SAR TEST REPORT

Report No.：	SET2019-06789
Product：	Mobile Computer
Trade Name:	Janam
Model No.：	XT30
FCC ID:	UTWXT30WA
IC：	6914A-XT30WA
Applicant：	Janam Technologies LLC
Address：	100 Crossways Park West Suite 105 Woodbury, NY 11797
Issued by：	CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd.
Lab Location：	Building 28/29, East of Shigu, Xili Industrial Zone, Xili Road, Nanshan District, Shenzhen, Guangdong, China
Tel：	86 755 26627338 Fax：86 755 26627238
Mail：	manager@ccic-set.com Website：http://www.ccic-set.com

Test Report

Product. …….:	Mobile Computer
Model No. ……..:	XT30
Brand Name……..:	Janam
Applicant……..:	Janam Technologies LLC
Applicant Address…….:	100 Crossways Park West Suite 105 Woodbury, NY 11797
Manufacturer……:	Janam Technologies LLC
Manufacturer Address:	100 Crossways Park West Suite 105 Woodbury, NY 11797
Test Standards…….:	**47CFR §2.1093-** Radiofrequency Radiation Exposure Evaluation: Portable Devices; **RSS-102 Issue 5, March 2015:** Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) **IEEE 1528–2013:** IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques **IEC62209-2:2010** Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)
Test Result……:	Pass
Test Date……:	2019.05.15-2019.07.08
Tested by ……..:	Mei Chun 2019-07-08 Mei Chun, Test Engineer
Reviewed by…….:	Chris You 2019-07-08 Chris You, Senior Engineer
Approved by……:	Shuangwen Zhang 2019-07-08 Shuangwen Zhang, Manager

Contents

1. Administrative Data

1.1 Testing Laboratory

Test Site:	CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd.
Address:	Electronic Testing Building, No. 43 Shahe Road, Xili Jiedao, Nanshan District, Shenzhen, Guangdong, China
NVLAP Lab Code:	CCIC-SET is a third party testing organization accredited by NVLAP according to ISO/IEC 17025. The accreditation certificate number is 201008-0.
FCC Registration:	CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN5031, valid time is until December 31, 2019.
ISED Registration:	CCIC Southern Testing Co., Ltd. Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on Aug. 04, 2016, valid time is until Dec. 31, 2019.
Test Environment Condition:	Temperature (°C): 21°C Relative Humidity (%): 60% Atmospheric Pressure (kPa): 86KPa-106KPa

2. Equipment Under Test (EUT)

Identification of the Equipment under Test

Device Type:	Portable	
Exposure Category:	Population/Uncontrolled	
Sample Name:	Mobile Computer	
Brand Name:	Janam	
Model Name:	XT30	
General description:	Support Band	GSM850MHz/1900MHz/900MHz/1800MHz, WCDMA 850MHz/1900MHz/2100MHz/900MHz, LTE Band 1/2/3/4/5/7/8/20/28,WIFI 2.4G/5G, BT,GPS
	Test Band	GSM850MHz/1900MHz,CDMA BC0, WCDMA 850MHz/1900MHz, LTE Band 2/4/5/7,WIFI2.4G/5G
	IMEI No.	867681020778915/867681020778923
	Device Class	Class B
	Multi Class	GPRS: Class 12; EGPRS: Class 12
	Development Stage	Identical Prototype
	Accessories	Power Supply
	Hotspot	2.4GHz WLAN support Hotspot mode
	Operation mode	GSM /CDMA/WCDMA / LTE /WIFI
	Modulation mode	GSM(GMSK),CDMA(QPSK)UMTS(QPSK),LTE(QPSK,16QAM,64QAM),WIFI(OFDM/DSSS), BT(GFSK/ π /4-DQPSK/8-DPSK)
	DTM mode	Not support
	Hardware Version	SQ51FW_MB_P0
	Software Version	SQ51FW_EN_XX_WE__DS__R01_D_190527_02
	Max. RF Power	32.40dBm
	Battery options :	Model No.: HBL6300 Capacitance:4500mAh Rated Voltage:3.8V Charge Limit:4.35V
	Max. SAR Value	Head: 0.871 W/Kg Body: 1.040 W/Kg(Limit:1.6W/Kg, 10mm distance)

NOTE:

The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

EUT testing configuration

Tested frequency range(s)	Transmitter Frequency Range	Receiver Frequency Range
GSM850:	824-849 MHz	869-894 MHz
GSM1900:	1850-1910 MHz	1930-1990 MHz
UMTS Band II:	1850-1910 MHz	1930-1990 MHz
UMTS Band V:	824-849 MHz	869-894 MHz
LTE Band2:	1850-1910 MHz	1930-1990 MHz
LTE Band4:	1710-1755 MHz	2110-2155 MHz
LTE Band5:	824-849 MHz	869-894 MHz
LTE Band7:	2500-2570 MHz	2620-2690 MHz
WIFI(tested):	2412-2462 MHz	
	5150-5250 MHz	
	5250-5350 MHz	
	5470-5725 MHz	
	5745-5825 MHz	
Bluetooth:	2402-2480 MHz	
Test channels(low-mid-high):	128-190-251(GSM850)	
	512-661-810(GSM1900)	
	9262-9400-9538(UMTS Band II)	
	4132-4183-4233(UMTS Band V)	
	18700-18900-19100(LTE Band 2 Bandwidth 20M)	
	20050-20175-20300(LTE Band 4 Bandwidth 20M)	
	20450-20525-20600(LTE Band 5 Bandwidth 10M)	
	20850-21100-21350(LTE Band 7 Bandwidth 20M)	
	1-6-11(Wi-Fi 2.4G 802.11b)	
	5190-5270-5590-5795 (WIFI 5G)	
	0-39-78(BT)	

3. SAR Summary

Highest Standalone SAR Summary

Exposure Position	Frequency Band	Scaled 1g-SAR(W/kg)	Highest Scaled 1g-SAR(W/kg)
Head	GSM850	0.188	0.871
	GSM1900	0.497	
	WCDMA Band II	0.871	
	WCDMA Band V	0.161	
	LTE Band 2	0.415	
	LTE Band 4	0.115	
	LTE Band 5	0.099	
	LTE Band 7	0.211	
	WIFI 2.4G 802.11b	0.244	
	WIFI 5G	0.395	
	BT	0.061	

Exposure Position	Frequency Band	Scaled 1g-SAR(W/kg)	Highest Scaled 1g-SAR(W/kg)
Body-worn (10mm Gap)	GSM850	1.040	1.040
	GSM1900	0.989	
	WCDMA Band II	0.991	
	WCDMA Band V	0.528	
	LTE Band 2	0.415	
	LTE Band 4	0.782	
	LTE Band 5	0.317	
	LTE Band 7	0.537	
	WIFI 2.4G 802.11b	0.076	
	WIFI 5G	0.061	
	BT	0.027	

Exposure Position	Frequency Band	Scaled 1g-SAR(W/kg)	Highest Scaled 1g-SAR(W/kg)
Hotspot (10mm Gap)	GSM850	1.040	1.040
	GSM1900	0.989	
	WCDMA Band II	0.991	
	WCDMA Band V	0.528	
	LTE Band 2	0.415	
	LTE Band 4	0.782	
	LTE Band 5	0.317	
	LTE Band 7	0.537	
	WIFI 2.4G 802.11b	0.076	

Highest Simultaneous SAR Summary

Exposure Position	Frequency Band	Highest Scaled 1g-SAR(W/kg)
Hotspot (10mmGap)	WWAN(GSM 850)&WIFI 2.4G	1.101

4. Specific Absorption Rate (SAR)

4.2. Introduction

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

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

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

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be either related to the temperature elevation in tissue by

$$SAR = C\frac{\delta T}{\delta t}$$

where C is the specific head capacity, δ T is the temperature rise and δ t the exposure duration, or related to the electrical field in the tissue by

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

where σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the rms electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

4.2 Applicable Standards and Limits

4.2.1 Applicable Standards

47CFR § 2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI C95.1–1992	Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.(IEEE Std C95.1-1991)
IEEE 1528–2013	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
IEC62209-2:2010	Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures – Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)
KDB 248227 D01	v02r02 802.11 Wi-Fi SAR
KDB 447498 D01	v06 General RF Exposure Guidance
KDB 648474 D04	v01r03 Handset SAR
KDB 865664 D01	v01r04 SAR Measurement 100MHz to 6GHz
KDB 865664 D02	v01r02 SAR Exposure Reporting
KDB 941225 D01	v03r01 3G SAR Procedures
KDB 941225 D05	v02r05 SAR for LTE Devices
KDB 941225 D05A	v01r02 LTE Rel.10 KDB Inquiry Sheet
KDB 941225 D06	v02r01 Hotspot Mode

4.2.2 RF exposure Limits

Human Exposure	**Uncontrolled Environment General Population**
Spatial Peak SAR* (Brain/Body)	**1.60 mW/g**
Spatial Average SAR** (Whole Body)	0.08 mW/g
Spatial Peak SAR*** (Limbs)	4.00 mW/g

The limit applied in this test report is shown in bold letters.

Notes:

* 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

** 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.

4.3 Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin-headed "SAM Phantom", manufactured by SATIMO. The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness increases to 6mm).

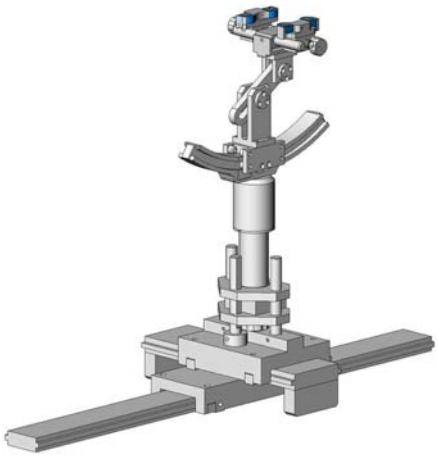
System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.

SAM Twin Phantom

4.4 Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SATIMO as an integral part of the COMOSAR test system.

The device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.



Device holder

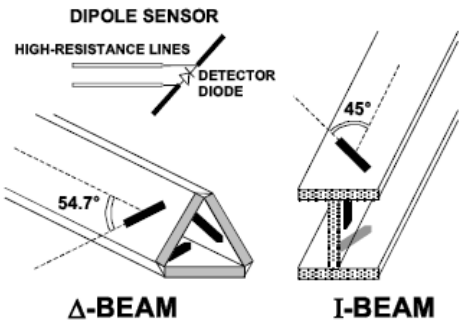
4.5 Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	700 MHz to 3 GHz; Linearity: ± 0.5 dB (700 MHz to 3 GHz)
Directivity	± 0.25 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	1.5 μW/g to 100 mW/g; Linearity: ± 0.5 dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 5 mm Distance from probe tip to dipole centers: <2.7 mm
Application	General dosimetry up to 3 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones
Compatibility	COMOSAR

Isotropic E-Field Probe

The isotropic E-Field probe has been fully calibrated and assessed for isotropicity, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change.

The E-Field probe utilizes a triangular sensor arrangement as detailed in the diagram below:



5. Tissue check and recommend Dielectric Parameters

5.1 Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness Power drifts in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

Table 1: Recommended Dielectric Performance of Tissue

Ingredients (% by weight)	Frequency (MHz)											
	450		835		915		1900		2450		2600	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.46	52.4	41.05	56.0	54.9	40.4	62.7	73.2	55.24	64.49
Salt (Nacl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04	0.5	0.024
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0	0.0	0.0
Triton x-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0	44.45	32.25
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7	0.0	26.7
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.2	52.5	39.0	52.5
Conductivity (s/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.80	1.78	1.96	2.16

MSL/HSL750 (Body and Head liquid for 650 – 850 MHz)

Item	Head Tissue Simulation Liquid HSL750 Muscle(body)Tissue Simulation Liquid MSL750			
H2O	Water, 35 – 58%			
Sucrese	Sugar, white, refined, 40-60%			
NaCl	Sodium Chloride, 0-6%			
Hydroxyethel-cellulsoe	Medium Viscosity (CAS# 9004-62-0), <0.3%			
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone, 0.1-0.7%			
Frequency (MHz)	Head εr	Head σ(S/m)	Body εr	Bodyσ(S/m)
750	41.9	0.89	55.2	0.97

Note: The liquid of 700MHz&2600MHz typical liquid composition is provided by SATIMO.

