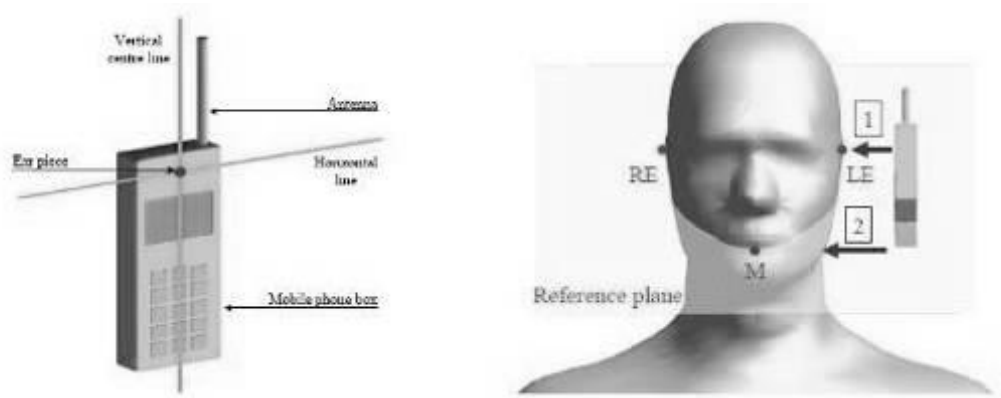
F-8. Handset vertical and horizontal reference lines-“clam-shell case”

5.1.3 Definition of the “cheek” position

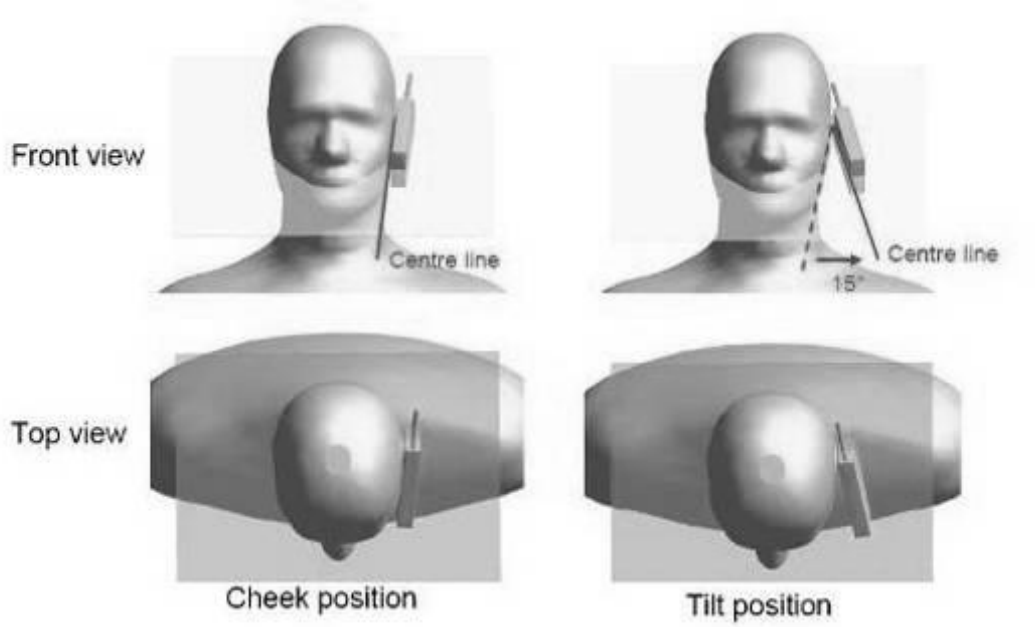
a) Position the device with the vertical centre line of the body of the device and the horizontal line crossing the centre of the ear piece in a plane parallel to the sagittal plane of the phantom ("initial position"). While maintaining the device in this plane, align the vertical centre line with the 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 Body Exposure Condition

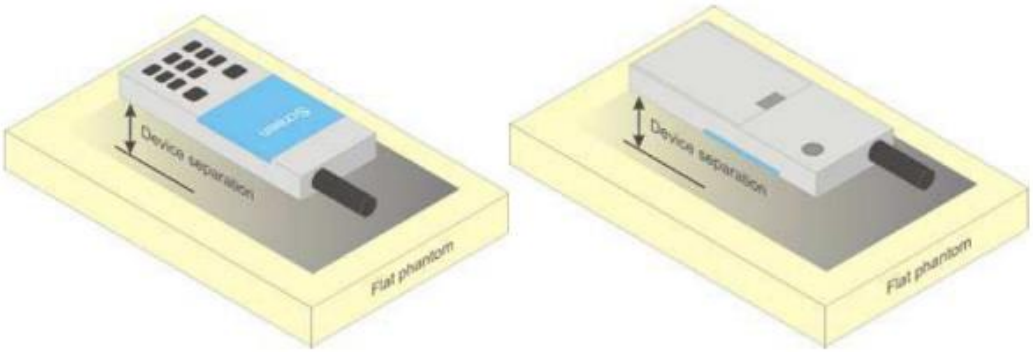
5.2.1 Body-worn accessory exposure conditions

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 D01 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.



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.

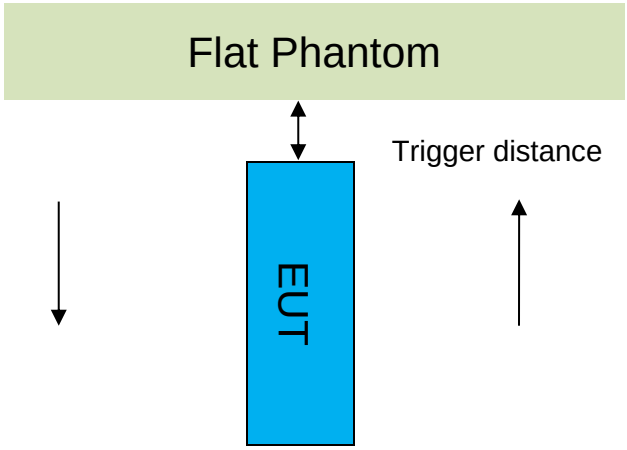
5.3 Extremity exposure conditions

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, no frequency bands need to test with 0mm for the Product Specific 10-g SAR.

5.1 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.

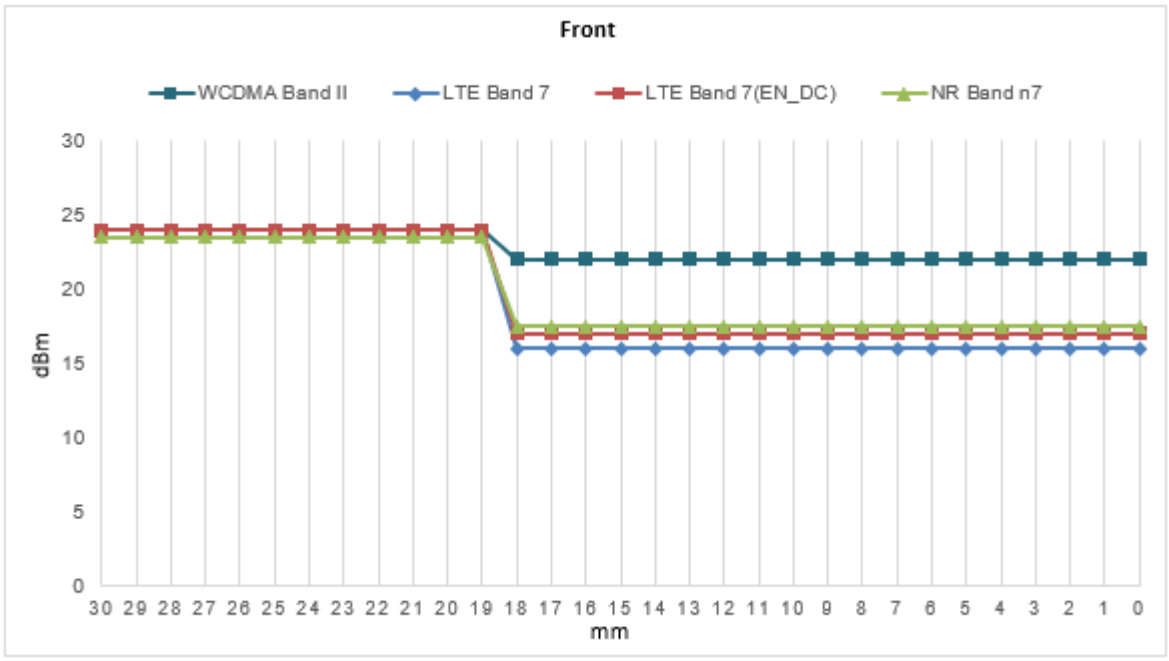


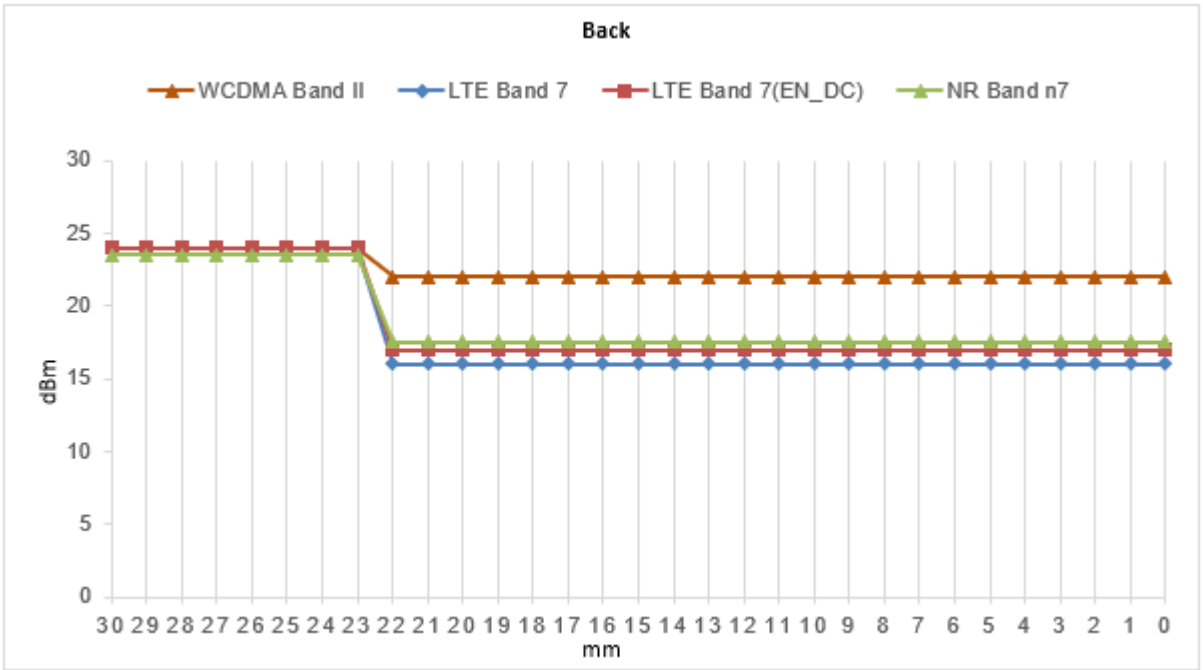
Proximity Sensor Triggering Distance(mm)			
Antenna	Ant2	Ant3	Ant2/3
Band	WCDMA B2	LTE B7(EN_DC)	5G NR n7
	LTE B7		
Position	Front/Back/Bottom		
Minimum	Front:18, Back:22, Bottom:21		
Required SAR Test	Front:17, Back:21, Bottom:20		

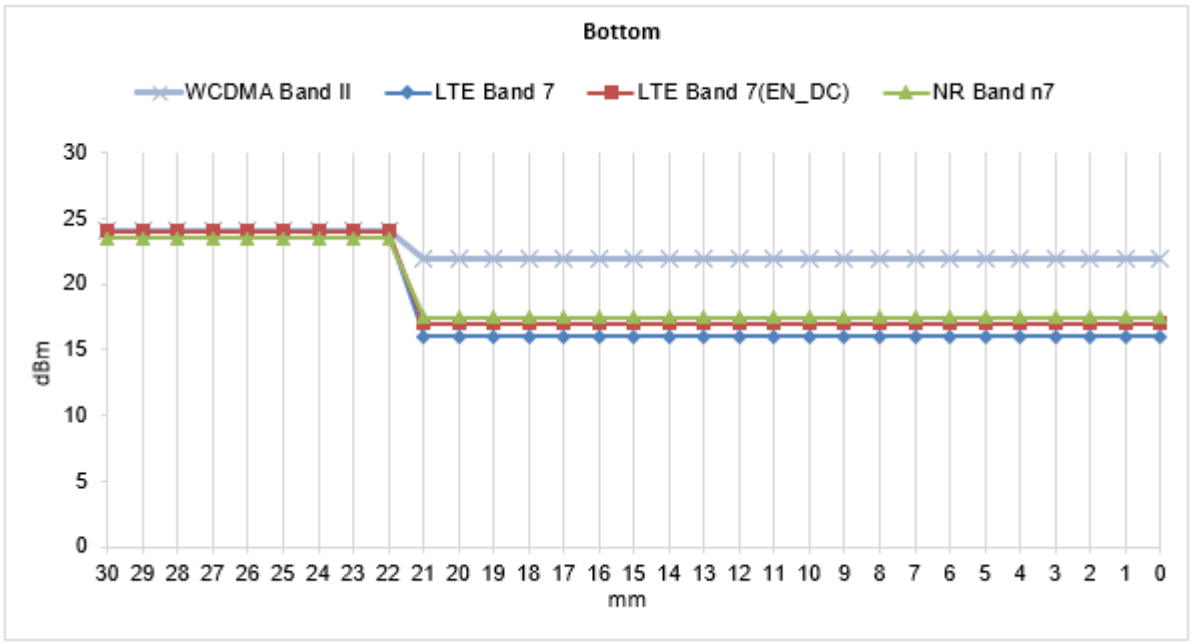
Note:

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.

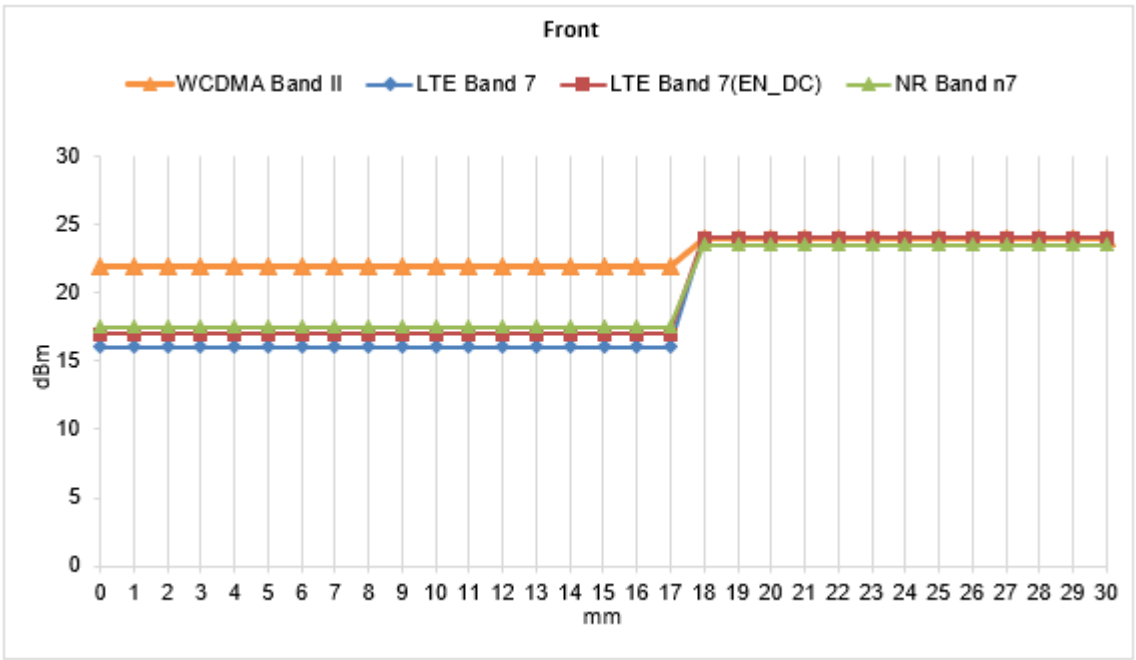
- DUT Moving Toward(Trigger)the Phantom

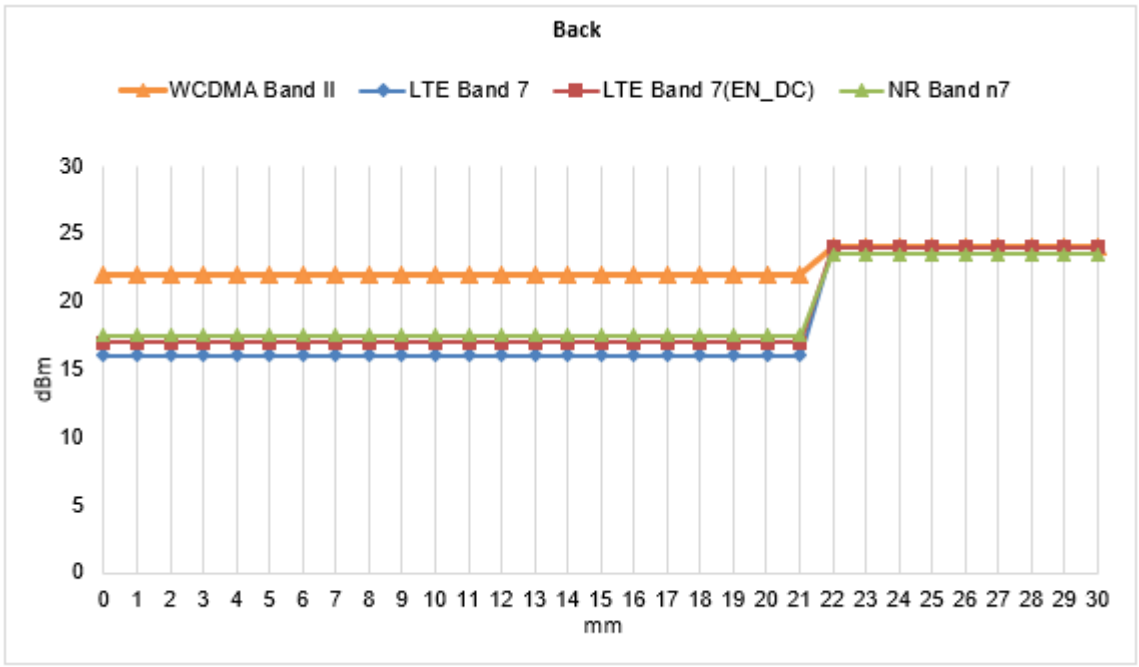


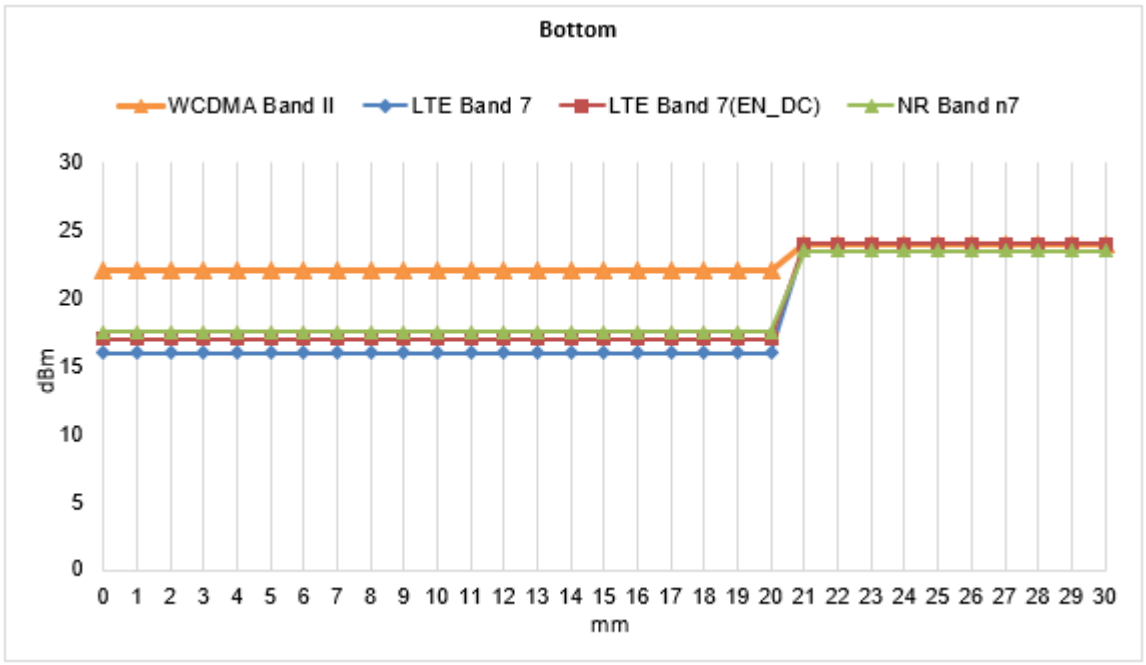




- DUT Moving Away(Release) from the Phantom







Proximity sensor coverage

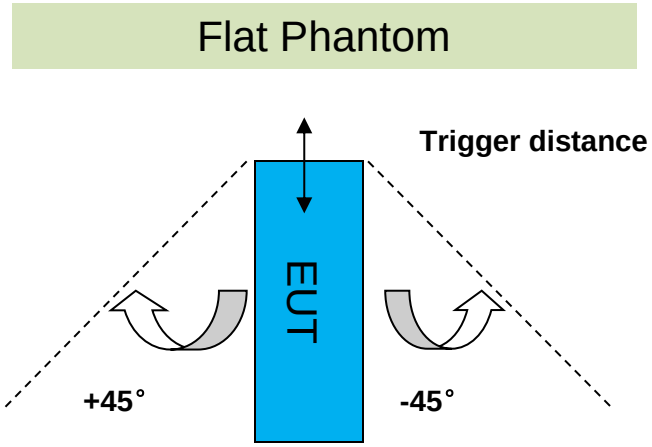
If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing,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



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°
WCDMA B2, LTE B7(Ant2)	Bottom side:21mm	Bottom side:21mm	on	on	on	on	on	on	on	on	on	on	on
EN_DC-LTE B7 (Ant3)	Bottom side:21mm	Bottom side:21mm	on	on	on	on	on	on	on	on	on	on	on
5G NR n7(Ant2/3)	Bottom side:21mm	Bottom side:21mm	on	on	on	on	on	on	on	on	on	on	on

6 SAR System Verification Procedure

6.1 Tissue Simulate Liquid

6.1.1 Recipes for Tissue Simulate Liquid

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

Ingredients (% by weight)	Frequency (MHz)				
	450	700-900	1750-2000	2300-2500	2500-2700
Water	38.56	40.30	55.24	55.00	54.92
Salt (NaCl)	3.95	1.38	0.31	0.2	0.23
Sucrose	56.32	57.90	0	0	0
HEC	0.98	0.24	0	0	0
Bactericide	0.19	0.18	0	0	0
Tween	0	0	44.45	44.80	44.85
Salt: 99⁺% Pure Sodium Chloride 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： 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 dielectric properties for this Tissue Simulate Liquids were measured by using the Agilent Model 85070E Dielectric Probe in conjunction with Agilent E5071C Network Analyzer (300 KHz-8500 MHz). The Conductivity (σ) and Permittivity (ρ) are listed in bellow table. For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was 22±2°C.

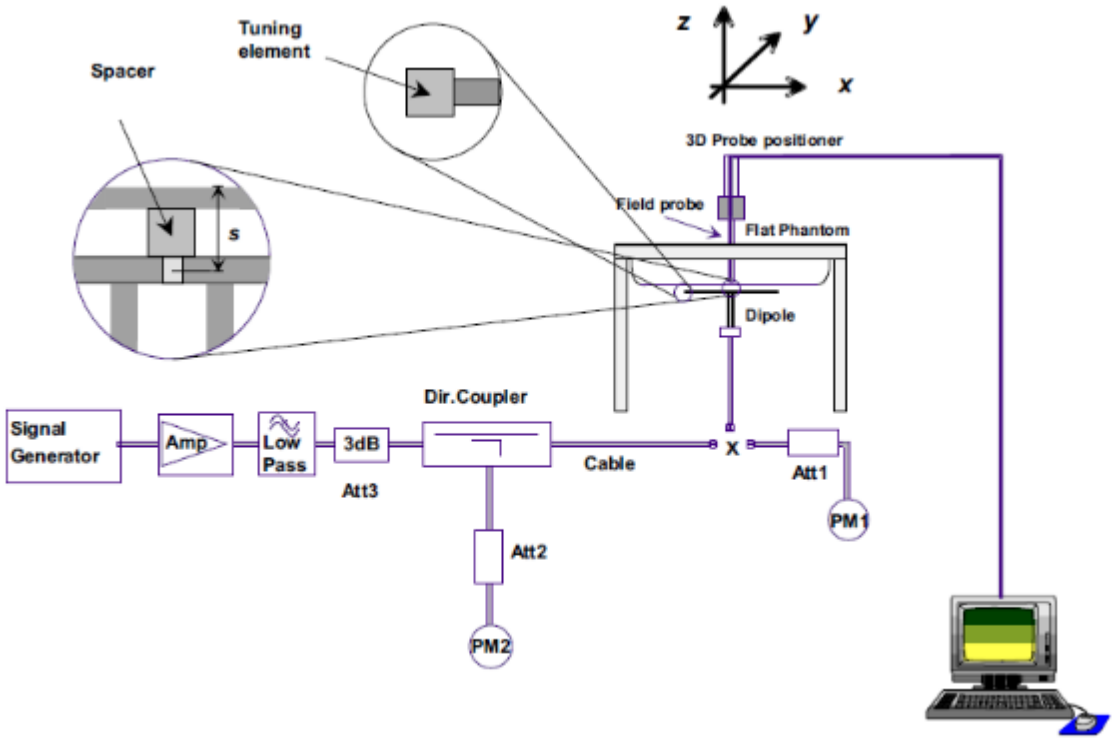
Tissue Type	Measured Frequency (MHz)	Target Tissue (±5%)		Measured Tissue		Liquid Temp.	Measured Date
		ε_r	σ(S/m)	ε_r	σ(S/m)	(℃)	
750 Head	750	41.9 (39.81~44)	0.89 (0.85~0.94)	41.539	0.898	22.1	2021-02-16
835 Head	835	41.5 (39.43~43.58)	0.90 (0.86~0.95)	42.595	0.930	22.1	2021-02-15
835 Head	835	41.5 (39.43~43.58)	0.90 (0.86~0.95)	40.849	0.886	22.1	2021-02-17
835 Head	835	41.5 (39.43~43.58)	0.90 (0.86~0.95)	42.247	0.902	22.1	2021-02-20
1750 Head	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	40.190	1.318	21.9	2021-02-14
1750 Head	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	39.346	1.342	21.9	2021-02-22
1750 Head	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	40.629	1.323	21.9	2021-02-23
1900 Head	1900	40.0 (38.00~42.00)	1.40 (1.33~1.47)	41.790	1.413	22.3	2021-02-05
1900 Head	1900	40.0 (38.00~42.00)	1.40 (1.33~1.47)	40.038	1.416	22.3	2021-02-21
1900 Head	1900	40.0 (38.00~42.00)	1.40 (1.33~1.47)	40.419	1.382	22.3	2021-03-05
2450 Head	2450	39.2 (37.24~41.16)	1.8 (1.71~1.89)	38.735	1.841	21.8	2021-02-18
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	37.884	1.961	21.9	2021-02-19
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	38.321	1.989	21.9	2021-02-25
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	38.094	1.974	21.9	2021-02-26
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	37.931	2.047	21.9	2021-03-02
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	38.468	1.966	21.9	2021-03-04
5250 Head	5250	35.9 (34.11~37.70)	4.66 (4.47~4.95)	36.011	4.721	22.3	2021-02-17
5600 Head	5600	35.5 (33.73~37.30)	5.07 (4.82~5.32)	35.059	5.107	22.3	2021-02-17
5750 Head	5750	35.4 (33.63~37.17)	5.22 (4.96~5.48)	34.695	5.279	22.3	2021-02-17

Table 4： Measurement result of Tissue electric parameters

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch Testing Center EMC Laboratory
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

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) Referring to KDB865664 D01 requirements for dipole calibration, instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.
a) There is no physical damage on the dipole;
b) System check with specific dipole is within 10% of calibrated value;
c) Return-loss is within 10% of calibrated measurement;
d) Impedance is within 5Ω from the previous measurement.

