

Report No.: SEWM2308000313RG10

Rev.: 01

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# FCC TEST REPORT PART 1

**Application No.:** SEWM2308000313RG  
**Applicant:** Shenzhen Tinno Mobile Technology Corp.  
**Manufacturer:** Shenzhen Tinno Mobile Technology Corp.  
**Product Name:** Smart Phone  
**Model No.(EUT):** Celero3 5G+  
**Trade Mark:** Celero3 5G+  
**FCC ID:** XD6U695DS  
**Standards:** FCC 47CFR §2.1093  
**Date of Receipt:** 2023-08-14  
**Date of Test:** 2023-08-20 to 2023-09-24  
**Date of Issue:** 2023-09-25  
**Test conclusion:** **PASS \***

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

Authorized Signature:

Well Wei

Well Wei

Wireless Laboratory Manager



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## REVISION HISTORY

Report Number	Revision	Description	Issue Date
SEWM2308000313RG10	01	Original	2023-09-25



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## TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)			
	Head	Body-worn	Hotspot	Product specific 10g SAR
GSM850	0.45	0.52	1.06	/
GSM1900	0.20	0.35	0.69	/
WCDMA Band II	0.21	0.39	0.75	/
WCDMA Band IV	0.14	0.25	0.57	/
WCDMA Band V	0.22	0.32	0.67	/
LTE Band 2	1.17	0.85	1.21	1.79
LTE Band 5	0.88	0.16	0.33	/
LTE Band 12	0.19	0.31	0.54	/
LTE Band 14	0.22	0.35	0.56	/
LTE Band 26	0.22	0.34	0.87	/
LTE Band 30	1.13	1.04	1.25	2.60
LTE Band 48	0.74	0.28	0.59	/
LTE Band 66	1.09	0.67	1.15	1.81
LTE Band 71	0.13	0.35	0.35	/
NR Band n25	1.28	0.83	1.27	2.92
NR Band n26	0.22	0.35	0.63	/
NR Band n30	1.19	0.65	1.20	2.60
NR Band n41	1.23	1.05	1.22	2.92
NR Band n48	1.20	0.58	1.18	/
NR Band n66	1.16	0.64	1.19	2.19
NR Band n70	1.18	0.61	1.14	/
NR Band n71	0.17	0.30	0.36	/
NR Band n77 (3450-3550)	1.23	0.80	0.80	/
NR Band n77 (3700-3980)	1.15	0.78	1.17	2.58
WI-FI (2.4GHz)	1.18	0.72	0.28	2.17
WI-FI (5GHz)	1.19	1.17	0.30	1.57
WI-FI (6E)	1.11	0.60	0.31	/
BT	0.07	0.01	0.02	/
NFC	/	/	/	0.05
SAR Limited(W/kg)	1.6			4.0
Maximum Simultaneous Transmission SAR (W/kg)				
Scenario	Head	Body-worn	Hotspot	Product specific 10g SAR
Sum SAR	1.58	1.54	1.58	3.98
SPLSR	/	/	/	/
SPLSR Limited	0.04			0.1

Note:

1) According to TCB workshop October,2014 RF Exposure Procedures Update (Overlapping Bands): SAR for LTE Band 4 (Frequency range:1710 - 1755 MHz)/LTE Band 5 (Frequency range:824 - 849 MHz)/ LTE Band 17 (Frequency range:704-716 MHz) is respectively covered by LTE Band 66 (Frequency range:1710 - 1780 MHz)/LTE Band 26 (Frequency range:814 - 849 MHz)/ LTE Band 12 (Frequency range:699-716 MHz) due to similar frequency range, same maximum tune up limit and same channel bandwidth.

2) For LTE band 4/5/12/26 and n25/n26/41/n66/n71/n77 that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Reviewed by

Nick Hu

Nick Hu

Prepared by

Leon Xu

Leon Xu



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.  
Wireless Laboratory

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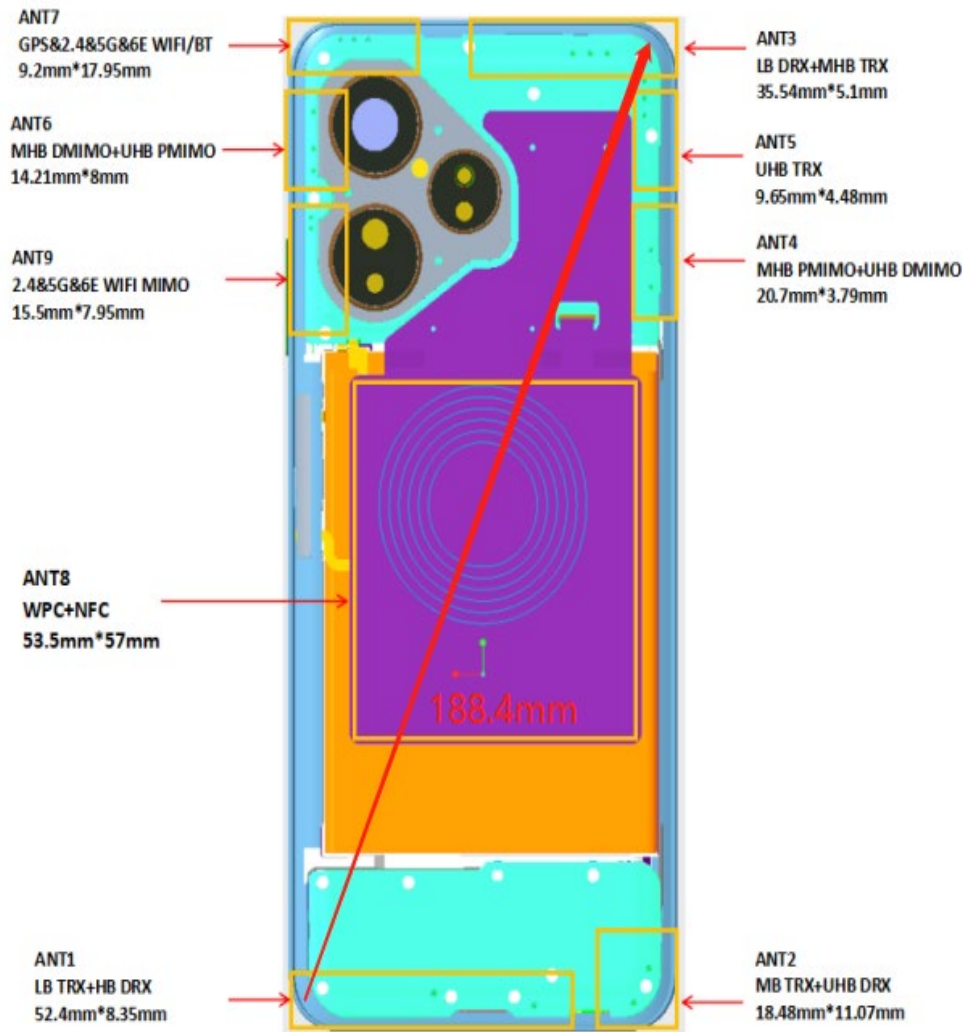
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### 1.1.1 DUT Antenna Locations (Back View)



**Note:**

- 1) The test device is a smart phone. The overall diagonal dimension of this device is 188.4 mm. Per KDB 648474 D04, because the diagonal distance of this device is  $\geq 160$ mm, 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



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Ant 1	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	Yes	No	Yes
Ant 2	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	No	Yes
Ant 3	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	Yes	No
Ant 4	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	No	No
Ant 5	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	No	No
Ant 7	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	Yes	No
Ant 9	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	No	No

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.



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## 2 General Information

### 2.1 Details of Client

Applicant:	Shenzhen Tinno Mobile Technology Corp.
Address:	27-001, South Side of Tianlong Mobile Headquarters Building, Tongfa South Road, Xili Community, Xili Street, Nanshan District, Shenzhen ,PRC
Manufacturer:	Shenzhen Tinno Mobile Technology Corp.
Address:	27-001, South Side of Tianlong Mobile Headquarters Building, Tongfa South Road, Xili Community, Xili Street, Nanshan District, Shenzhen ,PRC

### 2.2 Test Location

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



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## 2.3 Test Facility

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

- **A2LA (Certificate No. 6336.01)**

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

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

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IC#: 27594.

- **FCC –Designation Number: CN1312**

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Designation Number: CN1312.

Test Firm Registration Number: 717327



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中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

t (86-512) 62992980 [www.sgsgroup.com.cn](http://www.sgsgroup.com.cn)

t (86-512) 62992980 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

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## 2.4 General Description of EUT

Device Type :	portable device		
Exposure Category:	uncontrolled environment / general population		
Product Name:	Smart Phone		
Model No.(EUT):	Celero3 5G+		
FCC ID:	XD6U695DS		
Trade Mark:	Celero3 5G+		
Product Phase:	Identical Prototype		
IMEI:	1# 867222065004733		
	2# 867222065004857		
	3# 867222065004865		
Hardware Version:	V1.0		
Software Version:	U695DSV01.01.10		
Device Operating Configurations :			
Modulation Mode:	<b>GSM:</b> GMSK, 8PSK; <b>WCDMA:</b> QPSK,16QAM;		
	<b>LTE:</b> QPSK,16QAM,64QAM,256QAM;		
	<b>5G NR:</b> DFT-s-OFDM (PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM),		
	CP-OFDM (QPSK, 16QAM, 64QAM, 256QAM)		
	<b>WIFI:</b> DSSS, OFDM, OFDMA; <b>BT:</b> GFSK, $\pi$ /4DQPSK,8DPSK <b>NFC:</b> ASK		
Device Class:	B		
GPRS Multi-slots Class:	12	EGPRS Multi-slots Class:	12
HSDPA UE Category:	10	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 12	699-716	729-746



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	LTE Band 14	788-798	758-768
	LTE Band 17	704-716	734-746
	LTE Band 26	814-849	859-894
	LTE Band 30	2305-2315	2350-2360
	LTE Band 48	3550-3700	3550-3700
	LTE Band 66	1710-1780	2110-2200
	LTE Band 71	663-698	617-652
	NR Band n2	1850-1910	1930-1990
	NR Band n5	824-849	869-894
	NR Band n25	1850-1915	1930-1995
	NR Band n26	814-849	859-894
	NR Band n30	2305-2315	2350-2360
	NR Band n41	2496~2690	2496~2690
	NR Band n48	3550-3700	3550-3700
	NR Band n66	1710~1780	2110~2200
	NR Band n70	1695-1710	1995-2020
	NR Band n71	663-698	617-652
	NR Band n77	3450~3550	3450~3550
		3700~3980	3700~3980
	Bluetooth	2400~2483.5	2400~2483.5
	Wi-Fi 2.4G	2402~2462	2402~2462
	Wi-Fi 5G	5150~5250	5150~5250
		5250~5350	5250~5350
		5470~5725	5470~5725
		5725~5850	5725~5850
		5725~5850	5725~5850
	WIF 6E	5925-6425	5925-6425
6425-6525		6425-6525	
6525-6875		6525-6875	
6875-7125		6875-7125	
NFC	NFC	13.56	13.56
RF Cable:	Provided by the aplicant    Provided by the laboratory		
1# Battery Information:	Model:	486786	
	Normal Voltage:	+3.85V	
	Typical capacity:	4900mAh	
	Manufacturer:	Guangdong Fenghua New Energy Co.,Ltd.	
Note: *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.			
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## 2.4.1 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  $\leq$  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			Downlink (DL) operating band			Duplex Mode
		BS receive / UE transmit			BS transmit / UE receive			
		$F_{UL\_low} - F_{UL\_high}$			$F_{DL\_low} - F_{DL\_high}$			
CA 5B	5	826.5 MHz	–	846.5 MHz	869 MHz	–	894 MHz	FDD



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- c) The device supports Inter-band uplink LTE CA for CA\_2A-12A,CA\_12A-66A,CA\_2A-5A,CA\_5A-66A CA\_2A-14A,CA\_14A-66A,CA\_2A-4A,CA\_2A-66A with two component carriers in the uplink.
1. For Inter-band uplink LTE CA 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 LTE CA SAR from standalone SAR test results of each LTE component band and the conservative “max + max” multi-Tx method to combine the scaled SAR value from each Inter-band uplink LTE CA component band as the inter-band Uplink LTE CA SAR. All Simultaneous Transmission Scenarios will be evaluated independently in the final SAR report. Since the maximum output power of the LTE Inter-band uplink band is  $\leq$  the LTE Band, the SAR data of the LTE Band is used instead of the SAR data of the LTE Inter-band uplink band.

2CC Downlink Carrier Aggregation		3CC Downlink Carrier Aggregation	
CA_2A-5A	CA_2A-48A	CA_26A-48A-48A	CA_2A-4A-12A
CA_2A-12A	CA_48A-66A	CA_2A-12A-30A	CA_2A-4A-4A
CA_2A-29A	CA_48C	CA_4A-12A-30A	CA_2A-2A-4A
CA_12A-30A	CA_48A-48A	CA_2A-5A-30A	CA_2C-66A
CA_2A-30A	CA_4A-48A	CA_4A-4A-12A	CA_2A-66C
CA_5A-30A	CA_5A-48A	CA_2A-2A-12A	CA_12A-66C
CA_29A-30A	CA_4A-4A	CA_2A-4A-5A	CA_2A-4A-71A
CA_5B	CA_4A-5A	CA_4A-5A-30A	CA_2A-66A-71A
CA_5A-66A	CA_4A-12A	CA_2A-29A-30A	CA_66A-66A-71A
CA_12A-66A	CA_2A-2A	CA_4A-29A-30A	CA_66C-71A
CA_2A-66A	CA_2A-4A	CA_2A-12A-66A	CA_66A-66C
CA_30A-66A	CA_2C	CA_2A-5A-66A	CA_4A-4A-71A
CA_66A-66A	CA_2A-71A	CA_12A-30A-66A	CA_2A-2A-71A
CA_29A-66A	CA_4A-71A	CA_5A-30A-66A	CA_48D
CA_2A-14A	CA_66A-71A	CA_12A-66A-66A	CA_48C-48A
CA_14A-66A	CA_2A-17A	CA_5A-66A-66A	CA_2A-48A-66A
CA_14A-30A	CA_4A-17A	CA_2A-2A-66A	CA_2A-48A-48A
CA_66B	CA_26A-48A	CA_2A-66A-66A	CA_2A-48C
CA_66C		CA_30A-66A-66A	CA_48A-48A-66A
		CA_2A-30A-66A	CA_48C-66A



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## 2.4.2 Power reduction specification

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

- 1) A fixed level power reduction is applied for some frequency bands when simultaneously transmitting with the other antennas in certain simultaneous transmission conditions. The standalone SAR compliance still uses the standalone SAR results tested at the maximum output power level without any power reduction
- 2) A fixed level power reduction is applied for some frequency bands when handset operate "held to the ear" condition, the power reduction triggered by audio receiver detection. The audio receiver detection is used to determine head or body scenario.
- 3) The proximity sensor is used to indicate when the device is held close to a user's body exposure condition. It utilizes the proximity sensor to reduce the output power in specific wireless and operating modes of main antenna to ensure SAR compliance (Refer to section 5.4 for detailed proximity Sensor information and validation data per KDB 616217).

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



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## 2.5 Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI/IEEE C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
IEC/IEEE 62209-1528:2020	Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)
KDB 941225 D01	3G SAR Measurement Procedures v03r01
KDB 941225 D05	SAR for LTE Devices v02r05
KDB 941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB 941225 D06	Hotspot Mode SAR v02r01
KDB 248227 D01	SAR Guidance for IEEE 802.11 Wi-Fi SAR v02r02
KDB 648474 D04	Handset SAR v01r03
KDB 447498 D01	General RF Exposure Guidance v06
KDB 865664 D01	SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02	RF Exposure Reporting v01r02
KDB 690783 D01	SAR Listings on Grants v01r03
KDB 616217 D04	SAR for laptop and tablets v01r02



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## 2.6 RF exposure limits

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



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### 3 Laboratory Environment

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

Table 2: The Ambient Conditions



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## 4 SAR Measurements System Configuration

### 4.1 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  $SAR = \sigma (|E|^2) / \rho$  where  $\sigma$  and  $\rho$  are the conductivity and mass density of the tissue-Simulate.

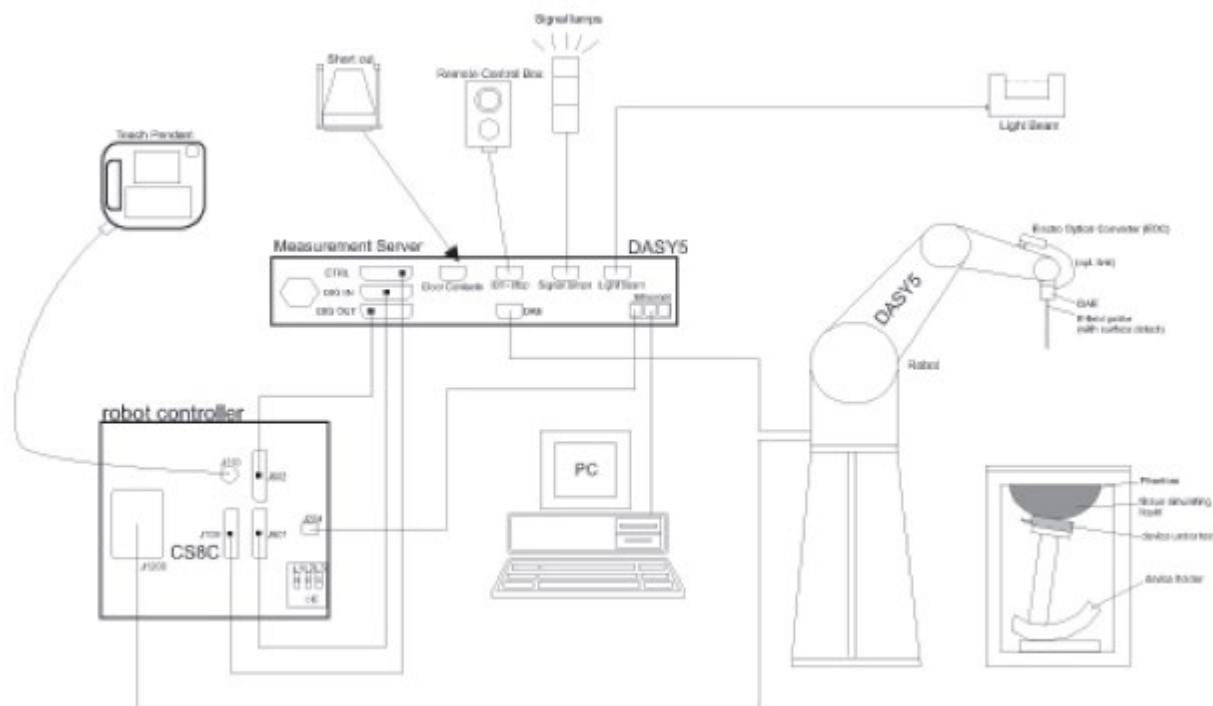
The DASY5 system for performing compliance tests consists of the following items:

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.


## 4.2 Isotropic E-field Probe EX3DV4

	<p>Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)</p>
<b>Calibration</b>	ISO/IEC 17025 <a href="#">calibration service</a> available.
<b>Frequency</b>	10 MHz to > 6 GHz Linearity: $\pm 0.2$ dB (30 MHz to 6 GHz)
<b>Directivity</b>	$\pm 0.3$ dB in TSL (rotation around probe axis) $\pm 0.5$ dB in TSL (rotation normal to probe axis)
<b>Dynamic Range</b>	10 $\mu$ W/g to > 100 mW/g Linearity: $\pm 0.2$ dB (noise: typically < 1 $\mu$ W/g)
<b>Dimensions</b>	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
<b>Application</b>	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%.
<b>Compatibility</b>	DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI

### 4.3 Data Acquisition Electronics (DAE)

<b>Model</b>	DAE	
<b>Construction</b>	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.	
<b>Measurement Range</b>	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)	
<b>Input Offset Voltage</b>	< 5µV (with auto zero)	
<b>Input Bias Current</b>	< 50 f A	
<b>Dimensions</b>	60 x 60 x 68 mm	


### 4.4 SAM Twin Phantom

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

## 4.5 ELI Phantom

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

The ELI phantom is used for compliance testing of handheld and body-mounted wireless devices in the frequency range of 4 MHz to 10 GHz. ELI is fully compatible with the IEC/IEEE 62209-1528 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all of SPEAG's dosimetric probes and dipoles.

ELI V5.0 and higher has the same shell geometry and is manufactured from the same material as ELI V4.0 but has a reinforced top structure.



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## 4.6 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  $\epsilon=3$  and loss tangent  $\delta=0.02$ . 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.



## 4.7 Measurement procedure

### 4.7.1 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 ( $f \leq 2\text{GHz}$ ), 30mm\*30mm\*30mm ( $f$  for 2-3GHz) and 24mm\*24mm\*22mm ( $f$  for 5-6GHz) was assessed by measuring 5x5x7 points ( $f \leq 2\text{GHz}$ ), 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.



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		$\leq 3 \text{ GHz}$	$> 3 \text{ GHz}$
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface		$5 \pm 1 \text{ mm}$	$\frac{1}{4} \cdot \delta \cdot \ln(2) \pm 0.5 \text{ mm}$
Maximum probe angle from probe axis to phantom surface normal at the measurement location		$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$		$\leq 2 \text{ GHz: } \leq 15 \text{ mm}$ $2 - 3 \text{ GHz: } \leq 12 \text{ mm}$	$3 - 4 \text{ GHz: } \leq 12 \text{ mm}$ $4 - 6 \text{ GHz: } \leq 10 \text{ mm}$
		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 $\leq$ 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: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$		$\leq 2 \text{ GHz: } \leq 8 \text{ mm}$ $2 - 3 \text{ GHz: } \leq 5 \text{ mm}^*$	$3 - 4 \text{ GHz: } \leq 5 \text{ mm}^*$ $4 - 6 \text{ GHz: } \leq 4 \text{ mm}^*$
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$	$\leq 5 \text{ mm}$	$3 - 4 \text{ GHz: } \leq 4 \text{ mm}$ $4 - 5 \text{ GHz: } \leq 3 \text{ mm}$ $5 - 6 \text{ GHz: } \leq 2 \text{ mm}$
	graded grid $\Delta z_{\text{Zoom}}(1)$ : between 1 <sup>st</sup> two points closest to phantom surface	$\leq 4 \text{ mm}$	$3 - 4 \text{ GHz: } \leq 3 \text{ mm}$ $4 - 5 \text{ GHz: } \leq 2.5 \text{ mm}$ $5 - 6 \text{ GHz: } \leq 2 \text{ mm}$
	$\Delta z_{\text{Zoom}}(n>1)$ : between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
Minimum zoom scan volume	x, y, z	$\geq 30 \text{ mm}$	$3 - 4 \text{ GHz: } \geq 28 \text{ mm}$ $4 - 5 \text{ GHz: } \geq 25 \text{ mm}$ $5 - 6 \text{ GHz: } \geq 22 \text{ mm}$

#### 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.  $\pm 5 \%$



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#### 4.7.2 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.

#### 4.7.3 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  $V_i$  = compensated signal of channel  $i$  ( $i = x, y, z$ )

$U_i$  = 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:

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



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H-field probes:

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

With  $V_i$  = compensated signal of channel  $i$  ( $i = x, y, z$ )

Normi = sensor sensitivity of channel  $i$  ( $i = x, y, z$ )

[mV/(V/m)<sup>2</sup>] for E-field Probes

ConvF = sensitivity enhancement in solution

$a_{ij}$  = sensor sensitivity factors for H-field probes

$f$  = carrier frequency [GHz]

$E_i$  = electric field strength of channel  $i$  in V/m

$H_i$  = 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.

$$SAR = (E_{tot}^2 \cdot \sigma) / (\epsilon \cdot 1000)$$

with SAR = local specific absorption rate in mW/g

$E_{tot}$  = total field strength in V/m

$\sigma$  = conductivity in [mho/m] or [Siemens/m]

$\epsilon$  = equivalent tissue density in g/cm<sup>3</sup>

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.

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

with  $P_{pwe}$  = equivalent power density of a plane wave in mW/cm<sup>2</sup>

$E_{tot}$  = total electric field strength in V/m

$H_{tot}$  = total magnetic field strength in A/m



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## 5 SAR measurement variability and uncertainty

### 5.1 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  $\geq 0.80$  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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).
  - 4) Perform a third repeated measurement only if the original, first or second repeated measurement is  $\geq 1.5$  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.

### 5.2 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.



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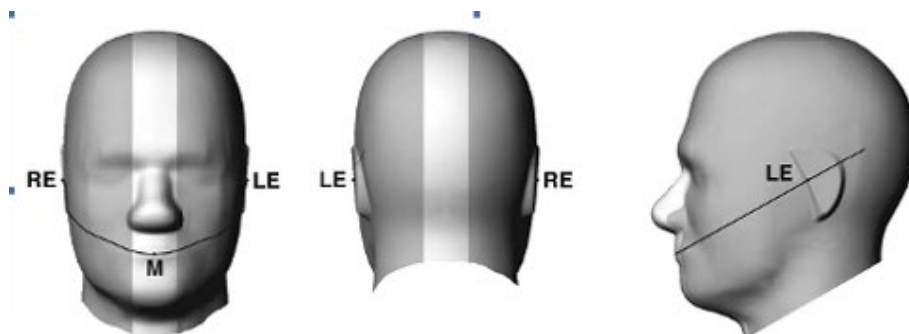
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## 6 Description of Test Position

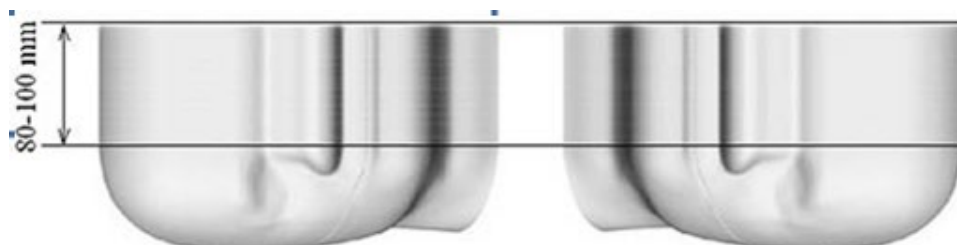
### 6.1 Head Exposure Condition

#### 6.1.1 SAM Phantom Shape

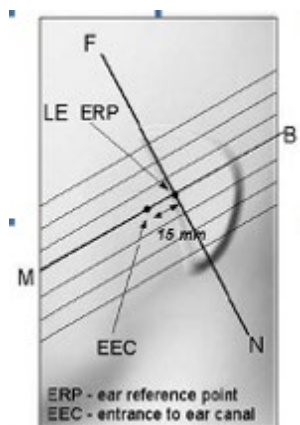


F-3. Front, back, and side views of SAM (model for the phantom shell). Full-head model is for illustration purposes only-procedures in this recommended practice are intended primarily for the phantom setup.

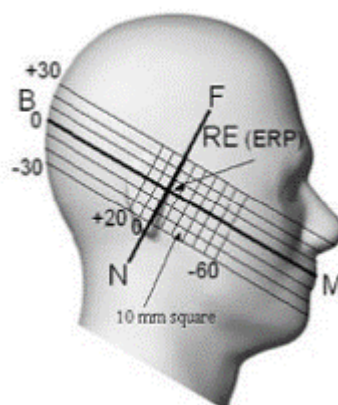
Note: The centre strip including the nose region has a different thickness tolerance.



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

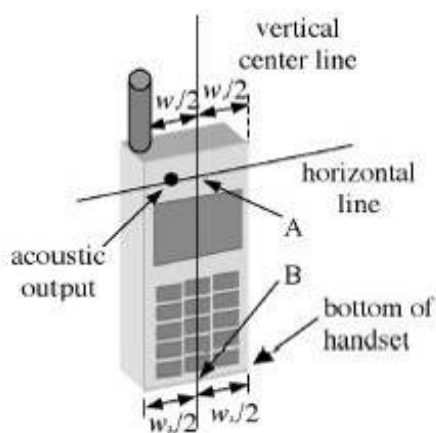


F-5. Close-up side view of phantom, showing the ear region, N-F and B-M lines, and seven cross-sectional plane locations

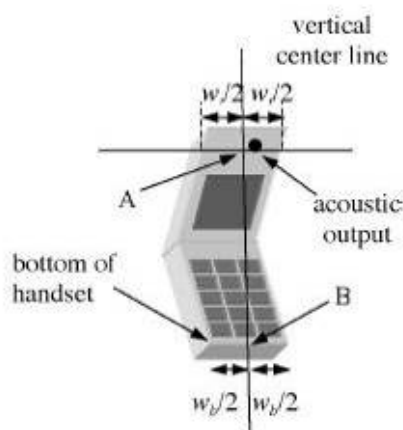


F-6. Side view of the phantom showing relevant markings and seven cross-sectional plane locations

### 6.1.2 EUT constructions



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



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

### 6.1.3 Definition of the “cheek” position

- 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.
- 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.



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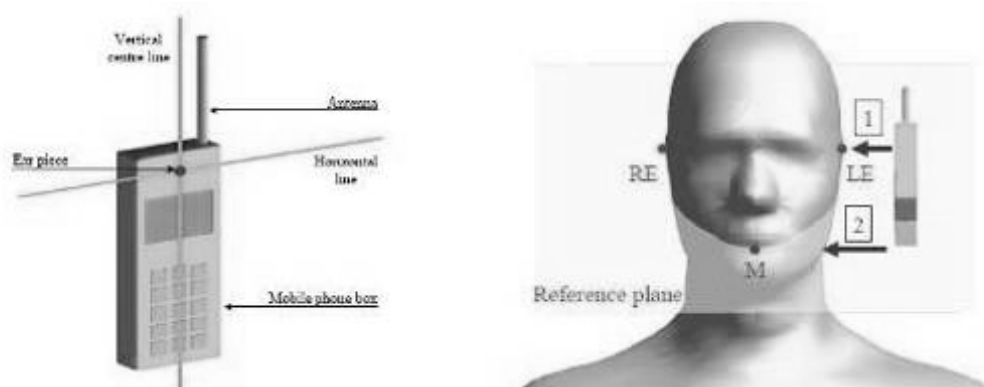
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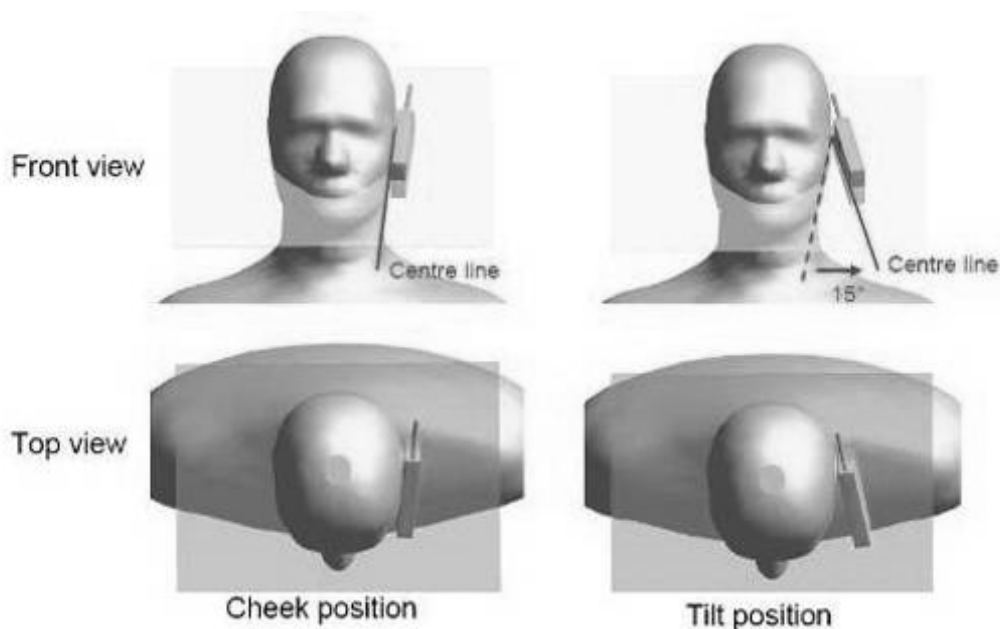
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### 6.1.4 Definition of the “tilted” position

- Position the device in the “cheek” position described above;
- 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

## 6.2 Body Exposure Condition

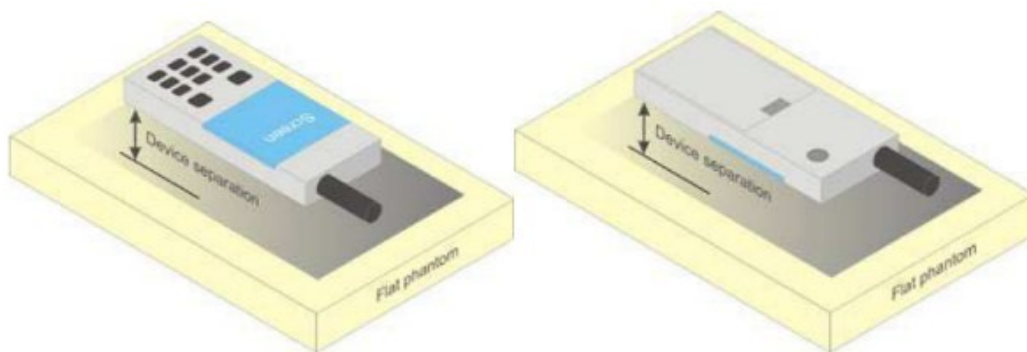
### 6.2.1 Body-worn accessory exposure conditions

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  $> 1.2 \text{ W/kg}$ , 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



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## 6.2.2 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 ( $L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$ ) 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.

## 6.3 Extremity exposure conditions

Per FCC KDB 648474 D04, for smart phones with a display diagonal dimension  $> 15.0 \text{ cm}$  or an overall diagonal dimension  $> 16.0 \text{ cm}$  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  $\leq 25 \text{ mm}$  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  $> 1.2 \text{ W/kg}$ ; 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, hotspot power levels, and product specific 10g SAR power levels are the same, no frequency bands need to test with 0mm for the Product Specific 10-g SAR are not required.



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## 7 SAR System Verification Procedure

### 7.1 Tissue Simulate Liquid

#### 7.1.1 Recipes for Tissue Simulate Liquid

The following 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 <sup>+</sup> resistivity Tween: Polyoxyethylene (20) sorbitan monolaurate Sucrose: 98+% Pure Sucrose HEC: Hydroxyethyl Cellulose					
HSL13MHz is composed of the following ingredients: Water: 50-90% Non-ionic detergents: 5-50% NaCl: 0-2% Preservative: 0.03-0.1% HSL5GHz is composed of the following ingredients: Water: 50-65% Mineral oil: 10-30% Emulsifiers: 8-25% Sodium salt: 0-1.5%					

Table 3: Recipe of Tissue Simulate Liquid



### 7.1.2 Measurement for Tissue Simulate Liquid

The Conductivity ( $\sigma$ ) and Permittivity ( $\rho$ ) are listed in bellow table. For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was  $22 \pm 2^\circ\text{C}$ .

Tissue Type	Measured Frequency (MHz)	Target Tissue ( $\pm 5\%$ )		Measured Tissue		Liquid Temp. ( $^\circ\text{C}$ )	Test Date
		$\epsilon_r$	$\sigma(\text{S/m})$	$\epsilon_r$	$\sigma(\text{S/m})$		
13 Head	13	55.00	0.75	54.100	0.736	22.5	2023-09-25
750 Head	750	41.90	0.89	42.789	0.885	22.3	2023-08-26
750 Head	750	41.90	0.89	42.687	0.889	22.1	2023-08-30
835 Head	835	41.50	0.90	42.879	0.896	22.3	2023-08-20
835 Head	835	41.50	0.90	42.911	0.895	22.4	2023-08-28
1750 Head	1750	40.10	1.37	40.120	1.341	22.2	2023-08-24
1750 Head	1750	40.10	1.37	40.087	1.346	22.5	2023-09-04
1950 Head	1950	40.00	1.40	38.718	1.465	22.3	2023-08-22
1950 Head	1950	40.00	1.40	38.794	1.460	22.4	2023-09-01
2300 Head	2300	39.50	1.67	39.664	1.693	22.1	2023-09-02
2450 Head	2450	39.20	1.80	40.136	1.784	22.2	2023-09-14
2600 Head	2600	39.00	1.96	37.735	1.969	22.1	2023-09-6
3500 Head	3500	37.90	2.91	39.040	2.957	22.3	2023-09-10
3700 Head	3700	37.70	3.12	37.385	3.262	22.5	2023-09-08
3900 Head	3900	37.50	3.32	36.981	3.454	22.4	2023-09-12
5250 Head	5250	35.90	4.66	36.536	4.857	22.3	2023-09-16
5600 Head	5600	35.50	5.07	35.668	5.249	22.2	2023-09-18
5750 Head	5750	35.40	5.22	35.487	5.446	22.4	2023-09-20
6500 Head	6500	34.50	6.07	33.700	6.180	22.3	2023-09-22
6500 Head	6500	34.50	6.07	33.900	6.110	22.3	2023-09-24

Table 4: Measurement result of Tissue electric parameters.



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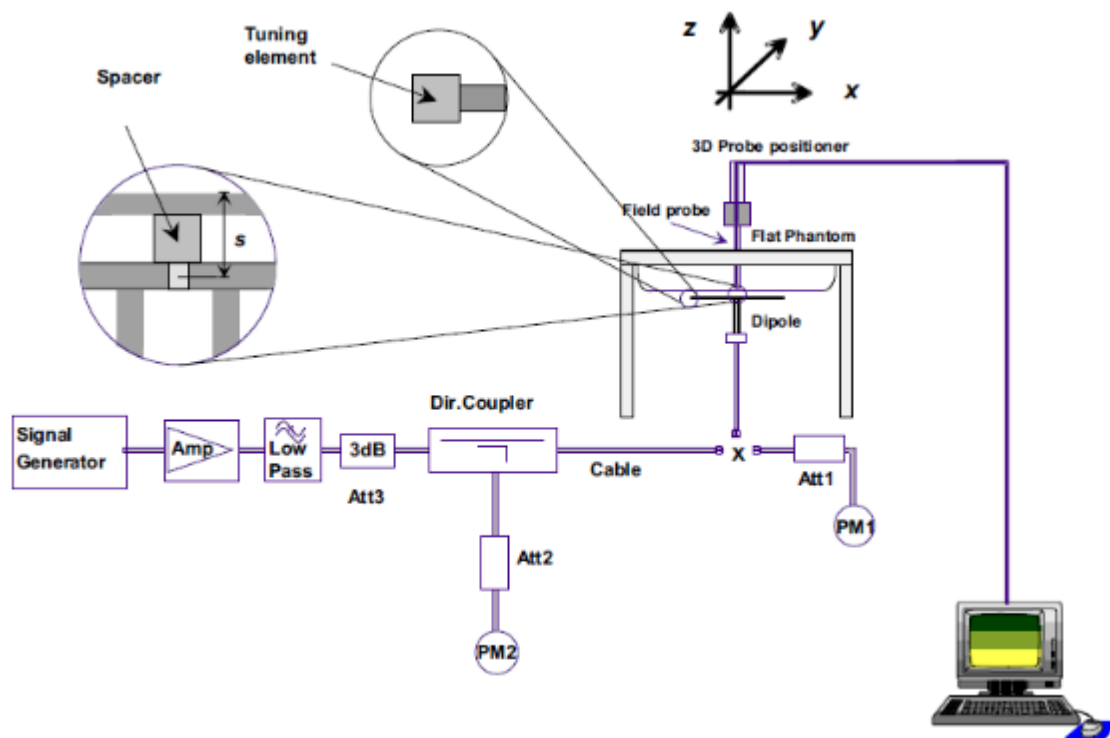
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## 7.2 SAR System Check

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  $\pm 10\%$  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  $22 \pm 2^\circ\text{C}$ , the relative humidity was in the range 60% and the liquid depth above the ear reference points was above  $15 \pm 0.5\text{ cm}$  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

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### 7.2.1 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.