Frequency:5200/5400/5600/5800MHz	
Ingredients	(% by weight)
Water	78
Mineral oil	11
Emulsifiers	9
Additives and Salt	2

Table 2 Recommended Tissue Dielectric Parameters

Frequency (MHz)	Head Tissue		Body Tissue	
	ε_r	σ(S/m)	ε_r	σ(S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800-2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

5.2 Simulate liquid

Dielectric Performance of Head Tissue Simulating Liquid

Temperature: 23.2°C; Humidity: 64%;			
/	Frequency	Permittivity ε	Conductivity σ (S/m)
Target value	850MHz	41.5±5%	0.90±5%
Validation value (2019-05-15)	825MHz	41.42	0.91
	835MHz	41.43	0.91
	845MHz	41.43	0.91
	850MHz	41.43	0.91
Target value	1800MHz	40.5±5%	1.40±5%
Validation value (2019-05-22)	1710MHz	40.12	1.40
	1730MHz	40.14	1.40
	1750MHz	40.15	1.40
	1760MHz	40.15	1.40
	1800MHz	40.16	1.40
Target value	1900MHz	40.5±5%	1.40±5%
Validation value (2019-05-27)	1850MHz	40.10	1.39
	1880MHz	40.11	1.39
	1900MHz	40.11	1.39
	1910MHz	40.12	1.39
Target value	2450MHz	39.2±5%	1.80±5%
Validation value (2019-05-29)	2410MHz	39.42	1.81
	2440MHz	39.44	1.81
	2450MHz	39.44	1.81
	2460MHz	39.44	1.81
Target value	2600MHz	39.0±5%	1.96±5%
Validation value (2019-05-31)	2500MHz	39.14	1.96
	2530MHz	39.16	1.96
	2540MHz	39.16	1.96
	2570MHz	39.17	1.96
	2600MHz	39.17	1.96
Target value	5200MHz	36.0±5%	4.66±5%
Validation value (2019-06-03)	5200MHz	36.45	4.61
	5220MHz	36.45	4.61
	5240MHz	36.45	4.61
Target value	5400MHz	35.8±5%	4.86±5%
Validation value (2019-06-03)	5290MHz	36.08	4.83
	5350MHz	36.11	4.83
	5400MHz	36.12	4.83
Target value	5600MHz	35.5±5%	5.07±5%
Validation value (2019-06-04)	5600MHz	35.78	5.03
	5670MHz	35.81	5.03
	5700MHz	35.82	5.03
Target value	5800MHz	35.3±5%	5.27±5%
Validation value (2019-06-05)	5750MHz	35.34	5.24
	5760MHz	35.34	5.24
	5800MHz	35.36	5.24

Dielectric Performance of Body Tissue Simulating Liquid

Temperature: 23.2°C; Humidity: 64%;			
/	Frequency	Permittivity ε	Conductivity σ (S/m)
Target value	850MHz	55.2±5%	0.97±5%
Validation value (2019-05-15)	825MHz	55.29	0.95
	835MHz	55.31	0.95
	845MHz	55.31	0.95
	850MHz	55.31	0.95
Target value	1800MHz	53.3±5%	1.52±5%
Validation value (2019-05-22)	1710MHz	53.07	1.51
	1730MHz	53.09	1.51
	1750MHz	53.10	1.51
	1760MHz	53.10	1.51
	1800MHz	53.12	1.51
Target value	1900MHz	53.3±5%	1.52±5%
Validation value (2019-05-27)	1850MHz	53.02	1.49
	1880MHz	53.06	1.49
	1900MHz	53.06	1.49
	1910MHz	53.08	1.49
Target value	2450MHz	52.7±5%	1.95±5%
Validation value (2019-05-29)	2410MHz	52.63	1.97
	2440MHz	52.66	1.98
	2450MHz	52.66	1.98
	2460MHz	52.67	1.98
Target value	2600MHz	52.5±5%	2.16±5%
Validation value (2019-05-31)	2500MHz	52.31	2.16
	2530MHz	52.34	2.16
	2540MHz	52.35	2.17
	2570MHz	52.38	2.18
	2600MHz	52.43	2.18
Target value	5200MHz	49.0±5%	5.30±5%
Validation value (2019-06-03)	5200MHz	49.41	5.17
	5220MHz	49.40	5.17
	5240MHz	49.37	5.17
Target value	5400MHz	48.7±5%	5.53±5%
Validation value (2019-06-03)	5290MHz	47.18	5.54
	5350MHz	47.17	5.54
	5400MHz	47.16	5.54
Target value	5600MHz	48.5±5%	5.77±5%
Validation value (2019-06-04)	5600MHz	48.24	5.67
	5670MHz	48.26	5.67
	5700MHz	48.26	5.67
Target value	5800MHz	48.2±5%	6.0±5%
Validation value (2019-06-05)	5750MHz	48.11	5.86
	5760MHz	48.11	5.87
	5800MHz	48.11	5.87

Dielectric Performance of Head Tissue Simulating Liquid

Temperature: 23.2°C; Humidity: 64%;			
/	Frequency	Permittivity ε	Conductivity σ (S/m)
Target value	2450MHz	39.2±5%	1.80±5%
Validation value (2019-07-08)	2400MHz	39.38	1.83
	2440MHz	29.36	1.82
	2450MHz	39.35	1.82
	2480MHz	39.29	1.82

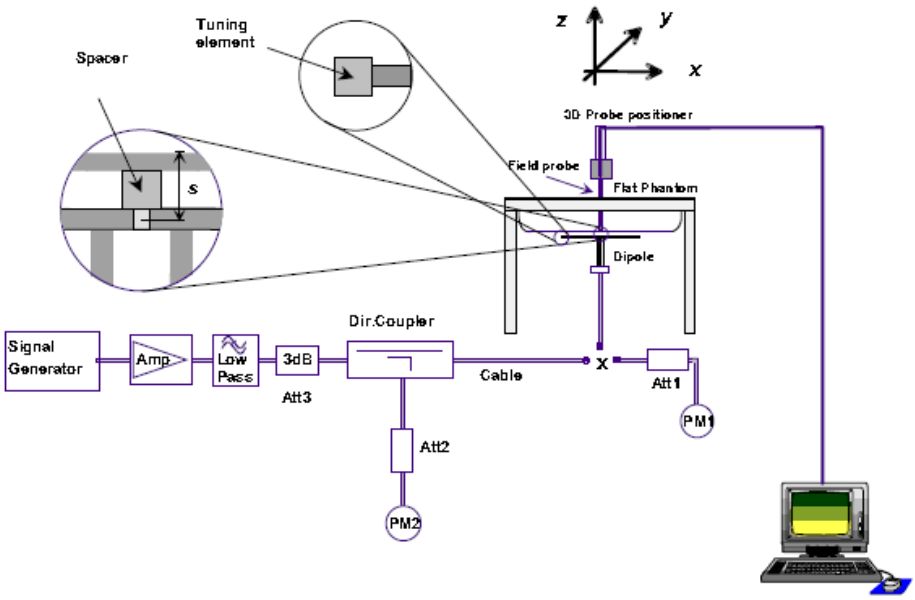
Dielectric Performance of Body Tissue Simulating Liquid

Temperature: 23.2°C; Humidity: 64%;			
/	Frequency	Permittivity ε	Conductivity σ (S/m)
Target value	2450MHz	52.7±5%	1.95±5%
Validation value (2019-07-08)	2400MHz	52.78	1.96
	2440MHz	52.72	1.95
	2450MHz	52.70	1.95
	2480MHz	52.65	1.95

SAR System validation

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ±10%. The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

The following procedure, recommended for performing validation tests using box phantoms is based on the procedures described in the IEEE standard P1528. Setup according to the setup diagram below:



With the SG and Amp and with directional coupler in place, set up the source signal at the relevant frequency and use a power meter to measure the power at the end of the SMA cable that you intend to connect to the balanced dipole. Adjust the SG to make this, say, 0.01W (10 dBm). If this level is too high to read directly with the power meter sensor, insert

a calibrated attenuator (e.g. 10 or 20 dB) and make a suitable correction to the power meter reading.

Note 1: In this method, the directional coupler is used for monitoring rather than setting the exact feed power level. If, however, the directional coupler is used for power measurement, you should check the frequency range and power rating of the coupler and measure the coupling factor (referred to output) at the test frequency using a VNA.

Note 2: Remember that the use of a 3dB attenuator (as shown in Figure 8.1 of P1528) means that you need an RF amplifier of 2 times greater power for the same feed power. The other issue is the cable length. You might get up to 1dB of loss per meter of cable, so the cable length after the coupler needs to be quite short.

Note 3: For the validation testing done using CW signals, most power meters are suitable. However, if you are measuring the output of a modulated signal from either a signal generator or a handset, you must ensure that the power meter correctly reads the modulated signals.

The measured 1-gram averaged SAR values of the device against the phantom are provided in Tables 5 and Table 6. The humidity and ambient temperature of test facility were 64% and 23.2°C respectively. The body phantom were full of the body tissue simulating liquid. The EUT was supplied with full-charged battery for each measurement.

The distance between the back of the EUT and the bottom of the flat phantom is 10 mm (taking into account of the IEEE 1528 and the place of the antenna).

Head SAR system validation (1g)

Frequency	Duty cycle	Target value （W/kg）	Test value (W/kg)	
			10 mW	1W
850MHz(2019-05-15)	1:1	9.61±10%	0.0880	8.80
1800MHz(2019-05-22)	1:1	37.35±10%	0.3816	38.16
1900MHz(2019-05-27)	1:1	39.35±10%	0.3745	37.45
2450MHz(2019-05-29)	1:1	52.67±10%	0.5034	50.34
2600MHz(2019-05-31)	1:1	55.47±10%	0.5595	55.95
5200MHz(2019-06-03)	1:1	164.1±10%	1.5476	154.76
5400MHz(2019-06-03)	1:1	171.25±10%	1.5418	154.18
5600MHz(2019-06-04)	1:1	178.98±10%	1.6526	165.26
5800MHz(2019-06-05)	1:1	185.54±10%	1.7547	175.47
2450MHz(2019-05-29)	1:1	52.67±10%	0.5575	55.75

Body SAR system validation (1g)

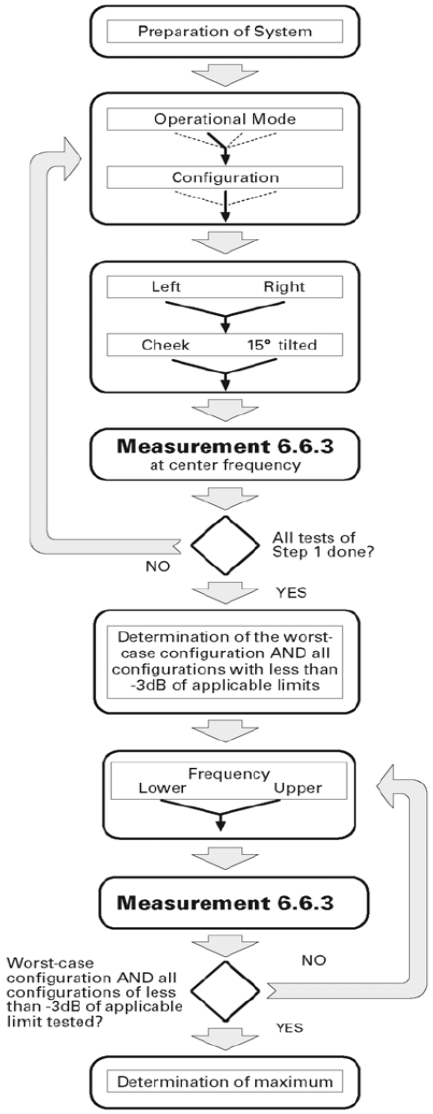
Frequency	Duty cycle	Target value （W/kg）	Test value (W/kg)	
			10 mW	1W
850MHz(2019-05-15)	1:1	9.88±10%	0.0940	9.40
1800MHz(2019-05-22)	1:1	37.68±10%	0.3886	38.86
1900MHz(2019-05-27)	1:1	38.84±10%	0.3924	39.24
2450MHz(2019-05-29)	1:1	51.42±10%	0.4785	47.85

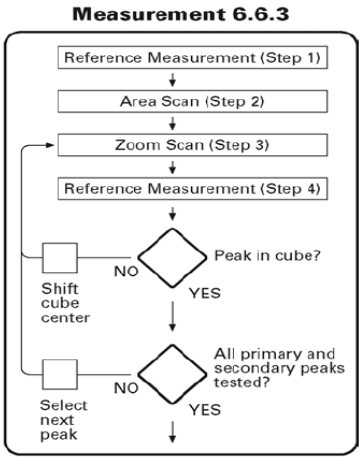
2600MHz(2019-05-31)	1:1	53.45±10%	0.5471	54.71
5200MHz(2019-06-03)	1:1	155.78±10%	1.4810	148.10
5400MHz(2019-06-03)	1:1	160.24±10%	1.4705	147.05
5600MHz(2019-06-04)	1:1	167.61±10%	1.6197	161.97
5800MHz(2019-06-05)	1:1	170.49±10%	1.7817	178.17
2450MHz(2019-05-29)	1:1	51.42±10%	0.5653	56.53

* Note: Target value was referring to the measured value in the calibration certificate of reference dipole.
Note: All SAR values are normalized to 1W forward power.