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

6.2.2 Summary System Check Result(s)

Validation Kit		Measured SAR 250mW	Measured SAR 250mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W) (±10%)	Target SAR (normalized to 1W) (±10%)	Liquid Temp. (℃)	Measured Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)		
D750V2	Head	2.19	1.44	8.76	5.76	8.39 (7.55~9.23)	5.63 (5.07~6.19)	22.1	2021-02-16
D835V2	Head	2.53	1.65	10.12	6.60	9.64 (8.68~10.60)	6.29 (5.66~6.92)	22.1	2021-02-15
D835V2	Head	2.45	1.60	9.80	6.40	9.64 (8.68~10.60)	6.29 (5.66~6.92)	22.1	2021-02-17
D835V2	Head	2.51	1.64	10.04	6.56	9.64 (8.68~10.60)	6.29 (5.66~6.92)	22.1	2021-02-20
D1750V2	Head	9.17	4.88	36.68	19.52	36.3 (32.67~39.93)	19.2 (17.28~21.12)	21.9	2021-02-14
D1750V2	Head	9.32	4.96	37.28	19.84	36.3 (32.67~39.93)	19.2 (17.28~21.12)	21.9	2021-02-22
D1750V2	Head	9.21	4.90	36.84	19.60	36.3 (32.67~39.93)	19.2 (17.28~21.12)	21.9	2021-02-23
D1900V2	Head	10.40	5.40	41.60	21.60	39.3 (35.37~43.23)	20.2 (18.18~22.22)	22.3	2021-02-05
D1900V2	Head	10.50	5.41	42.00	21.64	39.3 (35.37~43.23)	20.2 (18.18~22.22)	22.3	2021-02-21
D1900V2	Head	10.30	5.29	41.20	21.16	39.3 (35.37~43.23)	20.2 (18.18~22.22)	22.3	2021-03-05
D2450V2	Head	13.40	6.21	53.60	24.84	51.9 (46.71~57.09)	23.8 (21.42~26.18)	21.8	2021-02-18
D2600V2	Head	13.50	6.04	54.00	24.16	56.8 (51.12~62.48)	24.9 (22.41~27.39)	21.9	2021-02-19
D2600V2	Head	14.00	6.28	56.00	25.12	56.8 (51.12~62.48)	24.9 (22.41~27.39)	21.9	2021-02-25
D2600V2	Head	13.70	6.10	54.80	24.40	56.8 (51.12~62.48)	24.9 (22.41~27.39)	21.9	2021-02-26
D2600V2	Head	14.20	6.33	56.80	25.32	56.8 (51.12~62.48)	24.9 (22.41~27.39)	21.9	2021-03-02
D2600V2	Head	13.60	6.06	54.40	24.24	56.8 (51.12~62.48)	24.9 (22.41~27.39)	21.9	2021-03-04
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%)**	**Liquid Temp. (℃)**	**Measured Date**
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)		
D5GHzV2	Head(5.25GHz)	7.97	2.30	79.7	23	75.2 (67.68~82.72)	21.5 (19.35~23.65)	22.3	2021-02-17
	Head(5.6GHz)	8.48	2.42	84.8	24.2	80.0 (72.0~88.0)	22.7 (20.43~24.97)	22.3	2021-02-17
	Head(5.75GHz)	7.84	2.23	78.4	22.3	78.7 (70.83~86.57)	22.3 (20.07~24.53)	22.3	2021-02-17

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 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 33 for this EUT, it has at most 4 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5.

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 6： 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 7： HSDPA UE category

b) HSUPA

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

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

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

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

Note 3 : For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TFI, 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 8： 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 9： 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 10： 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.

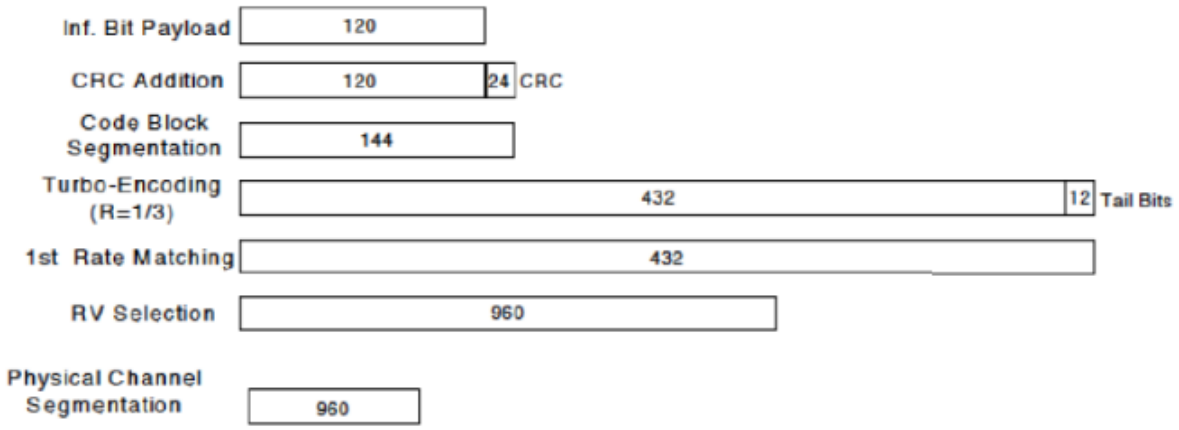


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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.

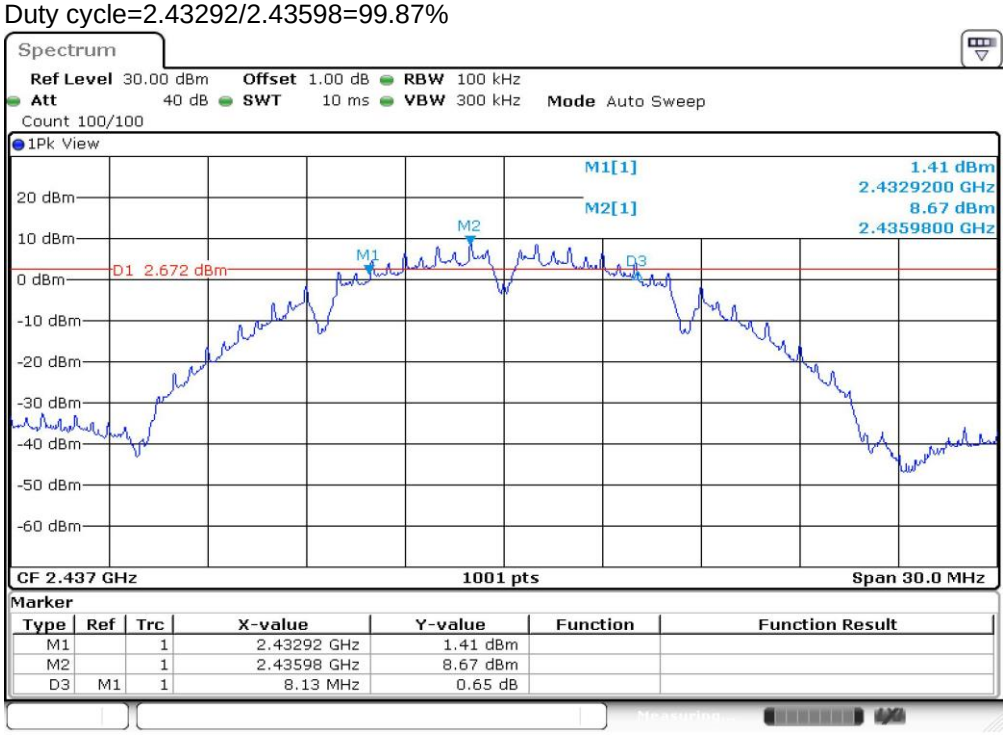
7.2.3 WiFi Test Configuration

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.

7.2.3.1 Duty cycle

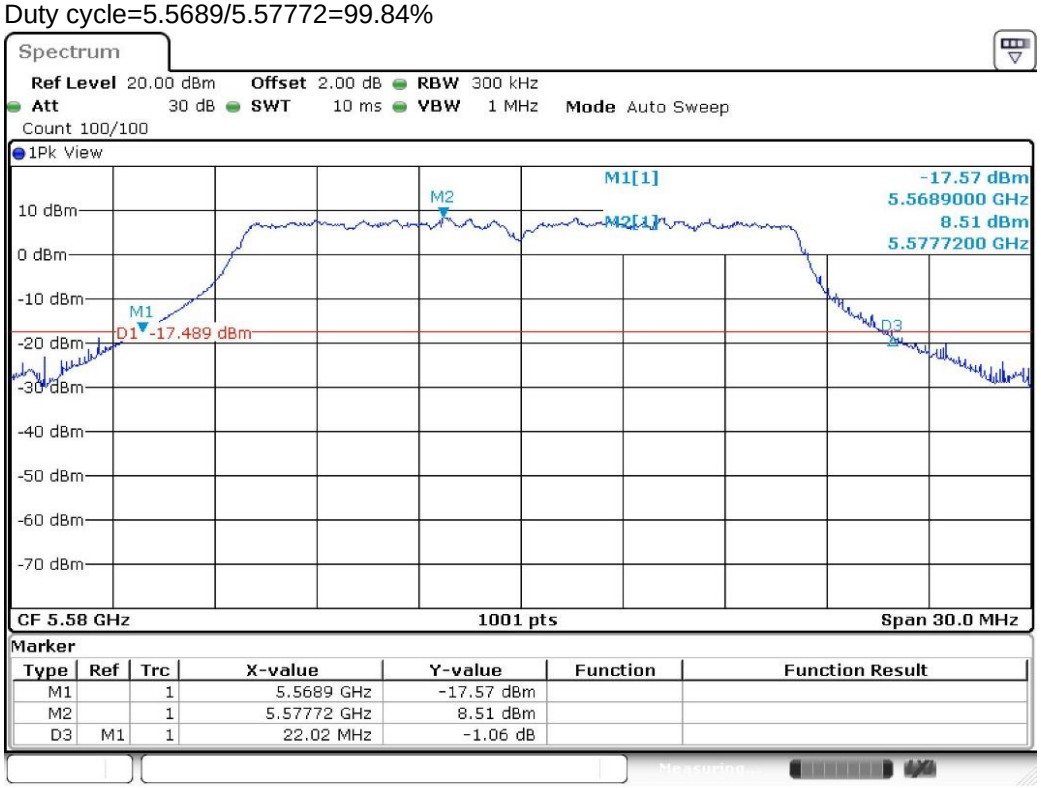
1) Wi-Fi 2.4GHz 802.11b:

Duty cycle=2.43292/2.43598=99.87%



Date: 3.FEB.2021 15:05:39

2) Wi-Fi 5GHz 802.11a:
Duty cycle=5.5689/5.57772=99.84%



Date: 3.FEB.2021 11:06:24

7.2.3.2 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.

7.2.3.3 Initial Test Configuration Procedures

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

7.2.3.4 Subsequent Test Configuration Procedures

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

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

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

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

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

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

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

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

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

7.2.3.5 2.4 GHz WiFi SAR Procedures

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

- **802.11b DSSS SAR Test Requirements**

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

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

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

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

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

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

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

- **SAR Test Requirements for OFDM configurations**

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

7.2.3.6 5 GHz WiFi SAR Procedures

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

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

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

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

- **OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements**
  The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined according to the following steps applied sequentially.
  1) The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
  2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
  3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.
  4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n. After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.
     a) The channel closest to mid-band frequency is selected for SAR measurement.
     b) For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

- **SAR Test Requirements for OFDM configurations**

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

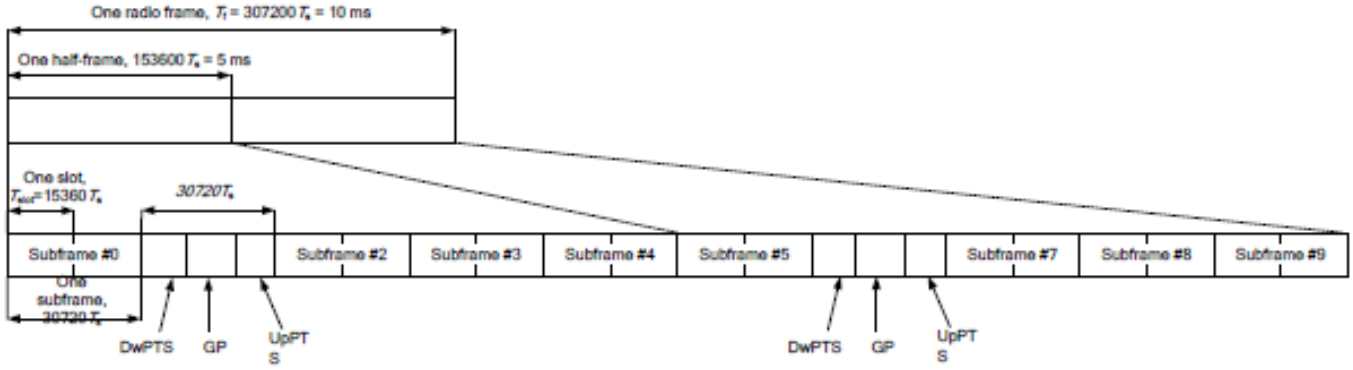
7.2.4 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The Anritsu MT8821C was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

TDD LTE test consideration

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

Frame structure type 2:



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

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

Uplink-downlink configurations.

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

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

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

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A) Spectrum Plots for RB Configurations

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

B) MPR

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

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

C) A-MPR

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

D) Largest channel bandwidth standalone SAR test requirements

1) QPSK with 1 RB allocation

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

2) QPSK with 50% RB allocation

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

3) QPSK with 100% RB allocation

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

4) Higher order modulations

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

E) Other channel bandwidth standalone SAR test requirements

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

7.2.5 NR Band Test Configuration

1. For this FCC report, NR Band n2/n5/n7/n38/n41/n66 support SA and NSA mode. NSA mode operations are possible only with LTE under EN-DC mode and the operations are possible as following table:

Band/Antenna		N1	N2	N3	N5	N7		N28	N38	N41	N66	N78
		Ant3	Ant3	Ant3	Ant1	Ant2	Ant3	Ant1	Ant3	Ant3	Ant3	Ant6
LTE Band 1	Ant2			v					v	v		v
	Ant3				v	v		v				
LTE Band 2	Ant2									v	v	v
	Ant3				v							
LTE Band 3	Ant2	v							v	v		v
	Ant3				v	v		v				
LTE Band 4	Ant2									v		
	Ant3											
LTE Band 5	Ant1		v				v		v		v	v
LTE Band 7	Ant2	v		v							v	v
	Ant3				v			v				
LTE Band 8	Ant1	v		v								v
LTE Band 12	Ant1		v				v		v	v		v
LTE Band 20	Ant1	v		v			v		v	v		v
LTE Band 28	Ant1	v		v			v					v
LTE Band 40	Ant2	v										v
	Ant3											
LTE Band 66	Ant2		v							v		v
	Ant3				v							

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

Band			n2	n5	n7	n38	n41	n66
NR mode		SA	Yes	Yes	Yes	Yes	Yes	Yes
		NSA	Yes	Yes	Yes	Yes	Yes	Yes
Modulation	DFT-s-OFDM	PI/2 BPSK	Yes	Yes	Yes	Yes	Yes	Yes
		QPSK	Yes	Yes	Yes	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes	Yes	Yes	Yes
	CP-OFDM	QPSK	Yes	Yes	Yes	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes	Yes	Yes	Yes
Duty Cycle			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
	30KHZ	N/A	N/A	N/A	N/A	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
	30KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n7	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n38	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	Yes	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n41	15KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A	Yes	Yes	Yes
n66	15KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	Yes	Yes	Yes	Yes	N/A	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A

3. 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

4. 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 n40, n41, n77, n78 and n79. 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 n40, n41, n77, n78 and n79 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 n40, n41, n77, n78 and n79.				

5. 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.

6. 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.

7. 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.

8. 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.

9. 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

Note: The detailed conducted power table can refer to Appendix E.

8.1.1 Conducted Power of GSM

Note:

1）. CMW500 measures GSM peak and average output power for active timeslots. For 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

8.1.2 Conducted Power of WCDMA

Note:

1) 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.

8.1.3 Conducted Power of LTE

8.1.4 Conducted Power of Uplink LTE CA

The following conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR test exclusion. 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.
Power test equipment: Anritsu Radio Communication Analyzer MT8821C were used.

8.1.4.1 Conducted Power of Uplink LTE CA

Note:
1) This device supports uplink carrier aggregation for LTE CA_7C, CA_38C, CA_41C with a maximum of two 20MHz component carriers.
2) 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.
3) 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.
4) Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05.

8.1.4.2 Conducted Power of Downlink LTE CA

In this section, the following 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.
Power test equipment: Anritsu Radio Communication Analyzer MT8821C

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 below, so the downlink only carrier aggregation conditions for this device can be excluded from SAR testing

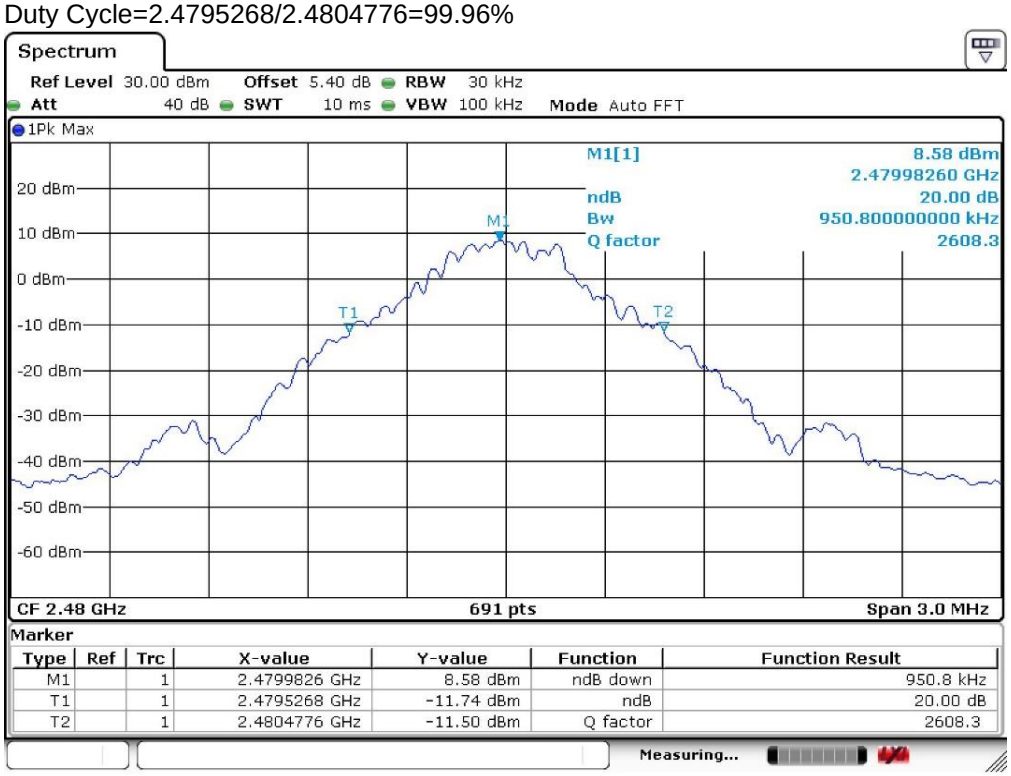
Note:
The downlink LTE CA SAR test is not required since the maximum output power for downlink LTE CA was not more than 0.25dB higher than the maximum output power for without downlink LTE CA.

8.1.5 Conducted Power of WIFI

Note:
a) Power must be measured at each transmit antenna port according to the DSSS and OFDM transmission configurations in each standalone and aggregated frequency band.
b) 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.
c) 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.

8.1.6 Conducted Power of BT

BT DH5
Duty Cycle=2.4795268/2.4804776=99.96%



Date: 4.FEB.2021 15:58:34

Note:
1)The conducted power of BT is measured with RMS detector.

8.2 Stand-alone SAR test evaluation

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and Product specific 10g SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.

Freq. Band	Frequency (GHz)	Position	Average Power		Test Separation (mm)	Calculate Value	Exclusion Threshold	Exclusion (Y/N)
			dBm	mW				
Wi-Fi	2.45	Head	17.5	56.2	0	17.6	3	N
		Body-worn	17.5	56.2	10	8.8	3	N
		hotspot	17.5	56.2	10	8.8	3	N
Wi-Fi	5	Head	17.0	50.1	0	22.4	3	N
		Body-worn	17.0	50.1	10	11.2	3	N
		hotspot	17.0	50.1	10	11.2	3	N
Bluetooth	2.48	Head	11.0	12.6	0	4.0	3	N
		Body-worn	11.0	12.6	10	2.0	3	Y
		hotspot	11.0	12.6	10	2.0	3	Y

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where
• f(GHz) is the RF channel transmit frequency in GHz
• Power and distance are rounded to the nearest mW and mm before calculation
• The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

8.3 Measurement of SAR Data

Note:

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

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

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

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

8.3.1 SAR Result of GSM850

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	GSM	190/836.6	1:8.3	0.095	-0.02	32.29	33.50	1.321	0.125	22.0
Left tilted	GSM	190/836.6	1:8.3	0.053	-0.04	32.29	33.50	1.321	0.070	22.0
Right cheek	GSM	190/836.6	1:8.3	0.102	0.08	32.29	33.50	1.321	**0.135**	22.0
Right tilted	GSM	190/836.6	1:8.3	0.045	0.04	32.29	33.50	1.321	0.059	22.0
Head Test Data at the worst case with Sample2#										
Right cheek	GSM	190/836.6	1:8.3	0.096	0.06	32.29	33.50	1.321	0.127	22.0
Body worn Test data(Separate 10mm)										
Front side	GSM	190/836.6	1:8.3	0.207	0.02	32.29	33.50	1.321	0.274	22.0
Back side	GSM	190/836.6	1:8.3	0.215	0.07	32.29	33.50	1.321	**0.284**	22.0
Body worn Test Data at the worst case with Sample2#(10mm)										
Back side	GSM	190/836.6	1:8.3	0.201	0.05	32.29	33.50	1.321	0.266	22.0
Hotspot Test data(Separate 10mm)										
Front side	GPRS 2TS	190/836.6	1:4.15	0.267	-0.05	30.19	31.00	1.205	0.322	22.0
Back side	GPRS 2TS	190/836.6	1:4.15	0.322	-0.08	30.19	31.00	1.205	**0.388**	22.0
Left side	GPRS 2TS	190/836.6	1:4.15	0.046	-0.03	30.19	31.00	1.205	0.055	22.0
Right side	GPRS 2TS	190/836.6	1:4.15	0.136	-0.02	30.19	31.00	1.205	0.164	22.0
Bottom side	GPRS 2TS	190/836.6	1:4.15	0.248	0.01	30.19	31.00	1.205	0.299	22.0
Hotspot Test Data at the worst case with Sample2#(10mm)										
Back side	GPRS 2TS	190/836.6	1:4.15	0.300	-0.01	30.19	31.00	1.205	0.362	22.0

Table 11： SAR of GSM850 for Head and Body

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8.3.2 SAR Result of GSM1900

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	GSM	661/1880	1:8.3	0.049	0.06	28.77	30.50	1.489	**0.074**	22.0
Left tilted	GSM	661/1880	1:8.3	0.032	0.04	28.77	30.50	1.489	0.047	22.0
Right cheek	GSM	661/1880	1:8.3	0.042	0.02	28.77	30.50	1.489	0.062	22.0
Right tilted	GSM	661/1880	1:8.3	0.045	0.03	28.77	30.50	1.489	0.067	22.0
Head Test Data at the worst case with Sample2#										
Left cheek	GSM	661/1880	1:8.3	0.047	0.02	28.77	30.50	1.489	0.070	22.0
Body worn Test data(Separate 10mm)										
Front side	GSM	661/1880	1:8.3	0.178	0.02	28.77	30.50	1.489	0.265	22.0
Back side	GSM	661/1880	1:8.3	0.197	0.07	28.77	30.50	1.489	**0.293**	22.0
Body worn Test Data at the worst case with Sample2#(10mm)										
Back side	GSM	661/1880	1:8.3	0.188	0.07	28.77	30.50	1.489	0.280	22.0
Hotspot Test data(Separate 10mm)										
Front side	GPRS 4TS	661/1880	1:2.075	0.194	-0.04	23.57	24.50	1.239	0.240	22.0
Back side	GPRS 4TS	661/1880	1:2.075	0.187	-0.03	23.57	24.50	1.239	0.232	22.0
Left side	GPRS 4TS	661/1880	1:2.075	0.141	-0.01	23.57	24.50	1.239	0.175	22.0
Right side	GPRS 4TS	661/1880	1:2.075	0.047	0.02	23.57	24.50	1.239	0.058	22.0
Bottom side	GPRS 4TS	661/1880	1:2.075	0.402	-0.01	23.57	24.50	1.239	**0.498**	22.0
Hotspot Test Data at the worst case with Sample2#(10mm)										
Bottom side	GPRS 4TS	661/1880	1:2.075	0.385	0.01	23.57	24.50	1.239	0.477	22.0

Table 12：SAR of GSM1900 for Head and Body.

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8.3.3 SAR Result of WCDMA Band II

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	9400/1880	1:1	0.108	0.01	23.03	24.00	1.250	**0.135**	22.0
Left tilted	RMC	9400/1880	1:1	0.068	-0.05	23.03	24.00	1.250	0.085	22.0
Right cheek	RMC	9400/1880	1:1	0.072	0.02	23.03	24.00	1.250	0.091	22.0
Right tilted	RMC	9400/1880	1:1	0.071	0.04	23.03	24.00	1.250	0.089	22.0
Head Test Data at the worst case with Sample2#										
Left cheek	RMC	9400/1880	1:1	0.093	0.02	23.03	24.00	1.250	0.116	22.0
Body worn Test data Sensor on(Separate 10mm)										
Front side	RMC	9400/1880	1:1	0.281	-0.07	21.34	22.00	1.164	0.327	22.0
Back side	RMC	9400/1880	1:1	0.298	-0.01	21.34	22.00	1.164	**0.347**	22.0
Body worn Test data Sensor off										
Front side-17mm	RMC	9400/1880	1:1	0.172	-0.05	23.03	24.00	1.250	0.215	22.0
Back side-21mm	RMC	9400/1880	1:1	0.157	0.01	23.03	24.00	1.250	0.196	22.0
Body worn Test Data at the worst case with Sample2#(10mm)										
Back side	RMC	9400/1880	1:1	0.284	0.08	21.34	22.00	1.164	0.331	22.0
Hotspot Test data Sensor on(Separate 10mm)										
Front side	RMC	9400/1880	1:1	0.281	-0.07	21.34	22.00	1.164	0.327	22.0
Back side	RMC	9400/1880	1:1	0.298	-0.01	21.34	22.00	1.164	0.347	22.0
Bottom side	RMC	9400/1880	1:1	0.809	-0.01	21.34	22.00	1.164	0.942	22.0
Bottom side	RMC	9262/1852.4	1:1	0.812	0.04	21.35	22.00	1.161	**0.943**	22.0
Bottom side-repeat	RMC	9262/1852.4	1:1	0.805	0.01	21.35	22.00	1.161	0.935	22.0
Bottom side	RMC	9538/1907.6	1:1	0.504	0.01	21.32	22.00	1.169	0.589	22.0
Hotspot Test data Sensor off										
Front side-17mm	RMC	9400/1880	1:1	0.172	-0.05	23.03	24.00	1.250	0.215	22.0
Back side-21mm	RMC	9400/1880	1:1	0.157	0.01	23.03	24.00	1.250	0.196	22.0
Left side	RMC	9400/1880	1:1	0.258	0.04	23.03	24.00	1.250	0.323	22.0
Right side	RMC	9400/1880	1:1	0.066	-0.02	23.03	24.00	1.250	0.083	22.0
Bottom side-20mm	RMC	9400/1880	1:1	0.235	0.04	23.03	24.00	1.250	0.294	22.0
Hotspot Test Data at the worst case with Sample2#(10mm)										
Bottom side	RMC	9262/1852.4	1:1	0.808	-0.06	21.35	22.00	1.161	0.938	22.0

Table 13：SAR of WCDMA Band II for Head and Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Bottom side	9262/1852.4	0.812	0.805	1.009	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 performed 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						

8.3.4 SAR Result of WCDMA Band IV

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	0.116	0.07	23.06	24.00	1.242	**0.144**	22.2
Left tilted	RMC	1412/1732.4	1:1	0.068	0.03	23.06	24.00	1.242	0.084	22.2
Right cheek	RMC	1412/1732.4	1:1	0.078	0.05	23.06	24.00	1.242	0.097	22.2
Right tilted	RMC	1412/1732.4	1:1	0.070	0.04	23.06	24.00	1.242	0.087	22.2
Head Test Data at the worst case with Sample2#										
Left cheek	RMC	1412/1732.4	1:1	0.112	0.05	23.06	24.00	1.242	0.139	22.2
Body worn Test data(Separate 10mm)										
Front side	RMC	1412/1732.4	1:1	0.348	-0.09	23.06	24.00	1.242	**0.432**	22.2
Back side	RMC	1412/1732.4	1:1	0.336	-0.01	23.06	24.00	1.242	0.417	22.2
Body worn Test Data at the worst case with Sample2#(10mm)										
Front side	RMC	1412/1732.4	1:1	0.340	-0.06	23.06	24.00	1.242	0.422	22.2
Hotspot Test data(Separate 10mm)										
Front side	RMC	1412/1732.4	1:1	0.348	-0.09	23.06	24.00	1.242	0.432	22.2
Back side	RMC	1412/1732.4	1:1	0.336	-0.01	23.06	24.00	1.242	0.417	22.2
Left side	RMC	1412/1732.4	1:1	0.338	0.03	23.06	24.00	1.242	0.420	22.2
Right side	RMC	1412/1732.4	1:1	0.084	0.05	23.06	24.00	1.242	0.104	22.2
Bottom side	RMC	1412/1732.4	1:1	0.545	-0.09	23.06	24.00	1.242	**0.677**	22.2
Hotspot Test Data at the worst case with Sample2#(10mm)										
Bottom side	RMC	1412/1732.4	1:1	0.533	-0.07	23.06	24.00	1.242	0.662	22.2

Table 14：SAR of WCDMA Band IV for Head and Body.

