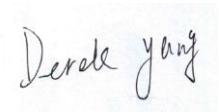
FCC SAR TEST REPORT

Report No:	AR/2020/C001008
Applicant:	Xiaomi Communications Co., Ltd.
Manufacturer:	Xiaomi Communications Co., Ltd.
Product Name:	Mobile Phone
Model No.(EUT):	M2012K11G
Brand Name:	Xiaomi
FCC ID:	2AFZZK11G
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2021-01-25
Date of Test:	2021-02-01 to 2021-02-18
Date of Issue:	2021-03-06
Test conclusion:	**PASS ***

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

Authorized Signature:



Derek Yang

Wireless Laboratory Manager

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

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

REVISION HISTORY

Report Number	Revision	Description	Issue Date
AR/2020/C001008	01	Original	2021-03-06

TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)			
	Head	Body-worn	Hotspot	Product specific 10g SAR
GSM850	0.52	0.16	0.27	/
GSM1900	0.88	0.20	0.45	/
WCDMA Band II	**0.95**	0.48	**0.93**	/
WCDMA Band IV	0.85	0.38	0.48	/
WCDMA Band V	0.56	0.17	0.29	/
LTE Band 2	0.94	0.50	0.85	/
LTE Band 4	0.89	0.43	0.62	/
LTE Band 5	0.54	0.19	0.29	/
LTE Band 7	0.49	**0.74**	0.38	/
LTE Band 12	0.65	0.20	0.34	/
LTE Band 17	0.69	0.20	0.37	/
LTE Band 38	0.70	0.40	0.39	/
LTE Band 41	0.65	0.35	0.41	/
LTE Band 66	0.72	0.40	0.66	/
NR Band 5	0.45	0.17	0.24	/
NR Band 7	0.48	0.45	0.45	/
NR Band 38	0.55	0.28	0.37	/
NR Band 41	0.58	0.26	0.44	/
NR Band 77	0.88	0.73	0.26	**2.66**
WiFi 2.4G	0.94	0.28	0.48	/
WiFi 5G	0.94	0.44	0.92	1.88
BT	0.64	0.08	0.18	/
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	1.59	1.46	1.56	3.66
SPLSR		N/A	N/A	N/A
SPLSR Limited	0.04			0.1

Note:
The Simultaneous transmission SAR is the same test position of the WWAN antenna + WiFi/BT antenna.

Approved & Released by

Simon Ling

SAR Manager

Tested by

Jackson Li

SAR Engineer

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1 General Information

1.1 Details of Client

Applicant:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Manufacturer:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.2 Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
Post code:	518057
Telephone:	+86 (0) 755 2601 2053
Fax:	+86 (0) 755 2671 0594
E-mail:	ee.shenzhen@sgs.com

1.3 Test Facility

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

• CNAS (No. CNAS L2929)

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

• A2LA (Certificate No. 3816.01)

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

• VCCI

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

• FCC –Designation Number: CN1178

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

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

• Industry Canada (IC)

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

CAB identifier: CN0006

IC#: 4620C.

1.4 General Description of EUT

Device Type :	portable device		
Exposure Category:	uncontrolled environment / general population		
Product Name:	Mobile Phone		
Model No.(EUT):	M2012K11G		
FCC ID:	2AFZZK11G		
Brand name:	Xiaomi		
Product Phase:	Identical Prototype		
IMEI:	865970050026465/865970050026242/865970050026259/865970050026317/ 865970050026309/865970050016268/865970050027489/865970050026481/ 865970050027000		
Hardware Version:	P2.1		
Software Version:	MIUI12		
Antenna Type:	PIFA Antenna		
Device Operating Configurations :			
Modulation Mode:	**GSM:** GMSK, 8PSK; **WCDMA:** QPSK; **LTE:** QPSK,16QAM,64QAM, 256QAM **5G NR:** DFT-s-OFDM (PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM), CP-OFDM (QPSK, 16QAM, 64QAM, 256QAM) **WIFI:** DSSS, OFDM, OFDMA; **BT:** GFSK, π/4DQPSK,8DPSK		
Device Class:	B		
GPRS Multi-slots Class:	33	EGPRS Multi-slots Class:	33
HSDPA UE Category:	24	HSUPA UE Category	6
DC-HSDPA UE Category:	24		
Power Class	4,tested with power level 5(GSM850)		
	1,tested with power level 0(GSM1900)		
	3, tested with power control “all 1”(WCDMA Band)		
	3, tested with power control Max Power(LTE Band)		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	GSM850	824~849	869~894
	GSM1900	1850~1910	1930~1990
	WCDMA Band II	1850~1910	1930~1990
	WCDMA Band IV	1710~1755	2110~2155
	WCDMA Band V	824~849	869~894
	LTE Band 2	1850 ~1910	1930 ~1990
	LTE Band 4	1710~1755	2110~2155
	LTE Band 5	824~849	869-894
	LTE Band 7	2500~2570	2620~2690
	LTE Band 12	699~716	729~746
	LTE Band 17	704~716	734~746
	LTE Band 38	2570~2620	2570~2620
	LTE Band 41	2496~2690	2496~2690
	LTE Band 66	1710~1780	2110~2200
	NR Band n5	824~849	869~894
	NR Band n7	2500~2570	2620~2690

	NR Band n38	2570~2620	2570~2620
	NR Band n41	2496~2690	2496~2690
	NR Band n77	3700~3980	3700~3980
	Bluetooth	2400~2483.5	2400~2483.5
	Wi-Fi 2.4G	2402~2472	2402~2472
	Wi-Fi 5G	5150~5250	5150~5250
		5250~5350	5250~5350
		5470~5725	5470~5725
		5725~5850	5725~5850

1.4.1 DUT Antenna Locations(Back View)

Refer to Appendix D Photographs

Note:

1) The test device is a smart phone. The overall diagonal dimension of this device is 173 mm. Per KDB 648474 D04, because the diagonal distance of this device is ≥160mm, so it is a phablet.
2) 3) For WiFi 2.4G/5G only support MIMO/CDD mode together, and it has no SISO antenna mode.

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

EUT Sides for SAR Testing							
Mode	Exposure Condition	Front	Back	Left	Right	Top	Bottom
Ant1	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	No	Yes
Ant2	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	Yes	No
Ant3	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	Yes	No
Ant4	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	Yes	No
Ant5	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	Yes	No
Ant8	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	No	No
Ant9	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	Yes	No
Ant10	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	No	Yes
Ant12	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	No	No
BT(Ant7)	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	Yes	No
BT(Ant11)	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	Yes	No
WIFI MIMO	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	Yes	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.

1.4.2 LTE CA additional specification

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

a) Intra-band carrier aggregation requirements for uplink.

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

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

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

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

- UL PCC configuration is determined by the required test channel

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

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

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

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

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

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

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

Intra-band contiguous CA operating bands：

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

1.4.3 Power reduction specification

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

1) A fixed level power reduction is applied for some frequency bands when hotspot mode becomes active. When the hotspot is disabled, the power value will be recovered.

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

3) 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.

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

The following tables summarize the key power reduction information. The detailed full power which is the Max. power the state can use and reduced tune-up specifications and conducted power measurement results are provided in Section 8 of this report.

Ant1 Power Level(dBm)								
Power Reduction Scenario	WCDMA B2	WCDMA B4	LTE B2	LTE B4	LTE B7	LTE B38	LTE B41	LTE B7 (ENDC)
Sensor off	25.0	25.0	25.5	25.5	25.5	25.5	25.5	23.3
Sensor on	24.0	23.0	23.5	24.5	20.5	22.5	22.5	18.3
Hotspot off	25.0	25.0	25.5	25.5	25.5	25.5	25.5	23.3
Hotspot on	24.0	23.0	23.5	24.5	20.5	22.5	22.5	18.3

Ant2 Power Level(dBm)					
Power Reduction Scenario	GSM850	WCDMA B5	LTE B5	LTE B12	LTE B17
Receiver off	34.5	25.7	25.7	25.7	25.7
Receiver on	32.5	22.7	21.7	22.7	21.7
Hotspot off	34.5	25.7	25.7	25.7	25.7
Hotspot on	32.5	22.7	21.7	22.7	21.7

Ant4 Power Level(dBm)									
Power Reduction Scenario	WCDMA B2	WCDMA B4	LTE B2	LTE B4	LTE B7	LTE B38	LTE B41	LTE B66	LTE B7 (ENDC)
Receiver off	25.0	25.0	25.5	25.7	25.4	25.4	25.4	25.4	22.5
Receiver on	21.0	20.0	21.5	20.7	17.4	21.4	21.4	19.4	14.5
Hotspot off	25.0	25.0	25.5	25.7	25.4	25.4	25.4	25.4	22.5
Hotspot on	21.0	20.0	21.5	20.7	17.4	21.4	21.4	19.4	14.5
Sensor off	25.0	25.0	25.5	25.7	25.4	25.4	25.4	25.4	22.5
Sensor on	23.0	23.0	22.5	23.7	21.4	23.4	23.4	23.4	18.5

Ant8 Power Level(dBm)			
Power Reduction Scenario	LTE B7	LTE B38	LTE B7 (ENDC)
Receiver off	20.0	23.0	20.5
Receiver on	19.0	24.0	19.5
Hotspot off	20.0	/	/
Hotspot on	19.0	/	/

Ant9 Power Level(dBm)		
Power Reduction Scenario	LTE B38	LTE B41
Receiver off	20.2	20.2
Receiver on	24.2	24.2

Ant10 Power Level(dBm)			
Power Reduction Scenario	LTE B4	LTE B7	LTE B7 (ENDC)
Sensor off	24.5	24.5	25.5
Sensor on	23.5	19.5	20.5
Hotspot off	24.5	24.5	25.5
Hotspot on	23.5	19.5	20.5

5G NR antenna(Ant1) Power Level(dBm)			
Power Reduction Scenario	n7	n38	n41
Sensor off	22.2	22.1	21.8
Sensor on	17.2	18.1	17.8
Hotspot off	22.2	22.1	21.8
Hotspot on	17.2	18.1	17.8

5G NR antenna(Ant2) Power Level(dBm)		
Power Reduction Scenario	n5	n77
Receiver off	25.7	20.8
Receiver on	20.7	18.8
Hotspot off	/	20.8
Hotspot on	/	18.8

5G NR antenna(Ant3) Power Level(dBm)	
Power Reduction Scenario	n77
Receiver off	24.5
Receiver on	15.5
Hotspot off	24.5
Hotspot on	15.5
Sensor off	24.5
Sensor on	16.5

5G NR antenna(Ant4) Power Level(dBm)			
Power Reduction Scenario	n7	n38	n41
Sensor off	21.6	21.6	21.2
Sensor on	18.6	18.6	19.2
Receiver off	21.6	21.6	21.2
Receiver on	15.6	17.6	16.2
Hotspot off	21.6	21.6	21.2
Hotspot on	15.6	17.6	16.2

5G NR antenna(Ant5) Power Level(dBm)	
Power Reduction Scenario	n77
Receiver off	20.1
Receiver on	19.1
Hotspot off	20.1
Hotspot on	19.1

5G NR antenna(Ant8) Power Level(dBm)		
Power Reduction Scenario	n38	n41
Receiver off	20.0	20.0
Receiver on	21.0	21.0

5G NR antenna(Ant9) Power Level(dBm)		
Power Reduction Scenario	n38	n41
Receiver off	19.2	20.0
Receiver on	24.2	24.0

5G NR antenna(Ant10) Power Level(dBm)		
Power Reduction Scenario	n5	n7
Sensor off	25.5	25.5
Sensor on	24.5	21.5
Hotspot off	25.5	25.5
Hotspot on	24.5	21.5

5G NR antenna(Ant12) Power Level(dBm)	
Power Reduction Scenario	n77
Receiver off	18.8
Receiver on	24.8

WIFI 2.4g Power Level(dBm)						
Mode	Power Reduction Scenario	Receiver ff&Hotspot	Receiver on	Hotspot on	Receiver on+WWAN	Receiver on+WWAN+WiFi 5G
WIFI 2.4G MIMO	802.11b	23.5	21.5	22.5	20.5	17.5
	802.11g	22.5	21.5	22.5	20.5	17.5
	802.11n 20M	22.5	21.5	22.5	20.5	17.5
	802.11n 40M	20.5	20.5	20.5	20.5	17.5

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WIFI 5G Power Level(dBm)							
Mode	Power Reduction Scenario	Receiver off&Hotspot	Receiver on	Hotspot on	Receiver on+WWAN	Receiver on+WWAN+WiFi 2.4G or BT	Receiver off+WWAN or Receiver off+WWAN+WiFi 2.4G or BT
WIFI 5G 802.11a	U-NII-1	22.5	21.0	22.5	19.5	17.0	20.5
	U-NII-2A	22.5	21.0	22.5	19.5	17.0	20.5
	U-NII-2C	21.5	21.0	21.5	19.5	17.0	19.5
	U-NII-3	23.5	20.5	21.5	19.0	16.5	21.5
WIFI 5G 802.11n 20M	U-NII-1	22.5	21.0	22.5	19.5	17.0	20.5
	U-NII-2A	22.5	21.0	22.5	19.5	17.0	20.5
	U-NII-2C	21.5	21.0	21.5	19.5	17.0	19.5
	U-NII-3	23.5	20.5	21.5	19.0	16.5	21.5
WIFI 5G 802.11n 40M	U-NII-1	20.5	20.5	20.5	19.5	17.0	20.5
	U-NII-2A	20.5	20.5	20.5	19.5	17.0	20.5
	U-NII-2C	19.5	19.5	19.5	19.5	17.0	19.5
	U-NII-3	21.5	20.5	21.5	19.0	16.5	21.5
WIFI 5G 802.11ac 20M	U-NII-1	22.5	21.0	22.5	19.5	17.0	20.5
	U-NII-2A	22.5	21.0	22.5	19.5	17.0	20.5
	U-NII-2C	21.5	21.0	21.5	19.5	17.0	19.5
	U-NII-3	22.5	20.5	21.5	19.0	16.5	21.5
WIFI 5G 802.11ac 40M	U-NII-1	20.5	20.5	20.5	19.5	17.0	20.5
	U-NII-2A	20.5	20.5	20.5	19.5	17.0	20.5
	U-NII-2C	20.5	20.5	20.5	19.5	17.0	19.5
	U-NII-3	21.5	20.5	21.5	19.0	16.5	21.5
WIFI 5G 802.11ac 80M	U-NII-1	20.5	20.5	20.5	19.5	17.0	20.5
	U-NII-2A	20.5	20.5	20.5	19.5	17.0	20.5
	U-NII-2C	19.5	19.5	19.5	19.5	17.0	19.5
	U-NII-3	20.5	20.5	20.5	19.0	16.5	20.5
WIFI 5G 802.11ac 160M	U-NII-1/2A	19.5	19.5	19.5	19.5	17.0	19.5
	U-NII-2C	18.5	18.5	18.5	18.5	16.5	18.5

BT1(Ant11) Power Level(dBm)			
Mode	Power Reduction Scenario	BT only	BT+WWAN+WIFI 5G
BT	GFSK	16.0	15.0
	π/4DQPSK	14.0	13.0
	8DPSK	14.0	13.0
BLE 1M	GFSK	9.0	9.0
BLE 2M	GFSK	9.0	9.0

BT2(Ant7) Power Level(dBm)			
Mode	Power Reduction Scenario	BT only	BT+WWAN+WIFI 5G
BT	GFSK	16.0	13.0
	π/4DQPSK	14.0	11.0
	8DPSK	14.0	11.0
BLE 1M	GFSK	9.0	9.0
BLE 2M	GFSK	9.0	9.0

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1.5 Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI/IEEE C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 941225 D01	3G SAR Measurement Procedures v03r01
KDB 941225 D05	SAR for LTE Devices v02r05
KDB 941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB 941225 D06	Hotspot Mode SAR v02r01
KDB 248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02r02
KDB 648474 D04	Handset SAR v01r03
KDB447498 D01	General RF Exposure Guidance v06
KDB 865664 D01	SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02	RF Exposure Reporting v01r02
KDB 690783 D01	SAR Listings on Grants v01r03
KDB 616217 D04	SAR for laptop and tablets v01r02

1.6 RF exposure limits

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

Notes:

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

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

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

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

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

2 Laboratory Environment

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

Table 2： The Ambient Conditions

3 SAR Measurements System Configuration

3.1 The SAR Measurement System

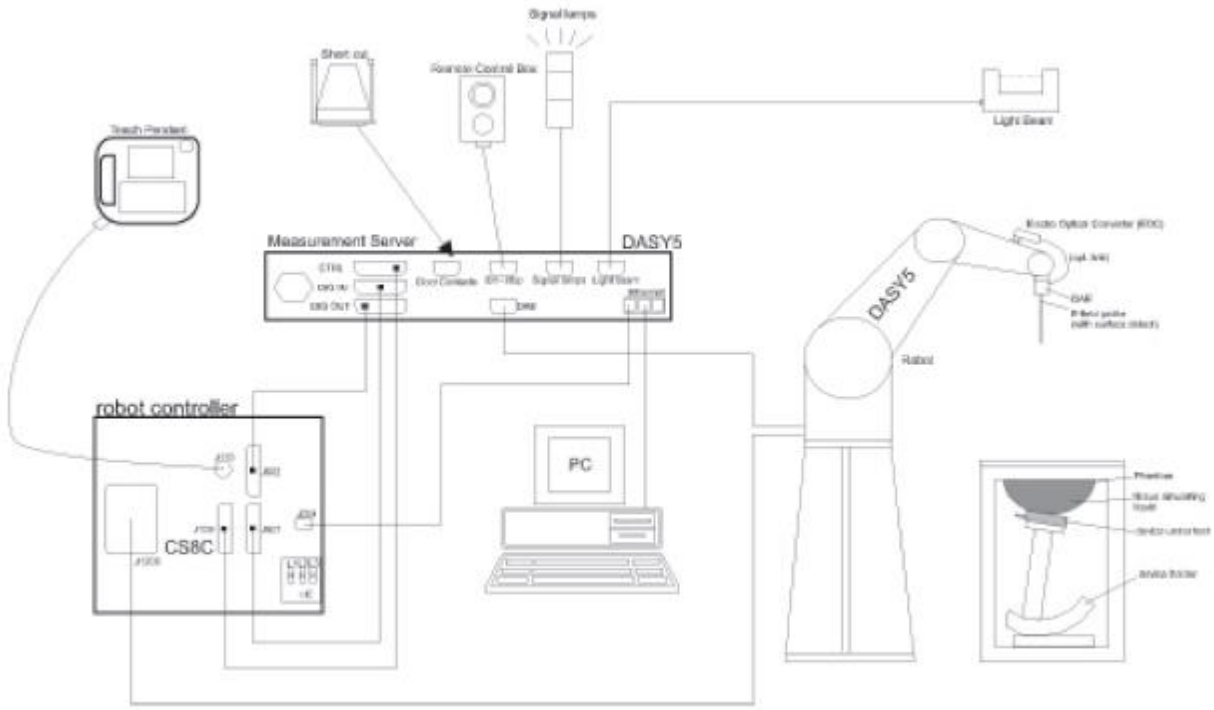
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY5 professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the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

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

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

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

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



F-1. SAR Measurement System Configuration

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

3.2 Isotropic E-field Probe EX3DV4

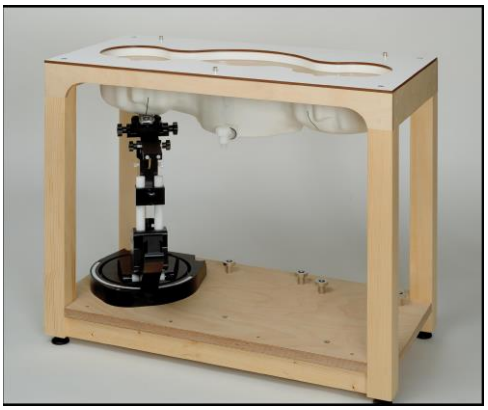
	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in TSL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

3.3 Data Acquisition Electronics (DAE)

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

3.4 SAM Twin Phantom

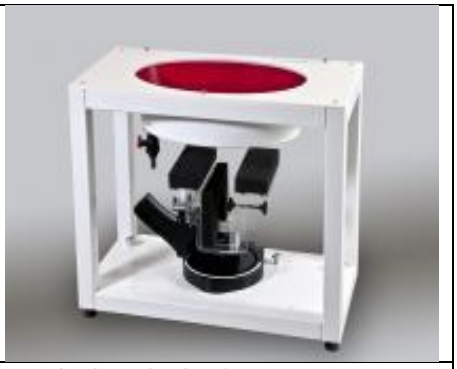
Material	Vinylester, glass fiber reinforced (VE-GF)
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)
Dimensions (incl. Wooden Support)	Length: 1000 mm Width: 500 mm Height: adjustable feet
Filling Volume	approx.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



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

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

3.5 ELI Phantom

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

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

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

3.6 Device Holder for Transmitters

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

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

3.7 Measurement procedure

3.7.1 Scanning procedure

Step 1: Power reference measurement

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

Step 2: *Area scan*

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

Step 3: *Zoom scan*

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

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

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

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

Step 4: Power reference measurement (drift)

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

3.7.2 Data Storage

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

3.7.3 Data Evaluation by SEMCAD

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

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

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

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

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

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

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

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

E-field probes:

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

H-field probes:

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

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

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

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

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

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

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

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

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

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

4 SAR measurement variability and uncertainty

4.1 SAR measurement variability

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

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

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

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

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

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

4.2 SAR measurement uncertainty

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

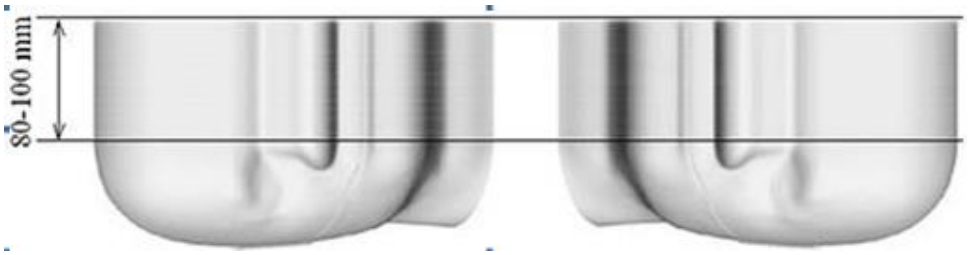
5 Description of Test Position

5.1 Head Exposure Condition

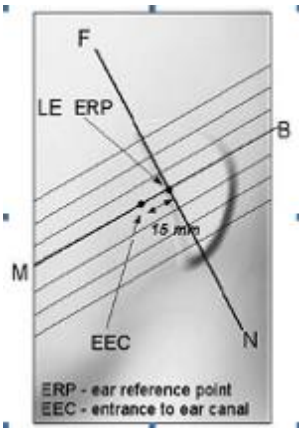
5.1.1 SAM Phantom Shape

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

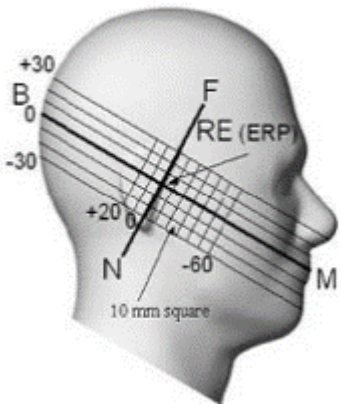
Note: The centre strip including the nose region has a different thickness tolerance.



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

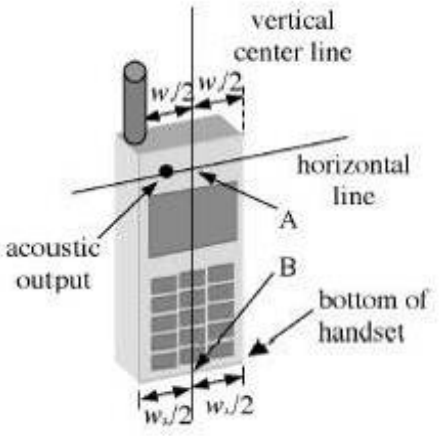


F-5. Close-up side view of phantom, showing the ear region, N-F and B-M lines, and seven cross-sectional plane locations

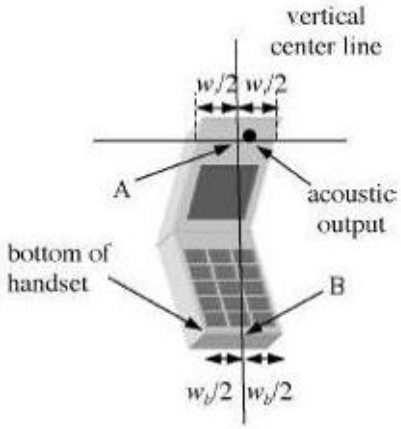


F-6. Side view of the phantom showing relevant markings and seven cross-sectional plane locations

5.1.2 EUT constructions



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



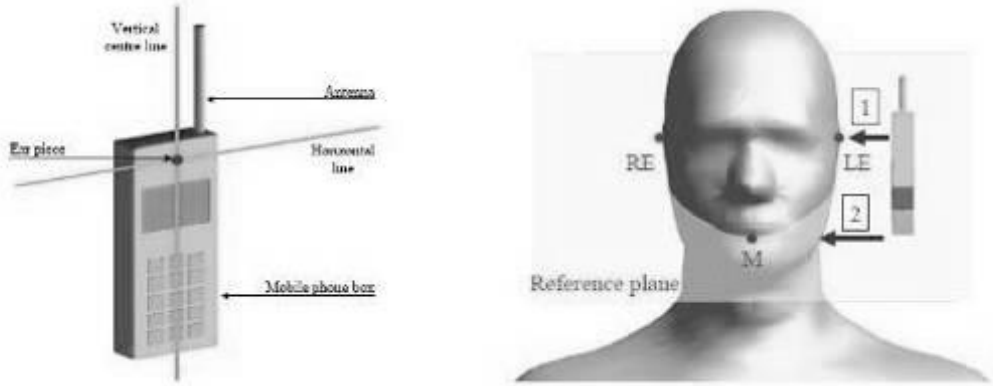
F-8. Handset vertical and horizontal reference lines-“clam-shell case”

5.1.3 Definition of the “cheek” position

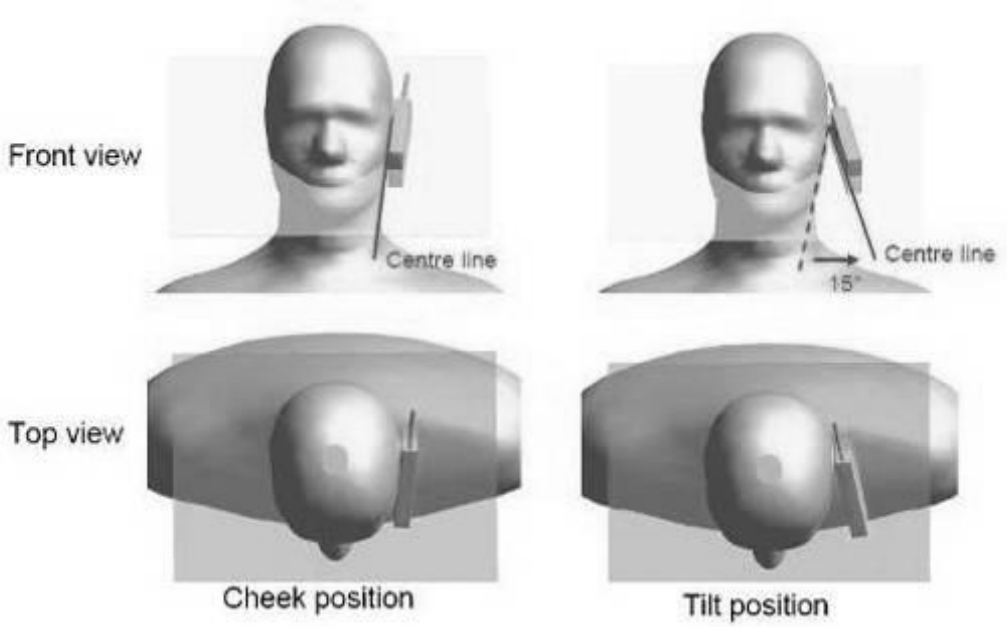
a) Position the device with the vertical centre line of the body of the device and the horizontal line crossing the centre of the ear piece in a plane parallel to the sagittal plane of the phantom ("initial position"). While maintaining the device in this plane, align the vertical centre line with the reference plane containing the three ear and mouth reference points (M, RE and LE) and align the centre of the ear piece with the line RE-LE.
b) Translate the mobile phone box towards the phantom with the ear piece aligned with the line LE-RE until telephone touches the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the box until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.

5.1.4 Definition of the “tilted” position

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



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



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

5.2 Body Exposure Condition

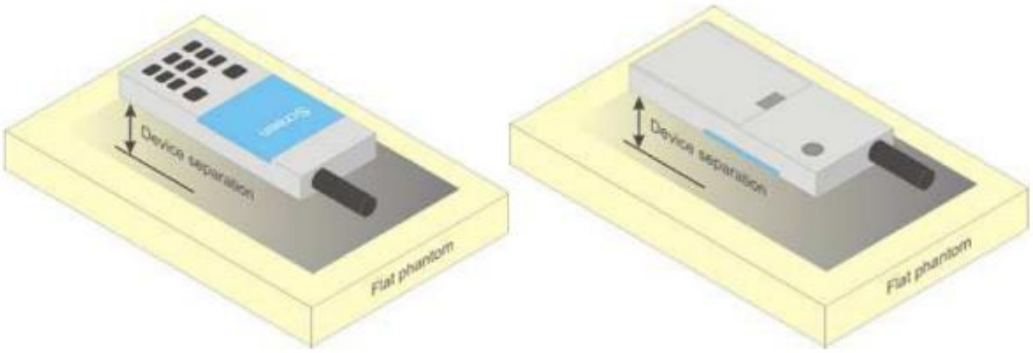
5.2.1 Body-worn accessory exposure conditions

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. Per FCC KDB Publication 648474 D04, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

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

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



F-11. **Test positions for body-worn devices**

5.2.2 Wireless Router exposure conditions

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

5.3 Extremity exposure conditions

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

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

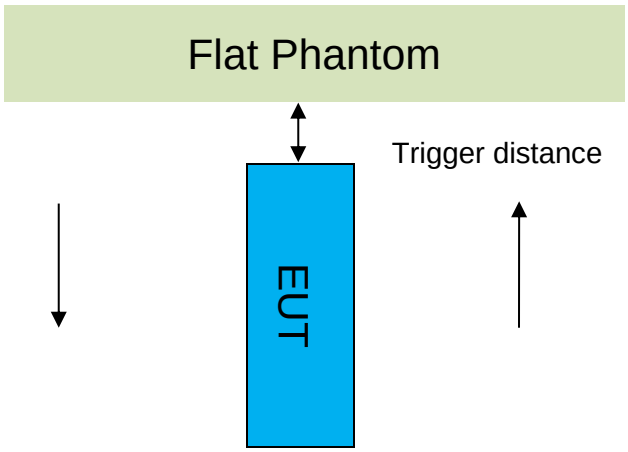
5G NR N77(Ant3):

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	Power Drift(dB)	Conducted power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR(W/kg)	Product Specific 10-g SAR SAR Exclusion
Hotspot Test data(Separate 10mm 1RB)											
Front side	100	QPSK 1RB_137	654800/3822	1:1	0.080	0.11	15.34	24.50	8.241	0.659	Yes
Back side	100	QPSK 1RB_137	654800/3822	1:1	0.126	-0.19	15.34	24.50	8.241	1.038	Yes
Left side	100	QPSK 1RB_137	654800/3822	1:1	0.049	0.00	15.34	24.50	8.241	0.404	Yes
Top side	100	QPSK 1RB_137	654800/3822	1:1	0.186	-0.09	15.34	24.50	8.241	1.533	No
Hotspot Test data (Separate 10mm 50%RB)											
Front side	100	QPSK 135RB_0	652400/3786	1:1	0.077	-0.04	15.36	24.50	8.204	0.632	Yes
Back side	100	QPSK 135RB_0	652400/3786	1:1	0.134	-0.19	15.36	24.50	8.204	1.099	Yes
Left side	100	QPSK 135RB_0	652400/3786	1:1	0.047	-0.12	15.36	24.50	8.204	0.386	Yes
Top side	100	QPSK 135RB_0	652400/3786	1:1	0.198	-0.19	15.36	24.50	8.204	1.624	No
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Top side	100	QPSK 135RB_0	652400/3786	1:1	0.172	-0.04	15.36	24.50	8.204	1.411	No

5.1 Proximity Sensor Triggering Test

Proximity sensor triggering distances：

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

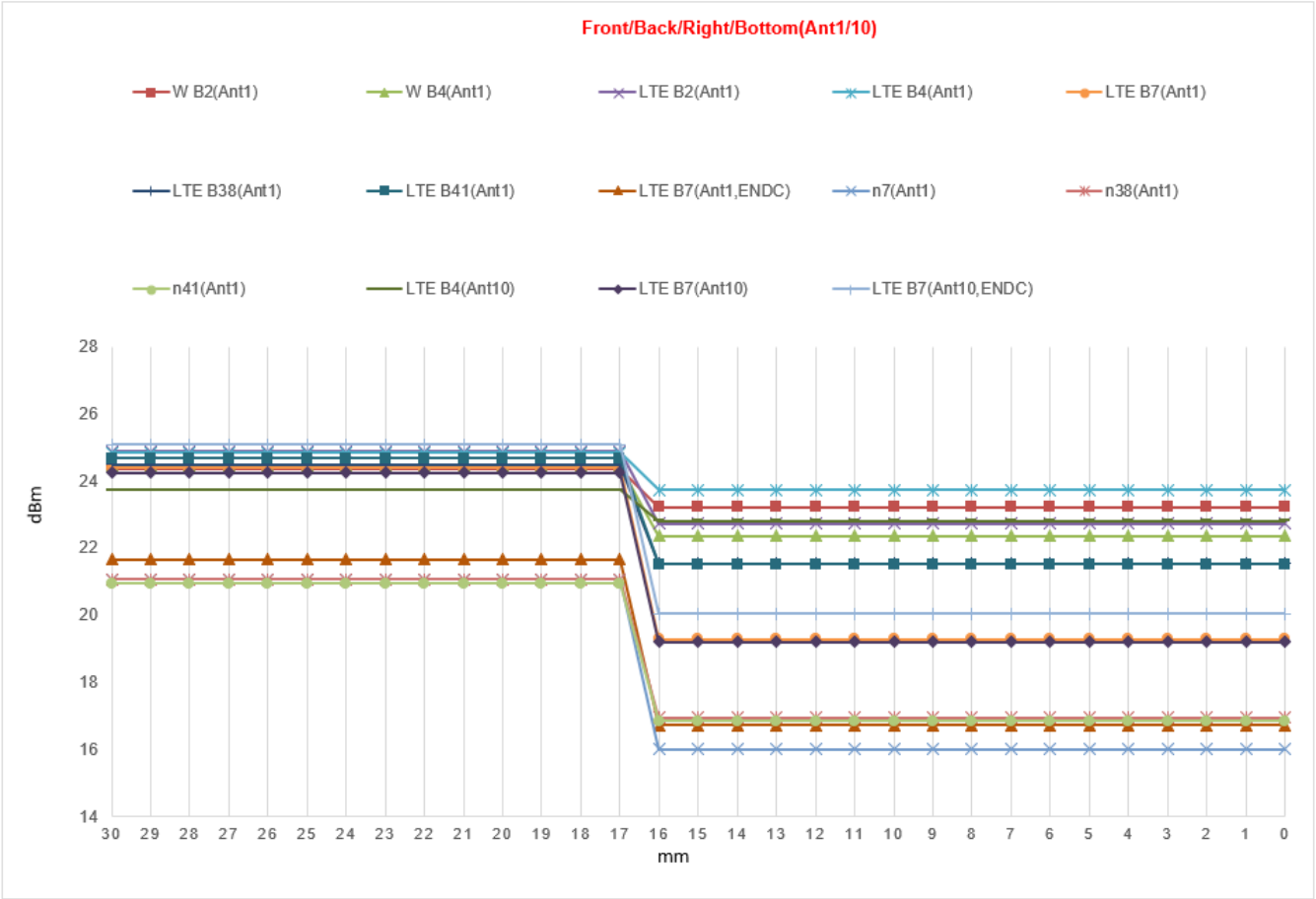


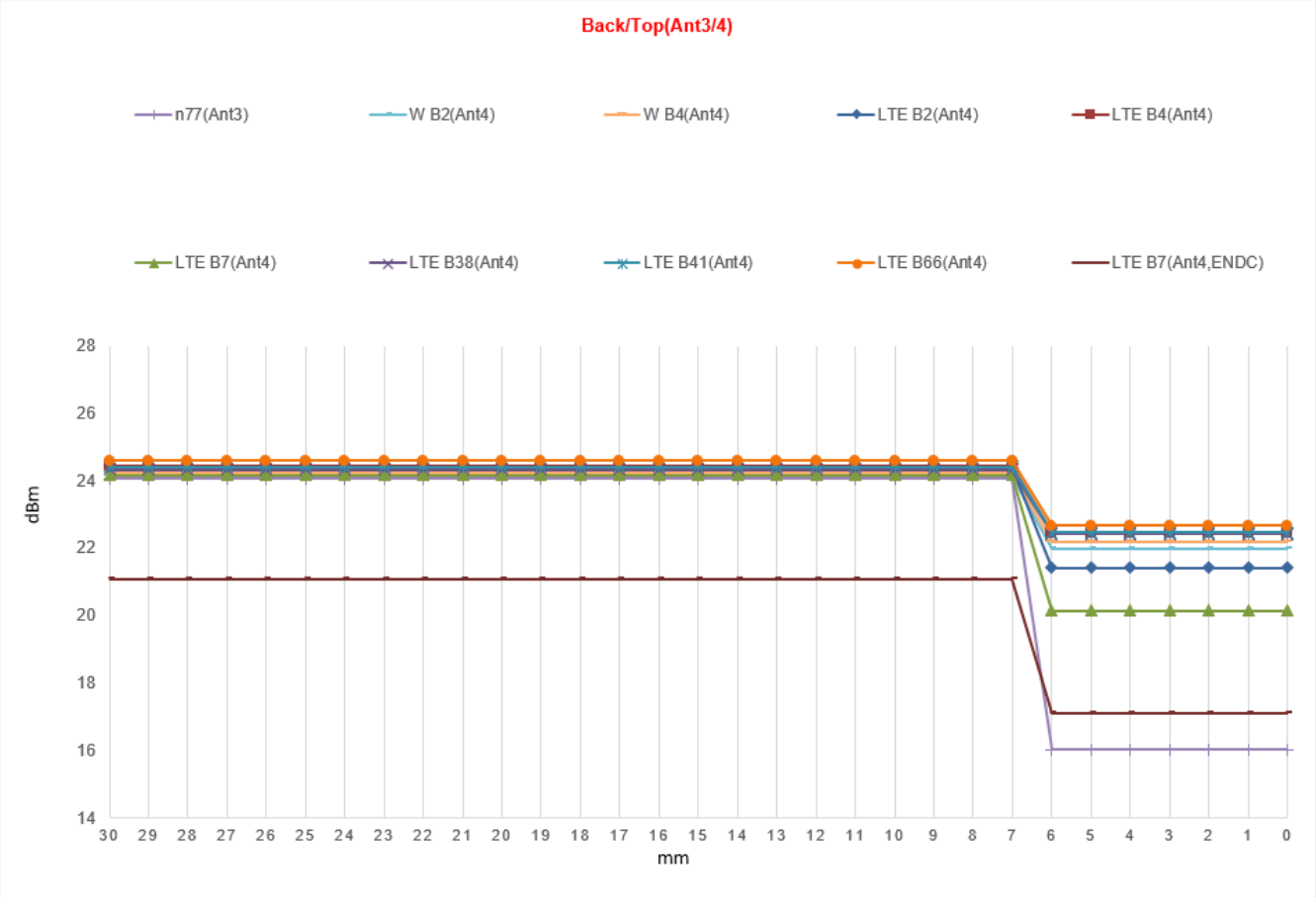
Proximity Sensor Triggering Distance(mm)				
Antenna	Ant1	Ant10	Ant3	Ant4
Band	WCDMA B2/4 LTE B2/4/7/38/41 LTE B7(EN_DC) 5G NR n7/38/41	LTE B4/7 LTE B7(EN_DC) 5G NR n5/7	5G NR n77	WCDMA B2/4 LTE B2/4/7/38/41/66 LTE B7(EN_DC) 5G NR n7/38/41
Position	Front/Back/Bottom/Right		Front/Top	
Minimum	16		6	
Required SAR Test	15		5	

Note:

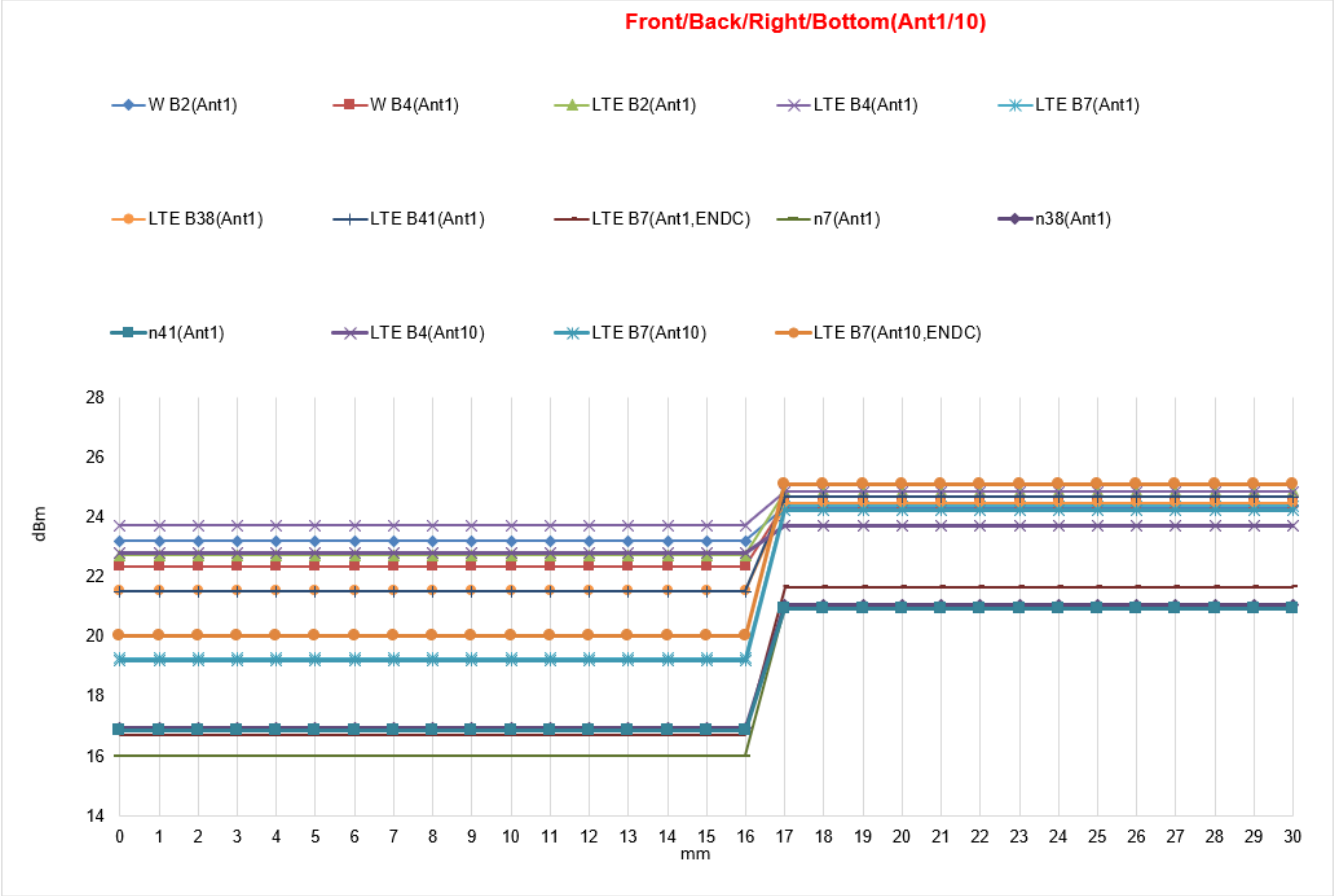
SAR tests with proximity sensor power reduction are only required for the sides of frequency bands in the table above. For the other sides or other frequency bands of the device, SAR is still tested at the maximum power level with sensor off.