6. SAR measurement procedure

The SAR test against the head phantom was carried out as follow:





Establish a call with the maximum output power with a base station simulator, the connection between the EUT and the base station simulator is established via air interface.

After an area scan has been done at a fixed distance of 2mm from the surface of the phantom on the source side, a 3D scan is set up around the location of the maximum spot

SAR. First, a point within the scan area is visited by the probe and a SAR reading taken at the start of testing. At the end of testing, the probe is returned to the same point and a second reading is taken. Comparison between these start and end readings enables the power drift during measurement to be assessed.

Above is the scanning procedure flow chart and table from the IEEEp1528 standard. This is the procedure for which all compliant testing should be carried out to ensure that all variations of the device position and transmission behavior are tested.

7. Conducted RF Output Power

7.1 GSM Conducted Power

GSM850		Burst-Averaged output Power (dBm)			Division	Frame-Averaged output Power (dBm)		
		128CH	190CH	251CH	Factors	28CH	190CH	251CH
GSM (CS)		32.00	32.40	32.20	-9.19	22.81	23.21	23.01
GPRS (GMSK)	1 Tx Slot	32.00	31.60	32.20	-9.19	22.81	22.41	23.01
	2 Tx Slots	29.34	29.57	29.49	-6.13	23.21	**23.44**	23.36
	3 Tx Slots	27.45	27.71	27.52	-4.42	23.03	23.29	23.10
	4 Tx Slots	25.86	26.02	25.93	-3.18	22.68	22.84	22.75
EDGE (8PSK)	1 Tx Slot	27.4	27.6	27.4	-9.19	18.21	18.41	18.21
	2 Tx Slots	25.45	25.78	25.62	-6.13	19.32	19.65	19.49
	3 Tx Slots	23.68	23.82	23.71	-4.42	19.26	19.40	19.29
	4 Tx Slots	22.42	22.64	22.53	-3.18	19.24	19.46	19.35
GSM1900		Burst-Averaged output Power (dBm)			Division	Frame-Averaged output Power (dBm)		
		512CH	661CH	810CH	Factors	512CH	661CH	810CH
GSM (CS)		29.30	29.40	29.60	-9.19	20.11	20.21	20.41
GPRS (GMSK)	1 Tx Slot	28.70	28.80	28.50	-9.19	19.51	19.61	19.31
	2 Tx Slots	26.56	26.72	26.47	-6.13	20.43	**20.59**	20.34
	3 Tx Slots	24.67	24.75	24.58	-4.42	20.25	20.33	20.16
	4 Tx Slots	23.55	23.64	23.48	-3.18	20.37	20.46	20.30
EDGE (8PSK)	1 Tx Slot	24.50	25.60	25.40	-9.19	15.31	16.41	16.21
	2 Tx Slots	22.88	22.92	22.95	-6.13	16.75	16.79	16.82
	3 Tx Slots	21.16	21.20	21.22	-4.42	16.74	16.78	16.80
	4 Tx Slots	19.90	19.95	19.93	-3.18	16.72	16.77	16.75

Note: Per KDB 447498 D01 v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.

For hotspot SAR, EUT was performed at GPRS Class 12 multi-slots(4Tx) mode

For Head and Body-worn SAR testing, EUT was set in GSM Voice mode for both GSM850 and GSM1900

Timeslot consignations

No. Of Slots	Slot 1	Slot 2	Slot 3	Slot 4
Slot Consignation	1Up4Down	2UpDown	3UpDown	4Up1Down
Duty Cycle	1:8	1:4	1:2.67	1:2
Crest Factor	-9.03dB	-6.02dB	-4.26dB	-3.01dB

7.2 WCDMA Conducted output Power

UMTS1900 (Band II)		Average Power (dBm)		
		9262CH	9400CH	9538cH
WCDMA	12.2kbps RMC	22.15	22.01	22.34
HSDPA	Subtest 1	22.02	21.90	22.16
	Subtest 2	21.91	21.81	22.03
	Subtest 3	21.77	21.67	21.86
	Subtest 4	21.65	21.54	21.73
HSUPA	Subtest 1	21.53	21.42	21.61
	Subtest 2	21.41	21.33	21.53
	Subtest 3	21.29	21.18	21.37
	Subtest 4	21.16	21.07	21.26
	Subtest 5	21.05	20.94	21.13
UMTS850 (Band V)		Average Power (dBm)		
		4132CH	4183CH	4233CH
WCDMA	12.2kbps RMC	21.06	21.54	21.48
HSDPA	Subtest 1	20.98	21.34	21.23
	Subtest 2	20.86	21.21	21.11
	Subtest 3	20.77	21.06	20.93
	Subtest 4	20.64	20.92	20.84
HSUPA	Subtest 1	20.53	20.78	20.69
	Subtest 2	20.41	20.67	20.55
	Subtest 3	20.29	20.53	20.41
	Subtest 4	20.17	20.40	20.28
	Subtest 5	20.05	20.27	20.16

Note:

1. WCDMA SAR was tested under RMC 12.2kbps with HSPA Inactive per KDB Publication 941225 D01v03r01.HSPA SAR was not requires since the average output power of the HSPA subtests was not more than 0.25dB higher than the RMC level and SAR was less than 1.2W/kg.
2. It is expected by the manufacturer that MPR for some HSPA subtests may be up to 2dB more than specified by 3GPP, but also as low as 0dB according to the chipset implementation in this model

7.3 LTE Conducted peak output Power

LTE Test Configurations

The CMW500 Wide Band Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all frames.

1) Spectrum Plots for RB configurations

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

2) MPR

When MPR is implemented permanently within the UE, regardless of network requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR.

The allowed Maximum Power Reduction(MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101:

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

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

3)A-MPR LTE procedures for SAR testing

A-MPR(Additional MPR) has been disabled for all SAR tests by using Network Signaling Value of “NS_01” on the base station simulator.

4)LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test

requirements i) 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 ≤ 0.8W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1RB 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.

5)LTE CA operation

4.3.1.1.7A FDD reference test frequencies for CA in operating band 7

Table 4.3.1.1.7A-1: Test frequencies for CA_7C

Range	CC-Combo / N_{RB_agg} [RB]	CC1 Note1					CC2 Note1				
		BW [RB]	N_{UL}	f_{UL} [MHz]	N_{DL}	f_{DL} [MHz]	BW [RB]	N_{UL}	f_{UL} [MHz]	N_{DL}	f_{DL} [MHz]
Low	50+100	50	20805	2505.5	2805	2625.5	100	20949	2519.9	2949	2639.9
		100	20850	2510	2850	2630	50	20994	2524.4	2994	2644.4
	75+50	75	20825	2507.5	2825	2627.5	50	20945	2519.5	2945	2639.5
	75+75	75	20825	2507.5	2825	2627.5	75	20975	2522.5	2975	2642.5
	75+100	75	20828	2507.8	2828	2627.8	100	20999	2524.9	2999	2644.9
		100	20850	2510	2850	2630	75	21021	2527.1	3021	2647.1
	100+100	100	20850	2510	2850	2630	100	21048	2529.8	3048	2649.8
Mid	50+100	50	21006	2525.6	3006	2645.6	100	21150	2540	3150	2660
		100	21051	2530.1	3051	2650.1	50	21195	2544.5	3195	2664.5
	75+50	75	21051	2530.1	3051	2650.1	50	21171	2542.1	3171	2662.1
	75+75	75	21025	2527.5	3025	2647.5	75	21175	2542.5	3175	2662.5
	75+100	75	21003	2525.3	3003	2645.3	100	21174	2542.4	3174	2662.4
		100	21026	2527.6	3026	2647.6	75	21197	2544.7	3197	2664.7
	100+100	100	21001	2525.1	3001	2645.1	100	21199	2544.9	3199	2664.9
High	50+100	50	21206	2545.6	3206	2665.6	100	21350	2560	3350	2680
		100	21251	2550.1	3251	2670.1	50	21395	2564.5	3395	2684.5
	75+50	75	21277	2552.7	3277	2672.7	50	21397	2564.7	3397	2684.7
	75+75	75	21225	2547.5	3225	2667.5	75	21375	2562.5	3375	2682.5
	75+100	75	21179	2542.9	3179	2662.9	100	21350	2560	3350	2680
		100	21201	2545.1	3201	2665.1	75	21372	2562.2	3372	2682.2
	100+100	100	21152	2540.2	3152	2660.2	100	21350	2560	3350	2680

Note 1: Carriers in increasing frequency order.

1. LTE Band 2 Conducted Power Test Verdict:

LTE FDD Band 2				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	23.15	23.14	23.07	22.5±1.0
		1	3	23.03	22.75	22.97	
		1	5	22.91	22.67	22.75	
		3	0	22.75	22.66	22.67	22.0±1.0
		3	2	22.63	22.55	22.42	
		3	3	22.54	22.48	22.47	
		6	0	22.36	22.45	22.38	22.0±1.0
	16QAM	1	0	22.09	22.09	21.97	21.5±1.0
		1	3	22.07	22.05	21.84	
		1	5	21.95	22.01	21.68	
		3	0	2184	21.66	21.83	21.0±1.0
		3	2	21.62	21.61	21.69	
		3	3	21.54	21.55	21.64	
		6	0	21.22	21.29	21.26	20.5±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	23.02	22.94	23.02	22.5±1.0
		1	7	22.96	22.81	22.93	
		1	14	22.76	22.9	22.92	
		8	0	22.66	22.72	22.58	22.0±1.0
		8	4	22.4	22.69	22.54	
		8	7	22.51	22.65	22.47	
		15	0	22.45	22.52	22.54	22.0±1.0
	16QAM	1	0	22.19	22.19	22.09	21.5±1.0
		1	7	21.94	21.95	22.07	
		1	14	22	22.07	22.05	
		8	0	21.81	21.79	21.68	21.0±1.0
		8	4	21.61	21.72	21.61	
		8	7	21.62	21.61	21.6	
		15	0	21.3	21.29	21.23	20.5±1.0

LTE FDD Band 2				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	23.04	22.91	22.94	22.5±1.0
		1	13	22.83	22.75	22.89	
		1	24	22.77	22.8	22.83	
		12	0	22.56	22.72	22.65	22.0±1.0
		12	6	22.52	22.68	22.51	
		12	13	22.48	22.51	22.47	
		25	0	22.4	22.6	22.57	22.0±1.0
	16QAM	1	0	22.09	22.19	22.11	21.5±1.0
		1	13	22.05	22.06	21.99	
		1	24	21.87	22.01	21.88	
		12	0	21.85	21.69	21.83	21.0±1.0
		12	6	21.64	21.6	21.61	
		12	13	21.76	21.56	21.75	
		25	0	21.21	21.2	21.28	20.5±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	22.97	23.13	23.08	22.5±1.0
		1	25	22.78	22.79	22.81	
		1	49	22.86	22.93	22.75	
		25	0	22.65	22.73	22.76	22.0±1.0
		25	13	22.57	22.45	22.61	
		25	25	22.51	22.71	22.53	
		50	0	22.42	22.35	22.52	22.0±1.0
	16QAM	1	0	22.2	22.05	22.15	21.5±1.0
		1	25	22.09	21.93	22.06	
		1	49	21.95	22.01	22.01	
		25	0	21.84	21.78	21.82	21.0±1.0
		25	13	21.84	21.67	21.71	
		25	25	21.65	21.62	21.56	
		50	0	21.25	21.3	21.2	20.5±1.0

LTE FDD Band 2				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	23.02	23.13	22.32	22.5±1.0
		1	38	22.99	23.04	22.77	
		1	74	23.01	22.87	22.81	
		36	0	22.79	22.66	22.8	22.0±1.0
		36	18	22.65	22.52	22.68	
		36	39	22.55	22.49	22.49	
		75	0	22.54	22.49	22.36	22.0±1.0
	16QAM	1	0	22.19	22.18	22.1	21.5±1.0
		1	38	22.11	22.07	22.04	
		1	74	22.1	22.03	21.86	
		36	0	21.78	21.85	21.82	21.0±1.0
		36	18	21.59	21.66	21.79	
		36	39	21.75	21.57	21.61	
		75	0	21.25	21.22	21.26	20.5±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	22.93	23.21	23.05	22.5±1.0
		1	50	23.14	22.75	22.79	
		1	99	22.87	23.13	23.01	
		50	0	22.76	22.70	22.62	22.0±1.0
		50	25	22.68	22.65	22.6	
		50	50	22.41	22.51	22.51	
		100	0	22.52	22.59	22.46	22.0±1.0
	16QAM	1	0	22.17	22.11	22.03	21.5±1.0
		1	50	21.94	22.08	21.99	
		1	99	22.02	21.94	21.84	
		50	0	21.75	21.84	21.7	21.0±1.0
		50	25	21.74	21.67	21.68	
		50	50	21.7	21.52	21.64	
		100	0	21.2	21.3	21.21	20.5±1.0