8.3.5 SAR Result of WCDMA Band V

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	0.092	0.08	23.86	24.00	1.033	0.095	22.0
Left tilted	RMC	4182/836.4	1:1	0.055	0.05	23.86	24.00	1.033	0.057	22.0
Right cheek	RMC	4182/836.4	1:1	0.123	-0.09	23.86	24.00	1.033	**0.127**	22.0
Right tilted	RMC	4182/836.4	1:1	0.058	0.03	23.86	24.00	1.033	0.060	22.0
Head Test Data at the worst case with Sample2#										
Right cheek	RMC	4182/836.4	1:1	0.118	-0.04	23.86	24.00	1.033	0.122	22.0
Body worn Test data(Separate 10mm)										
Front side	RMC	4182/836.4	1:1	0.263	0.05	23.86	24.50	1.159	0.305	22.0
Back side	RMC	4182/836.4	1:1	0.270	0.09	24.86	25.50	1.159	**0.313**	22.0
Body worn Test Data at the worst case with Sample2#(10mm)										
Back side	RMC	4182/836.4	1:1	0.259	0.07	23.86	24.50	1.159	0.300	22.0
Hotspot Test data(Separate 10mm)										
Front side	RMC	4182/836.4	1:1	0.263	0.05	23.86	24.50	1.159	0.305	22.0
Back side	RMC	4182/836.4	1:1	0.270	0.09	23.86	24.50	1.159	**0.313**	22.0
Left side	RMC	4182/836.4	1:1	0.045	0.04	23.86	24.50	1.159	0.052	22.0
Right side	RMC	4182/836.4	1:1	0.130	0.04	23.86	24.50	1.159	0.151	22.0
Bottom side	RMC	4182/836.4	1:1	0.234	0.02	23.86	24.50	1.159	0.271	22.0
Hotspot Test Data at the worst case with Sample2#(10mm)										
Back side	RMC	4182/836.4	1:1	0.259	0.07	23.86	24.50	1.159	0.300	22.0

Table 15：SAR of WCDMA Band V for Head and Body.

8.3.6 SAR Result of LTE Band 2

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	18700/1860	1:1	0.107	0.02	22.90	24.00	1.288	**0.138**	22.3
Left tilted	20	QPSK 1RB_0	18700/1860	1:1	0.064	0.04	22.90	24.00	1.288	0.082	22.3
Right cheek	20	QPSK 1RB_0	18700/1860	1:1	0.070	0.01	22.90	24.00	1.288	0.090	22.3
Right tilted	20	QPSK 1RB_0	18700/1860	1:1	0.065	0.03	22.90	24.00	1.288	0.084	22.3
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_0	18700/1860	1:1	0.080	0.03	21.94	23.00	1.276	0.102	22.3
Left tilted	20	QPSK 50RB_0	18700/1860	1:1	0.048	0.03	21.94	23.00	1.276	0.061	22.3
Right cheek	20	QPSK 50RB_0	18700/1860	1:1	0.059	0.01	21.94	23.00	1.276	0.075	22.3
Right tilted	20	QPSK 50RB_0	18700/1860	1:1	0.052	0.02	21.94	23.00	1.276	0.066	22.3
Head Test Data at the worst case with Sample2#											
Left cheek	20	QPSK 1RB_0	18700/1860	1:1	0.104	0.02	22.90	24.00	1.288	0.134	22.3
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	18700/1860	1:1	0.348	0.01	22.90	24.00	1.288	0.448	22.3
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.399	-0.04	22.90	24.00	1.288	**0.514**	22.3
Body worn Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	18700/1860	1:1	0.280	0.06	21.94	23.00	1.276	0.357	22.3
Back side	20	QPSK 50RB_0	18700/1860	1:1	0.390	-0.04	21.94	23.00	1.276	0.498	22.3
Body worn Test Data at the worst case with Sample2#(10mm)											
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.381	0.02	22.90	24.00	1.288	0.491	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	18700/1860	1:1	0.348	0.01	22.90	24.00	1.288	0.448	22.3
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.399	-0.04	22.90	24.00	1.288	0.514	22.3
Left side	20	QPSK 1RB_0	18700/1860	1:1	0.273	0.03	22.90	24.00	1.288	0.352	22.3
Right side	20	QPSK 1RB_0	18700/1860	1:1	0.072	0.05	22.90	24.00	1.288	0.093	22.3
Bottom side	20	QPSK 1RB_0	18700/1860	1:1	0.610	0.06	22.90	24.00	1.288	**0.786**	22.3
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	18700/1860	1:1	0.280	0.06	21.94	23.00	1.276	0.357	22.3
Back side	20	QPSK 50RB_0	18700/1860	1:1	0.390	-0.04	21.94	23.00	1.276	0.498	22.3
Left side	20	QPSK 50RB_0	18700/1860	1:1	0.222	0.02	21.94	23.00	1.276	0.283	22.3
Right side	20	QPSK 50RB_0	18700/1860	1:1	0.049	0.04	21.94	23.00	1.276	0.063	22.3
Bottom side	20	QPSK 50RB_0	18700/1860	1:1	0.491	-0.06	21.94	23.00	1.276	0.627	22.3
Hotspot Test Data at the worst case with Sample2#(10mm)											
Bottom side	20	QPSK 1RB_0	18700/1860	1:1	0.583	0.05	22.90	24.00	1.288	0.751	22.3
Simultaneous Transmission SAR Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg)1-g**	**Power Drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR(W/kg)**	**Liquid Temp.**
Body worn Test data(Separate 10mm 1RB)											
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.092	0.05	16.49	17.00	1.125	0.104	22.3
Body worn Test data (Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_0	18700/1860	1:1	0.094	0.06	16.42	17.00	1.143	0.108	22.3
Hotspot Test data(Separate 10mm 1RB)											
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.092	0.05	16.49	17.00	1.125	0.104	22.3
Hotspot Test data (Separate 10mm 50%RB)											

Back side	20	QPSK 50RB_0	18700/1860	1:1	0.094	0.06	16.42	17.00	1.143	0.108	22.3

ENDC_B2 SAR Test Record													
Ant3 Test Record													
Test position	Test mode			Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Modulation	RB Size_RB offset										
Head Test data(1RB)													
Left cheek	20	QPSK	1_50	18900/1880	1:1	0.039	0.023	-0.04	23.19	24.00	1.205	0.047	22.1
Left tilted	20	QPSK	1_50	18900/1880	1:1	0.027	0.015	0.03	23.19	24.00	1.205	0.033	22.1
Right cheek	20	QPSK	1_50	18900/1880	1:1	0.063	0.039	-0.01	23.19	24.00	1.205	**0.076**	22.1
Right tilted	20	QPSK	1_50	18900/1880	1:1	0.033	0.019	0.07	23.19	24.00	1.205	0.040	22.1
Head Test data(50%RB)													
Left cheek	20	QPSK	50_25	18900/1880	1:1	0.038	0.021	0.01	22.01	23.00	1.256	0.047	22.1
Left tilted	20	QPSK	50_25	18900/1880	1:1	0.022	0.011	-0.02	22.01	23.00	1.256	0.028	22.1
Right cheek	20	QPSK	50_25	18900/1880	1:1	0.060	0.037	0.07	22.01	23.00	1.256	0.075	22.1
Right tilted	20	QPSK	50_25	18900/1880	1:1	0.029	0.017	0.08	22.01	23.00	1.256	0.036	22.1
Head Test Data at the worst case with Sample2#													
Right cheek	20	QPSK	1_50	18900/1880	1:1	0.058	0.036	0.05	22.01	23.00	1.256	0.073	22.1
Body worn Test data(Separate 10mm 1RB)													
Front side	20	QPSK	1_50	18900/1880	1:1	0.255	0.161	0.06	23.19	24.00	1.205	0.307	22.1
Back side	20	QPSK	1_50	18900/1880	1:1	0.332	0.197	-0.01	23.19	24.00	1.205	**0.400**	22.1
Body worn Test data (Separate 10mm 50%RB)													
Front side	20	QPSK	50_25	18900/1880	1:1	0.207	0.126	0.01	22.01	23.00	1.256	0.260	22.1
Back side	20	QPSK	50_25	18900/1880	1:1	0.264	0.154	0.07	22.01	23.00	1.256	0.332	22.1
Body worn Test Data at the worst case with Sample2#(10mm)													
Back side	20	QPSK	1_50	18900/1880	1:1	0.285	0.172	-0.09	23.19	24.00	1.205	0.343	22.1
Hotspot Test data(Separate 10mm 1RB)													
Front side	20	QPSK	1_50	18900/1880	1:1	0.255	0.161	0.06	23.19	24.00	1.205	0.307	22.1
Back side	20	QPSK	1_50	18900/1880	1:1	0.332	0.197	-0.01	23.19	24.00	1.205	**0.400**	22.1
Left side	20	QPSK	1_50	18900/1880	1:1	0.044	0.027	-0.07	23.19	24.00	1.205	0.053	22.1
Right side	20	QPSK	1_50	18900/1880	1:1	0.223	0.109	0.01	23.19	24.00	1.205	0.269	22.1
Bottom side	20	QPSK	1_50	18900/1880	1:1	0.243	0.144	0.06	23.19	24.00	1.205	0.293	22.1
Hotspot Test data (Separate 10mm 50%RB)													
Front side	20	QPSK	50_25	18900/1880	1:1	0.207	0.126	0.01	22.01	23.00	1.256	0.260	22.1
Back side	20	QPSK	50_25	18900/1880	1:1	0.264	0.154	0.07	22.01	23.00	1.256	0.332	22.1
Left side	20	QPSK	50_25	18900/1880	1:1	0.032	0.021	0.03	22.01	23.00	1.256	0.040	22.1
Right side	20	QPSK	50_25	18900/1880	1:1	0.162	0.079	-0.08	22.01	23.00	1.256	0.203	22.1
Bottom side	20	QPSK	50_25	18900/1880	1:1	0.154	0.092	0.01	22.01	23.00	1.256	0.193	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)													
Back side	20	QPSK	1_50	18900/1880	1:1	0.285	0.172	-0.09	23.19	24.00	1.205	0.343	22.1

Table 16：SAR of LTE Band 2 for Head and Body.

8.3.7 SAR Result of LTE Band 4

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_99	20300/1745	1:1	0.103	0.01	23.19	24.00	1.205	**0.124**	22.2
Left tilted	20	QPSK 1RB_99	20300/1745	1:1	0.057	0.03	23.19	24.00	1.205	0.069	22.2
Right cheek	20	QPSK 1RB_99	20300/1745	1:1	0.069	-0.02	23.19	24.00	1.205	0.083	22.2
Right tilted	20	QPSK 1RB_99	20300/1745	1:1	0.060	-0.01	23.19	24.00	1.205	0.072	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	20300/1745	1:1	0.073	0.02	22.13	23.00	1.222	0.090	22.2
Left tilted	20	QPSK 50RB_25	20300/1745	1:1	0.045	0.01	22.13	23.00	1.222	0.055	22.2
Right cheek	20	QPSK 50RB_25	20300/1745	1:1	0.057	-0.01	22.13	23.00	1.222	0.070	22.2
Right tilted	20	QPSK 50RB_25	20300/1745	1:1	0.050	0.02	22.13	23.00	1.222	0.061	22.2
Head Test Data at the worst case with Sample2#											
Left cheek	20	QPSK 1RB_99	20300/1745	1:1	0.099	0.01	23.19	24.00	1.205	0.120	22.2
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	20300/1745	1:1	0.376	0.02	23.19	24.00	1.205	0.453	22.2
Back side	20	QPSK 1RB_99	20300/1745	1:1	0.398	0.01	23.19	24.00	1.205	**0.480**	22.2
Body worn Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	20300/1745	1:1	0.307	0.03	22.13	23.00	1.222	0.375	22.2
Back side	20	QPSK 50RB_25	20300/1745	1:1	0.316	0.02	22.13	23.00	1.222	0.386	22.2
Body worn Test Data at the worst case with Sample2#(10mm)											
Back side	20	QPSK 1RB_99	20300/1745	1:1	0.383	0.02	23.19	24.00	1.205	0.462	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	20300/1745	1:1	0.376	0.02	23.19	24.00	1.205	0.453	22.2
Back side	20	QPSK 1RB_99	20300/1745	1:1	0.398	0.01	23.19	24.00	1.205	0.480	22.2
Left side	20	QPSK 1RB_99	20300/1745	1:1	0.305	0.03	23.19	24.00	1.205	0.368	22.2
Right side	20	QPSK 1RB_99	20300/1745	1:1	0.080	0.01	23.19	24.00	1.205	0.096	22.2
Bottom side	20	QPSK 1RB_99	20300/1745	1:1	0.578	-0.04	23.19	24.00	1.205	**0.697**	22.2
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	20300/1745	1:1	0.307	0.03	22.13	23.00	1.222	0.375	22.2
Back side	20	QPSK 50RB_25	20300/1745	1:1	0.316	0.02	22.13	23.00	1.222	0.386	22.2
Left side	20	QPSK 50RB_25	20300/1745	1:1	0.251	0.01	22.13	23.00	1.222	0.307	22.2
Right side	20	QPSK 50RB_25	20300/1745	1:1	0.068	0.02	22.13	23.00	1.222	0.083	22.2
Bottom side	20	QPSK 50RB_25	20300/1745	1:1	0.434	-0.03	22.13	23.00	1.222	0.530	22.2
Hotspot Test Data at the worst case with Sample2#(10mm)											
Bottom side	20	QPSK 1RB_99	20300/1745	1:1	0.556	-0.03	23.19	24.00	1.205	0.670	22.2

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ENDC_B4 SAR Test Record													
Ant3 Test Record													
Test position	Test mode			Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Modulation	RB Size_RB offset										
Head Test data(1RB)													
Left cheek	20	QPSK	1_0	20175/1732.5	1:1	0.055	0.036	0.08	23.35	24.00	1.161	0.064	22.1
Left tilted	20	QPSK	1_0	20175/1732.5	1:1	0.052	0.032	-0.03	23.35	24.00	1.161	0.060	22.1
Right cheek	20	QPSK	1_0	20175/1732.5	1:1	0.098	0.062	0.09	23.35	24.00	1.161	**0.114**	22.1
Right tilted	20	QPSK	1_0	20175/1732.5	1:1	0.053	0.034	0.02	23.35	24.00	1.161	0.062	22.1
Head Test data(50%RB)													
Left cheek	20	QPSK	50_50	20175/1732.5	1:1	0.058	0.037	0.04	21.96	23.00	1.271	0.074	22.1
Left tilted	20	QPSK	50_50	20175/1732.5	1:1	0.044	0.027	-0.03	21.96	23.00	1.271	0.056	22.1
Right cheek	20	QPSK	50_50	20175/1732.5	1:1	0.061	0.040	0.07	21.96	23.00	1.271	0.078	22.1
Right tilted	20	QPSK	50_50	20175/1732.5	1:1	0.044	0.028	0.05	21.96	23.00	1.271	0.056	22.1
Head Test Data at the worst case with Sample2#													
Right cheek	20	QPSK	1_0	20175/1732.5	1:1	0.097	0.061	-0.04	23.35	24.00	1.161	0.113	22.1
Body worn Test data(Separate 10mm 1RB)													
Front side	20	QPSK	1_0	20175/1732.5	1:1	0.324	0.199	-0.04	23.35	24.00	1.161	0.376	22.1
Back side	20	QPSK	1_0	20175/1732.5	1:1	0.450	0.279	0.09	23.35	24.00	1.161	**0.523**	22.1
Body worn Test data (Separate 10mm 50%RB)													
Front side	20	QPSK	50_50	20175/1732.5	1:1	0.268	0.167	0.03	21.96	23.00	1.271	0.341	22.1
Back side	20	QPSK	50_50	20175/1732.5	1:1	0.320	0.200	0.08	21.96	23.00	1.271	0.407	22.1
Body worn Test Data at the worst case with Sample2#(10mm)													
Back side	20	QPSK	1_0	20175/1732.5	1:1	0.348	0.220	0.06	23.35	24.00	1.161	0.404	22.1
Hotspot Test data(Separate 10mm 1RB)													
Front side	20	QPSK	1_0	20175/1732.5	1:1	0.324	0.199	-0.04	23.35	24.00	1.161	0.376	22.1
Back side	20	QPSK	1_0	20175/1732.5	1:1	0.450	0.279	0.09	23.35	24.00	1.161	**0.523**	22.1
Left side	20	QPSK	1_0	20175/1732.5	1:1	0.042	0.027	-0.02	23.35	24.00	1.161	0.049	22.1
Right side	20	QPSK	1_0	20175/1732.5	1:1	0.241	0.120	0.01	23.35	24.00	1.161	0.280	22.1
Bottom side	20	QPSK	1_0	20175/1732.5	1:1	0.134	0.083	0.07	23.35	24.00	1.161	0.156	22.1
Hotspot Test data (Separate 10mm 50%RB)													
Front side	20	QPSK	50_50	20175/1732.5	1:1	0.268	0.167	0.03	21.96	23.00	1.271	0.341	22.1
Back side	20	QPSK	50_50	20175/1732.5	1:1	0.320	0.200	0.08	21.96	23.00	1.271	0.407	22.1
Left side	20	QPSK	50_50	20175/1732.5	1:1	0.031	0.016	-0.05	21.96	23.00	1.271	0.039	22.1
Right side	20	QPSK	50_50	20175/1732.5	1:1	0.215	0.106	0.02	21.96	23.00	1.271	0.273	22.1
Bottom side	20	QPSK	50_50	20175/1732.5	1:1	0.123	0.073	0.04	21.96	23.00	1.271	0.156	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)													
Back side	20	QPSK	1_0	20175/1732.5	1:1	0.348	0.220	0.06	23.35	24.00	1.161	0.404	22.1

Table 17：SAR of LTE Band 4 for Head and Body.

8.3.8 SAR Result of LTE Band 5

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data(1RB)											
Left cheek	10	QPSK 1RB_49	20600/844	1:1	0.073	0.05	23.74	24.00	1.062	0.077	22.1
Left tilted	10	QPSK 1RB_49	20600/844	1:1	0.064	0.04	23.74	24.00	1.062	0.068	22.1
Right cheek	10	QPSK 1RB_49	20600/844	1:1	0.084	-0.06	23.74	24.00	1.062	**0.089**	22.1
Right tilted	10	QPSK 1RB_49	20600/844	1:1	0.069	-0.03	23.74	24.00	1.062	0.073	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25RB_0	20600/844	1:1	0.060	0.08	22.79	23.00	1.050	0.063	22.1
Left tilted	10	QPSK 25RB_0	20600/844	1:1	0.054	0.04	22.79	23.00	1.050	0.057	22.1
Right cheek	10	QPSK 25RB_0	20600/844	1:1	0.071	0.07	22.79	23.00	1.050	0.074	22.1
Right tilted	10	QPSK 25RB_0	20600/844	1:1	0.057	0.05	22.79	23.00	1.050	0.060	22.1
Head Test Data at the worst case with Sample2#											
Left cheek	10	QPSK 1RB_0	20525/836.5	1:1	0.080	-0.03	23.74	24.00	1.062	0.085	22.1
Body worn Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_49	20600/844	1:1	0.253	0.05	23.74	24.00	1.062	**0.269**	22.1
Back side	10	QPSK 1RB_49	20600/844	1:1	0.235	0.03	23.74	24.00	1.062	0.249	22.1
Body worn Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25RB_0	20600/844	1:1	0.198	0.03	22.79	23.00	1.050	0.208	22.1
Back side	10	QPSK 25RB_0	20600/844	1:1	0.206	0.05	22.79	23.00	1.050	0.216	22.1
Body worn Test Data at the worst case with Sample2#(10mm)											
Front side	10	QPSK 1RB_49	20600/844	1:1	0.239	0.03	23.74	24.00	1.062	0.254	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_49	20600/844	1:1	0.253	0.05	23.74	24.00	1.062	**0.269**	22.1
Back side	10	QPSK 1RB_49	20600/844	1:1	0.235	0.03	23.74	24.00	1.062	0.249	22.1
Left side	10	QPSK 1RB_49	20600/844	1:1	0.047	0.02	23.74	24.00	1.062	0.050	22.1
Right side	10	QPSK 1RB_49	20600/844	1:1	0.124	0.04	23.74	24.00	1.062	0.132	22.1
Bottom side	10	QPSK 1RB_49	20600/844	1:1	0.215	0.01	23.74	24.00	1.062	0.228	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25RB_0	20600/844	1:1	0.198	0.03	22.79	23.00	1.050	0.208	22.1
Back side	10	QPSK 25RB_0	20600/844	1:1	0.206	0.05	22.79	23.00	1.050	0.216	22.1
Left side	10	QPSK 25RB_0	20600/844	1:1	0.010	0.05	22.79	23.00	1.050	0.010	22.1
Right side	10	QPSK 25RB_0	20600/844	1:1	0.099	0.02	22.79	23.00	1.050	0.104	22.1
Bottom side	10	QPSK 25RB_0	20600/844	1:1	0.177	0.04	22.79	23.00	1.050	0.186	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)											
Front side	10	QPSK 1RB_49	20600/844	1:1	0.239	0.03	23.74	24.00	1.062	0.254	22.1
Simultaneous Transmission SAR Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg)1-g**	**Power Drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR(W/kg)**	**Liquid Temp.**
Body worn Test data(Separate 10mm 1RB)											
Back side	10	QPSK 1RB_49	20600/844	1:1	0.070	0.04	16.60	17.00	1.096	0.077	22.1
Body worn Test data (Separate 10mm 50%RB)											
Back side	10	QPSK 25RB_0	20600/844	1:1	0.071	0.04	16.55	17.00	1.109	0.078	22.1

Table 18： SAR of LTE Band 5 for Head and Body.

8.3.9 SAR Result of LTE Band 7

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_99	21350/2560	1:1	0.175	0.02	22.77	24.00	1.327	**0.232**	22.1
Left cheek	20	PCC 1_0	21350/2560	1:1	0.145	0.068	22.65	24.00	1.365	0.198	22.1
		SCC 1_99	21152/2540								
Left tilted	20	QPSK 1RB_99	21350/2560	1:1	0.063	0.04	22.77	24.00	1.327	0.084	22.1
Right cheek	20	QPSK 1RB_99	21350/2560	1:1	0.112	0.01	22.77	24.00	1.327	0.149	22.1
Right tilted	20	QPSK 1RB_99	21350/2560	1:1	0.097	0.02	22.77	24.00	1.327	0.129	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_50	21350/2560	1:1	0.123	0.02	21.85	23.00	1.303	0.160	22.1
Left tilted	20	QPSK 50RB_50	21350/2560	1:1	0.047	0.01	21.85	23.00	1.303	0.061	22.1
Right cheek	20	QPSK 50RB_50	21350/2560	1:1	0.084	0.03	21.85	23.00	1.303	0.109	22.1
Right tilted	20	QPSK 50RB_50	21350/2560	1:1	0.072	0.04	21.85	23.00	1.303	0.094	22.1
Head Test Data at the worst case with Sample2#											
Left cheek	20	QPSK 1RB_99	21350/2560	1:1	0.172	0.03	22.77	24.00	1.327	0.228	22.1
Body worn Test data Sensor on(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	21350/2560	1:1	0.109	0.09	15.53	16.00	1.114	0.121	22.1
Back side	20	QPSK 1RB_99	21350/2560	1:1	0.116	0.09	15.53	16.00	1.114	0.129	22.1
Body worn Test data Sensor on(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_50	21350/2560	1:1	0.105	0.01	15.01	16.00	1.256	0.132	22.1
Back side	20	QPSK 50RB_50	21350/2560	1:1	0.110	0.07	15.01	16.00	1.256	0.138	22.1
Body worn Test data Sensor off(1RB)											
Front side-17mm	20	QPSK 1RB_99	21350/2560	1:1	0.369	0.09	22.77	24.00	1.327	**0.490**	22.1
Front side-17mm	20	PCC 1_0	21350/2560	1:1	0.345	0.085	22.65	24.00	1.365	0.471	22.1
		SCC 1_99	21152/2540								
Back side-21mm	20	QPSK 1RB_99	21350/2560	1:1	0.260	0.09	22.77	24.00	1.327	0.345	22.1
Body worn Test data Sensor off(50%RB)											
Front side-17mm	20	QPSK 50RB_50	21350/2560	1:1	0.339	-0.06	21.85	23.00	1.303	0.442	22.1
Back side-21mm	20	QPSK 50RB_50	21350/2560	1:1	0.217	0.03	21.85	23.00	1.303	0.283	22.1
Body worn Test Data at the worst case with Sample2#(10mm)											
Front side-17mm	20	QPSK 1RB_99	21350/2560	1:1	0.345	0.02	15.53	16.00	1.114	0.384	22.1
Hotspot Test data Sensor on(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	21350/2560	1:1	0.109	0.09	15.53	16.00	1.114	0.121	22.1
Back side	20	QPSK 1RB_99	21350/2560	1:1	0.116	0.09	15.53	16.00	1.114	0.129	22.1
Bottom side	20	QPSK 1RB_99	21350/2560	1:1	0.111	0.05	15.53	16.00	1.114	0.124	22.1
Hotspot Test data Sensor on(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_50	21350/2560	1:1	0.105	0.01	15.01	16.00	1.256	0.132	22.1
Back side	20	QPSK 50RB_50	21350/2560	1:1	0.110	0.07	15.01	16.00	1.256	0.138	22.1
Bottom side	20	QPSK 50RB_50	21350/2560	1:1	0.135	-0.06	15.01	16.00	1.256	0.170	22.1
Hotspot Test data Sensor off(1RB)											
Front side-17mm	20	QPSK 1RB_99	21350/2560	1:1	0.369	0.09	22.77	24.00	1.327	**0.490**	22.1

Front side-17mm	20	PCC 1_0 SCC 1_99	21350/2560 21152/2540	1:1	0.345	0.085	22.65	24.00	1.365	0.471	22.1
Back side-21mm	20	QPSK 1RB_99	21350/2560	1:1	0.260	0.09	22.77	24.00	1.327	0.345	22.1
Left side	20	QPSK 1RB_99	21350/2560	1:1	0.289	0.00	22.77	24.00	1.327	0.384	22.1
Right side	20	QPSK 1RB_99	21350/2560	1:1	0.088	0.02	22.77	24.00	1.327	0.117	22.1
Bottom side-20mm	20	QPSK 1RB_99	21350/2560	1:1	0.280	-0.04	22.77	24.00	1.327	0.372	22.1
Hotspot Test data Sensor off(50%RB)											
Front side-17mm	20	QPSK 50RB_50	21350/2560	1:1	0.339	-0.06	21.85	23.00	1.303	0.442	22.1
Back side-21mm	20	QPSK 50RB_50	21350/2560	1:1	0.217	0.03	21.85	23.00	1.303	0.283	22.1
Left side	20	QPSK 50RB_50	21350/2560	1:1	0.234	-0.03	21.85	23.00	1.303	0.305	22.1
Right side	20	QPSK 50RB_50	21350/2560	1:1	0.083	0.01	21.85	23.00	1.303	0.108	22.1
Bottom side-20mm	20	QPSK 50RB_50	21350/2560	1:1	0.254	-0.04	21.85	23.00	1.303	0.331	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)											
Front side-17mm	20	QPSK 1RB_99	21350/2560	1:1	0.345	0.02	15.53	16.00	1.114	0.384	22.1