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## 7.2.2 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.

Measurements and results are all in compliance with the standards listed. All measurements and results are recorded and maintained at the laboratory performing the tests and measurement uncertainties are taken into account when comparing measurements to pass/ fail criteria. The expanded uncertainty (95% CONFIDENCE INTERVAL) is **23.01%**.

a	b	c	d = f(d,k)	F	i = C*g/e	K
Uncertainty Component	Tol (%)	Prob.Dist.	Div.	Ci (1g)	1g <sub>ui</sub> (%)	Vi(Veff)
Probe calibration	6.65	N	1	1	6.65	∞
Axial isotropy	0.5	R	$\sqrt{3}$	1	0.29	∞
hemispherical isotropy	2.6	R	$\sqrt{3}$	1	1.50	∞
Linearity	0.6	R	$\sqrt{3}$	1	0.35	∞
Probe modulation response	0	R	$\sqrt{3}$	1	0.00	∞
Detection limits	0.25	R	$\sqrt{3}$	1	0.14	∞
Boundary effect	1.0	R	$\sqrt{3}$	1	0.58	∞
Readout electronics	0.3	N	1	1	0.30	∞
Response time	0	R	$\sqrt{3}$	1	0.00	∞
Integration time	2.6	R	$\sqrt{3}$	1	1.50	∞
RF ambient conditions – noise	3	R	$\sqrt{3}$	1	1.73	∞
RF ambient conditions – reflections	3	R	$\sqrt{3}$	1	1.73	∞
Probe positioner mech. restrictions	1.5	R	$\sqrt{3}$	1	0.87	∞
Probe positioning with respect to phantom shell	2.9	R	$\sqrt{3}$	1	1.67	∞
Post-processing	1	R	$\sqrt{3}$	1	0.58	∞
Device holder uncertainty	3.6	N	1	1	3.60	∞
Test sample positioning	3.7	N	1	1	3.70	9
Power scaling	5.0	R	$\sqrt{3}$	1	2.89	∞
Drift of output power (measured SAR drift)	5	R	$\sqrt{3}$	1	2.89	∞
Phantom uncertainty (shape and thickness tolerances)	4	R	$\sqrt{3}$	1	2.31	∞
Algorithm for correcting SAR for deviations in permittivity and conductivity	1.9	N	1	1	1.90	∞
Liquid conductivity (meas.)	5.78	N	1	0.78	4.51	4
Liquid permittivity (meas.)	0.62	N	1	0.23	0.14	5
Liquid permittivity –temperature uncertainty	0.2	R	$\sqrt{3}$	0.78	0.09	∞
Liquid conductivity –temperature uncertainty	5.37	R	$\sqrt{3}$	0.23	071	∞
<b>Combined standard uncertainty RSS</b>					11.51	417
<b>Expanded uncertainty (95% CONFIDENCE INTERVAL) k=2</b>					<b>23.01</b>	

Table 1: Measurement Uncertainty.



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t (86-512) 62992980 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)



### 7.2.3 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)	Target SAR (normalized to 1W)	Liquid Temp. (°C)	Test Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)		
CLA-13	Head	0.11	0.07	0.46	0.29	0.42	0.27	22.5	2023-09-25
D750V3	Head	2.11	1.4	8.44	5.60	8.48	5.56	22.3	2023-08-26
D750V3	Head	2.12	1.41	8.48	5.64	8.48	5.56	22.1	2023-08-30
D835V2	Head	2.43	1.63	9.72	6.52	9.60	6.16	22.3	2023-08-20
D835V2	Head	2.46	1.65	9.84	6.60	9.60	6.16	22.4	2023-08-28
D1750V2	Head	8.96	4.77	35.84	19.08	37.00	19.30	22.2	2023-08-24
D1750V2	Head	9.13	4.86	36.52	19.44	37.00	19.30	22.5	2023-09-04
D1950V2	Head	10.30	5.32	41.20	21.28	40.40	20.80	22.3	2023-08-22
D1900V2	Head	10.10	5.14	40.40	20.56	40.40	20.80	22.4	2023-09-01
D2300V2	Head	12.9	6.15	51.60	24.60	48.70	23.30	22.1	2023-09-02
D2450V2	Head	13.50	6.28	54.00	25.12	52.70	24.60	22.2	2023-09-14
D2600V2	Head	14.70	6.54	58.80	26.16	57.10	25.40	22.1	2023-09-06
Validation Kit		Measured SAR 100mW	Measured SAR 100mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W)	Target SAR (normalized to 1W)	Liquid Temp. (°C)	Test Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)		
D3500V2	Head(3.5GHz)	7.05	2.63	70.50	26.30	66.60	24.90	22.3	2023-09-10
D3700V2	Head(3.7GHz)	7.27	2.65	72.70	26.50	68.00	24.60	22.5	2023-09-08
D3900V2	Head(3.9GHz)	7.26	2.51	72.60	25.10	69.70	24.00	22.4	2023-09-12
D5GHzV2	Head(5.25GHz)	7.94	2.23	79.40	22.30	78.00	21.80	22.3	2023-09-16
	Head(5.6GHz)	8.14	2.32	81.40	23.20	79.90	22.50	22.2	2023-09-18
	Head(5.75GHz)	8.07	2.29	80.70	22.90	76.40	21.20	22.4	2023-09-20
D6.5GV2	Head(6.5GHz)	27.50	5.07	275.00	50.70	290.00	52.60	22.3	2023-09-22
D6.5GV2	Head(6.5GHz)	27.70	5.23	277.00	52.30	290.00	52.60	22.3	2023-09-24

Table 5: SAR System Check Result.

### 7.2.4 Detailed System Check Results

Please see the Appendix A



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## 8 Test Configuration

### 8.1 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  $\leq \frac{1}{4}$  dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is  $\leq 1.2$  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.

### 8.2 Operation Configurations

#### 8.2.1 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 12 for this EUT, it has at most 4 timeslots in uplink and at most 5 timeslots in downlink, the maximum total timeslot is 6. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 5 timeslots in downlink, the maximum total timeslot is 6.

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

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

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



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t (86-512) 62992980 [www.sgs.com](http://www.sgs.com)

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## 8.2.2 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 spreading 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  $\leq \frac{1}{4}$  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  $\leq 1.2$  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( $\beta_c$ ,  $\beta_d$ ), and HS-DPCCH power offset parameters ( $\Delta_{ACK}$ ,  $\Delta_{NACK}$ ,  $\Delta_{CQI}$ ) 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.



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Sub-test	$\beta_c$	Bd	$\beta_d(\text{SF})$	$\beta_c/\beta_d$	$\beta_{hs}$	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:  $\Delta\text{ACK}$ ,  $\Delta\text{NACK}$  and  $\Delta\text{CQI} = 8$  Ahs =  $\beta_{hs}/\beta_c = 30/15$   $\beta_{hs} = 30/15 * \beta_c$   
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,  $\Delta\text{ACK}$  and  $\Delta\text{NACK} = 8$  (Ahs = 30/15) with  $\beta_{hs} = 30/15 * \beta_c$ , and  $\Delta\text{CQI} = 7$  (Ahs = 24/15) with  $\beta_{hs} = 24/15 * \beta_c$ .  
Note3: CM = 1 for  $\beta_c/\beta_d = 12/15$ ,  $\beta_{hs}/\beta_c = 24/15$ . 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.

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



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HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	Maximum HS-DSCH Transport Block Bits/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.



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Sub-test <sup>c</sup>	$\beta_c$ <sup>c</sup>	$\beta_d$ <sup>c</sup>	$\beta_d$ (SF) <sup>c</sup>	$\beta_c/\beta_d$ <sup>c</sup>	$\beta_{hs}$ <sup>(1)</sup> <sup>c</sup>	$\beta_{ec}$ <sup>c</sup>	$\beta_{ed}$ <sup>c</sup>	$\beta_c$ (SF) <sup>c</sup>	$\beta_{ed}$ (code) <sup>c</sup>	CM <sup>(2)</sup> (dB) <sup>c</sup>	MP R <sup>c</sup> (dB) <sup>c</sup>	AG <sup>(4)</sup> Inde <sup>c</sup>	E-TFC I <sup>c</sup>
1 <sup>c</sup>	11/15 <sup>(3)</sup> <sup>c</sup>	15/15 <sup>(3)</sup> <sup>c</sup>	64 <sup>c</sup>	11/15 <sup>(3)</sup> <sup>c</sup>	22/15 <sup>c</sup>	209/225 <sup>c</sup>	1039/225 <sup>c</sup>	4 <sup>c</sup>	1 <sup>c</sup>	1.0 <sup>c</sup>	0.0 <sup>c</sup>	20 <sup>c</sup>	75 <sup>c</sup>
2 <sup>c</sup>	6/15 <sup>c</sup>	15/15 <sup>c</sup>	64 <sup>c</sup>	6/15 <sup>c</sup>	12/15 <sup>c</sup>	12/15 <sup>c</sup>	94/75 <sup>c</sup>	4 <sup>c</sup>	1 <sup>c</sup>	3.0 <sup>c</sup>	2.0 <sup>c</sup>	12 <sup>c</sup>	67 <sup>c</sup>
3 <sup>c</sup>	15/15 <sup>c</sup>	9/15 <sup>c</sup>	64 <sup>c</sup>	15/9 <sup>c</sup>	30/15 <sup>c</sup>	30/15 <sup>c</sup>	$\beta_{ed1}: 47/15c$ $\beta_{ed2}: 47/15c$	4 <sup>c</sup>	2 <sup>c</sup>	2.0 <sup>c</sup>	1.0 <sup>c</sup>	15 <sup>c</sup>	92 <sup>c</sup>
4 <sup>c</sup>	2/15 <sup>c</sup>	15/15 <sup>c</sup>	64 <sup>c</sup>	2/15 <sup>c</sup>	4/15 <sup>c</sup>	2/15 <sup>c</sup>	56/75 <sup>c</sup>	4 <sup>c</sup>	1 <sup>c</sup>	3.0 <sup>c</sup>	2.0 <sup>c</sup>	17 <sup>c</sup>	71 <sup>c</sup>
5 <sup>c</sup>	15/15 <sup>(4)</sup> <sup>c</sup>	15/15 <sup>(4)</sup> <sup>c</sup>	64 <sup>c</sup>	15/15 <sup>(4)</sup> <sup>c</sup>	30/15 <sup>c</sup>	24/15 <sup>c</sup>	134/15 <sup>c</sup>	4 <sup>c</sup>	1 <sup>c</sup>	1.0 <sup>c</sup>	0.0 <sup>c</sup>	21 <sup>c</sup>	81 <sup>c</sup>
Note 1: $\Delta ACK$ , $\Delta NACK$ and $\Delta CQI = 8$ $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$ 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 <sup>c</sup> Note 3: For subtest 1 the $\beta_c/\beta_d$ ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$ <sup>c</sup> Note 4: For subtest 5 the $\beta_c/\beta_d$ 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 $\beta_d = 15/15$ <sup>c</sup> 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 <sup>c</sup> Note 6: $\beta_{ed}$ can not be set directly; it is set by Absolute Grant Value. <sup>c</sup>													

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 Spreading 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&2SF	11484	5.76
	4	4	2	4	20000	2.00
7 (No DPDCH)	4	8	2	2SF2&2SF	22996	?
	4	4	10	4	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



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**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.



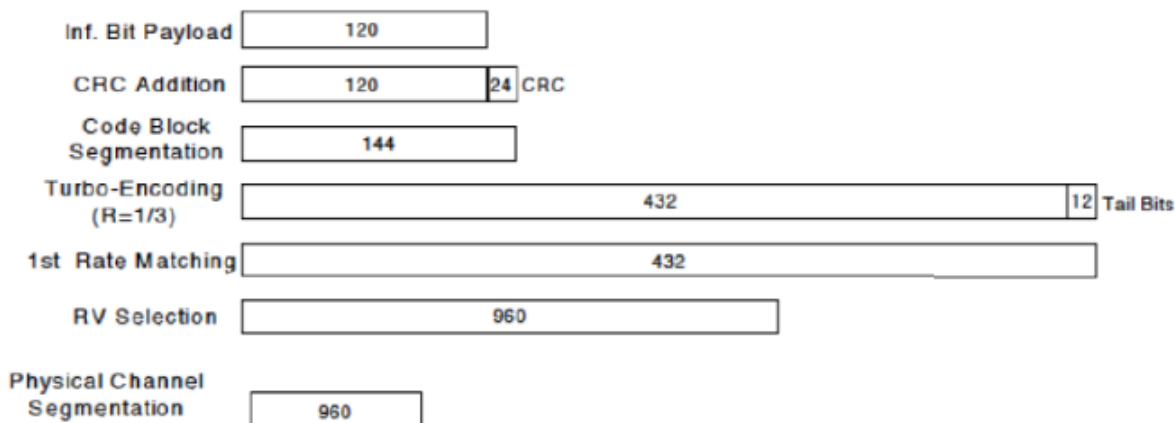
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**Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)**

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

Sub-test <sup>o</sup>	$\beta_c$ <sup>o</sup>	$\beta_d$ <sup>o</sup>	$\beta_d$ (SF) <sup>o</sup>	$\beta_c/\beta_d$ <sup>o</sup>	$\beta_{hs}(1)$ <sup>o</sup>	CM(dB)(2) <sup>o</sup>	MPR <sup>o</sup> (dB) <sup>o</sup>
1 <sup>o</sup>	2/15 <sup>o</sup>	15/15 <sup>o</sup>	64 <sup>o</sup>	2/15 <sup>o</sup>	4/15 <sup>o</sup>	0.0 <sup>o</sup>	0 <sup>o</sup>
2 <sup>o</sup>	12/15(3) <sup>o</sup>	15/15(3) <sup>o</sup>	64 <sup>o</sup>	12/15(3) <sup>o</sup>	24/15 <sup>o</sup>	1.0 <sup>o</sup>	0 <sup>o</sup>
3 <sup>o</sup>	15/15 <sup>o</sup>	8/15 <sup>o</sup>	64 <sup>o</sup>	15/8 <sup>o</sup>	30/15 <sup>o</sup>	1.5 <sup>o</sup>	0.5 <sup>o</sup>
4 <sup>o</sup>	15/15 <sup>o</sup>	4/15 <sup>o</sup>	64 <sup>o</sup>	15/4 <sup>o</sup>	30/15 <sup>o</sup>	1.5 <sup>o</sup>	0.5 <sup>o</sup>

Note1:  $\Delta ACK$ ,  $\Delta NACK$  and  $\Delta CQI=8$   $A_{hs}=\beta_{hs}/\beta_c=30/15$   $\beta_{hs}=30/15 * \beta_c$

Note2: CM=1 for  $\beta_c/\beta_d=12/15$ ,  $\beta_{hs}/\beta_c=24/15$ . 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.

Note3: For subtest 2 the  $\beta_c/\beta_d$  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  $\beta_c=11/15$  and  $\beta_d=15/15$

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.



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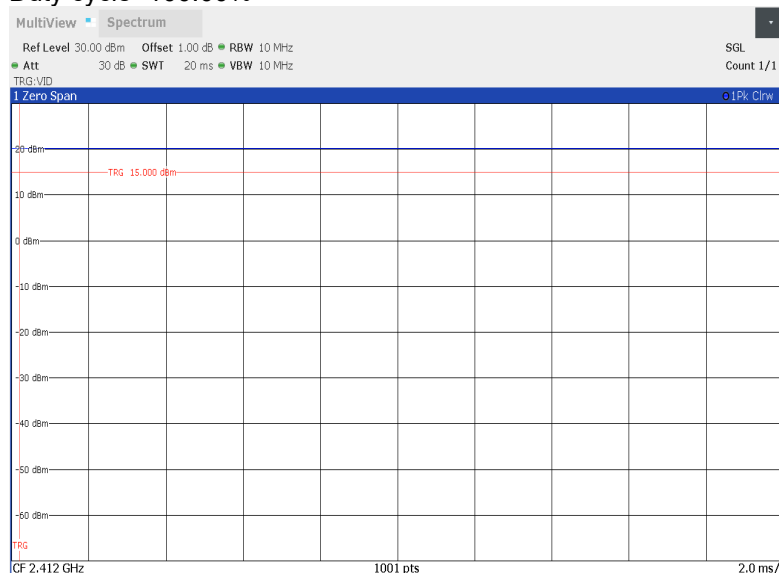
### 8.2.3 WiFi Test Configuration

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.

#### 8.2.3.1 Duty cycle

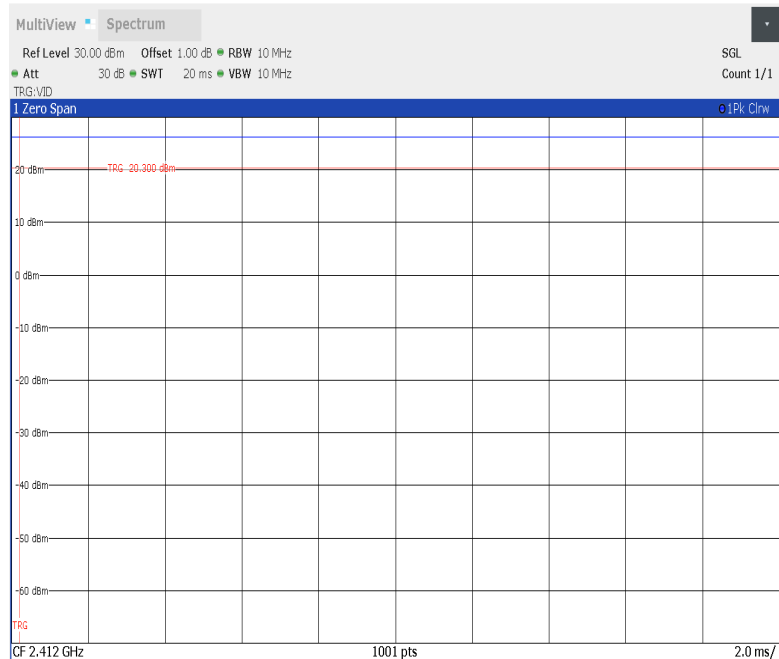
Wi-Fi 2.4GHz 802.11b Ant7:

Duty cycle=100.00%



Wi-Fi 2.4GHz 802.11b Ant9:

Duty cycle=100.00%



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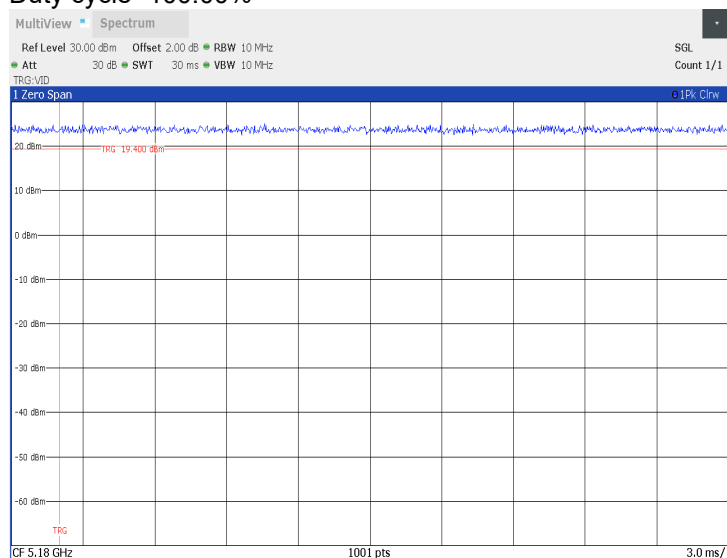
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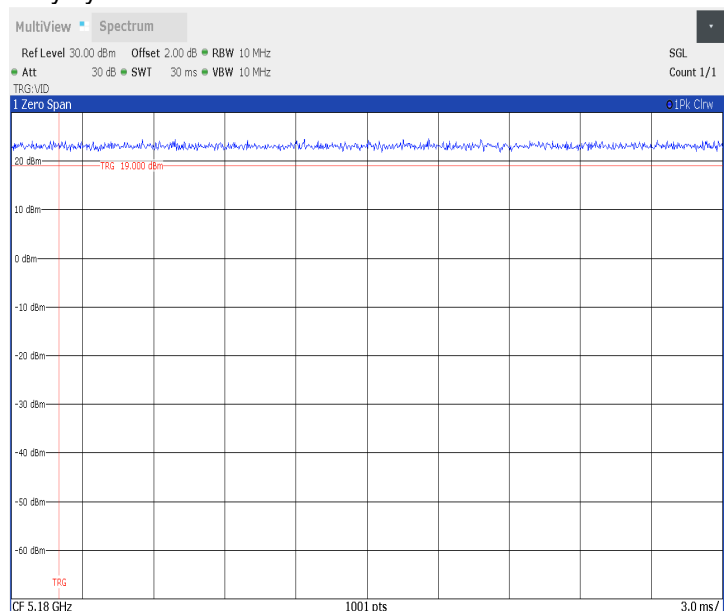
## Wi-Fi 5GHz 802.11a Ant7:

Duty cycle=100.00%



## Wi-Fi 5GHz 802.11n HT20 Ant7:

Duty cycle=100.00%



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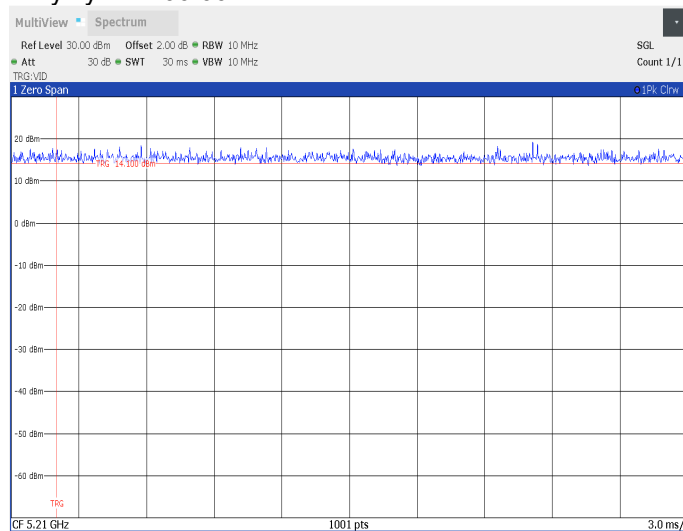
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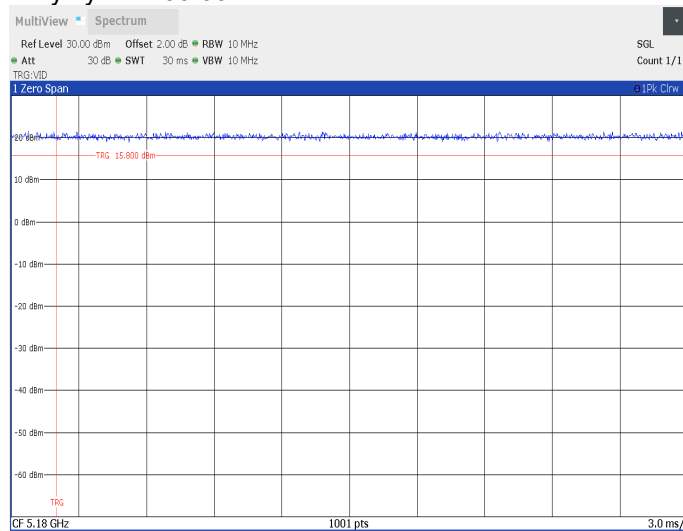
Wi-Fi 5GHz 802.11ac VHT80 Ant7:

Duty cycle=100.00%



Wi-Fi 5GHz 802.11a Ant9:

Duty cycle=100.00%



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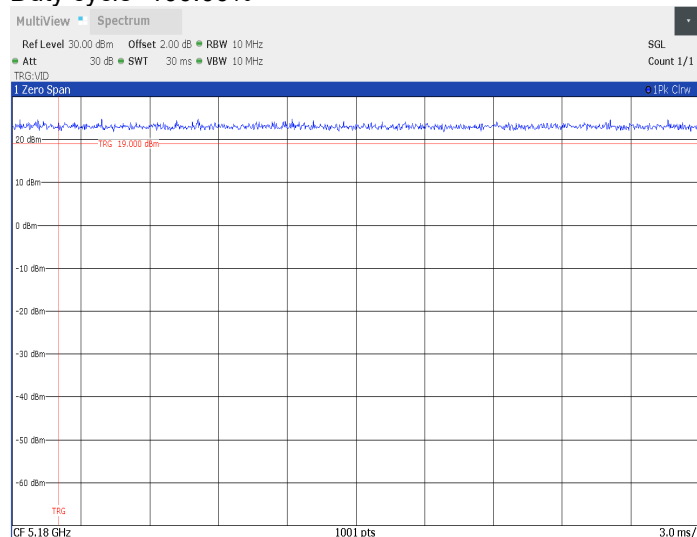
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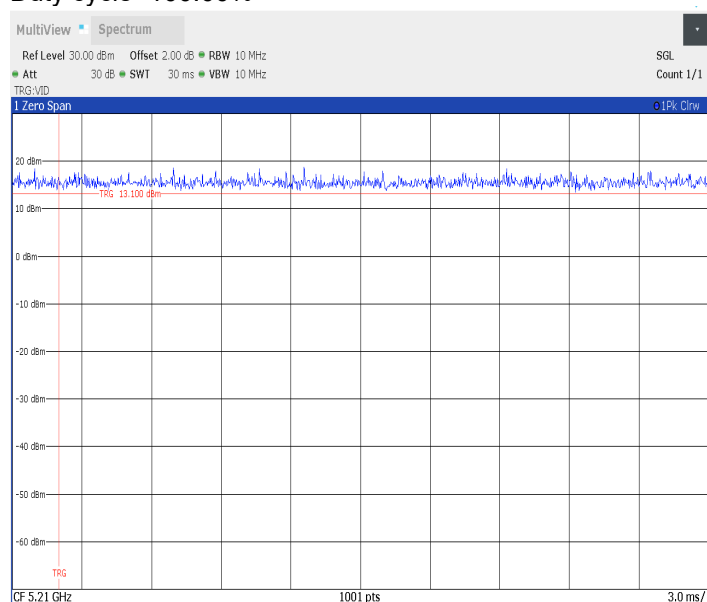
Wi-Fi 5GHz 802.11n HT20 Ant9:

Duty cycle=100.00%



Wi-Fi 5GHz 802.11ac VHT80 Ant9:

Duty cycle=100.00%



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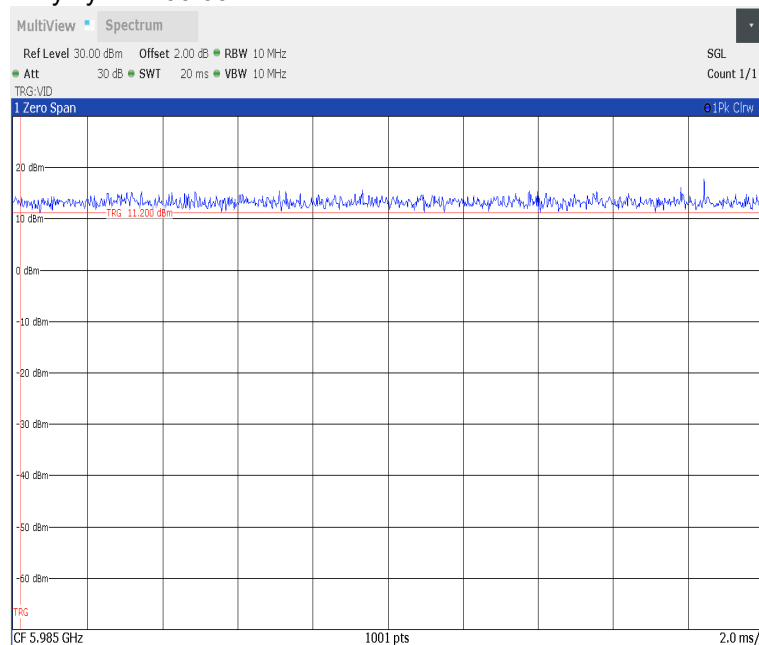
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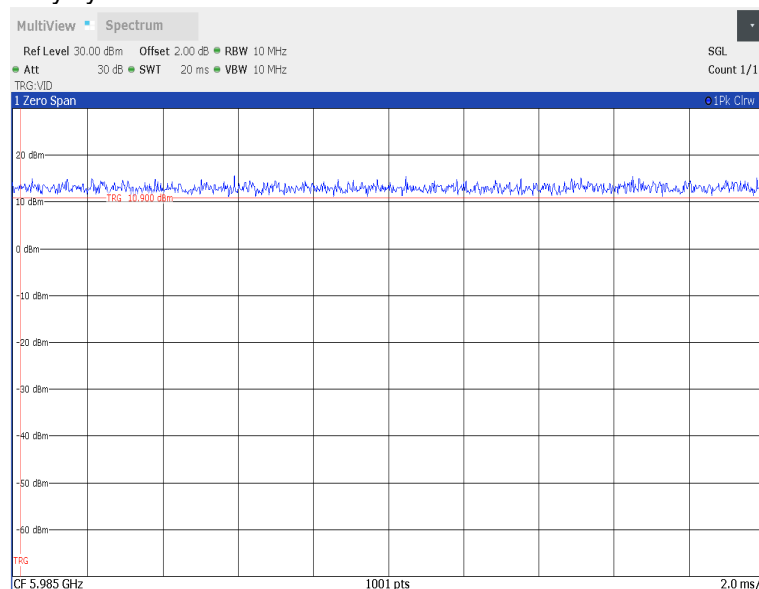
Wi-Fi 5GHz 802.11ax 80M Ant7:

Duty cycle=100.00%



Wi-Fi 5GHz 802.11ax 80M Ant9:

Duty cycle=100.00%



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### 8.2.3.2 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  $\leq 0.4$  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  $\leq 0.8$  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  $\leq 1.2$  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.

### 8.2.3.3 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  $\leq 1.2$  W/kg or all required channels are tested.

### 8.2.3.4 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



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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  $\leq 1.2$  W/kg, SAR is not required for that subsequent test configuration.
- 3) . The number of channels in the initial test configuration and subsequent test configuration can be different due to differences in channel bandwidth. When SAR measurement is required for a subsequent test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel. This step requires additional power measurement to identify the highest maximum output power channel in the subsequent test configuration to determine SAR test reduction.
  - a) SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.
  - b) SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the *reported* SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is  $> 1.2$  W/kg or until all required channels are tested. i) For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration.
- 4) . SAR measurements for the remaining highest specified maximum output power OFDM transmission mode configurations that have not been tested in the initial test configuration (highest maximum output) or subsequent test configuration(s) (subsequent next highest maximum output power) is determined by recursively applying the subsequent test configuration procedures in this section to the remaining configurations according to the following:
  - a) replace "subsequent test configuration" with "next subsequent test configuration" (i.e., subsequent next highest specified maximum output power configuration)
  - b) replace "initial test configuration" with "all tested higher output power configurations"



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### 8.2.3.5 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  $\leq 0.8$  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  $\leq 1.2$  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.



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## 8.2.4 LTE Test Configuration

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

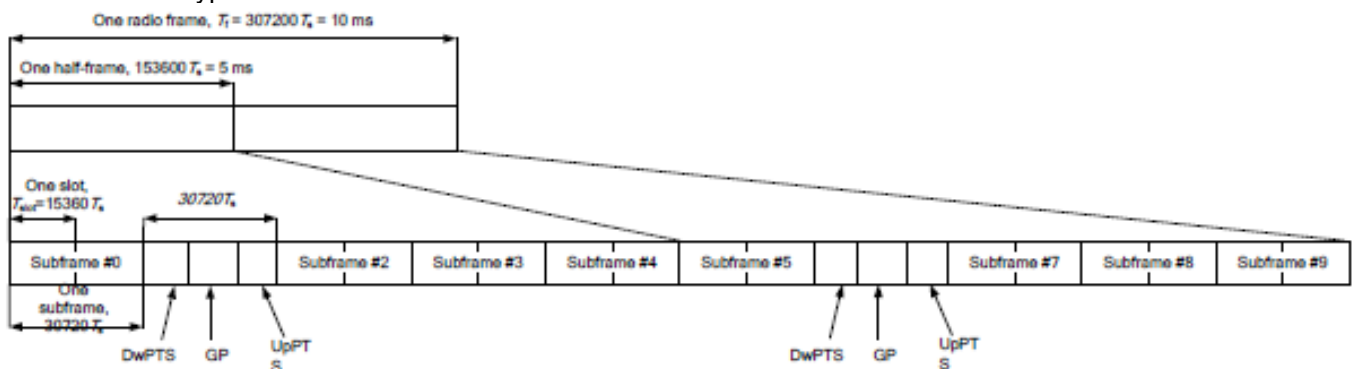
### TDD LTE test consideration

For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.

LTE TDD Band support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Frame structure type 2:



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**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		
5	6592.Ts	4384.Ts	5120.Ts	20480.Ts	4384.Ts	5120.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 ( $N_{RB}$ )						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3

### C) A-MPR

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

### D) Largest channel bandwidth standalone SAR test requirements

#### 1) QPSK with 1 RB allocation

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

#### 2) QPSK with 50% RB allocation

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

#### 3) QPSK with 100% RB allocation

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

#### 4) Higher order modulations

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

### E) Other channel bandwidth standalone SAR test requirements

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



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## 8.2.5 NR Band Test Configuration

1. NR Band n2/n5/n25/n26/n30/n41/n48/n66/n70/71/n77 support SA mode and n2/n5/n25/n41/n66/71/n77 support NSA mode. LTE+NR Band operations are possible only with LTE under EN-DC mode and the operations are possible as following table:

Band/Antenna		LTE Band 2		LTE Band 5	LTE Band 12	LTE Band 14	LTE Band 30		LTE Band 66	
		Ant2	Ant3	Ant1	Ant1	Ant1	Ant1	Ant3	Ant2	Ant3
n2	Ant2	√	√					√	√	√
	Ant3	√	√	√	√	√		√	√	√
n5	ant1		√					√		√
n25	Ant2								√	√
	Ant3								√	√
n41	ant3	√	√						√	√
n66	Ant2	√	√					√	√	√
	Ant3	√	√		√	√		√	√	√
n71	ant1		√							
	ant3									√
n77	ant5	√	√	√	√	√	√		√	√

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

Band			n2	n5	n25	n26	n30	n41 PC3	n41 PC2	n48	n66	n70	n71	n77 PC3	n77 PC2
Modulation	DFT-s-OFDM	PI/2 BPSK	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		QPSK	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	CP-OFDM	QPSK	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Duty Cycle		100%	100%	100%	100%	100%	80%	50%	100%	100%	100%	100%	80%	50%	

Band	SCS	Bandwidth												
		5Mhz	10Mhz	15Mhz	20Mhz	25Mhz	30Mhz	40Mhz	50Mhz	60Mhz	70Mhz	80Mhz	90Mhz	100Mhz
N2	15KHZ	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
N2	30KHZ	N/A	Yes	Yes	Yes	Yes	Yes	Yes	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
N5	30KHZ	N/A	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N25	15KHZ	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
N25	30KHZ	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
N26	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N26	30KHZ	N/A	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N30	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N30	30KHZ	N/A	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N41	15KHZ	N/A	Yes	Yes	Yes	N/A	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A
N41	30KHZ	N/A	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N48	15KHZ	N/A	Yes	Yes	Yes	N/A	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
N48	30KHZ	N/A	Yes	Yes	Yes	N/A	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
N66	15KHZ	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
N66	30KHZ	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
N70	15KHZ	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N70	30KHZ	N/A	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A







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N71	15KHZ	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
N71	30KHZ	N/A	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A
N77	15KHZ	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A
N77	30KHZ	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes



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3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
- 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.
  - 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.
  - 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.
  - 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
  - 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.
  - 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.
  - 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



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#### 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	$\leq 3.5^1$	$\leq 1.2^1$	$\leq 0.2^1$
		$\leq 0.5^2$	$\leq 0.5^2$	$0^2$
	QPSK	$\leq 1$		0
	16 QAM	$\leq 2$		$\leq 1$
	64 QAM	$\leq 2.5$		
CP-OFDM	256 QAM	$\leq 4.5$		
	QPSK	$\leq 3$		$\leq 1.5$
	16 QAM	$\leq 3$		$\leq 2$
	64 QAM	$\leq 3.5$		
	256 QAM	$\leq 6.5$		

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

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

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  $\leq$  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.



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## 9 Test Result

### 9.1 Measurement of RF conducted Power

The detailed conducted power table can refer to Appendix E.

Note:

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

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

- 2) . The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:  
Frame-averaged power = 10 x log (Burst-averaged power mW x Slot used / 8
- 3) . When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used
- 4) . According to FCC guidance, the output power with uplink CA active was measured for the high / middle / low channel configuration with the highest reported SAR for each exposure condition, the power was measured with wideband signal integration over both component carriers.
- 5) . In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs.
- 6) . Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05.
- 7) . Conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR test exclusion per KDB 941225 D05A. Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive, therefore SAR evaluation with downlink carrier aggregation can be excluded.  
The possible downlink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.101 V15.4.0. The detailed conducted power measurement results of downlink LTE CA are provided in the SAR report per 3GPP TS 36.521-1 V14.4.0. According to KDB 941225 D05A, the downlink only carrier aggregation conditions for this device can be excluded from SAR testing.  
The conducted power measurement results of downlink LTE CA Conducted Power are as Appendix E conducted RF output power, so the downlink only carrier aggregation conditions for this device can be excluded from SAR testing
- 8) . For conducted power of WIFI must be measured at each transmit antenna port according to the DSSS and OFDM transmission configurations in each standalone and aggregated frequency band. For each transmission mode configuration, power must be measured for the highest and lowest channels; and at the mid-band channel(s) when there are at least 3 channels. For configurations with multiple mid-band channels, due to an even number of channels, both channels should be measured. Power measurement is required for the transmission mode configuration with the highest maximum output power specified for production units.