2. LTE Band 4 Conducted Power Test Verdict:

LTE FDD Band 4				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	22.05	22.01	21.99	21.5±1.0
		1	3	21.88	21.92	21.89	
		1	5	22.02	21.84	21.82	
		3	0	21.72	21.68	21.77	21.0±1.0
		3	2	21.64	21.64	21.63	
		3	3	21.62	21.61	21.73	
		6	0	21.51	21.48	21.55	21.0±1.0
	16QAM	1	0	21.19	21.28	21.27	20.5±1.0
		1	3	21.05	21.2	21.04	
		1	5	21.07	21.08	21.2	
		3	0	20.85	20.95	20.85	20.0±1.0
		3	2	20.7	20.8	20.75	
		3	3	20.81	20.85	20.74	
		6	0	20.55	20.64	20.6	20.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	22.01	21.92	22.06	21.5±1.0
		1	7	21.92	21.85	22.01	
		1	14	21.88	21.82	21.99	
		8	0	21.78	21.76	21.83	21.0±1.0
		8	4	21.7	21.68	21.8	
		8	7	21.61	21.69	21.73	
		15	0	21.47	21.53	21.54	21.0±1.0
	16QAM	1	0	21.27	21.22	21.31	20.5±1.0
		1	7	21.07	21.2	21.12	
		1	14	21.11	21.14	21.26	
		8	0	20.95	20.86	20.91	20.0±1.0
		8	4	20.74	20.7	20.82	
		8	7	20.71	20.75	20.78	
		15	0	20.59	20.63	20.62	20.0±1.0

LTE FDD Band 4				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	22.05	22.1	22.08	21.5±1.0
		1	13	22.01	21.98	22.01	
		1	24	21.92	21.87	22	
		12	0	21.74	21.79	21.79	21.0±1.0
		12	6	21.66	21.69	21.72	
		12	13	21.57	21.63	21.65	
		25	0	21.46	21.48	21.47	21.0±1.0
	16QAM	1	0	21.19	21.13	21.26	20.5±1.0
		1	13	21.08	21.06	21.11	
		1	24	21.02	21.1	21.02	
		12	0	20.83	20.92	20.81	20.0±1.0
		12	6	20.71	20.81	20.73	
		12	13	20.77	20.82	20.75	
		25	0	20.61	20.6	20.6	20.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	21.99	21.95	22.12	21.5±1.0
		1	25	21.93	21.93	21.95	
		1	49	21.91	21.87	22.05	
		25	0	21.75	21.86	21.77	21.0±1.0
		25	13	21.6	21.66	21.73	
		25	25	21.7	21.81	21.72	
		50	0	21.49	21.47	21.53	21.0±1.0
	16QAM	1	0	21.24	21.13	21.24	20.5±1.0
		1	25	21.11	21.05	21.05	
		1	49	21.03	21.1	21.2	
		25	0	20.84	20.94	20.89	20.0±1.0
		25	13	20.72	20.93	20.71	
		25	25	20.8	20.83	20.75	
		50	0	20.64	20.64	20.63	20.0±1.0

LTE FDD Band 4				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	22.06	21.95	22.09	21.5±1.0
		1	38	21.96	21.91	22.01	
		1	74	21.87	21.86	21.92	
		36	0	21.75	21.72	21.68	21.0±1.0
		36	18	21.72	21.68	21.63	
		36	39	21.67	21.63	21.62	
		75	0	21.5	21.5	21.54	21.0±1.0
	16QAM	1	0	21.18	21.28	21.29	20.5±1.0
		1	38	21.05	21.22	21.13	
		1	74	21.14	21.15	21.15	
		36	0	20.92	20.93	20.85	20.0±1.0
		36	18	20.73	20.85	20.81	
		36	39	20.85	20.7	20.78	
		75	0	20.64	20.56	20.57	20.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	22.02	22.28	22.16	21.5±1.0
		1	50	22.01	22.08	22.12	
		1	99	21.98	22.01	22.05	
		50	0	21.8	21.75	21.79	21.0±1.0
		50	25	21.7	21.69	21.76	
		50	50	21.75	21.73	21.66	
		100	0	21.51	21.54	21.51	21.0±1.0
	16QAM	1	0	21.24	21.3	21.24	20.5±1.0
		1	50	21.12	21	21.13	
		1	99	21.09	21.02	21.19	
		50	0	20.94	20.88	20.92	20.0±1.0
		50	25	20.8	20.78	20.78	
		50	50	20.91	20.81	20.89	
		100	0	20.59	20.59	20.63	20.0±1.0

3. LTE Band 5 Conducted Power Test Verdict

LTE FDD Band 5				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	22.53	22.61	22.52	22.0±1.0
		1	3	22.48	22.64	22.46	
		1	5	22.59	22.58	22.61	
		3	0	22.19	22.35	22.22	21.5±1.0
		3	2	22.32	22.29	22.2	
		3	3	22.15	22.26	22.31	
		6	0	22.06	22.03	22.1	21.5±1.0
	16QAM	1	0	21.76	21.87	21.89	21.0±1.0
		1	3	21.88	21.81	21.77	
		1	5	21.9	21.89	21.81	
		3	0	21.62	21.62	21.48	21.0±1.0
		3	2	21.47	21.51	21.52	
		3	3	21.51	21.62	21.6	
		6	0	21.27	21.21	21.27	20.5±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	22.54	22.53	22.56	22.0±1.0
		1	7	22.55	22.48	22.47	
		1	14	22.49	22.59	22.62	
		8	0	22.25	22.17	22.26	21.5±1.0
		8	4	22.25	22.34	22.22	
		8	7	22.16	22.17	22.18	
		15	0	22.1	22.07	22.02	21.5±1.0
	16QAM	1	0	21.87	21.71	21.78	21.0±1.0
		1	7	21.77	21.86	21.75	
		1	14	21.75	21.81	21.8	
		8	0	21.53	21.62	21.46	21.0±1.0
		8	4	21.55	21.57	21.51	
		8	7	21.46	21.59	21.47	
		15	0	21.2	21.3	21.27	20.5±1.0

LTE FDD Band 5				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	22.64	22.57	22.61	22.0±1.0
		1	13	22.59	22.6	22.64	
		1	24	22.49	22.48	22.64	
		12	0	22.33	22.34	22.25	21.5±1.0
		12	6	22.23	22.23	22.33	
		12	13	22.23	22.17	22.19	
		25	0	21.96	22.06	21.97	21.5±1.0
	16QAM	1	0	21.86	21.76	21.83	21.0±1.0
		1	13	21.9	21.82	21.87	
		1	24	21.83	21.86	21.77	
		12	0	21.61	21.59	21.6	21.0±1.0
		12	6	21.58	21.58	21.65	
		12	13	21.63	21.51	21.49	
		25	0	21.28	21.23	21.2	20.5±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	22.59	22.75	22.63	22.0±1.0
		1	25	22.52	22.61	22.46	
		1	49	22.56	22.5	22.62	
		25	0	22.35	22.34	22.31	21.5±1.0
		25	13	22.31	22.16	22.16	
		25	25	22.23	22.29	22.24	
		50	0	21.98	22.08	22.01	21.5±1.0
	16QAM	1	0	21.91	21.9	21.88	21.0±1.0
		1	25	21.75	21.76	21.81	
		1	49	21.86	21.73	21.73	
		25	0	21.65	21.64	21.59	21.0±1.0
		25	13	21.61	21.54	21.54	
		25	25	21.58	21.45	21.5	
		50	0	21.22	21.3	21.29	20.5±1.0

4. LTE Band 7 Conducted Power Test Verdict:

LTE FDD Band 7				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	22.23	22.56	22.31	22.0±1.0
		1	13	22.3	22.49	22.38	
		1	24	22.5	22.46	22.28	
		12	0	21.92	21.94	22.01	21.5±1.0
		12	6	21.92	22.14	22.09	
		12	13	21.94	21.95	21.99	
		25	0	21.81	21.76	21.81	21.0±1.0
	16QAM	1	0	21.69	21.36	21.68	21.0±1.0
		1	13	21.47	21.56	21.41	
		1	24	21.6	21.5	21.59	
		12	0	21.16	20.95	21.1	20.5±1.0
		12	6	20.99	21.13	21.08	
		12	13	21.04	21.08	21.03	
		25	0	20.86	20.87	20.87	20.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	22.49	22.58	22.36	22.0±1.0
		1	25	22.34	22.51	22.45	
		1	49	22.28	22.38	22.47	
		25	0	22.06	22.05	22.13	21.5±1.0
		25	13	21.95	22.03	22.02	
		25	25	22.06	22.04	21.98	
		50	0	21.77	21.77	21.81	21.0±1.0
	16QAM	1	0	21.65	21.46	21.41	21.0±1.0
		1	25	21.63	21.58	21.33	
		1	49	21.3	21.58	21.59	
		25	0	21.07	21.15	21.11	20.5±1.0
		25	13	21.1	21.01	21.18	
		25	25	21.06	21.05	21.17	
		50	0	20.81	20.86	20.82	20.0±1.0

LTE FDD Band 7				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	22.23	22.61	22.4	22.0±1.0
		1	38	22.36	22.38	22.39	
		1	74	22.23	22.39	22.29	
		36	0	22.14	21.93	22.1	21.5±1.0
		36	18	22.08	22.09	22.12	
		36	39	21.92	21.98	21.92	
		75	0	21.84	21.85	21.78	21.0±1.0
	16QAM	1	0	21.52	21.39	21.62	21.0±1.0
		1	38	21.35	21.63	21.41	
		1	74	21.54	21.38	21.69	
		36	0	20.97	20.96	21.08	20.5±1.0
		36	18	21.08	21.06	21.1	
		36	39	21.05	21.11	21.04	
		75	0	20.88	20.87	20.89	20.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	22.65	22.88	22.75	22.0±1.0
		1	50	22.53	22.37	22.47	
		1	99	22.31	22.47	22.52	
		50	0	22.22	22.15	22.31	21.5±1.0
		50	25	22.13	21.93	22.13	
		50	50	22.15	21.98	21.91	
		100	0	21.83	21.83	21.77	21.0±1.0
	16QAM	1	0	21.75	21.64	21.69	21.0±1.0
		1	50	21.31	21.36	21.52	
		1	99	21.42	21.62	21.46	
		50	0	21.18	21.15	21.06	20.5±1.0
		50	25	21.03	21.12	20.95	
		50	50	21.1	21.01	20.99	
		100	0	20.86	20.82	20.88	20.0±1.0

7.4 WIFI Conducted Power

WLAN 2.4GHz Band Conducted Power

Channel/Freq.(MHz)	Maximum Conducted Out Power (dBm) Average		
	802.11b	802.11g	802.11n(HT20)
1(2412)	15.12	12.27	12.02
6(2437)	14.77	11.80	12.19
11(2462)	15.37	12.85	12.88

Channel/Freq.(MHz)	Maximum Conducted Out Power (dBm) Average
	802.11n40
3(2422)	12.71
6(2437)	12.13
9(2452)	12.01

WLAN 5GHz Band Conducted Power

U-NII-1 AVGSA Output Power

Mode	Test Frequency (MHz)	Max Conducted Output Power (dBm)
802.11n (20MHz)	5180	13.53
802.11n (20MHz)	5220	14.02
802.11n (20MHz)	5240	14.44
802.11n (40MHz)	5190	13.42
802.11n (40MHz)	5230	13.55
802.11a (20MHz)	5180	15.19
802.11a (20MHz)	5220	15.82
802.11a (20MHz)	5240	16.22
802.11ac (20MHz)	5180	12.09
802.11ac (20MHz)	5220	12.81
802.11ac (20MHz)	5240	13.19
802.11ac (40MHz)	5190	13.03
802.11ac (40MHz)	5230	13.58
802.11ac (80MHz)	5210	11.54