ENDC_B7 SAR Test Record

Ant3 Test Record

Test position	Test mode			Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Modulation	RB Size_RB offset										
Head Test data(1RB)													
Left cheek	20	QPSK	1_99	21100/2535	1:1	0.019	0.009	0.08	23.12	24.00	1.225	0.024	22.1
Left tilted	20	QPSK	1_99	21100/2535	1:1	0.023	0.012	0.08	23.12	24.00	1.225	0.029	22.1
Right cheek	20	QPSK	1_99	21100/2535	1:1	0.030	0.015	0.06	23.12	24.00	1.225	**0.037**	22.1
Right tilted	20	QPSK	1_99	21100/2535	1:1	0.015	0.008	0.08	23.12	24.00	1.225	0.018	22.1
Head Test data(50%RB)													
Left cheek	20	QPSK	50_50	21100/2535	1:1	0.017	0.008	0.07	22.09	23.00	1.233	0.021	22.1
Left tilted	20	QPSK	50_50	21100/2535	1:1	0.023	0.011	0.01	22.09	23.00	1.233	0.028	22.1
Right cheek	20	QPSK	50_50	21100/2535	1:1	0.027	0.014	0.02	22.09	23.00	1.233	0.034	22.1
Right tilted	20	QPSK	50_50	21100/2535	1:1	0.014	0.008	0.01	22.09	23.00	1.233	0.018	22.1
Head Test Data at the worst case with Sample2#													
Right cheek	20	QPSK	1_99	21100/2535	1:1	0.028	0.015	-0.03	23.12	24.00	1.225	0.035	22.1
Body worn Test data(Separate 10mm 1RB)													
Front side	20	QPSK	1_99	21100/2535	1:1	0.504	0.246	0.02	23.12	24.00	1.225	0.617	22.1
Back side	20	QPSK	1_99	21100/2535	1:1	0.516	0.256	-0.05	23.12	24.00	1.225	**0.632**	22.1
Body worn Test data (Separate 10mm 50%RB)													
Front side	20	QPSK	50_50	21100/2535	1:1	0.416	0.201	0.08	22.09	23.00	1.233	0.513	22.1
Back side	20	QPSK	50_50	21100/2535	1:1	0.456	0.219	-0.01	22.09	23.00	1.233	0.562	22.1
Body worn Test Data at the worst case with Sample2#(10mm)													
Back side	20	QPSK	1_99	21100/2535	1:1	0.502	0.249	-0.10	23.12	24.00	1.225	0.615	22.1
Hotspot Test data(Separate 10mm 1RB)													
Front side	20	QPSK	1_99	21100/2535	1:1	0.504	0.246	0.08	23.12	24.00	1.225	0.617	22.1
Back side	20	QPSK	1_99	21100/2535	1:1	0.516	0.256	-0.05	23.12	24.00	1.225	**0.632**	22.1
Left side	20	QPSK	1_99	21100/2535	1:1	0.043	0.025	-0.01	23.12	24.00	1.225	0.053	22.1

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Right side	20	QPSK	1_99	21100/2535	1:1	0.219	0.114	0.07	23.12	24.00	1.225	0.268	22.1
Bottom side	20	QPSK	1_99	21100/2535	1:1	0.314	0.149	0.03	23.12	24.00	1.225	0.385	22.1
Hotspot Test data (Separate 10mm 50%RB)													
Front side	20	QPSK	50_50	21100/2535	1:1	0.416	0.201	0.04	22.09	23.00	1.233	0.513	22.1
Back side	20	QPSK	50_50	21100/2535	1:1	0.456	0.219	0.02	22.09	23.00	1.233	0.562	22.1
Left side	20	QPSK	50_50	21100/2535	1:1	0.033	0.010	-0.03	22.09	23.00	1.233	0.041	22.1
Right side	20	QPSK	50_50	21100/2535	1:1	0.180	0.091	0.06	22.09	23.00	1.233	0.222	22.1
Bottom side	20	QPSK	50_50	21100/2535	1:1	0.308	0.151	-0.04	22.09	23.00	1.233	0.380	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)													
Back side	20	QPSK	1_99	21100/2535	1:1	0.422	0.213	-0.08	23.12	24.00	1.225	0.517	22.1
Simultaneous Transmission SAR Test Record													
Ant3 Test Record													
Test position	**Test mode**			**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
	BW.	**Modulation**	**RB Size_RB offset**										
Body worn Test data(Separate 10mm 1RB)													
Back side	20	QPSK	1_99	21100/2535	1:1	0.161	0.078	-0.07	16.20	17.00	1.202	0.194	22.1
Body worn Test data (Separate 10mm 50%RB)													
Back side	20	QPSK	50_50	21100/2535	1:1	0.139	0.068	0.01	16.10	17.00	1.230	0.171	22.1

Table 19：SAR of LTE Band 7 for Head and Body.

8.3.10SAR Result of LTE Band 12

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data(1RB)											
Left cheek	10	QPSK 1RB_49	23060/704	1:1	0.069	0.02	23.66	24.00	1.081	0.075	22.1
Left tilted	10	QPSK 1RB_49	23060/704	1:1	0.001	0.02	23.66	24.00	1.081	0.001	22.1
Right cheek	10	QPSK 1RB_49	23060/704	1:1	0.091	0.04	23.66	24.00	1.081	**0.099**	22.1
Right tilted	10	QPSK 1RB_49	23060/704	1:1	0.049	0.03	23.66	24.00	1.081	0.053	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25RB_25	23060/704	1:1	0.059	0.03	22.53	23.00	1.114	0.066	22.1
Left tilted	10	QPSK 25RB_25	23060/704	1:1	0.001	0.02	22.53	23.00	1.114	0.001	22.1
Right cheek	10	QPSK 25RB_25	23060/704	1:1	0.070	0.02	22.53	23.00	1.114	0.078	22.1
Right tilted	10	QPSK 25RB_25	23060/704	1:1	0.003	0.02	22.53	23.00	1.114	0.003	22.1
Head Test Data at the worst case with Sample2#											
Right cheek	10	QPSK 1RB_49	23060/704	1:1	0.086	0.04	23.66	24.00	1.081	0.093	22.1
Body worn Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_49	23060/704	1:1	0.108	0.01	23.66	24.00	1.081	0.117	22.1
Back side	10	QPSK 1RB_49	23060/704	1:1	0.123	0.08	23.66	24.00	1.081	**0.133**	22.1
Body worn Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25RB_25	23060/704	1:1	0.087	0.02	22.53	23.00	1.114	0.096	22.1
Back side	10	QPSK 25RB_25	23060/704	1:1	0.117	0.05	22.53	23.00	1.114	0.130	22.1
Body worn Test Data at the worst case with Sample2#(10mm)											
Back side	10	QPSK 1RB_25	23130/711	1:1	0.120	0.05	23.66	24.00	1.081	0.130	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_49	23060/704	1:1	0.108	0.01	23.66	24.00	1.081	0.117	22.1
Back side	10	QPSK 1RB_49	23060/704	1:1	0.123	0.08	23.66	24.00	1.081	0.133	22.1
Left side	10	QPSK 1RB_49	23060/704	1:1	0.088	0.04	23.66	24.00	1.081	0.095	22.1
Right side	10	QPSK 1RB_49	23060/704	1:1	0.177	-0.02	23.66	24.00	1.081	**0.191**	22.1
Bottom side	10	QPSK 1RB_49	23060/704	1:1	0.126	0.03	23.66	24.00	1.081	0.136	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25RB_25	23060/704	1:1	0.087	0.02	22.53	23.00	1.114	0.096	22.1
Back side	10	QPSK 25RB_25	23060/704	1:1	0.117	0.05	22.53	23.00	1.114	0.130	22.1
Left side	10	QPSK 25RB_25	23060/704	1:1	0.073	0.01	22.53	23.00	1.114	0.081	22.1
Right side	10	QPSK 25RB_25	23060/704	1:1	0.131	-0.04	22.53	23.00	1.114	0.146	22.1
Bottom side	10	QPSK 25RB_25	23060/704	1:1	0.105	0.02	22.53	23.00	1.114	0.117	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)											
Right side	10	QPSK 1RB_49	23060/704	1:1	0.169	-0.03	23.66	24.00	1.081	0.183	22.1
Simultaneous Transmission SAR Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg)1-g**	**Power Drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR(W/kg)**	**Liquid Temp.**
Body worn Test data(Separate 10mm 1RB)											
Back side	10	QPSK 1RB_49	23060/704	1:1	0.035	0.02	16.92	17.00	1.019	0.036	22.1
Body worn Test data (Separate 10mm 50%RB)											
Back side	10	QPSK 25RB_25	23060/704	1:1	0.033	0.02	16.80	17.00	1.047	0.035	22.1

Table 20：SAR of LTE Band 12 for Head and Body.

8.3.11 SAR Result of LTE Band 38

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data(1RB)											
Left cheek	20	QPSK 1_0	37850/2580	1:1	0.098	0.08	22.70	24.00	1.349	**0.132**	22.2
Left cheek	20	PCC 1_99	37850/2580	1:1	0.060	0.03	22.59	24.00	1.384	0.083	22.2
		SCC 1_0	38048/2599.8								
Left tilted	20	QPSK 1_0	37850/2580	1:1	0.045	0.03	22.70	24.00	1.349	0.061	22.2
Right cheek	20	QPSK 1_0	37850/2580	1:1	0.071	0.02	22.70	24.00	1.349	0.096	22.2
Right tilted	20	QPSK 1_0	37850/2580	1:1	0.074	0.04	22.70	24.00	1.349	0.100	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_0	37850/2580	1:1	0.089	0.05	21.83	23.00	1.309	0.117	22.2
Left tilted	20	QPSK 50RB_0	37850/2580	1:1	0.032	0.04	21.83	23.00	1.309	0.042	22.2
Right cheek	20	QPSK 50RB_0	37850/2580	1:1	0.060	0.01	21.83	23.00	1.309	0.079	22.2
Right tilted	20	QPSK 50RB_0	37850/2580	1:1	0.059	0.03	21.83	23.00	1.309	0.077	22.2
Head Test Data at the worst case with Sample2#											
Left cheek	20	QPSK 1_0	37850/2580	1:1	0.096	0.08	22.70	24.00	1.349	0.129	22.2
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	37850/2580	1:1	0.395	0.03	22.70	24.00	1.349	0.533	22.2
Back side	20	QPSK 1_0	37850/2580	1:1	0.462	0.01	22.70	24.00	1.349	**0.623**	22.2
Back side	20	PCC 1_99	37850/2580	1:1	0.426	0.03	22.59	24.00	1.384	0.589	22.2
		SCC 1_0	38048/2599.8								
Body worn Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	37850/2580	1:1	0.314	-0.02	21.83	23.00	1.309	0.411	22.2
Back side	20	QPSK 50RB_0	37850/2580	1:1	0.376	-0.01	21.83	23.00	1.309	0.492	22.2
Body worn Test Data at the worst case with Sample2#(10mm)											
Back side	20	QPSK 1_0	37850/2580	1:1	0.455	-0.02	22.70	24.00	1.349	0.614	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	37850/2580	1:1	0.395	0.03	22.70	24.00	1.349	0.533	22.2
Back side	20	QPSK 1_0	37850/2580	1:1	0.462	0.01	22.70	24.00	1.349	**0.623**	22.2
Back side	20	PCC 1_99	37850/2580	1:1	0.426	0.03	22.59	24.00	1.384	0.589	22.2
		SCC 1_0	38048/2599.8								
Left side	20	QPSK 1_0	37850/2580	1:1	0.192	0.01	22.70	24.00	1.349	0.259	22.2
Right side	20	QPSK 1_0	37850/2580	1:1	0.060	0.05	22.70	24.00	1.349	0.081	22.2
Bottom side	20	QPSK 1_0	37850/2580	1:1	0.314	-0.02	22.70	24.00	1.349	0.424	22.2
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	37850/2580	1:1	0.314	-0.02	21.83	23.00	1.309	0.411	22.2
Back side	20	QPSK 50RB_0	37850/2580	1:1	0.376	-0.01	21.83	23.00	1.309	0.492	22.2
Left side	20	QPSK 50RB_0	37850/2580	1:1	0.156	0.02	21.83	23.00	1.309	0.204	22.2
Right side	20	QPSK 50RB_0	37850/2580	1:1	0.049	-0.01	21.83	23.00	1.309	0.064	22.2
Bottom side	20	QPSK 50RB_0	37850/2580	1:1	0.280	-0.02	21.83	23.00	1.309	0.367	22.2
Hotspot Test Data at the worst case with Sample2#(10mm)											
Back side	20	QPSK 1_0	37850/2580	1:1	0.455	-0.02	22.70	24.00	1.349	0.614	22.2

Table 21： SAR of LTE Band 38 for Head and Body.

8.3.12 SAR Result of LTE Band 41

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data(1RB)											
Left cheek	20	QPSK 1_0	39750/2506	1:1	0.079	0.09	22.86	24.00	1.300	**0.103**	22.2
Left cheek	20	PCC 1_99	39750/2506	1:1	0.059	0.030	22.81	24.00	1.315	0.078	22.2
		SCC 1_0	39948/2525.8								
Left tilted	20	QPSK 1_0	39750/2506	1:1	0.047	0.01	22.86	24.00	1.300	0.061	22.2
Right cheek	20	QPSK 1_0	39750/2506	1:1	0.071	0.03	22.86	24.00	1.300	0.092	22.2
Right tilted	20	QPSK 1_0	39750/2506	1:1	0.075	0.01	22.86	24.00	1.300	0.098	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_0	39750/2506	1:1	0.067	0.02	22.11	23.00	1.227	0.082	22.2
Left tilted	20	QPSK 50RB_0	39750/2506	1:1	0.031	0.04	22.11	23.00	1.227	0.038	22.2
Right cheek	20	QPSK 50RB_0	39750/2506	1:1	0.059	0.01	22.11	23.00	1.227	0.072	22.2
Right tilted	20	QPSK 50RB_0	39750/2506	1:1	0.058	0.03	22.11	23.00	1.227	0.071	22.2
Head Test Data at the worst case with Sample2#											
Left cheek	20	QPSK 1_0	39750/2506	1:1	0.077	0.05	22.86	24.00	1.300	0.100	22.2
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	39750/2506	1:1	0.338	0.07	22.86	24.00	1.300	0.439	22.2
Back side	20	QPSK 1_0	39750/2506	1:1	0.378	-0.08	22.86	24.00	1.300	**0.491**	22.2
Back side	20	PCC 1_99	39750/2506	1:1	0.351	0.03	22.81	24.00	1.315	0.462	22.2
		SCC 1_0	39948/2525.8								
Body worn Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	39750/2506	1:1	0.314	0.04	22.11	23.00	1.227	0.385	22.2
Back side	20	QPSK 50RB_0	39750/2506	1:1	0.326	0.07	22.11	23.00	1.227	0.400	22.2
Body worn Test Data at the worst case with Sample2#(10mm)											
Back side	20	QPSK 1_0	39750/2506	1:1	0.370	-0.06	22.86	24.00	1.300	0.481	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	39750/2506	1:1	0.338	0.07	22.86	24.00	1.300	0.439	22.2
Back side	20	QPSK 1_0	39750/2506	1:1	0.378	-0.08	22.86	24.00	1.300	**0.491**	22.2
Back side	20	PCC 1_99	39750/2506	1:1	0.351	0.03	22.81	24.00	1.315	0.462	22.2
		SCC 1_0	39948/2525.8								
Left side	20	QPSK 1_0	39750/2506	1:1	0.187	0.05	22.86	24.00	1.300	0.243	22.2
Right side	20	QPSK 1_0	39750/2506	1:1	0.059	0.05	22.86	24.00	1.300	0.077	22.2
Bottom side	20	QPSK 1_0	39750/2506	1:1	0.323	0.04	22.86	24.00	1.300	0.420	22.2
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	39750/2506	1:1	0.314	0.04	22.11	23.00	1.227	0.385	22.2
Back side	20	QPSK 50RB_0	39750/2506	1:1	0.326	0.07	22.11	23.00	1.227	0.400	22.2
Left side	20	QPSK 50RB_0	39750/2506	1:1	0.155	0.05	22.11	23.00	1.227	0.190	22.2
Right side	20	QPSK 50RB_0	39750/2506	1:1	0.047	0.01	22.11	23.00	1.227	0.058	22.2
Bottom side	20	QPSK 50RB_0	39750/2506	1:1	0.260	0.02	22.11	23.00	1.227	0.319	22.2
Hotspot Test Data at the worst case with Sample2#(10mm)											
Back side	20	QPSK 1_0	39750/2506	1:1	0.370	-0.06	22.86	24.00	1.300	0.481	22.2

Table 22： SAR of LTE Band 41 for Head and Body.

8.3.13 SAR Result of LTE Band 66

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_99	132572/1770	1:1	0.159	-0.06	23.64	24.50	1.219	**0.194**	22.2
Left tilted	20	QPSK 1RB_99	132572/1770	1:1	0.054	-0.04	23.64	24.50	1.219	0.066	22.2
Right cheek	20	QPSK 1RB_99	132572/1770	1:1	0.069	0.01	23.64	24.50	1.219	0.084	22.2
Right tilted	20	QPSK 1RB_99	132572/1770	1:1	0.060	-0.02	23.64	24.50	1.219	0.073	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_0	132572/1770	1:1	0.125	0.01	22.62	23.00	1.091	0.136	22.2
Left tilted	20	QPSK 50RB_0	132572/1770	1:1	0.044	0.04	22.62	23.00	1.091	0.048	22.2
Right cheek	20	QPSK 50RB_0	132572/1770	1:1	0.054	0.03	22.62	23.00	1.091	0.059	22.2
Right tilted	20	QPSK 50RB_0	132572/1770	1:1	0.047	0.04	22.62	23.00	1.091	0.051	22.2
Head Test Data at the worst case with Sample2#											
Left cheek	20	QPSK 1RB_99	132572/1770	1:1	0.152	-0.01	23.64	24.50	1.219	0.185	22.2
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	132572/1770	1:1	0.337	-0.04	23.64	24.50	1.219	0.411	22.2
Back side	20	QPSK 1RB_99	132572/1770	1:1	0.372	-0.09	23.64	24.50	1.219	**0.453**	22.2
Body worn Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	132572/1770	1:1	0.313	-0.02	22.62	23.00	1.091	0.342	22.2
Back side	20	QPSK 50RB_0	132572/1770	1:1	0.304	-0.04	22.62	23.00	1.091	0.332	22.2
Body worn Test Data at the worst case with Sample2#(10mm)											
Back side	20	QPSK 1RB_99	132572/1770	1:1	0.356	-0.08	23.64	24.50	1.219	0.434	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	132572/1770	1:1	0.337	-0.04	23.64	24.50	1.219	0.411	22.2
Back side	20	QPSK 1RB_99	132572/1770	1:1	0.372	-0.09	23.64	24.50	1.219	0.453	22.2
Left side	20	QPSK 1RB_99	132572/1770	1:1	0.272	0.03	23.64	24.50	1.219	0.332	22.2
Right side	20	QPSK 1RB_99	132572/1770	1:1	0.082	0.03	23.64	24.50	1.219	0.100	22.2
Bottom side	20	QPSK 1RB_99	132572/1770	1:1	0.542	0.01	23.64	24.50	1.219	**0.661**	22.2
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	132572/1770	1:1	0.313	-0.02	22.62	23.00	1.091	0.342	22.2
Back side	20	QPSK 50RB_0	132572/1770	1:1	0.304	-0.04	22.62	23.00	1.091	0.332	22.2
Left side	20	QPSK 50RB_0	132572/1770	1:1	0.220	0.03	22.62	23.00	1.091	0.240	22.2
Right side	20	QPSK 50RB_0	132572/1770	1:1	0.065	0.02	22.62	23.00	1.091	0.071	22.2
Bottom side	20	QPSK 50RB_0	132572/1770	1:1	0.420	0.01	22.62	23.00	1.091	0.458	22.2
Hotspot Test Data at the worst case with Sample2#(10mm)											
Bottom side	20	QPSK 1RB_99	132572/1770	1:1	0.517	0.06	23.64	24.50	1.219	0.630	22.2
Simultaneous Transmission SAR Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg)1-g**	**Power Drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR(W/kg)**	**Liquid Temp.**
Body worn Test data(Separate 10mm 1RB)											
Back side	20	QPSK 1RB_99	132572/1770	1:1	0.087	0.05	16.49	17.00	1.125	0.097	22.2
Body worn Test data (Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_0	132572/1770	1:1	0.084	0.05	16.41	17.00	1.146	0.096	22.2
Hotspot Test data(Separate 10mm 1RB)											
Back side	20	QPSK 1RB_99	132572/1770	1:1	0.087	0.05	16.49	17.00	1.125	0.097	22.2
Hotspot Test data (Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_0	132572/1770	1:1	0.084	0.05	16.41	17.00	1.146	0.096	22.2

ENDC_B66 SAR Test Record													
Ant3 Test Record													
Test position	Test mode			Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Modulation	RB Size_RB offset										
Head Test data(1RB)													
Left cheek	20	QPSK	1_0	132072/1720	1:1	0.058	0.038	0.08	23.61	24.00	1.094	0.063	22.1
Left tilted	20	QPSK	1_0	132072/1720	1:1	0.048	0.030	0.05	23.61	24.00	1.094	0.053	22.1
Right cheek	20	QPSK	1_0	132072/1720	1:1	0.081	0.052	0.09	23.61	24.00	1.094	**0.089**	22.1
Right tilted	20	QPSK	1_0	132072/1720	1:1	0.048	0.031	-0.03	23.61	24.00	1.094	0.053	22.1
Head Test data(50%RB)													
Left cheek	20	QPSK	50_0	132572/1770	1:1	0.055	0.035	0.08	22.23	23.00	1.194	0.066	22.1
Left tilted	20	QPSK	50_0	132572/1770	1:1	0.045	0.030	0.07	22.23	23.00	1.194	0.054	22.1
Right cheek	20	QPSK	50_0	132572/1770	1:1	0.058	0.037	-0.02	22.23	23.00	1.194	0.069	22.1
Right tilted	20	QPSK	50_0	132572/1770	1:1	0.044	0.028	0.04	22.23	23.00	1.194	0.053	22.1
Head Test Data at the worst case with Sample2#													
Right cheek	20	QPSK	1_0	132072/1720	1:1	0.080	0.050	0.02	23.61	24.00	1.094	0.087	22.1
Body worn Test data(Separate 10mm 1RB)													
Front side	20	QPSK	1_0	132072/1720	1:1	0.281	0.176	-0.05	23.61	24.00	1.094	0.307	22.1
Back side	20	QPSK	1_0	132072/1720	1:1	0.346	0.217	0.03	23.61	24.00	1.094	**0.379**	22.1
Body worn Test data (Separate 10mm 50%RB)													
Front side	20	QPSK	50_0	132572/1770	1:1	0.273	0.167	-0.02	22.23	23.00	1.194	0.326	22.1
Back side	20	QPSK	50_0	132572/1770	1:1	0.302	0.190	0.08	22.23	23.00	1.194	0.361	22.1
Body worn Test Data at the worst case with Sample2#(10mm)													
Back side	20	QPSK	1_0	132072/1720	1:1	0.305	0.193	-0.09	23.61	24.00	1.094	0.334	22.1
Hotspot Test data(Separate 10mm 1RB)													
Front side	20	QPSK	1_0	132072/1720	1:1	0.281	0.176	-0.05	23.61	24.00	1.094	0.307	22.1
Back side	20	QPSK	1_0	132072/1720	1:1	0.346	0.217	0.03	23.61	24.00	1.094	**0.379**	22.1
Left side	20	QPSK	1_0	132072/1720	1:1	0.057	0.026	-0.03	23.61	24.00	1.094	0.062	22.1
Right side	20	QPSK	1_0	132072/1720	1:1	0.216	0.108	0.05	23.61	24.00	1.094	0.236	22.1
Bottom side	20	QPSK	1_0	132072/1720	1:1	0.133	0.085	-0.07	23.61	24.00	1.094	0.145	22.1
Hotspot Test data (Separate 10mm 50%RB)													
Front side	20	QPSK	50_0	132572/1770	1:1	0.273	0.167	-0.02	22.23	23.00	1.194	0.326	22.1
Back side	20	QPSK	50_0	132572/1770	1:1	0.302	0.190	0.08	22.23	23.00	1.194	0.361	22.1
Left side	20	QPSK	50_0	132572/1770	1:1	0.036	0.017	0.06	22.23	23.00	1.194	0.043	22.1
Right side	20	QPSK	50_0	132572/1770	1:1	0.218	0.109	-0.01	22.23	23.00	1.194	0.260	22.1
Bottom side	20	QPSK	50_0	132572/1770	1:1	0.125	0.074	0.10	22.23	23.00	1.194	0.149	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)													
Back side	20	QPSK	1_0	132072/1720	1:1	0.296	0.188	0.04	23.61	24.00	1.094	0.324	22.1

Table 23：SAR of LTE Band 66 for Head and Body.

