



SAR Test Report

Report No.: STS2508211H01

Issued for

SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU
INDUSTRIAL ZONE, GUANLAN, LONGHUA, SHENZHEN,
China.

Product Name: Smart Phone

Brand Name: OUKITEL

Model Name: WP62

Series Model(s): WP62 S, WP62 Pro, WP62 Ultra, WP62
E, WP62 Plus, WP62 MAX

FCC ID: 2ANMU-WP62

Test Standard: ANSI/IEEE Std. C95.1
FCC 47 CFR Part 2 (2.1093)
IEEE Std. 1528-2013

Max. Report Head: 0.443 W/kg
SAR (1g) Body: 0.498 W/kg

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

**TEST REPORT CERTIFICATION**

Applicant's name : SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU
Address : INDUSTRIAL ZONE, GUANLAN, LONGHUA, SHENZHEN,
China.
Manufacturer's Name : SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
202, Building A2, Silicon Valley Power Intelligent Terminal
Address : Industrial Park, No. 20, Dafu Industrial Zone, Kukeng
Community, Guanlan Street, Longhua District, Shenzhen, China

Product description

Product name : Smart Phone
Brand name : OUKITEL
Model name : WP62
Series Model..... : WP62 S, WP62 Pro, WP62 Ultra, WP62 E, WP62 Plus, WP62
MAX
ANSI/IEEE Std. C95.1
Standards : FCC 47 CFR Part 2 (2.1093)
IEEE Std. 1528-2013

The device was tested by Shenzhen STS Test Services Co., Ltd. in accordance with the measurement methods and procedures specified in KDB 865664 The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Date of Test

Date (s) of performance of tests..... : 11 Aug. 2025 ~ 19 Aug. 2025

Date of Issue..... : 18 Sep. 2025

Test Result..... : **Pass**

Testing Engineer :

Xin Liu

(Xin.Liu)

Technical Manager :

Shi fan-long

(Shifan. Long)

Authorized Signatory :

Bovey Yang

(Bovey Yang)





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**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	18 Sep. 2025	STS2508211H01	ALL	Initial Issue



1. General Information

Environmental evaluation measurements of specific absorption rate (SAR) distributions in emulated human head and body tissues exposed to radio frequency (RF) radiation from wireless portable devices for compliance with the rules and regulations of the U.S. Federal Communications Commission (FCC).

1.1 EUT Description

Product Name	Smart Phone			
Brand Name	OUKITELE			
Model Name	WP62			
Series Model	WP62 S, WP62 Pro, WP62 Ultra, WP62 E, WP62 Plus, WP62 MAX			
Model Difference	Only different in model name			
Sample number	250829023-2			
Battery	Rated Voltage:3.87V Charge Limit Voltage:4.45V Capacity: 11000 mAh			
Device Category	Portable			
Product stage	Production unit			
RF Exposure Environment	General Population / Uncontrolled			
Hardware Version	J612_9621MB__D4FUV1.1			
Software Version	OUKITELE_WP58 Pro_EEA_V01_20250730			
Frequency Range	GSM 850: 824 MHz ~ 849 MHz PCS1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV:1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7:2480 MHz ~ 2580 MHz LTE Band 12: 699 MHz ~ 716 MHz 5G n5: 824-849 MHz 5G n78: 3450-3550 MHz&3700-3800 MHz WLAN802.11b/g/n20: 2412 MHz ~ 2462 MHz WLAN 802.11n40: 2422 MHz ~ 2452 MHz WLAN 802.11a/n20/n40: 5150 ~ 5250 MHz WLAN 802.11a/n20/n40: 5725 ~ 5850 MHz Bluetooth: 2402 MHz to 2480 MHz NFC:13.56 Mhz			
Max. Reported SAR(1g): (Limit:1.6W/kg) Test distance: Head:0mm Body:10mm	Band	Mode	Head (W/kg)	Body Worn and Hotspot(W/kg)
	PCE	GSM 850	0.228	0.198
	PCE	GSM 1900	0.083	0.105
	PCE	WCDMA Band II	0.159	0.478
	PCE	WCDMA Band IV	0.097	0.166
	PCE	WCDMA Band V	0.217	0.400
	PCE	LTE Band 2	0.295	0.497
	PCE	LTE Band 4	0.147	0.405
	PCE	LTE Band 5	0.246	0.498
	PCE	LTE Band 7	0.443	0.351
	PCE	LTE Band 12	0.115	0.280