U-NII-2a AVGSA Output Power

Mode	Test Frequency (MHz)	Max Conducted Output Power (dBm)
802.11n (20MHz)	5260	10.72
802.11n (20MHz)	5300	11.71
802.11n (20MHz)	5320	11.75
802.11n (40MHz)	5270	11.19
802.11n (40MHz)	5310	11.57
802.11a (20MHz)	5260	10.85
802.11a (20MHz)	5300	11.43
802.11a (20MHz)	5320	11.85
802.11ac (20MHz)	5260	10.80
802.11ac (20MHz)	5300	11.24
802.11ac (20MHz)	5320	11.60
802.11ac (40MHz)	5270	11.30
802.11ac (40MHz)	5310	11.62
802.11ac (80MHz)	5290	12.90

U-NII-2C AVGSA Output Power

Mode	Test Frequency (MHz)	Max Conducted Output Power (dBm)
802.11n (20MHz)	5500	11.91
802.11n (20MHz)	5600	12.42
802.11n (20MHz)	5700	13.09
802.11n (40MHz)	5510	12.94
802.11n (40MHz)	5590	13.59
802.11n (40MHz)	5670	14.75
802.11a (20MHz)	5500	12.19
802.11a (20MHz)	5600	12.52
802.11a (20MHz)	5700	13.35
802.11ac (20MHz)	5500	11.80
802.11ac (20MHz)	5600	12.25
802.11ac (20MHz)	5700	13.22
802.11ac (40MHz)	5510	12.67
802.11ac (40MHz)	5590	13.45
802.11ac (40MHz)	5670	14.56
802.11ac (80MHz)	5530	11.68

U-NII-3 AVGSA Output Power

Mode	Test Frequency (MHz)	Max Conducted Output Power (dBm)
802.11a (20MHz)	5745	11.98
802.11a (20MHz)	5785	11.99
802.11a (20MHz)	5825	11.58
802.11n (20MHz)	5745	11.96
802.11n (20MHz)	5785	11.82
802.11n (20MHz)	5825	11.58
802.11n (40MHz)	5755	12.65
802.11n (40MHz)	5795	12.75
802.11ac (20MHz)	5745	11.98
802.11ac (20MHz)	5785	11.83
802.11ac (20MHz)	5825	11.52
802.11ac (40MHz)	5755	13.03
802.11ac (40MHz)	5795	12.78
802.11ac (80MHz)	5775	11.13

Note:

1. Per KDB248227 D01 v02r02, choose the highest output power channel to test SAR and determine further SAR exclusion
2. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4dB higher than those measured at lowest data rate
3. Per KDB248227 D01 v02r02, 802.11g /11n-HT20/11n-HT40 is not required. . 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 ≤1.2W/Kg. Thus the SAR can be excluded.

7.5 Bluetooth Output Power

Channel	Frequency (MHz)	BT3.0 Output Power(dBm)		
		GFSK	π /4-DQPSK	8-DPSK
CH 0	2402	8.61	8.43	8.64
CH 39	2441	8.34	8.08	8.31
CH 78	2480	7.23	7.30	7.44
Channel	Frequency (MHz)	BT4.0 Output Power(dBm)		
		GFSK		
CH 0	2402	-0.809		
CH 20	2442	-0.957		
CH 39	2480	-2.092		

8. SAR test Exclusion and estimate SAR calculation:

1. According to RSS102 Issue5

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

2. Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances ≤ 50mm are determined by:[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] • [$\sqrt{f}$ (GHz)] ≤3.0 for 1-g SAR and ≤7.5 for 10-g extremity SAR
   (1) f(GHz) is the RF channel transmit frequency in GHz
   (2) Power and distance are round to the nearest mW and mm before calculation
   (3) The result is rounded to one decimal place for comparison
   (4) If the test separation distance(antenna-user) is < 5mm, 5mm is used for excluded SAR calculation

BT4.0 Max Power (dBm)	mW	Test Distance (mm)	Frequency(GHz)	Exclusion Thresholds
-0.5	0.891	5	2.45	0.279

Per KDB 447498 D01v06 exclusion thresholds is 0.279<3, RF exposure evaluation is not required.

BT estimated SAR value=Exclusion Thresholds/7.5=0.279/7.5=**0.037**W/Kg

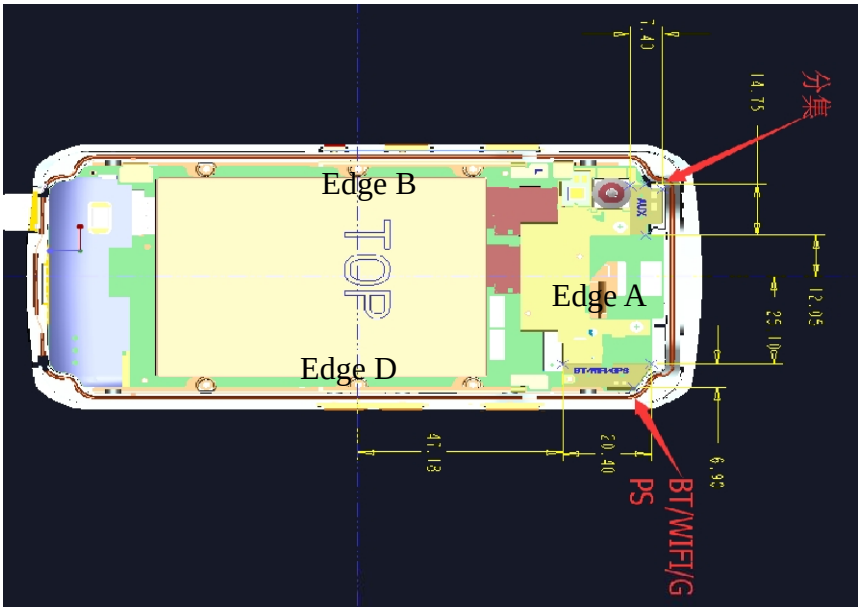
BT4.0 Max Power (dBm)	mW	Test Distance (mm)	Frequency(GHz)	Exclusion Thresholds
-0.5	0.891	10	2.45	0.140

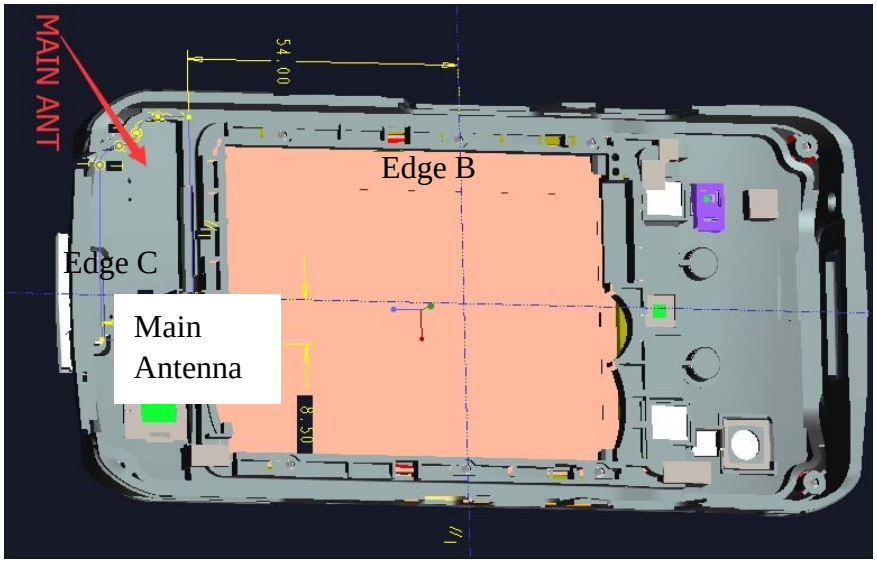
Per KDB 447498 D01v06 exclusion thresholds is0.140<3, RF exposure evaluation is not required.

BT estimated SAR value=Exclusion Thresholds/7.5=0.140/7.5=**0.019**W/Kg

The estimated SAR value is used for simultaneous transmission analysis.

Antenna Location:





Edge A

Edge D

Antenna-to-User (Edge Side) distance (mm):

Antenna	Front	Back	Edge A	Edge B	Edge C	Edge D
WWAN Main Antenna	2	2	148	9	8	12
WIFI2.4G/BT	2	2	12	71	136	71
WIFI 5G	4.5	2	12	71	136	71

Note: The diagonal distance of the overall section is 15cm.

The Body SAR measurement positions of each band are as below:

Antenna	Front	Back	Edge A	Edge B	Edge C	Edge D
WWAN Antenna Body-worn	Yes	Yes	No	No	No	No
WWAN Antenna hotspot	Yes	Yes	No	Yes	Yes	Yes
WIFI Antenna Body-worn	Yes	Yes	No	No	No	No
WIFI 2.4G Antenna hotspot	Yes	Yes	Yes	Yes	No	No
WIFI 5G Antenna Body-worn	Yes	Yes	No	No	No	No

Note: According to KDB 941225 D06 v02r01, when antenna-to-edge>2.5cm, SAR is not required.

9. Scaling Factor calculation

Operation Mode	Channel /Frequency	Output Power(dBm)	Tune up Power in tolerance (dBm)	Max. Tune up(dBm)	Scaling Factor
GSM850	128/824.2	32.00	31.5 ± 1.0	32.50	1.122
	190/836.6	32.40	31.5 ± 1.0	32.50	1.023
	251/848.8	32.20	31.5 ± 1.0	32.50	1.072
GPRS850 (GPRS 2Tx)	128/824.2	29.34	29.0 ± 1.0	30.00	1.164
	190/836.6	29.57	29.0 ± 1.0	30.00	1.104
	251/848.8	29.49	29.0 ± 1.0	30.00	1.125
GSM1900	512/1850.2	29.30	29.0 ± 1.0	30.00	1.175
	661/1880.0	29.40	29.0 ± 1.0	30.00	1.148
	810/1909.8	29.60	29.0 ± 1.0	30.00	1.096
GPRS1900 (GPRS 2Tx)	512/1850.2	26.56	26.0 ± 1.0	27.00	1.107
	661/1880.0	26.72	26.0 ± 1.0	27.00	1.067
	810/1909.8	26.47	26.0 ± 1.0	27.00	1.130
WCDMA850	4132/826.4	21.06	21.0 ± 1.0	22.00	1.242
	4183/836.6	21.54	21.0 ± 1.0	22.00	1.112
	4233/846.6	21.48	21.0 ± 1.0	22.00	1.127
WCDMA1900	9262/1852.4	22.15	21.5 ± 1.0	22.50	1.084
	9400/1880.0	22.01	21.5 ± 1.0	22.50	1.119
	9538/1907.6	22.34	21.5 ± 1.0	22.50	1.038
LTE B2 20MHz 1RB#0	18700/1860	22.93	22.5 ± 1.0	23.50	1.140
	18900/1880	23.21	22.5 ± 1.0	23.50	1.069
	19100/1900	23.05	22.5 ± 1.0	23.50	1.109
LTE B2 20MHz 50RB#0	18700/1860	22.76	22.0 ± 1.0	23.00	1.057
	18900/1880	22.70	22.0 ± 1.0	23.00	1.072
	19100/1900	22.62	22.0 ± 1.0	23.00	1.091
LTE B4 20MHz 1RB#0	20050/1720	22.02	21.5 ± 1.0	22.50	1.117
	20175/1732.5	22.28	21.5 ± 1.0	22.50	1.052
	20300/1745	22.16	21.5 ± 1.0	22.50	1.081
LTE B4 20MHz 50RB#0	20050/1720	21.80	21.0 ± 1.0	22.00	1.047
	20175/1732.5	21.75	21.0 ± 1.0	22.00	1.059
	20300/1745	21.79	21.0 ± 1.0	22.00	1.050

LTE B5 10MHz 1RB#0	20450/829	22.59	22.0 ± 1.0	23.00	1.099
	20525/836.5	22.75	22.0 ± 1.0	23.00	1.059
	20600/844	22.63	22.0 ± 1.0	23.00	1.089
LTE B5 10MHz 25RB#0	20450/829	22.35	21.5 ± 1.0	22.50	1.035
	20525/836.5	22.34	21.5 ± 1.0	22.50	1.038
	20600/844	22.31	21.5 ± 1.0	22.50	1.045
LTE B7 20MHz 1RB#0	20850/2510	22.65	22.0 ± 1.0	23.00	1.084
	21100/2535	22.88	22.0 ± 1.0	23.00	1.028
	21350/2560	22.75	22.0 ± 1.0	23.00	1.059
LTE B7 20MHz 50RB#0	20850/2510	22.22	21.5 ± 1.0	22.50	1.067
	21100/2535	22.15	21.5 ± 1.0	22.50	1.084
	21350/2560	22.31	21.5 ± 1.0	22.50	1.045
WIFI 2.4G 802.11b	1/2412	15.12	14.5 ± 1.0	15.50	1.091
	6/2437	14.77	14.5 ± 1.0	15.50	1.183
	11/2462	15.37	14.5 ± 1.0	15.50	1.030
BT 3.0 8-DPSK	0/2402	8.64	8.0 ± 1.0	9.00	1.086
	39/2441	8.31	8.0 ± 1.0	9.00	1.172
	78/2480	7.44	8.0 ± 1.0	9.00	1.432
WIFI 5G BAND I	48/5240	16.22	15.5 ± 1.0	16.50	1.067
WIFI 5G BAND II	58/5290	12.90	12.0 ± 1.0	13.00	1.023
WIFI 5G BAND III	134/5670	14.75	13.9 ± 1.0	14.90	1.035
WIFI 5G BAND IV	151/5755	13.03	12.5 ± 1.0	13.50	1.114

Note: for LTE power tolerance, only QPSK modulation mode was provide here.