8.3.14 SAR Result of 5G NR n2

SA N2 SAR Test Record												
Ant2 Test Record												
Test position	Test mode			Test ch./Freq.	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Modulation	RB Size_RB offset									
Head Test data(1RB)												
Left cheek	20	QPSK	1_1	376000/1880	0.122	0.075	-0.14	23.27	23.50	1.054	**0.129**	22.1
Left tilted	20	QPSK	1_1	376000/1880	0.067	0.040	0.02	23.27	23.50	1.054	0.071	22.1
Right cheek	20	QPSK	1_1	376000/1880	0.065	0.040	0.01	23.27	23.50	1.054	0.069	22.1
Right tilted	20	QPSK	1_1	376000/1880	0.067	0.041	-0.06	23.27	23.50	1.054	0.071	22.1
Head Test data(50%RB)												
Left cheek	20	QPSK	50_28	376000/1880	0.113	0.070	-0.13	23.22	23.50	1.067	0.121	22.1
Left tilted	20	QPSK	50_28	376000/1880	0.065	0.039	0.04	23.22	23.50	1.067	0.069	22.1
Right cheek	20	QPSK	50_28	376000/1880	0.064	0.040	0.05	23.22	23.50	1.067	0.068	22.1
Right tilted	20	QPSK	50_28	376000/1880	0.067	0.040	0.01	23.22	23.50	1.067	0.071	22.1
Head Test Data at the worst case with Sample2#												
Left cheek	20	QPSK	1_1	376000/1880	0.120	0.073	0.01	23.27	23.50	1.054	0.127	22.1
Body worn Test data(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	376000/1880	0.447	0.260	0.02	23.27	23.50	1.054	0.471	22.1
Back side	20	QPSK	1_1	376000/1880	0.554	0.324	0.04	23.27	23.50	1.054	**0.584**	22.1
Body worn Test data (Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	376000/1880	0.337	0.204	0.01	23.22	23.50	1.067	0.359	22.1
Back side	20	QPSK	50_28	376000/1880	0.352	0.211	-0.02	23.22	23.50	1.067	0.375	22.1
Body worn Test Data at the worst case with Sample2#(10mm)												
Back side	20	QPSK	1_1	376000/1880	0.548	0.322	0.06	23.27	23.50	1.054	0.578	22.1
Hotspot Test data(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	376000/1880	0.447	0.260	0.02	23.27	23.50	1.054	0.471	22.1
Back side	20	QPSK	1_1	376000/1880	0.554	0.324	0.04	23.27	23.50	1.054	0.584	22.1
Left side	20	QPSK	1_1	376000/1880	0.340	0.172	-0.06	23.27	23.50	1.054	0.358	22.1
Right side	20	QPSK	1_1	376000/1880	0.092	0.056	0.02	23.27	23.50	1.054	0.097	22.1
Bottom side	20	QPSK	1_1	376000/1880	0.813	0.450	0.04	23.27	23.50	1.054	0.857	22.1
Bottom side	20	QPSK	1_1	372000/1860	0.808	0.440	0.12	23.23	23.50	1.064	0.860	22.1
Bottom side	20	QPSK	1_1	380000/1900	0.887	0.505	0.02	23.21	23.50	1.069	**0.948**	22.1
Bottom side-repeat	20	QPSK	1_1	380000/1900	0.882	0.502	0.03	23.27	23.50	1.054	0.930	22.1
Hotspot Test data (Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	376000/1880	0.337	0.204	0.01	23.22	23.50	1.067	0.359	22.1
Back side	20	QPSK	50_28	376000/1880	0.352	0.211	-0.02	23.22	23.50	1.067	0.375	22.1
Left side	20	QPSK	50_28	376000/1880	0.255	0.128	0.01	23.22	23.50	1.067	0.272	22.1
Right side	20	QPSK	50_28	376000/1880	0.081	0.048	0.05	23.22	23.50	1.067	0.086	22.1
Bottom side	20	QPSK	50_28	376000/1880	0.647	0.356	-0.04	23.22	23.50	1.067	0.690	22.1
Hotspot Test data (Separate 10mm 100%RB)												
Bottom side	20	QPSK	100_0	376000/1880	0.681	0.386	0.07	22.13	22.50	1.089	0.742	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)												
Bottom side	20	QPSK	1_1	380000/1900	0.865	0.492	0.11	23.21	23.50	1.069	0.925	22.1
NSA N2 SAR Test Record												
Ant3 Test Record												
Test position	Test mode			Test ch./Freq.	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Modulation	RB Size_RB offset									

Head Test data(1RB)												
Left cheek	20	QPSK	1_1	376000/1880	0.051	0.028	-0.09	23.20	23.50	1.072	0.055	22.1
Left tilted	20	QPSK	1_1	376000/1880	0.051	0.034	0.02	23.20	23.50	1.072	0.055	22.1
Right cheek	20	QPSK	1_1	376000/1880	0.079	0.049	0.17	23.20	23.50	1.072	0.084	22.1
Right tilted	20	QPSK	1_1	376000/1880	0.055	0.036	0.04	23.20	23.50	1.072	0.059	22.1
Head Test data(50%RB)												
Left cheek	20	QPSK	50_28	376000/1880	0.053	0.029	0.08	23.17	23.50	1.079	0.057	22.1
Left tilted	20	QPSK	50_28	376000/1880	0.069	0.043	0.06	23.17	23.50	1.079	0.074	22.1
Right cheek	20	QPSK	50_28	376000/1880	0.085	0.053	0.07	23.17	23.50	1.079	**0.092**	22.1
Right tilted	20	QPSK	50_28	376000/1880	0.055	0.037	-0.03	23.17	23.50	1.079	0.059	22.1
Head Test Data at the worst case with Sample2#												
Right cheek	20	QPSK	50_28	376000/1880	0.084	0.052	0.01	23.17	23.50	1.079	0.090	22.1
Body worn Test data(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	376000/1880	0.344	0.199	0.02	23.20	23.50	1.072	0.369	22.1
Back side	20	QPSK	1_1	376000/1880	0.551	0.322	0.08	23.20	23.50	1.072	0.590	22.1
Body worn Test data (Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	376000/1880	0.357	0.207	0.01	23.17	23.50	1.079	0.385	22.1
Back side	20	QPSK	50_28	376000/1880	0.553	0.324	0.14	23.17	23.50	1.079	**0.597**	22.1
Body worn Test Data at the worst case with with Sample2#(10mm)												
Back side	20	QPSK	50_28	376000/1880	0.538	0.314	0.02	23.17	23.50	1.079	0.580	22.1
Hotspot Test data(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	376000/1880	0.344	0.199	0.02	23.20	23.50	1.072	0.369	22.1
Back side	20	QPSK	1_1	376000/1880	0.551	0.322	0.08	23.20	23.50	1.072	0.590	22.1
Left side	20	QPSK	1_1	376000/1880	0.020	0.010	0.04	23.20	23.50	1.072	0.021	22.1
Right side	20	QPSK	1_1	376000/1880	0.205	0.109	-0.06	23.20	23.50	1.072	0.220	22.1
Bottom side	20	QPSK	1_1	376000/1880	0.192	0.118	-0.11	23.20	23.50	1.072	0.206	22.1
Hotspot Test data (Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	376000/1880	0.357	0.207	0.01	23.17	23.50	1.079	0.385	22.1
Back side	20	QPSK	50_28	376000/1880	0.553	0.324	0.14	23.17	23.50	1.079	**0.597**	22.1
Left side	20	QPSK	50_28	376000/1880	0.026	0.012	0.05	23.17	23.50	1.079	0.028	22.1
Right side	20	QPSK	50_28	376000/1880	0.202	0.100	-0.03	23.17	23.50	1.079	0.218	22.1
Bottom side	20	QPSK	50_28	376000/1880	0.197	0.122	0.12	23.17	23.50	1.079	0.213	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)												
Back side	20	QPSK	50_28	376000/1880	0.538	0.314	0.02	23.17	23.50	1.079	0.580	22.1

Table 24：SAR of 5G NR n2 for Head and Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Bottom side	380000/1900	0.887	0.882	1.006	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 performed 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 performed 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						

8.3.15 SAR Result of 5G NR n5

NSA/SA N5 SAR Test Record												
Ant1 Test Record												
Test position	Test mode			Test ch./Freq.	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Modulation	RB Size_RB offset									
Head Test data(1RB)												
Left cheek	20	QPSK	1_1	167300/836.5	0.016	0.008	0.04	23.69	24.00	1.074	0.017	22.1
Left tilted	20	QPSK	1_1	167300/836.5	0.010	0.005	0.02	23.69	24.00	1.074	0.011	22.1
Right cheek	20	QPSK	1_1	167300/836.5	0.046	0.033	0.01	23.69	24.00	1.074	0.049	22.1
Right tilted	20	QPSK	1_1	167300/836.5	0.024	0.012	0.06	23.69	24.00	1.074	0.026	22.1
Head Test data(50%RB)												
Left cheek	20	QPSK	50_28	167300/836.5	0.018	0.008	-0.03	23.51	24.00	1.119	0.020	22.1
Left tilted	20	QPSK	50_28	167300/836.5	0.012	0.006	0.02	23.51	24.00	1.119	0.013	22.1
Right cheek	20	QPSK	50_28	167300/836.5	0.118	0.087	-0.02	23.51	24.00	1.119	**0.132**	22.1
Right tilted	20	QPSK	50_28	167300/836.5	0.026	0.014	0.11	23.51	24.00	1.119	0.029	22.1
Head Test Data at the worst case with Sample2#												
Right cheek	20	QPSK	50_28	167300/836.5	0.111	0.065	0.03	23.51	24.00	1.119	0.124	22.1
Body worn Test data(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	167300/836.5	0.162	0.091	0.03	23.69	24.00	1.074	0.174	22.1
Back side	20	QPSK	1_1	167300/836.5	0.300	0.175	0.08	23.69	24.00	1.074	**0.322**	22.1
Body worn Test data (Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	167300/836.5	0.148	0.083	0.06	23.51	24.00	1.119	0.166	22.1
Back side	20	QPSK	50_28	167300/836.5	0.181	0.107	0.04	23.51	24.00	1.119	0.203	22.1
Body worn Test Data at the worst case with Sample2#(10mm)												
Back side	20	QPSK	1_1	167300/836.5	0.289	0.155	0.03	23.69	24.00	1.074	0.310	22.1
Hotspot Test data(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	167300/836.5	0.162	0.091	0.03	23.69	24.00	1.074	0.174	22.1
Back side	20	QPSK	1_1	167300/836.5	0.300	0.175	0.08	23.69	24.00	1.074	**0.322**	22.1
Left side	20	QPSK	1_1	167300/836.5	0.025	0.013	0.02	23.69	24.00	1.074	0.027	22.1
Right side	20	QPSK	1_1	167300/836.5	0.012	0.007	-0.04	23.69	24.00	1.074	0.013	22.1
Bottom side	20	QPSK	1_1	167300/836.5	0.208	0.105	0.11	23.69	24.00	1.074	0.223	22.1
Hotspot Test data (Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	167300/836.5	0.148	0.083	0.06	23.51	24.00	1.119	0.166	22.1
Back side	20	QPSK	50_28	167300/836.5	0.181	0.107	0.04	23.51	24.00	1.119	0.203	22.1
Left side	20	QPSK	50_28	167300/836.5	0.026	0.014	-0.12	23.51	24.00	1.119	0.029	22.1
Right side	20	QPSK	50_28	167300/836.5	0.014	0.008	0.06	23.51	24.00	1.119	0.016	22.1
Bottom side	20	QPSK	50_28	167300/836.5	0.183	0.098	0.02	23.51	24.00	1.119	0.205	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)												
Back side	20	QPSK	1_1	167300/836.5	0.289	0.155	0.03	23.69	24.00	1.074	0.310	22.1

Table 25：SAR of 5G NR n5 for Head and Body.

8.3.16 SAR Result of 5G NR n7

SA N7 SAR Test Record												
Ant2 Test Record												
Test position	Test mode			Test ch./Freq.	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Modulation	RB Size_RB offset									
Head Test data(1RB)												
Left cheek	20	QPSK	1_1	507000/2535	0.153	0.082	0.01	23.16	23.50	1.081	0.165	22.1
Left tilted	20	QPSK	1_1	507000/2535	0.065	0.034	0.02	23.16	23.50	1.081	0.070	22.1
Right cheek	20	QPSK	1_1	507000/2535	0.102	0.058	-0.04	23.16	23.50	1.081	0.110	22.1
Right tilted	20	QPSK	1_1	507000/2535	0.098	0.051	0.06	23.16	23.50	1.081	0.106	22.1
Head Test data(50%RB)												
Left cheek	20	QPSK	50_28	507000/2535	0.166	0.090	0.05	23.06	23.50	1.107	**0.184**	22.1
Left tilted	20	QPSK	50_28	507000/2535	0.062	0.034	-0.03	23.06	23.50	1.107	0.069	22.1
Right cheek	20	QPSK	50_28	507000/2535	0.104	0.061	0.02	23.06	23.50	1.107	0.115	22.1
Right tilted	20	QPSK	50_28	507000/2535	0.104	0.056	0.04	23.06	23.50	1.107	0.115	22.1
Head Test Data at the worst case with Sample2#												
Left cheek	20	QPSK	50_28	507000/2535	0.165	0.087	0.14	23.06	23.50	1.107	0.183	22.1
Body worn Test data Sensor on(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	507000/2535	0.185	0.091	0.04	17.06	17.50	1.107	0.205	22.1
Back side	20	QPSK	1_1	507000/2535	0.197	0.097	0.08	17.06	17.50	1.107	0.218	22.1
Body worn Test data Sensor on(Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	507000/2535	0.182	0.091	0.01	16.99	16.50	0.893	0.163	22.1
Back side	20	QPSK	50_28	507000/2535	0.176	0.091	0.01	16.99	16.50	0.893	0.157	22.1
Body worn Test data Sensor off(1RB)												
Front side-17mm	20	QPSK	1_1	507000/2535	0.380	0.197	0.06	23.16	23.50	1.081	**0.411**	22.1
Back side-21mm	20	QPSK	1_1	507000/2535	0.244	0.128	0.05	23.16	23.50	1.081	0.264	22.1
Body worn Test data Sensor off(50%RB)												
Front side-17mm	20	QPSK	50_28	507000/2535	0.355	0.184	0.01	23.06	23.50	1.107	0.393	22.1
Back side-21mm	20	QPSK	50_28	507000/2535	0.224	0.118	0.04	23.06	23.50	1.107	0.248	22.1
Body worn Test Data at the worst case with with Sample2#(10mm)												
Front side-17mm	20	QPSK	1_1	507000/2535	0.318	0.166	0.07	23.16	23.50	1.081	0.344	22.1
Hotspot Test data Sensor on(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	507000/2535	0.185	0.091	0.04	17.06	17.50	1.107	0.205	22.1
Back side	20	QPSK	1_1	507000/2535	0.197	0.097	0.08	17.06	17.50	1.107	0.218	22.1
Bottom side	20	QPSK	1_1	507000/2535	0.267	0.124	-0.09	17.06	17.50	1.107	0.295	22.1
Hotspot Test data Sensor on(Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	507000/2535	0.182	0.091	0.01	16.99	16.50	0.893	0.163	22.1
Back side	20	QPSK	50_28	507000/2535	0.176	0.091	0.01	16.99	16.50	0.893	0.157	22.1
Bottom side	20	QPSK	50_28	507000/2535	0.266	0.122	0.08	16.99	16.50	0.893	0.238	22.1
Hotspot Test data Sensor off(1RB)												
Front side-17mm	20	QPSK	1_1	507000/2535	0.380	0.197	0.06	23.16	23.50	1.081	**0.411**	22.1
Back side-21mm	20	QPSK	1_1	507000/2535	0.244	0.128	0.05	23.16	23.50	1.081	0.264	22.1
Left side	20	QPSK	1_1	507000/2535	0.253	0.130	-0.04	23.16	23.50	1.081	0.274	22.1
Right side	20	QPSK	1_1	507000/2535	0.097	0.058	0.06	23.16	23.50	1.081	0.105	22.1
Bottom side-20mm	20	QPSK	1_1	507000/2535	0.285	0.168	0.05	23.16	23.50	1.081	0.308	22.1
Hotspot Test data Sensor off(50%RB)												
Front side-17mm	20	QPSK	50_28	507000/2535	0.355	0.184	0.01	23.06	23.50	1.107	0.393	22.1
Back side-21mm	20	QPSK	50_28	507000/2535	0.224	0.118	0.04	23.06	23.50	1.107	0.248	22.1
Left side	20	QPSK	50_28	507000/2535	0.271	0.140	-0.12	23.06	23.50	1.107	0.300	22.1
Right side	20	QPSK	50_28	507000/2535	0.093	0.055	0.00	23.06	23.50	1.107	0.103	22.1

Bottom side-20mm	20	QPSK	50_28	507000/2535	0.291	0.154	0.01	23.06	23.50	1.107	0.322	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)												
Front side-17mm	20	QPSK	1_1	507000/2535	0.318	0.166	0.07	23.16	23.50	1.081	0.344	22.1
NSA N7 SAR Test Record												
Ant3 Test Record												
Test position	**Test mode**			**Test ch./Freq.**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
	BW.	**Modulation**	**RB Size_RB offset**									
Head Test data(1RB)												
Left cheek	20	QPSK	1_1	507000/2535	0.025	0.012	0.04	23.36	23.50	1.033	0.026	22.1
Left tilted	20	QPSK	1_1	507000/2535	0.041	0.020	0.08	23.36	23.50	1.033	0.042	22.1
Right cheek	20	QPSK	1_1	507000/2535	0.029	0.015	0.02	23.36	23.50	1.033	0.030	22.1
Right tilted	20	QPSK	1_1	507000/2535	0.021	0.009	0.04	23.36	23.50	1.033	0.021	22.1
Head Test data(50%RB)												
Left cheek	20	QPSK	50_28	507000/2535	0.024	0.012	0.05	23.27	23.50	1.054	0.025	22.1
Left tilted	20	QPSK	50_28	507000/2535	0.041	0.020	0.01	23.27	23.50	1.054	**0.043**	22.1
Right cheek	20	QPSK	50_28	507000/2535	0.028	0.014	0.02	23.27	23.50	1.054	0.029	22.1
Right tilted	20	QPSK	50_28	507000/2535	0.021	0.009	0.04	23.27	23.50	1.054	0.022	22.1
Head Test Data at the worst case with Sample2#												
Left tilted	20	QPSK	50_28	507000/2535	0.024	0.012	0.03	23.27	23.50	1.054	0.025	22.1
Body worn Test data Sensor on(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	507000/2535	0.180	0.084	0.03	17.29	17.50	1.050	0.189	22.1
Back side	20	QPSK	1_1	507000/2535	0.143	0.069	-0.11	17.29	17.50	1.050	0.150	22.1
Body worn Test data Sensor on(Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	507000/2535	0.211	0.101	0.07	17.22	16.50	0.847	0.179	22.1
Back side	20	QPSK	50_28	507000/2535	0.237	0.117	0.07	17.22	16.50	0.847	0.201	22.1
Body worn Test data Sensor off(1RB)												
Front side-17mm	20	QPSK	1_1	507000/2535	0.274	0.142	0.03	23.36	23.50	1.033	0.283	22.1
Back side-21mm	20	QPSK	1_1	507000/2535	0.197	0.102	0.03	23.36	23.50	1.033	0.203	22.1
Body worn Test data Sensor off(50%RB)												
Front side-17mm	20	QPSK	50_28	507000/2535	0.335	0.171	0.07	23.27	23.50	1.054	**0.353**	22.1
Back side-21mm	20	QPSK	50_28	507000/2535	0.279	0.147	0.05	23.27	23.50	1.054	0.294	22.1
Body worn Test Data at the worst case with with Sample2#(10mm)												
Front side-17mm	20	QPSK	50_28	507000/2535	0.325	0.166	0.08	23.27	23.50	1.054	0.343	22.1
Hotspot Test data Sensor on(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	507000/2535	0.180	0.084	0.03	17.29	17.50	1.050	0.189	22.1
Back side	20	QPSK	1_1	507000/2535	0.143	0.069	-0.11	17.29	17.50	1.050	0.150	22.1
Bottom side	20	QPSK	1_1	507000/2535	0.225	0.099	0.01	17.29	17.50	1.050	0.236	22.1
Hotspot Test data Sensor on(Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	507000/2535	0.211	0.101	0.07	17.22	16.50	0.847	0.179	22.1
Back side	20	QPSK	50_28	507000/2535	0.237	0.117	0.07	17.22	16.50	0.847	0.201	22.1
Bottom side	20	QPSK	50_28	507000/2535	0.159	0.073	0.01	17.22	16.50	0.847	0.135	22.1
Hotspot Test data Sensor off(1RB)												
Front side-17mm	20	QPSK	1_1	507000/2535	0.274	0.142	0.03	23.36	23.50	1.033	0.283	22.1
Back side-21mm	20	QPSK	1_1	507000/2535	0.197	0.102	0.03	23.36	23.50	1.033	0.203	22.1
Left side	20	QPSK	1_1	507000/2535	0.048	0.028	0.06	23.36	23.50	1.033	0.050	22.1
Right side	20	QPSK	1_1	507000/2535	0.179	0.091	0.02	23.36	23.50	1.033	0.185	22.1
Bottom side-20mm	20	QPSK	1_1	507000/2535	0.194	0.102	0.04	23.36	23.50	1.033	0.200	22.1
Hotspot Test data Sensor off(50%RB)												
Front side-17mm	20	QPSK	50_28	507000/2535	0.335	0.171	0.07	23.27	23.50	1.054	**0.353**	22.1
Back side-21mm	20	QPSK	50_28	507000/2535	0.279	0.147	0.05	23.27	23.50	1.054	0.294	22.1
Left side	20	QPSK	50_28	507000/2535	0.063	0.037	0.04	23.27	23.50	1.054	0.066	22.1

Right side	20	QPSK	50_28	507000/2535	0.231	0.119	0.03	23.27	23.50	1.054	0.244	22.1
Bottom side-20mm	20	QPSK	50_28	507000/2535	0.216	0.113	0.06	23.27	23.50	1.054	0.228	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)												
Front side-17mm	20	QPSK	50_28	507000/2535	0.325	0.166	0.08	23.27	23.50	1.054	0.343	22.1

Table 26：SAR of 5G NR n7 for Head and Body.

8.3.17 SAR Result of 5G NR n38

SA N38 SAR Test Record													
Ant2 Test Record													
Test position	Test mode			Test ch./Freq.	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Modulation	RB Size_RB offset										
Head Test data(1RB)													
Left cheek	40	QPSK	1_1	519000/2595	25.00%	0.123	0.067	0.02	22.45	23.50	1.274	0.039	22.1
Left tilted	40	QPSK	1_1	519000/2595	25.00%	0.061	0.031	0.01	22.45	23.50	1.274	0.019	22.1
Right cheek	40	QPSK	1_1	519000/2595	25.00%	0.089	0.052	-0.06	22.45	23.50	1.274	0.028	22.1
Right tilted	40	QPSK	1_1	519000/2595	25.00%	0.096	0.051	0.05	22.45	23.50	1.274	0.031	22.1
Head Test data(50%RB)													
Left cheek	40	QPSK	50_28	519000/2595	25.00%	0.124	0.063	-0.02	22.41	23.50	1.285	**0.040**	22.1
Left tilted	40	QPSK	50_28	519000/2595	25.00%	0.069	0.036	0.12	22.41	23.50	1.285	0.022	22.1
Right cheek	40	QPSK	50_28	519000/2595	25.00%	0.090	0.051	0.06	22.41	23.50	1.285	0.029	22.1
Right tilted	40	QPSK	50_28	519000/2595	25.00%	0.098	0.052	0.05	22.41	23.50	1.285	0.031	22.1
Head Test Data at the worst case with Sample2#													
Left cheek	40	QPSK	50_28	519000/2595	25.00%	0.121	0.061	-0.06	22.41	23.50	1.285	0.039	22.1
Body worn Test data(Separate 10mm 1RB)													
Front side	40	QPSK	1_1	519000/2595	25.00%	0.462	0.242	0.04	22.45	23.50	1.274	0.147	22.1
Back side	40	QPSK	1_1	519000/2595	25.00%	0.538	0.280	0.02	22.45	23.50	1.274	0.171	22.1
Body worn Test data (Separate 10mm 50%RB)													
Front side	40	QPSK	50_28	519000/2595	25.00%	0.480	0.252	-0.06	22.41	23.50	1.285	0.154	22.1
Back side	40	QPSK	50_28	519000/2595	25.00%	0.640	0.313	-0.05	22.41	23.50	1.285	**0.206**	22.1
Body worn Test Data at the worst case with Sample2#(10mm)													
Back side	40	QPSK	50_28	519000/2595	25.00%	0.604	0.300	0.04	22.41	23.50	1.285	0.194	22.1
Hotspot Test data(Separate 10mm 1RB)													
Front side	40	QPSK	1_1	519000/2595	25.00%	0.462	0.242	0.04	22.45	23.50	1.274	0.147	22.1
Back side	40	QPSK	1_1	519000/2595	25.00%	0.538	0.280	0.02	22.45	23.50	1.274	0.171	22.1
Left side	40	QPSK	1_1	519000/2595	25.00%	0.218	0.114	0.06	22.45	23.50	1.274	0.069	22.1
Right side	40	QPSK	1_1	519000/2595	25.00%	0.086	0.049	-0.04	22.45	23.50	1.274	0.027	22.1
Bottom side	40	QPSK	1_1	519000/2595	25.00%	0.446	0.212	0.01	22.45	23.50	1.274	0.142	22.1
Hotspot Test data (Separate 10mm 50%RB)													
Front side	40	QPSK	50_28	519000/2595	25.00%	0.480	0.252	-0.06	22.41	23.50	1.285	0.154	22.1
Back side	40	QPSK	50_28	519000/2595	25.00%	0.640	0.313	-0.05	22.41	23.50	1.285	**0.206**	22.1
Left side	40	QPSK	50_28	519000/2595	25.00%	0.218	0.112	0.11	22.41	23.50	1.285	0.070	22.1
Right side	40	QPSK	50_28	519000/2595	25.00%	0.086	0.051	0.12	22.41	23.50	1.285	0.028	22.1
Bottom side	40	QPSK	50_28	519000/2595	25.00%	0.439	0.210	-0.02	22.41	23.50	1.285	0.141	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)													
Back side	40	QPSK	50_28	519000/2595	25.00%	0.604	0.300	0.04	22.41	23.50	1.285	0.194	22.1
NSA N38 SAR Test Record													
Ant3 Test Record													
Test position	Test mode			Test ch./Freq.	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Test mode	RB Size_RB offset										

Head Test data(1RB)												
Left cheek	40	QPSK	1_1	519000/2595	25.00%	0.026	0.014	0.02	22.51	23.50	1.256	0.008	22.1
Left tilted	40	QPSK	1_1	519000/2595	25.00%	0.033	0.017	0.04	22.51	23.50	1.256	0.010	22.1
Right cheek	40	QPSK	1_1	519000/2595	25.00%	0.049	0.026	0.05	22.51	23.50	1.256	**0.015**	22.1
Right tilted	40	QPSK	1_1	519000/2595	25.00%	0.021	0.010	0.06	22.51	23.50	1.256	0.006	22.1
Head Test data(50%RB)												
Left cheek	40	QPSK	50_28	519000/2595	25.00%	0.024	0.011	0.05	22.50	23.50	1.259	0.008	22.1
Left tilted	40	QPSK	50_28	519000/2595	25.00%	0.032	0.016	0.09	22.50	23.50	1.259	0.010	22.1
Right cheek	40	QPSK	50_28	519000/2595	25.00%	0.047	0.024	-0.07	22.50	23.50	1.259	0.015	22.1
Right tilted	40	QPSK	50_28	519000/2595	25.00%	0.021	0.009	0.08	22.50	23.50	1.259	0.007	22.1
Head Test Data at the worst case with Sample2#												
Right cheek	40	QPSK	1_1	519000/2595	25.00%	0.047	0.025	0.03	22.51	23.50	1.256	0.015	22.1
Body worn Test data(Separate 10mm 1RB)												
Front side	40	QPSK	1_1	519000/2595	25.00%	0.460	0.224	0.02	22.51	23.50	1.256	0.144	22.1
Back side	40	QPSK	1_1	519000/2595	25.00%	0.512	0.255	-0.03	22.51	23.50	1.256	**0.161**	22.1
Body worn Test data (Separate 10mm 50%RB)												
Front side	40	QPSK	50_28	519000/2595	25.00%	0.457	0.224	0.01	22.50	23.50	1.259	0.144	22.1
Back side	40	QPSK	50_28	519000/2595	25.00%	0.471	0.231	0.06	22.50	23.50	1.259	0.148	22.1
Body worn Test Data at the worst case with Sample2#(10mm)												
Back side	40	QPSK	1_1	519000/2595	25.00%	0.511	0.254	-0.08	22.51	23.50	1.256	0.160	22.1
Hotspot Test data(Separate 10mm 1RB)												
Front side	40	QPSK	1_1	519000/2595	25.00%	0.460	0.224	0.02	22.51	23.50	1.256	0.144	22.1
Back side	40	QPSK	1_1	519000/2595	25.00%	0.512	0.255	-0.03	22.51	23.50	1.256	**0.161**	22.1
Left side	40	QPSK	1_1	519000/2595	25.00%	0.037	0.016	0.01	22.51	23.50	1.256	0.012	22.1
Right side	40	QPSK	1_1	519000/2595	25.00%	0.210	0.107	0.04	22.51	23.50	1.256	0.066	22.1
Bottom side	40	QPSK	1_1	519000/2595	25.00%	0.194	0.104	0.06	22.51	23.50	1.256	0.061	22.1
Hotspot Test data (Separate 10mm 50%RB)												
Front side	40	QPSK	50_28	519000/2595	25.00%	0.457	0.224	0.01	22.50	23.50	1.259	0.144	22.1
Back side	40	QPSK	50_28	519000/2595	25.00%	0.471	0.231	0.06	22.50	23.50	1.259	0.148	22.1
Left side	40	QPSK	50_28	519000/2595	25.00%	0.043	0.025	-0.06	22.50	23.50	1.259	0.014	22.1
Right side	40	QPSK	50_28	519000/2595	25.00%	0.223	0.115	0.09	22.50	23.50	1.259	0.070	22.1
Bottom side	40	QPSK	50_28	519000/2595	25.00%	0.188	0.099	0.16	22.50	23.50	1.259	0.059	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)												
Back side	40	QPSK	1_1	519000/2595	25.00%	0.511	0.254	-0.08	22.51	23.50	1.256	0.160	22.1

Table 27：SAR of 5G NR n38 for Head and Body.