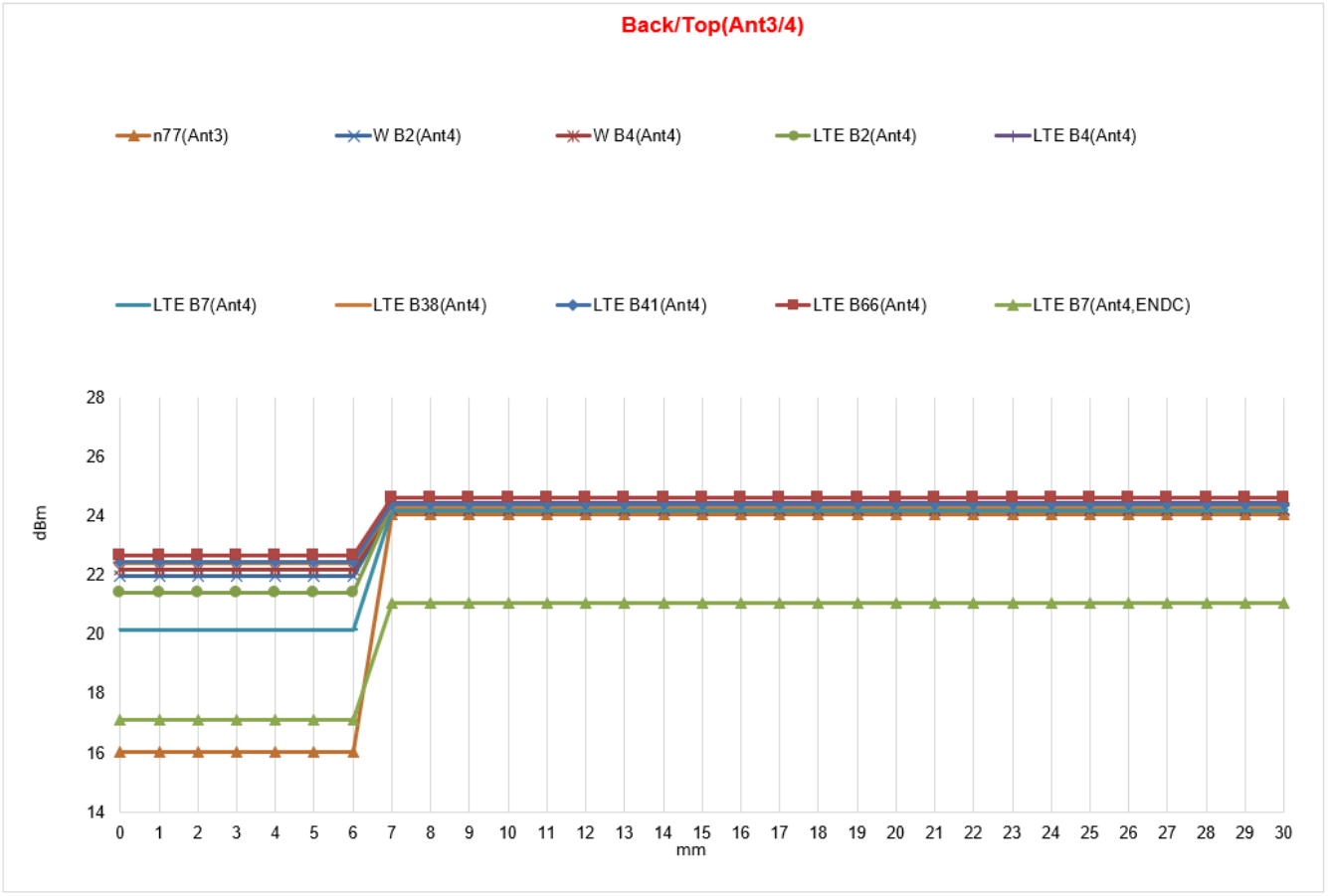
- DUT Moving Toward(Trigger)the Phantom





- DUT Moving Away(Release) from the Phantom





Proximity sensor coverage

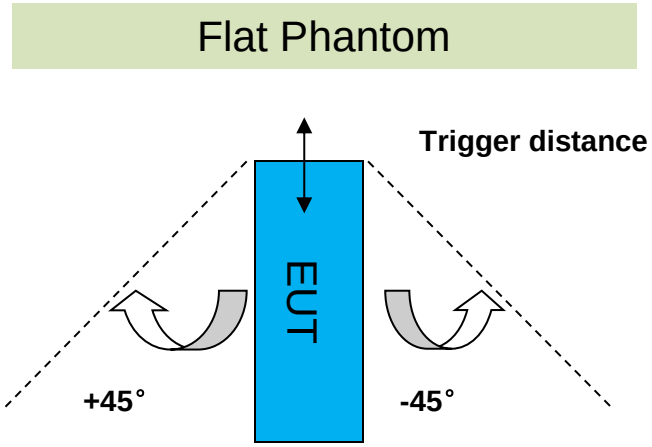
If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing,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

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

Device tilt angle influences to proximity sensor triggering

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

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



Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering for Top Side												
Band (MHz)	Minimum trigger distance Per KDB616217§6.2	Minimum trigger distance at which power reduction was maintained over ±45°	Power Reduction Status									
			-45°	-35°	-25°	-15°	-5°	0°	5°	15°	25°	35°	45°
Ant1/Ant10	Right side:16mm Bottom side:16mm	Right side:16mm Bottom side:16mm	on	on	on	on	on	on	on	on	on	on	on
Ant3/Ant4	Top side:6mm	Top side:6mm	on	on	on	on	on	on	on	on	on	on	on

6 SAR System Verification Procedure

6.1 Tissue Simulate Liquid

6.1.1 Recipes for Tissue Simulate Liquid

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

Ingredients (% by weight)	Frequency (MHz)				
	450	700-900	1750-2000	2300-2500	2500-2700
Water	38.56	40.30	55.24	55.00	54.92
Salt (NaCl)	3.95	1.38	0.31	0.2	0.23
Sucrose	56.32	57.90	0	0	0
HEC	0.98	0.24	0	0	0
Bactericide	0.19	0.18	0	0	0
Tween	0	0	44.45	44.80	44.85
Salt: 99⁺% Pure Sodium Chloride Water: De-ionized, 16 MΩ⁺ resistivity Tween: Polyoxyethylene (20) sorbitan monolaurate			Sucrose: 98⁺% Pure Sucrose HEC: Hydroxyethyl Cellulose		
HSL5GHz is composed of the following ingredients： Water：50-65% Mineral oil：10-30% Emulsifiers：8-25% Sodium salt：0-1.5%					

Table 3： Recipe of Tissue Simulate Liquid

6.1.2 Measurement for Tissue Simulate Liquid

The dielectric properties for this Tissue Simulate Liquids were measured by using the Agilent Model 85070E Dielectric Probe in conjunction with Agilent E5071C Network Analyzer (300 KHz-8500 MHz). The Conductivity (σ) and Permittivity (ρ) are listed in bellow table. For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was 22±2°C.

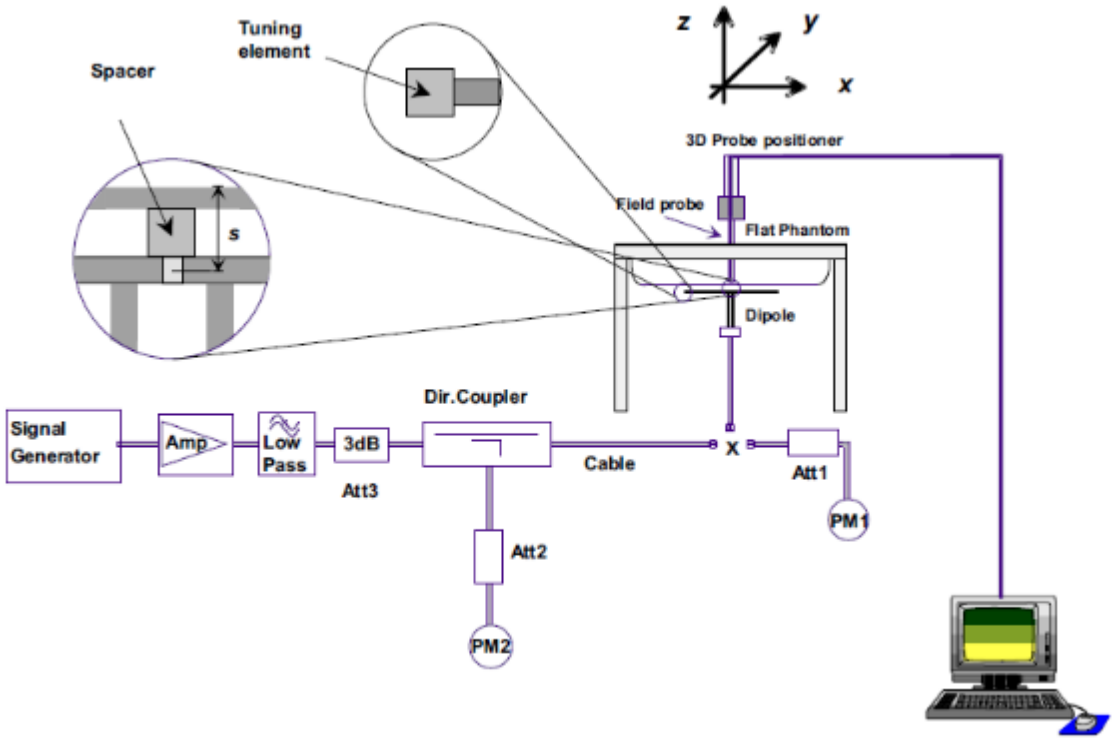
Tissue Type	Measured Frequency (MHz)	Target Tissue (±5%)		Measured Tissue		Liquid Temp.(℃)	Measured Date
		ε_r	σ(S/m)	ε_r	σ(S/m)		
750 Head	750	41.9 (39.81~44)	0.89 (0.85~0.94)	42.495	0.884	22.1	2021/2/2
835 Head	835	41.5 (39.43~43.58)	0.90 (0.86~0.95)	41.762	0.938	22.1	2021/2/1
835 Head	835	41.5 (39.43~43.58)	0.90 (0.86~0.95)	41.753	0.936	22.1	2021/2/2
835 Head	835	41.5 (39.43~43.58)	0.90 (0.86~0.95)	41.763	0.934	22.1	2021/2/3
835 Head	835	41.5 (39.43~43.58)	0.90 (0.86~0.95)	43.118	0.916	22.1	2021/2/12
1750 Head	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	40.271	1.309	22.2	2021/2/4
1750 Head	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	39.159	1.332	22.2	2021/2/6
1750 Head	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	38.467	1.328	22.2	2021/2/10
1900 Head	1900	40 (38.00~42.00)	1.4 (1.33~1.47)	39.973	1.376	22.3	2021/2/4
1900 Head	1900	40 (38.00~42.00)	1.4 (1.33~1.47)	39.564	1.414	22.3	2021/2/5
2450 Head	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	40.410	1.797	22.0	2021/2/17
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	39.388	2.000	22.1	2021/2/7
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	39.860	1.968	22.1	2021/2/8
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	39.491	1.948	22.1	2021/2/9
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	39.385	2.000	22.1	2021/2/11
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	38.790	1.967	22.1	2021/2/13
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	38.858	1.946	22.1	2021/2/14
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	38.658	1.982	22.1	2021/2/15
3700 Head	3700	37.7 (35.82~39.59)	3.12 (2.96~3.28)	37.105	3.043	21.9	2021/2/16
3900 Head	3900	37.5 (35.63~39.38)	3.32 (3.15~3.49)	36.395	3.255	22.1	2021/2/16
5250Head	5250	35.9 (34.11~37.70)	4.71 (4.47~4.95)	35.669	4.658	22.2	2021/2/18
5600 Head	5600	35.5 (33.73~37.28)	5.07 (4.82~5.32)	34.801	5.037	22.2	2021/2/18
5750 Head	5750	35.4 (33.63~37.17)	5.22 (4.96~5.48)	34.621	5.229	22.2	2021/2/18

Table 4： Measurement result of Tissue electric parameters

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

6.2 SAR System Check

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



F-12. the microwave circuit arrangement used for SAR system check

6.2.1 Justification for Extended SAR Dipole Calibrations

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

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

6.2.2 Summary System Check Result(s)

Validation Kit		Measured SAR 250mW	Measured SAR 250mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W) (±10%)	Target SAR (normalized to 1W) (±10%)	Liquid Temp. (℃)	Measured Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)		
D750V2	Head	2.14	1.38	8.56	5.52	8.39 (7.55~9.23)	5.63 (5.07~6.19)	22.1	2021/2/2
D835V2	Head	2.46	1.61	9.84	6.44	9.64 (8.68~10.60)	6.29 (5.66~6.92)	22.1	2021/2/1
D835V2	Head	2.61	1.70	10.44	6.80	9.64 (8.68~10.60)	6.29 (5.66~6.92)	22.1	2021/2/2
D835V2	Head	2.61	1.70	10.44	6.80	9.64 (8.68~10.60)	6.29 (5.66~6.92)	22.1	2021/2/3
D835V2	Head	2.59	1.72	10.36	6.88	9.64 (8.68~10.60)	6.29 (5.66~6.92)	22.1	2021/2/12
D1750V2	Head	9.11	4.84	36.44	19.36	36.3 (32.67~39.93)	19.2 (17.28~21.12)	22.2	2021/2/4
D1750V2	Head	9.25	4.92	37.00	19.68	36.3 (32.67~39.93)	19.2 (17.28~21.12)	22.2	2021/2/6
D1750V2	Head	9.48	5.03	37.92	20.12	36.3 (32.67~39.93)	19.2 (17.28~21.12)	22.2	2021/2/10
D1900V2	Head	10.20	5.27	40.80	21.08	39.3 (35.37~43.23)	20.2 (18.18~22.22)	22.3	2021/2/4
D1900V2	Head	10.50	5.40	42.00	21.60	39.3 (35.37~43.23)	20.2 (18.18~22.22)	22.3	2021/2/5
D2450V2	Head	13.40	6.29	53.60	25.16	51.9 (46.71~57.09)	23.8 (21.42~26.18)	22.0	2021/2/17
D2600V2	Head	13.80	6.14	55.20	24.56	56.8 (51.12~62.48)	24.9 (22.41~27.39)	22.1	2021/2/7
D2600V2	Head	14.10	6.29	56.40	25.16	56.8 (51.12~62.48)	24.9 (22.41~27.39)	22.1	2021/2/8
D2600V2	Head	14.00	6.23	56.00	24.92	56.8 (51.12~62.48)	24.9 (22.41~27.39)	22.1	2021/2/9
D2600V2	Head	13.90	6.18	55.60	24.72	56.8 (51.12~62.48)	24.9 (22.41~27.39)	22.1	2021/2/11
D2600V2	Head	13.80	6.17	55.20	24.68	56.8 (51.12~62.48)	24.9 (22.41~27.39)	22.1	2021/2/13
D2600V2	Head	13.70	6.14	54.80	24.56	56.8 (51.12~62.48)	24.9 (22.41~27.39)	22.1	2021/2/14
D2600V2	Head	14.00	6.25	56.00	25.00	56.8 (51.12~62.48)	24.9 (22.41~27.39)	22.1	2021/2/15
Validation Kit		Measured SAR 100mW	Measured SAR 100mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W) (±10%)	Target SAR (normalized to 1W) (±10%)	Liquid Temp. (℃)	Measured Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)		
D3700V2	Head	6.22	2.27	62.20	22.70	67.8 (61.02~74.58)	24.7 (22.23~27.17)	21.9	2021/2/16
D3900V2	Head	6.96	2.49	69.60	24.90	71.1 (63.99~78.21)	24.6 (22.14~27.06)	22.1	2021/2/16
D5GHzV2	Head (5.25GHz)	7.86	2.27	78.60	22.70	75.2 (67.68~82.72)	21.5 (19.35~23.65)	22.2	2021/2/18
	Head (5.6GHz)	8.36	2.39	83.60	23.90	80 (72~88)	22.7 (20.43~24.97)	22.2	2021/2/18
	Head (5.75GHz)	7.76	2.21	77.60	22.10	78.7 (70.83~86.57)	22.3 (20.07~24.53)	22.2	2021/2/18

Table 5： SAR System Check Result

6.2.3 Detailed System Check Results

Please see the Appendix A

7 Test Configuration

7.1 3G SAR Test Reduction Procedure

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

7.2 Operation Configurations

7.2.1 GSM Test Configuration

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

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

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

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

7.2.2 WCDMA Test Configuration

1）. Output Power Verification

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

2）. Head SAR

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

3）. Body SAR

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

4）. HSDPA / HSUPA / DC-HSDPA

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

a) HSDPA

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

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

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

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

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

Table 6： settings of required H-Set 1 QPSK acc. to 3GPP 34.121

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

Table 7： HSDPA UE category

b) HSUPA

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

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

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

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

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

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

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

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

Table 8： Subtests for UMTS Release 6 HSUPA

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

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

Table 9： HSUPA UE category

c) DC-HSDPA

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

Table E.5.0: Levels for HSDPA connection setup

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

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

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

Table 10： settings of required H-Set 12 QPSK acc. to 3GPP 34.121

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

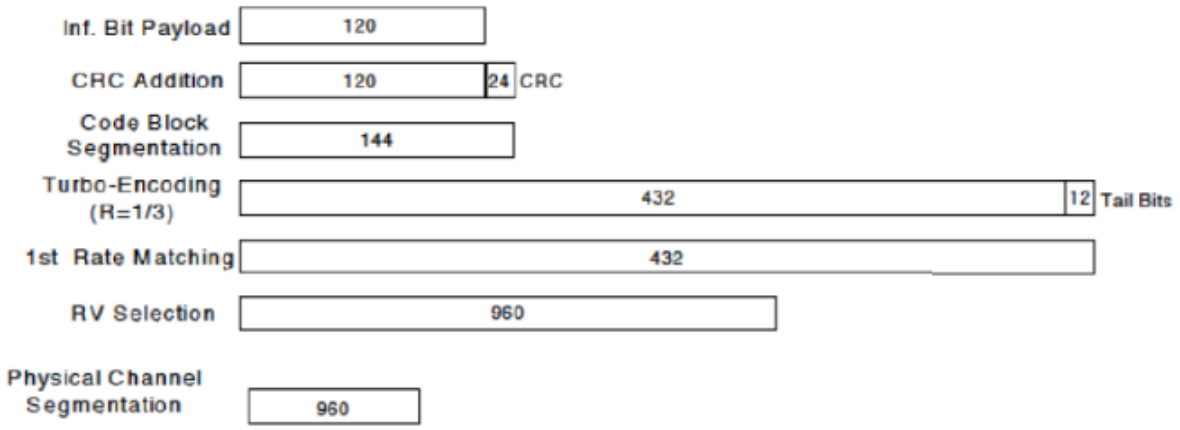


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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

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

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

Note 2: CM=1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. 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.

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$

Up commands are set continuously to set the UE to Max power.

Note:

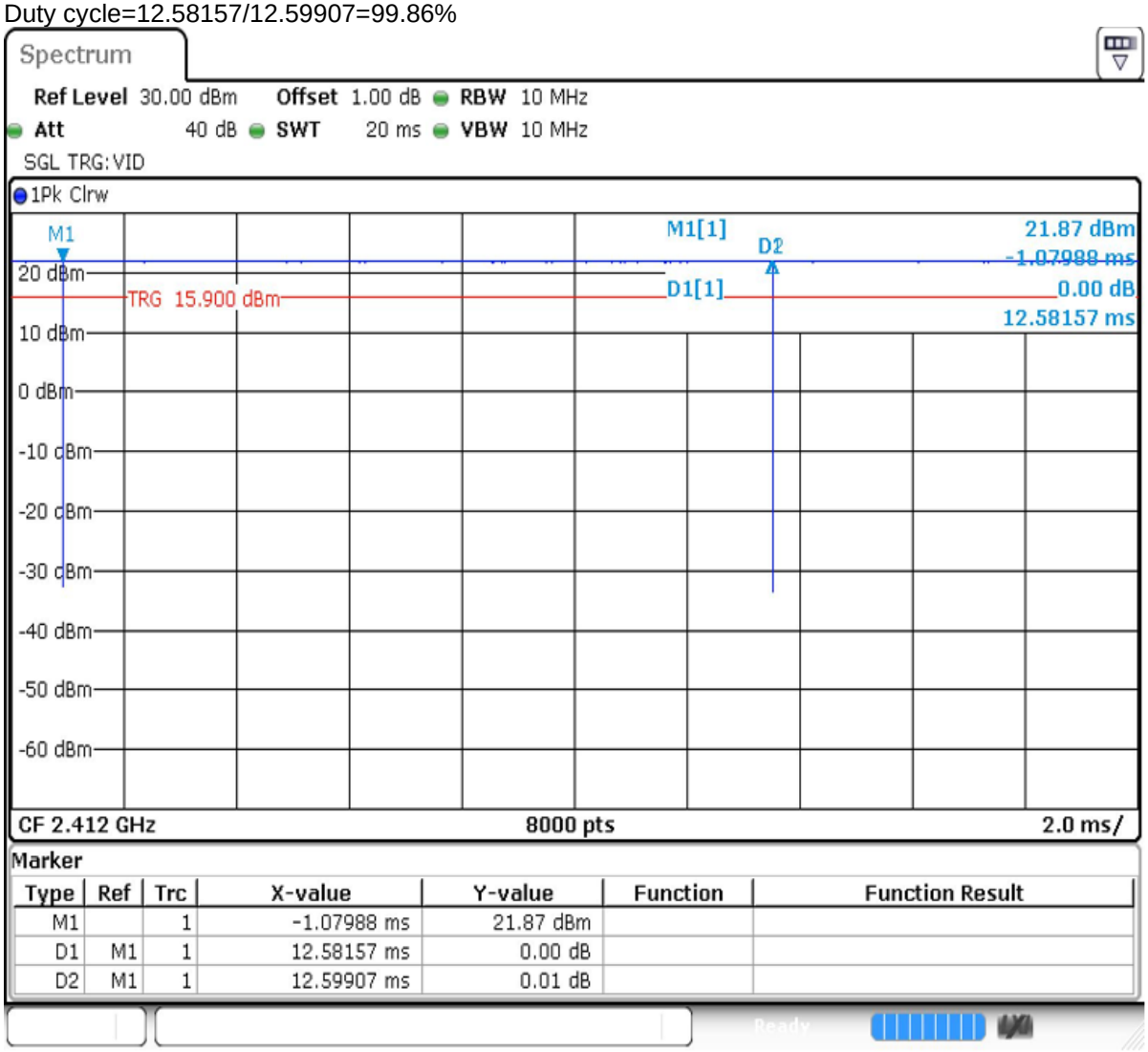
1. The Dual Carriers transmission only applies to HSDPA physical channels
2. The Dual Carriers belong to the same Node and are on adjacent carriers.
3. The Dual Carriers do not support MIMO to serve UEs configured for dual cell operation
4. The Dual Carriers operate in the same frequency band.
5. The 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.

7.2.3 WiFi Test Configuration

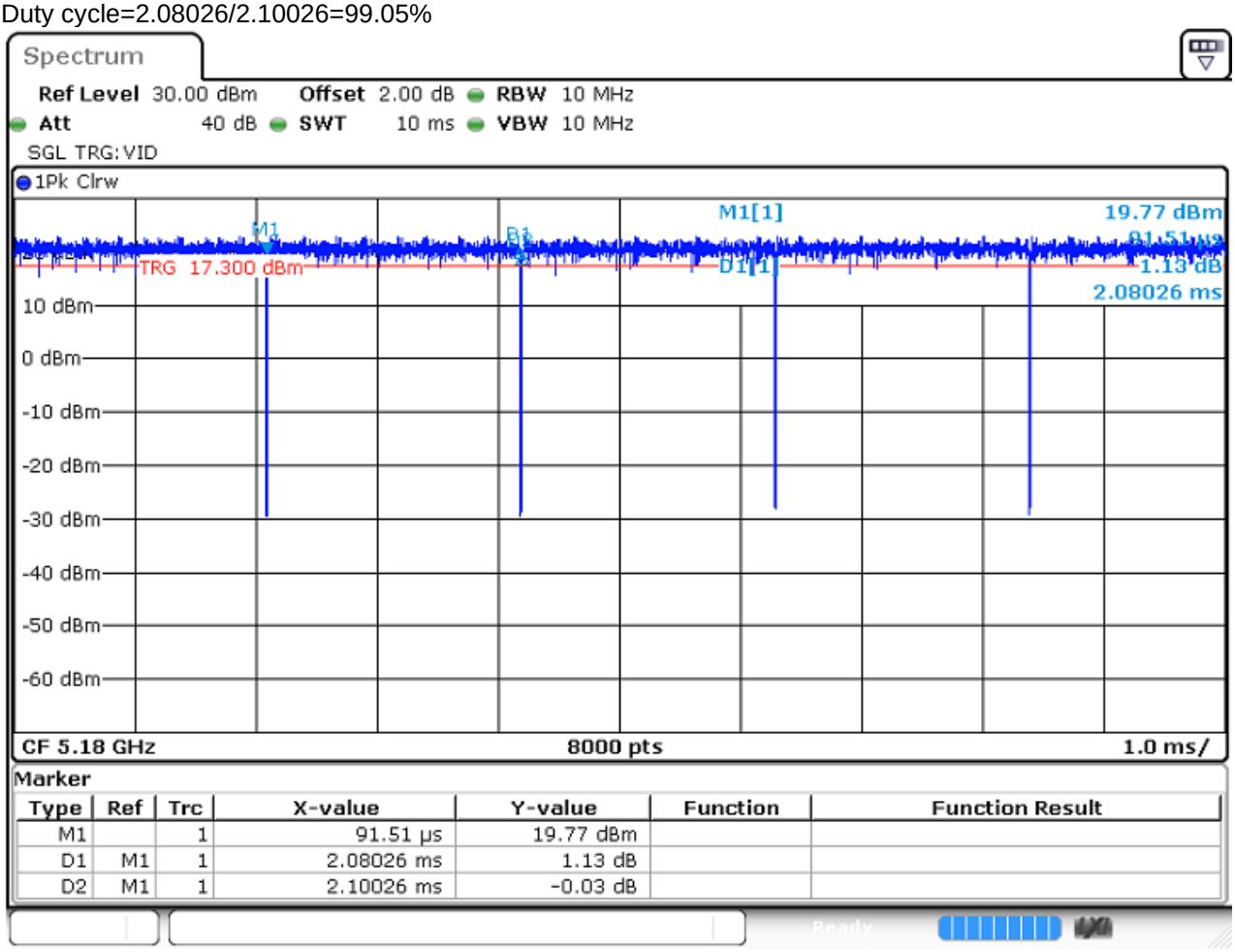
A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

7.2.3.1 Duty cycle

1) Wi-Fi 2.4GHz 802.11b(CDD):
Duty cycle=12.58157/12.59907=99.86%



2) Wi-Fi 5GHz 802.11a:
Duty cycle=2.08026/2.10026=99.05%



7.2.3.2 Initial Test Position SAR Test Reduction Procedure

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

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

7.2.3.3 Initial Test Configuration Procedures

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

7.2.3.4 Subsequent Test Configuration Procedures

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

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

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

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

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

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

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

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

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

7.2.3.5 2.4 GHz WiFi SAR Procedures

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

- **802.11b DSSS SAR Test Requirements**

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

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

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

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

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

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

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

- **SAR Test Requirements for OFDM configurations**

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

7.2.3.6 5 GHz WiFi SAR Procedures

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

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

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

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

- **OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements**

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

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

- **SAR Test Requirements for OFDM configurations**

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

7.2.4 LTE Test Configuration

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

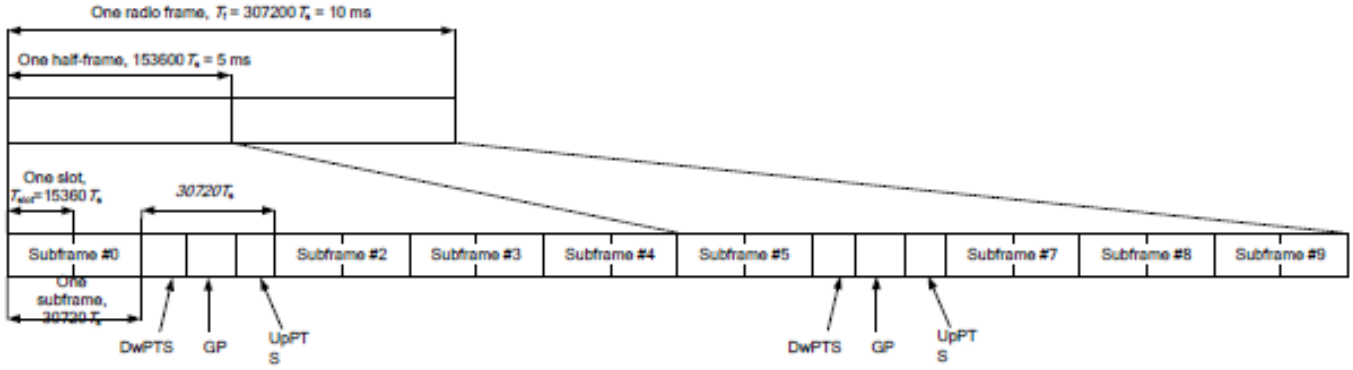
TDD LTE test consideration

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

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

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

Frame structure type 2:



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

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

Uplink-downlink configurations.

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

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

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

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A) Spectrum Plots for RB Configurations

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

B) MPR

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

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

C) A-MPR

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

D) Largest channel bandwidth standalone SAR test requirements

1) QPSK with 1 RB allocation

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

2) QPSK with 50% RB allocation

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

3) QPSK with 100% RB allocation

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

4) Higher order modulations

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

E) Other channel bandwidth standalone SAR test requirements

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

7.2.5 NR Band Test Configuration

1. NR Band n5/n7/n38/n41/n77 support SA mode and n5/n7 support NSA mode. LTE+NR Band n5/n7 operations are possible only with LTE under EN-DC mode and the operations are possible as following table:

Band/Antenna		n5		n7			
		Ant2	Ant10	Ant1	Ant4	Ant8	Ant10
LTE B5	Ant2			v	v	v	v
	Ant10			v	v	v	
LTE B7	Ant1	v	v				
	Ant4	v	v				
	Ant8	v	v				
	Ant10	v	v				

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

Band			n5	n7	n38	n41	n77
NR mode		SA	Yes	Yes	Yes	Yes	Yes
		NSA	Yes	Yes	N/A	N/A	N/A
Modulation	DFT-s-OFDM	PI/2 BPSK	Yes	Yes	Yes	Yes	Yes
		QPSK	Yes	Yes	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes	Yes	Yes
	CP-OFDM	QPSK	Yes	Yes	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes	Yes	Yes
Duty Cycle			100%	100%	100%	100%	100%

Band	SCS	Bandwidth												
		5Mhz	10Mhz	15Mhz	20Mhz	25Mhz	30Mhz	40Mhz	50Mhz	60Mhz	70Mhz	80Mhz	90Mhz	100Mhz
n5	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n7	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n38	15KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n41	15KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	N/A	N/A	Yes	N/A	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes
n77	15KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	N/A	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 3GPP 38.101 maximum power reduction for power class 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
   b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 3, for PI/2 BPSK/16QAM/64QMA/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the PI/2 BPSK/16QAM/64QMA/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
   c. SAR testing start with the largest SCS and largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
   d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
   e. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
   f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK/16QAM/64QAM/256QAM SAR testing are not required.
   g. Smaller SCS/bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device

4. MPR

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

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	PI/2 BPSK	≤ 3.5[1]	≤ 1.2[1]	≤ 0.2[1]
		≤ 0.5[2]	≤ 0.5[2]	0[2]
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM	≤ 2.5		
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		
NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability powerBoosting-pi2BPSK and if the IE powerBoostPi2BPSK is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26dBm.				
NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE powerBoostPi2BPSK is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.				

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

6. For 5G NR Sub6GHz SISO Mode, SAR Test plan as below:

1) For 5G NR NSA mode with the same UL EN_DC combination but different DL EN_DC combinations, eg: EN-DC configuration: UL DC_7A_n5 (UL two bands) with DL DC_7C_n5 (DL two bands)

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

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

7. For EN-DC SAR, as the existing SAR test system cannot test the multiple different frequency bands simultaneous Transmission SAR at the same time, we suggest that the conservative “max + max” multi-Tx and SAR scaling method can be used to evaluate the inter-band Uplink EN-DC SAR from standalone SAR test results of each LTE and NR EN-DC component band and the conservative “max + max” multi-Tx method to combine the scaled SAR value from each EN-DC component band as the inter-band Uplink EN-DC SAR. All Simultaneous Transmission Scenarios will be evaluated independently in the final SAR report.

8. When the reported SAR for and EN DC configuration is greater than 1.2 W/kg, EN DC SAR is also required for other NR based test channels.

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

8 Test Result

8.1 Measurement of RF conducted Power

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

8.1.1 Conducted Power of GSM

Note:

1）. CMW500 measures GSM peak and average output power for active timeslots. For SAR the time based average power is relevant. The difference in between depends on the duty cycle of the TDMA signal:

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

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

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

8.1.2 Conducted Power of WCDMA

Note:

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

8.1.3 Conducted Power of LTE

8.1.4 Conducted Power of Uplink & Downlink LTE CA

The following conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR test exclusion. Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
Power test equipment: Anritsu Radio Communication Analyzer MT8821C were used.

8.1.4.1 Conducted Power of uplink LTE CA

Note:
1) This device supports uplink carrier aggregation for LTE CA_7C, CA_38C with a maximum of two 20MHz component carriers.
2) According to FCC guidance, the output power with uplink CA active was measured for the high / middle / low channel configuration with the highest reported SAR for each exposure condition, the power was measured with wideband signal integration over both component carriers.
3) In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs.
4) Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05.

8.1.4.2 Conducted Power of Downlink LTE CA

In this section, the following conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR test exclusion per KDB 941225 D05A.Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive, therefore SAR evaluation with downlink carrier aggregation can be excluded.
Power test equipment: Anritsu Radio Communication Analyzer MT8821C

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

The conducted power measurement results of downlink LTE CA Conducted Power are as below, so the downlink only carrier aggregation conditions for this device can be excluded from SAR testing

In applying the existing power measurement procedures for DL CA SAR test exclusion, the configurations that require power measurements are highlighted in the table as below:

1 Band / 2CC	2 Band / 2CC	2 Band / 3CC	2 Band / 4CC	3 Band / 3CC	3 Band / 4CC	3 Band / 5CC
CA_2C						
CA_7A-7A		CA_5A-7A-7A				
CA_7C						CA_5A-7C-66A-66A
CA_38C						
CA_41A-41A						
CA_66A-66A					CA_5A-7A-66A-66A	
	CA_2A-4A				CA_2A-4A-7C	
	CA_2A-5A			CA_2A-4A-5A		
	CA_2A-7A			CA_2A-4A-7A		
		CA_2A-7C			CA_2A-4A-7C	
	CA_4A-5A			CA_2A-4A-5A		
	CA_4A-7A			CA_2A-4A-7A		
	CA_5A-7A				CA_5A-7A-66A-66A	
	CA_5A-66A				CA_5A-7A-66A-66A	
				CA_2A-4A-5A		
				CA_2A-4A-7A		
		CA_2A-7A-7A				
		CA_4A-7C			CA_2A-4A-7C	
				CA_5A-7A-66A	CA_5A-7A-66A-66A	
		CA_5A-7C				CA_5A-7C-66A-66A
		CA_5A-66A-66A			CA_5A-7A-66A-66A	
				CA_7A-66A-66A	CA_5A-7A-66A-66A	
					CA_2A-4A-7C	
					CA_5A-7A-66A-66A	
					CA_5A-7C-66A	CA_5A-7C-66A-66A
			CA_7C-66A-66A			CA_5A-7C-66A-66A
						CA_5A-7C-66A-66A

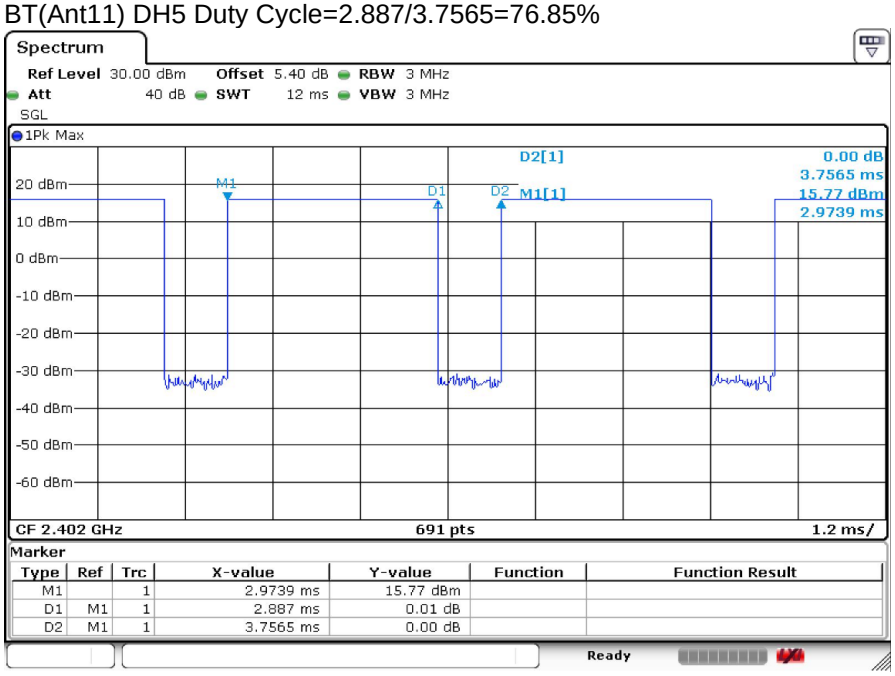
Note:
The downlink LTE CA SAR test is not required since the maximum output power for downlink LTE CA was not more than 0.25dB higher than the maximum output power for without downlink LTE CA.