10. Test Results

Results overview of GSM850

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Right Cheek	128/824.2	Voice	0.164	3.42	1.122	0.184	/
Right Cheek	190/836.6	Voice	**0.184**	4.06	1.023	**0.188**	Yes
Right Cheek	251/848.8	Voice	0.167	1.05	1.072	0.179	/
Right Tilt 15°	190/836.6	Voice	0.104	-4.90	1.023	0.106	/
Left Cheek	190/836.6	Voice	0.118	-4.81	1.023	0.121	/
Left Tilt 15°	190/836.6	Voice	0.091	-4.79	1.023	0.093	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	128/824.2	GPRS 2Tx	0.864	-3.47	1.164	1.006	/
Back Upward	190/836.6	GPRS 2Tx	**0.942**	-0.86	1.104	**1.040**	Yes
Back Upward	251/848.8	GPRS 2Tx	0.911	-2.15	1.125	1.025	/
Back Upward Repeated	128/824.2	GPRS 2Tx	0.857	-2.66	1.164	0.998	/
Back Upward Repeated	190/836.6	GPRS 2Tx	0.939	-0.53	1.104	1.037	/
Back Upward Repeated	251/848.8	GPRS 2Tx	0.910	-2.34	1.125	1.024	/
Face Upward	190/836.6	GPRS 2Tx	0.397	0.73	1.104	0.438	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	128/824.2	GPRS 2Tx	0.864	-3.47	1.164	1.006	/
Back Upward	190/836.6	GPRS 2Tx	**0.942**	-0.86	1.104	**1.040**	Yes
Back Upward	251/848.8	GPRS 2Tx	0.911	-2.15	1.125	1.025	/
Back Upward Repeated	128/824.2	GPRS 2Tx	0.857	-2.66	1.164	0.998	/
Back Upward Repeated	190/836.6	GPRS 2Tx	0.939	-0.53	1.104	1.037	/
Back Upward Repeated	251/848.8	GPRS 2Tx	0.910	-2.34	1.125	1.024	/
Face Upward	190/836.6	GPRS 2Tx	0.397	0.73	1.104	0.438	/
Edge B	190/836.6	GPRS 2Tx	0.729	-3.73	1.104	0.805	/
Edge C	190/836.6	GPRS 2Tx	0.314	3.68	1.104	0.347	/
Edge D	190/836.6	GPRS 2Tx	0.413	-1.83	1.104	0.456	/

Results overview of GSM1900

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	512/1850.2	Voice	0.417	2.21	1.175	0.490	/
Left Cheek	661/1880.0	Voice	**0.433**	-4.32	1.148	**0.497**	Yes
Left Cheek	810/1909.8	Voice	0.425	0.78	1.096	0.466	/
Left Tilt 15°	661/1880.0	Voice	0.206	4.17	1.148	0.237	/
Right Cheek	661/1880.0	Voice	0.290	-4.08	1.148	0.333	/
Right Tilt 15°	661/1880.0	Voice	0.289	-4.45	1.148	0.332	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Face Upward	512/1850.2	GPRS 2Tx	0.886	1.59	1.107	0.980	/
Face Upward	661/1880.0	GPRS 2Tx	**0.927**	0.53	1.067	**0.989**	Yes
Face Upward	810/1909.8	GPRS 2Tx	0.845	-0.67	1.130	0.955	/
Face Upward Repeated	512/1850.2	GPRS 2Tx	0.882	0.78	1.107	0.976	/
Face Upward Repeated	661/1880.0	GPRS 2Tx	0.923	0.34	1.067	0.985	/
Face Upward Repeated	810/1909.8	GPRS 2Tx	0.841	-0.88	1.130	0.950	/
Back Upward	512/1850.2	GPRS 2Tx	0.733	0.35	1.107	0.811	/
Back Upward	661/1880.0	GPRS 2Tx	0.765	-1.20	1.067	0.816	/
Back Upward	810/1909.8	GPRS 2Tx	0.724	1.24	1.130	0.818	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Face Upward	512/1850.2	GPRS 2Tx	0.886	1.59	1.107	0.980	/
Face Upward	661/1880.0	GPRS 2Tx	**0.927**	0.53	1.067	**0.989**	Yes
Face Upward	810/1909.8	GPRS 2Tx	0.845	-0.67	1.130	0.955	/
Face Upward Repeated	512/1850.2	GPRS 2Tx	0.882	0.78	1.107	0.976	/
Face Upward Repeated	661/1880.0	GPRS 2Tx	0.923	0.34	1.067	0.985	/
Face Upward Repeated	810/1909.8	GPRS 2Tx	0.841	-0.88	1.130	0.950	/
Back Upward	512/1850.2	GPRS 2Tx	0.733	0.35	1.107	0.811	/
Back Upward	661/1880.0	GPRS 2Tx	0.765	-1.20	1.067	0.816	/
Back Upward	810/1909.8	GPRS 2Tx	0.724	1.24	1.130	0.818	/
Edge B	661/1880.0	GPRS 2Tx	0.299	-3.12	1.067	0.319	/
Edge C	661/1880.0	GPRS 2Tx	0.723	-2.09	1.067	0.771	/
Edge D	512/1850.2	GPRS 2Tx	0.742	0.68	1.107	0.821	/
Edge D	661/1880.0	GPRS 2Tx	0.788	-1.79	1.067	0.840	/
Edge D	810/1909.8	GPRS 2Tx	0.735	1.02	1.130	0.831	/

Results overview of WCDMA1900

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	9262/1852.4	RMC	0.774	-4.33	1.084	0.839	/
Left Cheek	9400/1880.0	RMC	**0.778**	-2.50	1.119	**0.871**	Yes
Left Cheek	9538/1907.6	RMC	0.775	-4.63	1.038	0.804	/
Left Tilt 15°	9400/1880.0	RMC	0.260	-2.78	1.119	0.291	/
Right Cheek	9400/1880.0	RMC	0.376	-3.08	1.119	0.421	/
Right Tilt 15°	9400/1880.0	RMC	0.422	-4.52	1.119	0.472	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Face Upward	9262/1852.4	RMC	0.843	-1.68	1.084	0.914	/
Face Upward	9400/1880.0	RMC	**0.885**	1.10	1.119	**0.991**	Yes
Face Upward	9538/1907.6	RMC	0.821	-0.79	1.038	0.852	/
Face Upward Repeated	9262/1852.4	RMC	0.834	-3.22	1.084	0.904	/
Face Upward Repeated	9400/1880.0	RMC	0.869	0.45	1.119	0.972	/
Face Upward Repeated	9538/1907.6	RMC	0.816	0.22	1.038	0.847	/
Back Upward	9262/1852.4	RMC	0.748	0.36	1.084	0.811	/
Back Upward	9400/1880.0	RMC	0.762	-4.32	1.119	0.853	/
Back Upward	9538/1907.6	RMC	0.761	0.87	1.038	0.790	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Face Upward	9262/1852.4	RMC	0.843	-1.68	1.084	0.914	/
Face Upward	9400/1880.0	RMC	**0.885**	1.10	1.119	**0.991**	Yes
Face Upward	9538/1907.6	RMC	0.821	-0.79	1.038	0.852	/
Face Upward Repeated	9262/1852.4	RMC	0.834	-3.22	1.084	0.904	/
Face Upward Repeated	9400/1880.0	RMC	0.869	0.45	1.119	0.972	/
Face Upward Repeated	9538/1907.6	RMC	0.816	0.22	1.038	0.847	/
Back Upward	9262/1852.4	RMC	0.748	0.36	1.084	0.811	/
Back Upward	9400/1880.0	RMC	0.762	-4.32	1.119	0.853	/
Back Upward	9538/1907.6	RMC	0.761	0.87	1.038	0.790	/
Edge B	9400/1880.0	RMC	0.128	-3.26	1.119	0.143	/
Edge C	9400/1880.0	RMC	0.478	-1.90	1.119	0.535	/
Edge D	9400/1880.0	RMC	0.707	-0.88	1.119	0.791	/

Results overview of WCDMA850

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	4183/836.6	RMC	0.104	4.42	1.112	0.116	/
Left Tilt 15°	4183/836.6	RMC	0.069	-4.54	1.112	0.077	/
Right Cheek	4132/826.4	RMC	0.128	1.25	1.242	0.159	/
Right Cheek	4183/836.6	RMC	**0.145**	-4.28	1.112	**0.161**	Yes
Right Cheek	4233/846.6	RMC	0.137	0.57	1.127	0.154	/
Right Tilt 15°	4183/836.6	RMC	0.096	-4.82	1.112	0.107	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	4132/826.4	RMC	0.423	1.25	1.242	0.525	/
Back Upward	4183/836.6	RMC	**0.475**	-1.01	1.112	**0.528**	Yes
Back Upward	4233/846.6	RMC	0.466	0.54	1.127	0.525	/
Face Upward	4183/836.6	RMC	0.115	-3.59	1.112	0.128	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	4132/826.4	RMC	0.423	1.25	1.242	0.525	/
Back Upward	4183/836.6	RMC	**0.475**	-1.01	1.112	**0.528**	Yes
Back Upward	4233/846.6	RMC	0.466	0.54	1.127	0.525	/
Face Upward	4183/836.6	RMC	0.115	-3.59	1.112	0.128	/
Edge B	4183/836.6	RMC	0.177	-2.24	1.112	0.197	/
Edge C	4183/836.6	RMC	0.084	-3.84	1.112	0.093	/
Edge D	4183/836.6	RMC	0.115	-2.81	1.112	0.128	/

Results overview of FDD LTE Band 2, QPSK, 20MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	18700/1860	Data	0.344	0.24	1.140	0.392	/
Left Cheek	18900/1880	Data	**0.388**	-2.57	1.069	**0.415**	Yes
Left Cheek	19100/1900	Data	0.367	1.35	1.109	0.407	/
Left Tilt 15°	18900/1880	Data	0.161	-4.25	1.069	0.172	/
Right Cheek	18900/1880	Data	0.240	-3.06	1.069	0.257	/
Right Tilt 15°	18900/1880	Data	0.206	1.38	1.069	0.220	/
50%RB#0							
Left Cheek	18900/1880	Data	0.361	-3.15	1.072	0.387	/
Left Tilt 15°	18900/1880	Data	0.152	-2.87	1.072	0.163	/
Right Cheek	18900/1880	Data	0.221	-1.98	1.072	0.237	/
Right Tilt 15°	18900/1880	Data	0.188	-0.38	1.072	0.201	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	18900/1880	Data	0.343	-0.67	1.069	0.367	/
Face Upward	18700/1860	Data	0.361	1.34	1.140	0.411	/
Face Upward	18900/1880	Data	**0.388**	-2.37	1.069	**0.415**	Yes
Face Upward	19100/1900	Data	0.381	0.21	1.109	0.407	/
50%RB#0							
Back Upward	18900/1880	Data	0.321	2.58	1.072	0.344	/
Face Upward	18900/1880	Data	0.364	-1.62	1.072	0.390	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	Limit (W/kg)
1RB#0							
Back Upward	18900/1880	Data	0.343	-0.67	1.069	0.367	/
Face Upward	18700/1860	Data	0.361	1.34	1.140	0.411	/
Face Upward	18900/1880	Data	**0.388**	-2.37	1.069	**0.415**	Yes
Face Upward	19100/1900	Data	0.381	0.21	1.109	0.407	/
Edge B	18900/1880	Data	0.093	0.41	1.069	0.099	/
Edge C	18900/1880	Data	0.248	-1.92	1.069	0.265	/
Edge D	18900/1880	Data	0.303	-1.32	1.069	0.324	/
50%RB#0							
Back Upward	18900/1880	Data	0.321	2.58	1.072	0.344	/
Face Upward	18900/1880	Data	0.364	-1.62	1.072	0.390	/
Edge B	18900/1880	Data	0.084	-2.40	1.072	0.090	/
Edge C	18900/1880	Data	0.218	-3.69	1.072	0.234	/
Edge D	18900/1880	Data	0.291	-4.11	1.072	0.312	/