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8.3.18 SAR Result of 5G NR n41

SA N41 SAR Test Record													
Ant2 Test Record													
Test position	Test mode			Test ch./Freq.	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Modulation	RB Size_RB offset										
Head Test data(1RB)													
Left cheek	100	QPSK	1_1	518598/2592.99	25.00%	0.032	0.017	-0.01	24.61	25.00	1.094	0.009	22.1
Left tilted	100	QPSK	1_1	518598/2592.99	25.00%	0.037	0.018	-0.04	24.61	25.00	1.094	0.010	22.1
Right cheek	100	QPSK	1_1	518598/2592.99	25.00%	0.074	0.037	0.08	24.61	25.00	1.094	0.020	22.1
Right tilted	100	QPSK	1_1	518598/2592.99	25.00%	0.022	0.009	0.02	24.61	25.00	1.094	0.006	22.1
Head Test data(50%RB)													
Left cheek	100	QPSK	135_69	518598/2592.99	25.00%	0.034	0.018	0.09	24.31	25.00	1.172	0.010	22.1
Left tilted	100	QPSK	135_69	518598/2592.99	25.00%	0.038	0.019	0.06	24.31	25.00	1.172	0.011	22.1
Right cheek	100	QPSK	135_69	518598/2592.99	25.00%	0.090	0.047	0.04	24.31	25.00	1.172	**0.026**	22.1
Right tilted	100	QPSK	135_69	518598/2592.99	25.00%	0.022	0.010	0.09	24.31	25.00	1.172	0.006	22.1
Head Test Data at the worst case with Sample2#													
Right cheek	100	QPSK	135_69	518598/2592.99	25.00%	0.078	0.038	0.07	24.31	25.00	1.172	0.023	22.1
Body worn Test data(Separate 10mm 1RB)													
Front side	100	QPSK	1_1	518598/2592.99	25.00%	0.652	0.335	0.04	24.61	25.00	1.094	0.178	22.1
Back side	100	QPSK	1_1	518598/2592.99	25.00%	0.775	0.384	0.02	24.61	25.00	1.094	0.212	22.1
Body worn Test data (Separate 10mm 50%RB)													
Front side	100	QPSK	135_69	518598/2592.99	25.00%	0.784	0.408	0.06	24.31	25.00	1.172	0.230	22.1
Back side	100	QPSK	135_69	518598/2592.99	25.00%	0.920	0.456	0.09	24.31	25.00	1.172	**0.270**	22.1
Body worn Test Data at the worst case with Sample2#(10mm)													
Back side	100	QPSK	135_69	518598/2592.99	25.00%	0.780	0.390	-0.02	24.31	25.00	1.172	0.229	22.1
Hotspot Test data(Separate 10mm 1RB)													
Front side	100	QPSK	1_1	518598/2592.99	25.00%	0.652	0.335	0.04	24.61	25.00	1.094	0.178	22.1
Back side	100	QPSK	1_1	518598/2592.99	25.00%	0.775	0.384	0.02	24.61	25.00	1.094	0.212	22.1
Left side	100	QPSK	1_1	518598/2592.99	25.00%	0.315	0.162	-0.12	24.61	25.00	1.094	0.086	22.1
Right side	100	QPSK	1_1	518598/2592.99	25.00%	0.124	0.074	0.03	24.61	25.00	1.094	0.034	22.1
Bottom side	100	QPSK	1_1	518598/2592.99	25.00%	0.712	0.328	0.04	24.61	25.00	1.094	0.195	22.1
Hotspot Test data (Separate 10mm 50%RB)													
Front side	100	QPSK	135_69	518598/2592.99	25.00%	0.784	0.408	0.06	24.31	25.00	1.172	0.230	22.1
Back side	100	QPSK	135_69	518598/2592.99	25.00%	0.920	0.456	0.09	24.31	25.00	1.172	**0.270**	22.1
Left side	100	QPSK	135_69	518598/2592.99	25.00%	0.372	0.193	-0.06	24.31	25.00	1.172	0.109	22.1
Right side	100	QPSK	135_69	518598/2592.99	25.00%	0.134	0.079	0.12	24.31	25.00	1.172	0.039	22.1
Bottom side	100	QPSK	135_69	518598/2592.99	25.00%	0.718	0.345	-0.04	24.31	25.00	1.172	0.210	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)													
Back side	100	QPSK	135_69	518598/2592.99	25.00%	0.831	0.416	-0.09	24.31	25.00	1.172	0.244	22.1
NSA N41 SAR Test Record													
Ant3 Test Record													
Test position	Test mode			Test ch./Freq.	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Test mode	RB Size_RB offset										

Head Test data(1RB)													
Left cheek	100	QPSK	1_1	518598/2592.99	25.00%	0.042	0.023	0.04	23.16	23.50	1.081	0.011	22.1
Left tilted	100	QPSK	1_1	518598/2592.99	25.00%	0.034	0.011	0.06	23.16	23.50	1.081	0.009	22.1
Right cheek	100	QPSK	1_1	518598/2592.99	25.00%	0.050	0.026	0.03	23.16	23.50	1.081	**0.014**	22.1
Right tilted	100	QPSK	1_1	518598/2592.99	25.00%	0.024	0.012	0.02	23.16	23.50	1.081	0.007	22.1
Head Test data(50%RB)													
Left cheek	100	QPSK	135_69	509202/2546.01	25.00%	0.030	0.014	0.07	23.15	23.50	1.084	0.008	22.1
Left tilted	100	QPSK	135_69	509202/2546.01	25.00%	0.041	0.019	0.05	23.15	23.50	1.084	0.011	22.1
Right cheek	100	QPSK	135_69	509202/2546.01	25.00%	0.048	0.024	0.01	23.15	23.50	1.084	0.013	22.1
Right tilted	100	QPSK	135_69	509202/2546.01	25.00%	0.023	0.012	0.03	23.15	23.50	1.084	0.006	22.1
Head Test Data at the worst case with Sample2#													
Right cheek	100	QPSK	1_1	518598/2592.99	25.00%	0.048	0.025	0.09	23.16	23.50	1.081	0.013	22.1
Body worn Test data(Separate 10mm 1RB)													
Front side	100	QPSK	1_1	518598/2592.99	25.00%	0.474	0.222	-0.01	23.16	23.50	1.081	0.128	22.1
Back side	100	QPSK	1_1	518598/2592.99	25.00%	0.490	0.239	0.02	23.16	23.50	1.081	0.132	22.1
Body worn Test data (Separate 10mm 50%RB)													
Front side	100	QPSK	135_69	509202/2546.01	25.00%	0.637	0.314	0.11	23.15	23.50	1.084	0.173	22.1
Back side	100	QPSK	135_69	509202/2546.01	25.00%	0.666	0.322	-0.05	23.15	23.50	1.084	**0.180**	22.1
Body worn Test Data at the worst case with Sample2#(10mm)													
Back side	100	QPSK	135_69	509202/2546.01	25.00%	0.658	0.318	0.09	23.15	23.50	1.084	0.178	22.1
Hotspot Test data(Separate 10mm 1RB)													
Front side	100	QPSK	1_1	518598/2592.99	25.00%	0.474	0.222	-0.01	23.16	23.50	1.081	0.128	22.1
Back side	100	QPSK	1_1	518598/2592.99	25.00%	0.490	0.239	0.02	23.16	23.50	1.081	0.132	22.1
Left side	100	QPSK	1_1	518598/2592.99	25.00%	0.047	0.027	0.04	23.16	23.50	1.081	0.013	22.1
Right side	100	QPSK	1_1	518598/2592.99	25.00%	0.207	0.105	0.06	23.16	23.50	1.081	0.056	22.1
Bottom side	100	QPSK	1_1	518598/2592.99	25.00%	0.405	0.191	0.11	23.16	23.50	1.081	0.109	22.1
Hotspot Test data (Separate 10mm 50%RB)													
Front side	100	QPSK	135_69	509202/2546.01	25.00%	0.637	0.314	0.11	23.15	23.50	1.084	0.173	22.1
Back side	100	QPSK	135_69	509202/2546.01	25.00%	0.666	0.322	-0.05	23.15	23.50	1.084	**0.180**	22.1
Left side	100	QPSK	135_69	509202/2546.01	25.00%	0.055	0.032	-0.03	23.15	23.50	1.084	0.015	22.1
Right side	100	QPSK	135_69	509202/2546.01	25.00%	0.296	0.151	0.02	23.15	23.50	1.084	0.080	22.1
Bottom side	100	QPSK	135_69	509202/2546.01	25.00%	0.287	0.152	0.04	23.15	23.50	1.084	0.078	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)													
Back side	100	QPSK	135_69	509202/2546.01	25.00%	0.658	0.318	0.09	23.15	23.50	1.084	0.178	22.1

Table 28：SAR of 5G NR n41 for Head and Body.

8.3.19 SAR Result of 5G NR n66

SA N66 SAR Test Record												
Ant2 Test Record												
Test position	Test mode			Test ch./Freq.	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Modulation	RB Size_RB offset									
Head Test data(1RB)												
Left cheek	20	QPSK	1_1	349000/1745	0.126	0.081	0.08	23.13	23.50	1.089	0.137	22.1
Left tilted	20	QPSK	1_1	349000/1745	0.060	0.039	0.04	23.13	23.50	1.089	0.065	22.1
Right cheek	20	QPSK	1_1	349000/1745	0.115	0.073	0.03	23.13	23.50	1.089	0.125	22.1
Right tilted	20	QPSK	1_1	349000/1745	0.075	0.047	0.02	23.13	23.50	1.089	0.082	22.1
Head Test data(50%RB)												
Left cheek	20	QPSK	50_28	349000/1745	0.137	0.088	0.09	23.10	23.50	1.096	**0.150**	22.1
Left tilted	20	QPSK	50_28	349000/1745	0.062	0.040	0.06	23.10	23.50	1.096	0.068	22.1
Right cheek	20	QPSK	50_28	349000/1745	0.099	0.063	-0.04	23.10	23.50	1.096	0.109	22.1
Right tilted	20	QPSK	50_28	349000/1745	0.075	0.048	0.12	23.10	23.50	1.096	0.082	22.1
Head Test Data at the worst case with Sample2#												
Left cheek	20	QPSK	50_28	349000/1745	0.124	0.080	0.06	23.10	23.50	1.096	0.136	22.1
Body worn Test data(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	349000/1745	0.360	0.212	-0.13	23.13	23.50	1.089	0.392	22.1
Back side	20	QPSK	1_1	349000/1745	0.412	0.243	-0.09	23.13	23.50	1.089	0.449	22.1
Body worn Test data (Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	349000/1745	0.384	0.226	-0.01	23.10	23.50	1.096	0.421	22.1
Back side	20	QPSK	50_28	349000/1745	0.425	0.250	0.10	23.10	23.50	1.096	**0.466**	22.1
Body worn Test Data at the worst case with Sample2#(10mm)												
Back side	20	QPSK	50_28	349000/1745	0.418	0.246	0.03	23.10	23.50	1.096	0.458	22.1
Hotspot Test data(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	349000/1745	0.360	0.212	-0.13	23.13	23.50	1.089	0.392	22.1
Back side	20	QPSK	1_1	349000/1745	0.412	0.243	-0.09	23.13	23.50	1.089	0.449	22.1
Left side	20	QPSK	1_1	349000/1745	0.376	0.210	0.11	23.13	23.50	1.089	0.409	22.1
Right side	20	QPSK	1_1	349000/1745	0.030	0.012	0.01	23.13	23.50	1.089	0.033	22.1
Bottom side	20	QPSK	1_1	349000/1745	0.532	0.311	0.02	23.13	23.50	1.089	0.579	22.1
Hotspot Test data (Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	349000/1745	0.384	0.226	-0.01	23.10	23.50	1.096	0.421	22.1
Back side	20	QPSK	50_28	349000/1745	0.425	0.250	0.10	23.10	23.50	1.096	0.466	22.1
Left side	20	QPSK	50_28	349000/1745	0.384	0.214	-0.05	23.10	23.50	1.096	0.421	22.1
Right side	20	QPSK	50_28	349000/1745	0.033	0.014	0.04	23.10	23.50	1.096	0.036	22.1
Bottom side	20	QPSK	50_28	349000/1745	0.536	0.314	0.05	23.10	23.50	1.096	**0.588**	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)												
Bottom side	20	QPSK	50_28	349000/1745	0.524	0.307	-0.01	23.10	23.50	1.096	0.575	22.1
NSA N66 SAR Test Record												
Ant3 Test Record												
Test position	Test mode			Test ch./Freq.	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	BW.	Test mode	RB Size_RB offset									

Head Test data(1RB)												
Left cheek	20	QPSK	1_1	349000/1745	0.085	0.056	0.03	23.19	23.50	1.074	0.091	22.1
Left tilted	20	QPSK	1_1	349000/1745	0.050	0.034	-0.05	23.19	23.50	1.074	0.054	22.1
Right cheek	20	QPSK	1_1	349000/1745	0.115	0.074	0.05	23.19	23.50	1.074	0.124	22.1
Right tilted	20	QPSK	1_1	349000/1745	0.052	0.034	0.12	23.19	23.50	1.074	0.056	22.1
Head Test data(50%RB)												
Left cheek	20	QPSK	50_28	349000/1745	0.074	0.050	0.01	23.13	23.50	1.089	0.081	22.1
Left tilted	20	QPSK	50_28	349000/1745	0.054	0.036	0.06	23.13	23.50	1.089	0.059	22.1
Right cheek	20	QPSK	50_28	349000/1745	0.121	0.078	0.01	23.13	23.50	1.089	**0.132**	22.1
Right tilted	20	QPSK	50_28	349000/1745	0.052	0.032	-0.05	23.13	23.50	1.089	0.057	22.1
Head Test Data at the worst case with Sample2#												
Right cheek	20	QPSK	50_28	349000/1745	0.114	0.073	0.08	23.13	23.50	1.089	0.124	22.1
Body worn Test data(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	349000/1745	0.353	0.208	0.02	23.19	23.50	1.074	0.379	22.1
Back side	20	QPSK	1_1	349000/1745	0.426	0.270	0.02	23.19	23.50	1.074	0.458	22.1
Body worn Test data (Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	349000/1745	0.314	0.188	0.04	23.13	23.50	1.089	0.342	22.1
Back side	20	QPSK	50_28	349000/1745	0.462	0.290	0.17	23.13	23.50	1.089	**0.503**	22.1
Body worn Test Data at the worst case with Sample2#(10mm)												
Back side	20	QPSK	50_28	349000/1745	0.419	0.265	0.03	23.13	23.50	1.089	0.456	22.1
Hotspot Test data(Separate 10mm 1RB)												
Front side	20	QPSK	1_1	349000/1745	0.353	0.208	0.02	23.19	23.50	1.074	0.379	22.1
Back side	20	QPSK	1_1	349000/1745	0.426	0.270	0.02	23.19	23.50	1.074	0.458	22.1
Left side	20	QPSK	1_1	349000/1745	0.026	0.014	0.01	23.19	23.50	1.074	0.028	22.1
Right side	20	QPSK	1_1	349000/1745	0.279	0.151	-0.06	23.19	23.50	1.074	0.300	22.1
Bottom side	20	QPSK	1_1	349000/1745	0.136	0.079	0.05	23.19	23.50	1.074	0.146	22.1
Hotspot Test data (Separate 10mm 50%RB)												
Front side	20	QPSK	50_28	349000/1745	0.314	0.188	0.04	23.13	23.50	1.089	0.342	22.1
Back side	20	QPSK	50_28	349000/1745	0.462	0.290	0.17	23.13	23.50	1.089	**0.503**	22.1
Left side	20	QPSK	50_28	349000/1745	0.024	0.012	0.06	23.13	23.50	1.089	0.026	22.1
Right side	20	QPSK	50_28	349000/1745	0.321	0.171	-0.01	23.13	23.50	1.089	0.350	22.1
Bottom side	20	QPSK	50_28	349000/1745	0.144	0.086	0.02	23.13	23.50	1.089	0.157	22.1
Hotspot Test Data at the worst case with Sample2#(10mm)												
Back side	20	QPSK	50_28	349000/1745	0.419	0.265	0.03	23.13	23.50	1.089	0.456	22.1

Table 29：SAR of 5G NR n66 for Head and Body.

8.3.20 SAR Result of WIFI 2.4G

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data											
Left cheek	802.11b	6/2437	99.87%	1.001	0.670	0.01	17.01	17.50	1.119	0.751	22
Left tilted	802.11b	6/2437	99.87%	1.001	0.898	0.05	17.01	17.50	1.119	1.007	22
Right cheek	802.11b	6/2437	99.87%	1.001	0.417	0.01	17.01	17.50	1.119	0.467	22
Right tilted	802.11b	6/2437	99.87%	1.001	0.522	0.06	17.01	17.50	1.119	0.585	22
Left cheek	802.11b	1/2412	99.87%	1.001	0.856	0.00	17.30	17.50	1.047	0.897	22
Left cheek	802.11b	11/2462	99.87%	1.001	0.825	0.06	17.12	17.50	1.091	0.902	22
Left tilted	802.11b	1/2412	99.87%	1.001	0.988	0.01	17.30	17.50	1.047	**1.036**	22
Left tilted	802.11b	11/2462	99.87%	1.001	0.849	0.09	17.12	17.50	1.091	0.928	22
Head Test Data at the worst case with Sample2#											
Left tilted	802.11b	1/2412	99.87%	1.001	0.965	0.01	17.30	17.50	1.047	1.012	22
Body worn Test data(Separate 10mm)											
Front side	802.11b	6/2437	99.87%	1.001	0.169	0.03	17.01	17.50	1.119	0.189	22
Back side	802.11b	6/2437	99.87%	1.001	0.194	0.01	17.01	17.50	1.119	**0.217**	22
Body worn Test Data at the worst case with Sample2#(10mm)											
Back side	802.11b	6/2437	99.87%	1.001	0.189	0.03	17.01	17.50	1.119	0.212	22
Hotspot Test data (Separate 10mm)											
Front side	802.11b	6/2437	99.87%	1.001	0.169	0.01	17.01	17.50	1.119	0.189	22
Back side	802.11b	6/2437	99.87%	1.001	0.194	0.01	17.01	17.50	1.119	0.217	22
Left side	802.11b	6/2437	99.87%	1.001	0.045	0.08	17.01	17.50	1.119	0.050	22
Right side	802.11b	6/2437	99.87%	1.001	0.130	0.06	17.01	17.50	1.119	0.146	22
Top side	802.11b	6/2437	99.87%	1.001	0.199	0.01	17.01	17.50	1.119	**0.223**	22
Hotspot Test Data at the worst case with Sample2#(10mm)											
Top side	802.11b	6/2437	99.87%	1.001	0.195	0.02	17.01	17.50	1.119	0.219	22

Table 30：SAR of WIFI 2.4G for Head and Body.

8.3.21 SAR Result of WIFI 5G

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data of U-NII-2A											
Left cheek	802.11a	52/5260	99.84%	1.002	0.535	0.04	15.90	17.00	1.288	**0.690**	22.2
Left tilted	802.11a	52/5260	99.84%	1.002	0.525	0.05	15.90	17.00	1.288	0.677	22.2
Right cheek	802.11a	52/5260	99.84%	1.002	0.276	0.04	15.90	17.00	1.288	0.356	22.2
Right tilted	802.11a	52/5260	99.84%	1.002	0.290	0.09	15.90	17.00	1.288	0.374	22.2
Head Test data of U-NII-2C											
Left cheek	802.11a	116/5580	99.84%	1.002	0.275	0.04	15.85	17.00	1.303	0.359	22.2
Left tilted	802.11a	116/5580	99.84%	1.002	0.296	0.06	15.85	17.00	1.303	0.386	22.2
Right cheek	802.11a	116/5580	99.84%	1.002	0.218	0.05	15.85	17.00	1.303	0.285	22.2
Right tilted	802.11a	116/5580	99.84%	1.002	0.222	0.07	15.85	17.00	1.303	0.290	22.2
Head Test data of U-NII-3											
Left cheek	802.11a	157/5785	99.84%	1.002	0.116	0.04	12.99	13.50	1.125	0.131	22.2
Left tilted	802.11a	157/5785	99.84%	1.002	0.164	0.08	12.99	13.50	1.125	0.185	22.2
Right cheek	802.11a	157/5785	99.84%	1.002	0.120	0.09	12.99	13.50	1.125	0.135	22.2
Right tilted	802.11a	157/5785	99.84%	1.002	0.143	0.07	12.99	13.50	1.125	0.161	22.2
Head Test Data at the worst case with Sample2#											
Left cheek	802.11a	52/5260	99.84%	1.002	0.528	0.06	15.90	17.00	1.288	0.681	22.2
Body worn Test data of U-NII-2A (Separate 10mm)											
Front side	802.11a	52/5260	99.84%	1.002	0.072	0.06	15.90	17.00	1.288	0.093	22.2
Back side	802.11a	52/5260	99.84%	1.002	0.244	0.08	15.90	17.00	1.288	0.315	22.2
Body worn Test data of U-NII-2C(Separate 10mm)											
Front side	802.11a	116/5580	99.84%	1.002	0.064	0.05	15.85	17.00	1.303	0.084	22.2
Back side	802.11a	116/5580	99.84%	1.002	0.437	0.05	15.85	17.00	1.303	**0.570**	22.2
Body worn Test data of U-NII-3(Separate 10mm)											
Front side	802.11a	157/5785	99.84%	1.002	0.039	0.00	12.99	13.50	1.125	0.044	22.2
Back side	802.11a	157/5785	99.84%	1.002	0.241	0.00	12.99	13.50	1.125	0.271	22.2
Body worn Test Data at the worst case with Sample2#(10mm)											
Back side	802.11a	116/5580	99.84%	1.002	0.433	0.05	15.85	17.00	1.303	0.565	22.2
Hotspot Test data of U-NII-1(Separate 10mm)											
Front side	802.11a	36/5180	99.84%	1.002	0.070	0.06	15.75	17.00	1.334	0.093	22.2
Back side	802.11a	36/5180	99.84%	1.002	0.229	0.08	15.75	17.00	1.334	**0.306**	22.2
Left side	802.11a	36/5180	99.84%	1.002	0.005	0.04	15.75	17.00	1.334	0.007	22.2
Right side	802.11a	36/5180	99.84%	1.002	0.128	0.03	15.75	17.00	1.334	0.171	22.2
Top side	802.11a	36/5180	99.84%	1.002	0.099	0.04	15.75	17.00	1.334	0.132	22.2
Hotspot Test data of U-NII-3 (Separate 10mm)											
Front side	802.11a	157/5785	99.84%	1.002	0.039	0.00	12.99	13.50	1.125	0.044	22.2
Back side	802.11a	157/5785	99.84%	1.002	0.241	0.00	12.99	13.50	1.125	0.271	22.2
Left side	802.11a	157/5785	99.84%	1.002	0.006	0.05	12.99	13.50	1.125	0.007	22.2
Right side	802.11a	157/5785	99.84%	1.002	0.152	0.07	12.99	13.50	1.125	0.171	22.2
Top side	802.11a	157/5785	99.84%	1.002	0.118	0.04	12.99	13.50	1.125	0.133	22.2
Hotspot Test Data at the worst case with Sample2#(10mm)											
Front side	802.11a	36/5180	99.84%	1.002	0.227	0.01	15.75	17.00	1.334	0.303	22.2

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)10-g	Power drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Product specific 10gSAR Test data of U-NII-2A(Separate 0mm)											
Front side	802.11a	52/5260	99.84%	1.002	0.256	0.01	15.90	17.00	1.288	0.330	22.2
Back side	802.11a	52/5260	99.84%	1.002	0.558	0.07	15.90	17.00	1.288	0.720	22.2
Left side	802.11a	52/5260	99.84%	1.002	0.002	0.05	15.90	17.00	1.288	0.002	22.2
Right side	802.11a	52/5260	99.84%	1.002	0.188	0.05	15.90	17.00	1.288	0.243	22.2
Top side	802.11a	52/5260	99.84%	1.002	0.224	0.06	15.90	17.00	1.288	0.289	22.2
Product specific 10gSAR Test data of U-NII-2C(Separate 0mm)											
Front side	802.11a	116/5580	99.84%	1.002	0.290	0.05	15.85	17.00	1.303	0.379	22.2
Back side	802.11a	116/5580	99.84%	1.002	0.772	0.06	15.85	17.00	1.303	**1.008**	22.2
Left side	802.11a	116/5580	99.84%	1.002	0.011	0.04	15.85	17.00	1.303	0.014	22.2
Right side	802.11a	116/5580	99.84%	1.002	0.226	0.09	15.85	17.00	1.303	0.295	22.2
Top side	802.11a	116/5580	99.84%	1.002	0.261	0.05	15.85	17.00	1.303	0.341	22.2
Product specific 10gSAR Test Data at the worst case with Sample2#(0mm))											
Back side	802.11a	116/5580	99.84%	1.002	0.765	0.08	15.85	17.00	1.303	0.999	22.2

Table 31：SAR of WIFI 5G for Head, Body and Product specific 10g SAR.

8.3.22 SAR Result of BT

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp.
Head Test data											
Left cheek	DH5	78/2480	99.96%	1.0004	0.062	0.06	10.90	11.00	1.023	**0.064**	22.0
Left tilted	DH5	78/2480	99.96%	1.0004	0.051	0.04	10.90	11.00	1.023	0.053	22.0
Right cheek	DH5	78/2480	99.96%	1.0004	0.025	0.01	10.90	11.00	1.023	0.025	22.0
Right tilted	DH5	78/2480	99.96%	1.0004	0.027	0.03	10.90	11.00	1.023	0.028	22.0
Head Test Data at the worst case with Sample2#											
Left cheek	DH5	78/2480	99.96%	1.0004	0.061	0.04	10.90	11.00	1.023	0.062	22.0
Body worn Test data (Separate 10mm)											
Front side	DH5	78/2480	99.96%	1.0004	0.020	0.02	10.90	11.00	1.023	0.021	22.0
Back side	DH5	78/2480	99.96%	1.0004	0.031	0.01	10.90	11.00	1.023	**0.031**	22.0
Body worn Test Data at the worst case with Sample2#(10mm)											
Back side	DH5	78/2480	99.96%	1.0004	0.030	0.02	10.90	11.00	1.023	0.031	22.0
Hotspot Test data (Separate 10mm)											
Front side	DH5	78/2480	99.96%	1.0004	0.020	0.02	10.90	11.00	1.023	0.021	22.0
Back side	DH5	78/2480	99.96%	1.0004	0.031	0.01	10.90	11.00	1.023	**0.031**	22.0
Left side	DH5	78/2480	99.96%	1.0004	0.006	0.03	10.90	11.00	1.023	0.007	22.0
Right side	DH5	78/2480	99.96%	1.0004	0.016	0.01	10.90	11.00	1.023	0.016	22.0
Top side	DH5	78/2480	99.96%	1.0004	0.028	0.01	10.90	11.00	1.023	0.029	22.0
Hotspot Test Data at the worst case with Sample2#(10mm)											
Back side	DH5	78/2480	99.96%	1.0004	0.030	0.02	10.90	11.00	1.023	0.031	22.0

Table 32： SAR of BT for Head and Body.

8.4 Multiple Transmitter Evaluation

8.4.1 Simultaneous SAR SAR test evaluation

- **Simultaneous Transmission Possibilities**

WWAN +WLAN		
1	WWAN+WLAN 2.4GHz + BT	Y
2	WWAN+WLAN 5GHz + BT	Y
WLAN		
1	WLAN 2.4GHz + BT	Y
2	WLAN 5GHz + BT	Y

Note:
1) The device does not support DTM function.
2) For Wi-Fi 5G, U-NII-2A (5250-5350 MHz) and U-NII-2C (5470-5725 MHz) bands does not support hotspot function.