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- 1) When the same highest maximum output power specification applies to multiple transmission modes, the largest channel bandwidth configuration with the lowest order modulation and lowest data rate is measured.
- 2) When the same highest maximum output power is specified for multiple largest channel bandwidth configurations with the same lowest order modulation or lowest order modulation and lowest data rate, power measurement is required for all equivalent 802.11 configurations with the same maximum output power.

9) . The conducted power of BT is measured with RMS detector.

BT DH5 Duty Cycle=76.80%



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## 9.2 Measurement of SAR Data

### Note:

- 1) The maximum Scaled SAR value is select the worst presentation of the original report SEWM2304000137RG09 and this report. 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:
  - $\leq 0.8\text{W/kg}$  for 1-g or  $2.0\text{W/kg}$  for 10-g respectively, when the transmission band is  $\leq 100\text{MHz}$ .
  - $\leq 0.6\text{ W/kg}$  or  $1.5\text{ W/kg}$ , for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.
  - $\leq 0.4\text{ W/kg}$  or  $1.0\text{ W/kg}$ , for 1-g or 10-g respectively, when the transmission band is  $\geq 200\text{ MHz}$ .
- 3) Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
- 4) The simultaneous transmission is reduced by XdB (the power reduced refer to RF Conducted Power section), therefore, those SAR is estimated based on standalone results.
- 5) For GSM band, when multiple slots can be used, SAR should be tested to account for the maximum source-based time-averaged output power.

### 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  $\leq 1.2\text{ W/kg}$ , 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  $\leq 1.2\text{ W/kg}$ , 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  $\leq 1.2\text{ W/kg}$ , SAR test for the other 802.11 modes are not required.

### NFC:

- 1) NFC SAR is measured for all edges and surfaces of the device.
- 2) NFC 13.56MHz antenna port is not available on the device to support conducted power measurement, therefore the measured results are referred to as reported SAR.
- 3) NFC SAR test tissue-simulating liquid parameter refer to IEC/IEEE 62209-1528 2020.



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## 9.2.1 SAR Result of GSM850

GSM850 SAR Test Record										
Ant 1 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data										
Left cheek	GPRS 4TS	190/836.6	1:2.075	0.213	0.02	26.73	28.30	1.435	0.306	22.3
Left tilted	GPRS 4TS	190/836.6	1:2.075	0.095	-0.19	26.73	28.30	1.435	0.136	22.3
Right cheek	GPRS 4TS	190/836.6	1:2.075	0.243	0.02	26.73	28.30	1.435	<b>0.349</b>	22.3
Right tilted	GPRS 4TS	190/836.6	1:2.075	0.117	0.08	26.73	28.30	1.435	0.168	22.3
Body worn Test data(Separate 15mm)										
Front side	GPRS 4TS	190/836.6	1:2.075	0.201	-0.14	26.73	28.30	1.435	0.289	22.3
Back side	GPRS 4TS	190/836.6	1:2.075	0.358	0.04	26.73	28.30	1.435	<b>0.514</b>	22.3
Hotspot Test data(Separate 10mm)										
Front side	GPRS 4TS	190/836.6	1:2.075	0.371	-0.07	26.73	28.30	1.435	0.533	22.3
Back side	GPRS 4TS	190/836.6	1:2.075	0.714	-0.05	26.73	28.30	1.435	<b>1.025</b>	22.3
Back side	GPRS 4TS	128/824.2	1:2.075	0.662	-0.09	26.70	28.30	1.445	0.957	22.3
Back side	GPRS 4TS	251/848.8	1:2.075	0.607	0.05	26.67	28.30	1.455	0.883	22.3
Left side	GPRS 4TS	190/836.6	1:2.075	0.210	-0.09	26.73	28.30	1.435	0.301	22.3
Right side	GPRS 4TS	190/836.6	1:2.075	0.274	0.17	26.73	28.30	1.435	0.393	22.3
Bottom side	GPRS 4TS	190/836.6	1:2.075	0.379	0.19	26.73	28.30	1.435	0.544	22.3

Table 11: SAR of GSM850 for Head and Body.

## 9.2.2 SAR Result of GSM1900

GSM1900 SAR Test Record										
Ant 2 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data										
Left cheek	GPRS 4TS	661/1880	1:2.075	0.135	0.07	23.63	25.30	1.469	<b>0.198</b>	22.3
Left tilted	GPRS 4TS	661/1880	1:2.075	0.087	-0.07	23.63	25.30	1.469	0.128	22.3
Right cheek	GPRS 4TS	661/1880	1:2.075	0.093	-0.02	23.63	25.30	1.469	0.137	22.3
Right tilted	GPRS 4TS	661/1880	1:2.075	0.092	0.05	23.63	25.30	1.469	0.135	22.3
Body worn Test data(Separate 15mm)										
Front side	GPRS 4TS	661/1880	1:2.075	0.157	0.10	23.63	25.30	1.469	0.231	22.3
Back side	GPRS 4TS	661/1880	1:2.075	0.236	0.04	23.63	25.30	1.469	<b>0.347</b>	22.3
Hotspot Test data(Separate 10mm)										
Front side	GPRS 4TS	661/1880	1:2.075	0.283	0.16	23.63	25.30	1.469	0.416	22.3
Back side	GPRS 4TS	661/1880	1:2.075	0.465	0.04	23.63	25.30	1.469	<b>0.683</b>	22.3
Left side	GPRS 4TS	661/1880	1:2.075	0.264	0.09	23.63	25.30	1.469	0.388	22.3
Bottom side	GPRS 4TS	661/1880	1:2.075	0.331	0.07	23.63	25.30	1.469	0.486	22.3

Table 12: SAR of GSM1900 for Head and Body.



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## 9.2.3 SAR Result of WCDMA Band II

W B2 SAR Test Record										
Ant 2 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data										
Left cheek	RMC	9400/1880	1:1	0.169	0.05	22.93	23.80	1.222	<b>0.206</b>	22.3
Left tilted	RMC	9400/1880	1:1	0.104	-0.09	22.93	23.80	1.222	0.127	22.3
Right cheek	RMC	9400/1880	1:1	0.131	0.09	22.93	23.80	1.222	0.160	22.3
Right tilted	RMC	9400/1880	1:1	0.109	0.11	22.93	23.80	1.222	0.133	22.3
Body worn Test data(Separate 15mm)										
Front side	RMC	9400/1880	1:1	0.196	-0.05	22.93	23.80	1.222	0.239	22.3
Back side	RMC	9400/1880	1:1	0.321	0.02	22.93	23.80	1.222	<b>0.392</b>	22.3
Hotspot Test data(Separate 10mm)										
Front side	RMC	9400/1880	1:1	0.341	0.18	22.93	23.80	1.222	0.417	22.3
Back side	RMC	9400/1880	1:1	0.614	0.01	22.93	23.80	1.222	<b>0.750</b>	22.3
Left side	RMC	9400/1880	1:1	0.232	-0.05	22.93	23.80	1.222	0.283	22.3
Bottom side	RMC	9400/1880	1:1	0.312	0.04	22.93	23.80	1.222	0.381	22.3

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

## 9.2.4 SAR Result of WCDMA Band IV

W B4 SAR Test Record										
Ant 2 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data										
Left cheek	RMC	1412/1732.4	1:1	0.094	-0.07	23.00	23.80	1.202	0.113	22.2
Left tilted	RMC	1412/1732.4	1:1	0.080	0.08	23.00	23.80	1.202	0.096	22.2
Right cheek	RMC	1412/1732.4	1:1	0.116	0.18	23.00	23.80	1.202	<b>0.139</b>	22.2
Right tilted	RMC	1412/1732.4	1:1	0.087	0.05	23.00	23.80	1.202	0.105	22.2
Body worn Test data(Separate 15mm)										
Front side	RMC	1412/1732.4	1:1	0.148	0.08	23.00	23.80	1.202	0.178	22.2
Back side	RMC	1412/1732.4	1:1	0.208	-0.02	23.00	23.80	1.202	<b>0.250</b>	22.2
Hotspot Test data(Separate 10mm)										
Front side	RMC	1412/1732.4	1:1	0.248	-0.06	23.00	23.80	1.202	0.298	22.2
Back side	RMC	1412/1732.4	1:1	0.470	-0.01	23.00	23.80	1.202	<b>0.565</b>	22.2
Left side	RMC	1412/1732.4	1:1	0.264	-0.15	23.00	23.80	1.202	0.317	22.2
Bottom side	RMC	1412/1732.4	1:1	0.280	0.04	23.00	23.80	1.202	0.337	22.2

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



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## 9.2.5 SAR Result of WCDMA Band V

W B5 SAR Test Record										
Ant 1 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data										
Left cheek	RMC	4182/836.4	1:1	0.163	-0.13	22.87	23.80	1.239	0.202	22.3
Left tilted	RMC	4182/836.4	1:1	0.095	-0.15	22.87	23.80	1.239	0.118	22.3
Right cheek	RMC	4182/836.4	1:1	0.177	0.04	22.87	23.80	1.239	<b>0.219</b>	22.3
Right tilted	RMC	4182/836.4	1:1	0.105	-0.02	22.87	23.80	1.239	0.130	22.3
Body worn Test data(Separate 15mm)										
Front side	RMC	4182/836.4	1:1	0.176	0.05	22.87	23.80	1.239	0.218	22.3
Back side	RMC	4182/836.4	1:1	0.257	0.04	22.87	23.80	1.239	<b>0.318</b>	22.3
Hotspot Test data(Separate 10mm)										
Front side	RMC	4182/836.4	1:1	0.278	-0.10	22.87	23.80	1.239	0.344	22.3
Back side	RMC	4182/836.4	1:1	0.538	0.03	22.87	23.80	1.239	<b>0.666</b>	22.3
Left side	RMC	4182/836.4	1:1	0.072	-0.04	22.87	23.80	1.239	0.089	22.3
Right side	RMC	4182/836.4	1:1	0.207	-0.01	22.87	23.80	1.239	0.256	22.3
Bottom side	RMC	4182/836.4	1:1	0.212	0.18	22.87	23.80	1.239	0.263	22.3

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

## 9.2.6 SAR Result of LTE Band 2

LTE Band 2 SAR Test Record											
Ant 2 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	18900/1880	1:1	0.131	-0.04	22.55	23.10	1.135	0.149	22.3
Left tilted	20	QPSK 1_0	18900/1880	1:1	0.091	-0.09	22.55	23.10	1.135	0.103	22.3
Right cheek	20	QPSK 1_0	18900/1880	1:1	0.094	0.05	22.55	23.10	1.135	0.107	22.3
Right tilted	20	QPSK 1_0	18900/1880	1:1	0.091	-0.17	22.55	23.10	1.135	0.103	22.3
Left cheek for ENDC	20	QPSK 1_0	18900/1880	1:1	0.132	0.04	23.42	24.30	1.225	0.162	22.3
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	18900/1880	1:1	0.108	0.05	21.65	22.10	1.109	0.120	22.3
Left tilted	20	QPSK 50_0	18900/1880	1:1	0.070	0.12	21.65	22.10	1.109	0.078	22.3
Right cheek	20	QPSK 50_0	18900/1880	1:1	0.079	0.13	21.65	22.10	1.109	0.088	22.3
Right tilted	20	QPSK 50_0	18900/1880	1:1	0.078	0.02	21.65	22.10	1.109	0.087	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1_0	18900/1880	1:1	0.192	0.08	22.55	23.10	1.135	0.218	22.3
Back side	20	QPSK 1_0	18900/1880	1:1	0.210	0.01	22.55	23.10	1.135	0.238	22.3
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50_0	18900/1880	1:1	0.163	0.05	21.65	22.10	1.109	0.181	22.3
Back side	20	QPSK 50_0	18900/1880	1:1	0.259	0.06	21.65	22.10	1.109	0.287	22.3
Back side for ENDC	20	QPSK 50_0	18900/1880	1:1	0.242	0.11	22.47	23.30	1.211	0.293	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	18900/1880	1:1	0.339	0.19	22.55	23.10	1.135	0.385	22.3
Back side	20	QPSK 1_0	18900/1880	1:1	0.562	-0.01	22.55	23.10	1.135	0.638	22.3
Left side	20	QPSK 1_0	18900/1880	1:1	0.305	-0.04	22.55	23.10	1.135	0.346	22.3
Bottom side	20	QPSK 1_0	18900/1880	1:1	0.320	-0.09	22.55	23.10	1.135	0.363	22.3
Back side for ENDC	20	QPSK 1_0	18900/1880	1:1	0.574	-0.09	23.42	24.30	1.225	0.703	22.3



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Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	18900/1880	1:1	0.279	0.17	21.65	22.10	1.109	0.309	22.3
Back side	20	QPSK 50_0	18900/1880	1:1	0.471	-0.18	21.65	22.10	1.109	0.522	22.3
Left side	20	QPSK 50_0	18900/1880	1:1	0.234	-0.11	21.65	22.10	1.109	0.260	22.3
Bottom side	20	QPSK 50_0	18900/1880	1:1	0.274	-0.05	21.65	22.10	1.109	0.304	22.3
Ant 3 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	18900/1880	1:1	0.648	-0.01	20.09	20.80	1.178	0.763	22.3
Left tilted	20	QPSK 1_0	18900/1880	1:1	0.660	-0.01	20.09	20.80	1.178	0.777	22.3
Right cheek	20	QPSK 1_0	18900/1880	1:1	0.990	0.05	20.09	20.80	1.178	<b>1.166</b>	22.3
Right cheek-reoeated	20	QPSK 1_0	18900/1880	1:1	0.984	0.03	20.09	20.80	1.178	1.159	22.3
Right cheek	20	QPSK 1_0	18700/1860	1:1	0.926	0.11	19.89	20.80	1.233	1.142	22.3
Right cheek	20	QPSK 1_0	19100/1900	1:1	0.943	-0.09	19.93	20.80	1.222	1.152	22.3
Right tilted	20	QPSK 1_0	18900/1880	1:1	0.949	0.04	20.09	20.80	1.178	1.118	22.3
Right tilted	20	QPSK 1_0	18700/1860	1:1	0.912	0.07	19.89	20.80	1.233	1.125	22.3
Right tilted	20	QPSK 1_0	19100/1900	1:1	0.925	-0.02	19.93	20.80	1.222	1.130	22.3
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	18900/1880	1:1	0.444	-0.09	19.99	20.80	1.205	0.535	22.3
Left tilted	20	QPSK 50_0	18900/1880	1:1	0.526	-0.12	19.99	20.80	1.205	0.634	22.3
Right cheek	20	QPSK 50_0	18900/1880	1:1	0.782	-0.18	19.99	20.80	1.205	0.942	22.3
Right cheek	20	QPSK 50_0	18700/1860	1:1	0.726	0.11	19.88	20.80	1.236	0.897	22.3
Right cheek	20	QPSK 50_0	19100/1900	1:1	0.743	0.03	19.84	20.80	1.247	0.927	22.3
Right tilted	20	QPSK 50_0	18900/1880	1:1	0.945	-0.01	19.99	20.80	1.205	1.139	22.3
Right tilted	20	QPSK 50_0	18700/1860	1:1	0.901	0.09	19.88	20.80	1.236	1.114	22.3
Right tilted	20	QPSK 50_0	19100/1900	1:1	0.933	0.08	19.84	20.80	1.247	1.164	22.3
Head Test Data(100%RB)											
Right cheek	20	QPSK 100_0	18900/1880	1:1	0.786	0.01	20.01	20.80	1.199	0.943	22.3
Right tilted	20	QPSK 100_0	18900/1880	1:1	0.733	-0.01	20.01	20.80	1.199	0.879	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1_0	18900/1880	1:1	0.338	-0.07	23.54	24.30	1.191	0.403	22.3
Back side	20	QPSK 1_0	18900/1880	1:1	0.714	0.01	23.54	24.30	1.191	<b>0.851</b>	22.3
Back side	20	QPSK 1_0	18700/1860	1:1	0.683	-0.06	23.42	24.30	1.225	0.836	22.3
Back side	20	QPSK 1_0	19100/1900	1:1	0.691	0.01	23.44	24.30	1.219	0.842	22.3
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50_0	18900/1880	1:1	0.278	0.03	22.64	23.30	1.164	0.324	22.3
Back side	20	QPSK 50_0	18900/1880	1:1	0.553	0.09	22.64	23.30	1.164	0.644	22.3
Body worn Test data(Separate 15mm 100%RB)											
Back side	20	QPSK 100_0	18900/1880	1:1	0.635	0.02	22.60	23.30	1.175	0.746	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	18900/1880	1:1	0.509	0.09	22.59	23.30	1.178	0.599	22.3
Back side	20	QPSK 1_0	18900/1880	1:1	1.030	-0.05	22.59	23.30	1.178	<b>1.213</b>	22.3
Back side	20	QPSK 1_0	18700/1860	1:1	0.999	-0.14	22.53	23.30	1.194	1.193	22.3
Back side	20	QPSK 1_0	19100/1900	1:1	1.010	0.18	22.57	23.30	1.183	1.195	22.3
Left side	20	QPSK 1_0	18900/1880	1:1	0.248	0.03	22.59	23.30	1.178	0.292	22.3
Top side	20	QPSK 1_0	18900/1880	1:1	0.890	0.08	22.59	23.30	1.178	1.048	22.3
Top side	20	QPSK 1_0	18700/1860	1:1	0.863	0.09	22.53	23.30	1.194	1.030	22.3
Top side	20	QPSK 1_0	19100/1900	1:1	0.882	0.07	22.57	23.30	1.183	1.043	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	18900/1880	1:1	0.404	0.09	22.58	23.30	1.180	0.477	22.3
Back side	20	QPSK 50_0	18900/1880	1:1	1.000	-0.01	22.58	23.30	1.180	1.180	22.3
Back side	20	QPSK 50_0	18700/1860	1:1	0.986	-0.10	22.51	23.30	1.199	1.183	22.3
Back side	20	QPSK 50_0	19100/1900	1:1	0.989	0.05	22.48	23.30	1.208	1.195	22.3



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Left side	20	QPSK 50_0	18900/1880	1:1	0.178	0.01	22.58	23.30	1.180	0.210	22.3
Top side	20	QPSK 50_0	18900/1880	1:1	0.675	-0.15	22.58	23.30	1.180	0.797	22.3
Hotspot Test data(Separate 10mm 100%RB)											
Back side	20	QPSK 100_0	18900/1880	1:1	1.010	-0.01	22.57	23.30	1.183	1.195	22.3
Top side	20	QPSK 100_0	18900/1880	1:1	0.671	-0.15	22.57	23.30	1.183	0.794	22.3
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(°C)
Product specific 10gSAR Test data(Separate 0mm 1RB)											
Back side	20	QPSK 1_0	18900/1880	1:1	1.500	-0.05	23.54	24.30	1.191	<b>1.787</b>	22.3
Top side	20	QPSK 1_0	18900/1880	1:1	1.380	-0.02	23.54	24.30	1.191	1.644	22.3
Product specific 10gSAR Test data(Separate 0mm 50%RB)											
Back side	20	QPSK 50_0	18900/1880	1:1	1.180	0.13	22.64	23.30	1.164	1.374	22.3
Top side	20	QPSK 50_0	18900/1880	1:1	1.170	0.02	22.64	23.30	1.164	1.362	22.3

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

Test Position	Channel/ Frequency	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
	(MHz)		SAR (1g)		SAR (1g)	SAR (1g)
Right cheek	18900/1880	0.990	0.984	1.006097561	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 1.5$  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

## 9.2.7 SAR Result of LTE Band 5

LTE Band 5 SAR Test Record											
Ant 1 Test Record(UL CA_5B)											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data(1RB)											
Right cheek	10	QPSK 1_0	20501+20600 /834.1+844	1:1	0.168	0.05	23.73	24.80	1.279	0.215	22.4
Body worn Test data(Separate 15mm 1RB)											
Back side	10	QPSK 1_0	20501+20600 /834.1+844	1:1	0.236	0.03	23.73	24.80	1.279	<b>0.302</b>	22.4
Hotspot Test data(Separate 10mm 1RB)											
Back side	10	QPSK 1_0	20501+20600 /834.1+844	1:1	0.705	0.01	23.73	24.80	1.279	<b>0.902</b>	22.4
Ant 3 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data(1RB)											
Left cheek	10	QPSK 1_0	20525/836.5	1:1	0.649	-0.04	23.96	24.80	1.213	0.787	22.3
Left tilted	10	QPSK 1_0	20525/836.5	1:1	0.373	0.19	23.96	24.80	1.213	0.453	22.3
Right cheek	10	QPSK 1_0	20525/836.5	1:1	0.725	-0.15	23.96	24.80	1.213	<b>0.880</b>	22.3
Right tilted	10	QPSK 1_0	20525/836.5	1:1	0.426	0.13	23.96	24.80	1.213	0.517	22.3
Head Test Data(50%RB)											
Left cheek	10	QPSK 25_0	20525/836.5	1:1	0.561	0.13	23.13	23.80	1.167	0.655	22.3
Left tilted	10	QPSK 25_0	20525/836.5	1:1	0.326	0.07	23.13	23.80	1.167	0.380	22.3
Right cheek	10	QPSK 25_0	20525/836.5	1:1	0.613	0.13	23.13	23.80	1.167	0.715	22.3



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Right tilted	10	QPSK 25_0	20525/836.5	1:1	0.370	-0.13	23.13	23.80	1.167	0.432	22.3
Head Test Data(100%RB)											
Right cheek	10	QPSK 50_0	20525/836.5	1:1	0.605	0.04	23.13	23.80	1.167	0.706	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1_0	20525/836.5	1:1	0.081	0.08	23.96	24.80	1.213	0.098	22.3
Back side	10	QPSK 1_0	20525/836.5	1:1	0.128	0.07	23.96	24.80	1.213	0.155	22.3
Body worn Test data(Separate 15mm 50%RB)											
Front side	10	QPSK 25_0	20525/836.5	1:1	0.065	-0.06	23.13	23.80	1.167	0.076	22.3
Back side	10	QPSK 25_0	20525/836.5	1:1	0.098	-0.14	23.13	23.80	1.167	0.114	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	20525/836.5	1:1	0.148	0.13	23.96	24.80	1.213	0.180	22.3
Back side	10	QPSK 1_0	20525/836.5	1:1	0.268	0.09	23.96	24.80	1.213	0.325	22.3
Left side	10	QPSK 1_0	20525/836.5	1:1	0.077	0.10	23.96	24.80	1.213	0.093	22.3
Top side	10	QPSK 1_0	20525/836.5	1:1	0.193	-0.05	23.96	24.80	1.213	0.234	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	20525/836.5	1:1	0.119	-0.12	23.13	23.80	1.167	0.139	22.3
Back side	10	QPSK 25_0	20525/836.5	1:1	0.241	0.06	23.13	23.80	1.167	0.281	22.3
Left side	10	QPSK 25_0	20525/836.5	1:1	0.063	-0.02	23.13	23.80	1.167	0.074	22.3
Top side	10	QPSK 25_0	20525/836.5	1:1	0.138	-0.19	23.13	23.80	1.167	0.161	22.3

Table 17: SAR of LTE Band 5 for Head and Body.

## 9.2.8 SAR Result of LTE Band 12

LTE Band 12 SAR Test Record											
Ant 1 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data(1RB)											
Left cheek	10	QPSK 1_0	23095/707.5	1:1	0.131	0.02	23.89	24.80	1.233	0.162	22.3
Left tilted	10	QPSK 1_0	23095/707.5	1:1	0.069	-0.13	23.89	24.80	1.233	0.085	22.3
Right cheek	10	QPSK 1_0	23095/707.5	1:1	0.151	0.02	23.89	24.80	1.233	<b>0.186</b>	22.3
Right tilted	10	QPSK 1_0	23095/707.5	1:1	0.074	0.05	23.89	24.80	1.233	0.091	22.3
Head Test Data(50%RB)											
Left cheek	10	QPSK 25_0	23095/707.5	1:1	0.104	-0.14	22.93	23.80	1.222	0.127	22.3
Left tilted	10	QPSK 25_0	23095/707.5	1:1	0.056	-0.02	22.93	23.80	1.222	0.068	22.3
Right cheek	10	QPSK 25_0	23095/707.5	1:1	0.118	0.04	22.93	23.80	1.222	0.144	22.3
Right tilted	10	QPSK 25_0	23095/707.5	1:1	0.058	0.07	22.93	23.80	1.222	0.071	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1_0	23095/707.5	1:1	0.182	0.09	23.89	24.80	1.233	0.224	22.3
Back side	10	QPSK 1_0	23095/707.5	1:1	0.249	0.02	23.89	24.80	1.233	<b>0.307</b>	22.3
Body worn Test data(Separate 15mm 50%RB)											
Front side	10	QPSK 25_0	23095/707.5	1:1	0.143	0.02	22.93	23.80	1.222	0.175	22.3
Back side	10	QPSK 25_0	23095/707.5	1:1	0.201	-0.14	22.93	23.80	1.222	0.246	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	23095/707.5	1:1	0.239	0.01	23.89	24.80	1.233	0.295	22.3
Back side	10	QPSK 1_0	23095/707.5	1:1	0.438	-0.02	23.89	24.80	1.233	<b>0.540</b>	22.3
Left side	10	QPSK 1_0	23095/707.5	1:1	0.150	-0.14	23.89	24.80	1.233	0.185	22.3
Right side	10	QPSK 1_0	23095/707.5	1:1	0.267	-0.06	23.89	24.80	1.233	0.329	22.3
Bottom side	10	QPSK 1_0	23095/707.5	1:1	0.215	0.17	23.89	24.80	1.233	0.265	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	23095/707.5	1:1	0.188	0.01	22.93	23.80	1.222	0.230	22.3
Back side	10	QPSK 25_0	23095/707.5	1:1	0.371	-0.04	22.93	23.80	1.222	0.453	22.3
Left side	10	QPSK 25_0	23095/707.5	1:1	0.072	0.01	22.93	23.80	1.222	0.088	22.3



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Right side	10	QPSK 25_0	23095/707.5	1:1	0.140	-0.16	22.93	23.80	1.222	0.171	22.3
Bottom side	10	QPSK 25_0	23095/707.5	1:1	0.201	0.09	22.93	23.80	1.222	0.246	22.3

Table 18: SAR of LTE Band 12 for Head and Body.

## 9.2.9 SAR Result of LTE Band 14

LTE Band 14 SAR Test Record											
Ant 1 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data(1RB)											
Left cheek	10	QPSK 1_0	23330/793	1:1	0.175	0.03	24.09	24.80	1.178	0.206	22.3
Left tilted	10	QPSK 1_0	23330/793	1:1	0.110	-0.05	24.09	24.80	1.178	0.130	22.3
Right cheek	10	QPSK 1_0	23330/793	1:1	0.188	0.01	24.09	24.80	1.178	0.221	22.3
Right tilted	10	QPSK 1_0	23330/793	1:1	0.110	0.15	24.09	24.80	1.178	0.130	22.3
Head Test Data(50%RB)											
Left cheek	10	QPSK 25_0	23330/793	1:1	0.144	0.17	23.16	23.80	1.160	0.167	22.3
Left tilted	10	QPSK 25_0	23330/793	1:1	0.092	-0.09	23.16	23.80	1.160	0.107	22.3
Right cheek	10	QPSK 25_0	23330/793	1:1	0.151	0.06	23.16	23.80	1.160	0.175	22.3
Right tilted	10	QPSK 25_0	23330/793	1:1	0.090	-0.19	23.16	23.80	1.160	0.104	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1_0	23330/793	1:1	0.214	0.02	24.09	24.80	1.178	0.252	22.3
Back side	10	QPSK 1_0	23330/793	1:1	0.301	0.02	24.09	24.80	1.178	0.354	22.3
Body worn Test data(Separate 15mm 50%RB)											
Front side	10	QPSK 25_0	23330/793	1:1	0.174	0.05	23.16	23.80	1.160	0.202	22.3
Back side	10	QPSK 25_0	23330/793	1:1	0.240	0.04	23.16	23.80	1.160	0.278	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	23330/793	1:1	0.262	0.12	24.09	24.80	1.178	0.309	22.3
Back side	10	QPSK 1_0	23330/793	1:1	0.476	0.03	24.09	24.80	1.178	0.561	22.3
Left side	10	QPSK 1_0	23330/793	1:1	0.111	-0.12	24.09	24.80	1.178	0.131	22.3
Right side	10	QPSK 1_0	23330/793	1:1	0.303	0.19	24.09	24.80	1.178	0.357	22.3
Bottom side	10	QPSK 1_0	23330/793	1:1	0.199	-0.16	24.09	24.80	1.178	0.234	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	23330/793	1:1	0.204	-0.09	23.16	23.80	1.160	0.237	22.3
Back side	10	QPSK 25_0	23330/793	1:1	0.371	-0.13	23.16	23.80	1.160	0.430	22.3
Left side	10	QPSK 25_0	23330/793	1:1	0.107	0.09	23.16	23.80	1.160	0.124	22.3
Right side	10	QPSK 25_0	23330/793	1:1	0.249	0.18	23.16	23.80	1.160	0.289	22.3
Bottom side	10	QPSK 25_0	23330/793	1:1	0.240	0.07	23.16	23.80	1.160	0.278	22.3

Table 19: SAR of LTE Band 14 for Head and Body.

## 9.2.10 SAR Result of LTE Band 26

LTE Band 26 SAR Test Record											
Ant 1 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data(1RB)											
Left cheek	15	QPSK 1_0	26865/831.5	1:1	0.186	-0.18	24.10	24.80	1.175	0.219	22.4
Left tilted	15	QPSK 1_0	26865/831.5	1:1	0.100	0.06	24.10	24.80	1.175	0.117	22.4
Right cheek	15	QPSK 1_0	26865/831.5	1:1	0.191	0.08	24.10	24.80	1.175	0.224	22.4
Right tilted	15	QPSK 1_0	26865/831.5	1:1	0.100	-0.12	24.10	24.80	1.175	0.117	22.4
Head Test Data(50%RB)											



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Left cheek	15	QPSK 36_0	26865/831.5	1:1	0.154	-0.06	23.17	23.80	1.156	0.178	22.4
Left tilted	15	QPSK 36_0	26865/831.5	1:1	0.088	0.10	23.17	23.80	1.156	0.102	22.4
Right cheek	15	QPSK 36_0	26865/831.5	1:1	0.162	0.13	23.17	23.80	1.156	0.187	22.4
Right tilted	15	QPSK 36_0	26865/831.5	1:1	0.088	-0.16	23.17	23.80	1.156	0.102	22.4
Body worn Test data(Separate 15mm 1RB)											
Front side	15	QPSK 1_0	26865/831.5	1:1	0.176	0.19	24.10	24.80	1.175	0.207	22.4
Back side	15	QPSK 1_0	26865/831.5	1:1	0.289	0.01	24.10	24.80	1.175	<b>0.340</b>	22.4
Body worn Test data(Separate 15mm 50%RB)											
Front side	15	QPSK 36_0	26865/831.5	1:1	0.150	0.18	23.17	23.80	1.156	0.173	22.4
Back side	15	QPSK 36_0	26865/831.5	1:1	0.239	0.03	23.17	23.80	1.156	0.276	22.4
Hotspot Test data(Separate 10mm 1RB)											
Front side	15	QPSK 1_0	26865/831.5	1:1	0.358	-0.07	24.10	24.80	1.175	0.421	22.4
Back side	15	QPSK 1_0	26865/831.5	1:1	0.737	0.03	24.10	24.80	1.175	<b>0.866</b>	22.4
Left side	15	QPSK 1_0	26865/831.5	1:1	0.210	-0.19	24.10	24.80	1.176	0.247	22.4
Right side	15	QPSK 1_0	26865/831.5	1:1	0.297	0.00	24.10	24.80	1.176	0.349	22.4
Bottom side	15	QPSK 1_0	26865/831.5	1:1	0.338	0.19	24.10	24.80	1.176	0.398	22.4
Hotspot Test data(Separate 10mm 50%RB)											
Front side	15	QPSK 36_0	26865/831.5	1:1	0.299	0.02	23.17	23.80	1.156	0.346	22.4
Back side	15	QPSK 36_0	26865/831.5	1:1	0.554	-0.02	23.17	23.80	1.156	0.640	22.4
Left side	15	QPSK 36_0	26865/831.5	1:1	0.146	-0.14	23.17	23.80	1.156	0.169	22.4
Right side	15	QPSK 36_0	26865/831.5	1:1	0.250	-0.05	23.17	23.80	1.156	0.289	22.4
Bottom side	15	QPSK 36_0	26865/831.5	1:1	0.230	-0.02	23.17	23.80	1.156	0.266	22.4
Hotspot Test data(Separate 10mm 100%RB)											
Back side	15	QPSK 75_0	26865/831.5	1:1	0.561	0.03	23.17	23.80	1.156	0.649	22.4

Table 20: SAR of LTE Band 26 for Head and Body.

## 9.2.11 SAR Result of LTE Band 30

LTE Band 30 SAR Test Record											
Ant 1 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data(1RB)											
Left cheek	10	QPSK 1_0	27710/2310	1:1	0.004	0.14	22.66	23.00	1.081	0.004	22.1
Left tilted	10	QPSK 1_0	27710/2310	1:1	0.002	-0.06	22.66	23.00	1.081	0.002	22.1
Right cheek	10	QPSK 1_0	27710/2310	1:1	0.007	-0.04	22.66	23.00	1.081	0.008	22.1
Right tilted	10	QPSK 1_0	27710/2310	1:1	0.004	0.12	22.66	23.00	1.081	0.004	22.1
Head Test Data(50%RB)											
Left cheek	10	QPSK 25_0	27710/2310	1:1	0.003	0.14	21.69	22.00	1.074	0.003	22.1
Left tilted	10	QPSK 25_0	27710/2310	1:1	0.001	0.05	21.69	22.00	1.074	0.001	22.1
Right cheek	10	QPSK 25_0	27710/2310	1:1	0.005	0.01	21.69	22.00	1.074	0.005	22.1
Right tilted	10	QPSK 25_0	27710/2310	1:1	0.003	-0.04	21.69	22.00	1.074	0.003	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1_0	27710/2310	1:1	0.161	0.03	22.66	23.00	1.081	0.174	22.1
Back side	10	QPSK 1_0	27710/2310	1:1	0.749	-0.08	22.66	23.00	1.081	0.810	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	10	QPSK 25_0	27710/2310	1:1	0.123	-0.05	21.69	22.00	1.074	0.132	22.1
Back side	10	QPSK 25_0	27710/2310	1:1	0.598	0.01	21.69	22.00	1.074	0.642	22.1
Body worn Test data(Separate 15mm 100%RB)											
Back side	10	QPSK 50_0	27710/2310	1:1	0.610	0.06	21.55	22.00	1.109	0.677	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	27710/2310	1:1	0.213	-0.01	21.93	22.50	1.140	0.243	22.1
Back side	10	QPSK 1_0	27710/2310	1:1	1.100	0.08	21.93	22.50	1.140	<b>1.254</b>	22.1



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t (86-512) 62992980 [www.sgs.com](http://www.sgs.com)

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Back side-repeated	10	QPSK 1_0	27710/2310	1:1	1.060	0.05	21.93	22.50	1.140	1.209	22.1
Left side	10	QPSK 1_0	27710/2310	1:1	0.019	-0.03	21.93	22.50	1.140	0.022	22.1
Right side	10	QPSK 1_0	27710/2310	1:1	0.051	-0.09	21.93	22.50	1.140	0.058	22.1
Bottom side	10	QPSK 1_0	27710/2310	1:1	0.804	0.14	21.93	22.50	1.140	0.917	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	10	QPSK 25_0	27710/2310	1:1	0.164	-0.09	21.58	22.00	1.102	0.181	22.1
Back side	10	QPSK 25_0	27710/2310	1:1	0.901	0.18	21.58	22.00	1.102	0.992	22.1
Left side	10	QPSK 25_0	27710/2310	1:1	0.017	0.16	21.58	22.00	1.102	0.019	22.1
Right side	10	QPSK 25_0	27710/2310	1:1	0.071	0.14	21.58	22.00	1.102	0.078	22.1
Bottom side	10	QPSK 25_0	27710/2310	1:1	0.627	0.02	21.58	22.00	1.102	0.691	22.1
Hotspot Test data(Separate 10mm 100%RB)											
Back side	10	QPSK 50_0	27710/2310	1:1	0.920	-0.04	21.52	22.00	1.117	1.028	22.1
Bottom side	10	QPSK 50_0	27710/2310	1:1	0.656	-0.17	21.52	22.00	1.117	0.733	22.1
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(°C)
Product specific 10gSAR Test data(Separate 0mm 1RB)											
Back side	10	QPSK 1_0	27710/2310	1:1	2.310	0.07	22.66	23.00	1.081	2.498	22.1
Back side-repeated	10	QPSK 1_0	27710/2310	1:1	2.230	0.01	22.66	23.00	1.081	2.412	22.1
Product specific 10gSAR Test data(Separate 0mm 50%RB)											
Back side	10	QPSK 25_0	27710/2310	1:1	1.630	0.05	21.69	22.00	1.074	1.751	22.1
Product specific 10gSAR Test data(Separate 0mm 100%RB)											
Back side	10	QPSK 50_0	27710/2310	1:1	1.430	0.01	21.55	22.00	1.109	1.586	22.1
Ant 3 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data(1RB)											
Left cheek	10	QPSK 1_0	27710/2310	1:1	0.493	-0.11	16.14	16.80	1.164	0.574	22.1
Left tilted	10	QPSK 1_0	27710/2310	1:1	0.624	-0.18	16.14	16.80	1.164	0.726	22.1
Right cheek	10	QPSK 1_0	27710/2310	1:1	0.903	0.04	16.14	16.80	1.164	1.051	22.1
Right tilted	10	QPSK 1_0	27710/2310	1:1	0.967	0.14	16.14	16.80	1.164	1.126	22.1
Head Test Data(50%RB)											
Left cheek	10	QPSK 25_0	27710/2310	1:1	0.559	0.03	15.89	16.80	1.233	0.689	22.1
Left tilted	10	QPSK 25_0	27710/2310	1:1	0.550	0.04	15.89	16.80	1.233	0.678	22.1
Right cheek	10	QPSK 25_0	27710/2310	1:1	0.795	-0.13	15.89	16.80	1.233	0.980	22.1
Right tilted	10	QPSK 25_0	27710/2310	1:1	0.869	-0.01	15.89	16.80	1.233	1.072	22.1
Head Test Data(100%RB)											
Right cheek	10	QPSK 50_0	27710/2310	1:1	0.809	0.08	15.96	16.80	1.213	0.982	22.1
Right tilted	10	QPSK 50_0	27710/2310	1:1	0.858	0.11	15.96	16.80	1.213	1.041	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1_0	27710/2310	1:1	0.241	0.05	19.44	20.30	1.219	0.294	22.1
Back side	10	QPSK 1_0	27710/2310	1:1	0.851	-0.02	19.44	20.30	1.219	1.037	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	10	QPSK 25_0	27710/2310	1:1	0.219	-0.05	19.40	20.30	1.230	0.269	22.1
Back side	10	QPSK 25_0	27710/2310	1:1	0.784	0.15	19.40	20.30	1.230	0.965	22.1
Body worn Test data(Separate 15mm 100%RB)											
Back side	10	QPSK 50_0	27710/2310	1:1	0.754	0.01	19.30	20.30	1.259	0.949	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_0	27710/2310	1:1	0.272	-0.17	17.24	18.30	1.276	0.347	22.1
Back side	10	QPSK 1_0	27710/2310	1:1	0.697	-0.03	17.24	18.30	1.276	0.890	22.1
Left side	10	QPSK 1_0	27710/2310	1:1	0.059	-0.01	17.24	18.30	1.276	0.075	22.1
Top side	10	QPSK 1_0	27710/2310	1:1	0.938	0.14	17.24	18.30	1.276	1.197	22.1
Hotspot Test data(Separate 10mm 50%RB)											



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Front side	10	QPSK 25_0	27710/2310	1:1	0.245	-0.02	17.11	18.30	1.315	0.322	22.1
Back side	10	QPSK 25_0	27710/2310	1:1	0.641	0.04	17.11	18.30	1.315	0.843	22.1
Left side	10	QPSK 25_0	27710/2310	1:1	0.055	0.14	17.11	18.30	1.315	0.072	22.1
Top side	10	QPSK 25_0	27710/2310	1:1	0.906	0.05	17.11	18.30	1.315	1.192	22.1
Hotspot Test data(Separate 10mm 100%RB)											
Back side	10	QPSK 50_0	27710/2310	1:1	0.620	0.10	17.14	18.30	1.306	0.810	22.1
Top side	10	QPSK 50_0	27710/2310	1:1	0.892	-0.11	17.14	18.30	1.306	1.165	22.1
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(°C)
Product specific 10gSAR Test data(Separate 0mm 1RB)											
Back side	10	QPSK 1_0	27710/2310	1:1	1.530	0.12	19.44	20.30	1.219	1.865	22.1
Top side	10	QPSK 1_0	27710/2310	1:1	2.130	0.05	19.44	20.30	1.219	2.596	22.1
Product specific 10gSAR Test data(Separate 0mm 50%RB)											
Back side	10	QPSK 25_0	27710/2310	1:1	1.550	0.02	19.40	20.30	1.230	1.907	22.1
Top side	10	QPSK 25_0	27710/2310	1:1	1.970	0.03	19.40	20.30	1.230	2.424	22.1
Product specific 10gSAR Test data(Separate 0mm 100%RB)											
Top side	10	QPSK 50_0	27710/2310	1:1	1.820	0.01	19.30	20.30	1.259	2.291	22.1

Table 21: SAR of LTE Band 30 for Head and Body.