8.1.5 Conducted Power of WIFI

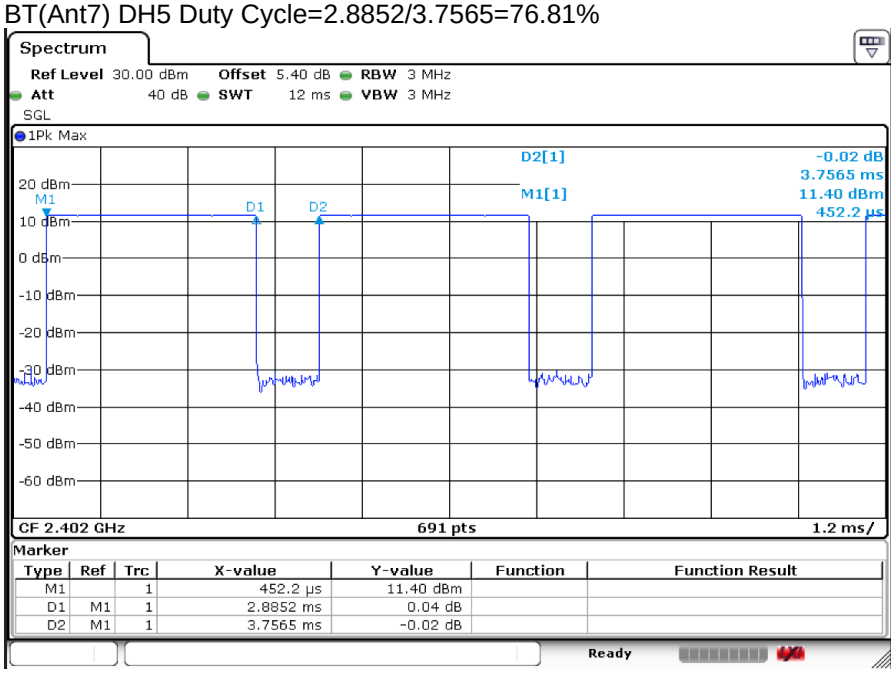
Note:
a) Power must be measured at each transmit antenna port according to the DSSS and OFDM transmission configurations in each standalone and aggregated frequency band.
b) Power measurement is required for the transmission mode configuration with the highest maximum output power specified for production units.
1) When the same highest maximum output power specification applies to multiple transmission modes, the largest channel bandwidth configuration with the lowest order modulation and lowest data rate is measured.
2) When the same highest maximum output power is specified for multiple largest channel bandwidth configurations with the same lowest order modulation or lowest order modulation and lowest data rate, power measurement is required for all equivalent 802.11 configurations with the same maximum output power.
c) For each transmission mode configuration, power must be measured for the highest and lowest channels; and at the mid-band channel(s) when there are at least 3 channels. For configurations with multiple mid-band channels, due to an even number of channels, both channels should be measured.

8.1.6 Conducted Power of BT

BT(Ant11) DH5 Duty Cycle=2.887/3.7565=76.85%



BT(Ant7) DH5 Duty Cycle=2.8852/3.7565=76.81%



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

8.2 Stand-alone SAR test evaluation

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

Freq. Band	Frequency (GHz)	Position	Average Power		Test Separation (mm)	Calculate Value	Exclusion Threshold	Exclusion (Y/N)
			dBm	mW				
Wi-Fi 2.4G	2.472	Head	21.5	141.25	5	44.42	3	N
		Body-worn	23.5	223.87	15	23.47	3	N
		Hotspot	22.5	177.83	10	27.96	3	N
Wi-Fi 5G	5.850	Head	21.0	125.89	5	60.90	3	N
		Body-worn	23.5	223.87	15	36.10	3	N
		Hotspot	22.5	177.83	10	43.01	3	N
Bluetooth	2.48	Head	16.0	39.81	5	12.54	3	N
		Body-worn	16.0	39.81	15	4.18	3	N
		Hotspot	16.0	39.81	10	6.27	3	N

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

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

8.3 Measurement of SAR Data

Note:

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

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

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

WiFi 2.4G:

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

WiFi 5G:

1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. As the highest reported SAR for a test configuration is ⩽ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration.
2) For Wi-Fi 5G, U-NII-2A (5250-5350 MHz) and U-NII-2C (5470-5725 MHz) bands does not support hotspot function.
3) When the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ⩽ 1.2 W/kg, SAR test for the other 802.11 modes are not required.

8.3.1 SAR Result of GSM850

Ant2 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 (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	GSM	190/836.6	1:8.3	0.173	0.03	31.13	32.50	1.371	0.237	22.1
Left tilted	GSM	190/836.6	1:8.3	0.123	-0.07	31.13	32.50	1.371	0.169	22.1
Right cheek	GSM	190/836.6	1:8.3	0.382	-0.08	31.13	32.50	1.371	**0.524**	22.1
Right tilted	GSM	190/836.6	1:8.3	0.257	0.13	31.13	32.50	1.371	0.352	22.1
Head Test Data at the worst case with Battery2#										
Right cheek	GSM	190/836.6	1:8.3	0.368	0.09	31.13	32.50	1.371	0.504	22.1
Body worn Test data(Separate 15mm)										
Front side	GSM	190/836.6	1:8.3	0.069	0.00	33.21	34.50	1.346	0.093	22.1
Back side	GSM	190/836.6	1:8.3	0.077	-0.17	33.21	34.50	1.346	**0.104**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm)										
Back side	GSM	190/836.6	1:8.3	0.071	0.01	33.21	34.50	1.346	0.096	22.1
Hotspot Test data(Separate 10mm)										
Front side	GPRS 4TS	190/836.6	1:2.075	0.074	0.15	24.77	26.50	1.489	0.110	22.1
Back side	GPRS 4TS	190/836.6	1:2.075	0.086	-0.08	24.77	26.50	1.489	0.128	22.1
Left side	GPRS 4TS	190/836.6	1:2.075	0.100	-0.01	24.77	26.50	1.489	**0.149**	22.1
Top side	GPRS 4TS	190/836.6	1:2.075	0.044	0.16	24.77	26.50	1.489	0.066	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm)										
Left side	GPRS 4TS	190/836.6	1:2.075	0.093	0.06	24.77	26.50	1.489	0.139	22.1
Ant10 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 (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	GSM	190/836.6	1:8.3	0.070	0.02	33.04	34.00	1.247	**0.087**	22.1
Left tilted	GSM	190/836.6	1:8.3	0.028	0.16	33.04	34.00	1.247	0.035	22.1
Right cheek	GSM	190/836.6	1:8.3	0.056	0.03	33.04	34.00	1.247	0.070	22.1
Right tilted	GSM	190/836.6	1:8.3	0.034	-0.03	33.04	34.00	1.247	0.042	22.1
Head Test Data at the worst case with Battery2#										
Left cheek	GSM	190/836.6	1:8.3	0.066	0.13	33.04	34.00	1.247	0.082	22.1
Body worn Test data(Separate 15mm)										
Front side	GSM	190/836.6	1:8.3	0.083	0.02	33.04	34.00	1.247	0.104	22.1
Back side	GSM	190/836.6	1:8.3	0.127	0.17	33.04	34.00	1.247	**0.158**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm)										
Back side	GSM	190/836.6	1:8.3	0.121	0.14	33.04	34.00	1.247	0.151	22.1
Hotspot Test data(Separate 10mm)										
Front side	GPRS 4TS	190/836.6	1:2.075	0.151	0.11	26.79	28.00	1.321	0.200	22.1
Back side	GPRS 4TS	190/836.6	1:2.075	0.205	-0.13	26.79	28.00	1.321	**0.271**	22.1
Right side	GPRS 4TS	190/836.6	1:2.075	0.046	-0.05	26.79	28.00	1.321	0.061	22.1
Bottom side	GPRS 4TS	190/836.6	1:2.075	0.103	0.06	26.79	28.00	1.321	0.136	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm)										
Back side	GPRS 4TS	190/836.6	1:2.075	0.198	0.04	26.79	28.00	1.321	0.262	22.1

Table 11： SAR of GSM850 for Head and Body

8.3.2 SAR Result of GSM1900

Ant1 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 (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	GSM	661/1880	1:8.3	0.035	0.03	30.11	31.00	1.227	**0.043**	22.3
Left tilted	GSM	661/1880	1:8.3	0.021	0.01	30.11	31.00	1.227	0.026	22.3
Right cheek	GSM	661/1880	1:8.3	0.032	0.02	30.11	31.00	1.227	0.039	22.3
Right tilted	GSM	661/1880	1:8.3	0.021	-0.14	30.11	31.00	1.227	0.026	22.3
Head Test Data at the worst case with Battery2#										
Left cheek	GSM	661/1880	1:8.3	0.031	0.11	30.11	31.00	1.227	0.038	22.3
Body worn Test data(Separate 15mm)										
Front side	GSM	661/1880	1:8.3	0.094	-0.16	30.11	31.00	1.227	0.116	22.3
Back side	GSM	661/1880	1:8.3	0.161	-0.13	30.11	31.00	1.227	**0.198**	22.3
Body worn Test data at the worst case with Battery2#(Separate 15mm)										
Back side	GSM	661/1880	1:8.3	0.152	0.15	30.11	31.00	1.227	0.187	22.3
Hotspot Test data(Separate 10mm)										
Front side	GPRS 4TS	661/1880	1:2.075	0.200	-0.02	23.96	25.00	1.271	0.254	22.3
Back side	GPRS 4TS	661/1880	1:2.075	0.265	-0.05	23.96	25.00	1.271	0.337	22.3
Left side	GPRS 4TS	661/1880	1:2.075	0.081	-0.06	23.96	25.00	1.271	0.103	22.3
Bottom side	GPRS 4TS	661/1880	1:2.075	0.355	-0.05	23.96	25.00	1.271	**0.451**	22.3
Hotspot Test data at the worst case with Battery2#(Separate 10mm)										
Bottom side	GPRS 4TS	661/1880	1:2.075	0.342	0.18	23.96	25.00	1.271	0.435	22.3
Ant4 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 (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	GSM	661/1880	1:8.3	0.272	0.01	30.18	31.50	1.355	0.369	22.3
Left tilted	GSM	661/1880	1:8.3	0.319	0.16	30.18	31.50	1.355	0.432	22.3
Right cheek	GSM	661/1880	1:8.3	0.497	-0.15	30.18	31.50	1.355	0.674	22.3
Right tilted	GSM	661/1880	1:8.3	0.647	-0.16	30.18	31.50	1.355	**0.877**	22.3
Right tilted	GSM	512/1850.2	1:8.3	0.595	-0.09	30.30	31.50	1.318	0.784	22.3
Right tilted	GSM	810/1909.8	1:8.3	0.535	-0.06	30.15	31.50	1.365	0.730	22.3
Head Test Data at the worst case with Battery2#										
Right tilted	GSM	661/1880	1:8.3	0.621	0.13	30.18	31.50	1.355	0.842	22.3
Body worn Test data(Separate 15mm)										
Front side	GSM	661/1880	1:8.3	0.069	0.02	30.18	31.50	1.355	0.093	22.3
Back side	GSM	661/1880	1:8.3	0.097	-0.15	30.18	31.50	1.355	**0.131**	22.3
Body worn Test data at the worst case with Battery2#(Separate 15mm)										
Back side	GSM	661/1880	1:8.3	0.092	0.16	30.18	31.50	1.355	0.125	22.3
Hotspot Test data(Separate 10mm)										
Front side	GPRS 4TS	661/1880	1:2.075	0.121	-0.12	24.08	25.50	1.387	0.168	22.3
Back side	GPRS 4TS	661/1880	1:2.075	0.201	-0.01	24.08	25.50	1.387	0.279	22.3
Left side	GPRS 4TS	661/1880	1:2.075	0.014	0.15	24.08	25.50	1.387	0.019	22.3
Top side	GPRS 4TS	661/1880	1:2.075	0.240	-0.02	24.08	25.50	1.387	**0.333**	22.3
Hotspot Test data at the worst case with Battery2#(Separate 10mm)										
Top side	GPRS 4TS	661/1880	1:2.075	0.220	0.09	24.08	25.50	1.387	0.305	22.3

Table 12： SAR of GSM1900 for Head and Body.

8.3.3 SAR Result of WCDMA Band II

Ant1 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 (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	RMC	9400/1880	1:1	0.094	-0.01	24.36	25.00	1.159	0.109	22.3
Left tilted	RMC	9400/1880	1:1	0.079	-0.06	24.36	25.00	1.159	0.092	22.3
Right cheek	RMC	9400/1880	1:1	0.104	0.05	24.36	25.00	1.159	**0.121**	22.3
Right tilted	RMC	9400/1880	1:1	0.075	-0.16	24.36	25.00	1.159	0.087	22.3
Head Test data at the worst case with Battery2#										
Right cheek	RMC	9400/1880	1:1	0.098	-0.03	24.36	25.00	1.159	0.114	22.3
Body worn Test data(Separate 15mm)										
Front side	RMC	9400/1880	1:1	0.223	0.07	24.36	25.00	1.159	0.258	22.3
Back side	RMC	9400/1880	1:1	0.413	0.11	24.36	25.00	1.159	**0.479**	22.3
Body worn Test data at the worst case with Battery2#(Separate 15mm)										
Back side	RMC	9400/1880	1:1	0.402	0.06	24.36	25.00	1.159	0.466	22.3
Hotspot Test data(Separate 10mm)										
Front side	RMC	9400/1880	1:1	0.338	-0.07	23.21	24.00	1.199	0.405	22.3
Back side	RMC	9400/1880	1:1	0.484	0.14	23.21	24.00	1.199	0.581	22.3
Left side	RMC	9400/1880	1:1	0.092	-0.16	23.21	24.00	1.199	0.110	22.3
Bottom side	RMC	9400/1880	1:1	0.773	-0.15	23.21	24.00	1.199	**0.927**	22.3
Bottom side	RMC	9262/1852.4	1:1	0.754	-0.05	23.24	24.00	1.191	0.898	22.3
Bottom side	RMC	9538/1907.6	1:1	0.755	0.01	23.33	24.00	1.167	0.881	22.3
Hotspot Test data at the worst case with Battery2#(Separate 10mm)										
Bottom side	RMC	9400/1880	1:1	0.740	0.03	23.21	24.00	1.199	0.888	22.3
Ant4 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 (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	RMC	9400/1880	1:1	0.287	-0.03	19.99	21.00	1.262	0.362	22.3
Left tilted	RMC	9400/1880	1:1	0.431	-0.12	19.99	21.00	1.262	0.544	22.3
Right cheek	RMC	9400/1880	1:1	0.506	-0.01	19.99	21.00	1.262	0.638	22.3
Right tilted	RMC	9400/1880	1:1	0.751	-0.02	19.99	21.00	1.262	**0.948**	22.3
Right tilted	RMC	9262/1852.4	1:1	0.617	-0.10	19.87	21.00	1.297	0.800	22.3
Right tilted	RMC	9538/1907.6	1:1	0.571	-0.09	19.92	21.00	1.282	0.732	22.3
Head Test data at the worst case with Battery2#										
Right tilted	RMC	9400/1880	1:1	0.735	0.03	19.99	21.00	1.262	0.927	22.3
Body worn Test data(Separate 15mm)										
Front side	RMC	9400/1880	1:1	0.181	0.01	24.17	25.00	1.211	0.219	22.3
Back side	RMC	9400/1880	1:1	0.279	-0.09	24.17	25.00	1.211	**0.338**	22.3
Body worn Test data at the worst case with Battery2#(Separate 15mm)										
Back side	RMC	9400/1880	1:1	0.271	-0.01	24.17	25.00	1.211	0.328	22.3
Hotspot Test data(Separate 10mm)										
Front side	RMC	9400/1880	1:1	0.129	-0.05	19.99	21.00	1.262	0.163	22.3
Back side	RMC	9400/1880	1:1	0.224	-0.04	19.99	21.00	1.262	0.283	22.3
Left side	RMC	9400/1880	1:1	0.046	0.16	19.99	21.00	1.262	0.058	22.3
Top side	RMC	9400/1880	1:1	0.270	-0.02	19.99	21.00	1.262	**0.341**	22.3
Hotspot Test data at the worst case with Battery2#(Separate 10mm)										
Top side	RMC	9400/1880	1:1	0.240	0.11	19.99	21.00	1.262	0.303	22.3

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

8.3.4 SAR Result of WCDMA Band IV

Ant1 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 (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	RMC	1412/1732.4	1:1	0.045	-0.12	24.45	25.00	1.135	0.051	22.2
Left tilted	RMC	1412/1732.4	1:1	0.032	-0.11	24.45	25.00	1.135	0.036	22.2
Right cheek	RMC	1412/1732.4	1:1	0.055	-0.03	24.45	25.00	1.135	**0.062**	22.2
Right tilted	RMC	1412/1732.4	1:1	0.033	0.13	24.45	25.00	1.135	0.037	22.2
Head Test data at the worst case with Battery2#										
Right cheek	RMC	1412/1732.4	1:1	0.048	0.11	24.45	25.00	1.135	0.054	22.2
Body worn Test data(Separate 15mm)										
Front side	RMC	1412/1732.4	1:1	0.136	-0.13	24.45	25.00	1.135	0.154	22.2
Back side	RMC	1412/1732.4	1:1	0.178	-0.02	24.45	25.00	1.135	**0.202**	22.2
Body worn Test data at the worst case with Battery2#(Separate 15mm)										
Back side	RMC	1412/1732.4	1:1	0.171	0.08	24.45	25.00	1.135	0.194	22.2
Hotspot Test data(Separate 10mm)										
Front side	RMC	1412/1732.4	1:1	0.162	0.19	22.25	23.00	1.189	0.193	22.2
Back side	RMC	1412/1732.4	1:1	0.246	-0.03	22.25	23.00	1.189	0.292	22.2
Left side	RMC	1412/1732.4	1:1	0.053	0.16	22.25	23.00	1.189	0.063	22.2
Bottom side	RMC	1412/1732.4	1:1	0.407	-0.03	22.25	23.00	1.189	**0.484**	22.2
Hotspot Test data at the worst case with Battery2#(Separate 10mm)										
Bottom side	RMC	1412/1732.4	1:1	0.396	0.14	22.25	23.00	1.189	0.471	22.2
An4 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 (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	RMC	1412/1732.4	1:1	0.293	-0.08	19.15	20.00	1.216	0.356	22.2
Left tilted	RMC	1412/1732.4	1:1	0.419	0.01	19.15	20.00	1.216	0.510	22.2
Right cheek	RMC	1412/1732.4	1:1	0.474	-0.02	19.15	20.00	1.216	0.576	22.2
Right tilted	RMC	1412/1732.4	1:1	0.697	-0.18	19.15	20.00	1.216	**0.848**	22.2
Right tilted	RMC	1312/1712.4	1:1	0.488	-0.14	19.12	20.00	1.225	0.598	22.2
Right tilted	RMC	1513/1752.6	1:1	0.582	-0.10	19.17	20.00	1.211	0.705	22.2
Head Test data at the worst case with Battery2#										
Right tilted	RMC	1412/1732.4	1:1	0.679	0.11	19.15	20.00	1.216	0.826	22.2
Body worn Test data(Separate 15mm)										
Front side	RMC	1412/1732.4	1:1	0.195	0.03	24.24	25.00	1.191	0.232	22.2
Back side	RMC	1412/1732.4	1:1	0.317	-0.02	24.24	25.00	1.191	**0.378**	22.2
Body worn Test data at the worst case with Battery2#(Separate 15mm)										
Back side	RMC	1412/1732.4	1:1	0.308	0.03	24.24	25.00	1.191	0.367	22.2
Hotspot Test data(Separate 10mm)										
Front side	RMC	1412/1732.4	1:1	0.117	0.02	19.15	20.00	1.216	0.142	22.2
Back side	RMC	1412/1732.4	1:1	0.206	0.03	19.15	20.00	1.216	0.251	22.2
Left side	RMC	1412/1732.4	1:1	0.041	-0.05	19.15	20.00	1.216	0.050	22.2
Top side	RMC	1412/1732.4	1:1	0.266	-0.04	19.15	20.00	1.216	**0.324**	22.2
Hotspot Test data at the worst case with Battery2#(Separate 10mm)										
Top side	RMC	1412/1732.4	1:1	0.252	0.07	19.15	20.00	1.216	0.306	22.2

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

8.3.5 SAR Result of WCDMA Band V

Ant2 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 (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	RMC	4182/836.4	1:1	0.140	0.02	21.68	22.70	1.265	0.177	22.1
Left tilted	RMC	4182/836.4	1:1	0.095	0.26	21.68	22.70	1.265	0.121	22.1
Right cheek	RMC	4182/836.4	1:1	0.446	0.03	21.68	22.70	1.265	**0.564**	22.1
Right tilted	RMC	4182/836.4	1:1	0.239	-0.02	21.68	22.70	1.265	0.302	22.1
Head Test data at the worst case with Battery2#										
Right cheek	RMC	4182/836.4	1:1	0.428	-0.18	21.68	22.70	1.265	0.541	22.1
Body worn Test data(Separate 15mm)										
Front side	RMC	4182/836.4	1:1	0.104	0.03	24.55	25.70	1.303	0.136	22.1
Back side	RMC	4182/836.4	1:1	0.105	-0.05	24.55	25.70	1.303	**0.137**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm)										
Back side	RMC	4182/836.4	1:1	0.101	0.05	24.55	25.70	1.303	0.132	22.1
Hotspot Test data(Separate 10mm)										
Front side	RMC	4182/836.4	1:1	0.085	-0.02	21.68	22.70	1.265	0.107	22.1
Back side	RMC	4182/836.4	1:1	0.101	0.01	21.68	22.70	1.265	0.128	22.1
Left side	RMC	4182/836.4	1:1	0.115	0.03	21.68	22.70	1.265	**0.145**	22.1
Top side	RMC	4182/836.4	1:1	0.041	0.14	21.68	22.70	1.265	0.052	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm)										
Left side	RMC	4182/836.4	1:1	0.103	0.13	21.68	22.70	1.265	0.130	22.1
Ant10 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 (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	RMC	4182/836.4	1:1	0.067	0.07	24.42	25.00	1.143	**0.077**	22.1
Left tilted	RMC	4182/836.4	1:1	0.039	-0.04	24.42	25.00	1.143	0.044	22.1
Right cheek	RMC	4182/836.4	1:1	0.067	0.01	24.42	25.00	1.143	0.077	22.1
Right tilted	RMC	4182/836.4	1:1	0.039	0.04	24.42	25.00	1.143	0.044	22.1
Head Test data at the worst case with Battery2#										
Left cheek	RMC	4182/836.4	1:1	0.058	-0.01	24.42	25.00	1.143	0.066	22.1
Body worn Test data(Separate 15mm)										
Front side	RMC	4182/836.4	1:1	0.110	0.08	24.42	25.00	1.143	0.126	22.1
Back side	RMC	4182/836.4	1:1	0.147	-0.04	24.42	25.00	1.143	**0.168**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm)										
Back side	RMC	4182/836.4	1:1	0.138	0.13	24.42	25.00	1.143	0.158	22.1
Hotspot Test data(Separate 10mm)										
Front side	RMC	4182/836.4	1:1	0.223	0.04	24.42	25.00	1.143	0.255	22.1
Back side	RMC	4182/836.4	1:1	0.249	-0.03	24.42	25.00	1.143	**0.285**	22.1
Right side	RMC	4182/836.4	1:1	0.081	0.10	24.42	25.00	1.143	0.093	22.1
Bottom side	RMC	4182/836.4	1:1	0.176	0.03	24.42	25.00	1.143	0.201	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm)										
Back side	RMC	4182/836.4	1:1	0.237	0.04	24.42	25.00	1.143	0.271	22.1

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

8.3.6 SAR Result of LTE Band 2

Ant1 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	18700/1860	1:1	0.092	0.12	24.88	25.50	1.153	0.106	22.3
Left tilted	20	QPSK 1RB_50	18700/1860	1:1	0.074	-0.17	24.88	25.50	1.153	0.085	22.3
Right cheek	20	QPSK 1RB_50	18700/1860	1:1	0.098	0.07	24.88	25.50	1.153	**0.113**	22.3
Right tilted	20	QPSK 1RB_50	18700/1860	1:1	0.077	-0.18	24.88	25.50	1.153	0.089	22.3
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	18700/1860	1:1	0.078	-0.16	23.90	24.50	1.148	0.090	22.3
Left tilted	20	QPSK 50RB_25	18700/1860	1:1	0.066	-0.19	23.90	24.50	1.148	0.076	22.3
Right cheek	20	QPSK 50RB_25	18700/1860	1:1	0.084	0.06	23.90	24.50	1.148	0.096	22.3
Right tilted	20	QPSK 50RB_25	18700/1860	1:1	0.068	-0.07	23.90	24.50	1.148	0.078	22.3
Head Test data at the worst case with Battery2#(1RB)											
Right cheek	20	QPSK 1RB_50	18700/1860	1:1	0.091	-0.07	24.88	25.50	1.153	0.105	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_50	18700/1860	1:1	0.228	-0.06	24.88	25.50	1.153	0.263	22.3
Back side	20	QPSK 1RB_50	18700/1860	1:1	0.429	-0.03	24.88	25.50	1.153	**0.495**	22.3
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	18700/1860	1:1	0.186	-0.06	23.90	24.50	1.148	0.214	22.3
Back side	20	QPSK 50RB_25	18700/1860	1:1	0.265	-0.11	23.90	24.50	1.148	0.304	22.3
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_50	18700/1860	1:1	0.413	0.14	24.88	25.50	1.153	0.476	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	18700/1860	1:1	0.266	0.08	22.88	23.50	1.153	0.307	22.3
Back side	20	QPSK 1RB_99	18700/1860	1:1	0.384	0.01	22.88	23.50	1.153	0.443	22.3
Left side	20	QPSK 1RB_99	18700/1860	1:1	0.107	-0.01	22.88	23.50	1.153	0.123	22.3
Bottom side	20	QPSK 1RB_99	18700/1860	1:1	0.615	-0.07	22.88	23.50	1.153	0.709	22.3
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_50	19100/1900	1:1	0.285	0.00	22.83	23.50	1.167	0.333	22.3
Back side	20	QPSK 50RB_50	19100/1900	1:1	0.415	0.10	22.83	23.50	1.167	0.484	22.3
Left side	20	QPSK 50RB_50	19100/1900	1:1	0.125	0.05	22.83	23.50	1.167	0.146	22.3
Bottom side	20	QPSK 50RB_50	19100/1900	1:1	0.730	-0.05	22.83	23.50	1.167	**0.852**	22.3
Bottom side	20	QPSK 50RB_25	18700/1860	1:1	0.578	0.04	22.76	23.50	1.186	0.685	22.3
Bottom side	20	QPSK 50RB_50	18900/1880	1:1	0.596	0.05	22.73	23.50	1.194	0.712	22.3
Hotspot Test data (Separate 10mm 100%RB)											
Bottom side	20	QPSK 100RB_0	18700/1860	1:1	0.555	0.03	22.70	23.50	1.202	0.667	22.3
Hotspot Test data at the worst case with Battery2# (Separate 10mm 50%RB)											
Bottom side	20	QPSK 50RB_50	19100/1900	1:1	0.714	0.12	22.83	23.50	1.167	0.833	22.3
Ant4 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	18700/1860	1:1	0.323	0.05	20.76	21.50	1.186	0.383	22.3
Left tilted	20	QPSK 1RB_0	18700/1860	1:1	0.434	0.15	20.76	21.50	1.186	0.515	22.3
Right cheek	20	QPSK 1RB_0	18700/1860	1:1	0.573	-0.12	20.76	21.50	1.186	0.679	22.3
Right tilted	20	QPSK 1RB_0	18700/1860	1:1	0.793	-0.08	20.76	21.50	1.186	**0.940**	22.3
Right tilted	20	QPSK 1RB_99	18900/1880	1:1	0.645	-0.18	20.72	21.50	1.197	0.772	22.3
Right tilted	20	QPSK 1RB_99	19100/1900	1:1	0.642	-0.09	20.75	21.50	1.189	0.763	22.3

Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_50	18700/1860	1:1	0.308	0.05	20.66	21.50	1.213	0.374	22.3
Left tilted	20	QPSK 50RB_50	18700/1860	1:1	0.403	-0.06	20.66	21.50	1.213	0.489	22.3
Right cheek	20	QPSK 50RB_50	18700/1860	1:1	0.563	0.07	20.66	21.50	1.213	0.683	22.3
Right tilted	20	QPSK 50RB_50	18700/1860	1:1	0.753	0.03	20.66	21.50	1.213	0.914	22.3
Right tilted	20	QPSK 50RB_50	18900/1880	1:1	0.667	-0.12	20.56	21.50	1.242	0.828	22.3
Right tilted	20	QPSK 50RB_50	19100/1900	1:1	0.674	-0.11	20.61	21.50	1.227	0.827	22.3
Head Test data at the worst case with Battery2#(1RB)											
Right tilted	20	QPSK 1RB_0	18700/1860	1:1	0.768	0.01	20.76	21.50	1.186	0.911	22.3
Head Test data(100%RB)											
Right tilted	20	QPSK 100RB_0	18700/1860	1:1	0.675	-0.11	20.60	21.50	1.230	0.830	22.3
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_99	18900/1880	1:1	0.141	-0.17	24.38	25.50	1.294	0.182	22.3
Back side	20	QPSK 1RB_99	18900/1880	1:1	0.273	-0.06	24.38	25.50	1.294	**0.353**	22.3
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_50	18700/1860	1:1	0.114	0.17	23.44	24.50	1.276	0.146	22.3
Back side	20	QPSK 50RB_50	18700/1860	1:1	0.174	-0.18	23.44	24.50	1.276	0.222	22.3
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_99	18900/1880	1:1	0.258	0.02	24.38	25.50	1.294	0.334	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	18700/1860	1:1	0.118	0.14	20.76	21.50	1.186	0.140	22.3
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.188	0.17	20.76	21.50	1.186	0.223	22.3
Left side	20	QPSK 1RB_0	18700/1860	1:1	0.048	0.18	20.76	21.50	1.186	0.057	22.3
Top side	20	QPSK 1RB_0	18700/1860	1:1	0.321	-0.01	20.76	21.50	1.186	0.381	22.3
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_50	18700/1860	1:1	0.124	0.09	20.66	21.50	1.213	0.150	22.3
Back side	20	QPSK 50RB_50	18700/1860	1:1	0.192	0.17	20.66	21.50	1.213	0.233	22.3
Left side	20	QPSK 50RB_50	18700/1860	1:1	0.049	-0.15	20.66	21.50	1.213	0.059	22.3
Top side	20	QPSK 50RB_50	18700/1860	1:1	0.317	-0.05	20.66	21.50	1.213	**0.385**	22.3
Hotspot Test data at the worst case with Battery2# (Separate 10mm 50%RB)											
Top side	20	QPSK 50RB_50	18700/1860	1:1	0.302	0.04	20.66	21.50	1.213	0.366	22.3

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

8.3.7 SAR Result of LTE Band 4

Ant1 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	20300/1745	1:1	0.060	0.15	24.92	25.50	1.143	0.069	22.2
Left tilted	20	QPSK 1RB_0	20300/1745	1:1	0.047	0.08	24.92	25.50	1.143	0.054	22.2
Right cheek	20	QPSK 1RB_0	20300/1745	1:1	0.062	0.05	24.92	25.50	1.143	**0.071**	22.2
Right tilted	20	QPSK 1RB_0	20300/1745	1:1	0.043	-0.08	24.92	25.50	1.143	0.049	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	20175/1732.5	1:1	0.045	-0.11	23.96	24.50	1.132	0.051	22.2
Left tilted	20	QPSK 50RB_25	20175/1732.5	1:1	0.021	-0.05	23.96	24.50	1.132	0.024	22.2
Right cheek	20	QPSK 50RB_25	20175/1732.5	1:1	0.055	0.03	23.96	24.50	1.132	0.062	22.2
Right tilted	20	QPSK 50RB_25	20175/1732.5	1:1	0.030	0.13	23.96	24.50	1.132	0.034	22.2
Head Test data at the worst case with Battery2#(1RB)											
Right cheek	20	QPSK 1RB_0	20300/1745	1:1	0.051	0.01	24.92	25.50	1.143	0.058	22.2
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	20300/1745	1:1	0.134	-0.05	24.92	25.50	1.143	0.153	22.2
Back side	20	QPSK 1RB_0	20300/1745	1:1	0.187	-0.08	24.92	25.50	1.143	**0.214**	22.2
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	20175/1732.5	1:1	0.113	-0.12	23.96	24.50	1.132	0.128	22.2
Back side	20	QPSK 50RB_25	20175/1732.5	1:1	0.173	-0.01	23.96	24.50	1.132	0.196	22.2
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_0	20300/1745	1:1	0.181	0.03	24.92	25.50	1.143	0.207	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	20175/1732.5	1:1	0.195	0.06	23.97	24.50	1.130	0.220	22.2
Back side	20	QPSK 1RB_50	20175/1732.5	1:1	0.309	0.16	23.97	24.50	1.130	0.349	22.2
Left side	20	QPSK 1RB_50	20175/1732.5	1:1	0.052	0.11	23.97	24.50	1.130	0.059	22.2
Bottom side	20	QPSK 1RB_50	20175/1732.5	1:1	0.523	0.01	23.97	24.50	1.130	0.591	22.2
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	20175/1732.5	1:1	0.208	-0.04	23.96	24.50	1.132	0.236	22.2
Back side	20	QPSK 50RB_25	20175/1732.5	1:1	0.329	0.17	23.96	24.50	1.132	0.373	22.2
Left side	20	QPSK 50RB_25	20175/1732.5	1:1	0.070	-0.10	23.96	24.50	1.132	0.079	22.2
Bottom side	20	QPSK 50RB_25	20175/1732.5	1:1	0.545	-0.01	23.96	24.50	1.132	**0.617**	22.2
Hotspot Test data at the worst case with Battery2# (Separate 10mm 50%RB)											
Bottom side	20	QPSK 50RB_25	20175/1732.5	1:1	0.532	0.11	23.96	24.50	1.132	0.602	22.2
Ant4 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	20175/1732.5	1:1	0.327	-0.09	19.84	20.70	1.219	0.399	22.2
Left tilted	20	QPSK 1RB_0	20175/1732.5	1:1	0.430	0.17	19.84	20.70	1.219	0.524	22.2
Right cheek	20	QPSK 1RB_0	20175/1732.5	1:1	0.547	-0.05	19.84	20.70	1.219	0.667	22.2
Right tilted	20	QPSK 1RB_0	20175/1732.5	1:1	0.582	0.07	19.84	20.70	1.219	0.709	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_0	20175/1732.5	1:1	0.335	-0.12	19.70	20.70	1.259	0.422	22.2
Left tilted	20	QPSK 50RB_0	20175/1732.5	1:1	0.435	-0.13	19.70	20.70	1.259	0.548	22.2
Right cheek	20	QPSK 50RB_0	20175/1732.5	1:1	0.556	-0.19	19.70	20.70	1.259	0.700	22.2
Right tilted	20	QPSK 50RB_0	20175/1732.5	1:1	0.708	-0.01	19.70	20.70	1.259	**0.891**	22.2
Right tilted	20	QPSK 50RB_0	20050/1720	1:1	0.530	-0.09	19.68	20.70	1.265	0.670	22.2

Right tilted	20	QPSK 50RB_0	20300/1745	1:1	0.630	-0.09	19.65	20.70	1.274	0.802	22.2
Head Test data(100%RB)											
Right tilted	20	QPSK 100RB_0	20050/1720	1:1	0.533	-0.11	19.68	20.70	1.265	0.674	22.2
Head Test data at the worst case with Battery2#(50%RB)											
Right tilted	20	QPSK 50RB_0	20175/1732.5	1:1	0.681	0.14	19.70	20.70	1.259	0.857	22.2
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	20300/1745	1:1	0.179	-0.15	24.49	25.70	1.321	0.237	22.2
Back side	20	QPSK 1RB_0	20300/1745	1:1	0.326	0.03	24.49	25.70	1.321	**0.431**	22.2
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	20050/1720	1:1	0.156	0.04	23.62	24.70	1.282	0.200	22.2
Back side	20	QPSK 50RB_25	20050/1720	1:1	0.235	0.01	23.62	24.70	1.282	0.301	22.2
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_0	20300/1745	1:1	0.311	0.07	24.49	25.70	1.321	0.411	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	20175/1732.5	1:1	0.119	-0.03	19.84	20.70	1.219	0.145	22.2
Back side	20	QPSK 1RB_0	20175/1732.5	1:1	0.183	-0.18	19.84	20.70	1.219	0.223	22.2
Left side	20	QPSK 1RB_0	20175/1732.5	1:1	0.043	-0.03	19.84	20.70	1.219	0.052	22.2
Top side	20	QPSK 1RB_0	20175/1732.5	1:1	0.261	-0.14	19.84	20.70	1.219	0.318	22.2
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	20175/1732.5	1:1	0.124	0.12	19.70	20.70	1.259	0.156	22.2
Back side	20	QPSK 50RB_0	20175/1732.5	1:1	0.194	0.09	19.70	20.70	1.259	0.244	22.2
Left side	20	QPSK 50RB_0	20175/1732.5	1:1	0.048	-0.03	19.70	20.70	1.259	0.060	22.2
Top side	20	QPSK 50RB_0	20175/1732.5	1:1	0.275	-0.01	19.70	20.70	1.259	**0.346**	22.2
Hotspot Test data at the worst case with Battery2# (Separate 10mm 50%RB)											
Top side	20	QPSK 50RB_0	20175/1732.5	1:1	0.263	0.14	19.70	20.70	1.259	0.331	22.2
Ant8 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	20300/1745	1:1	0.344	0.03	24.68	25.00	1.076	**0.370**	22.2
Left tilted	20	QPSK 1RB_0	20300/1745	1:1	0.005	-0.01	24.68	25.00	1.076	0.005	22.2
Right cheek	20	QPSK 1RB_0	20300/1745	1:1	0.239	-0.18	24.68	25.00	1.076	0.257	22.2
Right tilted	20	QPSK 1RB_0	20300/1745	1:1	0.052	0.14	24.68	25.00	1.076	0.056	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	20050/1720	1:1	0.253	0.02	23.61	24.00	1.094	0.277	22.2
Left tilted	20	QPSK 50RB_25	20050/1720	1:1	0.009	0.15	23.61	24.00	1.094	0.010	22.2
Right cheek	20	QPSK 50RB_25	20050/1720	1:1	0.173	-0.02	23.61	24.00	1.094	0.189	22.2
Right tilted	20	QPSK 50RB_25	20050/1720	1:1	0.045	0.12	23.61	24.00	1.094	0.049	22.2
Head Test data at the worst case with Battery2#(1RB)											
Left cheek	20	QPSK 1RB_0	20300/1745	1:1	0.332	0.17	24.68	25.00	1.076	0.357	22.2
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	20300/1745	1:1	0.002	-0.05	24.68	25.00	1.076	0.002	22.2
Back side	20	QPSK 1RB_0	20300/1745	1:1	0.044	0.06	24.68	25.00	1.076	**0.048**	22.2
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	20050/1720	1:1	0.003	-0.07	23.61	24.00	1.094	0.003	22.2
Back side	20	QPSK 50RB_25	20050/1720	1:1	0.039	0.17	23.61	24.00	1.094	0.043	22.2
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_0	20300/1745	1:1	0.041	0.14	24.68	25.00	1.076	0.044	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	20300/1745	1:1	0.085	0.13	24.68	25.00	1.076	0.091	22.2
Back side	20	QPSK 1RB_0	20300/1745	1:1	0.081	0.16	24.68	25.00	1.076	0.087	22.2
Left side	20	QPSK 1RB_0	20300/1745	1:1	0.225	-0.05	24.68	25.00	1.076	**0.242**	22.2

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Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	20050/1720	1:1	0.061	0.14	23.61	24.00	1.094	0.067	22.2
Back side	20	QPSK 50RB_25	20050/1720	1:1	0.071	0.11	23.61	24.00	1.094	0.078	22.2
Left side	20	QPSK 50RB_25	20050/1720	1:1	0.128	0.15	23.61	24.00	1.094	0.140	22.2
Hotspot Test data at the worst case with Battery2# (Separate 10mm 1RB)											
Left side	20	QPSK 1RB_0	20300/1745	1:1	0.207	0.06	24.68	25.00	1.076	0.223	22.2
Ant10 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	20175/1732.5	1:1	0.100	0.06	23.73	24.50	1.194	0.119	22.2
Left tilted	20	QPSK 1RB_50	20175/1732.5	1:1	0.063	0.08	23.73	24.50	1.194	0.075	22.2
Right cheek	20	QPSK 1RB_50	20175/1732.5	1:1	0.175	0.08	23.73	24.50	1.194	**0.209**	22.2
Right tilted	20	QPSK 1RB_50	20175/1732.5	1:1	0.063	0.07	23.73	24.50	1.194	0.075	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_0	20175/1732.5	1:1	0.088	0.11	22.87	23.50	1.156	0.102	22.2
Left tilted	20	QPSK 50RB_0	20175/1732.5	1:1	0.051	0.07	22.87	23.50	1.156	0.059	22.2
Right cheek	20	QPSK 50RB_0	20175/1732.5	1:1	0.159	0.08	22.87	23.50	1.156	0.184	22.2
Right tilted	20	QPSK 50RB_0	20175/1732.5	1:1	0.057	0.10	22.87	23.50	1.156	0.066	22.2
Head Test data at the worst case with Battery2#(1RB)											
Right cheek	20	QPSK 1RB_50	20175/1732.5	1:1	0.161	0.14	23.73	24.50	1.194	0.192	22.2
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_50	20175/1732.5	1:1	0.114	0.09	23.73	24.50	1.194	0.136	22.2
Back side	20	QPSK 1RB_50	20175/1732.5	1:1	0.205	0.02	23.73	24.50	1.194	**0.245**	22.2
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	20300/1745	1:1	0.094	0.06	22.86	23.50	1.159	0.109	22.2
Back side	20	QPSK 50RB_25	20300/1745	1:1	0.138	0.08	22.86	23.50	1.159	0.160	22.2
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_50	20175/1732.5	1:1	0.181	0.13	23.73	24.50	1.194	0.216	22.2
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	20175/1732.5	1:1	0.192	0.06	22.88	23.50	1.153	0.221	22.2
Back side	20	QPSK 1RB_0	20175/1732.5	1:1	0.274	0.11	22.88	23.50	1.153	0.316	22.2
Right side	20	QPSK 1RB_0	20175/1732.5	1:1	0.308	0.07	22.88	23.50	1.153	0.355	22.2
Bottom side	20	QPSK 1RB_0	20175/1732.5	1:1	0.098	0.08	22.88	23.50	1.153	0.113	22.2
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	20300/1745	1:1	0.196	0.05	22.86	23.50	1.159	0.227	22.2
Back side	20	QPSK 50RB_25	20300/1745	1:1	0.281	0.09	22.86	23.50	1.159	0.326	22.2
Right side	20	QPSK 50RB_25	20300/1745	1:1	0.335	0.13	22.86	23.50	1.159	**0.388**	22.2
Bottom side	20	QPSK 50RB_25	20300/1745	1:1	0.102	0.09	22.86	23.50	1.159	0.118	22.2
Hotspot Test data at the worst case with Battery2# (Separate 10mm 50%RB)											
Right side	20	QPSK 50RB_25	20300/1745	1:1	0.314	-0.03	22.86	23.50	1.159	0.364	22.2