	PCE	SA N5	0.271	0.171
	PCE	NSA N78+B5	0.460	0.762
	DTS	2.4G WLAN	0.343	0.354
	DSS	BT ^{Note}	0.560	0.280
	NII	5.2G WLAN	0.351	0.140
	NII	5.8G WLAN	0.053	0.053
1-g Sum SAR			1.020	1.116
FCC Equipment Class	Licensed Portable Transmitter Held to Ear (PCE) Part 15 Spread Spectrum Transmitter (DSS) Digital Transmission System (DTS) Unlicensed National Information Infrastructure TX(NII)			
Operating Mode:	GSM: GSM Voice; GPRS/EGPRS Class 12 WCDMA: RMC, HSDPA, HSUPA Release 6 LTE: QPSK, 16QAM 5G NR: DFT-s-OFDM, CP-OFDM 2.4G WLAN : 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM 5G WLAN: 802.11a(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11ac(OFDM):BPSK,QPSK,16-QAM,64-QAM,256-QAM Bluetooth: GFSK + $\pi/4$ DQPSK+8DPSK BLE: GFSK NFC:ASK			
Antenna Specification:	GSM/WCDMA/LTE: PIFA Antenna Bluetooth: PIFA Antenna WLAN: PIFA Antenna NFC: Coil Antenna			
SIM Card	Support dual-SIM, dual standby, the multiple SIM card with two lines cannot transmitting at the same time			
Hotspot Mode	Support			
DTM Mode	Not Support			
Note: 1. The dual SIM card mobile has 2 SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (Single active) 2. After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 card to perform all tests. 3. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power 4:n78 only Support NSA mode.				



1.2 Test Environment

Ambient conditions in the SAR laboratory:

Items	Required
Temperature (°C)	18-25
Humidity (%RH)	30-70

1.3 Test Factory

ShenZhen STS Test Services Co.,Ltd.

A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration No.: 625569

IC Registration No.: 12108A

A2LA Certificate No.: 4338.01



2. Test Standards and Limits

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	IEEE Std C95.1, 2019	IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz. It specifies the maximum exposure limit of 1.6 W/kg as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.
3	IEEE Std. 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
4	FCC KDB 447498 D04 v01	RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices
5	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
6	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
7	FCC KDB 941225 D01 v03r01	SAR Measurement Procedures for 3G Devices
8	FCC KDB 941225 D05 v02r05	SAR for LTE Devices
9	FCC KDB 941225 D06 v02r01	Hotspot Mode SAR
10	FCC KDB 648474 D04 v01r03	SAR Evaluation Considerations for Wireless Handsets
11	FCC KDB 248227 D01 Wi-Fi SAR v02r02	SAR Considerations for 802.11 Devices

(A). Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

(B). Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

NOTE: Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1 gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

Population/Uncontrolled Environments:

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

Occupational/Controlled Environments:

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

NOTE

GENERAL POPULATION/UNCONTROLLED EXPOSURE

PARTIAL BODY LIMIT

1.6 W/kg

3. SAR Measurement System

3.1 Definition of Specific Absorption Rate (SAR)

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 (ρ). 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 related to the electrical field in the tissue by

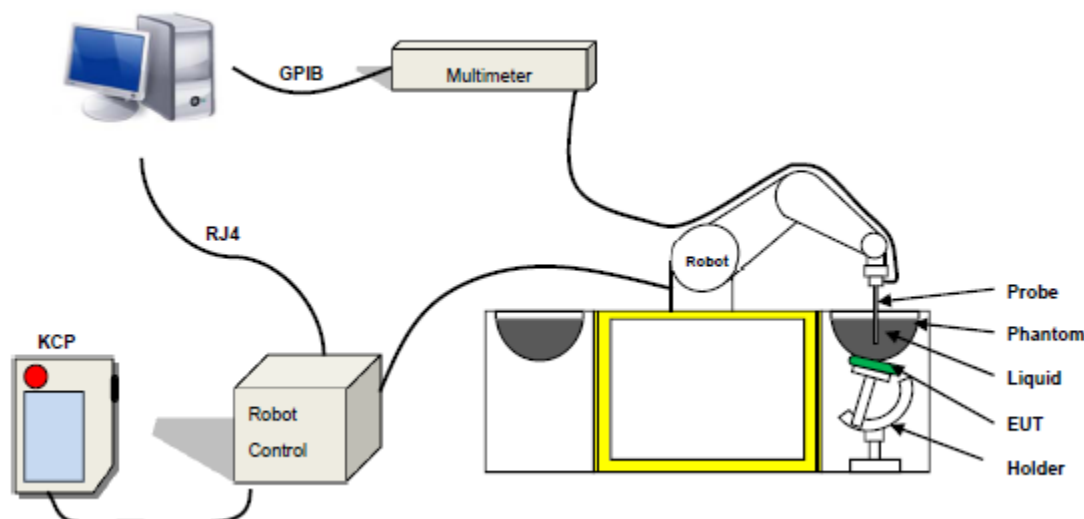
$$SAR = \frac{\sigma E^2}{\rho}$$

Where: σ is the conductivity of the tissue,

ρ is the mass density of the tissue and E is the RMS electrical field strength.