Test Position	Channel/ Frequency	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
	(MHz)		SAR (1g)		SAR (1g)	SAR (1g)
Back side	27710/2310	2.310	2.230	1.035874439	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  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  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .4) Repeated measurements are not required when the original highest measured SAR is  $< 0.80$  W/kg

Test Position	Channel/ Frequency	Measured SAR (10g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
	(MHz)		SAR (10g)		SAR (10g)	SAR (10g)
Back side	27710/2310	1.100	1.060	1.037735849	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 2.0$  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  $\geq 3.625$  W/kg (~ 10% from the 10-g SAR limit).3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 3$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .4) Repeated measurements are not required when the original highest measured SAR is  $< 2.0$  W/kg

## 9.2.12 SAR Result of LTE Band 48

LTE Band 48 SAR Test Record											
Ant 5 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	55830/3609	1:1.58	0.182	-0.04	20.44	20.80	1.086	0.198	22.5
Left tilted	20	QPSK 1_0	55830/3609	1:1.58	0.137	0.09	20.44	20.80	1.086	0.149	22.5
Right cheek	20	QPSK 1_0	55830/3609	1:1.58	0.681	0.18	20.44	20.80	1.086	0.740	22.5
Right tilted	20	QPSK 1_0	55830/3609	1:1.58	0.355	-0.05	20.44	20.80	1.086	0.386	22.5
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	55830/3609	1:1.58	0.176	-0.02	20.30	20.80	1.122	0.197	22.5



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Left tilted	20	QPSK 50_0	55830/3609	1:1.58	0.123	-0.14	20.30	20.80	1.122	0.138	22.5
Right cheek	20	QPSK 50_0	55830/3609	1:1.58	0.544	-0.06	20.30	20.80	1.122	0.610	22.5
Right tilted	20	QPSK 50_0	55830/3609	1:1.58	0.285	0.17	20.30	20.80	1.122	0.320	22.5
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1_0	55830/3609	1:1.58	0.117	0.09	22.82	23.80	1.253	0.147	22.5
Back side	20	QPSK 1_0	55830/3609	1:1.58	0.223	0.03	22.82	23.80	1.253	<b>0.279</b>	22.5
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50_0	55830/3609	1:1.58	0.093	0.08	21.87	22.80	1.239	0.115	22.5
Back side	20	QPSK 50_0	55830/3609	1:1.58	0.176	-0.02	21.87	22.80	1.239	0.218	22.5
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	55830/3609	1:1.58	0.191	0.08	22.82	23.80	1.253	0.239	22.5
Back side	20	QPSK 1_0	55830/3609	1:1.58	0.389	0.03	22.82	23.80	1.253	0.487	22.5
Left side	20	QPSK 1_0	55830/3609	1:1.58	0.473	0.04	22.82	23.80	1.253	<b>0.593</b>	22.5
Top side	20	QPSK 1_0	55830/3609	1:1.58	0.144	-0.04	22.82	23.80	1.253	0.180	22.5
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	55830/3609	1:1.58	0.152	0.05	21.87	22.80	1.239	0.188	22.5
Back side	20	QPSK 50_0	55830/3609	1:1.58	0.322	-0.03	21.87	22.80	1.239	0.399	22.5
Left side	20	QPSK 50_0	55830/3609	1:1.58	0.362	-0.09	21.87	22.80	1.239	0.448	22.5
Top side	20	QPSK 50_0	55830/3609	1:1.58	0.102	0.14	21.87	22.80	1.239	0.126	22.5

Table 22: SAR of LTE Band 48 for Head and Body.



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### 9.2.1 SAR Result of LTE Band 66

LTE Band 66 SAR Test Record											
Ant 2 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	132322/1745	1:1	0.072	-0.08	22.58	24.30	1.486	0.107	22.2
Left tilted	20	QPSK 1_0	132322/1745	1:1	0.056	0.19	22.58	24.30	1.486	0.083	22.2
Right cheek	20	QPSK 1_0	132322/1745	1:1	0.085	0.17	22.58	24.30	1.486	0.126	22.2
Right tilted	20	QPSK 1_0	132322/1745	1:1	0.070	-0.08	22.58	24.30	1.486	0.104	22.2
Right cheek for ENDC	20	QPSK 1_0	132322/1745	1:1	0.095	-0.19	23.38	24.30	1.236	0.117	22.2
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	132322/1745	1:1	0.058	-0.02	21.55	23.30	1.496	0.087	22.2
Left tilted	20	QPSK 50_0	132322/1745	1:1	0.047	0.03	21.55	23.30	1.496	0.070	22.2
Right cheek	20	QPSK 50_0	132322/1745	1:1	0.066	0.12	21.55	23.30	1.496	0.099	22.2
Right tilted	20	QPSK 50_0	132322/1745	1:1	0.047	-0.02	21.55	23.30	1.496	0.070	22.2
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1_0	132322/1745	1:1	0.148	-0.04	22.58	24.30	1.486	0.220	22.2
Back side	20	QPSK 1_0	132322/1745	1:1	0.189	-0.07	22.58	24.30	1.486	0.281	22.2
Back side for ENDC	20	QPSK 1_0	132322/1745	1:1	0.204	0.07	23.38	24.30	1.236	0.252	22.2
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50_0	132322/1745	1:1	0.114	-0.02	21.55	23.30	1.496	0.171	22.2
Back side	20	QPSK 50_0	132322/1745	1:1	0.161	0.03	21.55	23.30	1.496	0.241	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	132322/1745	1:1	0.230	-0.03	22.58	24.30	1.486	0.342	22.2
Back side	20	QPSK 1_0	132322/1745	1:1	0.445	0.19	22.58	24.30	1.486	0.661	22.2
Left side	20	QPSK 1_0	132322/1745	1:1	0.195	-0.16	22.58	24.30	1.486	0.290	22.2
Bottom side	20	QPSK 1_0	132322/1745	1:1	0.286	-0.07	22.58	24.30	1.486	0.425	22.2
Back side for ENDC	20	QPSK 1_0	132322/1745	1:1	0.461	0.07	23.38	24.30	1.236	0.570	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	132322/1745	1:1	0.192	0.07	21.55	23.30	1.496	0.287	22.2
Back side	20	QPSK 50_0	132322/1745	1:1	0.343	0.14	21.55	23.30	1.496	0.513	22.2
Left side	20	QPSK 50_0	132322/1745	1:1	0.149	0.07	21.55	23.30	1.496	0.223	22.2
Bottom side	20	QPSK 50_0	132322/1745	1:1	0.258	-0.01	21.55	23.30	1.496	0.386	22.2
Ant 3 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	132322/1745	1:1	0.530	-0.12	20.51	20.80	1.069	0.567	22.2
Left tilted	20	QPSK 1_0	132322/1745	1:1	0.556	0.06	20.51	20.80	1.069	0.594	22.2
Right cheek	20	QPSK 1_0	132322/1745	1:1	0.985	-0.06	20.51	20.80	1.069	1.053	22.2
Right cheek	20	QPSK 1_0	132072/1720	1:1	0.904	0.03	20.45	20.80	1.084	0.980	22.2
Right cheek	20	QPSK 1_0	132572/1770	1:1	1.010	0.06	20.46	20.80	1.081	<b>1.092</b>	22.2
Right cheek-repeated	20	QPSK 1_0	132572/1770	1:1	0.991	0.03	20.46	20.80	1.081	1.072	22.2
Right tilted	20	QPSK 1_0	132322/1745	1:1	0.808	-0.14	20.51	20.80	1.069	0.864	22.2
Right tilted	20	QPSK 1_0	132072/1720	1:1	0.727	0.06	20.45	20.80	1.084	0.788	22.2
Right tilted	20	QPSK 1_0	132572/1770	1:1	0.853	0.14	20.46	20.80	1.081	0.922	22.2
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	132322/1745	1:1	0.505	-0.14	20.42	20.80	1.091	0.551	22.2
Left tilted	20	QPSK 50_0	132322/1745	1:1	0.524	-0.12	20.42	20.80	1.091	0.572	22.2
Right cheek	20	QPSK 50_0	132322/1745	1:1	0.955	0.06	20.42	20.80	1.091	1.042	22.2
Right cheek	20	QPSK 50_0	132072/1720	1:1	0.794	-0.03	20.32	20.80	1.117	0.887	22.2



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中国·苏州·中国(江苏)自由贸易试验区苏州片区工业园区润胜路1号的6号厂房南楼 邮编: 215000

t (86-512) 62992980 [www.sgs.com](http://www.sgs.com)

t (86-512) 62992980 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

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Right cheek	20	QPSK 50_0	132572/1770	1:1	0.743	0.04	20.37	20.80	1.104	0.820	22.2
Right tilted	20	QPSK 50_0	132322/1745	1:1	0.805	-0.08	20.42	20.80	1.091	0.879	22.2
Right tilted	20	QPSK 50_0	132072/1720	1:1	0.675	0.03	20.32	20.80	1.117	0.754	22.2
Right tilted	20	QPSK 50_0	132572/1770	1:1	0.641	-0.10	20.37	20.80	1.104	0.708	22.2
Head Test Data(100%RB)											
Right cheek	20	QPSK 100_0	132572/1770	1:1	0.928	-0.11	20.38	20.80	1.102	1.022	22.2
Right cheek	20	QPSK 100_0	132072/1720	1:1	0.888	0.07	20.33	20.80	1.114	0.989	22.2
Right cheek	20	QPSK 100_0	132572/1770	1:1	0.862	0.04	20.14	20.80	1.164	1.003	22.2
Right tilted	20	QPSK 100_0	132572/1770	1:1	0.782	-0.12	20.38	20.80	1.102	0.861	22.2
Right tilted	20	QPSK 100_0	132072/1720	1:1	0.752	0.05	20.33	20.80	1.114	0.838	22.2
Right tilted	20	QPSK 100_0	132572/1770	1:1	0.724	-0.02	20.14	20.80	1.164	0.843	22.2
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1_0	132322/1745	1:1	0.288	0.05	23.63	24.30	1.167	0.336	22.2
Back side	20	QPSK 1_0	132322/1745	1:1	0.573	-0.01	23.63	24.30	1.167	0.669	22.2
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50_0	132322/1745	1:1	0.275	0.13	22.60	23.30	1.175	0.323	22.2
Back side	20	QPSK 50_0	132322/1745	1:1	0.545	0.02	22.60	23.30	1.175	0.640	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	132322/1745	1:1	0.431	-0.12	22.62	23.30	1.169	0.504	22.2
Back side	20	QPSK 1_0	132322/1745	1:1	0.932	0.08	22.62	23.30	1.169	1.090	22.2
Back side	20	QPSK 1_0	132072/1720	1:1	0.846	-0.18	22.54	23.30	1.191	1.008	22.2
Back side	20	QPSK 1_0	132572/1770	1:1	0.972	-0.05	22.59	23.30	1.178	1.145	22.2
Left side	20	QPSK 1_0	132322/1745	1:1	0.224	0.03	22.62	23.30	1.169	0.262	22.2
Top side	20	QPSK 1_0	132322/1745	1:1	0.499	-0.16	22.62	23.30	1.169	0.584	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	132322/1745	1:1	0.404	-0.01	22.51	23.30	1.199	0.485	22.2
Back side	20	QPSK 50_0	132322/1745	1:1	0.868	0.06	22.51	23.30	1.199	1.041	22.2
Back side	20	QPSK 50_0	132072/1720	1:1	0.755	0.11	22.50	23.30	1.202	0.908	22.2
Back side	20	QPSK 50_0	132572/1770	1:1	0.839	0.07	22.43	23.30	1.222	1.025	22.2
Left side	20	QPSK 50_0	132322/1745	1:1	0.224	0.17	22.51	23.30	1.199	0.269	22.2
Top side	20	QPSK 50_0	132322/1745	1:1	0.452	0.19	22.51	23.30	1.199	0.542	22.2
Hotspot Test data(Separate 10mm 50%RB)											
Back side	20	QPSK 100_0	132322/1745	1:1	0.872	0.16	22.54	23.30	1.191	1.039	22.2
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(°C)
Product specific 10gSAR Test data(Separate 0mm 1RB)											
Back side	20	QPSK 1_0	132322/1745	1:1	1.550	-0.09	23.63	24.30	1.167	1.809	22.2
Product specific 10gSAR Test data(Separate 0mm 50%RB)											
Back side	20	QPSK 50_0	132322/1745	1:1	1.450	0.14	22.60	23.30	1.175	1.704	22.2

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

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (1g)		SAR (1g)	SAR (1g)
Right cheek	132572/1770	1.010	0.991	1.019172553	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 1.5$  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

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## 9.2.2 SAR Result of LTE Band 71

LTE Band 71 SAR Test Record											
Ant 1 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data(1RB)											
Left cheek	20	QPSK 1_0	133322/683	1:1	0.084	0.16	23.86	24.80	1.242	0.104	22.1
Left tilted	20	QPSK 1_0	133322/683	1:1	0.040	-0.15	23.86	24.80	1.242	0.050	22.1
Right cheek	20	QPSK 1_0	133322/683	1:1	0.103	0.05	23.86	24.80	1.242	<b>0.128</b>	22.1
Right tilted	20	QPSK 1_0	133322/683	1:1	0.053	0.02	23.86	24.80	1.242	0.066	22.1
Head Test Data(50%RB)											
Left cheek	20	QPSK 50_0	133322/683	1:1	0.075	-0.09	22.90	23.80	1.230	0.092	22.1
Left tilted	20	QPSK 50_0	133322/683	1:1	0.035	0.03	22.90	23.80	1.230	0.043	22.1
Right cheek	20	QPSK 50_0	133322/683	1:1	0.101	0.05	22.90	23.80	1.230	0.124	22.1
Right tilted	20	QPSK 50_0	133322/683	1:1	0.046	-0.12	22.90	23.80	1.230	0.057	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1_0	133322/683	1:1	0.208	0.09	23.86	24.80	1.242	0.258	22.1
Back side	20	QPSK 1_0	133322/683	1:1	0.282	0.02	23.86	24.80	1.242	<b>0.350</b>	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50_0	133322/683	1:1	0.169	0.14	22.90	23.80	1.230	0.208	22.1
Back side	20	QPSK 50_0	133322/683	1:1	0.237	0.01	22.90	23.80	1.230	0.292	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_0	133322/683	1:1	0.171	-0.08	23.86	24.80	1.242	0.212	22.1
Back side	20	QPSK 1_0	133322/683	1:1	0.279	0.01	23.86	24.80	1.242	<b>0.346</b>	22.1
Left side	20	QPSK 1_0	133322/683	1:1	0.142	0.10	23.86	24.80	1.242	0.176	22.1
Right side	20	QPSK 1_0	133322/683	1:1	0.226	0.14	23.86	24.80	1.242	0.281	22.1
Bottom side	20	QPSK 1_0	133322/683	1:1	0.150	0.05	23.86	24.80	1.242	0.186	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50_0	133322/683	1:1	0.141	-0.09	22.90	23.80	1.230	0.173	22.1
Back side	20	QPSK 50_0	133322/683	1:1	0.229	-0.07	22.90	23.80	1.230	0.282	22.1
Left side	20	QPSK 50_0	133322/683	1:1	0.118	0.16	22.90	23.80	1.230	0.145	22.1
Right side	20	QPSK 50_0	133322/683	1:1	0.188	0.10	22.90	23.80	1.230	0.231	22.1
Bottom side	20	QPSK 50_0	133322/683	1:1	0.101	0.06	22.90	23.80	1.230	0.124	22.1

Table 24: SAR of LTE Band 71 for Head and Body.



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## 9.2.1 SAR Result of 5G NR n25

SA N25 SAR Test Record											
Ant2 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek	40	QPSK 1_1	376500/1882.5	1:1	0.139	0.14	22.69	23.10	1.099	0.153	22.4
Left tilted	40	QPSK 1_1	376500/1882.5	1:1	0.096	-0.19	22.69	23.10	1.099	0.106	22.4
Right cheek	40	QPSK 1_1	376500/1882.5	1:1	0.098	-0.15	22.69	23.10	1.099	0.108	22.4
Right tilted	40	QPSK 1_1	376500/1882.5	1:1	0.091	0.08	22.69	23.10	1.099	0.100	22.4
Head Test data(50%RB)											
Left cheek	40	QPSK 108_54	376500/1882.5	1:1	0.157	-0.02	22.66	23.10	1.107	0.174	22.4
Left tilted	40	QPSK 108_54	376500/1882.5	1:1	0.091	-0.15	22.66	23.10	1.107	0.101	22.4
Right cheek	40	QPSK 108_54	376500/1882.5	1:1	0.104	0.03	22.66	23.10	1.107	0.115	22.4
Right tilted	40	QPSK 108_54	376500/1882.5	1:1	0.090	0.08	22.66	23.10	1.107	0.100	22.4
Body worn Test data(Separate 15mm 1RB)											
Front side	40	QPSK 1_1	376500/1882.5	1:1	0.206	-0.14	22.69	23.10	1.099	0.226	22.4
Back side	40	QPSK 1_1	376500/1882.5	1:1	0.312	0.15	22.69	23.10	1.099	0.343	22.4
Body worn Test data(Separate 15mm 50%RB)											
Front side	40	QPSK 108_54	376500/1882.5	1:1	0.213	0.04	22.66	23.10	1.107	0.236	22.4
Back side	40	QPSK 108_54	376500/1882.5	1:1	0.279	0.09	22.66	23.10	1.107	0.309	22.4
Hotspot Test data(Separate 10mm 1RB)											
Front side	40	QPSK 1_1	376500/1882.5	1:1	0.354	0.07	22.69	23.10	1.099	0.389	22.4
Back side	40	QPSK 1_1	376500/1882.5	1:1	0.575	0.17	22.69	23.10	1.099	0.632	22.4
Left side	40	QPSK 1_1	376500/1882.5	1:1	0.317	-0.02	22.69	23.10	1.099	0.348	22.4
Bottom side	40	QPSK 1_1	376500/1882.5	1:1	0.347	-0.19	22.69	23.10	1.099	0.381	22.4
Hotspot Test data (Separate 10mm 50%RB)											
Front side	40	QPSK 108_54	376500/1882.5	1:1	0.370	-0.05	22.66	23.10	1.107	0.409	22.4
Back side	40	QPSK 108_54	376500/1882.5	1:1	0.610	-0.12	22.66	23.10	1.107	0.675	22.4
Left side	40	QPSK 108_54	376500/1882.5	1:1	0.331	0.04	22.66	23.10	1.107	0.366	22.4
Bottom side	40	QPSK 108_54	376500/1882.5	1:1	0.373	-0.18	22.66	23.10	1.107	0.413	22.4
Ant3 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek	40	QPSK 1_1	376500/1882.5	1:1	0.584	0.04	20.63	21.30	1.167	0.681	22.4
Left tilted	40	QPSK 1_1	376500/1882.5	1:1	0.682	0.02	20.63	21.30	1.167	0.796	22.4
Right cheek	40	QPSK 1_1	376500/1882.5	1:1	0.986	-0.05	20.63	21.30	1.167	1.150	22.4
Right tilted	40	QPSK 1_1	376500/1882.5	1:1	1.010	0.19	20.63	21.30	1.167	1.178	22.4
Head Test data(50%RB)											
Left cheek	40	QPSK 108_54	376500/1882.5	1:1	0.671	-0.06	20.61	21.30	1.172	0.787	22.4
Left tilted	40	QPSK 108_54	376500/1882.5	1:1	0.795	-0.07	20.61	21.30	1.172	0.932	22.4
Right cheek	40	QPSK 108_54	376500/1882.5	1:1	1.030	0.18	20.61	21.30	1.172	1.207	22.4
Right tilted	40	QPSK 108_54	376500/1882.5	1:1	1.090	0.03	20.61	21.30	1.172	1.278	22.4
Right tilted-repeated	40	QPSK 108_54	376500/1882.5	1:1	1.050	0.02	20.61	21.30	1.172	1.231	22.4
Head Test data(100%RB)											
Left tilted	40	QPSK 216_0	376500/1882.5	1:1	0.693	0.06	20.55	21.30	1.189	0.824	22.4
Right cheek	40	QPSK 216_0	376500/1882.5	1:1	0.965	-0.01	20.55	21.30	1.189	1.147	22.4
Right tilted	40	QPSK 216_0	376500/1882.5	1:1	0.993	-0.09	20.55	21.30	1.189	1.180	22.4
Body worn Test data(Separate 15mm 1RB)											
Front side	40	QPSK 1_1	376500/1882.5	1:1	0.454	0.16	23.67	24.30	1.156	0.525	22.4
Back side	40	QPSK 1_1	376500/1882.5	1:1	0.716	-0.03	23.67	24.30	1.156	0.828	22.4



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Body worn Test data (Separate 15mm 50%RB)											
Front side	40	QPSK 108_54	376500/1882.5	1:1	0.460	0.03	23.55	24.30	1.189	0.547	22.4
Back side	40	QPSK 108_54	376500/1882.5	1:1	0.652	-0.03	23.55	24.30	1.189	0.775	22.4
Body worn Test data (Separate 15mm 100%RB)											
Back side	40	QPSK 216_0	376500/1882.5	1:1	0.628	0.08	22.49	23.30	1.205	0.757	22.4
Hotspot Test data (Separate 10mm 1RB)											
Front side	40	QPSK 1_1	376500/1882.5	1:1	0.512	0.01	22.14	22.80	1.164	0.596	22.4
Back side	40	QPSK 1_1	376500/1882.5	1:1	0.772	-0.04	22.14	22.80	1.164	0.899	22.4
Left side	40	QPSK 1_1	376500/1882.5	1:1	0.310	-0.15	22.14	22.80	1.164	0.361	22.4
Top side	40	QPSK 1_1	376500/1882.5	1:1	0.812	0.19	22.14	22.80	1.164	0.945	22.4
Hotspot Test data (Separate 10mm 50%RB)											
Front side	40	QPSK 108_54	376500/1882.5	1:1	0.519	0.09	22.11	22.80	1.172	0.608	22.4
Back side	40	QPSK 108_54	376500/1882.5	1:1	1.080	-0.12	22.11	22.80	1.172	1.266	22.4
Left side	40	QPSK 108_54	376500/1882.5	1:1	0.270	0.13	22.11	22.80	1.172	0.316	22.4
Top side	40	QPSK 108_54	376500/1882.5	1:1	0.921	-0.07	22.11	22.80	1.172	1.080	22.4
Hotspot Test data (Separate 10mm 100%RB)											
Back side	40	QPSK 216_0	376500/1882.5	1:1	0.825	-0.05	22.09	22.80	1.178	0.972	22.4
Top side	40	QPSK 216_0	376500/1882.5	1:1	0.806	0.03	22.09	22.80	1.178	0.949	22.4
Test position	BW	Modulation	Test ch./Freq.	Duty Cycle	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.(°C)
Product specific 10gSAR Test data (Separate 0mm 1RB)											
Back side	40	QPSK 1_1	376500/1882.5	1:1	1.840	0.01	23.67	24.30	1.156	2.127	22.4
Top side	40	QPSK 1_1	376500/1882.5	1:1	2.020	-0.10	23.67	24.30	1.156	2.335	22.4
Product specific 10gSAR Test data (Separate 10mm 50%RB)											
Back side	40	QPSK 108_54	376500/1882.5	1:1	1.950	-0.01	23.55	24.30	1.189	2.318	22.4
Top side	40	QPSK 108_54	376500/1882.5	1:1	2.460	0.18	23.55	24.30	1.189	2.924	22.4
Top side-repeated	40	QPSK 108_54	376500/1882.5	1:1	2.390	0.18	23.55	24.30	1.189	2.841	22.4
Product specific 10gSAR Test data (Separate 10mm 100%RB)											
Back side	40	QPSK 216_0	376500/1882.5	1:1	1.610	0.14	22.49	23.30	1.205	1.940	22.4
Top side	40	QPSK 216_0	376500/1882.5	1:1	1.840	0.06	22.49	23.30	1.205	2.217	22.4

Table 25: SAR of 5G NR n25 for Head and Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (1g)		SAR (1g)	SAR (1g)
Right tilted	376500/1882.5	1.090	1.050	1.038095238	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).

3) A third repeated measurement was preformed only if the original, first or second repeated measurement was  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .

4) Repeated measurements are not required when the original highest measured SAR is  $< 0.80$  W/kg

Test Position	Channel/ Frequency (MHz)	Measured SAR (10g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (10g)		SAR (10g)	SAR (10g)
Top side	376500/1882.5	2.460	2.390	1.029288703	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 2.0$  W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was  $> 1.20$  or when the original or repeated measurement was  $\geq 3.625$  W/kg ( $\sim 10\%$  from the 10-g SAR limit).

3) A third repeated measurement was preformed only if the original, first or second repeated measurement was  $\geq 3.0$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .

4) Repeated measurements are not required when the original highest measured SAR is  $< 2.0$  W/kg



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## 9.2.2 SAR Result of 5G NR n26

SA N26 SAR Test Record											
Ant1 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek	20	QPSK 1_1	166300/831.5	1:1	0.171	0.06	24.43	24.80	1.089	0.186	22.4
Left tilted	20	QPSK 1_1	166300/831.5	1:1	0.095	0.13	24.43	24.80	1.089	0.103	22.4
Right cheek	20	QPSK 1_1	166300/831.5	1:1	0.177	0.11	24.43	24.80	1.089	0.193	22.4
Right tilted	20	QPSK 1_1	166300/831.5	1:1	0.110	0.14	24.43	24.80	1.089	0.120	22.4
Head Test data(50%RB)											
Left cheek	20	QPSK 50_28	166300/831.5	1:1	0.171	0.01	24.26	24.80	1.132	0.194	22.4
Left tilted	20	QPSK 50_28	166300/831.5	1:1	0.094	-0.18	24.26	24.80	1.132	0.106	22.4
Right cheek	20	QPSK 50_28	166300/831.5	1:1	0.194	0.02	24.26	24.80	1.132	<b>0.220</b>	22.4
Right tilted	20	QPSK 50_28	166300/831.5	1:1	0.111	-0.11	24.26	24.80	1.132	0.126	22.4
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1_1	166300/831.5	1:1	0.200	-0.05	24.43	24.80	1.089	0.218	22.4
Back side	20	QPSK 1_1	166300/831.5	1:1	0.266	-0.08	24.43	24.80	1.089	0.290	22.4
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50_28	166300/831.5	1:1	0.194	0.09	24.26	24.80	1.132	0.220	22.4
Back side	20	QPSK 50_28	166300/831.5	1:1	0.309	-0.04	24.26	24.80	1.132	<b>0.350</b>	22.4
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_1	166300/831.5	1:1	0.266	0.19	24.43	24.80	1.089	0.290	22.4
Back side	20	QPSK 1_1	166300/831.5	1:1	0.577	-0.01	24.43	24.80	1.089	<b>0.628</b>	22.4
Left side	20	QPSK 1_1	166300/831.5	1:1	0.174	0.02	24.43	24.80	1.089	0.189	22.4
Right side	20	QPSK 1_1	166300/831.5	1:1	0.226	-0.05	24.43	24.80	1.089	0.246	22.4
Bottom side	20	QPSK 1_1	166300/831.5	1:1	0.264	-0.02	24.43	24.80	1.089	0.287	22.4
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50_28	166300/831.5	1:1	0.285	-0.01	24.26	24.80	1.132	0.323	22.4
Back side	20	QPSK 50_28	166300/831.5	1:1	0.536	0.07	24.26	24.80	1.132	0.607	22.4
Left side	20	QPSK 50_28	166300/831.5	1:1	0.169	0.01	24.26	24.80	1.132	0.191	22.4
Right side	20	QPSK 50_28	166300/831.5	1:1	0.238	0.03	24.26	24.80	1.132	0.270	22.4
Bottom side	20	QPSK 50_28	166300/831.5	1:1	0.265	-0.03	24.26	24.80	1.132	0.300	22.4

Table 26: SAR of 5G NR n26 for Head and Body.

## 9.2.3 SAR Result of 5G NR n30

SA N30 SAR Test Record											
Ant3 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek	10	QPSK 1_1	462000/2310	1:1	0.741	-0.07	16.91	17.30	1.094	0.811	22.1
Left tilted	10	QPSK 1_1	462000/2310	1:1	0.916	-0.13	16.91	17.30	1.094	1.002	22.1
Right cheek	10	QPSK 1_1	462000/2310	1:1	0.927	-0.02	16.91	17.30	1.094	1.014	22.1
Right tilted	10	QPSK 1_1	462000/2310	1:1	1.090	0.10	16.91	17.30	1.094	<b>1.192</b>	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25_14	462000/2310	1:1	0.675	-0.04	16.72	17.30	1.143	0.771	22.1
Left tilted	10	QPSK 25_14	462000/2310	1:1	0.823	-0.02	16.72	17.30	1.143	0.941	22.1
Right cheek	10	QPSK 25_14	462000/2310	1:1	0.790	0.04	16.72	17.30	1.143	0.903	22.1
Right tilted	10	QPSK 25_14	462000/2310	1:1	0.971	0.06	16.72	17.30	1.143	1.110	22.1



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Head Test data(100%RB)											
Left cheek	10	QPSK 50_0	462000/2310	1:1	0.489	0.12	16.71	17.30	1.146	0.560	22.1
Left tilted	10	QPSK 50_0	462000/2310	1:1	0.601	0.05	16.71	17.30	1.146	0.688	22.1
Right cheek	10	QPSK 50_0	462000/2310	1:1	0.797	-0.10	16.71	17.30	1.146	0.913	22.1
Right tilted	10	QPSK 50_0	462000/2310	1:1	0.942	-0.17	16.71	17.30	1.146	1.079	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1_1	462000/2310	1:1	0.152	0.02	19.37	19.80	1.104	0.168	22.1
Back side	10	QPSK 1_1	462000/2310	1:1	0.535	0.07	19.37	19.80	1.104	0.591	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	10	QPSK 25_14	462000/2310	1:1	0.162	0.01	19.29	19.80	1.125	0.182	22.1
Back side	10	QPSK 25_14	462000/2310	1:1	0.581	0.15	19.29	19.80	1.125	<b>0.653</b>	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1_1	462000/2310	1:1	0.276	0.06	18.43	18.80	1.089	0.301	22.1
Back side	10	QPSK 1_1	462000/2310	1:1	1.000	0.11	18.43	18.80	1.089	1.089	22.1
Left side	10	QPSK 1_1	462000/2310	1:1	0.058	0.07	18.43	18.80	1.089	0.063	22.1
Top side	10	QPSK 1_1	462000/2310	1:1	0.939	-0.11	18.43	18.80	1.089	1.023	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25_14	462000/2310	1:1	0.280	0.12	18.40	18.80	1.096	0.307	22.1
Back side	10	QPSK 25_14	462000/2310	1:1	1.090	-0.16	18.40	18.80	1.096	<b>1.195</b>	22.1
Back side-repeated	10	QPSK 25_14	462000/2310	1:1	1.060	0.02	18.40	18.80	1.096	1.162	22.1
Left side	10	QPSK 25_14	462000/2310	1:1	0.055	-0.14	18.40	18.80	1.096	0.060	22.1
Top side	10	QPSK 25_14	462000/2310	1:1	0.975	0.08	18.40	18.80	1.096	1.069	22.1
Hotspot Test data (Separate 10mm 100%RB)											
Back side	10	QPSK 50_0	462000/2310	1:1	0.995	-0.16	18.23	18.80	1.140	1.135	22.1
Top side	10	QPSK 50_0	462000/2310	1:1	0.946	0.07	18.23	18.80	1.140	1.079	22.1
Test position	BW	Modulation	Test ch./Freq.	Duty Cycle	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.(°C)
Product specific 10gSAR Test data(Separate 0mm 1RB)											
Back side	10	QPSK 1_1	462000/2310	1:1	1.700	0.06	19.37	19.80	1.104	1.877	22.1
Top side	10	QPSK 1_1	462000/2310	1:1	2.300	-0.11	19.37	19.80	1.104	2.539	22.1
Product specific 10gSAR Test data (Separate 0mm 50%RB)											
Back side	10	QPSK 25_14	462000/2310	1:1	1.680	-0.04	19.29	19.80	1.125	1.889	22.1
Top side	10	QPSK 25_14	462000/2310	1:1	2.310	0.09	19.29	19.80	1.125	<b>2.598</b>	22.1
Top side -repeated	10	QPSK 25_14	462000/2310	1:1	2.260	0.03	19.29	19.80	1.125	2.542	22.1
Product specific 10gSAR Test data (Separate 0mm 100%RB)											
Top side	10	QPSK 50_0	462000/2310	1:1	1.790	-0.02	19.22	19.80	1.143	2.046	22.1

Table 27: SAR of 5G NR n30 for Head and Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (1g)		SAR (1g)	SAR (1g)
Back side	462000/2310	1.090	1.060	1.028301887	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .4) Repeated measurements are not required when the original highest measured SAR is  $< 0.80$  W/kg

Test Position	Channel/ Frequency (MHz)	Measured SAR (10g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (10g)		SAR (10g)	SAR (10g)
Top side	462000/2310	2.310	2.260	1.022123894	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 2.0$  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  $\geq 3.625$  W/kg ( $\sim 10\%$  from the 10-g SAR limit).3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 3.0$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .