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

8.3.8 SAR Result of LTE Band 5

Ant2 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	10	QPSK 1RB_25	20600/844	1:1	0.137	-0.14	20.81	21.70	1.227	0.168	22.1
Left tilted	10	QPSK 1RB_25	20600/844	1:1	0.095	-0.02	20.81	21.70	1.227	0.117	22.1
Right cheek	10	QPSK 1RB_25	20600/844	1:1	0.440	-0.03	20.81	21.70	1.227	**0.540**	22.1
Right tilted	10	QPSK 1RB_25	20600/844	1:1	0.188	0.08	20.81	21.70	1.227	0.231	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25RB_13	20450/829	1:1	0.117	0.02	20.58	21.70	1.294	0.151	22.1
Left tilted	10	QPSK 25RB_13	20450/829	1:1	0.080	0.13	20.58	21.70	1.294	0.104	22.1
Right cheek	10	QPSK 25RB_13	20450/829	1:1	0.305	0.01	20.58	21.70	1.294	0.395	22.1
Right tilted	10	QPSK 25RB_13	20450/829	1:1	0.164	-0.18	20.58	21.70	1.294	0.212	22.1
Head Test data at the worst case with Battery2#(1RB)											
Right cheek	10	QPSK 1RB_25	20600/844	1:1	0.418	0.17	20.81	21.70	1.227	0.513	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1RB_0	20450/829	1:1	0.126	0.01	24.86	25.70	1.213	**0.153**	22.1
Back side	10	QPSK 1RB_0	20450/829	1:1	0.072	-0.11	24.86	25.70	1.213	0.087	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	10	QPSK 25RB_13	20525/836.5	1:1	0.102	0.12	23.87	24.70	1.211	0.123	22.1
Back side	10	QPSK 25RB_13	20525/836.5	1:1	0.100	0.13	23.87	24.70	1.211	0.121	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Front side	10	QPSK 1RB_0	20450/829	1:1	0.102	-0.15	24.86	25.70	1.213	0.124	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_25	20600/844	1:1	0.084	0.02	20.81	21.70	1.227	0.104	22.1
Back side	10	QPSK 1RB_25	20600/844	1:1	0.099	0.06	20.81	21.70	1.227	0.122	22.1
Left side	10	QPSK 1RB_25	20600/844	1:1	0.117	-0.14	20.81	21.70	1.227	**0.144**	22.1
Top side	10	QPSK 1RB_25	20600/844	1:1	0.040	0.06	20.81	21.70	1.227	0.049	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25RB_13	20450/829	1:1	0.068	-0.05	20.58	21.70	1.294	0.088	22.1
Back side	10	QPSK 25RB_13	20450/829	1:1	0.081	-0.09	20.58	21.70	1.294	0.105	22.1
Left side	10	QPSK 25RB_13	20450/829	1:1	0.095	-0.13	20.58	21.70	1.294	0.123	22.1
Top side	10	QPSK 25RB_13	20450/829	1:1	0.031	0.08	20.58	21.70	1.294	0.041	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Left side	10	QPSK 1RB_25	20600/844	1:1	0.103	0.13	20.81	21.70	1.227	0.126	22.1
Ant10 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	10	QPSK 1RB_0	20450/829	1:1	0.079	0.02	24.96	25.50	1.132	**0.089**	22.1
Left tilted	10	QPSK 1RB_0	20450/829	1:1	0.036	0.02	24.96	25.50	1.132	0.041	22.1
Right cheek	10	QPSK 1RB_0	20450/829	1:1	0.065	0.09	24.96	25.50	1.132	0.073	22.1
Right tilted	10	QPSK 1RB_0	20450/829	1:1	0.045	-0.06	24.96	25.50	1.132	0.051	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25RB_13	20450/829	1:1	0.062	-0.08	24.06	24.50	1.107	0.068	22.1
Left tilted	10	QPSK 25RB_13	20450/829	1:1	0.029	-0.02	24.06	24.50	1.107	0.033	22.1
Right cheek	10	QPSK 25RB_13	20450/829	1:1	0.053	0.07	24.06	24.50	1.107	0.058	22.1
Right tilted	10	QPSK 25RB_13	20450/829	1:1	0.037	0.03	24.06	24.50	1.107	0.041	22.1
Head Test data at the worst case with Battery2#(1RB)											

Left cheek	10	QPSK 1RB_0	20450/829	1:1	0.062	0.11	24.96	25.50	1.132	0.070	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1RB_0	20450/829	1:1	0.109	0.14	24.96	25.50	1.132	0.123	22.1
Back side	10	QPSK 1RB_0	20450/829	1:1	0.163	0.05	24.96	25.50	1.132	**0.185**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	10	QPSK 25RB_13	20450/829	1:1	0.095	0.04	24.06	24.50	1.107	0.105	22.1
Back side	10	QPSK 25RB_13	20450/829	1:1	0.135	0.07	24.06	24.50	1.107	0.149	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	10	QPSK 1RB_0	20450/829	1:1	0.152	0.14	24.96	25.50	1.132	0.172	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_0	20450/829	1:1	0.209	0.03	24.96	25.50	1.132	0.237	22.1
Back side	10	QPSK 1RB_0	20450/829	1:1	0.257	-0.07	24.96	25.50	1.132	**0.291**	22.1
Right side	10	QPSK 1RB_0	20450/829	1:1	0.086	0.01	24.96	25.50	1.132	0.097	22.1
Bottom side	10	QPSK 1RB_0	20450/829	1:1	0.188	-0.02	24.96	25.50	1.132	0.213	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25RB_13	20450/829	1:1	0.179	-0.03	24.06	24.50	1.107	0.198	22.1
Back side	10	QPSK 25RB_13	20450/829	1:1	0.242	0.04	24.06	24.50	1.107	0.268	22.1
Right side	10	QPSK 25RB_13	20450/829	1:1	0.075	0.02	24.06	24.50	1.107	0.083	22.1
Bottom side	10	QPSK 25RB_13	20450/829	1:1	0.161	0.04	24.06	24.50	1.107	0.178	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Back side	10	QPSK 1RB_0	20450/829	1:1	0.241	0.01	24.96	25.50	1.132	0.273	22.1

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

8.3.9 SAR Result of LTE Band 7

Ant1 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	20850/2510	1:1	0.243	0.03	24.38	25.50	1.294	**0.314**	22.1
Left cheek	20	PCC QPSK 1_99	20850/2510	1:1	0.212	-0.02	24.21	25.50	1.346	0.285	22.1
		SCC QPSK 1_0	21048/2529.8								
Left tilted	20	QPSK 1RB_50	20850/2510	1:1	0.099	0.19	24.38	25.50	1.294	0.128	22.1
Right cheek	20	QPSK 1RB_50	20850/2510	1:1	0.175	-0.19	24.38	25.50	1.294	0.226	22.1
Right tilted	20	QPSK 1RB_50	20850/2510	1:1	0.111	0.13	24.38	25.50	1.294	0.144	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	20850/2510	1:1	0.240	-0.10	23.41	24.50	1.285	0.308	22.1
Left tilted	20	QPSK 50RB_25	20850/2510	1:1	0.084	-0.03	23.41	24.50	1.285	0.108	22.1
Right cheek	20	QPSK 50RB_25	20850/2510	1:1	0.129	0.19	23.41	24.50	1.285	0.166	22.1
Right tilted	20	QPSK 50RB_25	20850/2510	1:1	0.091	-0.04	23.41	24.50	1.285	0.117	22.1
Head Test data at the worst case with Battery2#(1RB)											
Left cheek	20	QPSK 1RB_50	20850/2510	1:1	0.221	0.14	24.38	25.50	1.294	0.286	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_50	20850/2510	1:1	0.312	0.04	24.38	25.50	1.294	0.404	22.1
Back side	20	QPSK 1RB_50	20850/2510	1:1	0.573	-0.15	24.38	25.50	1.294	**0.742**	22.1
Back side	20	PCC QPSK 1_99	20850/2510	1:1	0.514	0.01	24.21	25.50	1.346	0.692	22.1
		SCC QPSK 1_0	21048/2529.8								
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	20850/2510	1:1	0.255	-0.02	23.41	24.50	1.285	0.328	22.1
Back side	20	QPSK 50RB_25	20850/2510	1:1	0.436	0.07	23.41	24.50	1.285	0.560	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_50	20850/2510	1:1	0.558	0.03	24.38	25.50	1.294	0.722	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	21100/2535.5	1:1	0.180	0.15	19.62	20.50	1.225	0.220	22.1
Back side	20	QPSK 1RB_50	21100/2535.5	1:1	0.290	-0.15	19.62	20.50	1.225	0.355	22.1
Left side	20	QPSK 1RB_50	21100/2535.5	1:1	0.085	-0.02	19.62	20.50	1.225	0.104	22.1
Bottom side	20	QPSK 1RB_50	21100/2535.5	1:1	0.194	0.11	19.62	20.50	1.225	0.238	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_50	21100/2535.5	1:1	0.192	-0.15	19.58	20.50	1.236	0.237	22.1
Back side	20	QPSK 50RB_50	21100/2535.5	1:1	0.305	-0.01	19.58	20.50	1.236	**0.377**	22.1
Back side	20	PCC QPSK 1_99	21100/2535	1:1	0.281	0.08	19.52	20.50	1.253	0.352	22.1
		SCC QPSK 1_0	21298/2554.8								
Left side	20	QPSK 50RB_50	21100/2535.5	1:1	0.112	-0.10	19.58	20.50	1.236	0.138	22.1
Bottom side	20	QPSK 50RB_50	21100/2535.5	1:1	0.224	-0.12	19.58	20.50	1.236	0.277	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_50	21100/2535.5	1:1	0.282	0.11	19.58	20.50	1.236	0.349	22.1
Ant4 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_99	20850/2510	1:1	0.137	-0.07	16.15	17.40	1.334	0.183	22.1
Left tilted	20	QPSK 1RB_99	20850/2510	1:1	0.145	-0.17	16.15	17.40	1.334	0.193	22.1
Right cheek	20	QPSK 1RB_99	20850/2510	1:1	0.263	0.11	16.15	17.40	1.334	0.351	22.1
Right tilted	20	QPSK 1RB_99	20850/2510	1:1	0.266	-0.07	16.15	17.40	1.334	0.355	22.1

Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	20850/2510	1:1	0.142	-0.14	15.98	17.40	1.387	0.197	22.1
Left tilted	20	QPSK 50RB_25	20850/2510	1:1	0.154	-0.04	15.98	17.40	1.387	0.214	22.1
Right cheek	20	QPSK 50RB_25	20850/2510	1:1	0.259	0.19	15.98	17.40	1.387	0.359	22.1
Right tilted	20	QPSK 50RB_25	20850/2510	1:1	0.351	-0.05	15.98	17.40	1.387	**0.487**	22.1
Right tilted	20	PCC QPSK 1_99	20850/2510	1:1	0.302	0.06	15.91	17.40	1.409	0.426	22.1
		SCC QPSK 1_0	21048/2529.8								
Head Test data at the worst case with Battery2#(50%RB)											
Right tilted	20	QPSK 50RB_25	20850/2510	1:1	0.321	0.17	15.98	17.40	1.387	0.445	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_99	20850/2510	1:1	0.189	0.19	24.58	25.40	1.208	0.228	22.1
Back side	20	QPSK 1RB_99	20850/2510	1:1	0.439	0.03	24.58	25.40	1.208	**0.530**	22.1
Back side	20	PCC QPSK 1_99	20850/2510	1:1	0.391	-0.17	24.34	25.40	1.276	0.499	22.1
		SCC QPSK 1_0	21048/2529.8								
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_50	20850/2510	1:1	0.152	0.11	23.57	24.40	1.211	0.184	22.1
Back side	20	QPSK 50RB_50	20850/2510	1:1	0.288	-0.12	23.57	24.40	1.211	0.349	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_99	20850/2510	1:1	0.411	0.14	24.58	25.40	1.208	0.496	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	20850/2510	1:1	0.060	-0.05	16.15	17.40	1.334	0.080	22.1
Back side	20	QPSK 1RB_99	20850/2510	1:1	0.114	0.05	16.15	17.40	1.334	**0.152**	22.1
Back side	20	PCC QPSK 1_99	20850/2510	1:1	0.102	0.11	15.91	17.40	1.409	0.144	22.1
		SCC QPSK 1_0	21048/2529.8								
Left side	20	QPSK 1RB_99	20850/2510	1:1	0.024	0.01	16.15	17.40	1.334	0.032	22.1
Top side	20	QPSK 1RB_99	20850/2510	1:1	0.095	-0.04	16.15	17.40	1.334	0.127	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	20850/2510	1:1	0.052	0.18	15.98	17.40	1.387	0.072	22.1
Back side	20	QPSK 50RB_25	20850/2510	1:1	0.108	-0.09	15.98	17.40	1.387	0.150	22.1
Left side	20	QPSK 50RB_25	20850/2510	1:1	0.035	0.08	15.98	17.40	1.387	0.049	22.1
Top side	20	QPSK 50RB_25	20850/2510	1:1	0.089	0.08	15.98	17.40	1.387	0.124	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Back side	20	QPSK 1RB_99	20850/2510	1:1	0.102	-0.03	16.15	17.40	1.334	0.136	22.1
Ant8 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_99	21100/2535.5	1:1	0.258	0.00	18.36	19.00	1.159	0.299	22.1
Left tilted	20	QPSK 1RB_99	21100/2535.5	1:1	0.020	-0.04	18.36	19.00	1.159	0.023	22.1
Right cheek	20	QPSK 1RB_99	21100/2535.5	1:1	0.239	-0.16	18.36	19.00	1.159	0.277	22.1
Right tilted	20	QPSK 1RB_99	21100/2535.5	1:1	0.052	-0.16	18.36	19.00	1.159	0.060	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	20850/2510	1:1	0.268	-0.03	18.32	19.00	1.169	**0.313**	22.1
Left cheek	20	PCC QPSK 1_99	20850/2510	1:1	0.247	0.11	18.25	19.00	1.189	0.294	22.1
		SCC QPSK 1_0	21048/2529.8								
Left tilted	20	QPSK 50RB_25	20850/2510	1:1	0.019	0.08	18.32	19.00	1.169	0.022	22.1
Right cheek	20	QPSK 50RB_25	20850/2510	1:1	0.245	0.05	18.32	19.00	1.169	0.287	22.1
Right tilted	20	QPSK 50RB_25	20850/2510	1:1	0.065	0.17	18.32	19.00	1.169	0.076	22.1
Head Test data at the worst case with Battery2#(50%RB)											
Left cheek	20	QPSK 50RB_25	20850/2510	1:1	0.237	0.18	18.32	19.00	1.169	0.277	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_99	20850/2510	1:1	0.040	0.10	19.21	20.00	1.199	0.048	22.1

Back side	20	QPSK 1RB_99	20850/2510	1:1	0.043	0.11	19.21	20.00	1.199	0.051	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_0	20850/2510	1:1	0.046	-0.06	19.32	20.00	1.169	0.054	22.1
Back side	20	QPSK 50RB_0	20850/2510	1:1	0.048	0.13	19.32	20.00	1.169	**0.056**	22.1
Back side	20	PCC QPSK 1_99	20850/2510	1:1	0.039	-0.10	19.14	20.00	1.219	0.048	22.1
		SCC QPSK 1_0	21048/2529.8								
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	20	QPSK 50RB_0	20850/2510	1:1	0.039	0.11	19.32	20.00	1.169	0.046	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	21100/2535.5	1:1	0.084	0.09	18.36	19.00	1.159	0.097	22.1
Back side	20	QPSK 1RB_99	21100/2535.5	1:1	0.082	0.18	18.36	19.00	1.159	0.095	22.1
Left side	20	QPSK 1RB_99	21100/2535.5	1:1	0.108	0.09	18.36	19.00	1.159	0.125	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	20850/2510	1:1	0.088	-0.15	18.32	19.00	1.169	0.103	22.1
Back side	20	QPSK 50RB_25	20850/2510	1:1	0.087	0.04	18.32	19.00	1.169	0.102	22.1
Left side	20	QPSK 50RB_25	20850/2510	1:1	0.112	0.19	18.32	19.00	1.169	**0.131**	22.1
Left side	20	PCC QPSK 1_99	20850/2510	1:1	0.098	0.08	18.25	19.00	1.189	0.116	22.1
		SCC QPSK 1_0	21048/2529.8								
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Left side	20	QPSK 50RB_25	20850/2510	1:1	0.093	0.01	18.32	19.00	1.169	0.109	22.1
Ant10 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_99	21100/2535.5	1:1	0.211	0.04	24.25	24.50	1.059	0.224	22.1
Left tilted	20	QPSK 1RB_99	21100/2535.5	1:1	0.166	0.00	24.25	24.50	1.059	0.176	22.1
Right cheek	20	QPSK 1RB_99	21100/2535.5	1:1	0.321	0.09	24.25	24.50	1.059	**0.340**	22.1
Right cheek	20	PCC QPSK 1_99	21100/2535	1:1	0.304	-0.15	24.12	24.50	1.091	0.332	22.1
		SCC QPSK 1_0	21298/2554.8								
Right tilted	20	QPSK 1RB_99	21100/2535.5	1:1	0.116	-0.05	24.25	24.50	1.059	0.123	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_50	20850/2510	1:1	0.165	-0.12	23.18	23.50	1.076	0.178	22.1
Left tilted	20	QPSK 50RB_50	20850/2510	1:1	0.213	0.00	23.18	23.50	1.076	0.229	22.1
Right cheek	20	QPSK 50RB_50	20850/2510	1:1	0.309	-0.01	23.18	23.50	1.076	0.333	22.1
Right tilted	20	QPSK 50RB_50	20850/2510	1:1	0.095	0.18	23.18	23.50	1.076	0.102	22.1
Head Test data at the worst case with Battery2#(1RB)											
Right cheek	20	QPSK 1RB_99	21100/2535.5	1:1	0.303	0.03	24.25	24.50	1.059	0.321	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_99	21100/2535.5	1:1	0.183	0.03	24.25	24.50	1.059	0.194	22.1
Back side	20	QPSK 1RB_99	21100/2535.5	1:1	0.296	0.02	24.25	24.50	1.059	**0.314**	22.1
Back side	20	PCC QPSK 1_99	21100/2535	1:1	0.271	0.17	24.12	24.50	1.091	0.296	22.1
		SCC QPSK 1_0	21298/2554.8								
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_50	20850/2510	1:1	0.156	0.03	23.18	23.50	1.076	0.168	22.1
Back side	20	QPSK 50RB_50	20850/2510	1:1	0.219	0.02	23.18	23.50	1.076	0.236	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_99	21100/2535.5	1:1	0.268	0.07	24.25	24.50	1.059	0.284	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	21100/2535.5	1:1	0.093	0.03	19.27	19.50	1.054	0.098	22.1
Back side	20	QPSK 1RB_50	21100/2535.5	1:1	0.126	0.13	19.27	19.50	1.054	0.133	22.1
Right side	20	QPSK 1RB_50	21100/2535.5	1:1	0.189	-0.18	19.27	19.50	1.054	0.199	22.1
Bottom side	20	QPSK 1RB_50	21100/2535.5	1:1	0.037	0.15	19.27	19.50	1.054	0.039	22.1

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Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	21100/2535.5	1:1	0.099	0.03	18.92	19.50	1.143	0.113	22.1
Back side	20	QPSK 50RB_0	21100/2535.5	1:1	0.138	0.13	18.92	19.50	1.143	0.158	22.1
Right side	20	QPSK 50RB_0	21100/2535.5	1:1	0.205	-0.06	18.92	19.50	1.143	**0.234**	22.1
Right side	20	PCC QPSK 1_99	21100/2535	1:1	0.178	0.04	19.13	19.50	1.089	0.194	22.1
		SCC QPSK 1_0	21298/2554.8								
Bottom side	20	QPSK 50RB_0	21100/2535.5	1:1	0.039	0.15	18.92	19.50	1.143	0.045	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Right side	20	QPSK 50RB_0	21100/2535.5	1:1	0.183	-0.04	18.92	19.50	1.143	0.209	22.1

Ant1(ENDC) Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	21350/2560	1:1	0.157	0.02	21.86	23.30	1.393	**0.219**	22.1
Left tilted	20	QPSK 1RB_0	21350/2560	1:1	0.052	0.06	21.86	23.30	1.393	0.072	22.1
Right cheek	20	QPSK 1RB_0	21350/2560	1:1	0.105	0.08	21.86	23.30	1.393	0.146	22.1
Right tilted	20	QPSK 1RB_0	21350/2560	1:1	0.096	-0.15	21.86	23.30	1.393	0.134	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	21350/2560	1:1	0.145	0.10	20.76	22.30	1.426	0.207	22.1
Left tilted	20	QPSK 50RB_25	21350/2560	1:1	0.044	0.19	20.76	22.30	1.426	0.063	22.1
Right cheek	20	QPSK 50RB_25	21350/2560	1:1	0.086	-0.12	20.76	22.30	1.426	0.123	22.1
Right tilted	20	QPSK 50RB_25	21350/2560	1:1	0.071	0.19	20.76	22.30	1.426	0.101	22.1
Head Test data at the worst case with Battery2#(1RB)											
Left cheek	20	QPSK 1RB_0	21350/2560	1:1	0.132	0.11	21.86	23.30	1.393	0.184	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	21350/2560	1:1	0.217	0.02	21.86	23.30	1.393	0.302	22.1
Back side	20	QPSK 1RB_0	21350/2560	1:1	0.257	0.01	21.86	23.30	1.393	**0.358**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	21350/2560	1:1	0.169	0.07	20.76	22.30	1.426	0.241	22.1
Back side	20	QPSK 50RB_25	21350/2560	1:1	0.232	0.14	20.76	22.30	1.426	0.331	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_0	21350/2560	1:1	0.234	-0.13	21.86	23.30	1.393	0.326	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	21100/2535.5	1:1	0.132	0.18	17.02	18.30	1.343	0.177	22.1
Back side	20	QPSK 1RB_50	21100/2535.5	1:1	0.152	-0.04	17.02	18.30	1.343	0.204	22.1
Left side	20	QPSK 1RB_50	21100/2535.5	1:1	0.073	0.01	17.02	18.30	1.343	0.098	22.1
Bottom side	20	QPSK 1RB_50	21100/2535.5	1:1	0.125	-0.11	17.02	18.30	1.343	0.168	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	21100/2535.5	1:1	0.137	-0.06	16.93	18.30	1.371	0.188	22.1
Back side	20	QPSK 50RB_25	21100/2535.5	1:1	0.150	0.05	16.93	18.30	1.371	**0.206**	22.1
Left side	20	QPSK 50RB_25	21100/2535.5	1:1	0.074	-0.19	16.93	18.30	1.371	0.101	22.1
Bottom side	20	QPSK 50RB_25	21100/2535.5	1:1	0.127	0.10	16.93	18.30	1.371	0.174	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_25	21100/2535.5	1:1	0.114	0.17	16.93	18.30	1.371	0.156	22.1

Ant4(ENDC) Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	21100/2535.5	1:1	0.086	0.05	13.32	14.50	1.312	0.113	22.1
Left tilted	20	QPSK 1RB_50	21100/2535.5	1:1	0.090	-0.07	13.32	14.50	1.312	0.118	22.1

Right cheek	20	QPSK 1RB_50	21100/2535.5	1:1	0.142	-0.08	13.32	14.50	1.312	0.186	22.1
Right tilted	20	QPSK 1RB_50	21100/2535.5	1:1	0.177	-0.02	13.32	14.50	1.312	0.232	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_0	20850/2510	1:1	0.088	-0.14	13.24	14.50	1.337	0.118	22.1
Left tilted	20	QPSK 50RB_0	20850/2510	1:1	0.094	0.12	13.24	14.50	1.337	0.126	22.1
Right cheek	20	QPSK 50RB_0	20850/2510	1:1	0.150	0.18	13.24	14.50	1.337	0.200	22.1
Right tilted	20	QPSK 50RB_0	20850/2510	1:1	0.184	-0.17	13.24	14.50	1.337	**0.246**	22.1
Head Test data at the worst case with Battery2#(50%RB)											
Right tilted	20	QPSK 50RB_0	20850/2510	1:1	0.161	0.03	13.24	14.50	1.337	0.215	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	21350/2560	1:1	0.091	0.15	20.94	22.50	1.432	0.130	22.1
Back side	20	QPSK 1RB_0	21350/2560	1:1	0.160	-0.02	20.94	22.50	1.432	**0.229**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	21350/2560	1:1	0.076	0.03	19.78	21.50	1.486	0.113	22.1
Back side	20	QPSK 50RB_25	21350/2560	1:1	0.139	0.12	19.78	21.50	1.486	0.207	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_0	21350/2560	1:1	0.143	0.18	20.94	22.50	1.432	0.205	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	21100/2535.5	1:1	0.031	-0.03	13.32	14.50	1.312	0.041	22.1
Back side	20	QPSK 1RB_50	21100/2535.5	1:1	0.062	-0.01	13.32	14.50	1.312	0.081	22.1
Left side	20	QPSK 1RB_50	21100/2535.5	1:1	0.002	0.18	13.32	14.50	1.312	0.003	22.1
Top side	20	QPSK 1RB_50	21100/2535.5	1:1	0.052	0.10	13.32	14.50	1.312	0.068	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	20850/2510	1:1	0.016	0.08	13.24	14.50	1.337	0.021	22.1
Back side	20	QPSK 50RB_0	20850/2510	1:1	0.062	0.01	13.24	14.50	1.337	**0.083**	22.1
Left side	20	QPSK 50RB_0	20850/2510	1:1	0.001	0.04	13.24	14.50	1.337	0.001	22.1
Top side	20	QPSK 50RB_0	20850/2510	1:1	0.056	0.14	13.24	14.50	1.337	0.075	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_0	20850/2510	1:1	0.047	0.13	13.24	14.50	1.337	0.063	22.1
Ant8(ENDC) Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_99	20850/2510	1:1	0.304	-0.05	19.32	19.50	1.042	0.317	22.1
Left tilted	20	QPSK 1RB_99	20850/2510	1:1	0.033	0.18	19.32	19.50	1.042	0.034	22.1
Right cheek	20	QPSK 1RB_99	20850/2510	1:1	0.247	0.12	19.32	19.50	1.042	0.257	22.1
Right tilted	20	QPSK 1RB_99	20850/2510	1:1	0.079	0.00	19.32	19.50	1.042	0.082	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_50	21350/2560	1:1	0.415	0.01	19.15	19.50	1.084	**0.450**	22.1
Left tilted	20	QPSK 50RB_50	21350/2560	1:1	0.052	0.18	19.15	19.50	1.084	0.056	22.1
Right cheek	20	QPSK 50RB_50	21350/2560	1:1	0.312	-0.08	19.15	19.50	1.084	0.338	22.1
Right tilted	20	QPSK 50RB_50	21350/2560	1:1	0.105	0.12	19.15	19.50	1.084	0.114	22.1
Head Test data at the worst case with Battery2#(50%RB)											
Left cheek	20	QPSK 50RB_50	21350/2560	1:1	0.397	0.16	19.15	19.50	1.084	0.430	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_50	21350/2560	1:1	0.088	0.02	20.31	20.50	1.045	**0.092**	22.1
Back side	20	QPSK 1RB_50	21350/2560	1:1	0.063	-0.16	20.31	20.50	1.045	0.066	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_50	20850/2510	1:1	0.074	0.12	20.16	20.50	1.081	0.080	22.1
Back side	20	QPSK 50RB_50	20850/2510	1:1	0.065	0.16	20.16	20.50	1.081	0.070	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_50	21350/2560	1:1	0.072	-0.05	20.31	20.50	1.045	0.075	22.1

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Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	21350/2560	1:1	0.124	0.11	20.31	20.50	1.045	0.130	22.1
Back side	20	QPSK 1RB_50	21350/2560	1:1	0.101	0.06	20.31	20.50	1.045	0.106	22.1
Left side	20	QPSK 1RB_50	21350/2560	1:1	0.123	0.07	20.31	20.50	1.045	0.129	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_50	20850/2510	1:1	0.125	-0.03	20.16	20.50	1.081	**0.135**	22.1
Back side	20	QPSK 50RB_50	20850/2510	1:1	0.100	0.14	20.16	20.50	1.081	0.108	22.1
Left side	20	QPSK 50RB_50	20850/2510	1:1	0.119	-0.08	20.16	20.50	1.081	0.129	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_50	20850/2510	1:1	0.107	0.08	20.16	20.50	1.081	0.116	22.1
Ant10(ENDC) Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	21350/2560	1:1	0.344	-0.06	25.09	25.50	1.099	0.378	22.1
Left tilted	20	QPSK 1RB_0	21350/2560	1:1	0.303	-0.13	25.09	25.50	1.099	0.333	22.1
Right cheek	20	QPSK 1RB_0	21350/2560	1:1	0.534	0.04	25.09	25.50	1.099	**0.587**	22.1
Right tilted	20	QPSK 1RB_0	21350/2560	1:1	0.205	0.10	25.09	25.50	1.099	0.225	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	21350/2560	1:1	0.296	-0.08	24.26	24.50	1.057	0.313	22.1
Left tilted	20	QPSK 50RB_25	21350/2560	1:1	0.253	0.19	24.26	24.50	1.057	0.267	22.1
Right cheek	20	QPSK 50RB_25	21350/2560	1:1	0.522	-0.06	24.26	24.50	1.057	0.552	22.1
Right tilted	20	QPSK 50RB_25	21350/2560	1:1	0.170	0.05	24.26	24.50	1.057	0.180	22.1
Head Test data at the worst case with Battery2#(1RB)											
Right cheek	20	QPSK 1RB_0	21350/2560	1:1	0.509	-0.04	25.09	25.50	1.099	0.559	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	21350/2560	1:1	0.337	0.16	25.09	25.50	1.099	0.370	22.1
Back side	20	QPSK 1RB_0	21350/2560	1:1	0.551	0.05	25.09	25.50	1.099	**0.606**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	21350/2560	1:1	0.282	0.08	24.26	24.50	1.057	0.298	22.1
Back side	20	QPSK 50RB_25	21350/2560	1:1	0.440	0.14	24.26	24.50	1.057	0.465	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_0	21350/2560	1:1	0.527	0.01	25.09	25.50	1.099	0.579	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	20850/2510	1:1	0.136	-0.02	20.27	20.50	1.054	0.143	22.1
Back side	20	QPSK 1RB_0	20850/2510	1:1	0.186	0.06	20.27	20.50	1.054	0.196	22.1
Right side	20	QPSK 1RB_0	20850/2510	1:1	0.334	-0.06	20.27	20.50	1.054	0.352	22.1
Bottom side	20	QPSK 1RB_0	20850/2510	1:1	0.055	-0.19	20.27	20.50	1.054	0.058	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_50	21100/2535.5	1:1	0.187	0.11	20.23	20.50	1.064	0.199	22.1
Back side	20	QPSK 50RB_50	21100/2535.5	1:1	0.237	-0.02	20.23	20.50	1.064	0.252	22.1
Right side	20	QPSK 50RB_50	21100/2535.5	1:1	0.352	-0.01	20.23	20.50	1.064	**0.375**	22.1
Bottom side	20	QPSK 50RB_50	21100/2535.5	1:1	0.081	-0.13	20.23	20.50	1.064	0.086	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Right side	20	QPSK 50RB_50	21100/2535.5	1:1	0.322	0.17	20.23	20.50	1.064	0.343	22.1

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

8.3.10SAR Result of LTE Band 12

Ant2 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	10	QPSK 1RB_25	23060/704	1:1	0.175	0.03	21.76	22.70	1.242	0.217	22.1
Left tilted	10	QPSK 1RB_25	23060/704	1:1	0.133	0.05	21.76	22.70	1.242	0.165	22.1
Right cheek	10	QPSK 1RB_25	23060/704	1:1	0.441	0.07	21.76	22.70	1.242	0.548	22.1
Right tilted	10	QPSK 1RB_25	23060/704	1:1	0.290	-0.03	21.76	22.70	1.242	0.360	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25RB_25	23095/707.5	1:1	0.204	0.15	21.64	22.70	1.276	0.260	22.1
Left tilted	10	QPSK 25RB_25	23095/707.5	1:1	0.147	0.02	21.64	22.70	1.276	0.188	22.1
Right cheek	10	QPSK 25RB_25	23095/707.5	1:1	0.509	-0.04	21.64	22.70	1.276	**0.650**	22.1
Right tilted	10	QPSK 25RB_25	23095/707.5	1:1	0.300	-0.05	21.64	22.70	1.276	0.383	22.1
Head Test data at the worst case with Battery2#(50%RB)											
Right cheek	10	QPSK 25RB_25	23095/707.5	1:1	0.485	0.14	21.64	22.70	1.276	0.619	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1RB_49	23130/711	1:1	0.149	-0.01	24.92	25.70	1.197	0.178	22.1
Back side	10	QPSK 1RB_49	23130/711	1:1	0.165	-0.08	24.92	25.70	1.197	**0.197**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	10	QPSK 25RB_13	23060/704	1:1	0.142	-0.09	24.04	24.70	1.164	0.165	22.1
Back side	10	QPSK 25RB_13	23060/704	1:1	0.140	0.00	24.04	24.70	1.164	0.163	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	10	QPSK 1RB_49	23130/711	1:1	0.147	0.03	24.92	25.70	1.197	0.176	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_25	23060/704	1:1	0.125	0.08	21.76	22.70	1.242	0.155	22.1
Back side	10	QPSK 1RB_25	23060/704	1:1	0.152	0.16	21.76	22.70	1.242	0.189	22.1
Left side	10	QPSK 1RB_25	23060/704	1:1	0.251	0.08	21.76	22.70	1.242	0.312	22.1
Top side	10	QPSK 1RB_25	23060/704	1:1	0.056	0.02	21.76	22.70	1.242	0.070	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25RB_25	23095/707.5	1:1	0.135	-0.13	21.64	22.70	1.276	0.172	22.1
Back side	10	QPSK 25RB_25	23095/707.5	1:1	0.161	-0.07	21.64	22.70	1.276	0.206	22.1
Left side	10	QPSK 25RB_25	23095/707.5	1:1	0.265	0.00	21.64	22.70	1.276	**0.338**	22.1
Top side	10	QPSK 25RB_25	23095/707.5	1:1	0.060	0.03	21.64	22.70	1.276	0.077	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Left side	10	QPSK 25RB_25	23095/707.5	1:1	0.242	0.03	21.64	22.70	1.276	0.309	22.1
Ant10 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	10	QPSK 1RB_25	23130/711	1:1	0.053	-0.08	24.93	25.50	1.140	**0.060**	22.1
Left tilted	10	QPSK 1RB_25	23130/711	1:1	0.028	0.01	24.93	25.50	1.140	0.031	22.1
Right cheek	10	QPSK 1RB_25	23130/711	1:1	0.035	0.02	24.93	25.50	1.140	0.040	22.1
Right tilted	10	QPSK 1RB_25	23130/711	1:1	0.020	0.05	24.93	25.50	1.140	0.022	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25RB_25	23060/704	1:1	0.052	0.02	24.13	24.50	1.089	0.056	22.1
Left tilted	10	QPSK 25RB_25	23060/704	1:1	0.025	0.02	24.13	24.50	1.089	0.027	22.1
Right cheek	10	QPSK 25RB_25	23060/704	1:1	0.027	-0.18	24.13	24.50	1.089	0.029	22.1
Right tilted	10	QPSK 25RB_25	23060/704	1:1	0.147	0.04	24.13	24.50	1.089	0.160	22.1
Head Test data at the worst case with Battery2#(1RB)											

Right cheek	10	QPSK 1RB_25	23130/711	1:1	0.321	0.11	24.93	25.50	1.140	0.366	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1RB_25	23130/711	1:1	0.106	-0.09	24.93	25.50	1.140	0.121	22.1
Back side	10	QPSK 1RB_25	23130/711	1:1	0.119	-0.09	24.93	25.50	1.140	**0.136**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	10	QPSK 25RB_25	23060/704	1:1	0.080	-0.03	24.13	24.50	1.089	0.087	22.1
Back side	10	QPSK 25RB_25	23060/704	1:1	0.096	0.18	24.13	24.50	1.089	0.105	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	10	QPSK 1RB_25	23130/711	1:1	0.102	0.17	24.93	25.50	1.140	0.116	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_25	23130/711	1:1	0.177	-0.04	24.93	25.50	1.140	0.202	22.1
Back side	10	QPSK 1RB_25	23130/711	1:1	0.180	-0.08	24.93	25.50	1.140	**0.205**	22.1
Right side	10	QPSK 1RB_25	23130/711	1:1	0.108	-0.14	24.93	25.50	1.140	0.123	22.1
Bottom side	10	QPSK 1RB_25	23130/711	1:1	0.086	0.06	24.93	25.50	1.140	0.098	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25RB_25	23060/704	1:1	0.131	0.00	24.13	24.50	1.089	0.143	22.1
Back side	10	QPSK 25RB_25	23060/704	1:1	0.142	-0.07	24.13	24.50	1.089	0.155	22.1
Right side	10	QPSK 25RB_25	23060/704	1:1	0.042	-0.09	24.13	24.50	1.089	0.046	22.1
Bottom side	10	QPSK 25RB_25	23060/704	1:1	0.064	0.03	24.13	24.50	1.089	0.069	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Back side	10	QPSK 1RB_25	23130/711	1:1	0.156	0.16	24.93	25.50	1.140	0.178	22.1

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

8.3.11SAR Result of LTE Band 17

Ant2 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	10	QPSK 1RB_25	23790/710	1:1	0.192	0.13	20.59	21.70	1.291	0.248	22.1
Left tilted	10	QPSK 1RB_25	23790/710	1:1	0.143	0.02	20.59	21.70	1.291	0.185	22.1
Right cheek	10	QPSK 1RB_25	23790/710	1:1	0.471	-0.06	20.59	21.70	1.291	0.608	22.1
Right tilted	10	QPSK 1RB_25	23790/710	1:1	0.317	0.04	20.59	21.70	1.291	0.409	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25RB_25	23780/709	1:1	0.212	0.09	20.36	21.70	1.361	0.289	22.1
Left tilted	10	QPSK 25RB_25	23780/709	1:1	0.158	0.08	20.36	21.70	1.361	0.215	22.1
Right cheek	10	QPSK 25RB_25	23780/709	1:1	0.506	-0.02	20.36	21.70	1.361	**0.689**	22.1
Right tilted	10	QPSK 25RB_25	23780/709	1:1	0.300	-0.03	20.36	21.70	1.361	0.408	22.1
Head Test data at the worst case with Battery2#(50%RB)											
Right cheek	10	QPSK 25RB_25	23780/709	1:1	0.482	0.16	20.36	21.70	1.361	0.656	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1RB_49	23800/711	1:1	0.162	0.01	24.92	25.70	1.197	0.194	22.1
Back side	10	QPSK 1RB_49	23800/711	1:1	0.166	0.00	24.92	25.70	1.197	**0.199**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	10	QPSK 25RB_13	23780/709	1:1	0.153	0.03	24.08	24.70	1.153	0.176	22.1
Back side	10	QPSK 25RB_13	23780/709	1:1	0.164	0.01	24.08	24.70	1.153	0.189	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	10	QPSK 1RB_49	23800/711	1:1	0.142	0.02	24.92	25.70	1.197	0.170	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_25	23790/710	1:1	0.142	0.08	20.59	21.70	1.291	0.183	22.1
Back side	10	QPSK 1RB_25	23790/710	1:1	0.171	0.04	20.59	21.70	1.291	0.221	22.1
Left side	10	QPSK 1RB_25	23790/710	1:1	0.282	0.00	20.59	21.70	1.291	0.364	22.1
Top side	10	QPSK 1RB_25	23790/710	1:1	0.059	0.02	20.59	21.70	1.291	0.076	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25RB_25	23780/709	1:1	0.135	-0.09	20.36	21.70	1.361	0.184	22.1
Back side	10	QPSK 25RB_25	23780/709	1:1	0.162	-0.08	20.36	21.70	1.361	0.221	22.1
Left side	10	QPSK 25RB_25	23780/709	1:1	0.269	0.02	20.36	21.70	1.361	**0.366**	22.1
Top side	10	QPSK 25RB_25	23780/709	1:1	0.065	0.13	20.36	21.70	1.361	0.088	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Left side	10	QPSK 25RB_25	23780/709	1:1	0.238	0.18	20.36	21.70	1.361	0.324	22.1
Ant10 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	10	QPSK 1RB_49	23780/709	1:1	0.048	0.05	24.98	25.50	1.127	**0.054**	22.1
Left tilted	10	QPSK 1RB_49	23780/709	1:1	0.025	0.02	24.98	25.50	1.127	0.029	22.1
Right cheek	10	QPSK 1RB_49	23780/709	1:1	0.030	0.06	24.98	25.50	1.127	0.034	22.1
Right tilted	10	QPSK 1RB_49	23780/709	1:1	0.017	0.02	24.98	25.50	1.127	0.019	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25RB_25	23780/709	1:1	0.051	0.02	24.17	24.50	1.079	**0.054**	22.1
Left tilted	10	QPSK 25RB_25	23780/709	1:1	0.024	0.06	24.17	24.50	1.079	0.025	22.1
Right cheek	10	QPSK 25RB_25	23780/709	1:1	0.026	0.05	24.17	24.50	1.079	0.028	22.1
Right tilted	10	QPSK 25RB_25	23780/709	1:1	0.015	0.01	24.17	24.50	1.079	0.016	22.1
Head Test data at the worst case with Battery2#(1RB)											

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Left cheek	10	QPSK 1RB_49	23780/709	1:1	0.041	0.17	24.98	25.50	1.127	0.046	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	10	QPSK 1RB_49	23780/709	1:1	0.096	-0.08	24.98	25.50	1.127	0.108	22.1
Back side	10	QPSK 1RB_49	23780/709	1:1	0.118	0.06	24.98	25.50	1.127	**0.133**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	10	QPSK 25RB_25	23780/709	1:1	0.087	0.18	24.17	24.50	1.079	0.094	22.1
Back side	10	QPSK 25RB_25	23780/709	1:1	0.105	-0.08	24.17	24.50	1.079	0.113	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	10	QPSK 1RB_49	23780/709	1:1	0.107	-0.05	24.98	25.50	1.127	0.121	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_49	23780/709	1:1	0.154	0.15	24.98	25.50	1.127	0.174	22.1
Back side	10	QPSK 1RB_49	23780/709	1:1	0.187	-0.02	24.98	25.50	1.127	**0.211**	22.1
Right side	10	QPSK 1RB_49	23780/709	1:1	0.096	-0.07	24.98	25.50	1.127	0.108	22.1
Bottom side	10	QPSK 1RB_49	23780/709	1:1	0.073	-0.10	24.98	25.50	1.127	0.082	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	10	QPSK 25RB_25	23780/709	1:1	0.147	-0.10	24.17	24.50	1.079	0.159	22.1
Back side	10	QPSK 25RB_25	23780/709	1:1	0.163	0.16	24.17	24.50	1.079	0.176	22.1
Right side	10	QPSK 25RB_25	23780/709	1:1	0.078	-0.10	24.17	24.50	1.079	0.084	22.1
Bottom side	10	QPSK 25RB_25	23780/709	1:1	0.069	-0.12	24.17	24.50	1.079	0.074	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Back side	10	QPSK 1RB_49	23780/709	1:1	0.165	0.15	24.98	25.50	1.127	0.186	22.1

Table 21：SAR of LTE Band 17 for Head and Body.