3.2 SAR System

MVG SAR System Diagram:



COMOSAR is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The COMOSAR system consists of the following items:

- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

The following figure shows the system.



The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The Open SAR software computes the results to give a SAR value in a 1g or 10g mass.

3.2.1 Probe

For the measurements the Specific Dosimetric E-Field Probe SN 08/21 EPGO352 with following specifications is used

- Probe Length: 330 mm
- Length of Individual Dipoles: 2 mm
- Maximum external diameter: 8 mm
- Probe Tip External Diameter: 2.5 mm
- Distance between dipole/probe extremity: 1 mm
- Dynamic range: 0.01-100 W/kg
- Probe linearity: 3%
- Axial Isotropy: < 0.10 dB
- Spherical Isotropy: < 0.10 dB
- Calibration range: 150 MHz to 6 GHz for head & body simulating liquid.
- Angle between probe axis (evaluation axis) and surface normal line: less than 30°



Figure 1-MVG COMOSAR Dosimetric E field Dipole

3.2.2 Phantom

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.

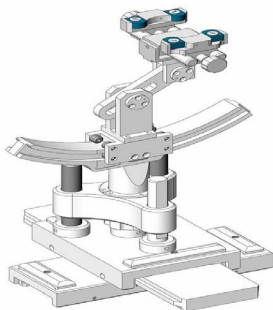
SN 32/14 SAM115



Figure-SN 21/21 ELLI48



3.2.3 Device Holder



The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ± 0.5 mm would produce a SAR uncertainty of ± 20 %. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.



4. Tissue Simulating Liquids

4.1 Simulating Liquids Parameter Check

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine if the dielectric parameters are within the tolerances of the specified target values

The uncertainty due to the liquid conductivity and permittivity arises from two different sources. The first source of error is the deviation of the liquid conductivity from its target value (max _ 5 %) and the second source of error arises from the measurement procedures used to assess conductivity. The uncertainty shall be assessed using a rectangular probability For 1 g averaging, the maximum weighting coefficient for SAR is 0,5.

IEEE SCC-34/SC-2 RECOMMENDED TISSUE DIELECTRIC PARAMETERS

The head and body tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 have been incorporated in the following table.

Frequency	ϵ_r	σ 10g S/m
300	45.3	0.87
450	43.5	0.87
750	41.9	0.89
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1800 to 2000	40.0	1.40
2100	39.8	1.49
2450	39.2	1.80
2600	39.0	1.96
3000	38.5	2.40
3500	37.9	2.91
4000	37.4	3.43
4500	36.8	3.94
5000	36.2	4.45
5200	36.0	4.66
5400	35.8	4.86
5600	35.5	5.07
5800	35.3	5.27



The following table gives the recipes for tissue simulating liquid and the theoretical Conductivity/Permittivity.

Head (Reference IEEE1528)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ϵ
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.4	40.0
2450	55.0	0	0	0.1	0	44.9	1.80	39.2
2600	54.9	0	0	0.1	0	45.0	1.96	39.0
Frequency (MHz)	Water (%)	Hexyl Carbitol (%)			Triton X-100 (%)		Conductivity σ (S/m)	Permittivity ϵ
5200	62.52	17.24			17.24		4.66	36.0
5800	62.52	17.24			17.24		5.27	35.3
Body (From instrument manufacturer)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ϵ
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
900	50.8	48.2	0	0.9	0.1	0	1.05	55.0
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0.1	0	31.3	1.95	52.7
2600	68.2	0	0	0.1	0	31.7	2.16	52.5
Frequency(MHz)	Water	DGBE (%)			Salt (%)		Conductivity σ (S/m)	Permittivity ϵ
5200	78.60	21.40			/		5.30	49.00
5800	78.50	21.40			0.1		6.00	48.20