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4) Repeated measurements are not required when the original highest measured SAR is < 2.0 W/kg

## 9.2.4 SAR Result of 5G NR n41

SA N41 SAR Test Record											
Ant1 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek PC2	100	QPSK 1_1	518598/2592.99	1:1	0.139	0.17	25.08	25.50	1.102	0.153	22.1
Left tilted PC2	100	QPSK 1_1	518598/2592.99	1:1	0.181	0.02	25.08	25.50	1.102	0.199	22.1
Right cheek PC2	100	QPSK 1_1	518598/2592.99	1:1	0.227	-0.05	25.08	25.50	1.102	0.250	22.1
Right tilted PC2	100	QPSK 1_1	518598/2592.99	1:1	0.112	-0.07	25.08	25.50	1.102	0.123	22.1
Head Test data(50%RB)											
Left cheek PC2	100	QPSK 135_69	518598/2592.99	1:1	0.142	-0.12	24.91	25.50	1.146	0.163	22.1
Left tilted PC2	100	QPSK 135_69	518598/2592.99	1:1	0.147	0.03	24.91	25.50	1.146	0.168	22.1
Right cheek PC2	100	QPSK 135_69	518598/2592.99	1:1	0.260	0.04	24.91	25.50	1.146	0.298	22.1
Right cheek-PC3	100	QPSK 135_69	518598/2592.99	1:1.25	0.179	0.04	22.44	22.80	1.086	0.194	22.1
Right tilted PC2	100	QPSK 135_69	518598/2592.99	1:1	0.092	-0.01	24.91	25.50	1.146	0.105	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.122	-0.12	20.89	21.80	1.233	0.150	22.1
Back side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.462	0.07	20.89	21.80	1.233	0.570	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.115	-0.17	20.87	21.80	1.239	0.142	22.1
Back side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.404	0.15	20.87	21.80	1.239	0.500	22.1
Body worn Test data (Separate 15mm 100%RB)											
Back side PC2&3	100	QPSK 270_0	518598/2592.99	1:1.25	0.489	0.15	20.81	21.80	1.256	0.614	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.260	-0.03	20.89	21.80	1.233	0.321	22.1
Back side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.969	0.09	20.89	21.80	1.233	1.195	22.1
Left side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.028	-0.17	20.89	21.80	1.233	0.035	22.1
Right side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.128	0.13	20.89	21.80	1.233	0.158	22.1
Bottom side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.874	0.04	20.89	21.80	1.233	1.078	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.203	0.12	20.87	21.80	1.239	0.251	22.1
Back side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.766	0.09	20.87	21.80	1.239	0.949	22.1
Left side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.025	0.04	20.87	21.80	1.239	0.031	22.1
Right side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.126	-0.07	20.87	21.80	1.239	0.156	22.1
Bottom side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.713	0.16	20.87	21.80	1.239	0.883	22.1
Hotspot Test data (Separate 10mm 100%RB)											
Back side PC2&3	100	QPSK 270_0	518598/2592.99	1:1.25	0.749	0.09	20.81	21.80	1.256	0.941	22.1
Bottom side PC2&3	100	QPSK 270_0	518598/2592.99	1:1.25	0.689	-0.03	20.81	21.80	1.256	0.865	22.1
Ant3 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.335	0.09	18.34	18.80	1.112	0.372	22.1
Left tilted PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.440	-0.19	18.34	18.80	1.112	0.489	22.1
Right cheek PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.784	0.08	18.34	18.80	1.112	0.872	22.1
Right tilted PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.860	0.17	18.34	18.80	1.112	0.956	22.1
Head Test data(50%RB)											
Left cheek PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.408	0.17	18.28	18.80	1.127	0.460	22.1



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Left tilted PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.509	0.03	18.28	18.80	1.127	0.574	22.1
Right cheek PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	1.030	0.05	18.28	18.80	1.127	1.161	22.1
Right tilted PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	1.090	0.06	18.28	18.80	1.127	1.229	22.1
Right tilted PC2&3-repeated	100	QPSK 135_69	518598/2592.99	1:1.25	1.070	0.02	18.28	18.80	1.127	1.206	22.1
Head Test data(100%RB)											
Right cheek PC2&3	100	QPSK 270_0	518598/2592.99	1:1.25	1.010	0.12	18.26	18.80	1.132	1.144	22.1
Right tilted PC2&3	100	QPSK 270_0	518598/2592.99	1:1.25	1.060	-0.09	18.26	18.80	1.132	1.200	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.207	-0.12	20.11	20.80	1.172	0.243	22.1
Back side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.844	0.08	20.11	20.80	1.172	0.989	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.227	0.08	19.99	20.80	1.205	0.274	22.1
Back side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.874	0.12	19.99	20.80	1.205	1.053	22.1
Body worn Test data (Separate 15mm 100%RB)											
Back side PC2&3	100	QPSK 270_0	518598/2592.99	1:1.25	0.829	0.10	20.07	20.80	1.183	0.981	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.144	-0.02	18.34	18.80	1.112	0.160	22.1
Back side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.740	-0.11	18.34	18.80	1.112	0.823	22.1
Left side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.124	-0.06	18.34	18.80	1.112	0.138	22.1
Top side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	0.557	0.18	18.34	18.80	1.112	0.619	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.213	0.06	18.28	18.80	1.127	0.240	22.1
Back side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	1.080	0.08	18.28	18.80	1.127	1.217	22.1
Left side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.180	-0.09	18.28	18.80	1.127	0.203	22.1
Top side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	0.857	0.11	18.28	18.80	1.127	0.966	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Back side PC2&3	100	QPSK 270_0	518598/2592.99	1:1.25	1.010	0.12	18.26	18.80	1.132	1.144	22.1
Top side PC2&3	100	QPSK 270_0	518598/2592.99	1:1.25	0.829	-0.17	18.26	18.80	1.132	0.939	22.1
Test position	BW.	Modulation	Test ch./Freq.	Duty Cycle	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.(°C)
Product specific 10gSAR Test data(Separate 0mm 1RB)											
Back side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	2.100	-0.17	20.11	20.80	1.172	2.462	22.1
Top side PC2&3	100	QPSK 1_1	518598/2592.99	1:1.25	1.920	0.08	20.11	20.80	1.172	2.251	22.1
Product specific 10gSAR Test data (Separate 0mm 50%RB)											
Back side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	2.420	0.07	19.99	20.80	1.205	2.916	22.1
Back side PC2&3-repeated	100	QPSK 135_69	518598/2592.99	1:1.25	2.330	0.01	19.99	20.80	1.205	2.808	22.1
Top side PC2&3	100	QPSK 135_69	518598/2592.99	1:1.25	1.810	0.08	19.99	20.80	1.205	2.181	22.1
Product specific 10gSAR Test data (Separate 0mm 100%RB)											
Back side PC2&3	100	QPSK 270_0	518598/2592.99	1:1.25	2.280	0.16	20.07	20.80	1.183	2.697	22.1
Top side PC2&3	100	QPSK 270_0	518598/2592.99	1:1.25	1.800	-0.03	20.07	20.80	1.183	2.129	22.1
Ant4 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek PC2	100	QPSK 1_1	518598/2592.99	1:1	0.000	-0.05	25.06	25.30	1.057	0.000	22.1
Left tilted PC2	100	QPSK 1_1	518598/2592.99	1:1	0.000	0.05	25.06	25.30	1.057	0.000	22.1
Right cheek PC2	100	QPSK 1_1	518598/2592.99	1:1	0.001	-0.11	25.06	25.30	1.057	0.001	22.1
Right cheek PC3	100	QPSK 1_1	518598/2592.99	1:1.25	0.001	-0.11	22.49	22.80	1.074	0.001	22.1
Right tilted PC2	100	QPSK 1_1	518598/2592.99	1:1	0.000	0.12	25.06	25.30	1.057	0.000	22.1
Head Test data(50%RB)											
Left cheek PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	0.05	24.92	25.30	1.091	0.000	22.1
Left tilted PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	0.08	24.92	25.30	1.091	0.000	22.1
Right cheek PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	0.15	24.92	25.30	1.091	0.000	22.1



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Right tilted PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	0.18	24.92	25.30	1.091	0.000	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.000	-0.04	25.06	25.30	1.057	0.000	22.1
Back side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.001	-0.01	25.06	25.30	1.057	0.001	22.1
Back side PC3	100	QPSK 1_1	518598/2592.99	1:1.25	0.001	-0.01	22.49	22.80	1.074	0.001	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	-0.13	24.92	25.30	1.091	0.000	22.1
Back side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	0.15	24.92	25.30	1.091	0.000	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.004	0.14	25.06	25.30	1.057	0.004	22.1
Back side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.011	-0.01	25.06	25.30	1.057	0.012	22.1
Back side PC3	100	QPSK 1_1	518598/2592.99	1:1.25	0.013	-0.01	22.49	22.80	1.074	0.014	22.1
Left side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.007	0.05	25.06	25.30	1.057	0.007	22.1
Top side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.003	-0.04	25.06	25.30	1.057	0.003	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.002	0.09	24.92	25.30	1.091	0.002	22.1
Back side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.007	-0.15	24.92	25.30	1.091	0.008	22.1
Left side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.004	-0.01	24.92	25.30	1.091	0.004	22.1
Top side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.001	-0.03	24.92	25.30	1.091	0.001	22.1
Ant6 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek PC2	100	QPSK 1_1	518598/2592.99	1:1	0.132	0.18	25.31	25.80	1.119	0.148	22.1
Left cheek PC3	100	QPSK 1_1	518598/2592.99	1:1.25	0.105	0.18	22.41	22.80	1.094	0.115	22.1
Left tilted PC2	100	QPSK 1_1	518598/2592.99	1:1	0.076	0.07	25.31	25.80	1.119	0.085	22.1
Right cheek PC2	100	QPSK 1_1	518598/2592.99	1:1	0.048	0.02	25.31	25.80	1.119	0.054	22.1
Right tilted PC2	100	QPSK 1_1	518598/2592.99	1:1	0.000	0.09	25.31	25.80	1.119	0.000	22.1
Head Test data(50%RB)											
Left cheek PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	0.04	25.27	25.80	1.130	0.000	22.1
Left tilted PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	-0.13	25.27	25.80	1.130	0.000	22.1
Right cheek PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	-0.05	25.27	25.80	1.130	0.000	22.1
Right tilted PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	0.15	25.27	25.80	1.130	0.000	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.041	0.11	25.31	25.80	1.119	0.046	22.1
Back side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.051	-0.17	25.31	25.80	1.119	0.057	22.1
Back side PC3	100	QPSK 1_1	518598/2592.99	1:1.25	0.036	-0.17	22.41	22.80	1.094	0.039	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.025	-0.03	25.27	25.80	1.130	0.028	22.1
Back side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.024	-0.14	25.27	25.80	1.130	0.027	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.044	-0.03	25.31	25.80	1.119	0.049	22.1
Back side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.129	0.10	25.31	25.80	1.119	0.144	22.1
Back side PC3	100	QPSK 1_1	518598/2592.99	1:1.25	0.095	0.10	22.41	22.80	1.094	0.104	22.1
Right side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.078	0.01	25.31	25.80	1.119	0.087	22.1
Top side PC2	100	QPSK 1_1	518598/2592.99	1:1	0.037	0.01	25.31	25.80	1.119	0.041	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.032	-0.10	25.27	25.80	1.130	0.036	22.1
Back side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.059	-0.18	25.27	25.80	1.130	0.067	22.1
Right side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	0.01	25.27	25.80	1.130	0.000	22.1
Top side PC2	100	QPSK 135_69	518598/2592.99	1:1	0.000	-0.11	25.27	25.80	1.130	0.000	22.1

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

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (1g)		SAR (1g)	SAR (1g)



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Right tilted	518598/2592.99	1.090	1.070	1.018691589	N/A	N/A
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Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  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  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .

4) Repeated measurements are not required when the original highest measured SAR is  $< 0.80$  W/kg

Test Position	Channel/ Frequency (MHz)	Measured SAR (10g)	1 <sup>st</sup> Repeated SAR (10g)	Ratio	2 <sup>nd</sup> Repeated SAR (10g)	3 <sup>rd</sup> Repeated SAR (10g)
Back side	518598/2592.99	2.420	2.330	1.038626609	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 2.0$  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  $\geq 3.625$  W/kg (~ 10% from the 10-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 3.0$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .

4) Repeated measurements are not required when the original highest measured SAR is  $< 2.0$  W/kg



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## 9.2.5 SAR Result of 5G NR n48

SA N48 SAR Test Record											
Ant5 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek	40	QPSK 1_1	641666/3624.99	1:1.25	0.337	0.05	20.68	21.80	1.294	0.436	22.5
Left tilted	40	QPSK 1_1	641666/3624.99	1:1.25	0.239	-0.03	20.68	21.80	1.294	0.309	22.5
Right cheek	40	QPSK 1_1	641666/3624.99	1:1.25	0.926	0.06	20.68	21.80	1.294	1.198	22.5
Right cheek	40	QPSK 1_1	638000/3570	1:1.25	0.795	0.02	20.61	21.80	1.315	1.046	22.5
Right cheek	40	QPSK 1_1	645332/3679.98	1:1.25	0.830	0.04	20.63	21.80	1.309	1.087	22.5
Right tilted	40	QPSK 1_1	641666/3624.99	1:1.25	0.531	0.01	20.68	21.80	1.294	0.687	22.5
Head Test data(50%RB)											
Left cheek	40	QPSK 50_28	641666/3624.99	1:1.25	0.313	-0.03	20.65	21.80	1.303	0.408	22.5
Left tilted	40	QPSK 50_28	641666/3624.99	1:1.25	0.229	0.06	20.65	21.80	1.303	0.298	22.5
Right cheek	40	QPSK 50_28	641666/3624.99	1:1.25	0.874	-0.03	20.65	21.80	1.303	1.139	22.5
Right cheek	40	QPSK 50_28	638000/3570	1:1.25	0.786	-0.05	20.60	21.80	1.318	1.036	22.5
Right cheek	40	QPSK 50_28	645332/3679.98	1:1.25	0.865	0.02	20.59	21.80	1.321	1.143	22.5
Right tilted	40	QPSK 50_28	641666/3624.99	1:1.25	0.517	-0.01	20.65	21.80	1.303	0.674	22.5
Head Test data(100%RB)											
Right cheek	40	QPSK 100_0	641666/3624.99	1:1.25	0.702	0.08	20.60	21.80	1.318	0.925	22.5
Body worn Test data(Separate 15mm 1RB)											
Front side	40	QPSK 1_1	641666/3624.99	1:1.25	0.275	0.09	23.40	23.80	1.096	0.302	22.5
Back side	40	QPSK 1_1	641666/3624.99	1:1.25	0.512	0.01	23.40	23.80	1.096	0.561	22.5
Body worn Test data(Separate 15mm 50%RB)											
Front side	40	QPSK 50_28	641666/3624.99	1:1.25	0.272	0.01	23.21	23.80	1.146	0.312	22.5
Back side	40	QPSK 50_28	641666/3624.99	1:1.25	0.503	-0.05	23.21	23.80	1.146	0.576	22.5
Hotspot Test data(Separate 10mm 1RB)											
Front side	40	QPSK 1_1	641666/3624.99	1:1.25	0.401	0.01	23.40	23.80	1.096	0.440	22.5
Back side	40	QPSK 1_1	641666/3624.99	1:1.25	0.781	-0.01	23.40	23.80	1.096	0.856	22.5
Back side	40	QPSK 1_1	638000/3570	1:1.25	0.697	0.09	23.20	23.80	1.148	0.800	22.5
Back side	40	QPSK 1_1	645332/3679.98	1:1.25	0.723	0.03	23.13	23.80	1.167	0.844	22.5
Left side	40	QPSK 1_1	641666/3624.99	1:1.25	1.000	0.04	23.40	23.80	1.096	1.096	22.5
Left side	40	QPSK 1_1	638000/3570	1:1.25	0.957	-0.01	23.20	23.80	1.148	1.099	22.5
Left side	40	QPSK 1_1	645332/3679.98	1:1.25	0.992	0.02	23.13	23.80	1.167	1.157	22.5
Top side	40	QPSK 1_1	641666/3624.99	1:1.25	0.212	0.03	23.40	23.80	1.096	0.232	22.5
Hotspot Test data (Separate 10mm 50%RB)											
Front side	40	QPSK 50_28	641666/3624.99	1:1.25	0.432	-0.03	23.21	23.80	1.146	0.495	22.5
Back side	40	QPSK 50_28	641666/3624.99	1:1.25	0.803	0.04	23.21	23.80	1.146	0.920	22.5
Back side	40	QPSK 50_28	638000/3570	1:1.25	0.699	0.05	23.18	23.80	1.153	0.806	22.5
Back side	40	QPSK 50_28	645332/3679.98	1:1.25	0.745	0.01	23.14	23.80	1.164	0.867	22.5
Left side	40	QPSK 50_28	641666/3624.99	1:1.25	1.030	0.07	23.21	23.80	1.146	1.180	22.5
Left side-repeated	40	QPSK 50_28	641666/3624.99	1:1.25	1.010	0.02	23.21	23.80	1.146	1.157	22.5
Left side	40	QPSK 50_28	638000/3570	1:1.25	0.954	-0.03	23.18	23.80	1.153	1.100	22.5
Left side	40	QPSK 50_28	645332/3679.98	1:1.25	1.000	0.02	23.14	23.80	1.164	1.164	22.5
Top side	40	QPSK 50_28	641666/3624.99	1:1.25	0.261	-0.04	23.21	23.80	1.146	0.299	22.5
Hotspot Test data (Separate 10mm 100%RB)											
Back side	40	QPSK 100_0	641666/3624.99	1:1.25	0.748	0.05	22.15	22.80	1.161	0.869	22.5
Left side	40	QPSK 100_0	641666/3624.99	1:1.25	1.000	0.07	22.15	22.80	1.161	1.161	22.5

Table 29: SAR of 5G NR n48 for Head and Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 <sup>st</sup> Repeated SAR (1g)	Ratio	2 <sup>nd</sup> Repeated SAR (1g)	3 <sup>rd</sup> Repeated SAR (1g)
Left side	641666/3624.99	1.030	1.010	1.01980198	N/A	N/A



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Note: 1) When the original highest measured SAR is $\geq 0.80$ 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 $\geq 1.45$ W/kg ( $\sim 10\%$ from the 1-g SAR limit).
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was $\geq 1.5$ 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

## 9.2.6 SAR Result of 5G NR n66

SA N66 SAR Test Record											
Ant2 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek	40	QPSK 1_1	349000/1745	1:1	0.083	0.06	22.75	23.50	1.189	0.099	22.5
Left tilted	40	QPSK 1_1	349000/1745	1:1	0.072	-0.04	22.75	23.50	1.189	0.086	22.5
Right cheek	40	QPSK 1_1	349000/1745	1:1	0.119	0.05	22.75	23.50	1.189	0.141	22.5
Right tilted	40	QPSK 1_1	349000/1745	1:1	0.078	-0.04	22.75	23.50	1.189	0.093	22.5
Head Test data(50%RB)											
Left cheek	40	QPSK 108_54	349000/1745	1:1	0.073	0.05	22.72	23.50	1.197	0.087	22.5
Left tilted	40	QPSK 108_54	349000/1745	1:1	0.058	0.01	22.72	23.50	1.197	0.069	22.5
Right cheek	40	QPSK 108_54	349000/1745	1:1	0.099	0.04	22.72	23.50	1.197	0.118	22.5
Right tilted	40	QPSK 108_54	349000/1745	1:1	0.061	-0.05	22.72	23.50	1.197	0.073	22.5
Body worn Test data(Separate 15mm 1RB)											
Front side	40	QPSK 1_1	349000/1745	1:1	0.161	-0.04	22.75	23.50	1.189	0.191	22.5
Back side	40	QPSK 1_1	349000/1745	1:1	0.222	-0.01	22.75	23.50	1.189	0.264	22.5
Body worn Test data(Separate 15mm 50%RB)											
Front side	40	QPSK 108_54	349000/1745	1:1	0.134	0.04	22.72	23.50	1.197	0.160	22.5
Back side	40	QPSK 108_54	349000/1745	1:1	0.204	-0.01	22.72	23.50	1.197	0.244	22.5
Hotspot Test data(Separate 10mm 1RB)											
Front side	40	QPSK 1_1	349000/1745	1:1	0.246	0.03	22.75	23.50	1.189	0.292	22.5
Back side	40	QPSK 1_1	349000/1745	1:1	0.451	-0.05	22.75	23.50	1.189	0.536	22.5
Left side	40	QPSK 1_1	349000/1745	1:1	0.209	0.10	22.75	23.50	1.189	0.248	22.5
Bottom side	40	QPSK 1_1	349000/1745	1:1	0.292	-0.01	22.75	23.50	1.189	0.347	22.5
Hotspot Test data (Separate 10mm 50%RB)											
Front side	40	QPSK 108_54	349000/1745	1:1	0.214	0.04	22.72	23.50	1.197	0.256	22.5
Back side	40	QPSK 108_54	349000/1745	1:1	0.439	0.07	22.72	23.50	1.197	0.525	22.5
Left side	40	QPSK 108_54	349000/1745	1:1	0.218	-0.01	22.72	23.50	1.197	0.261	22.5
Bottom side	40	QPSK 108_54	349000/1745	1:1	0.288	0.06	22.72	23.50	1.197	0.345	22.5
Ant3 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek	40	QPSK 1_1	349000/1745	1:1	0.496	0.06	20.51	21.30	1.199	0.595	22.5
Left tilted	40	QPSK 1_1	349000/1745	1:1	0.513	-0.02	20.51	21.30	1.199	0.615	22.5
Right cheek	40	QPSK 1_1	349000/1745	1:1	0.970	0.07	20.51	21.30	1.199	<b>1.164</b>	22.5
Right tilted	40	QPSK 1_1	349000/1745	1:1	0.801	-0.01	20.51	21.30	1.199	0.961	22.5
Head Test data(50%RB)											
Left cheek	40	QPSK 108_54	349000/1745	1:1	0.590	-0.04	20.50	21.30	1.202	0.709	22.5
Left tilted	40	QPSK 108_54	349000/1745	1:1	0.606	-0.03	20.50	21.30	1.202	0.729	22.5
Right cheek	40	QPSK 108_54	349000/1745	1:1	0.903	0.05	20.50	21.30	1.202	1.086	22.5



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Right tilted	40	QPSK 108_54	349000/1745	1:1	0.811	0.09	20.50	21.30	1.202	0.975	22.5
Head Test data(100%RB)											
Right cheek	40	QPSK 216_0	349000/1745	1:1	0.869	0.06	20.43	21.30	1.222	1.062	22.5
Right tilted	40	QPSK 216_0	349000/1745	1:1	0.747	-0.03	20.43	21.30	1.222	0.913	22.5
Body worn Test data(Separate 15mm 1RB)											
Front side	40	QPSK 1_1	349000/1745	1:1	0.222	-0.02	23.51	24.30	1.199	0.266	22.5
Back side	40	QPSK 1_1	349000/1745	1:1	0.455	0.08	23.51	24.30	1.199	0.546	22.5
Body worn Test data (Separate 15mm 50%RB)											
Front side	40	QPSK 108_54	349000/1745	1:1	0.263	0.04	23.44	24.30	1.219	0.321	22.5
Back side	40	QPSK 108_54	349000/1745	1:1	0.527	-0.01	23.44	24.30	1.219	<b>0.642</b>	22.5
Hotspot Test data(Separate 10mm 1RB)											
Front side	40	QPSK 1_1	349000/1745	1:1	0.415	-0.05	22.55	23.30	1.189	0.493	22.5
Back side	40	QPSK 1_1	349000/1745	1:1	0.877	0.01	22.55	23.30	1.189	1.042	22.5
Left side	40	QPSK 1_1	349000/1745	1:1	0.219	0.02	22.55	23.30	1.189	0.260	22.5
Top side	40	QPSK 1_1	349000/1745	1:1	0.440	-0.02	22.55	23.30	1.189	0.523	22.5
Hotspot Test data (Separate 10mm 50%RB)											
Front side	40	QPSK 108_54	349000/1745	1:1	0.468	-0.02	22.54	23.30	1.191	0.558	22.5
Back side	40	QPSK 108_54	349000/1745	1:1	1.000	-0.18	22.54	23.30	1.191	<b>1.191</b>	22.5
Back side-repeated	40	QPSK 108_54	349000/1745	1:1	0.981	0.02	22.54	23.30	1.191	1.169	22.5
Left side	40	QPSK 108_54	349000/1745	1:1	0.261	0.04	22.54	23.30	1.191	0.311	22.5
Top side	40	QPSK 108_54	349000/1745	1:1	0.505	0.06	22.54	23.30	1.191	0.602	22.5
Hotspot Test data (Separate 10mm 100%RB)											
Back side	40	QPSK 216_0	349000/1745	1:1	0.966	0.05	22.44	23.30	1.219	1.178	22.5
<b>Test position</b>	<b>BW.</b>	<b>Modulation</b>	<b>Test ch./Freq.</b>	<b>Duty Cycle</b>	<b>SAR (W/kg) 10-g</b>	<b>Power drift (dB)</b>	<b>Conducted Power(dBm)</b>	<b>Tune up Limit(dBm)</b>	<b>Scaled factor</b>	<b>Scaled SAR 1-g (W/kg)</b>	<b>Liquid Temp.(°C)</b>
Product specific 10gSAR Test data(Separate 10mm 1RB)											
Back side	40	QPSK 1_1	349000/1745	1:1	1.720	0.07	23.51	24.30	1.199	2.063	22.5
Product specific 10gSAR Test data (Separate 10mm 50%RB)											
Back side	40	QPSK 108_54	349000/1745	1:1	1.800	-0.01	23.44	24.30	1.219	<b>2.194</b>	22.5
Product specific 10gSAR Test data (Separate 10mm 100%RB)											
Back side	40	QPSK 216_0	349000/1745	1:1	1.570	0.03	22.49	23.30	1.205	1.892	22.5

Table 30: SAR of 5G NR n66 for Head and Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (1g)		SAR (1g)	SAR (1g)
Back side	349000/1745	1.000	0.981	1.019367992	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was preformed only if the original, first or second repeated measurement was  $\geq 1.5$  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

## 9.2.7 SAR Result of 5G NR n70

SA N70 SAR Test Record											
Ant2 Test Record											
Test position	BW.	Modulation	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.(°C)



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t (86-512) 62992980 www.sgsgroup.com.cn  
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Head Test data(1RB)											
Left cheek	15	QPSK 1_1	340500/1702.5	1:1	0.111	0.03	22.80	23.50	1.175	0.130	22.5
Left tilted	15	QPSK 1_1	340500/1702.5	1:1	0.078	0.04	22.80	23.50	1.175	0.092	22.5
Right cheek	15	QPSK 1_1	340500/1702.5	1:1	0.127	0.06	22.80	23.50	1.175	0.149	22.5
Right tilted	15	QPSK 1_1	340500/1702.5	1:1	0.086	0.04	22.80	23.50	1.175	0.101	22.5
Head Test data(50%RB)											
Left cheek	15	QPSK 36_22	340500/1702.5	1:1	0.107	-0.01	22.77	23.50	1.183	0.127	22.5
Left tilted	15	QPSK 36_22	340500/1702.5	1:1	0.078	-0.02	22.77	23.50	1.183	0.092	22.5
Right cheek	15	QPSK 36_22	340500/1702.5	1:1	0.131	0.04	22.77	23.50	1.183	0.155	22.5
Right tilted	15	QPSK 36_22	340500/1702.5	1:1	0.093	0.03	22.77	23.50	1.183	0.110	22.5
Body worn Test data(Separate 15mm 1RB)											
Front side	15	QPSK 1_1	340500/1702.5	1:1	0.216	0.05	22.80	23.50	1.175	0.254	22.5
Back side	15	QPSK 1_1	340500/1702.5	1:1	0.284	0.08	22.80	23.50	1.175	0.334	22.5
Body worn Test data(Separate 15mm 50%RB)											
Front side	15	QPSK 36_22	340500/1702.5	1:1	0.211	0.03	22.77	23.50	1.183	0.250	22.5
Back side	15	QPSK 36_22	340500/1702.5	1:1	0.276	0.06	22.77	23.50	1.183	0.327	22.5
Hotspot Test data(Separate 10mm 1RB)											
Front side	15	QPSK 1_1	340500/1702.5	1:1	0.321	-0.04	22.80	23.50	1.175	0.377	22.5
Back side	15	QPSK 1_1	340500/1702.5	1:1	0.507	-0.02	22.80	23.50	1.175	0.596	22.5
Left side	15	QPSK 1_1	340500/1702.5	1:1	0.257	0.04	22.80	23.50	1.175	0.302	22.5
Bottom side	15	QPSK 1_1	340500/1702.5	1:1	0.331	0.06	22.80	23.50	1.175	0.389	22.5
Hotspot Test data (Separate 10mm 50%RB)											
Front side	15	QPSK 36_22	340500/1702.5	1:1	0.324	0.06	22.77	23.50	1.183	0.383	22.5
Back side	15	QPSK 36_22	340500/1702.5	1:1	0.533	0.01	22.77	23.50	1.183	0.631	22.5
Left side	15	QPSK 36_22	340500/1702.5	1:1	0.261	-0.04	22.77	23.50	1.183	0.309	22.5
Bottom side	15	QPSK 36_22	340500/1702.5	1:1	0.320	0.07	22.77	23.50	1.183	0.379	22.5
Ant3 Test Record											
Test position	BW.	Modulation	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test data(1RB)											
Left cheek	15	QPSK 1_1	340500/1702.5	1:1	0.627	0.06	21.77	22.30	1.130	0.708	22.5
Left tilted	15	QPSK 1_1	340500/1702.5	1:1	0.600	0.01	21.77	22.30	1.130	0.678	22.5
Right cheek	15	QPSK 1_1	340500/1702.5	1:1	1.020	0.04	21.77	22.30	1.130	1.152	22.5
Right tilted	15	QPSK 1_1	340500/1702.5	1:1	0.803	-0.01	21.77	22.30	1.130	0.907	22.5
Head Test data(50%RB)											
Left cheek	15	QPSK 36_22	340500/1702.5	1:1	0.604	0.04	21.75	22.30	1.135	0.686	22.5
Left tilted	15	QPSK 36_22	340500/1702.5	1:1	0.569	0.07	21.75	22.30	1.135	0.646	22.5
Right cheek	15	QPSK 36_22	340500/1702.5	1:1	1.040	0.09	21.75	22.30	1.135	<b>1.180</b>	22.5
Right cheek-repeated	15	QPSK 36_22	340500/1702.5	1:1	1.010	0.01	21.75	22.30	1.135	1.146	22.5
Right tilted	15	QPSK 36_22	340500/1702.5	1:1	0.869	0.08	21.75	22.30	1.135	0.986	22.5
Head Test data(50%RB)											
Right cheek	15	QPSK 75_0	340500/1702.5	1:1	0.823	0.01	21.66	22.30	1.159	0.954	22.5
Right tilted	15	QPSK 75_0	340500/1702.5	1:1	0.644	0.06	21.66	22.30	1.159	0.746	22.5
Body worn Test data(Separate 15mm 1RB)											
Front side	15	QPSK 1_1	340500/1702.5	1:1	0.217	-0.01	23.38	24.30	1.236	0.268	22.5
Back side	15	QPSK 1_1	340500/1702.5	1:1	0.470	0.02	23.38	24.30	1.236	0.581	22.5
Body worn Test data (Separate 15mm 50%RB)											
Front side	15	QPSK 36_22	340500/1702.5	1:1	0.230	-0.07	23.38	24.30	1.236	0.284	22.5
Back side	15	QPSK 36_22	340500/1702.5	1:1	0.492	0.07	23.38	24.30	1.236	<b>0.608</b>	22.5
Hotspot Test data(Separate 10mm 1RB)											
Front side	15	QPSK 1_1	340500/1702.5	1:1	0.363	0.06	23.38	24.30	1.236	0.449	22.5
Back side	15	QPSK 1_1	340500/1702.5	1:1	0.866	0.03	23.38	24.30	1.236	1.070	22.5
Left side	15	QPSK 1_1	340500/1702.5	1:1	0.191	0.09	23.38	24.30	1.236	0.236	22.5
Top side	15	QPSK 1_1	340500/1702.5	1:1	0.377	-0.04	23.38	24.30	1.236	0.466	22.5



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Hotspot Test data (Separate 10mm 50%RB)											
Front side	15	QPSK 36_22	340500/1702.5	1:1	0.390	0.02	23.38	24.30	1.236	0.482	22.5
Back side	15	QPSK 36_22	340500/1702.5	1:1	0.921	-0.03	23.38	24.30	1.236	<b>1.138</b>	22.5
Left side	15	QPSK 36_22	340500/1702.5	1:1	0.216	0.04	23.38	24.30	1.236	0.267	22.5
Top side	15	QPSK 36_22	340500/1702.5	1:1	0.417	-0.01	23.38	24.30	1.236	0.515	22.5
Hotspot Test data (Separate 10mm 100%RB)											
Back side	15	QPSK 36_22	340500/1702.5	1:1	0.889	-0.06	22.44	23.30	1.219	1.084	22.5

Table 31: SAR of 5G NR n70 for Head and Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (1g)		SAR (1g)	SAR (1g)
Right cheek	340500/1702.5	1.040	1.010	1.02970297	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).

3) A third repeated measurement was preformed only if the original, first or second repeated measurement was  $\geq 1.5$  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



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## 9.2.8 SAR Result of 5G NR n71

SA N71 SAR Test Record											
Ant1 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek	20	QPSK 1_1	136100/680.5	1:1	0.122	0.08	24.01	24.80	1.199	0.146	22.1
Left tilted	20	QPSK 1_1	136100/680.5	1:1	0.059	0.08	24.01	24.80	1.199	0.071	22.1
Right cheek	20	QPSK 1_1	136100/680.5	1:1	0.127	0.09	24.01	24.80	1.199	0.152	22.1
Right tilted	20	QPSK 1_1	136100/680.5	1:1	0.072	-0.02	24.01	24.80	1.199	0.086	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50_28	136100/680.5	1:1	0.124	-0.05	23.99	24.80	1.205	0.149	22.1
Left tilted	20	QPSK 50_28	136100/680.5	1:1	0.067	-0.01	23.99	24.80	1.205	0.081	22.1
Right cheek	20	QPSK 50_28	136100/680.5	1:1	0.138	0.13	23.99	24.80	1.205	<b>0.166</b>	22.1
Right tilted	20	QPSK 50_28	136100/680.5	1:1	0.079	0.07	23.99	24.80	1.205	0.095	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1_1	136100/680.5	1:1	0.184	0.01	24.01	24.80	1.199	0.221	22.1
Back side	20	QPSK 1_1	136100/680.5	1:1	0.251	0.05	24.01	24.80	1.199	<b>0.301</b>	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50_28	136100/680.5	1:1	0.165	0.02	23.99	24.80	1.205	0.199	22.1
Back side	20	QPSK 50_28	136100/680.5	1:1	0.219	0.09	23.99	24.80	1.205	0.264	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1_1	136100/680.5	1:1	0.182	-0.04	24.01	24.80	1.199	0.218	22.1
Back side	20	QPSK 1_1	136100/680.5	1:1	0.300	-0.02	24.01	24.80	1.199	<b>0.360</b>	22.1
Left side	20	QPSK 1_1	136100/680.5	1:1	0.138	0.04	24.01	24.80	1.199	0.166	22.1
Right side	20	QPSK 1_1	136100/680.5	1:1	0.247	0.05	24.01	24.80	1.199	0.296	22.1
Bottom side	20	QPSK 1_1	136100/680.5	1:1	0.179	0.06	24.01	24.80	1.199	0.215	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50_28	136100/680.5	1:1	0.163	-0.03	23.99	24.80	1.205	0.196	22.1
Back side	20	QPSK 50_28	136100/680.5	1:1	0.252	0.09	23.99	24.80	1.205	0.304	22.1
Left side	20	QPSK 50_28	136100/680.5	1:1	0.121	0.07	23.99	24.80	1.205	0.146	22.1
Right side	20	QPSK 50_28	136100/680.5	1:1	0.228	0.06	23.99	24.80	1.205	0.275	22.1
Bottom side	20	QPSK 50_28	136100/680.5	1:1	0.170	-0.04	23.99	24.80	1.205	0.205	22.1

Table 32: SAR of 5G NR n71 for Head and Body.