8.3.12 SAR Result of LTE Band 38

Ant1 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	37850/2580	1:1.58	0.167	0.03	24.48	25.50	1.265	**0.211**	22.1
Left cheek	20	PCC QPSK 1_99	37850/2580	1:1.58	0.134	0.11	24.25	25.50	1.334	0.179	22.1
		SCC QPSK 1_0	38048/2599.8								
Left tilted	20	QPSK 1RB_50	37850/2580	1:1.58	0.105	-0.14	24.48	25.50	1.265	0.133	22.1
Right cheek	20	QPSK 1RB_50	37850/2580	1:1.58	0.141	-0.01	24.48	25.50	1.265	0.178	22.1
Right tilted	20	QPSK 1RB_50	37850/2580	1:1.58	0.111	-0.05	24.48	25.50	1.265	0.140	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	37850/2580	1:1.58	0.153	-0.10	23.70	24.50	1.202	0.184	22.1
Left tilted	20	QPSK 50RB_25	37850/2580	1:1.58	0.086	-0.12	23.70	24.50	1.202	0.103	22.1
Right cheek	20	QPSK 50RB_25	37850/2580	1:1.58	0.116	0.10	23.70	24.50	1.202	0.139	22.1
Right tilted	20	QPSK 50RB_25	37850/2580	1:1.58	0.097	0.04	23.70	24.50	1.202	0.117	22.1
Head Test data at the worst case with Battery2#(1RB)											
Left cheek	20	QPSK 1RB_50	37850/2580	1:1.58	0.142	-0.02	24.48	25.50	1.265	0.180	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_50	37850/2580	1:1.58	0.282	0.18	24.48	25.50	1.265	0.357	22.1
Back side	20	QPSK 1RB_50	37850/2580	1:1.58	0.315	-0.12	24.48	25.50	1.265	**0.398**	22.1
Back side	20	PCC QPSK 1_99	37850/2580	1:1.58	0.285	0.14	24.25	25.50	1.334	0.380	22.1
		SCC QPSK 1_0	38048/2599.8								
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	37850/2580	1:1.58	0.229	0.09	23.70	24.50	1.202	0.275	22.1
Back side	20	QPSK 50RB_25	37850/2580	1:1.58	0.269	-0.17	23.70	24.50	1.202	0.323	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_50	37850/2580	1:1.58	0.303	0.00	24.48	25.50	1.265	0.383	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	38150/2610	1:1.58	0.261	-0.02	21.68	22.50	1.208	0.315	22.1
Back side	20	QPSK 1RB_50	38150/2610	1:1.58	0.317	0.03	21.68	22.50	1.208	0.383	22.1
Left side	20	QPSK 1RB_50	38150/2610	1:1.58	0.109	0.04	21.68	22.50	1.208	0.132	22.1
Bottom side	20	QPSK 1RB_50	38150/2610	1:1.58	0.277	0.00	21.68	22.50	1.208	0.335	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	38150/2610	1:1.58	0.266	0.00	21.70	22.50	1.202	0.320	22.1
Back side	20	QPSK 50RB_0	38150/2610	1:1.58	0.322	0.05	21.70	22.50	1.202	**0.387**	22.1
Back side	20	PCC QPSK 1_0	38150/2610	1:1.58	0.294	0.01	21.56	22.50	1.242	0.365	22.1
		SCC QPSK 1_99	37952/2590.8								
Left side	20	QPSK 50RB_0	38150/2610	1:1.58	0.111	0.08	21.70	22.50	1.202	0.133	22.1
Bottom side	20	QPSK 50RB_0	38150/2610	1:1.58	0.279	0.17	21.70	22.50	1.202	0.335	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_0	38150/2610	1:1.58	0.314	-0.09	21.70	22.50	1.202	0.378	22.1
Ant4 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	38000/2595	1:1.58	0.187	0.11	20.51	21.40	1.227	0.230	22.1
Left tilted	20	QPSK 1RB_0	38000/2595	1:1.58	0.208	0.19	20.51	21.40	1.227	0.255	22.1
Right cheek	20	QPSK 1RB_0	38000/2595	1:1.58	0.304	-0.18	20.51	21.40	1.227	0.373	22.1
Right tilted	20	QPSK 1RB_0	38000/2595	1:1.58	0.320	0.16	20.51	21.40	1.227	0.393	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	38000/2595	1:1.58	0.192	-0.09	20.45	21.40	1.245	0.239	22.1
Left tilted	20	QPSK 50RB_25	38000/2595	1:1.58	0.203	-0.02	20.45	21.40	1.245	0.253	22.1
Right cheek	20	QPSK 50RB_25	38000/2595	1:1.58	0.331	0.12	20.45	21.40	1.245	0.412	22.1
Right tilted	20	QPSK 50RB_25	38000/2595	1:1.58	0.346	0.04	20.45	21.40	1.245	**0.431**	22.1
Right tilted	20	PCC QPSK 1_99	37850/2580	1:1.58	0.311	0.16	20.34	21.40	1.276	0.397	22.1
		SCC QPSK 1_0	38048/2599.8								

Head Test data at the worst case with Battery2#(50%RB)											
Right tilted	20	QPSK 50RB_25	38000/2595	1:1.58	0.321	0.08	20.45	21.40	1.245	0.399	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	38150/2610	1:1.58	0.101	-0.03	24.33	25.40	1.279	0.129	22.1
Back side	20	QPSK 1RB_0	38150/2610	1:1.58	0.130	0.03	24.33	25.40	1.279	**0.166**	22.1
Back side	20	PCC QPSK 1_0	38150/2610	1:1.58	0.104	0.17	24.16	25.40	1.330	0.138	22.1
		SCC QPSK 1_99	37952/2590.8								
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_0	37850/2580	1:1.58	0.082	-0.08	23.40	24.40	1.259	0.103	22.1
Back side	20	QPSK 50RB_0	37850/2580	1:1.58	0.124	0.06	23.40	24.40	1.259	0.156	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_0	38150/2610	1:1.58	0.105	-0.09	24.33	25.40	1.279	0.134	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	38000/2595	1:1.58	0.074	0.04	20.51	21.40	1.227	0.091	22.1
Back side	20	QPSK 1RB_0	38000/2595	1:1.58	0.109	0.17	20.51	21.40	1.227	0.134	22.1
Left side	20	QPSK 1RB_0	38000/2595	1:1.58	0.008	0.16	20.51	21.40	1.227	0.010	22.1
Top side	20	QPSK 1RB_0	38000/2595	1:1.58	0.091	-0.06	20.51	21.40	1.227	0.112	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	38000/2595	1:1.58	0.078	-0.12	20.45	21.40	1.245	0.097	22.1
Back side	20	QPSK 50RB_25	38000/2595	1:1.58	0.111	0.08	20.45	21.40	1.245	**0.138**	22.1
Back side	20	PCC QPSK 1_99	37850/2580	1:1.58	0.096	0.04	20.34	21.40	1.276	0.123	22.1
		SCC QPSK 1_0	38048/2599.8								
Left side	20	QPSK 50RB_25	38000/2595	1:1.58	0.013	0.11	20.45	21.40	1.245	0.016	22.1
Top side	20	QPSK 50RB_25	38000/2595	1:1.58	0.104	-0.13	20.45	21.40	1.245	0.129	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_25	38000/2595	1:1.58	0.093	-0.06	20.45	21.40	1.245	0.116	22.1

Ant8 Test Record

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	38000/2595	1:1.58	0.521	-0.09	22.75	24.00	1.334	**0.695**	22.1
Left cheek	20	PCC QPSK 1_99	37850/2580	1:1.58	0.428	0.13	22.41	24.00	1.442	0.617	22.1
		SCC QPSK 1_0	38048/2599.8								
Left tilted	20	QPSK 1RB_50	38000/2595	1:1.58	0.074	-0.15	22.75	24.00	1.334	0.099	22.1
Right cheek	20	QPSK 1RB_50	38000/2595	1:1.58	0.464	-0.13	22.75	24.00	1.334	0.619	22.1
Right tilted	20	QPSK 1RB_50	38000/2595	1:1.58	0.161	-0.10	22.75	24.00	1.334	0.215	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_50	38000/2595	1:1.58	0.492	0.11	22.68	24.00	1.355	0.667	22.1
Left tilted	20	QPSK 50RB_50	38000/2595	1:1.58	0.081	0.09	22.68	24.00	1.355	0.110	22.1
Right cheek	20	QPSK 50RB_50	38000/2595	1:1.58	0.423	-0.15	22.68	24.00	1.355	0.573	22.1
Right tilted	20	QPSK 50RB_50	38000/2595	1:1.58	0.159	-0.18	22.68	24.00	1.355	0.215	22.1
Head Test data at the worst case with Battery2#(1RB)											
Left cheek	20	QPSK 1RB_50	38000/2595	1:1.58	0.504	0.08	22.75	24.00	1.334	0.672	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_99	37850/2580	1:1.58	0.077	-0.06	22.27	23.00	1.183	0.091	22.1
Back side	20	QPSK 1RB_99	37850/2580	1:1.58	0.080	-0.12	22.27	23.00	1.183	0.095	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	38000/2595	1:1.58	0.080	-0.12	22.15	23.00	1.216	0.097	22.1
Back side	20	QPSK 50RB_25	38000/2595	1:1.58	0.081	-0.08	22.15	23.00	1.216	**0.099**	22.1
Back side	20	PCC QPSK 1_99	37850/2580	1:1.58	0.070	0.10	21.94	23.00	1.276	0.089	22.1
		SCC QPSK 1_0	38048/2599.8								
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	20	QPSK 50RB_25	38000/2595	1:1.58	0.069	-0.05	22.15	23.00	1.216	0.084	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	37850/2580	1:1.58	0.153	-0.07	22.27	23.00	1.183	0.181	22.1
Back side	20	QPSK 1RB_99	37850/2580	1:1.58	0.156	0.09	22.27	23.00	1.183	0.185	22.1
Left side	20	QPSK 1RB_99	37850/2580	1:1.58	0.260	0.04	22.27	23.00	1.183	0.308	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	38000/2595	1:1.58	0.154	0.17	22.15	23.00	1.216	0.187	22.1

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Back side	20	QPSK 50RB_25	38000/2595	1:1.58	0.161	0.10	22.15	23.00	1.216	0.196	22.1
Left side	20	QPSK 50RB_25	38000/2595	1:1.58	0.270	0.14	22.15	23.00	1.216	**0.328**	22.1
Left side	20	PCC QPSK 1_99	37850/2580	1:1.58	0.220	-0.09	21.94	23.00	1.276	0.281	22.1
		SCC QPSK 1_0	38048/2599.8								
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Left side	20	QPSK 50RB_25	38000/2595	1:1.58	0.223	0.11	22.15	23.00	1.216	0.271	22.1
Ant9 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	38000/2595	1:1.58	0.060	-0.06	23.75	24.20	1.109	0.067	22.1
Left tilted	20	QPSK 1RB_0	38000/2595	1:1.58	0.061	0.07	23.75	24.20	1.109	0.068	22.1
Right cheek	20	QPSK 1RB_0	38000/2595	1:1.58	0.153	0.12	23.75	24.20	1.109	**0.170**	22.1
Right cheek	20	PCC QPSK 1_99	37850/2580	1:1.58	0.133	-0.10	23.52	24.20	1.169	0.156	22.1
		SCC QPSK 1_0	38048/2599.8								
Right tilted	20	QPSK 1RB_0	38000/2595	1:1.58	0.128	-0.02	23.75	24.20	1.109	0.142	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	38000/2595	1:1.58	0.049	-0.11	22.81	23.20	1.094	0.054	22.1
Left tilted	20	QPSK 50RB_25	38000/2595	1:1.58	0.048	-0.13	22.81	23.20	1.094	0.053	22.1
Right cheek	20	QPSK 50RB_25	38000/2595	1:1.58	0.143	0.13	22.81	23.20	1.094	0.156	22.1
Right tilted	20	QPSK 50RB_25	38000/2595	1:1.58	0.099	-0.10	22.81	23.20	1.094	0.108	22.1
Head Test data at the worst case with Battery2#(1RB)											
Right cheek	20	QPSK 1RB_0	38000/2595	1:1.58	0.132	0.15	23.75	24.20	1.109	0.146	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_99	37850/2580	1:1.58	0.057	-0.15	19.18	20.20	1.265	0.072	22.1
Back side	20	QPSK 1RB_99	37850/2580	1:1.58	0.174	-0.18	19.18	20.20	1.265	**0.220**	22.1
Back side	20	PCC QPSK 1_99	37850/2580	1:1.58	0.153	0.14	19.01	20.20	1.315	0.201	22.1
		SCC QPSK 1_0	38048/2599.8								
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	38150/2610	1:1.58	0.053	0.18	19.14	20.20	1.276	0.068	22.1
Back side	20	QPSK 50RB_25	38150/2610	1:1.58	0.122	0.10	19.14	20.20	1.276	0.156	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_99	37850/2580	1:1.58	0.162	-0.11	19.18	20.20	1.265	0.205	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	37850/2580	1:1.58	0.002	-0.18	19.18	20.20	1.265	0.003	22.1
Back side	20	QPSK 1RB_99	37850/2580	1:1.58	0.161	0.12	19.18	20.20	1.265	0.204	22.1
Left side	20	QPSK 1RB_99	37850/2580	1:1.58	0.045	-0.14	19.18	20.20	1.265	0.057	22.1
Top side	20	QPSK 1RB_99	37850/2580	1:1.58	0.063	-0.12	19.18	20.20	1.265	0.080	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	38150/2610	1:1.58	0.009	0.00	19.14	20.20	1.276	0.011	22.1
Back side	20	QPSK 50RB_25	38150/2610	1:1.58	0.167	0.00	19.14	20.20	1.276	**0.213**	22.1
Back side	20	PCC QPSK 1_0	38150/2610	1:1.58	0.144	-0.15	19.00	20.20	1.318	0.190	22.1
		SCC QPSK 1_99	37952/2590.8								
Left side	20	QPSK 50RB_25	38150/2610	1:1.58	0.045	0.08	19.14	20.20	1.276	0.057	22.1
Top side	20	QPSK 50RB_25	38150/2610	1:1.58	0.064	0.12	19.14	20.20	1.276	0.082	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_25	38150/2610	1:1.58	0.153	0.01	19.14	20.20	1.276	0.195	22.1

Table 22：SAR of LTE Band 38 for Head and Body.

8.3.13 SAR Result of LTE Band 41

Ant1 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	39750/2506	1:1.58	0.165	0.09	24.77	25.50	1.183	**0.195**	22.1
Left tilted	20	QPSK 1RB_0	39750/2506	1:1.58	0.098	0.03	24.77	25.50	1.183	0.116	22.1
Right cheek	20	QPSK 1RB_0	39750/2506	1:1.58	0.129	0.05	24.77	25.50	1.183	0.153	22.1
Right tilted	20	QPSK 1RB_0	39750/2506	1:1.58	0.102	0.08	24.77	25.50	1.183	0.121	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	39750/2506	1:1.58	0.148	0.11	23.93	24.50	1.140	0.169	22.1
Left tilted	20	QPSK 50RB_25	39750/2506	1:1.58	0.080	0.19	23.93	24.50	1.140	0.091	22.1
Right cheek	20	QPSK 50RB_25	39750/2506	1:1.58	0.108	-0.08	23.93	24.50	1.140	0.123	22.1
Right tilted	20	QPSK 50RB_25	39750/2506	1:1.58	0.087	-0.10	23.93	24.50	1.140	0.099	22.1
Head Test data at the worst case with Battery2#(1RB)											
Left cheek	20	QPSK 1RB_0	39750/2506	1:1.58	0.142	-0.02	24.77	25.50	1.183	0.168	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	39750/2506	1:1.58	0.281	-0.05	24.77	25.50	1.183	0.332	22.1
Back side	20	QPSK 1RB_0	39750/2506	1:1.58	0.296	-0.11	24.77	25.50	1.183	**0.350**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	39750/2506	1:1.58	0.216	-0.07	23.93	24.50	1.140	0.246	22.1
Back side	20	QPSK 50RB_25	39750/2506	1:1.58	0.258	-0.09	23.93	24.50	1.140	0.294	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_0	39750/2506	1:1.58	0.273	0.04	24.77	25.50	1.183	0.323	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	41490/2680	1:1.58	0.261	-0.12	21.56	22.50	1.242	0.324	22.1
Back side	20	QPSK 1RB_0	41490/2680	1:1.58	0.331	-0.10	21.56	22.50	1.242	**0.411**	22.1
Left side	20	QPSK 1RB_0	41490/2680	1:1.58	0.121	-0.03	21.56	22.50	1.242	0.150	22.1
Bottom side	20	QPSK 1RB_0	41490/2680	1:1.58	0.304	-0.01	21.56	22.50	1.242	0.377	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	41490/2680	1:1.58	0.255	-0.17	21.47	22.50	1.268	0.323	22.1
Back side	20	QPSK 50RB_25	41490/2680	1:1.58	0.306	0.19	21.47	22.50	1.268	0.388	22.1
Left side	20	QPSK 50RB_25	41490/2680	1:1.58	0.111	-0.04	21.47	22.50	1.268	0.141	22.1
Bottom side	20	QPSK 50RB_25	41490/2680	1:1.58	0.300	-0.18	21.47	22.50	1.268	0.380	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Back side	20	QPSK 1RB_0	41490/2680	1:1.58	0.314	0.06	21.56	22.50	1.242	0.390	22.1
Ant4 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_99	41490/2680	1:1.58	0.195	0.09	20.48	21.40	1.236	0.241	22.1
Left tilted	20	QPSK 1RB_99	41490/2680	1:1.58	0.219	0.08	20.48	21.40	1.236	0.271	22.1
Right cheek	20	QPSK 1RB_99	41490/2680	1:1.58	0.305	-0.17	20.48	21.40	1.236	0.377	22.1
Right tilted	20	QPSK 1RB_99	41490/2680	1:1.58	0.340	-0.10	20.48	21.40	1.236	0.420	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	41490/2680	1:1.58	0.214	0.12	20.42	21.40	1.253	0.268	22.1
Left tilted	20	QPSK 50RB_25	41490/2680	1:1.58	0.237	0.06	20.42	21.40	1.253	0.297	22.1
Right cheek	20	QPSK 50RB_25	41490/2680	1:1.58	0.327	0.07	20.42	21.40	1.253	0.410	22.1
Right tilted	20	QPSK 50RB_25	41490/2680	1:1.58	0.351	0.08	20.42	21.40	1.253	**0.440**	22.1
Head Test data at the worst case with Battery2#(50%RB)											
Right tilted	20	QPSK 50RB_25	41490/2680	1:1.58	0.334	-0.07	20.42	21.40	1.253	0.419	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	40620/2593	1:1.58	0.099	0.17	24.40	25.40	1.259	0.125	22.1
Back side	20	QPSK 1RB_0	40620/2593	1:1.58	0.113	-0.03	24.40	25.40	1.259	0.142	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	39750/2506	1:1.58	0.078	0.18	23.48	24.40	1.236	0.096	22.1
Back side	20	QPSK 50RB_25	39750/2506	1:1.58	0.122	-0.05	23.48	24.40	1.236	**0.151**	22.1

Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	20	QPSK 50RB_25	39750/2506	1:1.58	0.114	-0.12	23.48	24.40	1.236	0.141	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	41490/2680	1:1.58	0.045	-0.17	20.48	21.40	1.236	0.056	22.1
Back side	20	QPSK 1RB_99	41490/2680	1:1.58	0.101	0.10	20.48	21.40	1.236	0.125	22.1
Left side	20	QPSK 1RB_99	41490/2680	1:1.58	0.008	0.13	20.48	21.40	1.236	0.010	22.1
Top side	20	QPSK 1RB_99	41490/2680	1:1.58	0.103	0.15	20.48	21.40	1.236	0.127	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	41490/2680	1:1.58	0.052	0.10	20.42	21.40	1.253	0.065	22.1
Back side	20	QPSK 50RB_25	41490/2680	1:1.58	0.117	-0.07	20.42	21.40	1.253	**0.147**	22.1
Left side	20	QPSK 50RB_25	41490/2680	1:1.58	0.012	0.16	20.42	21.40	1.253	0.015	22.1
Top side	20	QPSK 50RB_25	41490/2680	1:1.58	0.107	-0.17	20.42	21.40	1.253	0.134	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_25	41490/2680	1:1.58	0.102	0.11	20.42	21.40	1.253	0.128	22.1
Ant8 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	40620/2593	1:1.58	0.533	0.08	22.15	23.00	1.216	**0.648**	22.1
Left tilted	20	QPSK 1RB_0	40620/2593	1:1.58	0.076	-0.04	22.15	23.00	1.216	0.092	22.1
Right cheek	20	QPSK 1RB_0	40620/2593	1:1.58	0.465	0.10	22.15	23.00	1.216	0.566	22.1
Right tilted	20	QPSK 1RB_0	40620/2593	1:1.58	0.168	0.08	22.15	23.00	1.216	0.204	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	40185/2549.5	1:1.58	0.532	-0.16	22.17	23.00	1.211	0.644	22.1
Left tilted	20	QPSK 50RB_25	40185/2549.5	1:1.58	0.081	-0.07	22.17	23.00	1.211	0.098	22.1
Right cheek	20	QPSK 50RB_25	40185/2549.5	1:1.58	0.471	0.17	22.17	23.00	1.211	0.570	22.1
Right tilted	20	QPSK 50RB_25	40185/2549.5	1:1.58	0.175	0.19	22.17	23.00	1.211	0.212	22.1
Head Test data at the worst case with Battery2#(1RB)											
Left cheek	20	QPSK 1RB_0	40620/2593	1:1.58	0.508	0.02	22.15	23.00	1.216	0.618	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	40620/2593	1:1.58	0.060	0.14	22.15	23.00	1.216	0.073	22.1
Back side	20	QPSK 1RB_0	40620/2593	1:1.58	0.074	0.17	22.15	23.00	1.216	0.090	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	40185/2549.5	1:1.58	0.065	0.15	22.17	23.00	1.211	0.079	22.1
Back side	20	QPSK 50RB_25	40185/2549.5	1:1.58	0.076	-0.04	22.17	23.00	1.211	**0.092**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	20	QPSK 50RB_25	40185/2549.5	1:1.58	0.058	0.09	22.17	23.00	1.211	0.070	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	40620/2593	1:1.58	0.139	0.18	22.15	23.00	1.216	0.169	22.1
Back side	20	QPSK 1RB_0	40620/2593	1:1.58	0.143	0.17	22.15	23.00	1.216	0.174	22.1
Left side	20	QPSK 1RB_0	40620/2593	1:1.58	0.239	0.16	22.15	23.00	1.216	0.291	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	40185/2549.5	1:1.58	0.161	0.14	22.17	23.00	1.211	0.195	22.1
Back side	20	QPSK 50RB_25	40185/2549.5	1:1.58	0.162	-0.19	22.17	23.00	1.211	0.196	22.1
Left side	20	QPSK 50RB_25	40185/2549.5	1:1.58	0.247	0.02	22.17	23.00	1.211	**0.299**	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Left side	20	QPSK 50RB_25	40185/2549.5	1:1.58	0.214	-0.09	22.17	23.00	1.211	0.259	22.1
Ant9 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_99	40620/2593	1:1.58	0.057	0.08	23.44	24.20	1.191	0.068	22.1
Left tilted	20	QPSK 1RB_99	40620/2593	1:1.58	0.056	0.15	23.44	24.20	1.191	0.067	22.1
Right cheek	20	QPSK 1RB_99	40620/2593	1:1.58	0.146	-0.01	23.44	24.20	1.191	**0.174**	22.1
Right tilted	20	QPSK 1RB_99	40620/2593	1:1.58	0.126	-0.02	23.44	24.20	1.191	0.150	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_0	41490/2680	1:1.58	0.046	0.02	22.54	23.20	1.164	0.054	22.1
Left tilted	20	QPSK 50RB_0	41490/2680	1:1.58	0.041	-0.09	22.54	23.20	1.164	0.048	22.1

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Right cheek	20	QPSK 50RB_0	41490/2680	1:1.58	0.127	-0.06	22.54	23.20	1.164	0.148	22.1
Right tilted	20	QPSK 50RB_0	41490/2680	1:1.58	0.095	-0.05	22.54	23.20	1.164	0.111	22.1
Head Test data at the worst case with Battery2#(1RB)											
Right cheek	20	QPSK 1RB_99	40620/2593	1:1.58	0.118	0.15	23.44	24.20	1.191	0.141	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_99	40620/2593	1:1.58	0.002	-0.07	19.55	20.20	1.161	0.002	22.1
Back side	20	QPSK 1RB_99	40620/2593	1:1.58	0.074	0.01	19.55	20.20	1.161	**0.086**	22.1
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_0	41490/2680	1:1.58	0.003	-0.14	19.41	20.20	1.199	0.004	22.1
Back side	20	QPSK 50RB_0	41490/2680	1:1.58	0.068	-0.11	19.41	20.20	1.199	0.082	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_99	40620/2593	1:1.58	0.062	0.03	19.55	20.20	1.161	0.072	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_99	40620/2593	1:1.58	0.030	0.11	19.55	20.20	1.161	0.035	22.1
Back side	20	QPSK 1RB_99	40620/2593	1:1.58	0.179	0.10	19.55	20.20	1.161	0.208	22.1
Left side	20	QPSK 1RB_99	40620/2593	1:1.58	0.042	-0.06	19.55	20.20	1.161	0.049	22.1
Top side	20	QPSK 1RB_99	40620/2593	1:1.58	0.030	-0.16	19.55	20.20	1.161	0.035	22.1
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	41490/2680	1:1.58	0.059	0.10	19.41	20.20	1.199	0.071	22.1
Back side	20	QPSK 50RB_0	41490/2680	1:1.58	0.191	0.01	19.41	20.20	1.199	**0.229**	22.1
Left side	20	QPSK 50RB_0	41490/2680	1:1.58	0.045	0.15	19.41	20.20	1.199	0.054	22.1
Top side	20	QPSK 50RB_0	41490/2680	1:1.58	0.037	0.02	19.41	20.20	1.199	0.044	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_0	41490/2680	1:1.58	0.165	0.08	19.41	20.20	1.199	0.198	22.1

Table 23：SAR of LTE Band 41 for Head and Body.

8.3.14 SAR Result of LTE Band 66

Ant1 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	132572/1770	1:1	0.023	0.02	24.81	25.50	1.172	0.027	22.2
Left tilted	20	QPSK 1RB_0	132572/1770	1:1	0.014	-0.06	24.81	25.50	1.172	0.016	22.2
Right cheek	20	QPSK 1RB_0	132572/1770	1:1	0.048	0.10	24.81	25.50	1.172	**0.056**	22.2
Right tilted	20	QPSK 1RB_0	132572/1770	1:1	0.034	-0.03	24.81	25.50	1.172	0.040	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	132072/1720	1:1	0.021	0.19	23.95	24.50	1.135	0.024	22.2
Left tilted	20	QPSK 50RB_25	132072/1720	1:1	0.010	0.19	23.95	24.50	1.135	0.011	22.2
Right cheek	20	QPSK 50RB_25	132072/1720	1:1	0.039	0.14	23.95	24.50	1.135	0.044	22.2
Right tilted	20	QPSK 50RB_25	132072/1720	1:1	0.028	-0.03	23.95	24.50	1.135	0.032	22.2
Head Test data at the worst case with Battery2#(1RB)											
Right cheek	20	QPSK 1RB_0	132572/1770	1:1	0.035	0.06	24.81	25.50	1.172	0.041	22.2
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	132572/1770	1:1	0.099	0.07	24.81	25.50	1.172	0.116	22.2
Back side	20	QPSK 1RB_0	132572/1770	1:1	0.182	-0.05	24.81	25.50	1.172	**0.213**	22.2
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	132072/1720	1:1	0.084	-0.01	23.95	24.50	1.135	0.095	22.2
Back side	20	QPSK 50RB_25	132072/1720	1:1	0.122	0.12	23.95	24.50	1.135	0.138	22.2
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_0	132572/1770	1:1	0.163	0.03	24.81	25.50	1.172	0.191	22.2
Hotspot Test data (Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	132572/1770	1:1	0.195	-0.06	24.81	25.50	1.172	0.229	22.2
Back side	20	QPSK 1RB_0	132572/1770	1:1	0.287	-0.11	24.81	25.50	1.172	0.336	22.2
Left side	20	QPSK 1RB_0	132572/1770	1:1	0.080	0.09	24.81	25.50	1.172	0.094	22.2
Bottom side	20	QPSK 1RB_0	132572/1770	1:1	0.564	-0.04	24.81	25.50	1.172	**0.661**	22.2
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	132072/1720	1:1	0.164	0.18	23.95	24.50	1.135	0.186	22.2
Back side	20	QPSK 50RB_25	132072/1720	1:1	0.240	0.10	23.95	24.50	1.135	0.272	22.2
Left side	20	QPSK 50RB_25	132072/1720	1:1	0.070	-0.03	23.95	24.50	1.135	0.079	22.2
Bottom side	20	QPSK 50RB_25	132072/1720	1:1	0.490	0.04	23.95	24.50	1.135	0.556	22.2
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Bottom side	20	QPSK 1RB_0	132572/1770	1:1	0.534	0.11	24.81	25.50	1.172	0.626	22.2
Ant4 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	132572/1770	1:1	0.279	-0.08	18.79	19.40	1.151	0.321	22.2
Left tilted	20	QPSK 1RB_0	132572/1770	1:1	0.368	0.06	18.79	19.40	1.151	0.423	22.2
Right cheek	20	QPSK 1RB_0	132572/1770	1:1	0.381	-0.02	18.79	19.40	1.151	0.438	22.2
Right tilted	20	QPSK 1RB_0	132572/1770	1:1	0.512	-0.08	18.79	19.40	1.151	0.589	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_0	132322/1745	1:1	0.281	-0.04	18.54	19.40	1.219	0.343	22.2
Left tilted	20	QPSK 50RB_0	132322/1745	1:1	0.359	0.10	18.54	19.40	1.219	0.438	22.2
Right cheek	20	QPSK 50RB_0	132322/1745	1:1	0.392	0.09	18.54	19.40	1.219	0.478	22.2
Right tilted	20	QPSK 50RB_0	132322/1745	1:1	0.587	-0.02	18.54	19.40	1.219	**0.716**	22.2
Head Test data at the worst case with Battery2#(50%RB)											

Right tilted	20	QPSK 50RB_0	132322/1745	1:1	0.562	0.17	18.54	19.40	1.219	0.685	22.2
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_0	132572/1770	1:1	0.190	-0.14	24.60	25.40	1.202	0.228	22.2
Back side	20	QPSK 1RB_0	132572/1770	1:1	0.335	-0.02	24.60	25.40	1.202	**0.403**	22.2
Body worn Test data (Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_25	132072/1720	1:1	0.157	0.05	23.72	24.40	1.169	0.184	22.2
Back side	20	QPSK 50RB_25	132072/1720	1:1	0.237	0.06	23.72	24.40	1.169	0.277	22.2
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_0	132572/1770	1:1	0.308	0.16	24.60	25.40	1.202	0.370	22.2
Hotspot Test data (Separate 10mm 1RB)											
Front side	20	QPSK 1RB_0	132572/1770	1:1	0.106	-0.02	18.79	19.40	1.151	0.122	22.2
Back side	20	QPSK 1RB_0	132572/1770	1:1	0.178	0.01	18.79	19.40	1.151	0.205	22.2
Left side	20	QPSK 1RB_0	132572/1770	1:1	0.038	0.13	18.79	19.40	1.151	0.044	22.2
Top side	20	QPSK 1RB_0	132572/1770	1:1	0.258	0.05	18.79	19.40	1.151	**0.297**	22.2
Hotspot Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	132322/1745	1:1	0.102	-0.05	18.54	19.40	1.219	0.124	22.2
Back side	20	QPSK 50RB_0	132322/1745	1:1	0.155	0.01	18.54	19.40	1.219	0.189	22.2
Left side	20	QPSK 50RB_0	132322/1745	1:1	0.030	0.05	18.54	19.40	1.219	0.037	22.2
Top side	20	QPSK 50RB_0	132322/1745	1:1	0.237	-0.02	18.54	19.40	1.219	0.289	22.2
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Top side	20	QPSK 1RB_0	132572/1770	1:1	0.221	0.01	18.79	19.40	1.151	0.254	22.2

Table 24：SAR of LTE Band 66 for Head and Body.

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8.3.15 SAR Result of 5G NR n5

Ant2 Test Record										
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test Data 1RB										
Left cheek	20	QPSK 1RB_1	166800/834	0.120	-0.03	19.52	20.70	1.312	0.157	22.1
Left tilted	20	QPSK 1RB_1	166800/834	0.073	-0.09	19.52	20.70	1.312	0.096	22.1
Right cheek	20	QPSK 1RB_1	166800/834	0.318	0.01	19.52	20.70	1.312	0.417	22.1
Right tilted	20	QPSK 1RB_1	166800/834	0.186	-0.03	19.52	20.70	1.312	0.244	22.1
Head Test Data 50%RB										
Left cheek	20	QPSK 50RB_28	167800/839	0.117	0.06	19.51	20.70	1.315	0.154	22.1
Left tilted	20	QPSK 50RB_28	167800/839	0.081	-0.04	19.51	20.70	1.315	0.106	22.1
Right cheek	20	QPSK 50RB_28	167800/839	0.339	-0.14	19.51	20.70	1.315	**0.446**	22.1
Right tilted	20	QPSK 50RB_28	167800/839	0.221	0.06	19.51	20.70	1.315	0.291	22.1
Head Test Data at the worst case with Battery2# (50%RB)										
Right cheek	20	QPSK 50RB_28	167800/839	0.317	0.09	19.51	20.70	1.315	0.417	22.1
Body worn Test Data (15mm 1RB)										
Front side	20	QPSK 1RB_1	166800/834	0.090	-0.02	24.58	25.70	1.294	0.116	22.1
Back side	20	QPSK 1RB_1	166800/834	0.107	0.03	24.58	25.70	1.294	0.138	22.1
Body worn Test Data (15mm 50%RB)										
Front side	20	QPSK 50RB_28	167300/836.5	0.104	-0.17	24.57	25.70	1.297	0.135	22.1
Back side	20	QPSK 50RB_28	167300/836.5	0.109	-0.06	24.57	25.70	1.297	**0.141**	22.1
Body worn Test Data at the worst case with Battery2#(15mm 50%RB)										
Back side	20	QPSK 50RB_28	167300/836.5	0.098	0.03	24.57	25.70	1.297	0.127	22.1
Hotspot Test Data (10mm 1RB)										
Front side	20	QPSK 1RB_1	166800/834	0.072	0.07	19.52	20.70	1.312	0.094	22.1
Back side	20	QPSK 1RB_1	166800/834	0.082	0.02	19.52	20.70	1.312	0.108	22.1
Left side	20	QPSK 1RB_1	166800/834	0.104	0.06	19.52	20.70	1.312	0.136	22.1
Top side	20	QPSK 1RB_1	166800/834	0.030	0.00	19.52	20.70	1.312	0.039	22.1
Hotspot Test Data (10mm 50%RB)										
Front side	20	QPSK 50RB_28	167800/839	0.072	-0.01	19.51	20.70	1.315	0.095	22.1
Back side	20	QPSK 50RB_28	167800/839	0.078	-0.06	19.51	20.70	1.315	0.103	22.1
Left side	20	QPSK 50RB_28	167800/839	0.106	-0.04	19.51	20.70	1.315	**0.139**	22.1
Top side	20	QPSK 50RB_28	167800/839	0.030	-0.06	19.51	20.70	1.315	0.039	22.1
Hotspot Test Data at the worst case with Battery2#(10mm 50%RB)										
Left side	20	QPSK 50RB_28	167800/839	0.095	0.01	19.51	20.70	1.315	0.125	22.1
Ant10 Test Record										
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test Data 1RB										
Left cheek	20	QPSK 1RB_53	166800/834	0.074	0.01	24.65	25.50	1.216	0.090	22.1
Left tilted	20	QPSK 1RB_53	166800/834	0.033	-0.02	24.65	25.50	1.216	0.040	22.1
Right cheek	20	QPSK 1RB_53	166800/834	0.062	0.06	24.65	25.50	1.216	0.075	22.1
Right tilted	20	QPSK 1RB_53	166800/834	0.043	-0.06	24.65	25.50	1.216	0.052	22.1
Head Test Data 50%RB										
Left cheek	20	QPSK 50RB_28	166800/834	0.076	-0.07	24.64	25.50	1.219	**0.093**	22.1
Left tilted	20	QPSK 50RB_28	166800/834	0.035	-0.07	24.64	25.50	1.219	0.042	22.1
Right cheek	20	QPSK 50RB_28	166800/834	0.058	0.04	24.64	25.50	1.219	0.070	22.1
Right tilted	20	QPSK 50RB_28	166800/834	0.043	-0.09	24.64	25.50	1.219	0.052	22.1

Head Test Data at the worst case with Battery2# (50%RB)										
Left cheek	20	QPSK 50RB_28	166800/834	0.058	0.03	24.64	25.50	1.219	0.071	22.1
Body worn Test Data (15mm 1RB)										
Front side	20	QPSK 1RB_53	166800/834	0.110	0.02	24.65	25.50	1.216	0.134	22.1
Back side	20	QPSK 1RB_53	166800/834	0.139	-0.09	24.65	25.50	1.216	**0.169**	22.1
Body worn Test Data (15mm 50%RB)										
Front side	20	QPSK 50RB_28	166800/834	0.107	0.10	24.64	25.50	1.219	0.130	22.1
Back side	20	QPSK 50RB_28	166800/834	0.134	-0.02	24.64	25.50	1.219	0.163	22.1
Body worn Test Data at the worst case with Battery2#(15mm 1RB)										
Back side	20	QPSK 1RB_53	166800/834	0.107	0.13	24.65	25.50	1.216	0.130	22.1
Hotspot Test Data (10mm 1RB)										
Front side	20	QPSK 1RB_1	166800/834	0.170	0.13	23.61	24.50	1.227	0.209	22.1
Back side	20	QPSK 1RB_1	166800/834	0.183	-0.05	23.61	24.50	1.227	0.225	22.1
Right side	20	QPSK 1RB_1	166800/834	0.052	-0.09	23.61	24.50	1.227	0.064	22.1
Bottom side	20	QPSK 1RB_1	166800/834	0.144	-0.14	23.61	24.50	1.227	0.177	22.1
Hotspot Test Data (10mm 50%RB)										
Front side	20	QPSK 50RB_28	166800/834	0.174	-0.02	23.66	24.50	1.213	0.211	22.1
Back side	20	QPSK 50RB_28	166800/834	0.201	-0.03	23.66	24.50	1.213	**0.244**	22.1
Right side	20	QPSK 50RB_28	166800/834	0.062	-0.01	23.66	24.50	1.213	0.075	22.1
Bottom side	20	QPSK 50RB_28	166800/834	0.138	-0.13	23.66	24.50	1.213	0.167	22.1
Hotspot Test Data at the worst case with Battery2#(10mm 50%RB)										
Back side	20	QPSK 50RB_28	166800/834	0.183	0.04	23.66	24.50	1.213	0.222	22.1