Results overview of FDD LTE Band 4, QPSK, 20MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	20050/1720	Data	0.094	2.05	1.117	0.105	/
Left Cheek	20175/1732.5	Data	**0.109**	-3.86	1.052	**0.115**	Yes
Left Cheek	20300/1745	Data	0.098	1.57	1.081	0.106	/
Left Tilt 15°	20175/1732.5	Data	0.063	-3.90	1.052	0.066	/
Right Cheek	20175/1732.5	Data	0.065	-4.97	1.052	0.068	/
Right Tilt 15°	20175/1732.5	Data	0.066	-4.95	1.052	0.069	/
50%RB#0							
Left Cheek	20175/1732.5	Data	0.101	-2.11	1.059	0.107	/
Left Tilt 15°	20175/1732.5	Data	0.058	-1.89	1.059	0.061	/
Right Cheek	20175/1732.5	Data	0.061	-1.67	1.059	0.065	/
Right Tilt 15°	20175/1732.5	Data	0.062	-2.85	1.059	0.066	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	20050/1720	Data	0.700	3.05	1.117	0.782	/
Back Upward	20175/1732.5	Data	**0.743**	-3.20	1.052	**0.782**	Yes
Back Upward	20300/1745	Data	0.721	1.07	1.081	0.779	/
Face Upward	20175/1732.5	Data	0.109	-4.20	1.052	0.115	/
50%RB#0							
Back Upward	20175/1732.5	Data	0.712	-3.80	1.059	0.754	/
Face Upward	20175/1732.5	Data	0.102	-1.60	1.059	0.108	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	Limit (W/kg)
1RB#0							
Back Upward	20050/1720	Data	0.700	3.05	1.117	0.782	/
Back Upward	20175/1732.5	Data	**0.743**	-3.20	1.052	**0.782**	Yes
Back Upward	20300/1745	Data	0.721	1.07	1.081	0.779	/
Face Upward	20175/1732.5	Data	0.109	-4.20	1.052	0.115	/
Edge B	20175/1732.5	Data	0.066	-3.37	1.052	0.069	/
Edge C	20175/1732.5	Data	0.091	-0.63	1.052	0.096	/
Edge D	20175/1732.5	Data	0.127	-3.55	1.052	0.134	/
50%RB#0							
Back Upward	20175/1732.5	Data	0.712	-3.87	1.059	0.754	/
Face Upward	20175/1732.5	Data	0.102	-1.68	1.059	0.108	/
Edge B	20175/1732.5	Data	0.063	-3.11	1.059	0.067	/
Edge C	20175/1732.5	Data	0.084	-4.96	1.059	0.089	/
Edge D	20175/1732.5	Data	0.117	1.73	1.059	0.124	/

Results overview of FDD LTE Band 5, QPSK, 10MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	20450/829	Data	0.088	1.24	1.099	0.097	/
Left Cheek	20525/836.5	Data	**0.093**	-2.25	1.059	**0.098**	Yes
Left Cheek	20600/844	Data	0.091	0.24	1.089	0.099	/
Left Tilt 15°	20525/836.5	Data	0.070	-4.18	1.059	0.074	/
Right Cheek	20525/836.5	Data	0.089	-4.39	1.059	0.094	/
Right Tilt 15°	20525/836.5	Data	0.063	-4.26	1.059	0.067	/
50%RB#0							
Left Cheek	20525/836.5	Data	0.087	-3.17	1.038	0.090	/
Left Tilt 15°	20525/836.5	Data	0.061	-2.99	1.038	0.063	/
Right Cheek	20525/836.5	Data	0.082	-1.66	1.038	0.085	/
Right Tilt 15°	20525/836.5	Data	0.059	-2.85	1.038	0.061	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	20450/829	Data	0.284	2.01	1.099	0.312	/
Back Upward	20525/836.5	Data	**0.299**	-1.35	1.059	**0.317**	Yes
Back Upward	20600/844	Data	0.287	3.24	1.089	0.313	/
Face Upward	20525/836.5	Data	0.083	-1.77	1.059	0.088	/
50%RB#0							
Back Upward	20525/836.5	Data	0.283	-1.94	1.038	0.294	/
Face Upward	20525/836.5	Data	0.076	-1.85	1.038	0.079	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	Limit (W/kg)
1RB#0							
Back Upward	20450/829	Data	0.284	2.01	1.099	0.312	/
Back Upward	20525/836.5	Data	**0.299**	-1.35	1.059	**0.317**	Yes
Back Upward	20600/844	Data	0.287	3.24	1.089	0.313	/
Face Upward	20525/836.5	Data	0.083	-1.77	1.059	0.088	/
Edge B	20525/836.5	Data	0.122	3.65	1.059	0.129	/
Edge C	20525/836.5	Data	0.069	0.44	1.059	0.073	/
Edge D	20525/836.5	Data	0.085	-0.95	1.059	0.090	/
50%RB#0							
Back Upward	20525/836.5	Data	0.283	-1.94	1.038	0.294	/
Face Upward	20525/836.5	Data	0.076	-1.85	1.038	0.079	/
Edge B	20525/836.5	Data	0.113	-3.65	1.038	0.117	/
Edge C	20525/836.5	Data	0.062	-1.98	1.038	0.064	/
Edge D	20525/836.5	Data	0.081	-3.66	1.038	0.084	/

Results overview of FDD LTE Band 7, QPSK, 20MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	20850/2510	Data	0.188	0.27	1.084	0.204	/
Left Cheek	21100/2535	Data	**0.205**	-3.26	1.028	**0.211**	Yes
Left Cheek	21350/2560	Data	0.199	1.65	1.059	0.211	/
Left Tilt 15°	21100/2535	Data	0.103	-4.72	1.028	0.106	/
Right Cheek	21100/2535	Data	0.114	-4.32	1.028	0.117	/
Right Tilt 15°	21100/2535	Data	0.081	-4.64	1.028	0.083	/
50%RB#0							
Left Cheek	21100/2535	Data	0.178	-1.25	1.084	0.193	/
Left Tilt 15°	21100/2535	Data	0.094	-1.11	1.084	0.102	/
Right Cheek	21100/2535	Data	0.103	-2.97	1.084	0.112	/
Right Tilt 15°	21100/2535	Data	0.072	-3.44	1.084	0.078	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	20850/2510	Data	0.495	2.04	1.084	0.536	/
Back Upward	21100/2535	Data	**0.522**	1.53	1.028	**0.537**	Yes
Back Upward	21350/2560	Data	0.501	1.07	1.059	0.536	/
Face Upward	21100/2535	Data	0.196	0.73	1.028	0.201	/
50%RB#0							
Back Upward	21100/2535	Data	0.432	1.68	1.084	0.468	/
Face Upward	21100/2535	Data	0.167	-1.02	1.084	0.181	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	Limit (W/kg)
1RB#0							
Back Upward	20850/2510	Data	0.495	2.04	1.084	0.536	/
Back Upward	21100/2535	Data	**0.522**	1.53	1.028	**0.537**	Yes
Back Upward	21350/2560	Data	0.501	1.07	1.059	0.536	/
Face Upward	21100/2535	Data	0.196	0.73	1.028	0.201	/
Edge B	21100/2535	Data	0.026	-3.84	1.028	0.027	/
Edge C	21100/2535	Data	0.147	1.84	1.028	0.151	/
Edge D	21100/2535	Data	0.098	0.14	1.028	0.101	/
50%RB#0							
Back Upward	21100/2535	Data	0.432	1.68	1.084	0.468	/
Face Upward	21100/2535	Data	0.167	-1.02	1.084	0.181	/
Edge B	21100/2535	Data	0.021	-1.66	1.084	0.023	/
Edge C	21100/2535	Data	0.123	-0.33	1.084	0.133	/
Edge D	21100/2535	Data	0.091	-3.07	1.084	0.099	/

Results overview of WIFI2.4G 802.11b

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	6/2437	DSSS	0.101	-3.39	1.183	0.119	/
Left Tilt 15°	6/2437	DSSS	0.109	3.13	1.183	0.129	/
Right Cheek	6/2437	DSSS	0.143	4.95	1.183	0.169	/
Right Tilt 15°	1/2412	DSSS	0.198	2.35	1.091	0.216	/
Right Tilt 15°	6/2437	DSSS	**0.206**	-1.74	1.183	**0.244**	Yes
Right Tilt 15°	11/2462	DSSS	0.203	0.36	1.030	0.209	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	1/2412	DSSS	0.062	3.20	1.091	0.068	/
Back Upward	6/2437	DSSS	**0.064**	-4.93	1.183	**0.076**	/
Back Upward	11/2462	DSSS	0.061	1.54	1.030	0.063	/
Face Upward	6/2437	DSSS	0.038	-4.83	1.183	0.045	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	6/2437	DSSS	0.064	-4.93	1.183	0.076	/
Face Upward	6/2437	DSSS	0.038	-4.83	1.183	0.045	/
Edge A	6/2437	DSSS	0.028	4.79	1.183	0.033	/
Edge D	1/2412	DSSS	0.078	1.24	1.091	0.085	/
Edge D	6/2437	DSSS	**0.091**	-2.07	1.183	**0.108**	Yes
Edge D	11/2462	DSSS	0.084	0.27	1.030	0.087	/

Results overview of 5G WI-FI802.11a-20MHz -5240

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	48/5240	OFDM	0.312	-2.16	1.067	0.333	/
Left Tilt 15°	48/5240	OFDM	0.254	-1.03	1.067	0.271	/
Right Cheek	48/5240	OFDM	**0.370**	-4.13	1.067	**0.395**	Yes
Right Tilt 15°	48/5240	OFDM	0.291	1.36	1.067	0.310	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	48/5240	OFDM	0.045	-2.12	1.067	0.048	/
Face Upward	48/5240	OFDM	0.032	-0.78	1.067	0.035	/

Results overview of 5G WI-FI802.11ac-VHT80 -5290

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	58/5290	OFDM	0.239	-1.33	1.023	0.244	/
Left Tilt 15°	58/5290	OFDM	0.188	-0.86	1.023	0.192	/
Right Cheek	58/5290	OFDM	0.278	-2.60	1.023	0.284	/
Right Tilt 15°	58/5290	OFDM	0.211	0.18	1.023	0.216	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	58/5290	OFDM	0.039	-2.65	1.023	0.040	/
Face Upward	58/5290	OFDM	0.025	-3.15	1.023	0.026	/

Results overview of 5G WI-FI802.11n-40MHz -5670

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	134/5670	OFDM	0.321	-3.61	1.035	0.332	/
Left Tilt 15°	134/5670	OFDM	0.267	-2.59	1.035	0.276	/
Right Cheek	134/5670	OFDM	0.365	-4.60	1.035	0.378	/
Right Tilt 15°	134/5670	OFDM	0.304	-1.52	1.035	0.315	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	134/5670	OFDM	0.053	4.33	1.035	0.055	/
Face Upward	134/5670	OFDM	0.033	2.38	1.035	0.034	/

Results overview of 5G WI-FI802.11ac-VHT40 -5755

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	151/5755	OFDM	0.330	-2.15	1.114	0.368	/
Left Tilt 15°	151/5755	OFDM	0.282	-1.66	1.114	0.314	/
Right Cheek	151/5755	OFDM	0.374	-3.65	1.114	0.417	/
Right Tilt 15°	151/5755	OFDM	0.305	-0.89	1.114	0.340	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	151/5755	OFDM	**0.055**	-4.63	1.114	**0.061**	Yes
Face Upward	151/5755	OFDM	0.036	1.38	1.114	0.040	/

SAR Values of BT 3.0 8-DPSK

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	0/2402	OFDM	**0.056**	-4.37	1.086	**0.061**	Yes
Left Cheek	39/2441	OFDM	0.051	-3.22	1.172	0.060	/
Left Cheek	78/2480	OFDM	0.040	-2.89	1.432	0.057	/
Left Tilt 15°	0/2402	OFDM	0.054	-3.49	1.086	0.059	/
Right Cheek	0/2402	OFDM	0.049	2.11	1.086	0.053	/
Right Tilt 15°	0/2402	OFDM	0.047	1.04	1.086	0.051	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	0/2402	OFDM	**0.025**	4.30	1.086	**0.027**	Yes
Back Upward	39/2441	OFDM	0.021	3.14	1.172	0.025	/
Back Upward	78/2480	OFDM	0.016	-2.65	1.432	0.023	/
Face Upward	0/2402	OFDM	0.016	3.73	1.086	0.017	/

Note:

Per KDB941225 D06 v02r01, When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested. As the manufacture requirement the separation distance use 5mm for Hotspot mode.