## 9.2.9 SAR Result of 5G NR n77(3450~3550)

SA N77 SAR Test Record											
Ant2 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek PC2	100	QPSK 1_1	633334/3500	1:1	0.031	0.17	24.06	24.30	1.057	0.034	22.3
Left tilted PC2	100	QPSK 1_1	633334/3500	1:1	0.022	-0.07	24.06	24.30	1.057	0.024	22.3
Right cheek PC2	100	QPSK 1_1	633334/3500	1:1	0.046	0.06	24.06	24.30	1.057	0.051	22.3
Right cheek PC3	100	QPSK 1_1	633334/3500	1:1.25	0.044	0.06	21.31	21.80	1.119	0.051	22.3
Right tilted PC2	100	QPSK 1_1	633334/3500	1:1	0.035	0.17	24.06	24.30	1.057	0.039	22.3
Head Test data(50%RB)											
Left cheek PC2	100	QPSK 135_69	633334/3500	1:1	0.028	-0.19	24.03	24.30	1.064	0.031	22.3
Left tilted PC2	100	QPSK 135_69	633334/3500	1:1	0.019	-0.04	24.03	24.30	1.064	0.021	22.3
Right cheek PC2	100	QPSK 135_69	633334/3500	1:1	0.041	0.14	24.03	24.30	1.064	0.046	22.3
Right tilted PC2	100	QPSK 135_69	633334/3500	1:1	0.032	0.09	24.03	24.30	1.064	0.036	22.3



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t (86-512) 62992980 www.sgs.com.cn  
t (86-512) 62992980 sgs.china@sgs.com



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Body worn Test data(Separate 15mm 1RB)											
Front side PC2	100	QPSK 1_1	633334/3500	1:1	0.059	-0.19	24.06	24.30	1.057	0.066	22.3
Back side PC2	100	QPSK 1_1	633334/3500	1:1	0.111	0.09	24.06	24.30	1.057	0.124	22.3
Body worn Test data (Separate 15mm 50%RB)											
Front side PC2	100	QPSK 135_69	633334/3500	1:1	0.065	0.13	24.03	24.30	1.064	0.073	22.3
Back side PC2	100	QPSK 135_69	633334/3500	1:1	0.143	0.09	24.03	24.30	1.064	0.160	22.3
Back side PC3	100	QPSK 135_69	633334/3500	1:1.25	0.126	0.01	21.25	21.80	1.135	0.149	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.088	-0.14	21.31	21.80	1.119	0.102	22.3
Back side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.223	0.19	21.31	21.80	1.119	0.259	22.3
Left side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.121	-0.19	21.31	21.80	1.119	0.141	22.3
Bottom side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.099	0.12	21.31	21.80	1.119	0.115	22.3
Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.105	0.01	21.25	21.80	1.135	0.124	22.3
Back side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.310	0.04	21.25	21.80	1.135	0.366	22.3
Left side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.153	0.11	21.25	21.80	1.135	0.180	22.3
Bottom side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.109	0.15	21.25	21.80	1.135	0.129	22.3
Ant4 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek PC2	100	QPSK 1_1	633334/3500	1:1	0.057	-0.15	24.18	24.80	1.153	0.069	22.3
Left tilted PC2	100	QPSK 1_1	633334/3500	1:1	0.036	0.10	24.18	24.80	1.153	0.044	22.3
Right cheek PC2	100	QPSK 1_1	633334/3500	1:1	0.137	0.02	24.18	24.80	1.153	0.166	22.3
Right tilted PC2	100	QPSK 1_1	633334/3500	1:1	0.066	0.12	24.18	24.80	1.153	0.080	22.3
Head Test data(50%RB)											
Left cheek PC2	100	QPSK 135_69	633334/3500	1:1	0.104	0.05	24.11	24.80	1.172	0.128	22.3
Left tilted PC2	100	QPSK 135_69	633334/3500	1:1	0.048	-0.09	24.11	24.80	1.172	0.059	22.3
Right cheek PC2	100	QPSK 135_69	633334/3500	1:1	0.165	-0.06	24.11	24.80	1.172	0.204	22.3
Right cheek PC3	100	QPSK 135_69	633334/3500	1:1.25	0.147	0.05	21.18	21.80	1.153	0.176	22.3
Right tilted PC2	100	QPSK 135_69	633334/3500	1:1	0.089	-0.09	24.11	24.80	1.172	0.110	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side PC2	100	QPSK 1_1	633334/3500	1:1	0.041	-0.03	24.18	24.80	1.153	0.050	22.3
Back side PC2	100	QPSK 1_1	633334/3500	1:1	0.265	-0.16	24.18	24.80	1.153	0.322	22.3
Body worn Test data (Separate 15mm 50%RB)											
Front side PC2	100	QPSK 135_69	633334/3500	1:1	0.046	0.19	24.11	24.80	1.172	0.057	22.3
Back side PC2	100	QPSK 135_69	633334/3500	1:1	0.297	-0.19	24.11	24.80	1.172	0.367	22.3
Back side PC3	100	QPSK 135_69	633334/3500	1:1.25	0.249	0.03	21.18	21.80	1.153	0.302	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side PC2	100	QPSK 1_1	633334/3500	1:1	0.065	-0.05	24.18	24.80	1.153	0.079	22.3
Back side PC2	100	QPSK 1_1	633334/3500	1:1	0.658	0.07	24.18	24.80	1.153	0.799	22.3
Back side PC3	100	QPSK 1_1	633334/3500	1:1.25	0.635	0.01	21.23	21.80	1.140	0.752	22.3
Left side PC2	100	QPSK 1_1	633334/3500	1:1	0.239	0.02	24.18	24.80	1.153	0.290	22.3
Top side PC2	100	QPSK 1_1	633334/3500	1:1	0.053	0.15	24.18	24.80	1.153	0.064	22.3
Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2	100	QPSK 135_69	633334/3500	1:1	0.071	-0.09	24.11	24.80	1.172	0.088	22.3
Back side PC2	100	QPSK 135_69	633334/3500	1:1	0.591	-0.17	24.11	24.80	1.172	0.729	22.3
Left side PC2	100	QPSK 135_69	633334/3500	1:1	0.241	0.01	24.11	24.80	1.172	0.297	22.3
Top side PC2	100	QPSK 135_69	633334/3500	1:1	0.056	-0.18	24.11	24.80	1.172	0.069	22.3
Ant5 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											



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Left cheek PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.252	-0.09	19.32	19.80	1.117	0.292	22.3
Left tilted PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.181	-0.17	19.32	19.80	1.117	0.210	22.3
Right cheek PC2&3	100	QPSK 1_1	633334/3500	1:1.25	1.060	0.06	19.32	19.80	1.117	<b>1.230</b>	22.3
Right cheek PC2&3-repeated	100	QPSK 1_1	633334/3500	1:1.25	1.030	0.02	19.32	19.80	1.117	1.195	22.3
Right tilted PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.553	0.04	19.32	19.80	1.117	0.642	22.3
Head Test data(50%RB)											
Left cheek PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.269	0.16	19.28	19.80	1.127	0.315	22.3
Left tilted PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.209	0.02	19.28	19.80	1.127	0.245	22.3
Right cheek PC2&3	100	QPSK 135_69	633334/3500	1:1.25	1.000	0.03	19.28	19.80	1.127	1.171	22.3
Right tilted PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.588	-0.17	19.28	19.80	1.127	0.689	22.3
Head Test data(100%RB)											
Right cheek PC2&3	100	QPSK 270_0	633334/3500	1:1.25	0.916	-0.02	19.21	19.80	1.146	1.090	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side PC2	100	QPSK 1_1	633334/3500	1:1	0.341	0.16	26.89	27.50	1.151	0.413	22.3
Back side PC2	100	QPSK 1_1	633334/3500	1:1	0.597	0.13	26.89	27.50	1.151	0.723	22.3
Body worn Test data (Separate 15mm 50%RB)											
Front side PC2	100	QPSK 135_69	633334/3500	1:1	0.331	-0.05	26.88	27.50	1.153	0.402	22.3
Back side PC2	100	QPSK 135_69	633334/3500	1:1	0.655	-0.09	26.88	27.50	1.153	<b>0.796</b>	22.3
Back side PC3	100	QPSK 135_69	633334/3500	1:1.25	0.626	0.04	23.22	23.80	1.143	0.743	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.277	0.06	21.23	21.80	1.140	0.328	22.3
Back side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.543	-0.08	21.23	21.80	1.140	0.643	22.3
Left side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.526	0.09	21.23	21.80	1.140	0.623	22.3
Top side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.150	-0.02	21.23	21.80	1.140	0.178	22.3
Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.290	0.16	21.21	21.80	1.146	0.345	22.3
Back side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.553	-0.03	21.21	21.80	1.146	0.658	22.3
Left side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.560	0.02	21.21	21.80	1.146	0.667	22.3
Top side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.166	0.08	21.21	21.80	1.146	0.198	22.3
Ant6 Test Record											
Test position	BW	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.245	0.05	18.26	18.80	1.132	0.288	22.3
Left tilted PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.142	-0.02	18.26	18.80	1.132	0.167	22.3
Right cheek PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.077	-0.06	18.26	18.80	1.132	0.091	22.3
Right tilted PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.069	-0.18	18.26	18.80	1.132	0.081	22.3
Head Test data(50%RB)											
Left cheek PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.375	0.02	18.17	18.80	1.156	0.450	22.3
Left tilted PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.169	-0.15	18.17	18.80	1.156	0.203	22.3
Right cheek PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.095	0.08	18.17	18.80	1.156	0.114	22.3
Right tilted PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.092	-0.04	18.17	18.80	1.156	0.111	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side PC2	100	QPSK 1_1	633334/3500	1:1	0.034	0.03	25.16	25.80	1.159	0.041	22.3
Back side PC2	100	QPSK 1_1	633334/3500	1:1	0.046	-0.19	25.16	25.80	1.159	0.056	22.3
Body worn Test data (Separate 15mm 50%RB)											
Front side PC2	100	QPSK 135_69	633334/3500	1:1	0.047	0.04	25.12	25.80	1.169	0.058	22.3
Back side PC2	100	QPSK 135_69	633334/3500	1:1	0.055	-0.10	25.12	25.80	1.169	0.068	22.3
Back side PC3	100	QPSK 135_69	633334/3500	1:1.25	0.045	-0.10	22.17	22.80	1.156	0.054	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.065	0.06	25.16	25.80	1.159	0.079	22.3
Back side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.081	0.13	25.16	25.80	1.159	0.099	22.3
Right side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.067	0.07	25.16	25.80	1.159	0.082	22.3
Top side PC2&3	100	QPSK 1_1	633334/3500	1:1.25	0.037	0.06	25.16	25.80	1.159	0.045	22.3



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Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.088	-0.16	25.12	25.80	1.169	0.108	22.3
Back side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.132	0.03	25.12	25.80	1.169	0.163	22.3
Right side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.067	-0.02	25.12	25.80	1.169	0.083	22.3
Top side PC2&3	100	QPSK 135_69	633334/3500	1:1.25	0.052	-0.17	25.12	25.80	1.169	0.064	22.3

Table 33: SAR of 5G NR n77(3450~3550) for Head and Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (1g)		SAR (1g)	SAR (1g)
Right cheek	633334/3500	1.060	1.030	1.029126214	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 1.5$  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

## 9.2.10 SAR Result of 5G NR n77(3700~3980)

SA N77 SAR Test Record											
Ant2 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek PC2	100	QPSK 1_1	656000/3840	1:1	0.035	-0.02	24.97	25.30	1.079	0.038	22.4
Left tilted PC2	100	QPSK 1_1	656000/3840	1:1	0.037	0.05	24.97	25.30	1.079	0.040	22.4
Right cheek PC2	100	QPSK 1_1	656000/3840	1:1	0.033	0.19	24.97	25.30	1.079	0.036	22.4
Right tilted PC2	100	QPSK 1_1	656000/3840	1:1	0.031	-0.04	24.97	25.30	1.079	0.033	22.4
Head Test data(50%RB)											
Left cheek PC2	100	QPSK 135_69	656000/3840	1:1	0.039	-0.02	24.94	25.30	1.086	0.042	22.4
Left cheek PC3	100	QPSK 135_69	656000/3840	1:1.25	0.036	0.01	21.86	22.30	1.107	0.040	22.4
Left tilted PC2	100	QPSK 135_69	656000/3840	1:1	0.036	0.16	24.94	25.30	1.086	0.039	22.4
Right cheek PC2	100	QPSK 135_69	656000/3840	1:1	0.035	-0.13	24.94	25.30	1.086	0.038	22.4
Right tilted PC2	100	QPSK 135_69	656000/3840	1:1	0.034	0.07	24.94	25.30	1.086	0.037	22.4
Body worn Test data(Separate 15mm 1RB)											
Front side PC2	100	QPSK 1_1	656000/3840	1:1	0.222	-0.10	24.97	25.30	1.079	0.240	22.4
Back side PC2	100	QPSK 1_1	656000/3840	1:1	0.725	0.04	24.97	25.30	1.079	0.782	22.4
Back side PC3	100	QPSK 1_1	656000/3840	1:1.25	0.697	0.18	21.93	22.30	1.089	0.759	22.4
Body worn Test data (Separate 15mm 50%RB)											
Front side PC2	100	QPSK 135_69	656000/3840	1:1	0.230	0.14	24.94	25.30	1.086	0.250	22.4
Back side PC2	100	QPSK 135_69	656000/3840	1:1	0.656	0.19	24.94	25.30	1.086	0.713	22.4
Hotspot Test data(Separate 10mm 1RB)											
Front side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.272	0.11	21.93	22.30	1.089	0.296	22.4
Back side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	1.060	-0.03	21.93	22.30	1.089	1.154	22.4
Back side PC2&3-repeated	100	QPSK 1_1	656000/3840	1:1.25	1.010	0.02	21.93	22.30	1.089	1.100	22.4
Left side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.432	0.08	21.93	22.30	1.089	0.470	22.4
Bottom side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.289	0.07	21.93	22.30	1.089	0.315	22.4
Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.284	0.02	21.86	22.30	1.107	0.314	22.4
Back side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	1.000	0.13	21.86	22.30	1.107	1.107	22.4
Left side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.496	-0.08	21.86	22.30	1.107	0.549	22.4
Bottom side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.326	-0.12	21.86	22.30	1.107	0.361	22.4

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中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南楼 邮编: 215000

t (86-512) 62992980 www.sgs.com.cn  
t (86-512) 62992980 sgs.china@sgs.com

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Hotspot Test data (Separate 10mm 100%RB)											
Back side PC2&3	100	QPSK 270_0	656000/3840	1:1.25	1.020	-0.06	20.72	21.30	1.143	1.166	22.4
Ant4 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek PC2	100	QPSK 1_1	656000/3840	1:1	0.174	-0.04	24.18	24.80	1.153	0.201	22.4
Left tilted PC2	100	QPSK 1_1	656000/3840	1:1	0.054	-0.01	24.18	24.80	1.153	0.062	22.4
Right cheek PC2	100	QPSK 1_1	656000/3840	1:1	0.265	0.01	24.18	24.80	1.153	0.306	22.4
Right cheek PC3	100	QPSK 1_1	656000/3840	1:1.25	0.190	0.07	21.23	21.80	1.140	0.217	22.4
Right tilted PC2	100	QPSK 1_1	656000/3840	1:1	0.139	0.15	24.18	24.80	1.153	0.160	22.4
Head Test data(50%RB)											
Left cheek PC2	100	QPSK 135_69	656000/3840	1:1	0.119	-0.04	24.11	24.80	1.172	0.139	22.4
Left tilted PC2	100	QPSK 135_69	656000/3840	1:1	0.053	0.16	24.11	24.80	1.172	0.062	22.4
Right cheek PC2	100	QPSK 135_69	656000/3840	1:1	0.188	-0.18	24.11	24.80	1.172	0.220	22.4
Right tilted PC2	100	QPSK 135_69	656000/3840	1:1	0.068	0.03	24.11	24.80	1.172	0.080	22.4
Body worn Test data(Separate 15mm 1RB)											
Front side PC2	100	QPSK 1_1	656000/3840	1:1	0.068	-0.10	24.18	24.80	1.153	0.078	22.4
Back side PC2	100	QPSK 1_1	656000/3840	1:1	0.267	0.09	24.18	24.80	1.153	0.308	22.4
Back side PC3	100	QPSK 1_1	656000/3840	1:1.25	0.240	-0.06	21.23	21.80	1.140	0.274	22.4
Body worn Test data (Separate 15mm 50%RB)											
Front side PC2	100	QPSK 135_69	656000/3840	1:1	0.051	-0.12	24.11	24.80	1.172	0.060	22.4
Back side PC2	100	QPSK 135_69	656000/3840	1:1	0.225	-0.04	24.11	24.80	1.172	0.264	22.4
Hotspot Test data(Separate 10mm 1RB)											
Front side PC2	100	QPSK 1_1	656000/3840	1:1	0.076	-0.16	24.18	24.80	1.153	0.088	22.4
Back side PC2	100	QPSK 1_1	656000/3840	1:1	0.643	0.08	24.18	24.80	1.153	0.742	22.4
Back side PC3	100	QPSK 1_1	656000/3840	1:1.25	0.611	-0.16	21.23	21.80	1.140	0.697	22.4
Left side PC2	100	QPSK 1_1	656000/3840	1:1	0.256	-0.08	24.18	24.80	1.153	0.295	22.4
Top side PC2	100	QPSK 1_1	656000/3840	1:1	0.070	0.02	24.18	24.80	1.153	0.081	22.4
Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2	100	QPSK 135_69	656000/3840	1:1	0.077	0.12	24.11	24.80	1.172	0.090	22.4
Back side PC2	100	QPSK 135_69	656000/3840	1:1	0.501	-0.08	24.11	24.80	1.172	0.587	22.4
Left side PC2	100	QPSK 135_69	656000/3840	1:1	0.235	-0.02	24.11	24.80	1.172	0.275	22.4
Top side PC2	100	QPSK 135_69	656000/3840	1:1	0.052	0.01	24.11	24.80	1.172	0.061	22.4
Ant5 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.233	0.03	19.32	19.80	1.117	0.260	22.4
Left tilted PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.221	0.08	19.32	19.80	1.117	0.247	22.4
Right cheek PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.875	-0.03	19.32	19.80	1.117	0.977	22.4
Right tilted PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.497	-0.11	19.32	19.80	1.117	0.555	22.4
Head Test data(50%RB)											
Left cheek PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.233	0.06	19.29	19.80	1.125	0.262	22.4
Left tilted PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.205	-0.02	19.29	19.80	1.125	0.231	22.4
Right cheek PC2&3	100	QPSK 135_69	656000/3840	1:1.25	1.020	0.05	19.29	19.80	1.125	1.147	22.4
Right tilted PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.530	0.06	19.29	19.80	1.125	0.596	22.4
Head Test data(100%RB)											
Right cheek PC2&3	100	QPSK 270_0	656000/3840	1:1.25	0.776	0.13	19.24	19.80	1.138	0.883	22.4
Body worn Test data(Separate 15mm 1RB)											
Front side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.177	0.03	22.11	22.80	1.172	0.207	22.4
Back side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.328	0.01	22.11	22.80	1.172	0.384	22.4
Body worn Test data (Separate 15mm 50%RB)											



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t (86-512) 62992980 www.sgs.com.cn

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Front side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.176	-0.02	21.97	22.80	1.211	0.213	22.4
Back side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.372	0.05	21.97	22.80	1.211	<b>0.450</b>	22.4
Hotspot Test data (Separate 10mm 1RB)											
Front side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.328	0.03	21.25	21.80	1.135	0.372	22.4
Back side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.707	0.15	21.25	21.80	1.135	0.802	22.4
Left side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.937	0.01	21.25	21.80	1.135	1.064	22.4
Top side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.205	-0.08	21.25	21.80	1.135	0.233	22.4
Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.331	-0.17	21.17	21.80	1.156	0.383	22.4
Back side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.777	0.07	21.17	21.80	1.156	0.898	22.4
Left side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.944	0.08	21.17	21.80	1.156	1.091	22.4
Top side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.235	0.03	21.17	21.80	1.156	0.272	22.4
Hotspot Test data (Separate 10mm 100%RB)											
Back side PC2&3	100	QPSK 270_0	656000/3840	1:1.25	0.770	0.11	21.19	21.80	1.151	0.886	22.4
Left side PC2&3	100	QPSK 270_0	656000/3840	1:1.25	0.900	-0.10	21.19	21.80	1.151	1.036	22.4
Test position	BW.	Modulation	Test ch./Freq.	Duty Cycle	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.(°C)
Product specific 10gSAR Test data (Separate 10mm 1RB)											
Back side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	1.500	0.09	22.11	22.80	1.172	1.758	22.4
Left side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	2.000	0.19	22.11	22.80	1.172	2.344	22.4
Product specific 10gSAR Test data (Separate 10mm 50%RB)											
Back side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	1.540	0.11	21.97	22.80	1.211	1.864	22.4
Left side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	2.130	-0.06	21.97	22.80	1.211	<b>2.579</b>	22.4
Left side PC2&3-repeated	100	QPSK 135_69	656000/3840	1:1.25	2.080	0.09	21.97	22.80	1.211	2.518	22.4
Product specific 10gSAR Test data (Separate 10mm 100%RB)											
Left side PC2&3	100	QPSK 270_0	656000/3840	1:1.25	1.800	-0.14	21.94	22.80	1.219	2.194	22.4
Ant6 Test Record											
Test position	BW.	Modulation	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.(°C)
Head Test data(1RB)											
Left cheek PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.621	-0.07	18.52	19.30	1.197	0.743	22.4
Left tilted PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.352	0.09	18.52	19.30	1.197	0.421	22.4
Right cheek PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.319	-0.16	18.52	19.30	1.197	0.382	22.4
Right tilted PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.324	-0.05	18.52	19.30	1.197	0.388	22.4
Head Test data(50%RB)											
Left cheek PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.920	-0.03	18.47	19.30	1.211	1.114	22.4
Left tilted PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.601	-0.05	18.47	19.30	1.211	0.728	22.4
Right cheek PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.310	0.17	18.47	19.30	1.211	0.375	22.4
Right tilted PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.256	0.09	18.47	19.30	1.211	0.310	22.4
Head Test data(100%RB)											
Left cheek PC2&3	100	QPSK 270_0	656000/3840	1:1.25	0.763	-0.13	18.46	19.30	1.213	0.926	22.4
Body worn Test data (Separate 15mm 1RB)											
Front side PC2	100	QPSK 1_1	656000/3840	1:1	0.299	-0.09	25.39	25.80	1.099	0.329	22.4
Back side PC2	100	QPSK 1_1	656000/3840	1:1	0.357	0.12	25.39	25.80	1.099	0.392	22.4
Body worn Test data (Separate 15mm 50%RB)											
Front side PC2	100	QPSK 135_69	656000/3840	1:1	0.385	-0.03	25.37	25.80	1.104	0.425	22.4
Back side PC2	100	QPSK 135_69	656000/3840	1:1	0.566	-0.01	25.37	25.80	1.104	0.625	22.4
Back side PC3	100	QPSK 135_69	656000/3840	1:1.25	0.503	-0.01	22.55	23.30	1.189	0.598	22.4
Hotspot Test data (Separate 10mm 1RB)											
Front side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.474	0.08	22.78	23.30	1.127	0.534	22.4
Back side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.886	0.11	22.78	23.30	1.127	0.999	22.4
Right side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.411	0.05	22.78	23.30	1.127	0.463	22.4
Top side PC2&3	100	QPSK 1_1	656000/3840	1:1.25	0.391	0.17	22.78	23.30	1.127	0.441	22.4



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Hotspot Test data (Separate 10mm 50%RB)											
Front side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.523	0.02	22.55	23.30	1.189	0.622	22.4
Back side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.909	0.05	22.55	23.30	1.189	1.080	22.4
Right side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.428	-0.03	22.55	23.30	1.189	0.509	22.4
Top side PC2&3	100	QPSK 135_69	656000/3840	1:1.25	0.397	0.19	22.55	23.30	1.189	0.472	22.4
Hotspot Test data (Separate 10mm 100%RB)											
Back side PC2&3	100	QPSK 270_0	656000/3840	1:1.25	0.909	0.03	21.58	22.30	1.180	1.073	22.4

Table 34: SAR of 5G NR n77(3700~3980) for Head and Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (1g)		SAR (1g)	SAR (1g)
Back side	656000/3840	1.060	1.010	1.04950495	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .4) Repeated measurements are not required when the original highest measured SAR is  $< 0.80$  W/kg

Test Position	Channel/ Frequency (MHz)	Measured SAR (10g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (10g)		SAR (10g)	SAR (10g)
Left side	656000/3840	2.130	2.080	1.024038462	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 2.0$  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  $\geq 3.625$  W/kg ( $\sim 10\%$  from the 10-g SAR limit).3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 3.0$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .4) Repeated measurements are not required when the original highest measured SAR is  $< 2.0$  W/kg

## 9.2.11 SAR Result of WIFI 2.4G

Wi-Fi 2.4G SAR Test Record											
Ant7 Test Record chain0											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test data											
Left cheek	802.11b	6/2437	100.00%	1.000	0.933	-0.11	18.52	19.00	1.117	1.042	22.2
Left cheek	802.11b	1/2412	100.00%	1.000	0.590	-0.13	18.36	19.00	1.159	0.684	22.2
Left cheek	802.11b	11/2462	100.00%	1.000	1.040	0.14	18.47	19.00	1.130	<b>1.175</b>	22.2
Left cheek-repeated	802.11b	11/2462	100.00%	1.000	1.010	0.05	18.47	19.00	1.130	1.141	22.2
Left tilted	802.11b	6/2437	100.00%	1.000	0.589	-0.08	18.52	19.00	1.117	0.658	22.2
Right cheek	802.11b	6/2437	100.00%	1.000	0.470	0.05	18.52	19.00	1.117	0.525	22.2
Right tilted	802.11b	6/2437	100.00%	1.000	0.331	0.11	18.52	19.00	1.117	0.370	22.2
Head Test data For Simultaneous											
Left cheek	802.11b	6/2437	100.00%	1.000	0.933	-0.11	18.52	15.00	0.445	0.415	22.2
Left cheek	802.11b	1/2412	100.00%	1.000	0.590	-0.13	18.36	15.00	0.461	0.272	22.2
Left cheek	802.11b	11/2462	100.00%	1.000	1.040	0.14	18.47	15.00	0.450	0.468	22.2
Left tilted	802.11b	6/2437	100.00%	1.000	0.589	-0.08	18.52	15.00	0.445	0.262	22.2
Right cheek	802.11b	6/2437	100.00%	1.000	0.470	0.05	18.52	15.00	0.445	0.209	22.2
Right tilted	802.11b	6/2437	100.00%	1.000	0.331	0.11	18.52	15.00	0.445	0.147	22.2
Body worn Test data(Separate 15mm)											
Front side	802.11b	6/2437	100.00%	1.000	0.109	-0.02	20.56	21.00	1.107	0.121	22.2
Back side	802.11b	6/2437	100.00%	1.000	0.262	0.12	20.56	21.00	1.107	0.290	22.2



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t (86-512) 62992980 www.sgs.com.cn  
t (86-512) 62992980 sgs.china@sgs.com



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Hotspot Test data (Separate 10mm)											
Front side	802.11b	6/2437	100.00%	1.000	0.093	0.06	17.45	18.00	1.135	0.106	22.2
Back side	802.11b	6/2437	100.00%	1.000	0.245	-0.05	17.45	18.00	1.135	0.278	22.2
Right side	802.11b	6/2437	100.00%	1.000	0.131	0.01	17.45	18.00	1.135	0.149	22.2
Top side	802.11b	6/2437	100.00%	1.000	0.078	-0.07	17.45	18.00	1.135	0.089	22.2
Ant9 Test Record chain1											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test data											
Left cheek	802.11b	11/2462	100.00%	1.000	0.330	-0.07	20.69	21.00	1.074	0.354	22.2
Left tilted	802.11b	11/2462	100.00%	1.000	0.215	0.12	20.69	21.00	1.074	0.231	22.2
Right cheek	802.11b	11/2462	100.00%	1.000	0.182	-0.10	20.69	21.00	1.074	0.195	22.2
Right tilted	802.11b	11/2462	100.00%	1.000	0.111	0.06	20.69	21.00	1.074	0.119	22.2
Body worn Test data(Separate 15mm)											
Front side	802.11b	11/2462	100.00%	1.000	0.041	0.08	20.69	21.00	1.074	0.044	22.2
Back side	802.11b	11/2462	100.00%	1.000	0.134	-0.08	20.69	21.00	1.074	0.144	22.2
Hotspot Test data (Separate 10mm)											
Front side	802.11b	11/2462	100.00%	1.000	0.079	0.09	20.69	21.00	1.074	0.085	22.2
Back side	802.11b	11/2462	100.00%	1.000	0.264	-0.01	20.69	21.00	1.074	0.284	22.2
Right side	802.11b	11/2462	100.00%	1.000	0.174	0.15	20.69	21.00	1.074	0.187	22.2
MIMO Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test data											
Left cheek	802.11n HT20	6/2437	100.00%	1.000	0.847	-0.16	20.42	21.00	1.143	0.968	22.2
Left cheek	802.11n HT20	1/2412	100.00%	1.000	0.608	0.05	20.37	21.00	1.157	0.704	22.2
Left cheek	802.11n HT20	11/2462	100.00%	1.000	1.010	0.01	20.39	21.00	1.152	1.164	22.2
Left tilted	802.11n HT20	6/2437	100.00%	1.000	0.517	0.02	20.42	21.00	1.143	0.591	22.2
Right cheek	802.11n HT20	6/2437	100.00%	1.000	0.420	0.07	20.42	21.00	1.143	0.480	22.2
Right tilted	802.11n HT20	6/2437	100.00%	1.000	0.386	0.06	20.42	21.00	1.143	0.441	22.2
Head Test data For Simultaneous											
Left cheek	802.11n HT20	6/2437	100.00%	1.000	0.847	-0.16	20.56	17.00	0.441	0.373	22.2
Left cheek	802.11n HT20	1/2412	100.00%	1.000	0.608	0.05	20.47	17.00	0.450	0.273	22.2
Left cheek	802.11n HT20	11/2462	100.00%	1.000	1.010	0.01	20.41	17.00	0.456	0.461	22.2
Left tilted	802.11n HT20	6/2437	100.00%	1.000	0.517	0.02	20.56	17.00	0.441	0.228	22.2
Right cheek	802.11n HT20	6/2437	100.00%	1.000	0.420	0.07	20.56	17.00	0.441	0.185	22.2
Right tilted	802.11n HT20	6/2437	100.00%	1.000	0.386	0.06	20.56	17.00	0.441	0.170	22.2
Body worn Test data(Separate 15mm)											
Front side	802.11n HT20	6/2437	100.00%	1.000	0.212	0.05	21.37	22.00	1.156	0.245	22.2
Back side	802.11n HT20	6/2437	100.00%	1.000	0.625	-0.16	21.37	22.00	1.156	<b>0.723</b>	22.2
Body worn Test data(Separate 15mm) For Simultaneous											
Front side	802.11n HT20	6/2437	100.00%	1.000	0.212	0.05	21.37	17.50	0.410	0.087	22.2
Back side	802.11n HT20	6/2437	100.00%	1.000	0.625	-0.16	21.37	17.50	0.410	0.256	22.2
Hotspot Test data (Separate 10mm)											
Front side	802.11n HT20	6/2437	100.00%	1.000	0.078	-0.16	14.42	15.00	1.144	0.089	22.2
Back side	802.11n HT20	6/2437	100.00%	1.000	0.218	0.09	14.42	15.00	1.144	0.249	22.2
Back side	802.11n HT20	1/2412	100.00%	1.000	0.207	0.04	14.42	15.00	1.144	0.237	22.2
Back side	802.11n HT20	11/2462	100.00%	1.000	0.200	0.08	14.42	15.00	1.144	0.229	22.2
Right side	802.11n HT20	6/2437	100.00%	1.000	0.164	0.07	14.42	15.00	1.144	0.188	22.2
Top side	802.11n HT20	6/2437	100.00%	1.000	0.058	0.02	14.42	15.00	1.144	0.066	22.2



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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 10-g (W/kg)	Liquid Temp.(°C)
Product specific 10gSAR Test data (Separate 0mm)											
Back side	802.11n HT20	6/2437	100.00%	1.000	1.880	-0.18	21.37	22.00	1.156	2.173	22.2
Back side	802.11n HT20	1/2412	100.00%	1.000	1.630	-0.10	21.30	22.00	1.176	1.917	22.2
Back side	802.11n HT20	11/2462	100.00%	1.000	1.470	0.06	21.34	22.00	1.165	1.713	22.2
Product specific 10gSAR Test data (Separate 0mm) For Simultaneous											
Back side	802.11n HT20	6/2437	100.00%	1.000	1.880	-0.18	21.37	17.50	0.410	0.771	22.2
Back side	802.11n HT20	1/2412	100.00%	1.000	1.630	-0.10	21.30	17.50	0.417	0.680	22.2
Back side	802.11n HT20	11/2462	100.00%	1.000	1.470	0.06	21.34	17.50	0.413	0.608	22.2

Table 35: SAR of WIFI 2.4G for Head and Body.

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
			SAR (1g)		SAR (1g)	SAR (1g)
Left cheek	11/2462	1.040	1.010	1.02970297	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 1.5$  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

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



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## 9.2.1 SAR Result of WIFI 5G

Wi-Fi 5G SAR Test Record											
Ant7 Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test data of U-NII-2A											
Left cheek	802.11a	64/5320	100.00%	1.000	0.887	-0.09	17.51	18.00	1.119	0.993	22.3
Left cheek	802.11a	56/5280	100.00%	1.000	0.765	0.04	17.44	18.00	1.138	0.870	22.3
Left tilted	802.11a	64/5320	100.00%	1.000	0.942	0.07	17.51	18.00	1.119	1.055	22.3
Left tilted-repeated	802.11a	64/5320	100.00%	1.000	0.937	-0.06	17.51	18.00	1.119	1.049	22.3
Left tilted	802.11a	56/5280	100.00%	1.000	0.881	0.01	17.44	18.00	1.138	1.002	22.3
Right cheek	802.11a	64/5320	100.00%	1.000	0.589	-0.13	17.51	18.00	1.119	0.659	22.3
Right tilted	802.11a	64/5320	100.00%	1.000	0.632	0.10	17.51	18.00	1.119	0.707	22.3
Head Test data of U-NII-2A For Simultaneous											
Left cheek	802.11a	64/5320	100.00%	1.000	0.887	-0.09	17.51	12.00	0.281	0.249	22.3
Left cheek	802.11a	56/5280	100.00%	1.000	0.765	0.04	17.44	12.00	0.286	0.219	22.3
Left tilted	802.11a	64/5320	100.00%	1.000	0.942	0.07	17.51	12.00	0.281	0.265	22.3
Left tilted	802.11a	56/5280	100.00%	1.000	0.881	0.01	17.44	12.00	0.286	0.252	22.3
Right cheek	802.11a	64/5320	100.00%	1.000	0.589	-0.13	17.51	12.00	0.281	0.166	22.3
Right tilted	802.11a	64/5320	100.00%	1.000	0.632	0.10	17.51	12.00	0.281	0.178	22.3
Head Test data of U-NII-2C											
Left cheek	802.11ac 80M	106/5530	100.00%	1.000	1.010	0.18	14.83	15.50	1.167	1.178	22.2
Left cheek	802.11ac 80M	122/5610	100.00%	1.000	0.840	-0.17	14.72	15.50	1.197	1.005	22.2
Left tilted	802.11ac 80M	106/5530	100.00%	1.000	0.986	0.05	14.83	15.50	1.167	1.150	22.2
Left tilted	802.11ac 80M	122/5610	100.00%	1.000	0.832	0.06	14.72	15.50	1.197	0.996	22.2
Right cheek	802.11ac 80M	106/5530	100.00%	1.000	0.829	0.03	14.83	15.50	1.167	0.967	22.2
Right cheek	802.11ac 80M	122/5610	100.00%	1.000	0.750	0.06	14.72	15.50	1.197	0.898	22.2
Right tilted	802.11ac 80M	106/5530	100.00%	1.000	0.806	0.14	14.83	15.50	1.167	0.940	22.2
Right tilted	802.11ac 80M	122/5610	100.00%	1.000	0.755	0.03	14.72	15.50	1.197	0.904	22.2
Head Test data of U-NII-2C For Simultaneous											
Left cheek	802.11ac 80M	106/5530	100.00%	1.000	1.010	0.18	14.83	9.00	0.261	0.264	22.2
Left cheek	802.11ac 80M	122/5610	100.00%	1.000	0.840	-0.17	14.72	9.00	0.268	0.225	22.2
Left tilted	802.11ac 80M	106/5530	100.00%	1.000	0.986	0.05	14.83	9.00	0.261	0.258	22.2
Left tilted	802.11ac 80M	122/5610	100.00%	1.000	0.832	0.06	14.72	9.00	0.268	0.223	22.2
Right cheek	802.11ac 80M	106/5530	100.00%	1.000	0.829	0.03	14.83	9.00	0.261	0.217	22.2
Right cheek	802.11ac 80M	122/5610	100.00%	1.000	0.750	0.06	14.72	9.00	0.268	0.201	22.2
Right tilted	802.11ac 80M	106/5530	100.00%	1.000	0.806	0.14	14.83	9.00	0.261	0.211	22.2
Right tilted	802.11ac 80M	122/5610	100.00%	1.000	0.755	0.03	14.72	9.00	0.268	0.202	22.2
Head Test data of U-NII-3											
Left cheek	802.11ac 80M	155/5775	100.00%	1.000	0.811	0.08	14.04	14.50	1.112	0.902	22.4
Left tilted	802.11ac 80M	155/5775	100.00%	1.000	0.792	0.11	14.04	14.50	1.112	0.880	22.4
Right cheek	802.11ac 80M	155/5775	100.00%	1.000	0.746	0.07	14.04	14.50	1.112	0.829	22.4
Right tilted	802.11ac 80M	155/5775	100.00%	1.000	0.695	0.12	14.04	14.50	1.112	0.773	22.4
Head Test data of U-NII-3 For Simultaneous											
Left cheek	802.11ac 80M	155/5775	100.00%	1.000	0.811	0.08	14.04	9.00	0.313	0.254	22.4
Left tilted	802.11ac 80M	155/5775	100.00%	1.000	0.792	0.11	14.04	9.00	0.313	0.248	22.4
Right cheek	802.11ac 80M	155/5775	100.00%	1.000	0.746	0.07	14.04	9.00	0.313	0.234	22.4
Right tilted	802.11ac 80M	155/5775	100.00%	1.000	0.695	0.12	14.04	9.00	0.313	0.218	22.4
Body worn Test data of U-NII-2A(Separate 15mm)											
Front side	802.11a	64/5320	100.00%	1.000	0.138	0.05	17.51	18.00	1.119	0.154	22.3
Back side	802.11a	64/5320	100.00%	1.000	0.555	-0.04	17.51	18.00	1.119	0.621	22.3
Body worn Test data of U-NII-2A(Separate 15mm) For Simultaneous											



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Front side	802.11a	64/5320	100.00%	1.000	0.138	0.05	17.51	14.00	0.446	0.062	22.3
Back side	802.11a	64/5320	100.00%	1.000	0.555	-0.04	17.51	14.00	0.446	0.247	22.3
Body worn Test data of U-NII-2C(Separate 15mm)											
Front side	802.11a	100/5500	100.00%	1.000	0.250	0.18	17.51	18.00	1.119	0.280	22.2
Back side	802.11a	100/5500	100.00%	1.000	0.924	-0.03	17.51	18.00	1.119	1.034	22.2
Back side	802.11a	104/5520	100.00%	1.000	0.894	0.02	17.44	18.00	1.138	1.017	22.2
Body worn Test data of U-NII-2C(Separate 15mm) For Simultaneous											
Front side	802.11a	100/5500	100.00%	1.000	0.250	0.18	17.51	12.00	0.281	0.070	22.2
Back side	802.11a	100/5500	100.00%	1.000	0.924	-0.03	17.51	12.00	0.281	0.260	22.2
Back side	802.11a	104/5520	100.00%	1.000	0.894	0.02	17.44	12.00	0.286	0.255	22.2
Body worn Test data of U-NII-3(Separate 15mm)											
Front side	802.11a	149/5745	100.00%	1.000	0.321	0.08	17.67	18.00	1.079	0.346	22.4
Back side	802.11a	149/5745	100.00%	1.000	0.849	0.07	17.67	18.00	1.079	0.916	22.4
Body worn Test data of U-NII-3(Separate 15mm) For Simultaneous											
Front side	802.11a	149/5745	100.00%	1.000	0.321	0.08	17.67	13.00	0.341	0.110	22.4
Back side	802.11a	149/5745	100.00%	1.000	0.849	0.07	17.67	13.00	0.341	0.290	22.4
Hotspot Test data of U-NII-1(Separate 10mm)											
Front side	802.11a	36/5180	100.00%	1.000	0.052	-0.07	16.10	17.00	1.230	0.064	22.3
Back side	802.11a	36/5180	100.00%	1.000	0.228	0.08	16.10	17.00	1.230	0.281	22.3
Right side	802.11a	36/5180	100.00%	1.000	0.050	-0.08	16.10	17.00	1.230	0.062	22.3
Top side	802.11a	36/5180	100.00%	1.000	0.137	0.06	16.10	17.00	1.230	0.169	22.3
Hotspot Test data of U-NII-3(Separate 10mm)											
Front side	802.11ac 80M	151/5755	100.00%	1.000	0.082	0.13	14.54	15.00	1.112	0.091	22.4
Back side	802.11ac 80M	151/5755	100.00%	1.000	0.259	0.06	14.54	15.00	1.112	0.288	22.4
Right side	802.11ac 80M	151/5755	100.00%	1.000	0.066	0.10	14.54	15.00	1.112	0.073	22.4
Top side	802.11ac 80M	151/5755	100.00%	1.000	0.188	-0.16	14.54	15.00	1.112	0.209	22.4
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 10-g (W/kg)	Liquid Temp.(°C)
Product specific 10gSAR Test data of U-NII-2A(Separate 0mm)											
Front side	802.11a	64/5320	100.00%	1.000	0.341	-0.06	17.51	18.00	1.119	0.382	22.3
Back side	802.11a	64/5320	100.00%	1.000	0.913	0.06	17.51	18.00	1.119	<b>1.022</b>	22.3
Right side	802.11a	64/5320	100.00%	1.000	0.105	0.08	17.51	18.00	1.119	0.118	22.3
Top side	802.11a	64/5320	100.00%	1.000	0.533	0.14	17.51	18.00	1.119	0.597	22.3
Product specific 10gSAR Test data of U-NII-2A(Separate 0mm) For Simultaneous											
Front side	802.11a	64/5320	100.00%	1.000	0.341	-0.06	17.51	17.00	0.889	0.303	22.3
Back side	802.11a	64/5320	100.00%	1.000	0.913	0.06	17.51	17.00	0.889	0.812	22.3
Right side	802.11a	64/5320	100.00%	1.000	0.105	0.08	17.51	17.00	0.889	0.093	22.3
Top side	802.11a	64/5320	100.00%	1.000	0.533	0.14	17.51	17.00	0.889	0.474	22.3
Product specific 10g SAR Test data of U-NII-2C(Separate 0mm)											
Front side	802.11a	100/5500	100.00%	1.000	0.461	0.17	17.51	18.00	1.119	0.516	22.2
Back side	802.11a	100/5500	100.00%	1.000	1.070	-0.07	17.51	18.00	1.119	<b>1.198</b>	22.2
Right side	802.11a	100/5500	100.00%	1.000	0.264	0.12	17.51	18.00	1.119	0.296	22.2
Top side	802.11a	100/5500	100.00%	1.000	0.795	-0.06	17.51	18.00	1.119	0.890	22.2
Product specific 10gSAR Test data of U-NII-2C(Separate 0mm) For Simultaneous											
Front side	802.11a	100/5500	100.00%	1.000	0.461	0.17	17.51	17.00	0.889	0.410	22.2
Back side	802.11a	100/5500	100.00%	1.000	1.070	-0.07	17.51	17.00	0.889	0.951	22.2
Right side	802.11a	100/5500	100.00%	1.000	0.264	0.12	17.51	17.00	0.889	0.235	22.2
Top side	802.11a	100/5500	100.00%	1.000	0.795	-0.06	17.51	17.00	0.889	0.707	22.2
Ant9 Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)