8.4.2 Simultaneous Transmission SAR Summation Scenario

EN-DC SAR:
Head:

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n2			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 5	Left Touch	0.077	/	/	/	/	0.057	0.134
	Left Tilt	0.068	/	/	/	/	0.074	0.142
	Right Touch	0.089	/	/	/	/	0.092	0.181
	Right Tilt	0.073	/	/	/	/	0.059	0.132
Band 12	Left Touch	0.075	/	/	/	/	0.057	0.132
	Left Tilt	0.001	/	/	/	/	0.074	0.075
	Right Touch	0.099	/	/	/	/	0.092	0.191
	Right Tilt	0.053	/	/	/	/	0.059	0.112
Band 66	Left Touch	/	0.194	/	/	/	0.057	0.251
	Left Tilt	/	0.066	/	/	/	0.074	0.140
	Right Touch	/	0.084	/	/	/	0.092	0.176
	Right Tilt	/	0.073	/	/	/	0.059	0.132

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n5			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 7	Left Touch	/	/	0.024	0.078	/	/	0.102
	Left Tilt	/	/	0.029	0.058	/	/	0.087
	Right Touch	/	/	0.037	0.105	/	/	0.142
	Right Tilt	/	/	0.018	0.061	/	/	0.079
Band 66	Left Touch	/	/	0.066	0.078	/	/	0.144
	Left Tilt	/	/	0.054	0.058	/	/	0.112
	Right Touch	/	/	0.089	0.105	/	/	0.194
	Right Tilt	/	/	0.053	0.061	/	/	0.114

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n7			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 5	Left Touch	0.077	/	/	/	/	0.025	0.102
	Left Tilt	0.068	/	/	/	/	0.043	0.111
	Right Touch	0.089	/	/	/	/	0.029	0.118
	Right Tilt	0.073	/	/	/	/	0.022	0.095
Band 12	Left Touch	0.075	/	/	/	/	0.025	0.100
	Left Tilt	0.001	/	/	/	/	0.043	0.044
	Right Touch	0.099	/	/	/	/	0.029	0.128
	Right Tilt	0.053	/	/	/	/	0.022	0.075

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n38			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 5	Left Touch	0.077	/	/	/	/	0.008	0.085
	Left Tilt	0.068	/	/	/	/	0.010	0.078
	Right Touch	0.089	/	/	/	/	0.015	0.104
	Right Tilt	0.073	/	/	/	/	0.006	0.079
Band 12	Left Touch	0.075	/	/	/	/	0.008	0.083
	Left Tilt	0.001	/	/	/	/	0.010	0.011
	Right Touch	0.099	/	/	/	/	0.015	0.114
	Right Tilt	0.053	/	/	/	/	0.006	0.059

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LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n41			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 2	Left Touch	/	0.138	/	/	/	0.008	0.146
	Left Tilt	/	0.082	/	/	/	0.011	0.093
	Right Touch	/	0.090	/	/	/	0.013	0.103
	Right Tilt	/	0.084	/	/	/	0.006	0.090
Band 4	Left Touch	/	0.124	/	/	/	0.008	0.132
	Left Tilt	/	0.069	/	/	/	0.011	0.080
	Right Touch	/	0.083	/	/	/	0.013	0.096
	Right Tilt	/	0.072	/	/	/	0.006	0.078
Band 12	Left Touch	0.075	/	/	/	/	0.008	0.083
	Left Tilt	0.001	/	/	/	/	0.011	0.012
	Right Touch	0.099	/	/	/	/	0.013	0.112
	Right Tilt	0.053	/	/	/	/	0.006	0.059
Band 66	Left Touch	/	0.194	/	/	/	0.008	0.202
	Left Tilt	/	0.066	/	/	/	0.011	0.077
	Right Touch	/	0.084	/	/	/	0.013	0.097
	Right Tilt	/	0.073	/	/	/	0.006	0.079

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n66			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 2	Left Touch	/	0.138	/	/	/	0.091	0.229
	Left Tilt	/	0.082	/	/	/	0.059	0.141
	Right Touch	/	0.090	/	/	/	0.132	0.222
	Right Tilt	/	0.084	/	/	/	0.057	0.141
Band 5	Left Touch	0.077	/	/	/	/	0.091	0.168
	Left Tilt	0.068	/	/	/	/	0.059	0.127
	Right Touch	0.089	/	/	/	/	0.132	0.221
	Right Tilt	0.073	/	/	/	/	0.057	0.130
Band 7	Left Touch	/	0.232	/	/	/	0.091	0.323
	Left Tilt	/	0.084	/	/	/	0.059	0.143
	Right Touch	/	0.149	/	/	/	0.132	0.281
	Right Tilt	/	0.129	/	/	/	0.057	0.186

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Body-worn:

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n2			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 5	Front side	0.269	/	/	/	/	0.385	0.654
	Back side	0.078	/	/	/	/	0.597	0.675
Band 12	Front side	0.117	/	/	/	/	0.385	0.502
	Back side	0.036	/	/	/	/	0.597	0.633
Band 66	Front side	/	0.411	/	/	/	0.385	0.796
	Back side	/	0.097	/	/	/	0.597	0.694

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n5			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 2	Front side	/	/	0.307	0.174	/	/	0.481
	Back side	/	/	0.400	0.322	/	/	0.722
Band 7	Front side	/	/	0.617	0.174	/	/	0.791
	Back side	/	/	0.194	0.322	/	/	0.516
Band 66	Front side	/	/	0.326	0.174	/	/	0.500
	Back side	/	/	0.379	0.322	/	/	0.701

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n7			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 5	Front side	0.269	/	/	/	/	0.353	0.622
	Back side	0.078	/	/	/	/	0.294	0.372
Band 12	Front side	0.117	/	/	/	/	0.353	0.470
	Back side	0.036	/	/	/	/	0.294	0.330

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n38			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 5	Front side	0.269	/	/	/	/	0.144	0.413
	Back side	0.078	/	/	/	/	0.148	0.226
Band 12	Front side	0.117	/	/	/	/	0.144	0.261
	Back side	0.036	/	/	/	/	0.148	0.184

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n41			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 2	Front side	/	0.448	/	/	/	0.173	0.621
	Back side	/	0.108	/	/	/	0.180	0.288
Band 4	Front side	/	0.453	/	/	/	0.173	0.626
	Back side	/	0.480	/	/	/	0.180	0.660
Band 12	Front side	0.117	/	/	/	/	0.173	0.290
	Back side	0.036	/	/	/	/	0.180	0.216
Band 66	Front side	/	0.411	/	/	/	0.173	0.584
	Back side	/	0.097	/	/	/	0.180	0.277

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LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n66			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 2	Front side	/	0.448	/	/	/	0.379	0.827
	Back side	/	0.108	/	/	/	0.503	0.611
Band 5	Front side	0.269	/	/	/	/	0.379	0.648
	Back side	0.078	/	/	/	/	0.503	0.581
Band 7	Front side	/	0.121	/	/	/	0.379	0.500
	Back side	/	0.129	/	/	/	0.503	0.632

Hotspot:

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n2			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 5	Front side	0.269	/	/	/	/	0.385	0.654
	Back side	0.249	/	/	/	/	0.597	0.846
	Left side	0.050	/	/	/	/	0.028	0.078
	Right side	0.132	/	/	/	/	0.220	0.352
	Top	0.000	/	/	/	/	0.000	0.000
	Bottom side	0.228	/	/	/	/	0.213	0.441
Band 12	Front side	0.117	/	/	/	/	0.385	0.502
	Back side	0.133	/	/	/	/	0.597	0.730
	Left side	0.095	/	/	/	/	0.028	0.123
	Right side	0.191	/	/	/	/	0.220	0.411
	Top	0.000	/	/	/	/	0.000	0.000
	Bottom side	0.136	/	/	/	/	0.213	0.349
Band 66	Front side	/	0.411	/	/	/	0.385	0.796
	Back side	/	0.097	/	/	/	0.597	0.694
	Left side	/	0.332	/	/	/	0.028	0.360
	Right side	/	0.100	/	/	/	0.220	0.320
	Top	/	0.000	/	/	/	0.000	0.000
	Bottom side	/	0.661	/	/	/	0.213	0.874

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n5			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 2	Front side	/	/	0.307	0.174	/	/	0.481
	Back side	/	/	0.400	0.322	/	/	0.722
	Left side	/	/	0.053	0.029	/	/	0.082
	Right side	/	/	0.269	0.016	/	/	0.285
	Top	/	/	0.000	0.000	/	/	0.000
	Bottom side	/	/	0.293	0.223	/	/	0.516
Band 7	Front side	/	/	0.617	0.174	/	/	0.791
	Back side	/	/	0.632	0.322	/	/	0.954
	Left side	/	/	0.053	0.029	/	/	0.082
	Right side	/	/	0.268	0.016	/	/	0.284
	Top	/	/	0.000	0.000	/	/	0.000
	Bottom side	/	/	0.385	0.223	/	/	0.608
Band 66	Front side	/	/	0.326	0.174	/	/	0.500
	Back side	/	/	0.379	0.322	/	/	0.701
	Left side	/	/	0.062	0.029	/	/	0.091
	Right side	/	/	0.260	0.016	/	/	0.276

	Top	/	/	0.000	0.000	/	/	0.000
	Bottom side	/	/	0.149	0.223	/	/	0.372

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n7			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 5	Front side	0.269	/	/	/	/	0.353	0.622
	Back side	0.249	/	/	/	/	0.294	0.543
	Left side	0.050	/	/	/	/	0.066	0.116
	Right side	0.132	/	/	/	/	0.244	0.376
	Top	0.000	/	/	/	/	0.000	0.000
	Bottom side	0.228	/	/	/	/	0.200	0.428
Band 12	Front side	0.117	/	/	/	/	0.353	0.470
	Back side	0.133	/	/	/	/	0.294	0.427
	Left side	0.095	/	/	/	/	0.066	0.161
	Right side	0.191	/	/	/	/	0.244	0.435
	Top	0.000	/	/	/	/	0.000	0.000
	Bottom side	0.136	/	/	/	/	0.200	0.336

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n38			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 5	Front side	0.269	/	/	/	/	0.144	0.413
	Back side	0.249	/	/	/	/	0.148	0.397
	Left side	0.050	/	/	/	/	0.014	0.064
	Right side	0.132	/	/	/	/	0.070	0.202
	Top	0.000	/	/	/	/	0.000	0.000
	Bottom side	0.228	/	/	/	/	0.061	0.289
Band 12	Front side	0.117	/	/	/	/	0.144	0.261
	Back side	0.133	/	/	/	/	0.148	0.281
	Left side	0.095	/	/	/	/	0.014	0.109
	Right side	0.191	/	/	/	/	0.070	0.261
	Top	0.000	/	/	/	/	0.000	0.000
	Bottom side	0.136	/	/	/	/	0.061	0.197

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n41			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 2	Front side	/	0.448	/	/	/	0.173	0.621
	Back side	/	0.108	/	/	/	0.180	0.288
	Left side	/	0.352	/	/	/	0.015	0.367
	Right side	/	0.093	/	/	/	0.080	0.173
	Top	/	0.000	/	/	/	0.000	0.000
	Bottom side	/	0.786	/	/	/	0.109	0.895
Band 4	Front side	/	0.453	/	/	/	0.173	0.626
	Back side	/	0.480	/	/	/	0.180	0.660
	Left side	/	0.368	/	/	/	0.015	0.383
	Right side	/	0.096	/	/	/	0.080	0.176
	Top	/	0.000	/	/	/	0.000	0.000
	Bottom side	/	0.697	/	/	/	0.109	0.806
Band 12	Front side	0.117	/	/	/	/	0.173	0.290
	Back side	0.133	/	/	/	/	0.180	0.313
	Left side	0.095	/	/	/	/	0.015	0.110
	Right side	0.191	/	/	/	/	0.080	0.271

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	Top	0.000	/	/	/	/	0.000	0.000
	Bottom side	0.136	/	/	/	/	0.109	0.245
Band 66	Front side	/	0.411	/	/	/	0.173	0.584
	Back side	/	0.097	/	/	/	0.180	0.277
	Left side	/	0.332	/	/	/	0.015	0.347
	Right side	/	0.100	/	/	/	0.080	0.180
	Top	/	0.000	/	/	/	0.000	0.000
	Bottom side	/	0.661	/	/	/	0.109	0.770

LTE Band (EN_DC)	Exposure position	Ant1	Ant2	Ant3	n66			EN_DC Summed SAR
					Ant1	Ant2	Ant3	
Band 2	Front side	/	0.448	/	/	/	0.379	0.827
	Back side	/	0.108	/	/	/	0.503	0.611
	Left side	/	0.352	/	/	/	0.028	0.380
	Right side	/	0.093	/	/	/	0.350	0.443
	Top	/	0.000	/	/	/	0.000	0.000
	Bottom side	/	0.786	/	/	/	0.157	0.943
Band 5	Front side	0.269	/	/	/	/	0.379	0.648
	Back side	0.249	/	/	/	/	0.503	0.752
	Left side	0.050	/	/	/	/	0.028	0.078
	Right side	0.132	/	/	/	/	0.350	0.482
	Top	0.000	/	/	/	/	0.000	0.000
	Bottom side	0.228	/	/	/	/	0.157	0.385
Band 7	Front side	/	0.117	/	/	/	0.379	0.496
	Back side	/	0.372	/	/	/	0.503	0.875
	Left side	/	0.000	/	/	/	0.028	0.028
	Right side	/	0.442	/	/	/	0.350	0.792
	Top	/	0.000	/	/	/	0.000	0.000
	Bottom side	/	0.283	/	/	/	0.157	0.440

Simultaneous Transmission SAR Summation Scenario:

Test position		SARmax (W/kg)				Summed SAR				
		Main(Ant1)	WiFi 2.4G	WiFi 5G	BT					
		1	2	3	4	1+2	1+3	1+4	1+2+4	1+3+4
GSM850	Left cheek	0.125	0.902	0.690	0.064	1.027	0.815	0.189	1.091	0.879
	Left tilted	0.070	1.036	0.677	0.053	1.106	0.747	0.123	1.159	0.800
	Right cheek	0.135	0.467	0.356	0.025	0.602	0.491	0.160	0.627	0.516
	Right tilted	0.059	0.585	0.374	0.028	0.644	0.433	0.087	0.672	0.461
WCDMA B5	Left cheek	0.095	0.902	0.690	0.064	0.997	0.785	0.159	1.061	0.849
	Left tilted	0.057	1.036	0.677	0.053	1.093	0.734	0.110	1.146	0.787
	Right cheek	0.127	0.467	0.356	0.025	0.594	0.483	0.152	0.619	0.508
	Right tilted	0.060	0.585	0.374	0.028	0.645	0.434	0.088	0.673	0.462
LTE B5	Left cheek	0.077	0.902	0.690	0.064	0.979	0.767	0.141	1.043	0.831
	Left tilted	0.068	1.036	0.677	0.053	1.104	0.745	0.121	1.157	0.798
	Right cheek	0.089	0.467	0.356	0.025	0.556	0.445	0.114	0.581	0.470
	Right tilted	0.073	0.585	0.374	0.028	0.658	0.447	0.101	0.686	0.475
LTE B12	Left cheek	0.075	0.902	0.690	0.064	0.977	0.765	0.139	1.041	0.829
	Left tilted	0.001	1.036	0.677	0.053	1.037	0.678	0.054	1.090	0.731
	Right cheek	0.099	0.467	0.356	0.025	0.566	0.455	0.124	0.591	0.480
	Right tilted	0.053	0.585	0.374	0.028	0.638	0.427	0.081	0.666	0.455
N5	Left cheek	0.020	0.902	0.690	0.064	0.922	0.710	0.084	0.986	0.774
	Left tilted	0.013	1.036	0.677	0.053	1.049	0.690	0.066	1.102	0.743
	Right cheek	0.132	0.467	0.356	0.025	0.599	0.488	0.157	0.624	0.513
	Right tilted	0.029	0.585	0.374	0.028	0.614	0.403	0.057	0.642	0.431
Test position		SARmax (W/kg)				Summed SAR				
		Main(Ant2)	WiFi 2.4G	WiFi 5G	BT					
		1	2	3	4	1+2	1+3	1+4	1+2+4	1+3+4
GSM1900	Left cheek	0.074	0.902	0.690	0.064	0.976	0.764	0.138	1.040	0.828
	Left tilted	0.047	1.036	0.677	0.053	1.083	0.724	0.100	1.136	0.777
	Right cheek	0.062	0.467	0.356	0.025	0.529	0.418	0.087	0.554	0.443
	Right tilted	0.067	0.585	0.374	0.028	0.652	0.441	0.095	0.680	0.469
WCDMA B2	Left cheek	0.135	0.902	0.690	0.064	1.037	0.825	0.199	1.101	0.889
	Left tilted	0.085	1.036	0.677	0.053	1.121	0.762	0.138	1.174	0.815
	Right cheek	0.091	0.467	0.356	0.025	0.558	0.447	0.116	0.583	0.472
	Right tilted	0.089	0.585	0.374	0.028	0.674	0.463	0.117	0.702	0.491
WCDMA B4	Left cheek	0.144	0.902	0.690	0.064	1.046	0.834	0.208	1.110	0.898
	Left tilted	0.084	1.036	0.677	0.053	1.120	0.761	0.137	1.173	0.814
	Right cheek	0.097	0.467	0.356	0.025	0.564	0.453	0.122	0.589	0.478
	Right tilted	0.087	0.585	0.374	0.028	0.672	0.461	0.115	0.700	0.489
LTE B2	Left cheek	0.138	0.902	0.690	0.064	1.040	0.828	0.202	1.104	0.892
	Left tilted	0.082	1.036	0.677	0.053	1.118	0.759	0.135	1.171	0.812
	Right cheek	0.090	0.467	0.356	0.025	0.557	0.446	0.115	0.582	0.471
	Right tilted	0.084	0.585	0.374	0.028	0.669	0.458	0.112	0.697	0.486
LTE B4	Left cheek	0.124	0.902	0.690	0.064	1.026	0.814	0.188	1.090	0.878
	Left tilted	0.069	1.036	0.677	0.053	1.105	0.746	0.122	1.158	0.799
	Right cheek	0.083	0.467	0.356	0.025	0.550	0.439	0.108	0.575	0.464
	Right tilted	0.072	0.585	0.374	0.028	0.657	0.446	0.100	0.685	0.474
LTE B7	Left cheek	0.232	0.902	0.690	0.064	1.134	0.922	0.296	1.198	0.986
	Left tilted	0.084	1.036	0.677	0.053	1.120	0.761	0.137	1.173	0.814
	Right cheek	0.149	0.467	0.356	0.025	0.616	0.505	0.174	0.641	0.530
	Right tilted	0.129	0.585	0.374	0.028	0.714	0.503	0.157	0.742	0.531

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LTE B38	Left cheek	0.132	0.902	0.690	0.064	1.034	0.822	0.196	1.098	0.886
	Left tilted	0.061	1.036	0.677	0.053	1.097	0.738	0.114	1.150	0.791
	Right cheek	0.096	0.467	0.356	0.025	0.563	0.452	0.121	0.588	0.477
	Right tilted	0.100	0.585	0.374	0.028	0.685	0.474	0.128	0.713	0.502
LTE B41	Left cheek	0.103	0.902	0.690	0.064	1.005	0.793	0.167	1.069	0.857
	Left tilted	0.061	1.036	0.677	0.053	1.097	0.738	0.114	1.150	0.791
	Right cheek	0.092	0.467	0.356	0.025	0.559	0.448	0.117	0.584	0.473
	Right tilted	0.098	0.585	0.374	0.028	0.683	0.472	0.126	0.711	0.500
LTE B66	Left cheek	0.194	0.902	0.690	0.064	1.096	0.884	0.258	1.160	0.948
	Left tilted	0.066	1.036	0.677	0.053	1.102	0.743	0.119	1.155	0.796
	Right cheek	0.084	0.467	0.356	0.025	0.551	0.440	0.109	0.576	0.465
	Right tilted	0.073	0.585	0.374	0.028	0.658	0.447	0.101	0.686	0.475
N2	Left cheek	0.129	0.902	0.690	0.064	1.031	0.819	0.193	1.095	0.883
	Left tilted	0.071	1.036	0.677	0.053	1.107	0.748	0.124	1.160	0.801
	Right cheek	0.069	0.467	0.356	0.025	0.536	0.425	0.094	0.561	0.450
	Right tilted	0.071	0.585	0.374	0.028	0.656	0.445	0.099	0.684	0.473
N7	Left cheek	0.184	0.902	0.690	0.064	1.086	0.874	0.248	1.150	0.938
	Left tilted	0.070	1.036	0.677	0.053	1.106	0.747	0.123	1.159	0.800
	Right cheek	0.115	0.467	0.356	0.025	0.582	0.471	0.140	0.607	0.496
	Right tilted	0.115	0.585	0.374	0.028	0.700	0.489	0.143	0.728	0.517
N38	Left cheek	0.040	0.902	0.690	0.064	0.942	0.730	0.104	1.006	0.794
	Left tilted	0.022	1.036	0.677	0.053	1.058	0.699	0.075	1.111	0.752
	Right cheek	0.029	0.467	0.356	0.025	0.496	0.385	0.054	0.521	0.410
	Right tilted	0.031	0.585	0.374	0.028	0.616	0.405	0.059	0.644	0.433
N41	Left cheek	0.010	0.902	0.690	0.064	0.912	0.700	0.074	0.976	0.764
	Left tilted	0.011	1.036	0.677	0.053	1.047	0.688	0.064	1.100	0.741
	Right cheek	0.026	0.467	0.356	0.025	0.493	0.382	0.051	0.518	0.407
	Right tilted	0.006	0.585	0.374	0.028	0.591	0.380	0.034	0.619	0.408
N66	Left cheek	0.150	0.902	0.690	0.064	1.052	0.840	0.214	1.116	0.904
	Left tilted	0.068	1.036	0.677	0.053	1.104	0.745	0.121	1.157	0.798
	Right cheek	0.125	0.467	0.356	0.025	0.592	0.481	0.150	0.617	0.506
	Right tilted	0.082	0.585	0.374	0.028	0.667	0.456	0.110	0.695	0.484

Test position		SARmax (W/kg)				Summed SAR				
		EN_DC Summed SAR	WiFi 2.4G	WiFi 5G	BT					
		1	2	3	4	1+2	1+3	1+4	1+2+4	1+3+4
n2-B5	Left cheek	0.134	0.902	0.690	0.064	1.036	0.824	0.198	1.100	0.888
	Left tilted	0.142	1.036	0.677	0.053	1.178	0.819	0.195	1.231	0.872
	Right cheek	0.181	0.467	0.356	0.025	0.648	0.537	0.206	0.673	0.562
	Right tilted	0.132	0.585	0.374	0.028	0.717	0.506	0.160	0.745	0.534
n2-B12	Left cheek	0.132	0.902	0.690	0.064	1.034	0.822	0.196	1.098	0.886
	Left tilted	0.075	1.036	0.677	0.053	1.111	0.752	0.128	1.164	0.805
	Right cheek	0.191	0.467	0.356	0.025	0.658	0.547	0.216	0.683	0.572
	Right tilted	0.112	0.585	0.374	0.028	0.697	0.486	0.140	0.725	0.514
n2-B66	Left cheek	0.251	0.902	0.690	0.064	1.153	0.941	0.315	1.217	1.005
	Left tilted	0.140	1.036	0.677	0.053	1.176	0.817	0.193	1.229	0.870
	Right cheek	0.176	0.467	0.356	0.025	0.643	0.532	0.201	0.668	0.557
	Right tilted	0.132	0.585	0.374	0.028	0.717	0.506	0.160	0.745	0.534
n5-B7	Left cheek	0.102	0.902	0.690	0.064	1.004	0.792	0.166	1.068	0.856
	Left tilted	0.087	1.036	0.677	0.053	1.123	0.764	0.140	1.176	0.817
	Right cheek	0.142	0.467	0.356	0.025	0.609	0.498	0.167	0.634	0.523
	Right tilted	0.079	0.585	0.374	0.028	0.664	0.453	0.107	0.692	0.481
n5-B66	Left cheek	0.144	0.902	0.690	0.064	1.046	0.834	0.208	1.110	0.898

	Left tilted	0.112	1.036	0.677	0.053	1.148	0.789	0.165	1.201	0.842
	Right cheek	0.194	0.467	0.356	0.025	0.661	0.550	0.219	0.686	0.575
	Right tilted	0.114	0.585	0.374	0.028	0.699	0.488	0.142	0.727	0.516
n7-B5	Left cheek	0.102	0.902	0.690	0.064	1.004	0.792	0.166	1.068	0.856
	Left tilted	0.111	1.036	0.677	0.053	1.147	0.788	0.164	1.200	0.841
	Right cheek	0.118	0.467	0.356	0.025	0.585	0.474	0.143	0.610	0.499
	Right tilted	0.095	0.585	0.374	0.028	0.680	0.469	0.123	0.708	0.497
n7-B12	Left cheek	0.100	0.902	0.690	0.064	1.002	0.790	0.164	1.066	0.854
	Left tilted	0.044	1.036	0.677	0.053	1.080	0.721	0.097	1.133	0.774
	Right cheek	0.128	0.467	0.356	0.025	0.595	0.484	0.153	0.620	0.509
	Right tilted	0.075	0.585	0.374	0.028	0.660	0.449	0.103	0.688	0.477
n38-B5	Left cheek	0.085	0.902	0.690	0.064	0.987	0.775	0.149	1.051	0.839
	Left tilted	0.078	1.036	0.677	0.053	1.114	0.755	0.131	1.167	0.808
	Right cheek	0.104	0.467	0.356	0.025	0.571	0.460	0.129	0.596	0.485
	Right tilted	0.079	0.585	0.374	0.028	0.664	0.453	0.107	0.692	0.481
n38-B12	Left cheek	0.083	0.902	0.690	0.064	0.985	0.773	0.147	1.049	0.837
	Left tilted	0.011	1.036	0.677	0.053	1.047	0.688	0.064	1.100	0.741
	Right cheek	0.114	0.467	0.356	0.025	0.581	0.470	0.139	0.606	0.495
	Right tilted	0.059	0.585	0.374	0.028	0.644	0.433	0.087	0.672	0.461
n41-B2	Left cheek	0.146	0.902	0.690	0.064	1.048	0.836	0.210	1.112	0.900
	Left tilted	0.093	1.036	0.677	0.053	1.129	0.770	0.146	1.182	0.823
	Right cheek	0.103	0.467	0.356	0.025	0.570	0.459	0.128	0.595	0.484
	Right tilted	0.090	0.585	0.374	0.028	0.675	0.464	0.118	0.703	0.492
n41-B4	Left cheek	0.132	0.902	0.690	0.064	1.034	0.822	0.196	1.098	0.886
	Left tilted	0.080	1.036	0.677	0.053	1.116	0.757	0.133	1.169	0.810
	Right cheek	0.096	0.467	0.356	0.025	0.563	0.452	0.121	0.588	0.477
	Right tilted	0.078	0.585	0.374	0.028	0.663	0.452	0.106	0.691	0.480
n41-B12	Left cheek	0.083	0.902	0.690	0.064	0.985	0.773	0.147	1.049	0.837
	Left tilted	0.012	1.036	0.677	0.053	1.048	0.689	0.065	1.101	0.742
	Right cheek	0.112	0.467	0.356	0.025	0.579	0.468	0.137	0.604	0.493
	Right tilted	0.059	0.585	0.374	0.028	0.644	0.433	0.087	0.672	0.461
n41-B66	Left cheek	0.202	0.902	0.690	0.064	1.104	0.892	0.266	1.168	0.956
	Left tilted	0.077	1.036	0.677	0.053	1.113	0.754	0.130	1.166	0.807
	Right cheek	0.097	0.467	0.356	0.025	0.564	0.453	0.122	0.589	0.478
	Right tilted	0.079	0.585	0.374	0.028	0.664	0.453	0.107	0.692	0.481
n66-B2	Left cheek	0.229	0.902	0.690	0.064	1.131	0.919	0.293	1.195	0.983
	Left tilted	0.141	1.036	0.677	0.053	1.177	0.818	0.194	1.230	0.871
	Right cheek	0.222	0.467	0.356	0.025	0.689	0.578	0.247	0.714	0.603
	Right tilted	0.141	0.585	0.374	0.028	0.726	0.515	0.169	0.754	0.543
n66-B5	Left cheek	0.168	0.902	0.690	0.064	1.070	0.858	0.232	1.134	0.922
	Left tilted	0.127	1.036	0.677	0.053	1.163	0.804	0.180	1.216	0.857
	Right cheek	0.221	0.467	0.356	0.025	0.688	0.577	0.246	0.713	0.602
	Right tilted	0.130	0.585	0.374	0.028	0.715	0.504	0.158	0.743	0.532
n66-B7	Left cheek	0.323	0.902	0.690	0.064	1.225	1.013	0.387	1.289	1.077
	Left tilted	0.143	1.036	0.677	0.053	1.179	0.820	0.196	1.232	0.873
	Right cheek	0.281	0.467	0.356	0.025	0.748	0.637	0.306	0.773	0.662
	Right tilted	0.186	0.585	0.374	0.028	0.771	0.560	0.214	0.799	0.588