**LIQUID MEASUREMENT RESULTS**

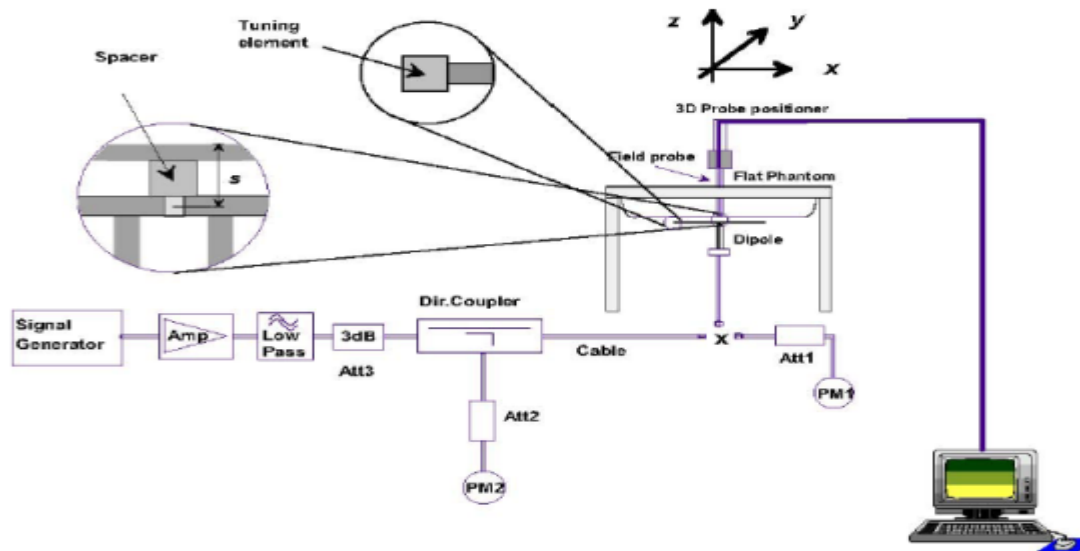
Date	Ambient		Simulating Liquid		Parameters	Target	Measured	Deviation %	Limited %
	Temp. [°C]	Humidity %	Frequency (MHz)	Temp. [°C]					
2025-08-11	21.5	44	704	21.3	Permittivity	42.15	41.90	-0.58	±5
					Conductivity	0.89	0.85	-4.16	±5
2025-08-11	21.5	44	750	21.3	Permittivity	41.90	42.26	0.86	±5
					Conductivity	0.89	0.86	-3.37	±5
2025-08-12	20.2	54	824.2	19.8	Permittivity	41.55	40.93	-1.49	±5
					Conductivity	0.90	0.90	0.14	±5
2025-08-12	20.2	54	829	19.8	Permittivity	41.53	41.57	0.10	±5
					Conductivity	0.90	0.91	1.19	±5
2025-08-12	20.2	54	835	19.8	Permittivity	41.50	41.42	-0.19	±5
					Conductivity	0.90	0.91	1.11	±5
2025-08-12	20.2	54	836.5	19.8	Permittivity	41.49	41.21	-0.68	±5
					Conductivity	0.90	0.86	-4.46	±5
2025-08-12	20.2	54	844	19.8	Permittivity	41.46	41.73	0.66	±5
					Conductivity	0.90	0.88	-2.34	±5
2025-08-12	20.2	54	846.6	19.8	Permittivity	41.45	41.02	-1.03	±5
					Conductivity	0.90	0.92	2.07	±5
2025-08-13	22.5	59	1720	22.3	Permittivity	40.11	40.63	1.29	±5
					Conductivity	1.35	1.39	2.64	±5
2025-08-13	22.5	59	1745	22.3	Permittivity	40.08	40.72	1.60	±5
					Conductivity	1.37	1.39	1.57	±5
2025-08-13	22.5	59	1752.4	22.3	Permittivity	40.07	40.89	2.05	±5
					Conductivity	1.37	1.40	1.98	±5
2025-08-13	22.5	59	1800	22.3	Permittivity	40.00	39.97	-0.08	±5
					Conductivity	1.40	1.46	4.29	±5
2025-08-15	22.4	47	1850.2	22.1	Permittivity	40.00	40.70	1.75	±5
					Conductivity	1.40	1.38	-1.43	±5
2025-08-15	22.5	47	1880	22.2	Permittivity	40.00	41.08	2.70	±5
					Conductivity	1.40	1.46	4.29	±5
2025-08-15	22.5	47	1900	22.2	Permittivity	40.00	39.84	-0.40	±5
					Conductivity	1.40	1.42	1.43	±5
2025-08-16	22.7	52	2450	22.3	Permittivity	39.20	39.57	0.94	±5
					Conductivity	1.80	1.78	-1.11	±5
2025-08-16	22.7	52	2462	22.3	Permittivity	39.18	40.35	2.99	±5
					Conductivity	1.81	1.87	3.28	±5
2025-08-16	22.7	52	2510	22.3	Permittivity	39.12	39.61	1.25	±5
					Conductivity	1.86	1.90	1.93	±5
2025-08-16	22.7	52	2535	22.3	Permittivity	39.09	39.87	2.00	±5
					Conductivity	1.89	1.88	-0.56	±5
2025-08-16	22.7	52	2560	22.3	Permittivity	39.05	39.91	2.19	±5
					Conductivity	1.92	1.90	-0.90	±5
2025-08-16	22.7	52	2600	22.3	Permittivity	39.00	39.69	1.77	±5
					Conductivity	1.96	1.97	0.51	±5
2025-08-17	23.2	53	3500	22.9	Permittivity	37.90	38.32	1.11	±5
					Conductivity	2.91	2.92	0.34	±5
2025-08-17	23.2	53	3550	22.9	Permittivity	37.84	39.01	3.09	±5
					Conductivity	2.96	3.09	4.36	±5
2025-08-17	23.2	53	3600	22.9	Permittivity	37.78	39.12	3.55	±5
					Conductivity	3.01	3.01	-0.07	±5
2025-08-19	22.9	50	5200	22.6	Permittivity	36.00	35.99	-0.03	±5
					Conductivity	4.66	4.62	-0.86	±5
2025-08-19	22.9	50	5240	22.6	Permittivity	35.96	36.10	0.39	±5
					Conductivity	4.70	4.66	-0.89	±5
2025-08-19	22.9	50	5800	22.6	Permittivity	35.30	36.32	2.89	±5
					Conductivity	5.27	5.24	-0.57	±5
2025-08-19	22.9	50	5825	22.6	Permittivity	35.28	35.71	1.23	±5
					Conductivity	5.30	5.28	-0.31	±5