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Head Test data of U-NII-2A											
Left cheek	802.11a	64/5320	100.00%	1.000	0.625	0.01	17.55	18.00	1.109	0.693	22.3
Left tilted	802.11a	64/5320	100.00%	1.000	0.263	0.12	17.55	18.00	1.109	0.292	22.3
Right cheek	802.11a	64/5320	100.00%	1.000	0.209	0.14	17.55	18.00	1.109	0.232	22.3
Right tilted	802.11a	64/5320	100.00%	1.000	0.143	-0.08	17.55	18.00	1.109	0.159	22.3
Head Test data of U-NII-2A For Simultaneous											
Left cheek	802.11a	64/5320	100.00%	1.000	0.625	0.01	17.55	15.00	0.556	0.347	22.3
Left tilted	802.11a	64/5320	100.00%	1.000	0.263	0.12	17.55	15.00	0.556	0.146	22.3
Right cheek	802.11a	64/5320	100.00%	1.000	0.209	0.14	17.55	15.00	0.556	0.116	22.3
Right tilted	802.11a	64/5320	100.00%	1.000	0.143	-0.08	17.55	15.00	0.556	0.079	22.3
Head Test data of U-NII-2C											
Left cheek	802.11a	104/5520	100.00%	1.000	0.693	0.05	17.71	18.00	1.069	0.741	22.2
Left tilted	802.11a	104/5520	100.00%	1.000	0.221	0.09	17.71	18.00	1.069	0.236	22.2
Right cheek	802.11a	104/5520	100.00%	1.000	0.162	0.18	17.71	18.00	1.069	0.173	22.2
Right tilted	802.11a	104/5520	100.00%	1.000	0.148	0.12	17.71	18.00	1.069	0.158	22.2
Head Test data of U-NII-2C For Simultaneous											
Left cheek	802.11a	104/5520	100.00%	1.000	0.693	0.05	17.71	15.00	0.536	0.371	22.2
Left tilted	802.11a	104/5520	100.00%	1.000	0.221	0.09	17.71	15.00	0.536	0.118	22.2
Right cheek	802.11a	104/5520	100.00%	1.000	0.162	0.18	17.71	15.00	0.536	0.087	22.2
Right tilted	802.11a	104/5520	100.00%	1.000	0.148	0.12	17.71	15.00	0.536	0.079	22.2
Head Test data of U-NII-3											
Left cheek	802.11a	157/5785	100.00%	1.000	0.518	0.07	17.71	18.00	1.069	0.554	22.4
Left tilted	802.11a	157/5785	100.00%	1.000	0.248	-0.14	17.71	18.00	1.069	0.265	22.4
Right cheek	802.11a	157/5785	100.00%	1.000	0.129	0.06	17.71	18.00	1.069	0.138	22.4
Right tilted	802.11a	157/5785	100.00%	1.000	0.151	0.10	17.71	18.00	1.069	0.161	22.4
Head Test data of U-NII-3 For Simultaneous											
Left cheek	802.11a	157/5785	100.00%	1.000	0.518	0.07	17.71	16.00	0.675	0.349	22.4
Left tilted	802.11a	157/5785	100.00%	1.000	0.248	-0.14	17.71	16.00	0.675	0.167	22.4
Right cheek	802.11a	157/5785	100.00%	1.000	0.129	0.06	17.71	16.00	0.675	0.087	22.4
Right tilted	802.11a	157/5785	100.00%	1.000	0.151	0.10	17.71	16.00	0.675	0.102	22.4
Body worn Test data of U-NII-2A(Separate 15mm)											
Front side	802.11a	64/5320	100.00%	1.000	0.077	0.02	17.55	18.00	1.109	0.085	22.3
Back side	802.11a	64/5320	100.00%	1.000	0.239	0.18	17.55	18.00	1.109	0.265	22.3
Body worn Test data of U-NII-2C(Separate 15mm)											
Front side	802.11a	100/5500	100.00%	1.000	0.116	0.10	17.71	18.00	1.069	0.124	22.2
Back side	802.11a	100/5500	100.00%	1.000	0.401	-0.03	17.71	18.00	1.069	0.429	22.2
Body worn Test data of U-NII-2C(Separate 15mm) For Simultaneous											
Front side	802.11a	100/5500	100.00%	1.000	0.116	0.10	17.71	16.00	0.675	0.078	22.2
Back side	802.11a	100/5500	100.00%	1.000	0.401	-0.03	17.71	16.00	0.675	0.270	22.2
Body worn Test data of U-NII-3(Separate 15mm)											
Front side	802.11a	157/5785	100.00%	1.000	0.106	0.09	17.71	18.00	1.069	0.113	22.4
Back side	802.11a	157/5785	100.00%	1.000	0.198	0.03	17.71	18.00	1.069	0.212	22.4
Hotspot Test data of U-NII-1(Separate 10mm)											
Front side	802.11a	48/5240	100.00%	1.000	0.055	0.13	17.59	18.00	1.099	0.060	22.3
Back side	802.11a	48/5240	100.00%	1.000	0.250	-0.07	17.59	18.00	1.099	0.275	22.3
Right side	802.11a	48/5240	100.00%	1.000	0.178	0.09	17.59	18.00	1.099	0.196	22.3
Hotspot Test data of U-NII-3 (Separate 10mm)											
Front side	802.11a	149/5745	100.00%	1.000	0.055	0.09	16.66	17.00	1.081	0.059	22.4
Back side	802.11a	149/5745	100.00%	1.000	0.232	-0.02	16.66	17.00	1.081	0.251	22.4
Right side	802.11a	149/5745	100.00%	1.000	0.221	-0.08	16.66	17.00	1.081	0.239	22.4
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 10-g (W/kg)	Liquid Temp.(℃)

Product specific 10gSAR Test data of U-NII-2A(Separate 0mm)



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Front side	802.11a	64/5320	100.00%	1.000	0.115	0.05	17.55	18.00	1.109	0.128	22.3
Back side	802.11a	64/5320	100.00%	1.000	0.477	-0.19	17.55	18.00	1.109	0.529	22.3
Right side	802.11a	64/5320	100.00%	1.000	0.403	-0.09	17.55	18.00	1.109	0.447	22.3
Product specific 10gSAR Test data of U-NII-2C(Separate 0mm)											
Front side	802.11a	100/5500	100.00%	1.000	0.249	-0.11	17.71	18.00	1.069	0.266	22.2
Back side	802.11a	100/5500	100.00%	1.000	0.804	-0.09	17.71	18.00	1.069	0.860	22.2
Right side	802.11a	100/5500	100.00%	1.000	0.840	0.03	17.71	18.00	1.069	0.898	22.2
MIMO Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test data of U-NII-2A											
Left cheek	802.11n HT20	64/5320	100.00%	1.000	0.757	-0.06	19.80	20.00	1.047	0.793	22.3
Left tilted	802.11n HT20	64/5320	100.00%	1.000	0.712	-0.05	19.80	20.00	1.047	0.746	22.3
Right cheek	802.11n HT20	64/5320	100.00%	1.000	0.392	0.07	19.80	20.00	1.047	0.411	22.3
Right tilted	802.11n HT20	64/5320	100.00%	1.000	0.480	0.03	19.80	20.00	1.047	0.503	22.3
Head Test data of U-NII-2A For Simultaneous											
Left cheek	802.11n HT20	64/5320	100.00%	1.000	0.757	-0.06	19.80	16.50	0.468	0.354	22.3
Left tilted	802.11n HT20	64/5320	100.00%	1.000	0.712	-0.05	19.80	16.50	0.468	0.333	22.3
Right cheek	802.11n HT20	64/5320	100.00%	1.000	0.392	0.07	19.80	16.50	0.468	0.183	22.3
Right tilted	802.11n HT20	64/5320	100.00%	1.000	0.480	0.03	19.80	16.50	0.468	0.225	22.3
Head Test data of U-NII-2C											
Left cheek	802.11ac 80M	122/5610	100.00%	1.000	0.954	0.11	16.44	17.00	1.139	1.086	22.2
Left cheek	802.11ac 80M	106/5530	100.00%	1.000	0.822	0.02	16.35	17.00	1.163	0.956	22.2
Left tilted	802.11ac 80M	122/5610	100.00%	1.000	1.020	0.03	16.44	17.00	1.139	1.162	22.2
Left tilted	802.11ac 80M	106/5530	100.00%	1.000	1.010	0.08	16.35	17.00	1.163	1.174	22.2
Right cheek	802.11ac 80M	122/5610	100.00%	1.000	0.661	0.04	16.44	17.00	1.139	0.753	22.2
Right cheek	802.11ac 80M	106/5530	100.00%	1.000	0.586	0.09	16.35	17.00	1.163	0.681	22.2
Right tilted	802.11ac 80M	122/5610	100.00%	1.000	0.771	-0.04	16.44	17.00	1.139	0.878	22.2
Right tilted	802.11ac 80M	106/5530	100.00%	1.000	0.733	0.02	16.35	17.00	1.163	0.852	22.2
Head Test data of U-NII-2C For Simultaneous											
Left cheek	802.11ac 80M	122/5610	100.00%	1.000	0.954	0.11	16.44	12.00	0.360	0.344	22.2
Left cheek	802.11ac 80M	106/5530	100.00%	1.000	0.822	0.02	16.35	12.00	0.368	0.302	22.2
Left tilted	802.11ac 80M	122/5610	100.00%	1.000	1.020	0.03	16.44	12.00	0.360	0.367	22.2
Left tilted	802.11ac 80M	106/5530	100.00%	1.000	1.010	0.08	16.35	12.00	0.368	0.371	22.2
Right cheek	802.11ac 80M	122/5610	100.00%	1.000	0.661	0.04	16.44	12.00	0.360	0.238	22.2
Right cheek	802.11ac 80M	106/5530	100.00%	1.000	0.586	0.09	16.35	12.00	0.368	0.215	22.2
Right tilted	802.11ac 80M	122/5610	100.00%	1.000	0.771	-0.04	16.44	12.00	0.360	0.278	22.2
Right tilted	802.11ac 80M	106/5530	100.00%	1.000	0.733	0.02	16.35	12.00	0.368	0.270	22.2
Head Test data of U-NII-3											
Left cheek	802.11ac 80M	155/5775	100.00%	1.000	0.944	0.03	18.11	18.50	1.095	1.034	22.4
Left tilted	802.11ac 80M	155/5775	100.00%	1.000	1.090	0.01	18.11	18.50	1.095	<b>1.194</b>	22.4
Left tilted-repeated	802.11ac 80M	155/5775	100.00%	1.000	1.060	0.05	18.11	18.50	1.095	1.161	22.4
Right cheek	802.11ac 80M	155/5775	100.00%	1.000	0.730	0.07	18.11	18.50	1.095	0.799	22.4
Right tilted	802.11ac 80M	155/5775	100.00%	1.000	0.887	0.02	18.11	18.50	1.095	0.971	22.4
Head Test data of U-NII-3 For Simultaneous											
Left cheek	802.11ac 80M	155/5775	100.00%	1.000	0.944	0.03	18.11	12.00	0.245	0.231	22.4
Left tilted	802.11ac 80M	155/5775	100.00%	1.000	1.090	0.01	18.11	12.00	0.245	0.267	22.4
Right cheek	802.11ac 80M	155/5775	100.00%	1.000	0.730	0.07	18.11	12.00	0.245	0.179	22.4
Right tilted	802.11ac 80M	155/5775	100.00%	1.000	0.887	0.02	18.11	12.00	0.245	0.217	22.4
Body worn Test data of U-NII-2A (Separate 15mm)											
Front side	802.11n HT20	64/5320	100.00%	1.000	0.154	0.03	19.80	20.00	1.047	0.161	22.3
Back side	802.11n HT20	64/5320	100.00%	1.000	0.632	0.14	19.80	20.00	1.047	<b>0.662</b>	22.3
Body worn Test data of U-NII-2A (Separate 15mm) For Simultaneous											



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Front side	802.11n HT20	64/5320	100.00%	1.000	0.154	0.03	19.80	15.00	0.331	0.051	22.3
Back side	802.11n HT20	64/5320	100.00%	1.000	0.632	0.14	19.80	15.00	0.331	0.209	22.3
Body worn Test data of U-NII-2C(Separate 15mm)											
Front side	802.11n HT20	100/5500	100.00%	1.000	0.225	0.08	19.68	20.00	1.077	0.242	22.2
Back side	802.11n HT20	100/5500	100.00%	1.000	0.985	-0.11	19.68	20.00	1.077	1.061	22.2
Back side	802.11n HT20	104/5520	100.00%	1.000	1.090	0.09	19.68	20.00	1.077	<b>1.174</b>	22.2
Back side-repeated	802.11n HT20	104/5520	100.00%	1.000	1.070	0.03	19.68	20.00	1.077	1.152	22.2
Body worn Test data of U-NII-2C(Separate 15mm) For Simultaneous											
Front side	802.11n HT20	100/5500	100.00%	1.000	0.225	0.08	19.68	14.00	0.271	0.061	22.2
Back side	802.11n HT20	100/5500	100.00%	1.000	0.985	-0.11	19.68	14.00	0.271	0.266	22.2
Back side	802.11n HT20	104/5520	100.00%	1.000	1.090	0.09	19.68	14.00	0.271	0.295	22.2
Body worn Test data of U-NII-3(Separate 15mm)											
Front side	802.11n HT20	153/5765	100.00%	1.000	0.293	0.02	19.74	20.00	1.062	0.311	22.4
Back side	802.11n HT20	153/5765	100.00%	1.000	0.896	-0.15	19.74	20.00	1.062	0.951	22.4
Back side	802.11n HT20	157/5785	100.00%	1.000	0.981	0.06	19.67	20.00	1.080	<b>1.060</b>	22.4
Body worn Test data of U-NII-3(Separate 15mm) For Simultaneous											
Front side	802.11n HT20	153/5765	100.00%	1.000	0.293	0.02	19.74	14.00	0.267	0.078	22.4
Back side	802.11n HT20	153/5765	100.00%	1.000	0.896	-0.15	19.74	14.00	0.267	0.239	22.4
Back side	802.11n HT20	157/5785	100.00%	1.000	0.981	0.06	19.67	14.00	0.271	0.266	22.4
Hotspot Test data of U-NII-1(Separate 10mm)											
Front side	802.11ac 80M	42/5210	100.00%	1.000	0.022	0.08	12.88	14.00	1.294	0.028	22.3
Back side	802.11ac 80M	42/5210	100.00%	1.000	0.193	-0.03	12.88	14.00	1.294	0.250	22.3
Back side	802.11ac 80M	42/5210	100.00%	1.000	0.190	0.07	12.88	14.00	1.294	0.246	22.3
Right side	802.11ac 80M	42/5210	100.00%	1.000	0.102	-0.11	12.88	14.00	1.294	0.132	22.3
Top side	802.11ac 80M	42/5210	100.00%	1.000	0.057	0.02	12.88	14.00	1.294	0.074	22.3
Hotspot Test data of U-NII-3 (Separate 10mm)											
Front side	802.11ac 80M	155/5775	100.00%	1.000	0.060	-0.16	9.78	11.00	1.326	0.080	22.4
Back side	802.11ac 80M	155/5775	100.00%	1.000	0.225	0.02	9.78	11.00	1.326	0.298	22.4
Right side	802.11ac 80M	155/5775	100.00%	1.000	0.089	0.07	9.78	11.00	1.326	0.118	22.4
Top side	802.11ac 80M	155/5775	100.00%	1.000	0.180	0.01	9.78	11.00	1.326	0.239	22.4
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 10-g (W/kg)	Liquid Temp.(°C)
Product specific 10gSAR Test data of U-NII-2A(Separate 0mm)											
Front side	802.11n HT20	64/5320	100.00%	1.000	0.235	0.13	19.84	20.00	1.037	0.244	22.3
Back side	802.11n HT20	64/5320	100.00%	1.000	0.813	-0.14	19.84	20.00	1.037	0.843	22.3
Right side	802.11n HT20	64/5320	100.00%	1.000	1.030	0.04	19.84	20.00	1.037	<b>1.068</b>	22.3
Top side	802.11n HT20	64/5320	100.00%	1.000	0.559	-0.15	19.84	20.00	1.037	0.580	22.3
Product specific 10gSAR Test data of U-NII-2C(Separate 0mm)											
Front side	802.11n HT20	100/5500	100.00%	1.000	0.425	-0.03	19.68	20.00	1.077	0.458	22.2
Back side	802.11n HT20	100/5500	100.00%	1.000	0.803	-0.17	19.68	20.00	1.077	0.865	22.2
Right side	802.11n HT20	100/5500	100.00%	1.000	1.460	0.02	19.68	20.00	1.077	<b>1.572</b>	22.2
Top side	802.11n HT20	100/5500	100.00%	1.000	0.609	0.07	19.68	20.00	1.077	0.656	22.2
Product specific 10gSAR Test data of U-NII-3 (Separate 0mm)											
Back side	802.11n HT20	153/5765	100.00%	1.000	1.900	0.11	19.74	20.00	1.062	<b>2.017</b>	22.4
Back side	802.11n HT20	157/5785	100.00%	1.000	1.800	0.05	19.67	20.00	1.080	1.944	22.4
Top side	802.11n HT20	153/5765	100.00%	1.000	1.320	0.03	19.74	20.00	1.062	1.401	22.4
Product specific 10gSAR Test data of U-NII-3 (Separate 0mm) For Simultaneous											
Back side	802.11n HT20	153/5765	100.00%	1.000	1.900	0.11	19.74	16.00	0.423	0.803	22.4
Back side	802.11n HT20	157/5785	100.00%	1.000	1.800	0.05	19.67	16.00	0.430	0.774	22.4
Top side	802.11n HT20	153/5765	100.00%	1.000	1.320	0.03	19.74	16.00	0.423	0.558	22.4

Table 36: SAR of WIFI 5G for Head and Body.



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中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南楼 邮编: 215000

t (86-512) 62992980 www.sgs.com.cn  
t (86-512) 62992980 sgs.china@sgs.com

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Test Position	Channel/ Frequency	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
	(MHz)		SAR (1g)		SAR (1g)	SAR (1g)
Left tilted	64/5320	0.942	0.937	1.005336179	N/A	N/A
Back side	104/5520	1.090	1.070	1.018691589	N/A	N/A
Left tilted	155/5775	1.090	1.060	1.028301887	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 1.5$  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

Note:

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



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t (86-512) 62992980 [www.sgs.com](http://www.sgs.com)

t (86-512) 62992980 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)



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## 9.2.2 SAR Result of WIFI 6E

Wi-Fi 6E SAR Test Record											
Test Record ANT7 chain0											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test data											
Left cheek	802.11ax 80M	119/6545	100.00%	1.000	0.459	-0.04	14.77	15.00	1.054	0.484	22.3
Left tilted	802.11ax 80M	119/6545	100.00%	1.000	0.500	0.10	14.77	15.00	1.054	0.527	22.3
Right cheek	802.11ax 80M	119/6545	100.00%	1.000	0.413	0.04	14.77	15.00	1.054	0.435	22.3
Right tilted	802.11ax 80M	119/6545	100.00%	1.000	0.522	0.03	14.77	15.00	1.054	0.550	22.3
Right tilted	802.11ax 80M	7/5985	100.00%	1.000	0.782	-0.05	14.25	15.00	1.189	0.929	22.3
Right tilted	802.11ax 80M	71/6305	100.00%	1.000	0.650	0.01	14.09	15.00	1.233	0.802	22.3
Right tilted	802.11ax 80M	167/6785	100.00%	1.000	0.627	0.08	14.59	15.00	1.099	0.689	22.3
Right tilted	802.11ax 80M	215/7025	100.00%	1.000	0.882	-0.01	14.02	15.00	1.253	1.105	22.3
Right tilted-repeated	802.11ax 80M	215/7025	100.00%	1.000	0.865	0.04	14.02	15.00	1.253	1.084	22.3
Head Test data For Simultaneous											
Left cheek	802.11ax 80M	119/6545	100.00%	1.000	0.459	-0.04	14.77	9.00	0.265	0.122	22.3
Left tilted	802.11ax 80M	119/6545	100.00%	1.000	0.500	0.10	14.77	9.00	0.265	0.132	22.3
Right cheek	802.11ax 80M	119/6545	100.00%	1.000	0.413	0.04	14.77	9.00	0.265	0.109	22.3
Right tilted	802.11ax 80M	119/6545	100.00%	1.000	0.522	0.03	14.77	9.00	0.265	0.138	22.3
Right tilted	802.11ax 80M	7/5985	100.00%	1.000	0.782	-0.05	14.25	9.00	0.299	0.233	22.3
Right tilted	802.11ax 80M	71/6305	100.00%	1.000	0.650	0.01	14.09	9.00	0.310	0.201	22.3
Right tilted	802.11ax 80M	167/6785	100.00%	1.000	0.627	0.08	14.59	9.00	0.276	0.173	22.3
Right tilted	802.11ax 80M	215/7025	100.00%	1.000	0.882	-0.01	14.02	9.00	0.315	0.278	22.3
Body worn Test data(Separate 15mm)											
Front side	802.11ax 80M	119/6545	100.00%	1.000	0.078	0.06	14.77	15.00	1.054	0.082	22.3
Back side	802.11ax 80M	119/6545	100.00%	1.000	0.268	0.00	14.77	15.00	1.054	0.283	22.3
Back side	802.11ax 80M	7/5985	100.00%	1.000	0.425	0.03	14.25	15.00	1.189	0.505	22.3
Back side	802.11ax 80M	71/6305	100.00%	1.000	0.319	-0.02	14.09	15.00	1.233	0.393	22.3
Back side	802.11ax 80M	167/6785	100.00%	1.000	0.315	0.06	14.59	15.00	1.099	0.346	22.3
Back side	802.11ax 80M	215/7025	100.00%	1.000	0.481	0.16	14.02	15.00	1.253	0.603	22.3
Body worn Test data(Separate 15mm) For Simultaneous											
Front side	802.11ax 80M	119/6545	100.00%	1.000	0.078	0.06	14.77	11.00	0.420	0.033	22.3
Back side	802.11ax 80M	119/6545	100.00%	1.000	0.268	0.00	14.77	11.00	0.420	0.112	22.3
Back side	802.11ax 80M	7/5985	100.00%	1.000	0.425	0.03	14.25	11.00	0.473	0.201	22.3
Back side	802.11ax 80M	71/6305	100.00%	1.000	0.319	-0.02	14.09	11.00	0.491	0.157	22.3
Back side	802.11ax 80M	167/6785	100.00%	1.000	0.315	0.06	14.59	11.00	0.438	0.138	22.3
Back side	802.11ax 80M	215/7025	100.00%	1.000	0.481	0.16	14.02	11.00	0.499	0.240	22.3
Hotspot Test data(Separate 10mm)											
Front side	802.11ax 80M	119/6545	100.00%	1.000	0.034	0.04	9.73	10.00	1.064	0.036	22.3
Back side	802.11ax 80M	119/6545	100.00%	1.000	0.110	0.08	9.73	10.00	1.064	0.117	22.3
Right side	802.11ax 80M	119/6545	100.00%	1.000	0.039	0.09	9.73	10.00	1.064	0.042	22.3
Top side	802.11ax 80M	119/6545	100.00%	1.000	0.097	0.04	9.73	10.00	1.064	0.103	22.3
Back side	802.11ax 80M	7/5985	100.00%	1.000	0.221	0.08	9.22	10.00	1.197	0.264	22.3
Back side	802.11ax 80M	71/6305	100.00%	1.000	0.165	-0.04	9.18	10.00	1.208	0.199	22.3
Back side	802.11ax 80M	167/6785	100.00%	1.000	0.141	0.02	9.58	10.00	1.102	0.155	22.3
Back side	802.11ax 80M	215/7025	100.00%	1.000	0.248	0.07	9.08	10.00	1.236	0.307	22.3
Test Record ANT9 chain1											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test data											



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Left cheek	802.11ax 80M	119/6545	100.00%	1.000	0.011	0.10	14.71	15.00	1.069	0.012	22.3
Left tilted	802.11ax 80M	119/6545	100.00%	1.000	0.005	0.02	14.71	15.00	1.069	0.005	22.3
Right cheek	802.11ax 80M	119/6545	100.00%	1.000	0.007	0.06	14.71	15.00	1.069	0.007	22.3
Right tilted	802.11ax 80M	119/6545	100.00%	1.000	0.014	-0.04	14.71	15.00	1.069	0.015	22.3
Right tilted	802.11ax 80M	7/5985	100.00%	1.000	0.096	0.05	13.98	15.00	1.265	0.121	22.3
Right tilted	802.11ax 80M	71/6305	100.00%	1.000	0.007	-0.05	14.02	15.00	1.253	0.009	22.3
Right tilted	802.11ax 80M	167/6785	100.00%	1.000	0.003	0.05	14.57	15.00	1.104	0.003	22.3
Right tilted	802.11ax 80M	215/7025	100.00%	1.000	0.025	0.02	14.94	15.00	1.014	0.025	22.3
Body worn Test data(Separate 15mm)											
Front side	802.11ax 80M	119/6545	100.00%	1.000	0.009	0.09	14.71	15.00	1.069	0.010	22.3
Back side	802.11ax 80M	119/6545	100.00%	1.000	0.225	-0.03	14.71	15.00	1.069	0.241	22.3
Back side	802.11ax 80M	7/5985	100.00%	1.000	0.249	-0.03	13.98	15.00	1.265	0.315	22.3
Back side	802.11ax 80M	71/6305	100.00%	1.000	0.200	0.05	14.02	15.00	1.253	0.251	22.3
Back side	802.11ax 80M	167/6785	100.00%	1.000	0.227	-0.03	14.57	15.00	1.104	0.251	22.3
Back side	802.11ax 80M	215/7025	100.00%	1.000	0.437	0.02	14.94	15.00	1.014	0.443	22.3
Body worn Test data(Separate 15mm) For Simultaneous											
Front side	802.11ax 80M	119/6545	100.00%	1.000	0.009	0.09	14.71	13.00	0.675	0.006	22.3
Back side	802.11ax 80M	119/6545	100.00%	1.000	0.225	-0.03	14.71	13.00	0.675	0.152	22.3
Back side	802.11ax 80M	7/5985	100.00%	1.000	0.249	-0.03	13.98	13.00	0.798	0.199	22.3
Back side	802.11ax 80M	71/6305	100.00%	1.000	0.200	0.05	14.02	13.00	0.791	0.158	22.3
Back side	802.11ax 80M	167/6785	100.00%	1.000	0.227	-0.03	14.57	13.00	0.697	0.158	22.3
Back side	802.11ax 80M	215/7025	100.00%	1.000	0.437	0.02	14.94	13.00	0.640	0.280	22.3
Hotspot Test data(Separate 10mm)											
Front side	802.11ax 80M	119/6545	100.00%	1.000	0.008	0.07	12.79	13.00	1.050	0.008	22.3
Back side	802.11ax 80M	119/6545	100.00%	1.000	0.156	-0.01	12.79	13.00	1.050	0.164	22.3
Right side	802.11ax 80M	119/6545	100.00%	1.000	0.135	0.09	12.79	13.00	1.050	0.142	22.3
Back side	802.11ax 80M	7/5985	100.00%	1.000	0.211	0.03	12.07	13.00	1.239	0.261	22.3
Back side	802.11ax 80M	71/6305	100.00%	1.000	0.145	0.07	12.09	13.00	1.233	0.179	22.3
Back side	802.11ax 80M	167/6785	100.00%	1.000	0.172	-0.11	12.63	13.00	1.089	0.187	22.3
Back side	802.11ax 80M	215/7025	100.00%	1.000	0.302	0.04	12.96	13.00	1.009	0.305	22.3
Test Record ANT7+9 MIMO											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test data											
Left cheek	802.11ax 80M	119/6545	100.00%	1.000	0.351	0.05	17.75	18.00	1.059	0.372	22.3
Left tilted	802.11ax 80M	119/6545	100.00%	1.000	0.403	-0.01	17.75	18.00	1.059	0.427	22.3
Right cheek	802.11ax 80M	119/6545	100.00%	1.000	0.352	0.09	17.75	18.00	1.059	0.373	22.3
Right tilted	802.11ax 80M	119/6545	100.00%	1.000	0.414	0.09	17.75	18.00	1.059	0.439	22.3
Right tilted	802.11ax 80M	7/5985	100.00%	1.000	0.644	0.01	17.13	18.00	1.222	0.787	22.3
Right tilted	802.11ax 80M	71/6305	100.00%	1.000	0.477	0.01	17.07	18.00	1.239	0.591	22.3
Right tilted	802.11ax 80M	167/6785	100.00%	1.000	0.482	0.07	17.59	18.00	1.099	0.530	22.3
Right tilted	802.11ax 80M	215/7025	100.00%	1.000	0.705	-0.03	17.51	18.00	1.119	0.789	22.3
Head Test data For Simultaneous											
Left cheek	802.11ax 80M	119/6545	100.00%	1.000	0.351	0.05	17.75	13.00	0.335	0.118	22.3
Left tilted	802.11ax 80M	119/6545	100.00%	1.000	0.403	-0.01	17.75	13.00	0.335	0.135	22.3
Right cheek	802.11ax 80M	119/6545	100.00%	1.000	0.352	0.09	17.75	13.00	0.335	0.118	22.3
Right tilted	802.11ax 80M	119/6545	100.00%	1.000	0.414	0.09	17.75	13.00	0.335	0.139	22.3
Right tilted	802.11ax 80M	7/5985	100.00%	1.000	0.644	0.01	17.13	13.00	0.386	0.249	22.3
Right tilted	802.11ax 80M	71/6305	100.00%	1.000	0.477	0.01	17.07	13.00	0.392	0.187	22.3
Right tilted	802.11ax 80M	167/6785	100.00%	1.000	0.482	0.07	17.59	13.00	0.348	0.168	22.3
Right tilted	802.11ax 80M	215/7025	100.00%	1.000	0.705	-0.03	17.51	13.00	0.354	0.250	22.3
Body worn Test data(Separate 15mm)											
Front side	802.11ax 80M	119/6545	100.00%	1.000	0.037	-0.04	17.75	18.00	1.059	0.039	22.3



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t (86-512) 62992980 www.sgs.com.cn  
t (86-512) 62992980 sgs.china@sgs.com

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Back side	802.11ax 80M	119/6545	100.00%	1.000	0.169	0.07	17.75	18.00	1.059	0.179	22.3
Back side	802.11ax 80M	7/5985	100.00%	1.000	0.312	0.02	17.13	18.00	1.222	0.381	22.3
Back side	802.11ax 80M	71/6305	100.00%	1.000	0.192	0.07	17.07	18.00	1.239	0.238	22.3
Back side	802.11ax 80M	167/6785	100.00%	1.000	0.199	0.05	17.59	18.00	1.099	0.219	22.3
Back side	802.11ax 80M	215/7025	100.00%	1.000	0.388	-0.01	17.51	18.00	1.119	0.434	22.3
Body worn Test data(Separate 15mm) For Simultaneous											
Front side	802.11ax 80M	119/6545	100.00%	1.000	0.037	-0.04	17.75	16.00	0.668	0.025	22.3
Back side	802.11ax 80M	119/6545	100.00%	1.000	0.169	0.07	17.75	16.00	0.668	0.113	22.3
Back side	802.11ax 80M	7/5985	100.00%	1.000	0.312	0.02	17.13	16.00	0.771	0.241	22.3
Back side	802.11ax 80M	71/6305	100.00%	1.000	0.192	0.07	17.07	16.00	0.782	0.150	22.3
Back side	802.11ax 80M	167/6785	100.00%	1.000	0.199	0.05	17.59	16.00	0.693	0.138	22.3
Back side	802.11ax 80M	215/7025	100.00%	1.000	0.388	-0.01	17.51	16.00	0.706	0.274	22.3
Hotspot Test data(Separate 10mm)											
Front side	802.11ax 80M	119/6545	100.00%	1.000	0.037	0.05	14.83	15.00	1.040	0.038	22.3
Back side	802.11ax 80M	119/6545	100.00%	1.000	0.165	-0.01	14.83	15.00	1.040	0.172	22.3
Right side	802.11ax 80M	119/6545	100.00%	1.000	0.042	0.04	14.83	15.00	1.040	0.044	22.3
Top side	802.11ax 80M	119/6545	100.00%	1.000	0.155	0.09	14.83	15.00	1.040	0.161	22.3
Back side	802.11ax 80M	7/5985	100.00%	1.000	0.241	0.02	14.19	15.00	1.205	0.290	22.3
Back side	802.11ax 80M	71/6305	100.00%	1.000	0.171	-0.16	14.16	15.00	1.213	0.207	22.3
Back side	802.11ax 80M	167/6785	100.00%	1.000	0.172	0.07	14.55	15.00	1.109	0.191	22.3
Back side	802.11ax 80M	215/7025	100.00%	1.000	0.251	-0.04	14.47	15.00	1.130	0.284	22.3

Table 37: SAR of WIFI 6E for Head and Body.

Test Position	Channel/ Frequency	Measured SAR (1g)	1 <sup>st</sup> Repeated	Ratio	2 <sup>nd</sup> Repeated	3 <sup>rd</sup> Repeated
	(MHz)		SAR (1g)		SAR (1g)	SAR (1g)
Right tilted	215/7025	0.882	0.865	1.019653179	N/A	N/A

Note: 1) When the original highest measured SAR is  $\geq 0.80$  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  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 1.5$  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



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t (86-512) 62992980 www.sgs.com.cn

t (86-512) 62992980 sgs.china@sgs.com

### 9.2.3 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 1-g (W/kg)	Liquid Temp.(°C)
Head Test data											
Left cheek	DH5	39/2441	77.68%	1.287	0.052	-0.04	7.49	7.50	1.002	0.066	22.2
Left tilted	DH5	39/2441	77.68%	1.287	0.051	-0.05	7.49	7.50	1.002	0.066	22.2
Right cheek	DH5	39/2441	77.68%	1.287	0.025	0.01	7.49	7.50	1.002	0.032	22.2
Right tilted	DH5	39/2441	77.68%	1.287	0.011	0.09	7.49	7.50	1.002	0.014	22.2
Body worn Test data(Separate 15mm)											
Front side	DH5	39/2441	77.68%	1.287	0.003	0.02	7.49	7.50	1.002	0.004	22.2
Back side	DH5	39/2441	77.68%	1.287	0.011	-0.03	7.49	7.50	1.002	0.014	22.2
Hotspot Test data (Separate 10mm)											
Front side	DH5	39/2441	77.68%	1.287	0.006	0.14	7.49	7.50	1.002	0.008	22.2
Back side	DH5	39/2441	77.68%	1.287	0.008	0.08	7.49	7.50	1.002	0.010	22.2
Right side	DH5	39/2441	77.68%	1.287	0.012	-0.02	7.49	7.50	1.002	0.016	22.2
Top side	DH5	39/2441	77.68%	1.287	0.006	0.03	7.49	7.50	1.002	0.008	22.2

Table 38: SAR of BT for Head and Body.



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## 9.2.1 SAR Result of NFC

Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 10-g	Power drift (dB)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
NFC Test data (Separate 0mm)									
Front side	NFC	13.56MHz	100.00%	1.000	0.001	-0.03	1.000	0.001	22.5
Back side	NFC	13.56MHz	100.00%	1.000	0.050	0.02	1.000	0.050	22.5
Left side	NFC	13.56MHz	100.00%	1.000	0.001	0.05	1.000	0.001	22.5
Right side	NFC	13.56MHz	100.00%	1.000	0.001	0.01	1.000	0.001	22.5
Top side	NFC	13.56MHz	100.00%	1.000	0.001	0.06	1.000	0.001	22.5
Bottom side	NFC	13.56MHz	100.00%	1.000	0.001	-0.08	1.000	0.001	22.5

Table 39: SAR of NFC for Body.



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## 9.3 Multiple Transmitter Evaluation

### 9.3.1 Simultaneous SAR test evaluation

#### Simultaneous Transmission Possibilities

NO	Simultaneous Tx Combination	Head	Body- worn	Hotspot	Product Specific 10-g (0mm)
1	WWAN + WIFI2.4G Ant7	Y	Y	Y	Y
2	WWAN + WIFI2.4G Ant9	Y	Y	Y	Y
3	WWAN + WIFI2.4G MIMO	Y	Y	Y	Y
4	WWAN + WIFI2.4G Ant9+BT Ant7	Y	Y	Y	Y
5	WWAN + BT Ant7	Y	Y	Y	Y
6	WWAN + WIFI5G Ant7+ BT Ant7	Y	Y	Y	Y
7	WWAN + WIFI5G Ant9+ BT Ant7	Y	Y	Y	Y
8	WWAN + WIFI5G MIMO+ BT Ant7	Y	Y	Y	Y
9	WWAN + WIFI6E Ant7+ BT Ant7	Y	Y	Y	Y
10	WWAN + WIFI6E Ant9+ BT Ant7	Y	Y	Y	Y
11	WWAN + WIFI6E MIMO+ BT Ant7	Y	Y	Y	Y

#### Note:

- 1) The device 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.
- 3) NFC is different from the working scenario of WWAN/WIFI(Head/Body-worn/Hotspot) and does not participate in the simultaneous transmission.
- 4) Per FCC KDB Publication 648474 D04 Handset SAR, Phablet SAR tests were not required it wireless router 1g SAR(Scaled to the maximum output power ,including tolerance) < 1.2 W/Kg. Therefore, no further analysis beyond tables included in this section was required to determine that possible Simultaneous transmission scenarios would not exceed the SAR limit.