Per KDB Publication 941225 D01v03r01. RMC 12.2kbps was as primary mode SAR, when the primary mode SAR less than 1.2W/kg, secondary SAR (HSPA) was not requires.

When the 1-g SAR for the mid-band channel or the channel with the highest output power satisfy the following conditions, testing of the other channels in the band is not required. (Per KDB 447498 D01 General RF Exposure Guidance v06)

- ≤ 0.8 W/kg, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg, when the transmission band is ≥ 200 MHz

11. Simultaneous Transmissions Analysis

Localized Specific Absorption Rate (SAR) of this portable wireless device has been measured in all cases requested by the relevant standards cited in Clause 6 of this report. Maximum localized SAR is **below** exposure limits specified in the relevant standards.

Simultaneous SAR

No.	Transmitter Combinations	Scenario Supported or not	Supported for Mobile Hotspot or not
1	GSM + BT	Yes	No
2	GSM + WIFI 2.4G	Yes	Yes
3	WCDMA +BT	Yes	No
4	WCDMA +WIFI2.4G	Yes	Yes
5	LTE+BT	Yes	No
6	LTE+WIFI2.4G	Yes	Yes
7	WIFI+BT	No	No
8	GSM/WCDMA/LTE+WIFI 5G	Yes	No

Simultaneous Tx Combination of GSM/WCDMA/LTE and BT/WIFI (Head)

Test Position		Left Cheek	Left Tilt	Right Cheek	Right Tilt
Head MAX 1-g SAR(W/Kg)	GSM850	0.121	0.093	0.188	0.106
	GSM1900	0.497	0.237	0.333	0.332
	WCDMA 850	0.116	0.077	0.161	0.107
	WCDMA 1900	0.871	0.291	0.421	0.472
	LTE Band2	0.415	0.172	0.257	0.220
	LTE Band4	0.115	0.066	0.068	0.069
	LTE Band5	0.099	0.074	0.094	0.067
	LTE Band7	0.211	0.106	0.117	0.083
	2.4G WIFI 802.11b	0.119	0.129	0.169	0.244
	5G WIFI 802.11ac	0.333	0.271	0.395	0.310
	BT	0.061	0.059	0.053	0.051
WIFI2.4G Simultaneous Σ1-g SAR(W/Kg)		0.990	0.420	0.590	0.716
WIFI5G Simultaneous Σ1-g SAR(W/Kg)		1.204	0.562	0.816	0.782
BT Simultaneous Σ1-g SAR(W/Kg)		0.932	0.350	0.474	0.523

Simultaneous Tx Combination of GSM/WCDMA/LTE and BT/WIFI (Body).

Test Position		Face	Back	Edge A	Edge B	Edge C	Edge D
Body-worn 10mm separation MAX 1-g SAR(W/Kg)	GSM850	0.438	1.040	/	/	/	/
	GSM1900	0.989	0.816	/	/	/	/
	WCDMA 850	0.128	0.528	/	/	/	/
	WCDMA 1900	0.991	0.853	/	/	/	/
	LTE Band2	0.415	0.367	/	/	/	/
	LTE Band4	0.115	0.782	/	/	/	/
	LTE Band5	0.088	0.317	/	/	/	/
	LTE Band7	0.201	0.537	/	/	/	/
	2.4G WIFI 802.11b	0.045	0.076	/	/	/	/
	5G WIFI 802.11ac	0.040	0.061	/	/	/	/
	BT	0.027	0.017	/	/	/	/
WIFI Simultaneous ∑1-g SAR(W/Kg)		1.036	1.101	/	/	/	/
BT Simultaneous∑1-g SAR(W/Kg)		1.018	1.057	/	/	/	/

Simultaneous Tx Combination of GSM/WCDMA/LTE and WIFI (Body).

Test Position		Face	Back	Edge A	Edge B	Edge C	Edge D
Hotspot 10mm separation MAX 1-g SAR(W/Kg)	GSM850	0.438	1.040	/	0.805	0.347	0.456
	GSM1900	0.989	0.816	/	0.319	0.771	0.840
	WCDMA 850	0.128	0.528	/	0.197	0.093	0.128
	WCDMA 1900	0.991	0.853	/	0.143	0.535	0.791
	LTE Band2	0.415	0.367	/	0.099	0.265	0.324
	LTE Band4	0.115	0.782	/	0.069	0.096	0.134
	LTE Band5	0.088	0.317	/	0.129	0.073	0.090
	LTE Band7	0.201	0.537	/	0.027	0.151	0.101
	2.4G WIFI 802.11b	0.045	0.076	0.033	0.019	/	0.108
WIFI Simultaneous ∑1-g SAR(W/Kg)		1.029	1.101	0.033	0.824	0.771	0.958

The estimated SAR value with * Signal

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required

12.Measurement Uncertainty

No.	Uncertainty Component	Type	Uncertainty Value (%)	Probability Distribution	k	ci	Standard Uncertainty (%) ui(%)	Degree of freedom Veff or vi
	Measurement System							
1	- Probe Calibration	B	5.8	N	1	1	5.8	∞
2	- Axial isotropy	B	3.5	R	$\sqrt{3}$	0.5	1.43	∞
3	—Hemispherical Isotropy	B	5.9	R	$\sqrt{3}$	0.5	2.41	∞
4	- Boundary Effect	B	1	R	$\sqrt{3}$	1	0.58	∞
5	- Linearity	B	4.7	R	$\sqrt{3}$	1	2.71	∞
6	- System Detection Limits	B	1.0	R	$\sqrt{3}$	1	0.58	∞
7	Modulation response	B	3	N	1	1	3.00	
8	- Readout Electronics	B	0.5	N	1	1	0.50	∞
9	- Response Time	B	1.4	R	$\sqrt{3}$	1	0.81	∞
10	- Integration Time	B	3.0	R	$\sqrt{3}$	1	1.73	∞
11	- RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.73	∞
12	- Probe Position Mechanical tolerance	B	1.4	R	$\sqrt{3}$	1	0.81	∞
13	- Probe Position with respect to Phantom Shell	B	1.4	R	$\sqrt{3}$	1	0.81	∞
14	- Extrapolation, Interpolation and Integration Algorithms for Max. SAR evaluation	B	2.3	R	$\sqrt{3}$	1	1.33	∞

	Uncertainties of the DUT							
15	- Position of the DUT	A	2.6	N	$\sqrt{3}$	1	2.6	5
16	- Holder of the DUT	A	3	N	$\sqrt{3}$	1	3.0	5
17	- Output Power Variation –SAR drift measurement	B	5.0	R	$\sqrt{3}$	1	2.89	∞
Phantom and Tissue Parameters								
18	- Phantom Uncertainty(shape and thickness tolerances)	B	4	R	$\sqrt{3}$	1	2.31	∞
19	Uncertainty in SAR correction for deviation(in permittivity and conductivity)	B	2	N	1	1	2.00	
20	- Liquid Conductivity Target –tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
21	- Liquid Conductivity –measurement Uncertainty)	B	4	N	$\sqrt{3}$	1	0.92	9
22	- Liquid Permittivity Target tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
23	- Liquid Permittivity –measurement uncertainty	B	5	N	$\sqrt{3}$	1	1.15	∞
Combined Standard Uncertainty				RSS			10.63	
Expanded uncertainty (Confidence interval of 95 %)				K=2			21.26	

System Check Uncertainty

No.	Uncertainty Component	Type	Uncertainty Value (%)	Probability Distribution	k	ci	Standard Uncertainty (%) ui(%)	Degree of freedom Veff or vi
	Measurement System							
1	- Probe Calibration	B	5.8	N	1	1	5.8	∞

2	- Axial isotropy	B	3.5	R	$\sqrt{3}$	0.5	1.43	∞
3	—Hemispherical Isotropy	B	5.9	R	$\sqrt{3}$	0.5	2.41	∞
4	- Boundary Effect	B	1	R	$\sqrt{3}$	1	0.58	∞
5	- Linearity	B	4.7	R	$\sqrt{3}$	1	2.71	∞
6	- System Detection Limits	B	1	R	$\sqrt{3}$	1	0.58	∞
7	Modulation response	B	0	N	1	1	0.00	
8	- Readout Electronics	B	0.5	N	1	1	0.50	∞
9	- Response Time	B	0.00	R	$\sqrt{3}$	1	0.00	∞
10	- Integration Time	B	1.4	R	$\sqrt{3}$	1	0.81	∞
11	- RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.73	∞
12	- Probe Position Mechanical tolerance	B	1.4	R	$\sqrt{3}$	1	0.81	∞
13	- Probe Position with respect to Phantom Shell	B	1.4	R	$\sqrt{3}$	1	0.81	∞
14	- Extrapolation, Interpolation and Integration Algorithms for Max. SAR evaluation	B	2.3	R	$\sqrt{3}$	1	1.33	∞
	Uncertainties of the DUT							
15	Deviation of experimental source from numberical source	A	4	N	1	1	4.00	5
16	Input Power and SAR drift measurement	A	5	R	$\sqrt{3}$	1	2.89	5
17	Dipole Axis to Liquid Distance	B	2	R	$\sqrt{3}$	1	1.2	∞

Phantom and Tissue Parameters								
18	- Phantom Uncertainty(shape and thickness tolerances)	B	4	R	$\sqrt{3}$	1	2.31	∞
19	Uncertainty in SAR correction for deviation(in permittivity and conductivity)	B	2	N	1	1	2.00	
20	- Liquid Conductivity Target –tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
21	- Liquid Conductivity –measurement Uncertainty)	B	4	N	$\sqrt{3}$	1	0.92	9
22	- Liquid Permittivity Target tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
23	- Liquid Permittivity –measurement uncertainty	B	5	N	$\sqrt{3}$	1	1.15	∞
Combined Standard Uncertainty				RSS			10.15	
Expanded uncertainty (Confidence interval of 95 %)				K=2			20.29	

13. Equipment List

This table is a complete overview of the SAR measurement equipment. Devices used during the test described are marked ☒.

	EQUIPMENT	Model	Serial number	Calibration Date	Due Date
☒	SAR Probe	SSE2	SN27/15 EPGO261	2019/03/04	2020/03/03
☒	Dipole	SID750	SN 23/15 DIP0G750-378	2017/11/27	2019/11/26
☒	Dipole	SID835	SN 09/13 DIP0G835-217	2017/11/27	2019/11/26
☐	Dipole	SID900	SN 09/13 DIP0G900-215	2017/11/27	2019/11/26
☒	Dipole	SID1800	SN 09/13 DIP1G800-216	2017/11/27	2019/11/26
☒	Dipole	SID1900	SN 09/13 DIP2G000-218	2017/11/27	2019/11/26
☐	Dipole	SID2000	SN 09/13 DIP2G000-219	2017/11/27	2019/11/26
☒	Dipole	SID2450	SN_09/13_DIP2G450-220	2017/11/27	2019/11/26
☒	Dipole	SID2600	SN 32/14_DIP2G600-338	2017/11/27	2019/11/26
☒	Dipole	SWG5500	SN15/15 WGA39	2017/11/27	2019/11/26
☒	Multimeter	Keithley-2000	4085310	2018/09/06	2019/09/05
☒	System Simulator(Agilent 8960)	E5515C	GB 47200710	2017/11/08	2019/11/07
☒	System Simulator(R&S)	CMW500	130805	2017/08/29	2019/08/28
☒	KEYSIGHT	E7515A	MY56040357	2019/04/01	2020/04/01
☒	Vector Network Analyzer(R&S)	ZVB8	A0802530	2019/04/17	2020/04/17
☒	PC 3.5 Fixed Match Calibration Kit	ZV-Z32	100571	2017/11/29	2019/11/28
☒	Dielectric Probe Kit	SCLMP	SN 09/13 OCPG51	2017/11/27	2019/11/26
☒	Signal Generator	SMU200A	A140801888	2019/04/01	2020/04/01
☒	Amplifier	Nucletudes	143060	2019/03/26	2020/03/25
☒	Directional Coupler	DC6180A	305827	2019/03/26	2020/03/25
☒	Power Meter	NRP2	A140401673	2019/03/26	2020/03/25
☒	Power Sensor	NPR-Z11	1138.3004.02-114072-nq	2019/03/26	2020/03/25
☒	Power Meter	NRVS	A0802531	2019/03/26	2020/03/25
☒	Power Sensor	NRV-Z4	100069	2019/03/26	2020/03/25

ANNEX A: Appendix A: SAR System performance Check Plots

(Please See Appendix A)

ANNEX B: Appendix B: SAR Measurement results Plots

(Please See Appendix B)

ANNEX C: Appendix C: Calibration reports

(Please See Appendix C)

ANNEX D: Appendix D: SAR Test Setup

(Please See Appendix D)

—End of the Report—