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

8.3.16 SAR Result of 5G NR n7

Ant1 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test Data(1RB)											
Left cheek	20	QPSK 1RB_1	512000/2560	1:1	0.095	-0.06	21.06	22.20	1.300	0.124	22.1
Left tilted	20	QPSK 1RB_1	512000/2560	1:1	0.032	0.12	21.06	22.20	1.300	0.042	22.1
Right cheek	20	QPSK 1RB_1	512000/2560	1:1	0.056	0.02	21.06	22.20	1.300	0.073	22.1
Right tilted	20	QPSK 1RB_1	512000/2560	1:1	0.040	-0.13	21.06	22.20	1.300	0.052	22.1
Head Test Data(50%RB)											
Left cheek	20	QPSK 50RB_28	507000/2535	1:1	0.102	0.03	21.03	22.20	1.309	**0.134**	22.1
Left tilted	20	QPSK 50RB_28	507000/2535	1:1	0.049	0.15	21.03	22.20	1.309	0.064	22.1
Right cheek	20	QPSK 50RB_28	507000/2535	1:1	0.066	0.07	21.03	22.20	1.309	0.086	22.1
Right tilted	20	QPSK 50RB_28	507000/2535	1:1	0.055	0.04	21.03	22.20	1.309	0.072	22.1
Head Test Data at the worst case with Battery2#(50%RB)											
Left cheek	20	QPSK 50RB_28	507000/2535	1:1	0.086	-0.05	21.03	22.20	1.309	0.113	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_1	512000/2560	1:1	0.191	-0.06	21.06	22.20	1.300	0.248	22.1
Back side	20	QPSK 1RB_1	512000/2560	1:1	0.201	-0.05	21.06	22.20	1.300	0.261	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_28	507000/2535	1:1	0.207	-0.09	21.03	22.20	1.309	0.271	22.1
Back side	20	QPSK 50RB_28	507000/2535	1:1	0.214	0.01	21.03	22.20	1.309	**0.280**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	20	QPSK 50RB_28	507000/2535	1:1	0.196	0.17	21.03	22.20	1.309	0.257	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_1	507000/2535	1:1	0.124	-0.12	16.08	17.20	1.294	0.160	22.1
Back side	20	QPSK 1RB_1	507000/2535	1:1	0.127	0.09	16.08	17.20	1.294	**0.164**	22.1
Left side	20	QPSK 1RB_1	507000/2535	1:1	0.068	0.09	16.08	17.20	1.294	0.088	22.1
Bottom side	20	QPSK 1RB_1	507000/2535	1:1	0.113	0.11	16.08	17.20	1.294	0.146	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	502000/2510	1:1	0.119	-0.03	16.06	17.20	1.300	0.155	22.1
Back side	20	QPSK 50RB_0	502000/2510	1:1	0.122	0.19	16.06	17.20	1.300	0.159	22.1
Left side	20	QPSK 50RB_0	502000/2510	1:1	0.066	-0.15	16.06	17.20	1.300	0.086	22.1
Bottom side	20	QPSK 50RB_0	502000/2510	1:1	0.110	0.13	16.06	17.20	1.300	0.143	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Back side	20	QPSK 1RB_1	507000/2535	1:1	0.103	-0.06	16.08	17.20	1.294	0.133	22.1
Ant4 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test Data(1RB)											
Left cheek	20	QPSK 1RB_104	502000/2510	1:1	0.122	0.16	14.20	15.60	1.380	0.168	22.1
Left tilted	20	QPSK 1RB_104	502000/2510	1:1	0.125	0.04	14.20	15.60	1.380	0.173	22.1
Right cheek	20	QPSK 1RB_104	502000/2510	1:1	0.216	0.19	14.20	15.60	1.380	0.298	22.1
Right tilted	20	QPSK 1RB_104	502000/2510	1:1	0.222	0.14	14.20	15.60	1.380	0.306	22.1
Head Test Data(50%RB)											
Left cheek	20	QPSK 50RB_28	512000/2560	1:1	0.125	-0.03	14.10	15.60	1.413	0.177	22.1
Left tilted	20	QPSK 50RB_28	512000/2560	1:1	0.128	0.00	14.10	15.60	1.413	0.181	22.1
Right cheek	20	QPSK 50RB_28	512000/2560	1:1	0.202	-0.10	14.10	15.60	1.413	0.285	22.1
Right tilted	20	QPSK 50RB_28	512000/2560	1:1	0.224	0.04	14.10	15.60	1.413	**0.316**	22.1
Head Test Data at the worst case with Battery2#(50%RB)											
Right tilted	20	QPSK 50RB_28	512000/2560	1:1	0.203	-0.04	14.10	15.60	1.413	0.287	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_53	507000/2535	1:1	0.076	-0.11	20.19	21.60	1.384	0.105	22.1
Back side	20	QPSK 1RB_53	507000/2535	1:1	0.163	0.09	20.19	21.60	1.384	**0.226**	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_28	502000/2510	1:1	0.071	0.16	20.04	21.60	1.432	0.102	22.1
Back side	20	QPSK 50RB_28	502000/2510	1:1	0.140	0.19	20.04	21.60	1.432	0.201	22.1

Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_53	507000/2535	1:1	0.134	-0.06	20.19	21.60	1.384	0.185	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_104	502000/2510	1:1	0.002	-0.04	14.20	15.60	1.380	0.003	22.1
Back side	20	QPSK 1RB_104	502000/2510	1:1	0.068	0.06	14.20	15.60	1.380	0.094	22.1
Left side	20	QPSK 1RB_104	502000/2510	1:1	0.002	0.02	14.20	15.60	1.380	0.003	22.1
Top side	20	QPSK 1RB_104	502000/2510	1:1	0.064	-0.16	14.20	15.60	1.380	0.088	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_28	507000/2535	1:1	0.005	-0.03	14.10	15.60	1.413	0.007	22.1
Back side	20	QPSK 50RB_28	507000/2535	1:1	0.071	-0.14	14.10	15.60	1.413	0.100	22.1
Left side	20	QPSK 50RB_28	507000/2535	1:1	0.004	0.03	14.10	15.60	1.413	0.006	22.1
Top side	20	QPSK 50RB_28	507000/2535	1:1	0.078	0.07	14.10	15.60	1.413	**0.110**	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Top side	20	QPSK 50RB_28	507000/2535	1:1	0.052	-0.01	14.10	15.60	1.413	0.073	22.1

Ant8 Test Record

Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test Data(1RB)											
Left cheek	20	QPSK 1RB_1	502000/2510	1:1	0.282	-0.04	19.23	20.00	1.194	0.337	22.1
Left tilted	20	QPSK 1RB_1	502000/2510	1:1	0.055	0.19	19.23	20.00	1.194	0.066	22.1
Right cheek	20	QPSK 1RB_1	502000/2510	1:1	0.308	0.08	19.23	20.00	1.194	**0.368**	22.1
Right tilted	20	QPSK 1RB_1	502000/2510	1:1	0.073	-0.04	19.23	20.00	1.194	0.087	22.1
Head Test Data(50%RB)											
Left cheek	20	QPSK 50RB_28	512000/2560	1:1	0.259	0.02	19.09	20.00	1.233	0.319	22.1
Left tilted	20	QPSK 50RB_28	512000/2560	1:1	0.042	-0.11	19.09	20.00	1.233	0.052	22.1
Right cheek	20	QPSK 50RB_28	512000/2560	1:1	0.288	-0.02	19.09	20.00	1.233	0.355	22.1
Right tilted	20	QPSK 50RB_28	512000/2560	1:1	0.055	-0.04	19.09	20.00	1.233	0.068	22.1
Head Test Data at the worst case with Battery2#(1RB)											
Right cheek	20	QPSK 1RB_1	502000/2510	1:1	0.296	0.01	19.23	20.00	1.194	0.353	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_1	502000/2510	1:1	0.037	0.00	19.23	20.00	1.194	0.044	22.1
Back side	20	QPSK 1RB_1	502000/2510	1:1	0.049	-0.19	19.23	20.00	1.194	0.059	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_28	502000/2510	1:1	0.045	0.13	19.09	20.00	1.233	0.055	22.1
Back side	20	QPSK 50RB_28	512000/2560	1:1	0.055	0.08	19.09	20.00	1.233	**0.068**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	20	QPSK 50RB_28	512000/2560	1:1	0.042	0.11	19.09	20.00	1.233	0.052	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_1	502000/2510	1:1	0.101	-0.04	19.23	20.00	1.194	0.121	22.1
Back side	20	QPSK 1RB_1	502000/2510	1:1	0.102	0.02	19.23	20.00	1.194	0.122	22.1
Left side	20	QPSK 1RB_1	502000/2510	1:1	0.156	-0.12	19.23	20.00	1.194	0.186	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_28	512000/2560	1:1	0.111	-0.11	19.09	20.00	1.233	0.137	22.1
Back side	20	QPSK 50RB_28	512000/2560	1:1	0.105	-0.01	19.09	20.00	1.233	0.129	22.1
Left side	20	QPSK 50RB_28	512000/2560	1:1	0.172	0.05	19.09	20.00	1.233	**0.212**	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Left side	20	QPSK 50RB_28	512000/2560	1:1	0.153	0.14	19.09	20.00	1.233	0.189	22.1

Ant10 Test Record

Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test Data(1RB)											
Left cheek	20	QPSK 1RB_104	507000/2535	1:1	0.238	-0.02	24.47	25.50	1.268	0.302	22.1
Left tilted	20	QPSK 1RB_104	507000/2535	1:1	0.178	-0.11	24.47	25.50	1.268	0.226	22.1
Right cheek	20	QPSK 1RB_104	507000/2535	1:1	0.354	-0.08	24.47	25.50	1.268	0.449	22.1
Right tilted	20	QPSK 1RB_104	507000/2535	1:1	0.126	-0.13	24.47	25.50	1.268	0.160	22.1
Head Test Data(50%RB)											
Left cheek	20	QPSK 50RB_28	507000/2535	1:1	0.240	-0.12	24.46	25.50	1.271	0.305	22.1
Left tilted	20	QPSK 50RB_28	507000/2535	1:1	0.188	-0.18	24.46	25.50	1.271	0.239	22.1

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Right cheek	20	QPSK 50RB_28	507000/2535	1:1	0.377	0.02	24.46	25.50	1.271	**0.479**	22.1
Right tilted	20	QPSK 50RB_28	507000/2535	1:1	0.149	0.13	24.46	25.50	1.271	0.189	22.1
Head Test Data at the worst case with Battery2#(50%RB)											
Right cheek	20	QPSK 50RB_28	507000/2535	1:1	0.342	-0.03	24.46	25.50	1.271	0.435	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_104	507000/2535	1:1	0.244	-0.17	24.47	25.50	1.268	0.309	22.1
Back side	20	QPSK 1RB_104	507000/2535	1:1	0.351	0.02	24.47	25.50	1.268	**0.445**	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_28	507000/2535	1:1	0.250	0.06	24.46	25.50	1.271	0.318	22.1
Back side	20	QPSK 50RB_28	507000/2535	1:1	0.318	-0.10	24.46	25.50	1.271	0.404	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	20	QPSK 1RB_104	507000/2535	1:1	0.324	-0.08	24.47	25.50	1.268	0.411	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_104	502000/2510	1:1	0.178	0.02	20.42	21.50	1.282	0.228	22.1
Back side	20	QPSK 1RB_104	502000/2510	1:1	0.229	-0.05	20.42	21.50	1.282	0.294	22.1
Right side	20	QPSK 1RB_104	502000/2510	1:1	0.344	-0.18	20.42	21.50	1.282	0.441	22.1
Bottom side	20	QPSK 1RB_104	502000/2510	1:1	0.073	0.17	20.42	21.50	1.282	0.094	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_0	502000/2510	1:1	0.188	-0.02	20.46	21.50	1.271	0.239	22.1
Back side	20	QPSK 50RB_0	502000/2510	1:1	0.231	0.05	20.46	21.50	1.271	0.294	22.1
Right side	20	QPSK 50RB_0	502000/2510	1:1	0.357	0.08	20.46	21.50	1.271	**0.454**	22.1
Bottom side	20	QPSK 50RB_0	502000/2510	1:1	0.071	0.02	20.46	21.50	1.271	0.090	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Right side	20	QPSK 50RB_0	502000/2510	1:1	0.323	0.07	20.46	21.50	1.271	0.410	22.1

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

8.3.17 SAR Result of 5G NR n38

Ant1 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test Data(1RB)											
Left cheek	20	QPSK 1RB_1	519000/2595	1:1	0.089	0.04	21.06	22.10	1.271	**0.114**	22.1
Left tilted	20	QPSK 1RB_1	519000/2595	1:1	0.042	0.05	21.06	22.10	1.271	0.053	22.1
Right cheek	20	QPSK 1RB_1	519000/2595	1:1	0.064	0.14	21.06	22.10	1.271	0.081	22.1
Right tilted	20	QPSK 1RB_1	519000/2595	1:1	0.033	-0.01	21.06	22.10	1.271	0.042	22.1
Head Test Data(50%RB)											
Left cheek	20	QPSK 50RB_28	522000/2610	1:1	0.082	-0.07	20.99	22.10	1.291	0.106	22.1
Left tilted	20	QPSK 50RB_28	522000/2610	1:1	0.038	0.05	20.99	22.10	1.291	0.049	22.1
Right cheek	20	QPSK 50RB_28	522000/2610	1:1	0.054	-0.18	20.99	22.10	1.291	0.070	22.1
Right tilted	20	QPSK 50RB_28	522000/2610	1:1	0.021	-0.10	20.99	22.10	1.291	0.027	22.1
Head Test Data at the worst case with Battery2#(1RB)											
Left cheek	20	QPSK 1RB_1	519000/2595	1:1	0.065	-0.03	21.06	22.10	1.271	0.083	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_1	519000/2595	1:1	0.161	0.13	21.06	22.10	1.271	0.205	22.1
Back side	20	QPSK 1RB_1	519000/2595	1:1	0.200	0.18	21.06	22.10	1.271	0.254	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_28	522000/2610	1:1	0.165	-0.11	20.99	22.10	1.291	0.213	22.1
Back side	20	QPSK 50RB_28	522000/2610	1:1	0.216	-0.09	20.99	22.10	1.291	**0.279**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	20	QPSK 50RB_28	522000/2610	1:1	0.203	0.06	20.99	22.10	1.291	0.262	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_1	522000/2610	1:1	0.122	-0.13	17.12	18.10	1.253	0.153	22.1
Back side	20	QPSK 1RB_1	522000/2610	1:1	0.153	0.06	17.12	18.10	1.253	0.192	22.1
Left side	20	QPSK 1RB_1	522000/2610	1:1	0.052	-0.08	17.12	18.10	1.253	0.065	22.1
Bottom side	20	QPSK 1RB_1	522000/2610	1:1	0.148	0.12	17.12	18.10	1.253	0.185	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_28	516000/2580	1:1	0.134	0.02	17.05	18.10	1.274	0.171	22.1
Back side	20	QPSK 50RB_28	516000/2580	1:1	0.159	0.14	17.05	18.10	1.274	**0.202**	22.1
Left side	20	QPSK 50RB_28	516000/2580	1:1	0.049	0.04	17.05	18.10	1.274	0.062	22.1
Bottom side	20	QPSK 50RB_28	516000/2580	1:1	0.155	0.16	17.05	18.10	1.274	0.197	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_28	516000/2580	1:1	0.134	0.03	17.05	18.10	1.274	0.171	22.1
Ant4 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test Data(1RB)											
Left cheek	20	QPSK 1RB_1	522000/2610	1:1	0.170	-0.15	16.21	17.60	1.377	0.234	22.1
Left tilted	20	QPSK 1RB_1	522000/2610	1:1	0.179	-0.17	16.21	17.60	1.377	0.247	22.1
Right cheek	20	QPSK 1RB_1	522000/2610	1:1	0.299	0.11	16.21	17.60	1.377	0.412	22.1
Right tilted	20	QPSK 1RB_1	522000/2610	1:1	0.313	-0.18	16.21	17.60	1.377	0.431	22.1
Head Test Data(50%RB)											
Left cheek	20	QPSK 50RB_28	516000/2580	1:1	0.175	-0.03	16.01	17.60	1.442	0.252	22.1
Left tilted	20	QPSK 50RB_28	516000/2580	1:1	0.182	0.06	16.01	17.60	1.442	0.262	22.1
Right cheek	20	QPSK 50RB_28	516000/2580	1:1	0.311	-0.05	16.01	17.60	1.442	0.448	22.1
Right tilted	20	QPSK 50RB_28	516000/2580	1:1	0.318	0.13	16.01	17.60	1.442	**0.459**	22.1
Head Test Data at the worst case with Battery2#(50%RB)											
Right tilted	20	QPSK 50RB_28	516000/2580	1:1	0.305	-0.04	16.01	17.60	1.442	0.440	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_1	522000/2610	1:1	0.072	-0.19	20.16	21.60	1.393	0.100	22.1
Back side	20	QPSK 1RB_1	522000/2610	1:1	0.129	0.05	20.16	21.60	1.393	0.180	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_28	522000/2610	1:1	0.065	0.18	19.98	21.60	1.452	0.094	22.1
Back side	20	QPSK 50RB_28	522000/2610	1:1	0.125	0.03	19.98	21.60	1.452	**0.182**	22.1

Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	20	QPSK 50RB_28	522000/2610	1:1	0.106	0.01	19.98	21.60	1.452	0.154	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_1	522000/2610	1:1	0.055	-0.16	16.21	17.60	1.377	0.076	22.1
Back side	20	QPSK 1RB_1	522000/2610	1:1	0.108	0.17	16.21	17.60	1.377	0.149	22.1
Left side	20	QPSK 1RB_1	522000/2610	1:1	0.035	-0.11	16.21	17.60	1.377	0.048	22.1
Top side	20	QPSK 1RB_1	522000/2610	1:1	0.110	0.01	16.21	17.60	1.377	0.151	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_28	516000/2580	1:1	0.058	-0.07	16.01	17.60	1.442	0.084	22.1
Back side	20	QPSK 50RB_28	516000/2580	1:1	0.113	-0.11	16.01	17.60	1.442	0.163	22.1
Left side	20	QPSK 50RB_28	516000/2580	1:1	0.038	0.16	16.01	17.60	1.442	0.055	22.1
Top side	20	QPSK 50RB_28	516000/2580	1:1	0.119	0.09	16.01	17.60	1.442	**0.172**	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Top side	20	QPSK 50RB_28	516000/2580	1:1	0.101	-0.08	16.01	17.60	1.442	0.146	22.1
Ant8 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test Data(1RB)											
Left cheek	20	QPSK 1RB_1	516000/2580	1:1	0.464	-0.01	20.25	21.00	1.189	**0.551**	22.1
Left tilted	20	QPSK 1RB_1	516000/2580	1:1	0.380	0.00	20.25	21.00	1.189	0.452	22.1
Right cheek	20	QPSK 1RB_1	516000/2580	1:1	0.448	0.07	20.25	21.00	1.189	0.532	22.1
Right tilted	20	QPSK 1RB_1	516000/2580	1:1	0.371	-0.12	20.25	21.00	1.189	0.441	22.1
Head Test Data(50%RB)											
Left cheek	20	QPSK 50RB_28	522000/2610	1:1	0.428	0.08	20.12	21.00	1.225	0.524	22.1
Left tilted	20	QPSK 50RB_28	522000/2610	1:1	0.350	0.01	20.12	21.00	1.225	0.429	22.1
Right cheek	20	QPSK 50RB_28	522000/2610	1:1	0.405	0.17	20.12	21.00	1.225	0.496	22.1
Right tilted	20	QPSK 50RB_28	522000/2610	1:1	0.341	-0.18	20.12	21.00	1.225	0.418	22.1
Head Test Data at the worst case with Battery2#(1RB)											
Left cheek	20	QPSK 1RB_1	516000/2580	1:1	0.438	0.07	20.25	21.00	1.189	0.521	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_53	522000/2610	1:1	0.030	-0.11	19.26	20.00	1.186	0.036	22.1
Back side	20	QPSK 1RB_53	522000/2610	1:1	0.041	0.05	19.26	20.00	1.186	0.049	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_28	522000/2610	1:1	0.032	-0.19	19.08	20.00	1.236	0.040	22.1
Back side	20	QPSK 50RB_28	522000/2610	1:1	0.064	-0.07	19.08	20.00	1.236	**0.079**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	20	QPSK 50RB_28	522000/2610	1:1	0.049	0.04	19.08	20.00	1.236	0.061	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_53	522000/2610	1:1	0.134	0.04	19.26	20.00	1.186	0.159	22.1
Back side	20	QPSK 1RB_53	522000/2610	1:1	0.140	-0.07	19.26	20.00	1.186	0.166	22.1
Left side	20	QPSK 1RB_53	522000/2610	1:1	0.206	-0.06	19.26	20.00	1.186	0.244	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_28	522000/2610	1:1	0.139	-0.03	19.08	20.00	1.236	0.172	22.1
Back side	20	QPSK 50RB_28	522000/2610	1:1	0.145	-0.11	19.08	20.00	1.236	0.179	22.1
Left side	20	QPSK 50RB_28	522000/2610	1:1	0.225	-0.01	19.08	20.00	1.236	**0.278**	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Left side	20	QPSK 50RB_28	522000/2610	1:1	0.214	0.06	19.08	20.00	1.236	0.264	22.1
Ant9 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test Data(1RB)											
Left cheek	20	QPSK 1RB_1	516000/2580	1:1	0.090	0.18	23.13	24.20	1.279	0.115	22.1
Left tilted	20	QPSK 1RB_1	516000/2580	1:1	0.083	-0.10	23.13	24.20	1.279	0.106	22.1
Right cheek	20	QPSK 1RB_1	516000/2580	1:1	0.245	-0.13	23.13	24.20	1.279	**0.313**	22.1
Right tilted	20	QPSK 1RB_1	516000/2580	1:1	0.179	0.01	23.13	24.20	1.279	0.229	22.1
Head Test Data(50%RB)											
Left cheek	20	QPSK 50RB_28	516000/2580	1:1	0.078	-0.05	23.08	24.20	1.294	0.101	22.1
Left tilted	20	QPSK 50RB_28	516000/2580	1:1	0.075	-0.19	23.08	24.20	1.294	0.097	22.1

Right cheek	20	QPSK 50RB_28	516000/2580	1:1	0.231	0.11	23.08	24.20	1.294	0.299	22.1
Right tilted	20	QPSK 50RB_28	516000/2580	1:1	0.158	0.05	23.08	24.20	1.294	0.204	22.1
Head Test Data at the worst case with Battery2#(1RB)											
Right cheek	20	QPSK 1RB_1	516000/2580	1:1	0.219	-0.11	23.13	24.20	1.279	0.280	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	20	QPSK 1RB_1	522000/2610	1:1	0.029	-0.03	18.12	19.20	1.282	0.037	22.1
Back side	20	QPSK 1RB_1	522000/2610	1:1	0.101	-0.09	18.12	19.20	1.282	0.130	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	20	QPSK 50RB_56	516000/2580	1:1	0.035	0.09	18.07	19.20	1.297	0.045	22.1
Back side	20	QPSK 50RB_56	516000/2580	1:1	0.123	0.02	18.07	19.20	1.297	**0.160**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	20	QPSK 50RB_56	516000/2580	1:1	0.107	0.08	18.07	19.20	1.297	0.139	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_1	522000/2610	1:1	0.011	-0.10	18.12	19.20	1.282	0.014	22.1
Back side	20	QPSK 1RB_1	522000/2610	1:1	0.256	-0.08	18.12	19.20	1.282	0.328	22.1
Left side	20	QPSK 1RB_1	522000/2610	1:1	0.080	0.19	18.12	19.20	1.282	0.103	22.1
Top side	20	QPSK 1RB_1	522000/2610	1:1	0.049	0.01	18.12	19.20	1.282	0.063	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_56	516000/2580	1:1	0.015	0.13	18.07	19.20	1.297	0.019	22.1
Back side	20	QPSK 50RB_56	516000/2580	1:1	0.285	0.07	18.07	19.20	1.297	**0.370**	22.1
Left side	20	QPSK 50RB_56	516000/2580	1:1	0.077	0.19	18.07	19.20	1.297	0.100	22.1
Top side	20	QPSK 50RB_56	516000/2580	1:1	0.055	0.01	18.07	19.20	1.297	0.071	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	20	QPSK 50RB_56	516000/2580	1:1	0.262	-0.03	18.07	19.20	1.297	0.340	22.1

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

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8.3.18 SAR Result of 5G NR n41

Ant1 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test Data(1RB)											
Left cheek	100	QPSK 1RB_137	518598/2592.99	1:1	0.089	-0.17	20.94	21.80	1.219	0.108	22.1
Left tilted	100	QPSK 1RB_137	518598/2592.99	1:1	0.043	-0.06	20.94	21.80	1.219	0.052	22.1
Right cheek	100	QPSK 1RB_137	518598/2592.99	1:1	0.059	-0.15	20.94	21.80	1.219	0.072	22.1
Right tilted	100	QPSK 1RB_137	518598/2592.99	1:1	0.044	0.15	20.94	21.80	1.219	0.054	22.1
Head Test Data(50%RB)											
Left cheek	100	QPSK 135RB_69	523302/2616.51	1:1	0.099	0.06	20.86	21.80	1.242	**0.123**	22.1
Left tilted	100	QPSK 135RB_69	523302/2616.51	1:1	0.045	-0.18	20.86	21.80	1.242	0.056	22.1
Right cheek	100	QPSK 135RB_69	523302/2616.51	1:1	0.066	0.12	20.86	21.80	1.242	0.082	22.1
Right tilted	100	QPSK 135RB_69	523302/2616.51	1:1	0.051	0.19	20.86	21.80	1.242	0.063	22.1
Head Test Data at the worst case with Battery2#(50%RB)											
Left cheek	100	QPSK 135RB_69	523302/2616.51	1:1	0.082	0.03	20.86	21.80	1.242	0.102	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	100	QPSK 1RB_137	518598/2592.99	1:1	0.142	0.18	20.94	21.80	1.219	0.173	22.1
Back side	100	QPSK 1RB_137	518598/2592.99	1:1	0.162	0.06	20.94	21.80	1.219	0.197	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	100	QPSK 135RB_69	523302/2616.51	1:1	0.145	-0.04	20.86	21.80	1.242	0.180	22.1
Back side	100	QPSK 135RB_69	523302/2616.51	1:1	0.209	-0.11	20.86	21.80	1.242	**0.260**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	100	QPSK 135RB_69	523302/2616.51	1:1	0.186	0.06	20.86	21.80	1.242	0.231	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	100	QPSK 1RB_1	528000/2640	1:1	0.113	0.13	17.05	17.80	1.189	0.134	22.1
Back side	100	QPSK 1RB_1	528000/2640	1:1	0.160	0.15	17.05	17.80	1.189	**0.190**	22.1
Left side	100	QPSK 1RB_1	528000/2640	1:1	0.048	-0.05	17.05	17.80	1.189	0.057	22.1
Bottom side	100	QPSK 1RB_1	528000/2640	1:1	0.128	-0.13	17.05	17.80	1.189	0.152	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	100	QPSK 135RB_0	528000/2640	1:1	0.105	0.15	16.98	17.80	1.208	0.127	22.1
Back side	100	QPSK 135RB_0	528000/2640	1:1	0.133	0.03	16.98	17.80	1.208	0.161	22.1
Left side	100	QPSK 135RB_0	528000/2640	1:1	0.051	-0.14	16.98	17.80	1.208	0.062	22.1
Bottom side	100	QPSK 135RB_0	528000/2640	1:1	0.125	0.01	16.98	17.80	1.208	0.151	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Back side	100	QPSK 1RB_1	528000/2640	1:1	0.132	-0.11	17.05	17.80	1.189	0.157	22.1

Ant4 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test Data(1RB)											
Left cheek	100	QPSK 1RB_1	528000/2640	1:1	0.153	-0.09	15.17	16.20	1.268	0.194	22.1
Left tilted	100	QPSK 1RB_1	528000/2640	1:1	0.181	-0.10	15.17	16.20	1.268	0.229	22.1
Right cheek	100	QPSK 1RB_1	528000/2640	1:1	0.209	0.05	15.17	16.20	1.268	0.265	22.1
Right tilted	100	QPSK 1RB_1	528000/2640	1:1	0.276	-0.11	15.17	16.20	1.268	0.350	22.1
Head Test Data(50%RB)											
Left cheek	100	QPSK 135RB_69	528000/2640	1:1	0.185	0.01	14.88	16.20	1.355	0.251	22.1
Left tilted	100	QPSK 135RB_69	528000/2640	1:1	0.201	-0.19	14.88	16.20	1.355	0.272	22.1
Right cheek	100	QPSK 135RB_69	528000/2640	1:1	0.251	-0.10	14.88	16.20	1.355	0.340	22.1
Right tilted	100	QPSK 135RB_69	528000/2640	1:1	0.313	0.04	14.88	16.20	1.355	**0.424**	22.1
Head Test Data at the worst case with Battery2#(50%RB)											
Right tilted	100	QPSK 135RB_69	528000/2640	1:1	0.296	0.17	14.88	16.20	1.355	0.401	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	100	QPSK 1RB_1	528000/2640	1:1	0.052	0.11	20.14	21.20	1.276	0.066	22.1
Back side	100	QPSK 1RB_1	528000/2640	1:1	0.090	0.09	20.14	21.20	1.276	0.115	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	100	QPSK 135RB_69	528000/2640	1:1	0.055	-0.05	19.86	21.20	1.361	0.075	22.1
Back side	100	QPSK 135RB_69	528000/2640	1:1	0.135	0.13	19.86	21.20	1.361	**0.184**	22.1

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Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	100	QPSK 135RB_69	528000/2640	1:1	0.104	-0.02	19.86	21.20	1.361	0.142	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	100	QPSK 1RB_1	528000/2640	1:1	0.034	-0.03	15.17	16.20	1.268	0.043	22.1
Back side	100	QPSK 1RB_1	528000/2640	1:1	0.068	-0.08	15.17	16.20	1.268	0.086	22.1
Left side	100	QPSK 1RB_1	528000/2640	1:1	0.002	0.02	15.17	16.20	1.268	0.003	22.1
Top side	100	QPSK 1RB_1	528000/2640	1:1	0.071	-0.03	15.17	16.20	1.268	0.090	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	100	QPSK 135RB_69	528000/2640	1:1	0.031	0.19	14.88	16.20	1.355	0.042	22.1
Back side	100	QPSK 135RB_69	528000/2640	1:1	0.062	0.07	14.88	16.20	1.355	0.084	22.1
Left side	100	QPSK 135RB_69	528000/2640	1:1	0.003	-0.03	14.88	16.20	1.355	0.004	22.1
Top side	100	QPSK 135RB_69	528000/2640	1:1	0.082	0.10	14.88	16.20	1.355	**0.111**	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Top side	100	QPSK 135RB_69	528000/2640	1:1	0.061	0.07	14.88	16.20	1.355	0.083	22.1
Ant8 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test Data(1RB)											
Left cheek	100	QPSK 1RB_1	528000/2640	1:1	0.188	0.19	20.32	21.00	1.169	0.220	22.1
Left tilted	100	QPSK 1RB_1	528000/2640	1:1	0.132	-0.12	20.32	21.00	1.169	0.154	22.1
Right cheek	100	QPSK 1RB_1	528000/2640	1:1	0.440	-0.01	20.32	21.00	1.169	0.515	22.1
Right tilted	100	QPSK 1RB_1	528000/2640	1:1	0.325	-0.08	20.32	21.00	1.169	0.380	22.1
Head Test Data(50%RB)											
Left cheek	100	QPSK 135RB_69	523302/2616.51	1:1	0.183	0.13	20.03	21.00	1.250	0.229	22.1
Left tilted	100	QPSK 135RB_69	523302/2616.51	1:1	0.134	-0.01	20.03	21.00	1.250	0.168	22.1
Right cheek	100	QPSK 135RB_69	523302/2616.51	1:1	0.464	0.01	20.03	21.00	1.250	**0.580**	22.1
Right tilted	100	QPSK 135RB_69	523302/2616.51	1:1	0.391	0.07	20.03	21.00	1.250	0.489	22.1
Head Test Data at the worst case with Battery2#(50%RB)											
Right cheek	100	QPSK 135RB_69	523302/2616.51	1:1	0.425	0.14	20.03	21.00	1.250	0.531	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	100	QPSK 1RB_1	528000/2640	1:1	0.002	0.18	19.29	20.00	1.178	0.002	22.1
Back side	100	QPSK 1RB_1	528000/2640	1:1	0.058	0.11	19.29	20.00	1.178	**0.068**	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	100	QPSK 135RB_138	528000/2640	1:1	0.009	0.02	19.03	20.00	1.250	0.011	22.1
Back side	100	QPSK 135RB_138	528000/2640	1:1	0.034	0.11	19.03	20.00	1.250	0.043	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	100	QPSK 1RB_1	528000/2640	1:1	0.047	0.08	19.29	20.00	1.178	0.055	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	100	QPSK 1RB_1	528000/2640	1:1	0.077	0.12	19.29	20.00	1.178	0.091	22.1
Back side	100	QPSK 1RB_1	528000/2640	1:1	0.074	-0.15	19.29	20.00	1.178	0.087	22.1
Left side	100	QPSK 1RB_1	528000/2640	1:1	0.200	0.04	19.29	20.00	1.178	0.236	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	100	QPSK 135RB_138	528000/2640	1:1	0.079	-0.14	19.03	20.00	1.250	0.099	22.1
Back side	100	QPSK 135RB_138	528000/2640	1:1	0.076	-0.13	19.03	20.00	1.250	0.095	22.1
Left side	100	QPSK 135RB_138	528000/2640	1:1	0.216	-0.13	19.03	20.00	1.250	**0.270**	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Left side	100	QPSK 135RB_138	528000/2640	1:1	0.197	0.01	19.03	20.00	1.250	0.246	22.1
Ant9 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test Data(1RB)											
Left cheek	100	QPSK 1RB_1	528000/2640	1:1	0.071	0.15	23.18	24.00	1.208	0.086	22.1
Left tilted	100	QPSK 1RB_1	528000/2640	1:1	0.080	-0.02	23.18	24.00	1.208	0.097	22.1
Right cheek	100	QPSK 1RB_1	528000/2640	1:1	0.216	0.07	23.18	24.00	1.208	**0.261**	22.1
Right tilted	100	QPSK 1RB_1	528000/2640	1:1	0.156	-0.19	23.18	24.00	1.208	0.188	22.1
Head Test Data(50%RB)											
Left cheek	100	QPSK 135RB_69	528000/2640	1:1	0.068	0.13	23.10	24.00	1.230	0.084	22.1
Left tilted	100	QPSK 135RB_69	528000/2640	1:1	0.075	-0.02	23.10	24.00	1.230	0.092	22.1

Right cheek	100	QPSK 135RB_69	528000/2640	1:1	0.199	-0.04	23.10	24.00	1.230	0.245	22.1
Right tilted	100	QPSK 135RB_69	528000/2640	1:1	0.164	-0.14	23.10	24.00	1.230	0.202	22.1
Head Test Data at the worst case with Battery2#(1RB)											
Right cheek	100	QPSK 1RB_1	528000/2640	1:1	0.201	-0.08	23.18	24.00	1.208	0.243	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	100	QPSK 1RB_137	528000/2640	1:1	0.041	0.05	19.05	20.00	1.245	0.051	22.1
Back side	100	QPSK 1RB_137	528000/2640	1:1	0.116	0.08	19.05	20.00	1.245	0.144	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	100	QPSK 135RB_69	528000/2640	1:1	0.045	0.07	19.07	20.00	1.239	0.056	22.1
Back side	100	QPSK 135RB_69	528000/2640	1:1	0.180	0.16	19.07	20.00	1.239	**0.223**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	100	QPSK 135RB_69	528000/2640	1:1	0.162	-0.09	19.07	20.00	1.239	0.201	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	100	QPSK 1RB_137	528000/2640	1:1	0.002	-0.02	19.05	20.00	1.245	0.002	22.1
Back side	100	QPSK 1RB_137	528000/2640	1:1	0.267	0.15	19.05	20.00	1.245	0.332	22.1
Left side	100	QPSK 1RB_137	528000/2640	1:1	0.099	-0.04	19.05	20.00	1.245	0.123	22.1
Top side	100	QPSK 1RB_137	528000/2640	1:1	0.064	0.05	19.05	20.00	1.245	0.080	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	100	QPSK 135RB_69	528000/2640	1:1	0.003	0.03	19.07	20.00	1.239	0.004	22.1
Back side	100	QPSK 135RB_69	528000/2640	1:1	0.353	0.09	19.07	20.00	1.239	**0.437**	22.1
Left side	100	QPSK 135RB_69	528000/2640	1:1	0.110	-0.07	19.07	20.00	1.239	0.136	22.1
Top side	100	QPSK 135RB_69	528000/2640	1:1	0.061	0.09	19.07	20.00	1.239	0.076	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	100	QPSK 135RB_69	528000/2640	1:1	0.314	-0.14	19.07	20.00	1.239	0.389	22.1

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

8.3.19 SAR Result of 5G NR n77

Ant2 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test Data(1RB)											
Left cheek	100	QPSK 1RB_137	652400/3786	1:1	0.132	0.08	18.74	18.80	1.014	0.134	22.1
Left tilted	100	QPSK 1RB_137	652400/3786	1:1	0.071	-0.04	18.74	18.80	1.014	0.072	22.1
Right cheek	100	QPSK 1RB_137	652400/3786	1:1	0.533	-0.19	18.74	18.80	1.014	0.540	22.1
Right tilted	100	QPSK 1RB_137	652400/3786	1:1	0.191	-0.01	18.74	18.80	1.014	0.194	22.1
Right cheek	100	QPSK 1RB_271	650000/3750	1:1	0.525	-0.12	18.49	18.80	1.074	0.564	22.1
Right cheek	100	QPSK 1RB_137	654800/3822	1:1	0.532	-0.06	18.53	18.80	1.064	0.566	22.1
Right cheek	100	QPSK 1RB_137	657200/3858	1:1	0.566	-0.18	18.73	18.80	1.016	0.575	22.1
Right cheek	100	QPSK 1RB_137	659600/3894	1:1	0.582	-0.07	18.19	18.80	1.151	**0.670**	22.1
Right cheek	100	QPSK 1RB_1	662000/3930	1:1	0.585	-0.03	18.43	18.80	1.089	0.637	22.1
Head Test Data(50%RB)											
Left cheek	100	QPSK 135RB_138	652400/3786	1:1	0.125	0.01	18.73	18.80	1.016	0.127	22.1
Left tilted	100	QPSK 135RB_138	652400/3786	1:1	0.064	0.00	18.73	18.80	1.016	0.065	22.1
Right cheek	100	QPSK 135RB_138	652400/3786	1:1	0.521	0.18	18.73	18.80	1.016	0.529	22.1
Right tilted	100	QPSK 135RB_138	652400/3786	1:1	0.184	-0.10	18.73	18.80	1.016	0.187	22.1
Right cheek	100	QPSK 135RB_138	650000/3750	1:1	0.516	0.15	18.44	18.80	1.086	0.561	22.1
Right cheek	100	QPSK 135RB_69	654800/3822	1:1	0.525	0.01	18.56	18.80	1.057	0.555	22.1
Right cheek	100	QPSK 135RB_0	657200/3858	1:1	0.530	-0.03	18.69	18.80	1.026	0.544	22.1
Right cheek	100	QPSK 135RB_0	659600/3894	1:1	0.578	-0.07	18.28	18.80	1.127	0.652	22.1
Right cheek	100	QPSK 135RB_0	662000/3930	1:1	0.583	-0.11	18.29	18.80	1.125	0.656	22.1
Head Test Data at the worst case with Battery2#(1RB)											
Right cheek	100	QPSK 1RB_137	659600/3894	1:1	0.562	0.03	18.19	18.80	1.151	0.647	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	100	QPSK 1RB_271	650000/3750	1:1	0.069	-0.04	20.67	20.80	1.030	0.071	22.1
Back side	100	QPSK 1RB_271	650000/3750	1:1	0.076	0.02	20.67	20.80	1.030	**0.079**	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	100	QPSK 135RB_69	650000/3750	1:1	0.066	-0.02	20.58	20.80	1.052	0.069	22.1
Back side	100	QPSK 135RB_69	650000/3750	1:1	0.070	0.09	20.58	20.80	1.052	0.074	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	100	QPSK 1RB_271	650000/3750	1:1	0.063	-0.08	20.67	20.80	1.030	0.065	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	100	QPSK 1RB_137	652400/3786	1:1	0.054	0.00	18.74	18.80	1.014	0.055	22.1
Back side	100	QPSK 1RB_137	652400/3786	1:1	0.067	-0.06	18.74	18.80	1.014	**0.068**	22.1
Left side	100	QPSK 1RB_137	652400/3786	1:1	0.060	0.00	18.74	18.80	1.014	0.061	22.1
Top side	100	QPSK 1RB_137	652400/3786	1:1	0.048	0.19	18.74	18.80	1.014	0.049	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	100	QPSK 135RB_138	652400/3786	1:1	0.048	0.14	18.73	18.80	1.016	0.049	22.1
Back side	100	QPSK 135RB_138	652400/3786	1:1	0.064	0.03	18.73	18.80	1.016	0.065	22.1
Left side	100	QPSK 135RB_138	652400/3786	1:1	0.056	-0.19	18.73	18.80	1.016	0.057	22.1
Top side	100	QPSK 135RB_138	652400/3786	1:1	0.044	-0.15	18.73	18.80	1.016	0.045	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Back side	100	QPSK 1RB_137	652400/3786	1:1	0.053	0.14	18.74	18.80	1.014	0.054	22.1
Ant3 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test Data(1RB)											
Left cheek	100	QPSK 1RB_137	654800/3822	1:1	0.216	0.02	15.34	15.50	1.038	0.224	22.1
Left tilted	100	QPSK 1RB_137	654800/3822	1:1	0.319	0.03	15.34	15.50	1.038	0.331	22.1
Right cheek	100	QPSK 1RB_137	654800/3822	1:1	0.321	0.02	15.34	15.50	1.038	0.333	22.1
Right tilted	100	QPSK 1RB_137	654800/3822	1:1	0.489	-0.10	15.34	15.50	1.038	0.507	22.1
Right tilted	100	QPSK 1RB_137	650000/3750	1:1	0.520	-0.04	15.25	15.50	1.059	0.551	22.1
Right tilted	100	QPSK 1RB_1	652400/3786	1:1	0.488	0.14	15.33	15.50	1.040	0.507	22.1
Right tilted	100	QPSK 1RB_1	657200/3858	1:1	0.489	0.06	15.07	15.50	1.104	0.540	22.1