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Test position		SARmax (W/kg)				Summed SAR				
		Main(Ant1)	WiFi 2.4G	WiFi 5G	BT					
		1	2	3	4	1+2	1+3	1+4	1+2+4	1+3+4
GSM850	Front side	0.274	0.189	0.093	0.021	0.463	0.367	0.295	0.484	0.388
	Back side	0.284	0.217	0.570	0.031	0.501	0.854	0.315	0.532	0.885
WCDMA B5	Front side	0.305	0.189	0.093	0.021	0.494	0.398	0.326	0.515	0.419
	Back side	0.313	0.217	0.570	0.031	0.530	0.883	0.344	0.561	0.914
LTE B5	Front side	0.269	0.189	0.093	0.021	0.458	0.362	0.290	0.479	0.383
	Back side	0.249	0.217	0.570	0.031	0.466	0.819	0.280	0.497	0.850
LTE B12	Front side	0.117	0.189	0.093	0.021	0.306	0.210	0.138	0.327	0.231
	Back side	0.133	0.217	0.570	0.031	0.350	0.703	0.164	0.381	0.734
N5	Front side	0.174	0.189	0.093	0.021	0.363	0.267	0.195	0.384	0.288
	Back side	0.322	0.217	0.570	0.031	0.539	0.892	0.353	0.570	0.923
Test position		SARmax (W/kg)				Summed SAR				
		Main(Ant2)	WiFi 2.4G	WiFi 5G	BT					
		1	2	3	4	1+2	1+3	1+4	1+2+4	1+3+4
GSM1900	Front side	0.265	0.189	0.093	0.021	0.454	0.358	0.286	0.475	0.379
	Back side	0.293	0.217	0.570	0.031	0.510	0.863	0.324	0.541	0.894
WCDMA B2	Front side	0.354	0.189	0.093	0.021	0.543	0.447	0.375	0.564	0.468
	Back side	0.375	0.217	0.570	0.031	0.592	0.945	0.406	0.623	0.976
WCDMA B4	Front side	0.432	0.189	0.093	0.021	0.621	0.525	0.453	0.642	0.546
	Back side	0.417	0.217	0.570	0.031	0.634	0.987	0.448	0.665	1.018
LTE B2	Front side	0.448	0.189	0.093	0.021	0.637	0.541	0.469	0.658	0.562
	Back side	0.514	0.217	0.570	0.031	0.731	1.084	0.545	0.762	1.115
LTE B4	Front side	0.453	0.189	0.093	0.021	0.642	0.546	0.474	0.663	0.567
	Back side	0.480	0.217	0.570	0.031	0.697	1.050	0.511	0.728	1.081
LTE B7	Front side	0.490	0.189	0.093	0.021	0.679	0.583	0.511	0.700	0.604
	Back side	0.345	0.217	0.570	0.031	0.562	0.915	0.376	0.593	0.946
LTE B38	Front side	0.533	0.189	0.093	0.021	0.722	0.626	0.554	0.743	0.647
	Back side	0.623	0.217	0.570	0.031	0.840	1.193	0.654	0.871	1.224
LTE B41	Front side	0.439	0.189	0.093	0.021	0.628	0.532	0.460	0.649	0.553
	Back side	0.491	0.217	0.570	0.031	0.708	1.061	0.522	0.739	1.092
LTE B66	Front side	0.411	0.189	0.093	0.021	0.600	0.504	0.432	0.621	0.525
	Back side	0.453	0.217	0.570	0.031	0.670	1.023	0.484	0.701	1.054
N2	Front side	0.471	0.189	0.093	0.021	0.660	0.564	0.492	0.681	0.585
	Back side	0.584	0.217	0.570	0.031	0.801	1.154	0.615	0.832	1.185
N7	Front side	0.163	0.189	0.093	0.021	0.352	0.256	0.184	0.373	0.277
	Back side	0.157	0.217	0.570	0.031	0.374	0.727	0.188	0.405	0.758
N38	Front side	0.154	0.189	0.093	0.021	0.343	0.247	0.175	0.364	0.268
	Back side	0.206	0.217	0.570	0.031	0.423	0.776	0.237	0.454	0.807
N41	Front side	0.230	0.189	0.093	0.021	0.419	0.323	0.251	0.440	0.344
	Back side	0.270	0.217	0.570	0.031	0.487	0.840	0.301	0.518	0.871
N66	Front side	0.421	0.189	0.093	0.021	0.610	0.514	0.442	0.631	0.535
	Back side	0.466	0.217	0.570	0.031	0.683	1.036	0.497	0.714	1.067
Test position		SARmax (W/kg)				Summed SAR				
		EN_DC Summed SAR	WiFi 2.4G	WiFi 5G	BT					
		1	2	3	4	1+2	1+3	1+4	1+2+4	1+3+4
n2-B5	Front side	0.654	0.189	0.093	0.021	0.843	0.747	0.675	0.864	0.768
	Back side	0.675	0.217	0.570	0.031	0.892	1.245	0.706	0.923	1.276
n2-B12	Front side	0.502	0.189	0.093	0.021	0.691	0.595	0.523	0.712	0.616
	Back side	0.633	0.217	0.570	0.031	0.850	1.203	0.664	0.881	1.234

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n2-B66	Front side	0.796	0.189	0.093	0.021	0.985	0.889	0.817	1.006	0.910
	Back side	0.694	0.217	0.570	0.031	0.911	1.264	0.725	0.942	1.295
n5-B7	Front side	0.791	0.189	0.093	0.021	0.980	0.884	0.812	1.001	0.905
	Back side	0.516	0.217	0.570	0.031	0.733	1.086	0.547	0.764	1.117
n5-B66	Front side	0.500	0.189	0.093	0.021	0.689	0.593	0.521	0.710	0.614
	Back side	0.701	0.217	0.570	0.031	0.918	1.271	0.732	0.949	1.302
n7-B5	Front side	0.622	0.189	0.093	0.021	0.811	0.715	0.643	0.832	0.736
	Back side	0.372	0.217	0.570	0.031	0.589	0.942	0.403	0.620	0.973
n7-B12	Front side	0.470	0.189	0.093	0.021	0.659	0.563	0.491	0.680	0.584
	Back side	0.330	0.217	0.570	0.031	0.547	0.900	0.361	0.578	0.931
n38-B5	Front side	0.413	0.189	0.093	0.021	0.602	0.506	0.434	0.623	0.527
	Back side	0.226	0.217	0.570	0.031	0.443	0.796	0.257	0.474	0.827
n38-B12	Front side	0.261	0.189	0.093	0.021	0.450	0.354	0.282	0.471	0.375
	Back side	0.184	0.217	0.570	0.031	0.401	0.754	0.215	0.432	0.785
n41-B2	Front side	0.621	0.189	0.093	0.021	0.810	0.714	0.642	0.831	0.735
	Back side	0.288	0.217	0.570	0.031	0.505	0.858	0.319	0.536	0.889
n41-B4	Front side	0.626	0.189	0.093	0.021	0.815	0.719	0.647	0.836	0.740
	Back side	0.660	0.217	0.570	0.031	0.877	1.230	0.691	0.908	1.261
n41-B12	Front side	0.290	0.189	0.093	0.021	0.479	0.383	0.311	0.500	0.404
	Back side	0.216	0.217	0.570	0.031	0.433	0.786	0.247	0.464	0.817
n41-B66	Front side	0.584	0.189	0.093	0.021	0.773	0.677	0.605	0.794	0.698
	Back side	0.277	0.217	0.570	0.031	0.494	0.847	0.308	0.525	0.878
n66-B2	Front side	0.827	0.189	0.093	0.021	1.016	0.920	0.848	1.037	0.941
	Back side	0.611	0.217	0.570	0.031	0.828	1.181	0.642	0.859	1.212
n66-B5	Front side	0.648	0.189	0.093	0.021	0.837	0.741	0.669	0.858	0.762
	Back side	0.581	0.217	0.570	0.031	0.798	1.151	0.612	0.829	1.182
n66-B7	Front side	0.500	0.189	0.093	0.021	0.689	0.593	0.521	0.710	0.614
	Back side	0.632	0.217	0.570	0.031	0.849	1.202	0.663	0.880	1.233

Test position		SARmax (W/kg)				Summed SAR				
		Main(Ant1)	WiFi 2.4G	WiFi 5G	BT					
		1	2	3	4	1+2	1+3	1+4	1+2+4	1+3+4
GSM850	Front side	0.322	0.189	0.093	0.021	0.511	0.415	0.343	0.532	0.436
	Back side	0.388	0.217	0.306	0.031	0.605	0.694	0.419	0.636	0.725
	Left side	0.055	0.050	0.007	0.007	0.105	0.062	0.062	0.112	0.069
	Right side	0.164	0.146	0.171	0.016	0.310	0.335	0.180	0.326	0.351
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.299	0.000	0.000	0.000	0.299	0.299	0.299	0.299	0.299
WCDMA B5	Front side	0.305	0.189	0.093	0.021	0.494	0.398	0.326	0.515	0.419
	Back side	0.313	0.217	0.306	0.031	0.530	0.619	0.344	0.561	0.650
	Left side	0.052	0.050	0.007	0.007	0.102	0.059	0.059	0.109	0.066
	Right side	0.151	0.146	0.171	0.016	0.297	0.322	0.167	0.313	0.338
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.271	0.000	0.000	0.000	0.271	0.271	0.271	0.271	0.271
LTE B5	Front side	0.269	0.189	0.093	0.021	0.458	0.362	0.290	0.479	0.383
	Back side	0.249	0.217	0.306	0.031	0.466	0.555	0.280	0.497	0.586
	Left side	0.050	0.050	0.007	0.007	0.100	0.057	0.057	0.107	0.064
	Right side	0.132	0.146	0.171	0.016	0.278	0.303	0.148	0.294	0.319
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.228	0.000	0.000	0.000	0.228	0.228	0.228	0.228	0.228
LTE B12	Front side	0.117	0.189	0.093	0.021	0.306	0.210	0.138	0.327	0.231

	Back side	0.133	0.217	0.306	0.031	0.350	0.439	0.164	0.381	0.470
	Left side	0.095	0.050	0.007	0.007	0.145	0.102	0.102	0.152	0.109
	Right side	0.191	0.146	0.171	0.016	0.337	0.362	0.207	0.353	0.378
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.136	0.000	0.000	0.000	0.136	0.136	0.136	0.136	0.136
N5	Front side	0.174	0.189	0.093	0.021	0.363	0.267	0.195	0.384	0.288
	Back side	0.322	0.217	0.306	0.031	0.539	0.628	0.353	0.570	0.659
	Left side	0.029	0.050	0.007	0.007	0.079	0.036	0.036	0.086	0.043
	Right side	0.016	0.146	0.171	0.016	0.162	0.187	0.032	0.178	0.203
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.223	0.000	0.000	0.000	0.223	0.223	0.223	0.223	0.223

Test position		SARmax (W/kg)				Summed SAR				
		Main(Ant2)	WiFi 2.4G	WiFi 5G	BT					
		1	2	3	4	1+2	1+3	1+4	1+2+4	1+3+4
GSM1900	Front side	0.240	0.189	0.093	0.021	0.429	0.333	0.261	0.450	0.354
	Back side	0.232	0.217	0.306	0.031	0.449	0.538	0.263	0.480	0.569
	Left side	0.175	0.050	0.007	0.007	0.225	0.182	0.182	0.232	0.189
	Right side	0.058	0.146	0.171	0.016	0.204	0.229	0.074	0.220	0.245
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.498	0.000	0.000	0.000	0.498	0.498	0.498	0.498	0.498
WCDMA B2	Front side	0.215	0.189	0.093	0.021	0.404	0.308	0.236	0.425	0.329
	Back side	0.196	0.217	0.306	0.031	0.413	0.502	0.227	0.444	0.533
	Left side	0.323	0.050	0.007	0.007	0.373	0.330	0.330	0.380	0.337
	Right side	0.083	0.146	0.171	0.016	0.229	0.254	0.099	0.245	0.270
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.294	0.000	0.000	0.000	0.294	0.294	0.294	0.294	0.294
WCDMA B4	Front side	0.432	0.189	0.093	0.021	0.621	0.525	0.453	0.642	0.546
	Back side	0.417	0.217	0.306	0.031	0.634	0.723	0.448	0.665	0.754
	Left side	0.420	0.050	0.007	0.007	0.470	0.427	0.427	0.477	0.434
	Right side	0.104	0.146	0.171	0.016	0.250	0.275	0.120	0.266	0.291
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.677	0.000	0.000	0.000	0.677	0.677	0.677	0.677	0.677
LTE B2	Front side	0.448	0.189	0.093	0.021	0.637	0.541	0.469	0.658	0.562
	Back side	0.514	0.217	0.306	0.031	0.731	0.820	0.545	0.762	0.851
	Left side	0.352	0.050	0.007	0.007	0.402	0.359	0.359	0.409	0.366
	Right side	0.093	0.146	0.171	0.016	0.239	0.264	0.109	0.255	0.280
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.786	0.000	0.000	0.000	0.786	0.786	0.786	0.786	0.786
LTE B4	Front side	0.453	0.189	0.093	0.021	0.642	0.546	0.474	0.663	0.567
	Back side	0.480	0.217	0.306	0.031	0.697	0.786	0.511	0.728	0.817
	Left side	0.368	0.050	0.007	0.007	0.418	0.375	0.375	0.425	0.382
	Right side	0.096	0.146	0.171	0.016	0.242	0.267	0.112	0.258	0.283
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.697	0.000	0.000	0.000	0.697	0.697	0.697	0.697	0.697
LTE B7	Front side	0.490	0.189	0.093	0.021	0.679	0.583	0.511	0.700	0.604
	Back side	0.345	0.217	0.306	0.031	0.562	0.651	0.376	0.593	0.682
	Left side	0.384	0.050	0.007	0.007	0.434	0.391	0.391	0.441	0.398
	Right side	0.117	0.146	0.171	0.016	0.263	0.288	0.133	0.279	0.304
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.372	0.000	0.000	0.000	0.372	0.372	0.372	0.372	0.372
LTE B38	Front side	0.533	0.189	0.093	0.021	0.722	0.626	0.554	0.743	0.647
	Back side	0.623	0.217	0.306	0.031	0.840	0.929	0.654	0.871	0.960

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	Left side	0.259	0.050	0.007	0.007	0.309	0.266	0.266	0.316	0.273
	Right side	0.081	0.146	0.171	0.016	0.227	0.252	0.097	0.243	0.268
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.424	0.000	0.000	0.000	0.424	0.424	0.424	0.424	0.424
LTE B41	Front side	0.439	0.189	0.093	0.021	0.628	0.532	0.460	0.649	0.553
	Back side	0.491	0.217	0.306	0.031	0.708	0.797	0.522	0.739	0.828
	Left side	0.243	0.050	0.007	0.007	0.293	0.250	0.250	0.300	0.257
	Right side	0.077	0.146	0.171	0.016	0.223	0.248	0.093	0.239	0.264
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.420	0.000	0.000	0.000	0.420	0.420	0.420	0.420	0.420
LTE B66	Front side	0.411	0.189	0.093	0.021	0.600	0.504	0.432	0.621	0.525
	Back side	0.453	0.217	0.306	0.031	0.670	0.759	0.484	0.701	0.790
	Left side	0.332	0.050	0.007	0.007	0.382	0.339	0.339	0.389	0.346
	Right side	0.100	0.146	0.171	0.016	0.246	0.271	0.116	0.262	0.287
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.661	0.000	0.000	0.000	0.661	0.661	0.661	0.661	0.661
N2	Front side	0.471	0.189	0.093	0.021	0.660	0.564	0.492	0.681	0.585
	Back side	0.584	0.217	0.306	0.031	0.801	0.890	0.615	0.832	0.921
	Left side	0.358	0.050	0.007	0.007	0.408	0.365	0.365	0.415	0.372
	Right side	0.097	0.146	0.171	0.016	0.243	0.268	0.113	0.259	0.284
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.948	0.000	0.000	0.000	0.948	0.948	0.948	0.948	0.948
N7	Front side	0.393	0.189	0.093	0.021	0.582	0.486	0.414	0.603	0.507
	Back side	0.248	0.217	0.306	0.031	0.465	0.554	0.279	0.496	0.585
	Left side	0.300	0.050	0.007	0.007	0.350	0.307	0.307	0.357	0.314
	Right side	0.105	0.146	0.171	0.016	0.251	0.276	0.121	0.267	0.292
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.322	0.000	0.000	0.000	0.322	0.322	0.322	0.322	0.322
N38	Front side	0.154	0.189	0.093	0.021	0.343	0.247	0.175	0.364	0.268
	Back side	0.206	0.217	0.306	0.031	0.423	0.512	0.237	0.454	0.543
	Left side	0.070	0.050	0.007	0.007	0.120	0.077	0.077	0.127	0.084
	Right side	0.028	0.146	0.171	0.016	0.174	0.199	0.044	0.190	0.215
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.142	0.000	0.000	0.000	0.142	0.142	0.142	0.142	0.142
N41	Front side	0.230	0.189	0.093	0.021	0.419	0.323	0.251	0.440	0.344
	Back side	0.270	0.217	0.306	0.031	0.487	0.576	0.301	0.518	0.607
	Left side	0.109	0.050	0.007	0.007	0.159	0.116	0.116	0.166	0.123
	Right side	0.039	0.146	0.171	0.016	0.185	0.210	0.055	0.201	0.226
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.210	0.000	0.000	0.000	0.210	0.210	0.210	0.210	0.210
N66	Front side	0.421	0.189	0.093	0.021	0.610	0.514	0.442	0.631	0.535
	Back side	0.466	0.217	0.306	0.031	0.683	0.772	0.497	0.714	0.803
	Left side	0.421	0.050	0.007	0.007	0.471	0.428	0.428	0.478	0.435
	Right side	0.036	0.146	0.171	0.016	0.182	0.207	0.052	0.198	0.223
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.588	0.000	0.000	0.000	0.588	0.588	0.588	0.588	0.588
Test position		SARmax (W/kg)				Summed SAR				
		EN_DC Summed SAR	WiFi 2.4G	WiFi 5G	BT					
		1	2	3	4	1+2	1+3	1+4	1+2+4	1+3+4
n2-B5	Front side	0.654	0.189	0.093	0.021	0.843	0.747	0.675	0.864	0.768
	Back side	0.846	0.217	0.306	0.031	1.063	1.152	0.877	1.094	1.183
	Left side	0.078	0.050	0.007	0.007	0.128	0.085	0.085	0.135	0.092

	Right side	0.352	0.146	0.171	0.016	0.498	0.523	0.368	0.514	0.539
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.441	0.000	0.000	0.000	0.441	0.441	0.441	0.441	0.441
n2-B12	Front side	0.502	0.189	0.093	0.021	0.691	0.595	0.523	0.712	0.616
	Back side	0.730	0.217	0.306	0.031	0.947	1.036	0.761	0.978	1.067
	Left side	0.123	0.050	0.007	0.007	0.173	0.130	0.130	0.180	0.137
	Right side	0.411	0.146	0.171	0.016	0.557	0.582	0.427	0.573	0.598
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.349	0.000	0.000	0.000	0.349	0.349	0.349	0.349	0.349
n2-B66	Front side	0.796	0.189	0.093	0.021	0.985	0.889	0.817	1.006	0.910
	Back side	0.694	0.217	0.306	0.031	0.911	1.000	0.725	0.942	1.031
	Left side	0.360	0.050	0.007	0.007	0.410	0.367	0.367	0.417	0.374
	Right side	0.320	0.146	0.171	0.016	0.466	0.491	0.336	0.482	0.507
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.874	0.000	0.000	0.000	0.874	0.874	0.874	0.874	0.874
n5-B7	Front side	0.791	0.189	0.093	0.021	0.980	0.884	0.812	1.001	0.905
	Back side	0.954	0.217	0.306	0.031	1.171	1.260	0.985	1.202	1.291
	Left side	0.082	0.050	0.007	0.007	0.132	0.089	0.089	0.139	0.096
	Right side	0.284	0.146	0.171	0.016	0.430	0.455	0.300	0.446	0.471
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.608	0.000	0.000	0.000	0.608	0.608	0.608	0.608	0.608
n5-B66	Front side	0.500	0.189	0.093	0.021	0.689	0.593	0.521	0.710	0.614
	Back side	0.701	0.217	0.306	0.031	0.918	1.007	0.732	0.949	1.038
	Left side	0.091	0.050	0.007	0.007	0.141	0.098	0.098	0.148	0.105
	Right side	0.276	0.146	0.171	0.016	0.422	0.447	0.292	0.438	0.463
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.372	0.000	0.000	0.000	0.372	0.372	0.372	0.372	0.372
n7-B5	Front side	0.622	0.189	0.093	0.021	0.811	0.715	0.643	0.832	0.736
	Back side	0.543	0.217	0.306	0.031	0.760	0.849	0.574	0.791	0.880
	Left side	0.116	0.050	0.007	0.007	0.166	0.123	0.123	0.173	0.130
	Right side	0.376	0.146	0.171	0.016	0.522	0.547	0.392	0.538	0.563
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.428	0.000	0.000	0.000	0.428	0.428	0.428	0.428	0.428
n7-B12	Front side	0.470	0.189	0.093	0.021	0.659	0.563	0.491	0.680	0.584
	Back side	0.427	0.217	0.306	0.031	0.644	0.733	0.458	0.675	0.764
	Left side	0.161	0.050	0.007	0.007	0.211	0.168	0.168	0.218	0.175
	Right side	0.435	0.146	0.171	0.016	0.581	0.606	0.451	0.597	0.622
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.336	0.000	0.000	0.000	0.336	0.336	0.336	0.336	0.336
n38-B5	Front side	0.413	0.189	0.093	0.021	0.602	0.506	0.434	0.623	0.527
	Back side	0.397	0.217	0.306	0.031	0.614	0.703	0.428	0.645	0.734
	Left side	0.064	0.050	0.007	0.007	0.114	0.071	0.071	0.121	0.078
	Right side	0.202	0.146	0.171	0.016	0.348	0.373	0.218	0.364	0.389
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.289	0.000	0.000	0.000	0.289	0.289	0.289	0.289	0.289
n38-B12	Front side	0.261	0.189	0.093	0.021	0.450	0.354	0.282	0.471	0.375
	Back side	0.281	0.217	0.306	0.031	0.498	0.587	0.312	0.529	0.618
	Left side	0.109	0.050	0.007	0.007	0.159	0.116	0.116	0.166	0.123
	Right side	0.261	0.146	0.171	0.016	0.407	0.432	0.277	0.423	0.448
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.197	0.000	0.000	0.000	0.197	0.197	0.197	0.197	0.197
n41-B2	Front side	0.621	0.189	0.093	0.021	0.810	0.714	0.642	0.831	0.735

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	Back side	0.288	0.217	0.306	0.031	0.505	0.594	0.319	0.536	0.625
	Left side	0.367	0.050	0.007	0.007	0.417	0.374	0.374	0.424	0.381
	Right side	0.173	0.146	0.171	0.016	0.319	0.344	0.189	0.335	0.360
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.895	0.000	0.000	0.000	0.895	0.895	0.895	0.895	0.895
n41-B4	Front side	0.626	0.189	0.093	0.021	0.815	0.719	0.647	0.836	0.740
	Back side	0.660	0.217	0.306	0.031	0.877	0.966	0.691	0.908	0.997
	Left side	0.383	0.050	0.007	0.007	0.433	0.390	0.390	0.440	0.397
	Right side	0.176	0.146	0.171	0.016	0.322	0.347	0.192	0.338	0.363
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.806	0.000	0.000	0.000	0.806	0.806	0.806	0.806	0.806
n41-B12	Front side	0.290	0.189	0.093	0.021	0.479	0.383	0.311	0.500	0.404
	Back side	0.313	0.217	0.306	0.031	0.530	0.619	0.344	0.561	0.650
	Left side	0.110	0.050	0.007	0.007	0.160	0.117	0.117	0.167	0.124
	Right side	0.271	0.146	0.171	0.016	0.417	0.442	0.287	0.433	0.458
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.245	0.000	0.000	0.000	0.245	0.245	0.245	0.245	0.245
n41-B66	Front side	0.584	0.189	0.093	0.021	0.773	0.677	0.605	0.794	0.698
	Back side	0.277	0.217	0.306	0.031	0.494	0.583	0.308	0.525	0.614
	Left side	0.347	0.050	0.007	0.007	0.397	0.354	0.354	0.404	0.361
	Right side	0.180	0.146	0.171	0.016	0.326	0.351	0.196	0.342	0.367
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.770	0.000	0.000	0.000	0.770	0.770	0.770	0.770	0.770
n66-B2	Front side	0.827	0.189	0.093	0.021	1.016	0.920	0.848	1.037	0.941
	Back side	0.611	0.217	0.306	0.031	0.828	0.917	0.642	0.859	0.948
	Left side	0.380	0.050	0.007	0.007	0.430	0.387	0.387	0.437	0.394
	Right side	0.443	0.146	0.171	0.016	0.589	0.614	0.459	0.605	0.630
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.943	0.000	0.000	0.000	0.943	0.943	0.943	0.943	0.943
n66-B5	Front side	0.648	0.189	0.093	0.021	0.837	0.741	0.669	0.858	0.762
	Back side	0.752	0.217	0.306	0.031	0.969	1.058	0.783	1.000	1.089
	Left side	0.078	0.050	0.007	0.007	0.128	0.085	0.085	0.135	0.092
	Right side	0.482	0.146	0.171	0.016	0.628	0.653	0.498	0.644	0.669
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.385	0.000	0.000	0.000	0.385	0.385	0.385	0.385	0.385
n66-B7	Front side	0.496	0.189	0.093	0.021	0.685	0.589	0.517	0.706	0.610
	Back side	0.875	0.217	0.306	0.031	1.092	1.181	0.906	1.123	1.212
	Left side	0.028	0.050	0.007	0.007	0.078	0.035	0.035	0.085	0.042
	Right side	0.792	0.146	0.171	0.016	0.938	0.963	0.808	0.954	0.979
	Top side	0.000	0.223	0.133	0.029	0.223	0.133	0.029	0.252	0.162
	Bottom side	0.440	0.000	0.000	0.000	0.440	0.440	0.440	0.440	0.440

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9 Equipment list

Test Platform	SPEAG DASY5 Professional
Description	SAR Test System (Frequency range 300MHz-6GHz)
Software Reference	DASY52; SEMCAD

Hardware Reference

	Equipment	Manufacturer	Model	Serial Number	Calibration Date	Due date of calibration
☒	Twin Phantom	SPEAG	SAM 5	1481	NCR	NCR
☒	Twin Phantom	SPEAG	SAM 8	1425	NCR	NCR
☒	DAE	SPEAG	DAE3	414	2020-12-30	2021-12-29
☒	DAE	SPEAG	DAE4	1374	2020-11-06	2021-11-05
☒	E-Field Probe	SPEAG	EX3DV4	3789	2020-06-16	2021-06-15
☒	E-Field Probe	SPEAG	EX3DV4	3923	2020-12-18	2021-12-17
☒	Validation Kits	SPEAG	D750V3	1160	2019-05-22	2022-05-21
☒	Validation Kits	SPEAG	D835V2	4d105	2019-12-17	2022-12-16
☒	Validation Kits	SPEAG	D1750V2	1149	2019-05-21	2022-05-20
☒	Validation Kits	SPEAG	D1900V2	5d028	2019-12-17	2022-12-16
☒	Validation Kits	SPEAG	D2450V2	733	2019-12-17	2022-12-16
☒	Validation Kits	SPEAG	D2600V2	1125	2019-05-20	2022-05-19
☒	Validation Kits	SPEAG	D5GHzV2	1165	2019-12-20	2022-12-19
☒	Agilent Network Analyzer	Agilent	E5071C	MY46523591	2020-04-16	2021-04-15
☒	Dielectric Probe Kit	Agilent	85070E	US01440210	NCR	NCR
☒	Universal Radio Communication Tester	R&S	CMW500	124587	2020-04-02	2021-04-01
☒	Radio Communication Analyzer	Anritsu	MT8821C	6201502984	2020-06-11	2021-06-10
☒	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
☒	Signal Generator	Agilent	N5171B	MY53050736	2020-04-15	2021-04-14
☒	Preamplifier	Mini-Circuits	ZHL-42W	15542	NCR	NCR
☒	Preamplifier	Compliance Directions Systems Inc.	AMP28-3W	073501433	NCR	NCR

☒	Power Meter	Agilent	E4416A	GB41292095	2020-04-15	2021-04-14
☒	Power Sensor	Agilent	8481H	MY41091234	2020-04-15	2021-04-14
☒	Power Sensor	R&S	NRP-Z92	100025	2020-04-16	2021-04-15
☒	Attenuator	SHX	TS2-3dB	30704	NCR	NCR
☒	Coaxial low pass filter	Mini-Circuits	VLF-2500(+)	NA	NCR	NCR
☒	Coaxial low pass filter	Microlab Fxr	LA-F13	NA	NCR	NCR
☒	DC POWER SUPPLY	SAKO	SK1730SL5A	NA	NCR	NCR
☒	Speed reading thermometer	MingGao	T809	NA	2020-04-21	2021-04-20
☒	Humidity and Temperature Indicator	KIMTOKA	KIMTOKA	NA	2020-04-21	2021-04-20

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

10 Calibration certificate

Please see the Appendix C

11 Photographs

Please see the Appendix D

Appendix A: Detailed System Check Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

Appendix E: Conducted RF Output Power Table

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