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### 9.3.2 Simultaneous Transmission SAR Summation Scenario

#### Simultaneous Transmission SAR Summation Scenario for WLAN Head:

Test position		SARmax (W/kg)											Summed SAR									
		WWAN	WiFi 2.4G Ant7	WiFi 2.4G Ant9	WiFi 2.4G MIMO	WiFi 5G Ant7	WiFi 5G Ant9	WiFi 5G MIMO	WiFi 6E Ant7	WiFi 6E Ant9	WiFi 6E MIMO	BT Ant7										
		1	2	3	4	5	6	7	9	10	11	8	1+2	1+3	1+4	1+3+8	1+5+8	1+6+8	1+7+8	1+8+9	1+8+10	1+8+11
GSM850	Left cheek	0.398	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.866	0.752	0.859	0.818	0.725	0.813	0.818	0.587	0.476	0.583
	Left tilted	0.178	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.440	0.409	0.406	0.475	0.509	0.411	0.615	0.378	0.249	0.380
	Right cheek	0.454	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.663	0.649	0.639	0.681	0.726	0.573	0.724	0.596	0.494	0.605
	Right tilted	0.218	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.365	0.337	0.388	0.351	0.456	0.334	0.510	0.512	0.355	0.484
GSM1900	Left cheek	0.200	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.668	0.554	0.661	0.620	0.527	0.615	0.620	0.389	0.278	0.385
	Left tilted	0.128	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.390	0.359	0.356	0.425	0.459	0.361	0.565	0.328	0.199	0.330
	Right cheek	0.137	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.346	0.332	0.322	0.364	0.409	0.256	0.407	0.279	0.177	0.288
	Right tilted	0.135	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.282	0.254	0.305	0.268	0.373	0.251	0.427	0.429	0.272	0.401
WCDMA II	Left cheek	0.206	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.674	0.560	0.667	0.626	0.533	0.621	0.626	0.395	0.284	0.391
	Left tilted	0.127	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.389	0.358	0.355	0.424	0.458	0.360	0.564	0.327	0.198	0.329
	Right cheek	0.160	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.369	0.355	0.345	0.387	0.432	0.279	0.430	0.302	0.200	0.311
	Right tilted	0.133	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.280	0.252	0.303	0.266	0.371	0.249	0.425	0.427	0.270	0.399
WCDMA IV	Left cheek	0.113	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.581	0.467	0.574	0.533	0.440	0.528	0.533	0.302	0.191	0.298
	Left tilted	0.096	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.358	0.327	0.324	0.393	0.427	0.329	0.533	0.296	0.167	0.298
	Right cheek	0.139	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.348	0.334	0.324	0.366	0.411	0.258	0.409	0.281	0.179	0.290
	Right tilted	0.105	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.252	0.224	0.275	0.238	0.343	0.221	0.397	0.399	0.242	0.371
WCDMA V	Left cheek	0.202	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.670	0.556	0.663	0.622	0.529	0.617	0.622	0.391	0.280	0.387
	Left tilted	0.118	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.380	0.349	0.346	0.415	0.449	0.351	0.555	0.318	0.189	0.320
	Right cheek	0.219	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.428	0.414	0.404	0.446	0.491	0.338	0.489	0.361	0.259	0.370
	Right tilted	0.130	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.277	0.249	0.300	0.263	0.368	0.246	0.422	0.424	0.267	0.396
LTE Band 2	Left cheek	0.763	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	1.231	1.117	1.224	1.183	1.090	1.178	1.183	0.952	0.841	0.948
	Left tilted	0.777	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	1.039	1.008	1.005	1.074	1.108	1.010	1.214	0.977	0.848	0.979
	Right cheek	1.166	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.375	1.361	1.351	1.393	1.438	1.285	1.436	1.308	1.206	1.317
	Right tilted	1.164	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	1.311	1.283	1.334	1.297	1.402	1.280	1.456	1.458	1.301	1.430
LTE Band 5	Left cheek	0.787	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	1.255	1.141	1.248	1.207	1.114	1.202	1.207	0.976	0.865	0.972
	Left tilted	0.453	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.715	0.684	0.681	0.750	0.784	0.686	0.890	0.653	0.524	0.655
	Right cheek	0.880	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.089	1.075	1.065	1.107	1.152	0.999	1.150	1.022	0.920	1.031
	Right tilted	0.517	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.664	0.636	0.687	0.650	0.755	0.633	0.809	0.811	0.654	0.783
LTE Band 12	Left cheek	0.162	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.630	0.516	0.623	0.582	0.489	0.577	0.582	0.351	0.240	0.347
	Left tilted	0.085	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.347	0.316	0.313	0.382	0.416	0.318	0.522	0.285	0.156	0.287
	Right cheek	0.186	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.395	0.381	0.371	0.413	0.458	0.305	0.456	0.328	0.226	0.337
	Right tilted	0.091	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.238	0.210	0.261	0.224	0.329	0.207	0.383	0.385	0.228	0.357
LTE Band 14	Left cheek	0.206	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.674	0.560	0.667	0.626	0.533	0.621	0.626	0.395	0.284	0.391
	Left tilted	0.130	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.392	0.361	0.358	0.427	0.461	0.363	0.567	0.330	0.201	0.332
	Right cheek	0.221	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.430	0.416	0.406	0.448	0.493	0.340	0.491	0.363	0.261	0.372
	Right tilted	0.130	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.277	0.249	0.300	0.263	0.368	0.246	0.422	0.424	0.267	0.396
LTE Band 26	Left cheek	0.219	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.687	0.573	0.680	0.639	0.546	0.634	0.639	0.408	0.297	0.404
	Left tilted	0.117	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.379	0.348	0.345	0.414	0.448	0.350	0.554	0.317	0.188	0.319
	Right cheek	0.224	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.433	0.419	0.409	0.451	0.496	0.343	0.494	0.366	0.264	0.375
	Right tilted	0.117	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.264	0.236	0.287	0.250	0.355	0.233	0.409	0.411	0.254	0.383
LTE Band 30	Left cheek	0.689	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	1.157	1.043	1.150	1.109	1.016	1.104	1.109	0.878	0.767	0.874
	Left tilted	0.726	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.988	0.957	0.954	1.023	1.057	0.959	1.163	0.926	0.797	0.928
	Right cheek	1.051	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.260	1.246	1.236	1.278	1.323	1.170	1.321	1.193	1.091	1.202
	Right tilted	1.126	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	1.273	1.245	1.296	1.259	1.364	1.242	1.418	1.420	1.263	1.392
LTE Band 48	Left cheek	0.198	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.666	0.552	0.659	0.618	0.525	0.613	0.618	0.387	0.276	0.383
	Left tilted	0.149	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.411	0.380	0.377	0.446	0.480	0.382	0.586	0.349	0.220	0.351
	Right cheek	0.740	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.949	0.935	0.925	0.967	1.012	0.859	1.010	0.882	0.780	0.891



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	Right tilted	0.386	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.533	0.505	0.556	0.519	0.624	0.502	0.678	0.680	0.523	0.652
LTE Band 66	Left cheek	0.567	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	1.035	0.921	1.028	0.987	0.894	0.982	0.987	0.756	0.645	0.752
	Left tilted	0.594	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.856	0.825	0.822	0.891	0.925	0.827	1.031	0.794	0.665	0.796
	Right cheek	1.092	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.301	1.287	1.277	1.319	1.364	1.211	1.362	1.234	1.132	1.243
	Right tilted	0.922	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	1.069	1.041	1.092	1.055	1.160	1.038	1.214	1.216	1.059	1.188
LTE Band 71	Left cheek	0.104	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.572	0.458	0.565	0.524	0.431	0.519	0.524	0.293	0.182	0.289
	Left tilted	0.050	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.312	0.281	0.278	0.347	0.381	0.283	0.487	0.250	0.121	0.252
	Right cheek	0.128	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.337	0.323	0.313	0.355	0.400	0.247	0.398	0.270	0.168	0.279
	Right tilted	0.066	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.213	0.185	0.236	0.199	0.304	0.182	0.358	0.360	0.203	0.332
5G NR n25	Left cheek	0.787	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	1.255	1.141	1.248	1.207	1.114	1.202	1.207	0.976	0.865	0.972
	Left tilted	0.932	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	1.194	1.163	1.160	1.229	1.263	1.165	1.369	1.132	1.003	1.134
	Right cheek	1.207	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.416	1.402	1.392	1.434	1.479	1.326	1.477	1.349	1.247	1.358
	Right tilted	1.278	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	1.425	1.397	1.448	1.411	1.516	1.394	1.570	1.572	1.415	1.544
5G NR n26	Left cheek	0.194	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.662	0.548	0.655	0.614	0.521	0.609	0.614	0.383	0.272	0.379
	Left tilted	0.106	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.368	0.337	0.334	0.403	0.437	0.339	0.543	0.306	0.177	0.308
	Right cheek	0.220	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.429	0.415	0.405	0.447	0.492	0.339	0.490	0.362	0.260	0.371
	Right tilted	0.126	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.273	0.245	0.296	0.259	0.364	0.242	0.418	0.420	0.263	0.392
5G NR n30	Left cheek	0.811	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	1.279	1.165	1.272	1.231	1.138	1.226	1.231	1.000	0.889	0.996
	Left tilted	1.002	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	1.264	1.233	1.230	1.299	1.333	1.235	1.439	1.202	1.073	1.204
	Right cheek	1.014	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.223	1.209	1.199	1.241	1.286	1.133	1.284	1.156	1.054	1.165
	Right tilted	1.192	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	1.339	1.311	1.362	1.325	1.430	1.308	1.484	1.486	1.329	1.458
5G NR n41	Left cheek	0.460	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.928	0.814	0.921	0.880	0.787	0.875	0.880	0.649	0.538	0.645
	Left tilted	0.574	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.836	0.805	0.802	0.871	0.905	0.807	1.011	0.774	0.645	0.776
	Right cheek	1.161	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.370	1.356	1.346	1.388	1.433	1.280	1.431	1.303	1.201	1.312
	Right tilted	1.206	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	1.353	1.325	1.376	1.339	1.444	1.322	1.498	1.500	1.343	1.472
5G NR n48	Left cheek	0.436	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.904	0.790	0.897	0.856	0.763	0.851	0.856	0.625	0.514	0.621
	Left tilted	0.309	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.571	0.540	0.537	0.606	0.640	0.542	0.746	0.509	0.380	0.511
	Right cheek	1.198	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.407	1.393	1.383	1.425	1.470	1.317	1.468	1.340	1.238	1.349
	Right tilted	0.687	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.834	0.806	0.857	0.820	0.925	0.803	0.979	0.981	0.824	0.953
5G NR n66	Left cheek	0.709	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	1.177	1.063	1.170	1.129	1.036	1.124	1.129	0.898	0.787	0.894
	Left tilted	0.729	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.991	0.960	0.957	1.026	1.060	0.962	1.166	0.929	0.800	0.931
	Right cheek	1.164	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.373	1.359	1.349	1.391	1.436	1.283	1.434	1.306	1.204	1.315
	Right tilted	0.975	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	1.122	1.094	1.145	1.108	1.213	1.091	1.267	1.269	1.112	1.241
5G NR n70	Left cheek	0.708	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	1.176	1.062	1.169	1.128	1.035	1.123	1.128	0.897	0.786	0.893
	Left tilted	0.678	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.940	0.909	0.906	0.975	1.009	0.911	1.115	0.878	0.749	0.880
	Right cheek	1.180	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.389	1.375	1.365	1.407	1.452	1.299	1.450	1.322	1.120	1.331
	Right tilted	0.986	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	1.133	1.105	1.156	1.119	1.224	1.102	1.278	1.280	1.123	1.252
5G NR n71	Left cheek	0.149	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.617	0.503	0.610	0.569	0.476	0.564	0.569	0.338	0.227	0.334
	Left tilted	0.081	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.343	0.312	0.309	0.378	0.412	0.314	0.518	0.281	0.152	0.283
	Right cheek	0.166	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	0.375	0.361	0.351	0.393	0.438	0.285	0.436	0.308	0.206	0.317
	Right tilted	0.095	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.242	0.214	0.265	0.228	0.333	0.211	0.387	0.389	0.232	0.361
5G NR n77 (3450-3550)	Left cheek	0.450	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	0.918	0.804	0.911	0.870	0.777	0.865	0.870	0.639	0.528	0.635
	Left tilted	0.245	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.507	0.476	0.473	0.542	0.576	0.478	0.682	0.445	0.316	0.447
	Right cheek	1.230	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.439	1.425	1.415	1.457	1.502	1.349	1.500	1.372	1.270	1.381
	Right tilted	0.689	0.147	0.119	0.170	0.224	0.102	0.278	0.280	0.123	0.252	0.014	0.836	0.808	0.859	0.822	0.927	0.805	0.981	0.983	0.826	0.955
5G NR n77 (3700-3980)	Left cheek	1.114	0.468	0.354	0.461	0.261	0.349	0.354	0.123	0.012	0.119	0.066	1.582	1.468	1.575	1.534	1.441	1.529	1.534	1.303	1.192	1.299
	Left tilted	0.728	0.262	0.231	0.228	0.265	0.167	0.371	0.134	0.005	0.136	0.066	0.990	0.959	0.956	1.025	1.059	0.961	1.165	0.928	0.799	0.930
	Right cheek	1.147	0.209	0.195	0.185	0.240	0.087	0.238	0.110	0.008	0.119	0.032	1.356	1.342	1.332	1.374	1.419	1.266	1.417	1.289	1.187	1



## Simultaneous Transmission SAR Summation Scenario for WLAN Body: Body-worn:

Test position		SARmax (W/kg)											Summed SAR									
		WWAN	WiFi 2.4G Ant7	WiFi 2.4G Ant9	WiFi 2.4G MIMO	WiFi 5G Ant7	WiFi 5G Ant9	WiFi 5G MIMO	WiFi 6E Ant7	WiFi 6E Ant9	WiFi 6E MIMO	BT Ant7										
		1	2	3	4	5	6	7	9	10	11	8	1+2	1+3	1+4	1+3+8	1+5+8	1+6+8	1+7+8	1+8+9	1+8+10	1+8+11
GSM850	Front side	0.289	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.410	0.333	0.376	0.338	0.404	0.407	0.372	0.327	0.300	0.319
	Back side	0.524	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.814	0.668	0.780	0.688	0.834	0.814	0.810	0.786	0.826	0.821
GSM1900	Front side	0.231	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.352	0.275	0.318	0.280	0.346	0.349	0.314	0.269	0.242	0.261
	Back side	0.348	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.638	0.492	0.604	0.512	0.658	0.638	0.634	0.610	0.650	0.645
WCDMA II	Front side	0.239	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.360	0.283	0.326	0.288	0.354	0.357	0.322	0.277	0.250	0.269
	Back side	0.392	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.682	0.536	0.648	0.556	0.702	0.682	0.678	0.654	0.694	0.689
WCDMA IV	Front side	0.178	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.299	0.222	0.265	0.227	0.293	0.296	0.261	0.216	0.189	0.208
	Back side	0.250	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.540	0.394	0.506	0.414	0.560	0.540	0.536	0.512	0.552	0.547
WCDMA V	Front side	0.218	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.339	0.262	0.305	0.267	0.333	0.336	0.301	0.256	0.229	0.248
	Back side	0.318	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.608	0.462	0.574	0.482	0.628	0.608	0.604	0.580	0.620	0.615
LTE Band 2	Front side	0.403	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.524	0.447	0.490	0.452	0.518	0.521	0.486	0.441	0.414	0.433
	Back side	0.851	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	1.141	0.995	1.107	1.015	1.161	1.141	1.137	1.113	1.153	1.148
LTE Band 5	Front side	0.098	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.219	0.142	0.185	0.147	0.213	0.216	0.181	0.136	0.109	0.128
	Back side	0.155	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.445	0.299	0.411	0.319	0.465	0.445	0.441	0.417	0.457	0.452
LTE Band 12	Front side	0.224	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.345	0.268	0.311	0.273	0.339	0.342	0.307	0.262	0.235	0.254
	Back side	0.307	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.597	0.451	0.563	0.471	0.617	0.597	0.593	0.569	0.609	0.604
LTE Band 14	Front side	0.252	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.373	0.296	0.339	0.301	0.367	0.370	0.335	0.290	0.263	0.282
	Back side	0.354	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.644	0.498	0.610	0.518	0.664	0.644	0.640	0.616	0.656	0.651
LTE Band 26	Front side	0.207	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.328	0.251	0.294	0.256	0.322	0.325	0.290	0.245	0.218	0.237
	Back side	0.340	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.630	0.484	0.596	0.504	0.650	0.630	0.626	0.602	0.642	0.637
LTE Band 30	Front side	0.294	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.415	0.338	0.381	0.343	0.409	0.412	0.377	0.332	0.305	0.324
	Back side	1.037	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	1.327	1.181	1.293	1.201	1.347	1.327	1.323	1.299	1.339	1.334
LTE Band 48	Front side	0.147	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.268	0.191	0.234	0.196	0.262	0.265	0.230	0.185	0.158	0.177
	Back side	0.279	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.569	0.423	0.535	0.443	0.589	0.569	0.565	0.541	0.581	0.576
LTE Band 66	Front side	0.336	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.457	0.380	0.423	0.385	0.451	0.454	0.419	0.374	0.347	0.366
	Back side	0.669	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.959	0.813	0.925	0.833	0.979	0.959	0.955	0.931	0.971	0.966
LTE Band 71	Front side	0.258	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.379	0.302	0.345	0.307	0.373	0.376	0.341	0.296	0.269	0.288
	Back side	0.350	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.640	0.494	0.606	0.514	0.660	0.640	0.636	0.612	0.652	0.647
5G NR n25	Front side	0.547	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.668	0.591	0.634	0.596	0.662	0.665	0.630	0.585	0.558	0.577
	Back side	0.828	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	1.118	0.972	1.084	0.992	1.138	1.118	1.114	1.090	1.130	1.125
5G NR n26	Front side	0.220	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.341	0.264	0.307	0.269	0.335	0.338	0.303	0.258	0.231	0.250
	Back side	0.350	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.640	0.494	0.606	0.514	0.660	0.640	0.636	0.612	0.652	0.647
5G NR n30	Front side	0.162	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.283	0.206	0.249	0.211	0.277	0.280	0.245	0.200	0.173	0.192
	Back side	0.581	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.871	0.725	0.837	0.745	0.891	0.871	0.867	0.843	0.883	0.878
5G NR n41	Front side	0.321	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.442	0.365	0.408	0.370	0.436	0.439	0.404	0.359	0.332	0.351
	Back side	1.234	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	1.524	1.378	1.490	1.398	1.544	1.524	1.520	1.496	1.536	1.531
5G NR n48	Front side	0.312	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.433	0.356	0.399	0.361	0.427	0.430	0.395	0.350	0.323	0.342
	Back side	0.576	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.866	0.720	0.832	0.740	0.886	0.866	0.862	0.838	0.878	0.873
5G NR n66	Front side	0.321	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.442	0.365	0.408	0.370	0.436	0.439	0.404	0.359	0.332	0.351
	Back side	0.642	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.932	0.786	0.898	0.806	0.952	0.932	0.928	0.904	0.944	0.939
5G NR n70	Front side	0.284	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.405	0.328	0.371	0.333	0.399	0.402	0.367	0.322	0.295	0.314
	Back side	0.608	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.898	0.752	0.864	0.772	0.918	0.898	0.894	0.870	0.910	0.905
5G NR n71	Front side	0.221	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.342	0.265	0.308	0.270	0.336	0.339	0.304	0.259	0.232	0.251
	Back side	0.301	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	0.591	0.445	0.557	0.465	0.611	0.591	0.587	0.563	0.603	0.598
5G NR n77 (3450-3550)	Front side	0.413	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.534	0.457	0.500	0.462	0.528	0.531	0.496	0.451	0.424	0.443
	Back side	0.796	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	1.086	0.940	1.052	0.960	1.106	1.086	1.082	1.058	1.098	1.093
	Front side	0.524	0.121	0.044	0.087	0.110	0.113	0.078	0.033	0.006	0.025	0.005	0.645	0.568	0.611	0.573	0.639	0.642	0.607	0.562	0.535	0.554



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5G NR n77 (3700- 3980)	Back side	1.097	0.290	0.144	0.256	0.290	0.270	0.266	0.242	0.282	0.277	0.020	1.387	1.241	1.353	1.261	1.407	1.387	1.383	1.359	1.399	1.394
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## Hotspot:

Test position		SARmax (W/kg)											Summed SAR										
		WWAN	WiFi 2.4G Ant7	WiFi 2.4G Ant9	WiFi 2.4G MIMO	WiFi 5G Ant7	WiFi 5G Ant9	WiFi 5G MIMO	WiFi 6E Ant7	WiFi 6E Ant9	WiFi 6E MIMO	BT Ant7											
		1	2	3	4	5	6	7	9	10	11	8	1+2	1+3	1+4	1+3+8	1+5+8	1+6+8	1+7+8	1+8+9	1+8+10	1+8+11	
GSM850	Front side	0.533	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.639	0.618	0.622	0.626	0.632	0.601	0.620	0.577	0.549	0.579	
	Back side	1.062	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	1.340	1.346	1.311	1.356	1.360	1.347	1.370	1.338	1.380	1.366	
	Left side	0.301	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.301	0.301	0.301	0.301	0.301	0.301	0.301	0.301	0.301	0.301	
	Right side	0.393	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.542	0.580	0.581	0.596	0.482	0.648	0.541	0.451	0.553	0.453	
	Top side	0.000	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.088	0.000	0.066	0.008	0.217	0.008	0.247	0.112	0.008	0.171	
	Bottom side	0.544	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544	
GSM1900	Front side	0.416	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.522	0.501	0.505	0.509	0.515	0.484	0.503	0.460	0.432	0.462	
	Back side	0.690	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	0.968	0.974	0.939	0.984	0.988	0.975	0.998	0.966	1.008	0.994	
	Left side	0.388	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.388	0.388	0.388	0.388	0.388	0.388	0.388	0.388	0.388	0.388	
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060	
	Top side	0.000	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.088	0.000	0.066	0.008	0.217	0.008	0.247	0.112	0.008	0.171	
	Bottom side	0.486	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	
WCDMA II	Front side	0.417	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.523	0.502	0.506	0.510	0.516	0.485	0.504	0.461	0.433	0.463	
	Back side	0.750	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	1.028	1.034	0.999	1.044	1.048	1.035	1.058	1.026	1.068	1.054	
	Left side	0.283	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060	
	Top side	0.000	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.088	0.000	0.066	0.008	0.217	0.008	0.247	0.112	0.008	0.171	
	Bottom side	0.381	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.381	0.381	0.381	0.381	0.381	0.381	0.381	0.381	0.381	0.381	
WCDMA IV	Front side	0.298	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.404	0.383	0.387	0.391	0.397	0.366	0.385	0.342	0.314	0.344	
	Back side	0.565	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	0.843	0.849	0.814	0.859	0.863	0.850	0.873	0.841	0.883	0.869	
	Left side	0.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.317	0.317	0.317	0.317	0.317	0.317	0.317	0.317	0.317	0.317	
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060	
	Top side	0.000	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.088	0.000	0.066	0.008	0.217	0.008	0.247	0.112	0.008	0.171	
	Bottom side	0.337	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	
WCDMA V	Front side	0.344	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.450	0.429	0.433	0.437	0.443	0.412	0.431	0.388	0.360	0.390	
	Back side	0.666	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	0.944	0.950	0.915	0.960	0.964	0.951	0.974	0.942	0.984	0.970	
	Left side	0.089	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	
	Right side	0.256	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.405	0.443	0.444	0.459	0.345	0.511	0.404	0.314	0.416	0.316	
	Top side	0.000	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.088	0.000	0.066	0.008	0.217	0.008	0.247	0.112	0.008	0.171	
	Bottom side	0.263	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.263	0.263	0.263	0.263	0.263	0.263	0.263	0.263	0.263	0.263	
LTE Band 2	Front side	0.599	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.705	0.684	0.688	0.692	0.698	0.667	0.686	0.643	0.615	0.645	
	Back side	1.213	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	1.491	1.497	1.462	1.507	1.511	1.498	1.521	1.489	1.531	1.517	
	Left side	0.346	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060	
	Top side	1.048	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	1.136	1.048	1.114	1.056	1.265	1.056	1.295	1.160	1.056	1.219	
	Bottom side	0.363	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.363	0.363	0.363	0.363	0.363	0.363	0.363	0.363	0.363	0.363	
LTE Band 5	Front side	0.180	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.286	0.265	0.269	0.273	0.279	0.248	0.267	0.224	0.196	0.226	
	Back side	0.325	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	0.603	0.609	0.574	0.619	0.623	0.610	0.633	0.601	0.643	0.629	
	Left side	0.093	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060	
	Top side	0.234	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.322	0.234	0.300	0.242	0.451	0.242	0.481	0.346	0.242	0.405	
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LTE Band 12	Front side	0.295	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.401	0.380	0.384	0.388	0.394	0.363	0.382	0.339	0.311	0.341	
	Back side	0.540	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	0.818	0.824	0.789	0.834	0.838	0.825	0.848	0.816	0.858	0.844	



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	Left side	0.185	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.185	0.185	0.185	0.185	0.185	0.185	0.185	0.185	0.185		
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060
	Top side	0.000	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.088	0.000	0.066	0.008	0.217	0.008	0.247	0.112	0.008	0.171
	Bottom side	0.265	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265
LTE Band 14	Front side	0.309	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.415	0.394	0.398	0.402	0.408	0.377	0.396	0.353	0.325	0.355
	Back side	0.561	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	0.839	0.845	0.810	0.855	0.859	0.846	0.869	0.837	0.879	0.865
	Left side	0.131	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060
	Top side	0.000	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.088	0.000	0.066	0.008	0.217	0.008	0.247	0.112	0.008	0.171
	Bottom side	0.278	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278
LTE Band 26	Front side	0.421	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.527	0.506	0.510	0.514	0.520	0.489	0.508	0.465	0.437	0.467
	Back side	0.866	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	1.144	1.150	1.115	1.160	1.164	1.151	1.174	1.142	1.184	1.170
	Left side	0.247	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.247	0.247	0.247	0.247	0.247	0.247	0.247	0.247	0.247	0.247
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060
	Top side	0.000	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.088	0.000	0.066	0.008	0.217	0.008	0.247	0.112	0.008	0.171
	Bottom side	0.398	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398
LTE Band 30	Front side	0.347	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.453	0.432	0.436	0.440	0.446	0.415	0.434	0.391	0.363	0.393
	Back side	1.254	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	1.532	1.538	1.503	1.548	1.552	1.539	1.562	1.530	1.572	1.558



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	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060
	Top side	1.079	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	1.167	1.079	1.145	1.087	1.296	1.087	1.326	1.191	1.087	1.250
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5G NR n41	Front side	0.321	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.427	0.406	0.410	0.414	0.420	0.389	0.408	0.365	0.337	0.367
	Back side	1.217	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	1.495	1.501	1.466	1.511	1.515	1.502	1.525	1.493	1.535	1.521
	Left side	0.203	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203
	Right side	0.158	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.307	0.345	0.346	0.361	0.247	0.413	0.306	0.216	0.318	0.218
	Top side	0.966	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	1.054	0.966	1.032	0.974	1.183	0.974	1.213	1.078	0.974	1.137
	Bottom side	1.078	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.078	1.078	1.078	1.078	1.078	1.078	1.078	1.078	1.078	1.078
5G NR n48	Front side	0.495	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.601	0.580	0.584	0.588	0.594	0.563	0.582	0.539	0.511	0.541
	Back side	0.920	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	1.198	1.204	1.169	1.214	1.218	1.205	1.228	1.196	1.238	1.224
	Left side	1.180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.180	1.180	1.180	1.180	1.180	1.180	1.180	1.180	1.180	1.180
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060
	Top side	0.299	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.387	0.299	0.365	0.307	0.516	0.307	0.546	0.411	0.307	0.470
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5G NR n66	Front side	0.558	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.664	0.643	0.647	0.651	0.657	0.626	0.645	0.602	0.574	0.604
	Back side	1.191	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	1.469	1.475	1.440	1.485	1.489	1.476	1.499	1.467	1.509	1.495
	Left side	0.311	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.311	0.311	0.311	0.311	0.311	0.311	0.311	0.311	0.311	0.311
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060
	Top side	0.602	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.690	0.602	0.668	0.610	0.819	0.610	0.849	0.714	0.610	0.773
	Bottom side	0.347	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.347	0.347	0.347	0.347	0.347	0.347	0.347	0.347	0.347	0.347
5G NR n70	Front side	0.482	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.588	0.567	0.571	0.575	0.581	0.550	0.569	0.526	0.498	0.528
	Back side	1.138	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	1.416	1.422	1.387	1.432	1.436	1.423	1.446	1.414	1.456	1.442
	Left side	0.309	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060
	Top side	0.515	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.603	0.515	0.581	0.523	0.732	0.523	0.762	0.627	0.523	0.686
	Bottom side	0.389	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.389	0.389	0.389	0.389	0.389	0.389	0.389	0.389	0.389	0.389
5G NR n71	Front side	0.218	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.324	0.303	0.307	0.311	0.317	0.286	0.305	0.262	0.234	0.264
	Back side	0.360	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	0.638	0.644	0.609	0.654	0.658	0.645	0.668	0.636	0.678	0.664
	Left side	0.166	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166
	Right side	0.000	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.149	0.187	0.188	0.203	0.089	0.255	0.148	0.058	0.160	0.060
	Top side	0.000	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.088	0.000	0.066	0.008	0.217	0.008	0.247	0.112	0.008	0.171
	Bottom side	0.215	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215
5G NR n77 (3450-3550)	Front side	0.345	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.451	0.430	0.434	0.438	0.444	0.413	0.432	0.389	0.361	0.391
	Back side	0.799	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	1.077	1.083	1.048	1.093	1.097	1.084	1.107	1.075	1.117	1.103
	Left side	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667
	Right side	0.083	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.232	0.270	0.271	0.286	0.172	0.338	0.231	0.141	0.243	0.143
	Top side	0.198	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.286	0.198	0.264	0.206	0.415	0.206	0.445	0.310	0.206	0.369
	Bottom side	0.129	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.129	0.129	0.129	0.129	0.129	0.129	0.129	0.129	0.129	0.129
5G NR n77 (3700-3980)	Front side	0.622	0.106	0.085	0.089	0.091	0.060	0.079	0.036	0.008	0.038	0.008	0.728	0.707	0.711	0.715	0.721	0.690	0.709	0.666	0.638	0.668
	Back side	1.166	0.278	0.284	0.249	0.288	0.275	0.298	0.266	0.308	0.294	0.010	1.444	1.450	1.415	1.460	1.464	1.451	1.474	1.442	1.484	1.470
	Left side	1.091	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091
	Right side	0.509	0.149	0.187	0.188	0.073	0.239	0.132	0.042	0.144	0.044	0.016	0.658	0.696	0.697	0.712	0.598	0.764	0.657	0.567	0.669	0.569
	Top side	0.472	0.088	0.000	0.066	0.209	0.000	0.239	0.104	0.000	0.163	0.008	0.560	0.472	0.538	0.480	0.689	0.480	0.719	0.584	0.480	0.643
	Bottom side	0.361	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.361	0.361	0.361	0.361	0.361	0.361	0.361	0.361	0.361	0.361

## Handheld:

Test position		SARmax (W/kg)					Summed SAR			
		WWAN	WiFi 2.4G MIMO	WiFi 5G Ant7	WiFi 5G Ant9	WiFi 5G MIMO				
		1	4	5	6	7	1+4	1+5	1+6	1+8
LTE Band 2	Front side	0.000	0.000	0.516	0.266	0.458	0.000	0.516	0.266	0.458
	Back side	1.787	0.771	0.951	0.000	0.865	2.558	2.738	1.787	2.652



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	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.296	0.898	1.572	0.000	0.296	0.898	1.572
	Top side	1.644	0.000	0.890	0.000	0.656	1.644	2.534	1.644	2.300
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 30	Front side	0.000	0.000	0.516	0.266	0.458	0.000	0.516	0.266	0.458
	Back side	2.498	0.771	0.951	0.000	0.865	3.269	3.449	2.498	3.363
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.296	0.898	1.572	0.000	0.296	0.898	1.572
	Top side	2.596	0.000	0.890	0.000	0.656	2.596	3.486	2.596	3.252
	Bottom side	2.120	0.000	0.000	0.000	0.000	2.120	2.120	2.120	2.120
LTE Band 66	Front side	0.000	0.000	0.516	0.266	0.458	0.000	0.516	0.266	0.458
	Back side	1.984	0.771	0.951	0.000	0.865	2.755	2.935	1.984	2.849
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.296	0.898	1.572	0.000	0.296	0.898	1.572
	Top side	0.000	0.000	0.890	0.000	0.656	0.000	0.890	0.000	0.656
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5G NR n25	Front side	0.000	0.000	0.516	0.266	0.458	0.000	0.516	0.266	0.458
	Back side	2.318	0.771	0.951	0.000	0.865	3.089	3.269	2.318	3.183
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.296	0.898	1.572	0.000	0.296	0.898	1.572
	Top side	2.924	0.000	0.890	0.000	0.656	2.924	3.814	2.924	3.580
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5G NR n30	Front side	0.000	0.000	0.516	0.266	0.458	0.000	0.516	0.266	0.458
	Back side	1.889	0.771	0.951	0.000	0.865	2.660	2.840	1.889	2.754
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.296	0.898	1.572	0.000	0.296	0.898	1.572
	Top side	2.598	0.000	0.890	0.000	0.656	2.598	3.488	2.598	3.254
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5G NR n41	Front side	0.000	0.000	0.516	0.266	0.458	0.000	0.516	0.266	0.458
	Back side	3.030	0.771	0.951	0.000	0.865	3.801	3.981	3.030	3.895
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.296	0.898	1.572	0.000	0.296	0.898	1.572
	Top side	2.332	0.000	0.890	0.000	0.656	2.332	3.222	2.332	2.988
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5G NR n66	Front side	0.000	0.000	0.516	0.266	0.458	0.000	0.516	0.266	0.458
	Back side	2.194	0.771	0.951	0.000	0.865	2.965	3.145	2.194	3.059
	Left side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right side	0.000	0.000	0.296	0.898	1.572	0.000	0.296	0.898	1.572
	Top side	0.000	0.000	0.890	0.000	0.656	0.000	0.890	0.000	0.656
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5G NR n77 (3700-3980)	Front side	0.000	0.000	0.516	0.266	0.458	0.000	0.516	0.266	0.458
	Back side	1.864	0.771	0.951	0.000	0.865	2.635	2.815	1.864	2.729
	Left side	2.579	0.000	0.000	0.000	0.000	2.579	2.579	2.579	2.579
	Right side	0.000	0.000	0.296	0.898	1.572	0.000	0.296	0.898	1.572
	Top side	0.000	0.000	0.890	0.000	0.656	0.000	0.890	0.000	0.656
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000



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中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南面 邮编: 215000

t (86-512) 62992980 www.sgs.com.cn  
t (86-512) 62992980 sgs.china@sgs.com

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## 10 Equipment list

Test Platform		SPEAG DASY8 Professional				
Description		SAR Test System (Frequency range 10MHz-10GHz)				
Software Reference		DASY8 Module SAR V16.2.0.1425				
Hardware Reference						
Equipment		Manufacturer	Model	Serial Number	Calibration Date	Due date of calibration
<input checked="" type="checkbox"/>	Twin Phantom	SPEAG	SAM 3	1770	NCR	NCR
<input checked="" type="checkbox"/>	Twin Phantom	SPEAG	Twin-SAM V8.0	2103	NCR	NCR
<input checked="" type="checkbox"/>	Twin Phantom	SPEAG	EL4	1143	NCR	NCR
<input checked="" type="checkbox"/>	DAE	SPEAG	DAE4	1374	2023-06-05	2024-06-04
<input checked="" type="checkbox"/>	DAE	SPEAG	DAE4	1324	2022-10-17	2023-10-16
<input checked="" type="checkbox"/>	E-Field Probe	SPEAG	EX3DV4	3793	2022-09-30	2023-09-29
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	CLA-13	1032	2023-02-09	2024-02-08
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D750V3	1210	2021-09-08	2024-09-07
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D835V2	4d161	2020-08-28	2023-08-27
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D835V2	4d161	2023-08-25	2024-08-24
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D1750V2	1038	2021-12-16	2024-12-15
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D1950V3	1218	2023-05-04	2024-05-03
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D2300V2	1072	2022-06-16	2024-06-15
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D2450V2	922	2023-08-28	2024-08-27
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D2600V2	1180	2021-05-12	2024-05-11
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D3500V2	1124	2021-05-17	2024-05-16
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D3700V2	1094	2021-05-17	2024-05-16
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D3900V2	1071	2021-05-20	2024-05-19
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D5GHzV2	1313	2022-01-25	2025-01-24
<input checked="" type="checkbox"/>	Validation Kits	SPEAG	D6.5GHzV2	1030	2021-03-01	2024-02-29
<input checked="" type="checkbox"/>	Dielectric parameter probes	SPEAG	DAKS-12	1043	2023-07-31	2024-07-30
<input checked="" type="checkbox"/>	Vector Network Analyzer and Vector Reflectometer	SPEAG	DAKS_VNA R60	21423005	2023-07-31	2024-07-30
<input checked="" type="checkbox"/>	Dielectric parameter probes	SPEAG	DAKS-3.5	1120	2023-06-06	2024-06-05
<input checked="" type="checkbox"/>	Vector Network Analyzer and Vector Reflectometer	SPEAG	DAKS_VNA R140	0050920	2023-06-06	2024-06-05
<input checked="" type="checkbox"/>	Universal Radio Communication Tester	R&S	CMW500	111637	2022-09-26	2023-09-26
<input checked="" type="checkbox"/>	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
<input checked="" type="checkbox"/>	Signal Generator	R&S	SMB100A	182393	2023-02-06	2024-02-05
<input checked="" type="checkbox"/>	Preamplifier	Qiji	YX28980933	202104001	NCR	NCR
<input checked="" type="checkbox"/>	Power Sensor	Keysight	U2002H	MY48200110	2022-12-23	2023-12-22
<input checked="" type="checkbox"/>	Attenuator	SHX	TS2-3dB	30704	NCR	NCR
<input checked="" type="checkbox"/>	Coaxial low pass filter	Mini-Circuits	VLF-2500(+)	NA	NCR	NCR



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t (86-512) 62992980 www.sgsgroup.com.cn  
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<input checked="" type="checkbox"/>	Coaxial low pass filter	Microlab Fxr	LA-F13	NA	NCR	NCR
<input checked="" type="checkbox"/>	DC POWER SUPPLY	SAKO	SK1730SL5A	NA	NCR	NCR
<input checked="" type="checkbox"/>	Speed reading thermometer	LKM	DTM3000	SUW201-30-01	2022-09-19	2023-09-18
<input checked="" type="checkbox"/>	Speed reading thermometer	LKM	DTM3000	SUW201-19-02	2023-09-15	2024-09-14
<input checked="" type="checkbox"/>	Humidity and Temperature Indicator	MingGao	MingGao	NA	2022-09-19	2023-09-18
<input checked="" type="checkbox"/>	Humidity and Temperature Indicator	MingGao	MingGao	NA	2023-09-15	2024-09-14

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

## 11 Calibration certificate

Please see the Appendix C

## 12 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

---END---



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中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

t (86-512) 62992980 [www.sgsgroup.com.cn](http://www.sgsgroup.com.cn)

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