Right tilted	100	QPSK 1RB_1	659600/3894	1:1	0.476	-0.06	14.98	15.50	1.127	0.537	22.1
Right tilted	100	QPSK 1RB_1	662000/3930	1:1	0.463	0.00	15.07	15.50	1.104	0.511	22.1
Head Test Data(50%RB)											
Left cheek	100	QPSK 135RB_0	652400/3786	1:1	0.210	0.11	15.36	15.50	1.033	0.217	22.1
Left tilted	100	QPSK 135RB_0	652400/3786	1:1	0.296	0.00	15.36	15.50	1.033	0.306	22.1
Right cheek	100	QPSK 135RB_0	652400/3786	1:1	0.352	-0.13	15.36	15.50	1.033	0.364	22.1
Right tilted	100	QPSK 135RB_0	652400/3786	1:1	0.467	-0.11	15.36	15.50	1.033	0.482	22.1
Right tilted	100	QPSK 135RB_69	650000/3750	1:1	0.576	0.02	15.07	15.50	1.104	**0.636**	22.1
Right tilted	100	QPSK 135RB_0	654800/3822	1:1	0.495	0.06	15.28	15.50	1.052	0.521	22.1
Right tilted	100	QPSK 135RB_0	657200/3858	1:1	0.465	-0.14	14.94	15.50	1.138	0.529	22.1
Right tilted	100	QPSK 135RB_0	659600/3894	1:1	0.445	0.18	14.70	15.50	1.202	0.535	22.1
Right tilted	100	QPSK 135RB_0	662000/3930	1:1	0.403	-0.06	14.88	15.50	1.153	0.465	22.1
Head Test Data at the worst case with Battery2#(50%RB)											
Right tilted	100	QPSK 135RB_69	650000/3750	1:1	0.553	-0.06	15.07	15.50	1.104	0.611	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	100	QPSK 1RB_1	652400/3786	1:1	0.327	0.08	24.12	24.50	1.091	0.357	22.1
Back side	100	QPSK 1RB_1	652400/3786	1:1	0.595	-0.05	24.12	24.50	1.091	0.649	22.1
Back side	100	QPSK 1RB_137	650000/3750	1:1	0.641	0.06	24.11	24.50	1.094	0.701	22.1
Back side	100	QPSK 1RB_1	654800/3822	1:1	0.628	-0.06	24.05	24.50	1.109	0.697	22.1
Back side	100	QPSK 1RB_1	657200/3858	1:1	0.639	0.08	23.91	24.50	1.146	**0.732**	22.1
Back side	100	QPSK 1RB_1	659600/3894	1:1	0.573	0.14	23.90	24.50	1.148	0.658	22.1
Back side	100	QPSK 1RB_1	662000/3930	1:1	0.517	-0.11	23.67	24.50	1.211	0.626	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	100	QPSK 135RB_69	650000/3750	1:1	0.367	-0.06	24.15	24.50	1.084	0.398	22.1
Back side	100	QPSK 135RB_69	650000/3750	1:1	0.603	-0.01	24.15	24.50	1.084	0.654	22.1
Back side	100	QPSK 135RB_69	652400/3786	1:1	0.620	0.16	24.13	24.50	1.089	0.675	22.1
Back side	100	QPSK 135RB_69	654800/3822	1:1	0.593	0.04	24.02	24.50	1.117	0.662	22.1
Back side	100	QPSK 135RB_69	657200/3858	1:1	0.555	0.12	23.71	24.50	1.199	0.666	22.1
Back side	100	QPSK 135RB_69	659600/3894	1:1	0.479	0.12	23.62	24.50	1.225	0.587	22.1
Back side	100	QPSK 135RB_69	662000/3930	1:1	0.428	0.03	23.24	24.50	1.337	0.572	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 1RB)											
Back side	100	QPSK 1RB_1	657200/3858	1:1	0.614	0.07	23.91	24.50	1.146	0.703	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	100	QPSK 1RB_137	654800/3822	1:1	0.080	0.11	15.34	15.50	1.038	0.083	22.1
Back side	100	QPSK 1RB_137	654800/3822	1:1	0.126	-0.19	15.34	15.50	1.038	0.131	22.1
Left side	100	QPSK 1RB_137	654800/3822	1:1	0.049	0.00	15.34	15.50	1.038	0.051	22.1
Top side	100	QPSK 1RB_137	654800/3822	1:1	0.186	-0.09	15.34	15.50	1.038	0.193	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	100	QPSK 135RB_0	652400/3786	1:1	0.077	-0.04	15.36	15.50	1.033	0.080	22.1
Back side	100	QPSK 135RB_0	652400/3786	1:1	0.134	-0.19	15.36	15.50	1.033	0.138	22.1
Left side	100	QPSK 135RB_0	652400/3786	1:1	0.047	-0.12	15.36	15.50	1.033	0.049	22.1
Top side	100	QPSK 135RB_0	652400/3786	1:1	0.198	-0.19	15.36	15.50	1.033	**0.204**	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Top side	100	QPSK 135RB_0	652400/3786	1:1	0.172	-0.04	15.36	15.50	1.033	0.178	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 (W/kg)**	**Liquid Temp**
Product specific 10g SAR Test data(Separate 0mm 1RB Sensor on)											
Top side	100	QPSK 1RB_137	654800/3822	1:1	1.020	-0.04	16.27	16.50	1.054	1.075	22.3
Top side	100	QPSK 1RB_137	650000/3750	1:1	0.875	0.16	16.23	16.50	1.064	0.931	22.3
Top side	100	QPSK 1RB_137	652400/3786	1:1	0.921	-0.04	16.24	16.50	1.062	0.978	22.3
Top side	100	QPSK 1RB_1	657200/3858	1:1	0.917	-0.02	16.02	16.50	1.117	1.024	22.3
Top side	100	QPSK 1RB_1	659600/3894	1:1	0.906	-0.04	15.88	16.50	1.153	1.045	22.3
Top side	100	QPSK 1RB_1	662000/3930	1:1	0.887	0.00	15.98	16.50	1.127	1.000	22.3
Product specific 10g SAR Test data(Separate 0mm 50%RB Sensor on)											
Top side	100	QPSK 135RB_0	654800/3822	1:1	0.948	-0.07	16.21	16.50	1.069	1.013	22.3
Top side	100	QPSK 135RB_69	650000/3750	1:1	0.895	-0.14	15.99	16.50	1.125	1.007	22.3
Top side	100	QPSK 135RB_69	652400/3786	1:1	1.090	0.02	16.12	16.50	1.091	1.190	22.3
Top side	100	QPSK 135RB_0	657200/3858	1:1	0.913	-0.03	15.86	16.50	1.159	1.058	22.3
Top side	100	QPSK 135RB_0	659600/3894	1:1	0.962	0.00	15.58	16.50	1.236	1.189	22.3

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Top side	100	QPSK 135RB_0	662000/3930	1:1	0.859	-0.14	15.79	16.50	1.178	1.012	22.3
Product specific 10g SAR Test data(Separate 5mm 1RB Sensor off)											
Top side 5mm	100	QPSK 1RB_1	652400/3786	1:1	2.050	0.03	24.12	24.50	1.091	2.237	22.3
Top side 5mm	100	QPSK 1RB_137	650000/3750	1:1	1.890	-0.16	24.11	24.50	1.094	2.068	22.1
Top side 5mm	100	QPSK 1RB_1	654800/3822	1:1	2.310	0.09	24.05	24.50	1.109	2.562	22.1
Top side 5mm	100	QPSK 1RB_1	657200/3858	1:1	2.280	-0.09	23.85	24.50	1.161	2.648	22.1
Top side 5mm	100	QPSK 1RB_1	659600/3894	1:1	2.320	-0.10	23.90	24.50	1.148	**2.664**	22.1
Top side 5mm-repeat	100	QPSK 1RB_1	659600/3894	1:1	2.210	0.01	23.90	24.50	1.148	2.537	22.1
Top side 5mm	100	QPSK 1RB_1	662000/3930	1:1	2.170	0.08	23.67	24.50	1.211	2.627	22.1
Product specific 10g SAR Test data(Separate 5mm 50%RB Sensor off)											
Top side 5mm	100	QPSK 135RB_69	650000/3750	1:1	1.910	-0.10	24.15	24.50	1.084	2.070	22.3
Top side 5mm	100	QPSK 135RB_69	652400/3786	1:1	2.300	0.01	24.13	24.50	1.089	2.505	22.1
Top side 5mm	100	QPSK 135RB_69	654800/3822	1:1	2.290	0.15	24.02	24.50	1.117	2.558	22.1
Top side 5mm	100	QPSK 135RB_69	657200/3858	1:1	2.210	0.13	23.71	24.50	1.199	2.651	22.1
Top side 5mm	100	QPSK 135RB_69	659600/3894	1:1	2.160	-0.08	23.62	24.50	1.225	2.645	22.1
Top side 5mm	100	QPSK 135RB_69	662000/3930	1:1	1.940	-0.14	23.24	24.50	1.337	2.593	22.1
Product specific 10g SAR Test data(Separate 5mm 100%RB Sensor off)											
Top side 5mm	100	QPSK 270RB_0	652400/3786	1:1	1.540	0.13	23.13	23.50	1.089	1.677	22.1
Product specific 10g SAR Test data at the worst case with Battery2#(Separate 5mm 1RB Sensor off)											
Top side 5mm	100	QPSK 1RB_1	659600/3894	1:1	2.240	0.11	23.90	24.50	1.148	2.572	22.1

Ant5 Test Record

Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test Data(1RB)											
Left cheek	100	QPSK 1RB_137	650000/3750	1:1	0.764	-0.17	18.65	19.10	1.109	0.847	22.1
Left tilted	100	QPSK 1RB_137	650000/3750	1:1	0.266	0.02	18.65	19.10	1.109	0.295	22.1
Right cheek	100	QPSK 1RB_137	650000/3750	1:1	0.208	0.19	18.65	19.10	1.109	0.231	22.1
Right tilted	100	QPSK 1RB_137	650000/3750	1:1	0.074	0.17	18.65	19.10	1.109	0.082	22.1
Left cheek	100	QPSK 1RB_137	652400/3786	1:1	0.628	0.02	18.36	19.10	1.186	0.745	22.1
Left cheek	100	QPSK 1RB_137	654800/3822	1:1	0.595	-0.08	18.59	19.10	1.125	0.669	22.1
Left cheek	100	QPSK 1RB_137	657200/3858	1:1	0.603	-0.13	18.15	19.10	1.245	0.750	22.1
Left cheek	100	QPSK 1RB_1	659600/3894	1:1	0.597	-0.11	18.36	19.10	1.186	0.708	22.1
Left cheek	100	QPSK 1RB_1	662000/3930	1:1	0.599	0.02	17.78	19.10	1.355	0.812	22.1
Head Test Data(50%RB)											
Left cheek	100	QPSK 135RB_138	650000/3750	1:1	0.585	0.02	18.59	19.10	1.125	0.658	22.1
Left tilted	100	QPSK 135RB_138	650000/3750	1:1	0.192	-0.09	18.59	19.10	1.125	0.216	22.1
Right cheek	100	QPSK 135RB_138	650000/3750	1:1	0.162	0.13	18.59	19.10	1.125	0.182	22.1
Right tilted	100	QPSK 135RB_138	650000/3750	1:1	0.052	-0.04	18.59	19.10	1.125	0.058	22.1
Left cheek	100	QPSK 135RB_69	652400/3786	1:1	0.628	-0.08	18.36	19.10	1.186	0.745	22.1
Left cheek	100	QPSK 135RB_0	654800/3822	1:1	0.603	-0.11	18.54	19.10	1.138	0.686	22.1
Left cheek	100	QPSK 135RB_0	657200/3858	1:1	0.592	0.12	18.17	19.10	1.239	0.733	22.1
Left cheek	100	QPSK 135RB_0	659600/3894	1:1	0.607	0.00	18.15	19.10	1.245	0.755	22.1
Left cheek	100	QPSK 135RB_0	662000/3930	1:1	0.619	0.04	17.57	19.10	1.422	**0.880**	22.1
Head Test Data(100%RB)											
Left cheek	100	QPSK 270RB_0	650000/3750	1:1	0.642	0.10	18.51	19.10	1.146	0.735	22.1
Head Test Data at the worst case with Battery2#(50%RB)											
Left cheek	100	QPSK 135RB_0	662000/3930	1:1	0.602	-0.03	17.57	19.10	1.422	0.856	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	100	QPSK 1RB_271	650000/3750	1:1	0.054	0.18	19.68	20.10	1.102	0.059	22.1
Back side	100	QPSK 1RB_271	650000/3750	1:1	0.079	0.04	19.68	20.10	1.102	0.087	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	100	QPSK 135RB_138	650000/3750	1:1	0.061	0.15	19.61	20.10	1.119	0.068	22.1
Back side	100	QPSK 135RB_138	650000/3750	1:1	0.099	0.08	19.61	20.10	1.119	**0.111**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	100	QPSK 135RB_138	650000/3750	1:1	0.078	0.02	19.61	20.10	1.119	0.087	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	100	QPSK 1RB_137	650000/3750	1:1	0.104	0.15	18.65	19.10	1.109	0.115	22.1
Back side	100	QPSK 1RB_137	650000/3750	1:1	0.163	0.00	18.65	19.10	1.109	0.181	22.1
Right side	100	QPSK 1RB_137	650000/3750	1:1	0.232	0.04	18.65	19.10	1.109	**0.257**	22.1

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Top side	100	QPSK 1RB_137	650000/3750	1:1	0.064	0.17	18.65	19.10	1.109	0.071	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	100	QPSK 135RB_138	650000/3750	1:1	0.094	-0.09	18.59	19.10	1.125	0.106	22.1
Back side	100	QPSK 135RB_138	650000/3750	1:1	0.143	-0.13	18.59	19.10	1.125	0.161	22.1
Right side	100	QPSK 135RB_138	650000/3750	1:1	0.162	0.07	18.59	19.10	1.125	0.182	22.1
Top side	100	QPSK 135RB_138	650000/3750	1:1	0.059	0.14	18.59	19.10	1.125	0.066	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 1RB)											
Right side	100	QPSK 1RB_137	650000/3750	1:1	0.217	0.03	18.65	19.10	1.109	0.241	22.1
Ant12 Test Record											
Test position	**BW.**	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test Data(1RB)											
Left cheek	100	QPSK 1RB_137	650000/3750	1:1	0.085	0.18	23.99	24.80	1.205	0.102	22.1
Left tilted	100	QPSK 1RB_137	650000/3750	1:1	0.111	-0.18	23.99	24.80	1.205	0.134	22.1
Right cheek	100	QPSK 1RB_137	650000/3750	1:1	0.213	0.06	23.99	24.80	1.205	**0.257**	22.1
Right tilted	100	QPSK 1RB_137	650000/3750	1:1	0.132	0.03	23.99	24.80	1.205	0.159	22.1
Head Test Data(50%RB)											
Left cheek	100	QPSK 135RB_69	650000/3750	1:1	0.094	-0.12	23.86	24.80	1.242	0.117	22.1
Left tilted	100	QPSK 135RB_69	650000/3750	1:1	0.113	-0.04	23.86	24.80	1.242	0.140	22.1
Right cheek	100	QPSK 135RB_69	650000/3750	1:1	0.180	0.05	23.86	24.80	1.242	0.223	22.1
Right tilted	100	QPSK 135RB_69	650000/3750	1:1	0.139	-0.15	23.86	24.80	1.242	0.173	22.1
Head Test Data at the worst case with Battery2#(1RB)											
Right cheek	100	QPSK 1RB_137	650000/3750	1:1	0.198	0.04	23.99	24.80	1.205	0.239	22.1
Body worn Test data(Separate 15mm 1RB)											
Front side	100	QPSK 1RB_137	650000/3750	1:1	0.040	0.19	18.18	18.80	1.153	0.046	22.1
Back side	100	QPSK 1RB_137	650000/3750	1:1	0.058	-0.17	18.18	18.80	1.153	0.067	22.1
Body worn Test data(Separate 15mm 50%RB)											
Front side	100	QPSK 135RB_69	650000/3750	1:1	0.062	-0.02	18.10	18.80	1.175	0.073	22.1
Back side	100	QPSK 135RB_69	650000/3750	1:1	0.073	0.07	18.10	18.80	1.175	**0.086**	22.1
Body worn Test data at the worst case with Battery2#(Separate 15mm 50%RB)											
Back side	100	QPSK 135RB_69	650000/3750	1:1	0.063	0.11	18.10	18.80	1.175	0.074	22.1
Hotspot Test data(Separate 10mm 1RB)											
Front side	100	QPSK 1RB_137	650000/3750	1:1	0.048	0.09	18.18	18.80	1.153	0.055	22.1
Back side	100	QPSK 1RB_137	650000/3750	1:1	0.125	-0.10	18.18	18.80	1.153	0.144	22.1
Left side	100	QPSK 1RB_137	650000/3750	1:1	0.057	0.16	18.18	18.80	1.153	0.066	22.1
Hotspot Test data(Separate 10mm 50%RB)											
Front side	100	QPSK 135RB_69	650000/3750	1:1	0.050	0.05	18.10	18.80	1.175	0.059	22.1
Back side	100	QPSK 135RB_69	650000/3750	1:1	0.176	-0.08	18.10	18.80	1.175	**0.207**	22.1
Left side	100	QPSK 135RB_69	650000/3750	1:1	0.076	0.14	18.10	18.80	1.175	0.089	22.1
Hotspot Test data at the worst case with Battery2#(Separate 10mm 50%RB)											
Back side	100	QPSK 135RB_69	650000/3750	1:1	0.158	0.01	18.10	18.80	1.175	0.186	22.1

Table 29：SAR of 5G NR n77 for Head and Body.

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8.3.20 SAR Result of WIFI 2.4G

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data											
Left cheek	802.11b	6/2437	99.86%	1.001	0.737	0.15	21.11	21.50	1.094	0.807	22
Left tilted	802.11b	6/2437	99.86%	1.001	0.857	0.01	21.11	21.50	1.094	0.938	22
Right cheek	802.11b	6/2437	99.86%	1.001	0.446	0.02	21.11	21.50	1.094	0.488	22
Right tilted	802.11b	6/2437	99.86%	1.001	0.421	0.15	21.11	21.50	1.094	0.461	22
Left cheek	802.11b	1/2412	99.86%	1.001	0.707	0.01	20.98	21.50	1.127	0.798	22
Left cheek	802.11b	11/2462	99.86%	1.001	0.571	0.14	20.62	21.50	1.225	0.700	22
Left tilted	802.11b	1/2412	99.86%	1.001	0.835	0.15	20.98	21.50	1.127	**0.942**	22
Left tilted-repeat	802.11b	1/2412	99.86%	1.001	0.829	0.06	20.98	21.50	1.127	0.935	22
Left tilted	802.11b	11/2462	99.86%	1.001	0.682	0.03	20.62	21.50	1.225	0.836	22
Head Test data at the worst case with Battery2#											
Left tilted	802.11b	1/2412	99.86%	1.001	0.814	0.03	20.98	21.50	1.127	0.918	22
Body worn Test data(Separate 15mm)											
Front side	802.11b	6/2437	99.86%	1.001	0.122	0.15	22.08	23.50	1.387	0.169	22
Back side	802.11b	6/2437	99.86%	1.001	0.198	0.06	22.08	23.50	1.387	**0.275**	22
Body worn Test data at the worst case with Battery2#(Separate 15mm)											
Back side	802.11b	6/2437	99.86%	1.001	0.185	0.01	22.08	23.50	1.387	0.257	22
Hotspot Test data (Separate 10mm)											
Front side	802.11b	6/2437	99.86%	1.001	0.160	0.01	21.13	22.50	1.371	0.220	22
Back side	802.11b	6/2437	99.86%	1.001	0.351	0.09	21.13	22.50	1.371	**0.482**	22
Right side	802.11b	6/2437	99.86%	1.001	0.132	0.17	21.13	22.50	1.371	0.181	22
Top side	802.11b	6/2437	99.86%	1.001	0.284	0.05	21.13	22.50	1.371	0.390	22
Hotspot Test data at the worst case with Battery2#(Separate 10mm)											
Back side	802.11b	6/2437	99.86%	1.001	0.334	0.06	21.13	22.50	1.371	0.458	22
Additional Test data(simultaneous transmission with (WWAN+WiFi 2.4G)											
Test position	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg)1-g**	**Power drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR(W/kg)**	**Liquid Temp.**
Head Test data											
Left cheek	802.11b	6/2437	99.86%	1.001	0.661	0.13	20.19	20.50	1.074	0.711	22
Additional Test data(simultaneous transmission with (WWAN+WiFi 2.4G+WiFi 5G)											
Test position	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg)1-g**	**Power drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR(W/kg)**	**Liquid Temp.**
Head Test data											
Left cheek	802.11b	6/2437	99.86%	1.001	0.289	0.01	17.11	17.50	1.094	0.316	22
Left tilted	802.11b	6/2437	99.86%	1.001	0.334	-0.03	17.11	17.50	1.094	0.366	22
Right cheek	802.11b	6/2437	99.86%	1.001	0.171	0.06	17.11	17.50	1.094	0.187	22
Right tilted	802.11b	6/2437	99.86%	1.001	0.162	0.07	17.11	17.50	1.094	0.177	22

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

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Left tilted	1/2412	0.835	0.829	1.007	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

8.3.21 SAR Result of WIFI 5G

Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data of U-NII-2A											
Left cheek	802.11a	60/5300	99.05%	1.01	0.666	0.06	20.80	21.00	1.047	0.704	22.2
Left tilted	802.11a	60/5300	99.05%	1.01	0.675	0.03	20.80	21.00	1.047	0.714	22.2
Right cheek	802.11a	60/5300	99.05%	1.01	0.322	0.02	20.80	21.00	1.047	0.341	22.2
Right tilted	802.11a	60/5300	99.05%	1.01	0.332	0.01	20.80	21.00	1.047	0.351	22.2
Head Test data of U-NII-2C											
Left cheek	802.11a	116/5580	99.05%	1.01	0.795	0.03	20.31	21.00	1.172	0.941	22.2
Left tilted	802.11a	116/5580	99.05%	1.01	0.682	0.01	20.31	21.00	1.172	0.807	22.2
Right cheek	802.11a	116/5580	99.05%	1.01	0.352	0.04	20.31	21.00	1.172	0.417	22.2
Right tilted	802.11a	116/5580	99.05%	1.01	0.421	0.04	20.31	21.00	1.172	0.498	22.2
Left cheek	802.11a	140/5700	99.05%	1.01	0.785	0.16	20.27	21.00	1.183	0.938	22.2
Left tilted	802.11a	140/5700	99.05%	1.01	0.744	0.14	20.27	21.00	1.183	0.889	22.2
Head Test data of U-NII-3											
Left cheek	802.11a	157/5785	99.05%	1.01	0.780	0.14	20.30	20.50	1.047	0.825	22.2
Left tilted	802.11a	157/5785	99.05%	1.01	0.656	0.02	20.30	20.50	1.047	0.694	22.2
Right cheek	802.11a	157/5785	99.05%	1.01	0.365	0.03	20.30	20.50	1.047	0.386	22.2
Right tilted	802.11a	157/5785	99.05%	1.01	0.380	0.06	20.30	20.50	1.047	0.402	22.2
Left cheek	802.11a	161/5805	99.05%	1.01	0.787	0.02	20.26	20.50	1.057	**0.840**	22.2
Left tilted	802.11a	161/5805	99.05%	1.01	0.590	0.01	20.26	20.50	1.057	0.630	22.2
Head Test data at the worst case with Battery2#											
Left cheek	802.11a	161/5805	99.05%	1.01	0.768	0.14	20.26	20.50	1.057	0.820	22.2
Body worn Test data of U-NII-2A (Separate 15mm)											
Front side	802.11a	60/5300	99.05%	1.01	0.179	-0.04	22.26	22.50	1.057	0.191	22.2
Back side	802.11a	60/5300	99.05%	1.01	0.204	0.07	22.26	22.50	1.057	0.218	22.2
Body worn Test data of U-NII-2C(Separate 15mm)											
Front side	802.11a	116/5580	99.05%	1.01	0.157	0.02	20.54	21.50	1.247	0.198	22.2
Back side	802.11a	116/5580	99.05%	1.01	0.209	0.01	20.54	21.50	1.247	0.263	22.2
Body worn Test data of U-NII-3(Separate 15mm)											
Front side	802.11a	157/5785	99.05%	1.01	0.294	-0.08	22.83	23.50	1.167	0.346	22.2
Back side	802.11a	157/5785	99.05%	1.01	0.373	0.04	22.83	23.50	1.167	**0.440**	22.2
Body worn Test data at the worst case with Battery2#(Separate 15mm)											
Back side	802.11a	157/5785	99.05%	1.01	0.354	-0.05	22.83	23.50	1.167	0.417	22.2
Hotspot Test data of U-NII-1(Separate 10mm)											
Front side	802.11a	40/5200	99.05%	1.01	0.200	-0.14	21.72	22.50	1.197	0.242	22.2
Back side	802.11a	40/5200	99.05%	1.01	0.250	0.03	21.72	22.50	1.197	0.302	22.2
Right side	802.11a	40/5200	99.05%	1.01	0.454	-0.05	21.72	22.50	1.197	0.549	22.2
Top side	802.11a	40/5200	99.05%	1.01	0.212	0.01	21.72	22.50	1.197	0.256	22.2
Hotspot Test data of U-NII-3 (Separate 10mm)											
Front side	802.11a	157/5785	99.05%	1.01	0.306	0.08	21.19	21.50	1.074	0.332	22.2
Back side	802.11a	157/5785	99.05%	1.01	0.424	0.17	21.19	21.50	1.074	0.460	22.2
Right side	802.11a	157/5785	99.05%	1.01	0.848	0.04	21.19	21.50	1.074	**0.920**	22.2
Top side	802.11a	157/5785	99.05%	1.01	0.339	-0.03	21.19	21.50	1.074	0.368	22.2
Right side	802.11a	165/5825	99.05%	1.01	0.814	-0.10	21.06	21.50	1.107	0.910	22.2
Right side-repeat	802.11a	157/5785	99.05%	1.01	0.812	0.15	21.19	21.50	1.074	0.881	22.2
Hotspot Test data at the worst case with Battery2#(Separate 10mm)											
Right side	802.11a	157/5785	99.05%	1.01	0.832	-0.06	21.19	21.50	1.074	0.902	22.2
Additional Test data(simultaneous transmission with (WWAN+WiFi 5G)											
Test position	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg)10-g**	**Power drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR(W/kg)**	**Liquid Temp.**
Head Test data of U-NII-2C											
Left cheek	802.11a	116/5580	99.05%	1.01	0.551	0.12	18.92	19.50	1.143	0.636	22.2
Head Test data of U-NII-3											

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Left cheek	802.11a	157/5785	99.05%	1.01	0.542	-0.09	18.88	19.50	1.153	0.631	22.2
Additional Test data(simultaneous transmission with (WWAN+WiFi 2.4G+WiFi 5G/WWAN+WiFi 5G+BT)											
Test position	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg)1-g**	**Power drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR(W/kg)**	**Liquid Temp.**
Head Test data of U-NII-2A											
Left cheek	802.11a	60/5300	99.05%	1.01	0.257	0.03	16.75	17.00	1.059	0.275	22.2
Left tilted	802.11a	60/5300	99.05%	1.01	0.262	-0.10	16.75	17.00	1.059	0.280	22.2
Right cheek	802.11a	60/5300	99.05%	1.01	0.114	0.17	16.75	17.00	1.059	0.122	22.2
Right tilted	802.11a	60/5300	99.05%	1.01	0.119	-0.11	16.75	17.00	1.059	0.127	22.2
Head Test data of U-NII-2C											
Left cheek	802.11a	116/5580	99.05%	1.01	0.314	0.11	16.39	17.00	1.151	0.365	22.2
Left tilted	802.11a	116/5580	99.05%	1.01	0.265	-0.16	16.39	17.00	1.151	0.308	22.2
Right cheek	802.11a	116/5580	99.05%	1.01	0.129	0.05	16.39	17.00	1.151	0.150	22.2
Right tilted	802.11a	116/5580	99.05%	1.01	0.153	0.16	16.39	17.00	1.151	0.178	22.2
Head Test data of U-NII-3											
Left cheek	802.11a	157/5785	99.05%	1.01	0.301	0.10	16.41	17.00	1.146	0.348	22.2
Left tilted	802.11a	157/5785	99.05%	1.01	0.253	0.17	16.41	17.00	1.146	0.293	22.2
Right cheek	802.11a	157/5785	99.05%	1.01	0.132	-0.04	16.41	17.00	1.146	0.153	22.2
Right tilted	802.11a	157/5785	99.05%	1.01	0.141	0.06	16.41	17.00	1.146	0.163	22.2
Test position	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg)10-g**	**Power drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR(W/kg)**	**Liquid Temp.**
Product specific 10gSAR Test data of U-NII-2A(Separate 0mm)											
Front side	802.11a	60/5300	99.05%	1.01	1.070	0.00	22.26	22.50	1.057	1.142	22.2
Back side	802.11a	60/5300	99.05%	1.01	0.458	0.04	22.26	22.50	1.057	0.489	22.2
Right side	802.11a	60/5300	99.05%	1.01	1.340	-0.02	22.26	22.50	1.057	1.430	22.2
Top side	802.11a	60/5300	99.05%	1.01	1.480	-0.15	22.26	22.50	1.057	1.580	22.2
Product specific 10gSAR Test data of U-NII-2C(Separate 0mm)											
Front side	802.11a	116/5580	99.05%	1.01	0.830	-0.07	20.54	21.50	1.247	1.046	22.2
Back side	802.11a	116/5580	99.05%	1.01	0.398	0.13	20.54	21.50	1.247	0.501	22.2
Right side	802.11a	116/5580	99.05%	1.01	1.380	0.05	20.54	21.50	1.247	1.739	22.2
Top side	802.11a	116/5580	99.05%	1.01	1.150	0.03	20.54	21.50	1.247	1.449	22.2
Right side	802.11a	140/5700	99.05%	1.01	1.490	-0.04	20.53	21.50	1.250	**1.882**	22.2
Product specific 10g SAR Test data at the worst case with Battery2#(Separate 0mm)											
Right side	802.11a	140/5700	99.05%	1.01	1.410	0.07	20.53	21.50	1.250	1.780	22.2
Additional Test data(simultaneous transmission with (WWAN+WiFi 5G/WWAN+WiFi 2.4G+WiFi 5G/WWAN+WiFi 5G+BT)											
Test position	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg)10-g**	**Power drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR(W/kg)**	**Liquid Temp.**
Product specific 10gSAR Test data of U-NII-2A(Separate 0mm)											
Top side	802.11a	60/5300	99.05%	1.01	0.927	0.17	20.24	20.50	1.062	0.994	22.2
Product specific 10gSAR Test data of U-NII-2C(Separate 0mm)											
Top side	802.11a	116/5580	99.05%	1.01	0.721	-0.11	18.67	19.50	1.211	0.882	22.2

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

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)
Right side	157/5785	0.848	0.812	1.044	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						

8.3.22 SAR Result of BT

ANT7 SAR 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 (W/kg)	Liquid Temp.
Head Test data											
Left cheek	DH5	39/2441	76.81%	1.302	0.391	0.10	15.04	16.00	1.247	**0.635**	22.0
Left tilted	DH5	39/2441	76.81%	1.302	0.258	-0.10	15.04	16.00	1.247	0.419	22.0
Right cheek	DH5	39/2441	76.81%	1.302	0.116	0.14	15.04	16.00	1.247	0.188	22.0
Right tilted	DH5	39/2441	76.81%	1.302	0.131	0.11	15.04	16.00	1.247	0.213	22.0
Head Test data at the worst case with Battery2#											
Left cheek	DH5	39/2441	76.81%	1.302	0.374	0.08	15.04	16.00	1.247	0.607	22.0
Body worn Test data (Separate 15mm)											
Front side	DH5	39/2441	76.81%	1.302	0.008	-0.02	15.04	16.00	1.247	0.013	22.0
Back side	DH5	39/2441	76.81%	1.302	0.049	0.05	15.04	16.00	1.247	**0.079**	22.0
Body worn Test data at the worst case with Battery2#(Separate 15mm)											
Back side	DH5	39/2441	76.81%	1.302	0.037	0.08	15.04	16.00	1.247	0.060	22.0
Hotspot Test data (Separate 10mm)											
Front side	DH5	39/2441	76.81%	1.302	0.051	-0.05	15.04	16.00	1.247	0.083	22.0
Back side	DH5	39/2441	76.81%	1.302	0.077	-0.12	15.04	16.00	1.247	0.125	22.0
Right side	DH5	39/2441	76.81%	1.302	0.003	0.13	15.04	16.00	1.247	0.005	22.0
Top side	DH5	39/2441	76.81%	1.302	0.110	-0.05	15.04	16.00	1.247	**0.179**	22.0
Hotspot Test data at the worst case with Battery2#(Separate 10mm)											
Top side	DH5	39/2441	76.81%	1.302	0.098	-0.01	15.04	16.00	1.247	0.159	22.0
Additional Test data(simultaneous transmission with (WWAN+WiFi 5G+BT)											
Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data											
Left cheek	DH5	39/2441	76.81%	1.302	0.187	0.11	12.33	13.00	1.167	0.284	22
ANT11 SAR 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 (W/kg)	Liquid Temp.
Head Test data											
Left cheek	DH5	39/2441	76.85%	1.301	0.276	0.02	15.20	16.00	1.202	**0.432**	22.0
Left tilted	DH5	39/2441	76.85%	1.301	0.054	0.11	15.20	16.00	1.202	0.084	22.0
Right cheek	DH5	39/2441	76.85%	1.301	0.160	0.00	15.20	16.00	1.202	0.250	22.0
Right tilted	DH5	39/2441	76.85%	1.301	0.013	-0.16	15.20	16.00	1.202	0.020	22.0
Head Test data at the worst case with Battery2#											
Left cheek	DH5	39/2441	76.85%	1.301	0.258	-0.06	15.20	16.00	1.202	0.404	22.0
Body worn Test data (Separate 15mm)											
Front side	DH5	39/2441	76.85%	1.301	0.032	0.08	15.20	16.00	1.202	0.050	22.0
Back side	DH5	39/2441	76.85%	1.301	0.033	0.01	15.20	16.00	1.202	**0.051**	22.0
Body worn Test data at the worst case with Battery2#(Separate 15mm)											
Back side	DH5	39/2441	76.85%	1.301	0.024	0.04	15.20	16.00	1.202	0.038	22.0
Hotspot Test data (Separate 10mm)											
Front side	DH5	39/2441	76.85%	1.301	0.052	-0.03	15.20	16.00	1.202	0.081	22.0
Back side	DH5	39/2441	76.85%	1.301	0.072	-0.03	15.20	16.00	1.202	0.113	22.0
Right side	DH5	39/2441	76.85%	1.301	0.101	-0.17	15.20	16.00	1.202	**0.158**	22.0
Top side	DH5	39/2441	76.85%	1.301	0.051	0.04	15.20	16.00	1.202	0.080	22.0
Hotspot Test data at the worst case with Battery2#(Separate 10mm)											
Right side	DH5	39/2441	76.85%	1.301	0.089	0.03	15.20	16.00	1.202	0.139	22.0
Additional Test data(simultaneous transmission with (WWAN+WiFi 5G+BT)											
Test position	Test mode	Test Ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg)1-g	Power drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR(W/kg)	Liquid Temp.
Head Test data											
Left cheek	DH5	39/2441	76.85%	1.301	0.202	-0.14	14.29	15.00	1.178	0.309	22

Table 32：SAR of BT for Head and Body.

8.4 Multiple Transmitter Evaluation

8.4.1 Simultaneous SAR SAR test evaluation

- **Simultaneous Transmission Possibilities**

NO	Simultaneous TX Combination	Head	Body-worn	Hotspot	Product Specific 10-g (0mm)
1	WWAN+BT2(Ant7)	Y	Y	Y	Y
2	WWAN+BT1(Ant11)	Y	Y	Y	Y
3	WWAN+WIFI 2.4G	Y	Y	Y	Y
4	WWAN+WIFI 5G	Y	Y	Y	Y
5	WWAN+WiFi 2.4G+WIFI 5G	Y	Y	Y	Y
6	WWAN+BT2(Ant7)+WIFI 5G	Y	Y	Y	Y
7	WWAN+BT1(Ant11)+WIFI 5G	Y	Y	Y	Y
8	BT2(Ant7)+WIFI 5G	Y	Y	Y	Y
9	BT1(Ant11)+WIFI 5G	Y	Y	Y	Y

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

State 1: WWAN+BT2(Ant7)
State 2: WWAN+BT1(Ant11)
State 3: WWAN+WIFI 2.4G
State 4: WWAN+WIFI 5G
State 5: WWAN+WiFi 2.4G+WIFI 5G
State 6: WWAN+BT2(Ant7)+WIFI 5G
State 7: WWAN+BT1(Ant11)+WIFI 5G
State 8: BT2(Ant7)+WIFI 5G
State 9: BT1(Ant11)+WIFI 5G

8.4.2 Simultaneous Transmission SAR Summation Scenario

EN-DC SAR:
Head:

LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant1	EN-DC Summed SAR
Band 5	Left cheek	0.168	0.089	0.134	0.302
	Left tilted	0.117	0.041	0.064	0.181
	Right cheek	0.540	0.073	0.086	0.626
	Right tilted	0.231	0.051	0.072	0.303

LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant4	EN-DC Summed SAR
Band 5	Left cheek	0.168	0.089	0.177	0.345
	Left tilted	0.117	0.041	0.181	0.298
	Right cheek	0.540	0.073	0.298	0.838
	Right tilted	0.231	0.051	0.316	0.547

LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant8	EN-DC Summed SAR
Band 5	Left cheek	0.168	0.089	0.337	0.505
	Left tilted	0.117	0.041	0.066	0.183
	Right cheek	0.540	0.073	0.368	0.908
	Right tilted	0.231	0.051	0.087	0.318

LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant10	EN-DC Summed SAR
Band 5	Left cheek	0.168	/	0.305	0.473
	Left tilted	0.117	/	0.239	0.356
	Right cheek	0.540	/	0.479	1.019
	Right tilted	0.231	/	0.189	0.420

LTE Band (EN-DC)	Exposure position	Ant1	Ant4	Ant8	Ant10	n5 Ant2	EN-DC Summed SAR
Band 7	Left cheek	0.219	0.118	0.450	0.378	0.157	0.607
	Left tilted	0.072	0.126	0.056	0.333	0.106	0.439
	Right cheek	0.146	0.200	0.338	0.587	0.446	1.033
	Right tilted	0.134	0.246	0.114	0.225	0.291	0.537

LTE Band (EN-DC)	Exposure position	Ant1	Ant4	Ant8	Ant10	n5 Ant10	EN-DC Summed SAR
Band 7	Left cheek	0.219	0.118	0.450	/	0.093	0.543
	Left tilted	0.072	0.126	0.056	/	0.042	0.168
	Right cheek	0.146	0.200	0.338	/	0.075	0.413
	Right tilted	0.134	0.246	0.114	/	0.052	0.298

Body-worn:

LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant1	EN-DC Summed SAR
Band 5	Front	0.153	0.123	0.271	0.424
	Back	0.121	0.185	0.280	0.401

LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant4	EN-DC Summed SAR
Band 5	Front	0.153	0.123	0.105	0.258
	Back	0.121	0.185	0.226	0.347

LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant8	EN-DC Summed SAR
Band 5	Front	0.153	0.123	0.055	0.208
	Back	0.121	0.185	0.068	0.189

LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant10	EN-DC Summed SAR
Band 5	Front	0.153	/	0.318	0.471
	Back	0.121	/	0.445	0.566

LTE Band (EN-DC)	Exposure position	Ant1	Ant4	Ant8	Ant10	n5 Ant2	EN-DC Summed SAR
Band 7	Front	0.302	0.130	0.092	0.370	0.135	0.505
	Back	0.358	0.229	0.070	0.606	0.141	0.747

LTE Band (EN-DC)	Exposure position	Ant1	Ant4	Ant8	Ant10	n5 Ant10	EN-DC Summed SAR
Band 7	Left cheek	0.302	0.130	0.092	/	0.134	0.436
	Left tilted	0.358	0.229	0.070	/	0.169	0.527

Hotspot:

LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant1	EN-DC Summed SAR
Band 7	Front	0.104	0.237	0.160	0.397
	Back	0.122	0.291	0.164	0.455
	Left	0.144	0.000	0.088	0.232
	Right	0.000	0.097	0.000	0.097
	Top	0.049	0.000	0.000	0.049
	Bottom	0.000	0.213	0.146	0.359

LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant4	EN-DC Summed SAR
Band 5	Front	0.104	0.237	0.007	0.244
	Back	0.122	0.291	0.100	0.391
	Left	0.144	0.000	0.006	0.150
	Right	0.000	0.097	0.000	0.097
	Top	0.049	0.000	0.110	0.159
	Bottom	0.000	0.213	0.000	0.213

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LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant8	EN-DC Summed SAR
Band 7	Front	0.104	0.237	0.137	0.374
	Back	0.122	0.291	0.129	0.420
	Left	0.144	0.000	0.212	0.356
	Right	0.000	0.097	0.000	0.097
	Top	0.049	0.000	0.000	0.049
	Bottom	0.000	0.213	0.000	0.213

LTE Band (EN-DC)	Exposure position	Ant2	Ant10	n7 Ant10	EN-DC Summed SAR
Band 5	Front	0.104	/	0.239	0.343
	Back	0.122	/	0.294	0.416
	Left	0.144	/	0.000	0.144
	Right	0.000	/	0.454	0.454
	Top	0.049	/	0.000	0.049
	Bottom	0.000	/	0.094	0.094

LTE Band (EN-DC)	Exposure position	Ant1	Ant4	Ant8	Ant10	n5 Ant2	EN-DC Summed SAR
Band 7	Front	0.188	0.041	0.135	0.199	0.095	0.294
	Back	0.206	0.083	0.108	0.252	0.108	0.360
	Left	0.101	0.003	0.129	0.000	0.139	0.268
	Right	0.000	0.000	0.000	0.375	0.000	0.375
	Top	0.000	0.000	0.000	0.000	0.039	0.039
	Bottom	0.174	0.075	0.000	0.086	0.000	0.174

LTE Band (EN-DC)	Exposure position	Ant1	Ant4	Ant8	Ant10	n5 Ant10	EN-DC Summed SAR
Band 7	Front	0.188	0.041	0.135	/	0.211	0.399
	Back	0.206	0.083	0.108	/	0.244	0.450
	Left	0.101	0.003	0.129	/	0.000	0.129
	Right	0.000	0.000	0.000	/	0.075	0.075
	Top	0.000	0.000	0.000	/	0.000	0.000
	Bottom	0.174	0.075	0.000	/	0.177	0.351

Simultaneous Transmission SAR Summation Scenario:

Test position		Ant1 SARmax (W/kg)												WiFi/BT Antenna SARmax (W/kg)								Summed SARmax (W/kg)								
		GSM1900	WCDMA B2	WCDMA B4	LTE B2	LTE B4	LTE B7	LTE B38	LTE B41	LTE B66	5G NR N7	5G NR N38	5G NR N41	WiFi 2.4G only	WiFi 2.4G State 3	WiFi 2.4G State 5	WiFi 5G only	WiFi 5G State 4/8/9	WiFi 5G State 5/6/7	BT Ant7	BT Ant11									
		1												2	2a	2b	3	3a	3b	4	5	1+2a	1+3a	1+4	1+5	1+2b+3b	1+3b+4	1+3b+5	3+4	3+5
Head	Left cheek	0.043	0.109	0.051	0.106	0.069	0.314	0.211	0.195	0.027	0.134	0.114	0.123	0.807	0.711	0.316	0.941	0.636	0.365	0.635	0.432	1.025	0.950	0.949	0.746	0.995	1.314	1.111	1.576	1.373
	Left tilted	0.026	0.092	0.036	0.085	0.054	0.128	0.133	0.116	0.016	0.064	0.053	0.056	0.942	0.942	0.366	0.807	0.807	0.308	0.419	0.084	1.075	0.940	0.552	0.217	0.807	0.860	0.525	1.226	0.891
	Right cheek	0.039	0.121	0.062	0.113	0.071	0.226	0.178	0.153	0.056	0.086	0.081	0.082	0.488	0.488	0.187	0.417	0.433	0.153	0.188	0.250	0.714	0.643	0.414	0.476	0.566	0.567	0.629	0.605	0.667
	Right tilted	0.026	0.087	0.037	0.089	0.049	0.144	0.140	0.121	0.040	0.072	0.042	0.063	0.461	0.461	0.177	0.498	0.498	0.178	0.213	0.020	0.605	0.642	0.357	0.164	0.499	0.535	0.342	0.711	0.518
Body-worn (15mm)	Front	0.116	0.258	0.154	0.263	0.153	0.404	0.357	0.332	0.116	0.271	0.213	0.180	0.169	0.169	0.169	0.346	0.346	0.346	0.013	0.050	0.573	0.750	0.417	0.454	0.919	0.763	0.800	0.359	0.396
	Back	0.198	0.479	0.202	0.495	0.214	0.742	0.398	0.350	0.213	0.280	0.279	0.260	0.275	0.275	0.275	0.440	0.440	0.440	0.079	0.051	1.017	1.182	0.821	0.793	1.457	1.261	1.233	0.519	0.491
Hotspot (10mm)	Front	0.254	0.405	0.193	0.333	0.236	0.237	0.320	0.324	0.229	0.160	0.171	0.134	0.220	0.220	0.220	0.332	0.332	0.332	0.083	0.081	0.625	0.737	0.488	0.486	0.957	0.820	0.818	0.415	0.413
	Back	0.337	0.581	0.292	0.484	0.373	0.377	0.387	0.411	0.336	0.164	0.202	0.190	0.482	0.482	0.482	0.460	0.460	0.460	0.125	0.113	1.063	1.041	0.706	0.694	1.523	1.166	1.154	0.585	0.573
	Left	0.103	0.110	0.063	0.146	0.079	0.138	0.133	0.150	0.094	0.088	0.065	0.062	/	/	/	/	/	/	/	/	0.150	0.150	0.150	0.150	0.150	0.150	0.150	/	/
	Right	/	/	/	/	/	/	/	/	/	/	/	/	0.181	0.181	0.181	0.920	0.920	0.920	0.005	0.158	0.181	0.920	0.005	0.158	1.101	0.925	1.078	0.925	1.078
	Top	/	/	/	/	/	/	/	/	/	/	/	/	0.390	0.390	0.390	0.368	0.368	0.368	0.179	0.080	0.390	0.368	0.179	0.080	0.758	0.547	0.448	0.547	0.448
	Bottom	0.451	0.927	0.484	0.852	0.617	0.277	0.335	0.380	0.661	0.146	0.197	0.152	/	/	/	/	/	/	/	/	0.927	0.927	0.927	0.927	0.927	0.927	0.927	/	/
Product specific 10g SAR (0mm)	Front	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	1.142	1.142	1.142	/	/	/	1.142	/	/	1.142	1.142	1.142	1.142	1.142
	Back	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.501	0.501	0.501	/	/	/	0.501	/	/	0.501	0.501	0.501	0.501	0.501
	Left	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Right	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	1.882	1.882	1.882	/	/	/	1.882	/	/	1.882	1.882	1.882	1.882	1.882
	Top	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	1.580	0.994	0.994	/	/	/	0.994	/	/	0.994	0.994	0.994	1.580	1.580
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Test position		Ant2 SARmax (W/kg)							WiFi/BT Antenna SARmax (W/kg)								Summed SARmax (W/kg)						
		GSM850	WCDMA B5	LTE B5	LTE B12	LTE B17	5G NR N5	5G NR N77	WiFi 2.4G only	WiFi 2.4G State 3	WiFi 2.4G State 5	WiFi 5G only	WiFi 5G State 4/8/9	WiFi 5G State 5/6/7	BT Ant7	BT Ant11							
		1							2	2a	2b	3	3a	3b	4	5	1+2a	1+3a	1+4	1+5	1+2b+3b	1+3b+4	1+3b+5
Head	Left cheek	0.237	0.177	0.168	0.260	0.289	0.157	0.134	0.807	0.711	0.316	0.941	0.636	0.365	0.635	0.432	1.000	0.925	0.924	0.721	0.970	1.289	1.086
	Left tilted	0.169	0.121	0.117	0.188	0.215	0.106	0.072	0.942	0.942	0.366	0.807	0.807	0.308	0.419	0.084	1.157	1.022	0.634	0.299	0.889	0.942	0.607
	Right cheek	0.524	0.564	0.540	0.650	0.689	0.446	0.670	0.488	0.488	0.187	0.417	0.433	0.153	0.188	0.250	1.177	1.106	0.877	0.939	1.029	1.030	1.092
	Right tilted	0.352	0.302	0.231	0.383	0.409	0.291	0.194	0.461	0.461	0.177	0.498	0.498	0.178	0.213	0.020	0.870	0.907	0.622	0.429	0.764	0.800	0.607
Body-worn (15mm)	Front	0.093	0.136	0.153	0.178	0.194	0.135	0.071	0.169	0.169	0.169	0.346	0.346	0.346	0.013	0.050	0.363	0.540	0.207	0.244	0.709	0.553	0.590
	Back	0.104	0.137	0.121	0.197	0.199	0.141	0.079	0.275	0.275	0.275	0.440	0.440	0.440	0.079	0.051	0.474	0.639	0.278	0.250	0.914	0.718	0.690
Hotspot (10mm)	Front	0.110	0.107	0.104	0.172	0.184	0.095	0.055	0.220	0.220	0.220	0.332	0.332	0.332	0.083	0.081	0.404	0.516	0.267	0.265	0.736	0.599	0.597
	Back	0.128	0.128	0.122	0.206	0.221	0.108	0.068	0.482	0.482	0.482	0.460	0.460	0.460	0.125	0.113	0.703	0.681	0.346	0.334	1.163	0.806	0.794
	Left	0.149	0.145	0.144	0.338	0.366	0.139	0.061	/	/	/	/	/	/	/	/	0.366	0.366	0.366	0.366	0.366	0.366	0.366
	Right	/	/	/	/	/	/	/	0.181	0.181	0.181	0.920	0.920	0.920	0.005	0.158	0.181	0.920	0.005	0.158	1.101	0.925	1.078
	Top	0.066	0.052	0.049	0.077	0.088	0.039	0.049	0.390	0.390	0.390	0.368	0.368	0.368	0.179	0.080	0.478	0.456	0.267	0.168	0.846	0.635	0.536
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Product specific 10g SAR (0mm)	Front	/	/	/	/	/	/	/	/	/	/	1.142	1.142	1.142	/	/	/	1.142	/	/	1.142	1.142	1.142
	Back	/	/	/	/	/	/	/	/	/	/	0.501	0.501	0.501	/	/	/	0.501	/	/	0.501	0.501	0.501
	Left	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Right	/	/	/	/	/	/	/	/	/	/	1.882	1.882	1.882	/	/	/	1.882	/	/	1.882	1.882	1.882
	Top	/	/	/	/	/	/	/	/	/	/	1.580	0.994	0.994	/	/	/	0.994	/	/	0.994	0.994	0.994
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

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Test position		Ant3 SARmax (W/kg)	WiFi/BT Antenna SARmax (W/kg)								Summed SARmax (W/kg)						
		5G NR N77	WiFi 2.4G only	WiFi 2.4G State 3	WiFi 2.4G State 5	WiFi 5G only	WiFi 5G State 4/8/9	WiFi 5G State 5/6/7	BT Ant7	BT Ant11							
		1	2	2a	2b	3	3a	3b	4	5	1+2a	1+3a	1+4	1+5	1+2b+3b	1+3b+4	1+3b+5
Head	Left cheek	0.224	0.807	0.711	0.316	0.941	0.636	0.365	0.635	0.432	0.935	0.860	0.859	0.656	0.905	1.224	1.021
	Left tilted	0.331	0.942	0.942	0.366	0.807	0.807	0.308	0.419	0.084	1.273	1.138	0.750	0.415	1.005	1.058	0.723
	Right cheek	0.364	0.488	0.488	0.187	0.417	0.433	0.153	0.188	0.250	0.852	0.781	0.552	0.614	0.704	0.705	0.767
	Right tilted	0.636	0.461	0.461	0.177	0.498	0.498	0.178	0.213	0.020	1.097	1.134	0.849	0.656	0.991	1.027	0.834
Body-worn (15mm)	Front	0.398	0.169	0.169	0.169	0.346	0.346	0.346	0.013	0.050	0.567	0.744	0.411	0.448	0.913	0.757	0.794
	Back	0.732	0.275	0.275	0.275	0.440	0.440	0.440	0.079	0.051	1.007	1.172	0.811	0.783	1.447	1.251	1.223
Hotspot (10mm)	Front	0.083	0.220	0.220	0.220	0.332	0.332	0.332	0.083	0.081	0.303	0.415	0.166	0.164	0.635	0.498	0.496
	Back	0.138	0.482	0.482	0.482	0.460	0.460	0.460	0.125	0.113	0.620	0.598	0.263	0.251	1.080	0.723	0.711
	Left	0.051	/	/	/	/	/	/	/	/	0.051	0.051	0.051	0.051	0.051	0.051	0.051
	Right	/	0.181	0.181	0.181	0.920	0.920	0.920	0.005	0.158	0.181	0.920	0.005	0.158	1.101	0.925	1.078
	Top	0.204	0.390	0.390	0.390	0.368	0.368	0.368	0.179	0.080	0.594	0.572	0.383	0.284	0.962	0.751	0.652
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Product specific 10g SAR (0mm)	Front	/	/	/	/	1.142	1.142	1.142	/	/	/	1.142	/	/	1.142	1.142	1.142
	Back	/	/	/	/	0.501	0.501	0.501	/	/	/	0.501	/	/	0.501	0.501	0.501
	Left	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Right	/	/	/	/	1.882	1.882	1.882	/	/	/	1.882	/	/	1.882	1.882	1.882
	Top	2.664	/	/	/	1.580	0.994	0.994	/	/	2.664	3.658	2.664	2.664	3.658	3.658	3.658
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Test position		Ant4 SARmax (W/kg)												WiFi/BT Antenna SARmax (W/kg)								Summed SARmax (W/kg)						
		GSM1900	WCDMA B2	WCDMA B4	LTE B2	LTE B4	LTE B7	LTE B38	LTE B41	LTE B66	5G NR N7	5G NR N38	5G NR N41	WiFi 2.4G only	WiFi 2.4G State 3	WiFi 2.4G State 5	WiFi 5G only	WiFi 5G State 4/8/9	WiFi 5G State 5/6/7	BT Ant7	BT Ant11							
		1												2	2a	2b	3	3a	3b	4	5	1+2a	1+3a	1+4	1+5	1+2b+3b	1+3b+4	1+3b+5
Head	Left cheek	0.369	0.362	0.356	0.383	0.422	0.197	0.239	0.268	0.343	0.177	0.252	0.251	0.807	0.711	0.316	0.941	0.636	0.365	0.635	0.432	1.133	1.058	1.057	0.854	1.103	1.422	1.219
	Left tilted	0.432	0.544	0.510	0.515	0.548	0.214	0.255	0.297	0.438	0.181	0.262	0.272	0.942	0.942	0.366	0.807	0.807	0.308	0.419	0.084	1.490	1.355	0.967	0.632	1.222	1.275	0.940
	Right cheek	0.674	0.638	0.576	0.683	0.700	0.359	0.412	0.410	0.478	0.298	0.448	0.340	0.488	0.488	0.187	0.417	0.433	0.153	0.188	0.250	1.188	1.117	0.888	0.950	1.040	1.041	1.103
	Right tilted	0.877	0.948	0.848	0.940	0.891	0.487	0.431	0.440	0.716	0.316	0.459	0.424	0.461	0.461	0.177	0.498	0.498	0.178	0.213	0.020	1.409	1.446	1.161	0.968	1.303	1.339	1.146
Body-worn (15mm)	Front	0.093	0.219	0.232	0.182	0.237	0.228	0.129	0.125	0.228	0.105	0.100	0.075	0.169	0.169	0.169	0.346	0.346	0.346	0.013	0.050	0.406	0.583	0.250	0.287	0.752	0.596	0.633
	Back	0.131	0.338	0.378	0.353	0.431	0.530	0.166	0.151	0.403	0.226	0.182	0.184	0.275	0.275	0.275	0.440	0.440	0.440	0.079	0.051	0.805	0.970	0.609	0.581	1.245	1.049	1.021
Hotspot (10mm)	Front	0.168	0.163	0.142	0.150	0.156	0.080	0.097	0.065	0.124	0.007	0.084	0.043	0.220	0.220	0.220	0.332	0.332	0.332	0.083	0.081	0.388	0.500	0.251	0.249	0.720	0.583	0.581
	Back	0.279	0.283	0.251	0.233	0.244	0.152	0.138	0.147	0.205	0.100	0.163	0.086	0.482	0.482	0.482	0.460	0.460	0.460	0.125	0.113	0.765	0.743	0.408	0.396	1.225	0.868	0.856
	Left	0.019	0.058	0.050	0.059	0.060	0.049	0.016	0.015	0.044	0.006	0.055	0.004	/	/	/	/	/	/	/	/	0.060	0.060	0.060	0.060	0.060	0.060	0.060
	Right	/	/	/	/	/	/	/	/	/	/	/	/	0.181	0.181	0.181	0.920	0.920	0.920	0.005	0.158	0.181	0.920	0.005	0.158	1.101	0.925	1.078
	Top	0.333	0.341	0.324	0.385	0.346	0.127	0.129	0.134	0.297	0.110	0.172	0.111	0.390	0.390	0.390	0.368	0.368	0.368	0.179	0.080	0.775	0.753	0.564	0.465	1.143	0.932	0.833
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Product specific 10g SAR (0mm)	Front	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	1.142	1.142	1.142	/	/	/	1.142	/	/	1.142	1.142	1.142
	Back	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.501	0.501	0.501	/	/	/	0.501	/	/	0.501	0.501	0.501
	Left	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Right	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	1.882	1.882	1.882	/	/	/	1.882	/	/	1.882	1.882	1.882
	Top	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	1.580	0.994	0.994	/	/	/	0.994	/	/	0.994	0.994	0.994
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

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Test position		Ant5 SARmax (W/kg)	WiFi/BT Antenna SARmax (W/kg)								Summed SARmax (W/kg)						
		5G NR N77	WiFi 2.4G only	WiFi 2.4G State 3	WiFi 2.4G State 5	WiFi 5G only	WiFi 5G State 4/8/9	WiFi 5G State 5/6/7	BT Ant7	BT Ant11							
		1	2	2a	2b	3	3a	3b	4	5	1+2a	1+3a	1+4	1+5	1+2b+3b	1+3b+4	1+3b+5
Head	Left cheek	0.880	0.807	0.711	0.316	0.941	0.636	0.365	0.284	0.309	1.591	1.516	1.164	1.189	1.561	1.529	1.554
	Left tilted	0.295	0.942	0.942	0.366	0.807	0.807	0.308	0.419	0.084	1.237	1.102	0.714	0.379	0.969	1.022	0.687
	Right cheek	0.231	0.488	0.488	0.187	0.417	0.433	0.153	0.188	0.250	0.719	0.648	0.419	0.481	0.571	0.572	0.634
	Right tilted	0.087	0.461	0.461	0.177	0.498	0.498	0.178	0.213	0.020	0.548	0.585	0.300	0.107	0.442	0.478	0.285
Body-worn (15mm)	Front	0.068	0.169	0.169	0.169	0.346	0.346	0.346	0.013	0.050	0.237	0.414	0.081	0.118	0.583	0.427	0.464
	Back	0.111	0.275	0.275	0.275	0.440	0.440	0.440	0.079	0.051	0.386	0.551	0.190	0.162	0.826	0.630	0.602
Hotspot (10mm)	Front	0.115	0.220	0.220	0.220	0.332	0.332	0.332	0.083	0.081	0.335	0.447	0.198	0.196	0.667	0.530	0.528
	Back	0.181	0.482	0.482	0.482	0.460	0.460	0.460	0.125	0.113	0.663	0.641	0.306	0.294	1.123	0.766	0.754
	Left	0.000	/	/	/	/	/	/	/	/	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right	0.257	0.181	0.181	0.181	0.920	0.920	0.920	0.005	0.158	0.438	1.177	0.262	0.415	1.358	1.182	1.335
	Top	0.071	0.390	0.390	0.390	0.368	0.368	0.368	0.179	0.080	0.461	0.439	0.250	0.151	0.829	0.618	0.519
	Bottom	0.000	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Product specific 10g SAR (0mm)	Front	/	/	/	/	1.142	1.142	1.142	/	/	/	1.142	/	/	1.142	1.142	1.142
	Back	/	/	/	/	0.501	0.501	0.501	/	/	/	0.501	/	/	0.501	0.501	0.501
	Left	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Right	/	/	/	/	1.882	1.882	1.882	/	/	/	1.882	/	/	1.882	1.882	1.882
	Top	/	/	/	/	1.580	0.994	0.994	/	/	/	0.994	/	/	0.994	0.994	0.994
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Test position		Ant8 SARmax (W/kg)							WiFi/BT Antenna SARmax (W/kg)								Summed SARmax (W/kg)						
		LTE B4	LTE B7	LTE B38	LTE B41	5G NR N7	5G NR N38	5G NR N41	WiFi 2.4G only	WiFi 2.4G State 3	WiFi 2.4G State 5	WiFi 5G only	WiFi 5G State 4/8/9	WiFi 5G State 5/6/7	BT Ant7	BT Ant11							
		1							2	2a	2b	3	3a	3b	4	5	1+2a	1+3a	1+4	1+5	1+2b+3b	1+3b+4	1+3b+5
Head	Left cheek	0.370	0.313	0.695	0.648	0.337	0.551	0.229	0.807	0.711	0.316	0.941	0.636	0.365	0.284	0.432	1.406	1.331	0.979	1.127	1.376	1.344	1.492
	Left tilted	0.010	0.023	0.110	0.098	0.066	0.452	0.168	0.942	0.942	0.366	0.807	0.807	0.308	0.419	0.084	1.394	1.259	0.871	0.536	1.126	1.179	0.844
	Right cheek	0.257	0.287	0.619	0.570	0.368	0.532	0.580	0.488	0.488	0.187	0.417	0.433	0.153	0.188	0.250	1.107	1.036	0.807	0.869	0.959	0.960	1.022
	Right tilted	0.056	0.076	0.215	0.212	0.087	0.441	0.489	0.461	0.461	0.177	0.498	0.498	0.178	0.213	0.020	0.950	0.987	0.702	0.509	0.844	0.880	0.687
Body-worn (15mm)	Front	0.003	0.054	0.097	0.079	0.055	0.040	0.011	0.169	0.169	0.169	0.346	0.346	0.346	0.013	0.050	0.266	0.443	0.110	0.147	0.612	0.456	0.493
	Back	0.048	0.056	0.099	0.092	0.068	0.079	0.068	0.275	0.275	0.275	0.440	0.440	0.440	0.079	0.051	0.374	0.539	0.178	0.150	0.814	0.618	0.590
Hotspot (10mm)	Front	0.091	0.103	0.187	0.195	0.137	0.172	0.099	0.220	0.220	0.220	0.332	0.332	0.332	0.083	0.081	0.415	0.527	0.278	0.276	0.747	0.610	0.608
	Back	0.087	0.102	0.196	0.196	0.129	0.179	0.095	0.482	0.482	0.482	0.460	0.460	0.460	0.125	0.113	0.678	0.656	0.321	0.309	1.138	0.781	0.769
	Left	0.242	0.131	0.328	0.299	0.212	0.278	0.270	/	/	/	/	/	/	/	/	0.328	0.328	0.328	0.328	0.328	0.328	0.328
	Right	/	/	/	/	/	/	/	0.181	0.181	0.181	0.920	0.920	0.920	0.005	0.158	0.181	0.920	0.005	0.158	1.101	0.925	1.078
	Top	/	/	/	/	/	/	/	0.390	0.390	0.390	0.368	0.368	0.368	0.179	0.080	0.390	0.368	0.179	0.080	0.758	0.547	0.448
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Product specific 10g SAR (0mm)	Front	/	/	/	/	/	/	/	/	/	/	1.142	1.142	1.142	/	/	/	1.142	/	/	1.142	1.142	1.142
	Back	/	/	/	/	/	/	/	/	/	/	0.501	0.501	0.501	/	/	/	0.501	/	/	0.501	0.501	0.501
	Left	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.000	/	/	/	/	/
	Right	/	/	/	/	/	/	/	/	/	/	1.882	1.882	1.882	/	/	/	1.882	/	/	1.882	1.882	1.882
	Top	/	/	/	/	/	/	/	/	/	/	1.580	0.994	0.994	/	/	/	0.994	/	/	0.994	0.994	0.994
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

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Test position		Ant9 SARmax (W/kg)				WiFi/BT Antenna SARmax (W/kg)								Summed SARmax (W/kg)						
		LTE B38	LTE B41	5G NR N38	5G NR N41	WiFi 2.4G only	WiFi 2.4G State 3	WiFi 2.4G State 5	WiFi 5G only	WiFi 5G State 4/8/9	WiFi 5G State 5/6/7	BT Ant7	BT Ant11							
		1				2	2a	2b	3	3a	3b	4	5	1+2a	1+3a	1+4	1+5	1+2b+3b	1+3b+4	1+3b+5
Head	Left cheek	0.067	0.068	0.115	0.086	0.807	0.711	0.316	0.941	0.636	0.365	0.284	0.432	0.826	0.751	0.399	0.547	0.796	0.764	0.912
	Left tilted	0.068	0.067	0.106	0.097	0.942	0.942	0.366	0.807	0.807	0.308	0.419	0.084	1.048	0.913	0.525	0.190	0.780	0.833	0.498
	Right cheek	0.170	0.174	0.313	0.261	0.488	0.488	0.187	0.417	0.433	0.153	0.188	0.250	0.801	0.730	0.501	0.563	0.653	0.654	0.716
	Right tilted	0.142	0.150	0.229	0.202	0.461	0.461	0.177	0.498	0.498	0.178	0.213	0.020	0.690	0.727	0.442	0.249	0.584	0.620	0.427
Body-worn (15mm)	Front	0.072	0.004	0.045	0.056	0.169	0.169	0.169	0.346	0.346	0.346	0.013	0.050	0.241	0.418	0.085	0.122	0.587	0.431	0.468
	Back	0.220	0.086	0.160	0.223	0.275	0.275	0.275	0.440	0.440	0.440	0.079	0.051	0.498	0.663	0.302	0.274	0.938	0.742	0.714
Hotspot (10mm)	Front	0.011	0.071	0.019	0.004	0.220	0.220	0.220	0.332	0.332	0.332	0.083	0.081	0.291	0.403	0.154	0.152	0.623	0.486	0.484
	Back	0.213	0.229	0.370	0.437	0.482	0.482	0.482	0.460	0.460	0.460	0.125	0.113	0.919	0.897	0.562	0.550	1.379	1.022	1.010
	Left	0.057	0.054	0.000	0.136	/	/	/	/	/	/	/	/	0.136	0.136	0.136	0.136	0.136	0.136	0.136
	Right	/	/	/	/	0.181	0.181	0.181	0.920	0.920	0.920	0.005	0.158	0.181	0.920	0.005	0.158	1.101	0.925	1.078
	Top	0.082	0.044	0.000	0.080	0.390	0.390	0.390	0.368	0.368	0.368	0.179	0.080	0.472	0.450	0.261	0.162	0.840	0.629	0.530
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Product specific 10g SAR (0mm)	Front	/	/	/	/	/	/	/	1.142	1.142	1.142	/	/	/	1.142	/	/	1.142	1.142	1.142
	Back	/	/	/	/	/	/	/	0.501	0.501	0.501	/	/	/	0.501	/	/	0.501	0.501	0.501
	Left	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Right	/	/	/	/	/	/	/	1.882	1.882	1.882	/	/	/	1.882	/	/	1.882	1.882	1.882
	Top	/	/	/	/	/	/	/	1.580	0.994	0.994	/	/	/	0.994	/	/	0.994	0.994	0.994
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Test position		Ant10 SARmax (W/kg)									WiFi/BT Antenna SARmax (W/kg)								Summed SARmax (W/kg)						
		GSM850	WCDMA B5	LTE B4	LTE B5	LTE B12	LTE B7	LTE B17	5G NR N5	5G NR N7	WiFi 2.4G only	WiFi 2.4G State 3	WiFi 2.4G State 5	WiFi 5G only	WiFi 5G State 4/8/9	WiFi 5G State 5/6/7	BT Ant7	BT Ant11							
		1									2	2a	2b	3	3a	3b	4	5	1+2a	1+3a	1+4	1+5	1+2b+3b	1+3b+4	1+3b+5
Head	Left cheek	0.087	0.077	0.119	0.089	0.060	0.224	0.054	0.093	0.305	0.807	0.711	0.316	0.941	0.636	0.365	0.284	0.432	1.016	0.941	0.589	0.737	0.986	0.954	1.102
	Left tilted	0.035	0.044	0.075	0.041	0.031	0.229	0.029	0.042	0.239	0.942	0.942	0.366	0.807	0.807	0.308	0.419	0.084	1.181	1.046	0.658	0.323	0.913	0.966	0.631
	Right cheek	0.070	0.077	0.209	0.073	0.040	0.340	0.034	0.075	0.479	0.488	0.488	0.187	0.417	0.433	0.153	0.188	0.250	0.967	0.896	0.667	0.729	0.819	0.820	0.882
	Right tilted	0.042	0.044	0.075	0.051	0.160	0.123	0.019	0.052	0.189	0.461	0.461	0.177	0.498	0.498	0.178	0.213	0.020	0.650	0.687	0.402	0.209	0.544	0.580	0.387
Body-worn (15mm)	Front	0.104	0.126	0.136	0.123	0.121	0.194	0.108	0.134	0.318	0.169	0.169	0.169	0.346	0.346	0.346	0.013	0.050	0.487	0.664	0.331	0.368	0.833	0.677	0.714
	Back	0.158	0.168	0.245	0.185	0.136	0.314	0.133	0.169	0.445	0.275	0.275	0.275	0.440	0.440	0.440	0.079	0.051	0.720	0.885	0.524	0.496	1.160	0.964	0.936
Hotspot (10mm)	Front	0.200	0.255	0.227	0.237	0.202	0.113	0.174	0.211	0.239	0.220	0.220	0.220	0.332	0.332	0.332	0.083	0.081	0.475	0.587	0.338	0.336	0.807	0.670	0.668
	Back	0.271	0.285	0.326	0.291	0.205	0.158	0.211	0.244	0.294	0.482	0.482	0.482	0.460	0.460	0.460	0.125	0.113	0.808	0.786	0.451	0.439	1.268	0.911	0.899
	Left	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Right	0.061	0.093	0.388	0.097	0.123	0.234	0.108	0.075	0.454	0.181	0.181	0.181	0.920	0.920	0.920	0.005	0.158	0.635	1.374	0.459	0.612	1.555	1.379	1.532
	Top	/	/	/	/	/	/	/	/	/	0.390	0.390	0.390	0.368	0.368	0.368	0.179	0.080	0.390	0.368	0.179	0.080	0.758	0.547	0.448
	Bottom	0.136	0.201	0.118	0.213	0.098	0.045	0.082	0.177	0.094	/	/	/	/	/	/	/	/	0.213	0.213	0.213	0.213	0.213	0.213	0.213
Product specific 10g SAR (0mm)	Front	/	/	/	/	/	/	/	/	/	/	/	/	1.142	1.142	1.142	/	/	/	1.142	/	/	1.142	1.142	1.142
	Back	/	/	/	/	/	/	/	/	/	/	/	/	0.501	0.501	0.501	/	/	/	0.501	/	/	0.501	0.501	0.501
	Left	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Right	/	/	/	/	/	/	/	/	/	/	/	/	1.882	1.882	1.882	/	/	/	1.882	/	/	1.882	1.882	1.882
	Top	/	/	/	/	/	/	/	/	/	/	/	/	1.580	0.994	0.994	/	/	/	0.994	/	/	0.994	0.994	0.994
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

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Test position		Ant12 SARmax (W/kg)	WiFi/BT Antenna SARmax (W/kg)								Summed SARmax (W/kg)						
		5G NR N77	WiFi 2.4G only	WiFi 2.4G State 3	WiFi 2.4G State 5	WiFi 5G only	WiFi 5G State 4/8/9	WiFi 5G State 5/6/7	BT Ant7	BT Ant11							
		1	2	2a	2b	3	3a	3b	4	5	1+2a	1+3a	1+4	1+5	1+2b+3b	1+3b+4	1+3b+5
Head	Left cheek	0.117	0.807	0.711	0.316	0.941	0.636	0.365	0.284	0.309	0.828	0.753	0.401	0.426	0.798	0.766	0.791
	Left tilted	0.140	0.942	0.942	0.366	0.807	0.807	0.308	0.419	0.084	1.082	0.947	0.559	0.224	0.814	0.867	0.532
	Right cheek	0.257	0.488	0.488	0.187	0.417	0.433	0.153	0.188	0.250	0.745	0.674	0.445	0.507	0.597	0.598	0.660
	Right tilted	0.173	0.461	0.461	0.177	0.498	0.498	0.178	0.213	0.020	0.634	0.671	0.386	0.193	0.528	0.564	0.371
Body-worn (15mm)	Front	0.073	0.169	0.169	0.169	0.346	0.346	0.346	0.013	0.050	0.242	0.419	0.086	0.123	0.588	0.432	0.469
	Back	0.086	0.275	0.275	0.275	0.440	0.440	0.440	0.079	0.051	0.361	0.526	0.165	0.137	0.801	0.605	0.577
Hotspot (10mm)	Front	0.059	0.220	0.220	0.220	0.332	0.332	0.332	0.083	0.081	0.279	0.391	0.142	0.140	0.611	0.474	0.472
	Back	0.207	0.482	0.482	0.482	0.460	0.460	0.460	0.125	0.113	0.689	0.667	0.332	0.320	1.149	0.792	0.780
	Left	0.089	/	/	/	/	/	/	/	/	0.089	0.089	0.089	0.089	0.089	0.089	0.089
	Right	/	0.181	0.181	0.181	0.920	0.920	0.920	0.005	0.158	0.181	0.920	0.005	0.158	1.101	0.925	1.078
	Top	/	0.390	0.390	0.390	0.368	0.368	0.368	0.179	0.080	0.390	0.368	0.179	0.080	0.758	0.547	0.448
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Product specific 10g SAR (0mm)	Front	/	/	/	/	1.142	1.142	1.142	/	/	/	1.142	/	/	1.142	1.142	1.142
	Back	/	/	/	/	0.501	0.501	0.501	/	/	/	0.501	/	/	0.501	0.501	0.501
	Left	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Right	/	/	/	/	1.882	1.882	1.882	/	/	/	1.882	/	/	1.882	1.882	1.882
	Top	/	/	/	/	1.580	0.994	0.994	/	/	/	0.994	/	/	0.994	0.994	0.994
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Test position		ENDC SARmax (W/kg)		WiFi/BT Antenna SARmax (W/kg)								Summed SARmax (W/kg)						
		DC_5A_N7a	DC_7A_N5a	WiFi 2.4G only	WiFi 2.4G State 3	WiFi 2.4G State 5	WiFi 5G only	WiFi 5G State 4/8/9	WiFi 5G State 5/6/7	BT Ant7	BT Ant11							
		1		2	2a	2b	3	3a	3b	4	5	1+2a	1+3a	1+4	1+5	1+2b+3b	1+3b+4	1+3b+5
Head	Left cheek	0.505	0.607	0.807	0.711	0.316	0.941	0.636	0.365	0.284	0.432	1.318	1.243	0.891	1.039	1.288	1.256	1.404
	Left tilted	0.356	0.439	0.942	0.942	0.366	0.807	0.807	0.308	0.419	0.084	1.381	1.246	0.858	0.523	1.113	1.166	0.831
	Right cheek	1.019	1.033	0.488	0.488	0.187	0.417	0.433	0.153	0.188	0.250	1.521	1.450	1.221	1.283	1.373	1.374	1.436
	Right tilted	0.547	0.537	0.461	0.461	0.177	0.498	0.498	0.178	0.213	0.020	1.008	1.045	0.760	0.567	0.902	0.938	0.745
Body-worn (15mm)	Front	0.471	0.505	0.169	0.169	0.169	0.346	0.346	0.346	0.013	0.050	0.674	0.851	0.518	0.555	1.020	0.864	0.901
	Back	0.566	0.747	0.275	0.275	0.275	0.440	0.440	0.440	0.079	0.051	1.022	1.187	0.826	0.798	1.462	1.266	1.238
Hotspot (10mm)	Front	0.397	0.399	0.220	0.220	0.220	0.332	0.332	0.332	0.083	0.081	0.619	0.731	0.482	0.480	0.951	0.814	0.812
	Back	0.455	0.450	0.482	0.482	0.482	0.460	0.460	0.460	0.125	0.113	0.937	0.915	0.580	0.568	1.397	1.040	1.028
	Left	0.356	0.268	/	/	/	/	/	/	/	/	0.356	0.356	0.356	0.356	0.356	0.356	0.356
	Right	0.454	0.375	0.181	0.181	0.181	0.920	0.920	0.920	0.005	0.158	0.635	1.374	0.459	0.612	1.555	1.379	1.532
	Top	0.159	0.039	0.390	0.390	0.390	0.368	0.368	0.368	0.179	0.080	0.549	0.527	0.338	0.239	0.917	0.706	0.607
	Bottom	0.359	0.351	/	/	/	/	/	/	/	/	0.359	0.359	0.359	0.359	0.359	0.359	0.359
Product specific 10g SAR (0mm)	Front	/	/	/	/	/	1.142	1.142	1.142	/	/	/	1.142	/	/	1.142	1.142	1.142
	Back	/	/	/	/	/	0.501	0.501	0.501	/	/	/	0.501	/	/	0.501	0.501	0.501
	Left	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Right	/	/	/	/	/	1.882	1.882	1.882	/	/	/	1.882	/	/	1.882	1.882	1.882
	Top	/	/	/	/	/	1.580	0.994	0.994	/	/	/	0.994	/	/	0.994	0.994	0.994
	Bottom	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

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9 Equipment list

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

Hardware Reference

	Equipment	Manufacturer	Model	Serial Number	Calibration Date	Due date of calibration
☒	Twin Phantom	SPEAG	SAM 11	1027	NCR	NCR
☒	DAE	SPEAG	DAE4	1267	2020-06-12	2021-06-11
☒	E-Field Probe	SPEAG	EX3DV4	3962	2020-04-01	2021-03-31
☒	E-Field Probe	SPEAG	EX3DV4	3982	2020-10-28	2021-10-27
☒	Validation Kits	SPEAG	D750V3	1160	2019-05-22	2022-05-21
☒	Validation Kits	SPEAG	D835V2	4d105	2019-12-17	2022-12-16
☒	Validation Kits	SPEAG	D1750V2	1149	2019-05-21	2022-05-20
☒	Validation Kits	SPEAG	D1900V2	5d028	2019-12-17	2022-12-16
☒	Validation Kits	SPEAG	D2450V2	733	2019-12-17	2022-12-16
☒	Validation Kits	SPEAG	D2600V2	1125	2019-05-20	2022-05-19
☒	Validation Kits	SPEAG	D3700V2	1046	2019-09-06	2022-09-05
☒	Validation Kits	SPEAG	D3900V2	1026	2019-09-03	2022-09-02
☒	Validation Kits	SPEAG	D5GHzV2	1165	2019-12-20	2022-12-19
☒	Agilent Network Analyzer	Agilent	E5071C	MY46523591	2020-04-16	2021-04-15
☒	Dielectric Probe Kit	Agilent	85070E	US01440210	NCR	NCR
☒	Universal Radio Communication Tester	R&S	CMW500	111637	2020-04-16	2021-04-15
☒	Radio Communication Analyzer	Anritsu	MT8821C	6201502984	2020-06-11	2021-06-10
☒	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
☒	Signal Generator	Agilent	N5171B	MY53050736	2020-04-15	2021-04-14
☒	Preamplifier	Mini-Circuits	ZHL-42W	15542	NCR	NCR
☒	Preamplifier	Compliance Directions Systems Inc.	AMP28-3W	073501433	NCR	NCR
☒	Power Meter	Agilent	E4416A	GB41292095	2020-04-15	2021-04-14
☒	Power Sensor	Agilent	8481H	MY41091234	2020-04-15	2021-04-14
☒	Power Sensor	R&S	NRP-Z92	100025	2020-04-16	2021-04-15
☒	Attenuator	SHX	TS2-3dB	30704	NCR	NCR
☒	Coaxial low pass filter	Mini-Circuits	VLF-2500(+)	NA	NCR	NCR

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☒	Coaxial low pass filter	Microlab Fxr	LA-F13	NA	NCR	NCR
☒	50 Ω coaxial load	Mini-Circuits	KARN-50+	00850	NCR	NCR
☒	DC POWER SUPPLY	SAKO	SK1730SL5A	NA	NCR	NCR
☒	Speed reading thermometer	MingGao	T809	NA	2020-04-21	2021-04-20
☒	Humidity and Temperature Indicator	KIMTOKA	KIMTOKA	NA	2020-04-21	2021-04-20

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

10 Calibration certificate

Please see the Appendix C

11 Photographs

Please see the Appendix D

Appendix A: Detailed System Check Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

Appendix E: Conducted RF Output Power Table

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