5. SAR System Validation

5.1 Validation System

Each MVG system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the MVG software, enable the user to conduct the system performance check and system validation. System kit includes a dipole, and dipole device holder.

The system check verifies that the system operates within its specifications. It's performed daily or before every SAR measurement. The system check uses normal SAR measurement in the flat section of the phantom with a matched dipole at a specified distance. The system validation setup is shown as below.





5.2 Validation Result

Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss (>20 dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB 865664 D01:

Comparing to the original SAR value provided by MVG, the validation data should be within its specification of 10 %.

Date	Frequency (MHz)	Power	SAR _{1g} (W/Kg)	SAR _{10g} (W/Kg)	Drift (%)	1W Target		Difference percentage		Limited %
						SAR _{1g} (W/Kg)	SAR _{10g} (W/Kg)	1g	10g	
2025-08-11	750	100 mW	0.815	0.546	-3.07	8.49	5.53	-4.00%	-1.27%	10
		Normalize to 1 Watt	8.15	5.46						
2025-08-12	835	100 mW	0.935	0.585	-1.95	9.63	6.15	-2.91%	-4.88%	10
		Normalize to 1 Watt	9.35	5.85						
2025-08-13	1800	100 mW	3.475	1.849	1.44	38.40	20.10	-9.51%	-8.01%	10
		Normalize to 1 Watt	34.75	18.49						
2025-08-15	1900	100 mW	3.816	1.999	0.56	39.84	20.20	-4.22%	-1.04%	10
		Normalize to 1 Watt	38.16	19.99						
2025-08-16	2450	100 mW	5.400	2.393	2.81	54.70	24.11	-1.28%	-0.75%	10
		Normalize to 1 Watt	54.00	23.93						
2025-08-16	2600	100 mW	5.561	2.319	2.21	56.19	24.08	-1.03%	-3.70%	10
		Normalize to 1 Watt	55.61	23.19						
2025-08-17	3500	100 mW	6.716	2.384	-0.81	68.37	25.50	-1.77%	-6.51%	10
		Normalize to 1 Watt	67.16	23.84						
2025-08-19	5200	10 mW	1.592	0.540	2.47	163.88	57.29	-2.85%	-5.71%	10
		Normalize to 1 Watt	159.21	54.02						
2025-08-19	5800	10 mW	1.781	0.602	1.27	188.95	63.45	-5.74%	-5.09%	10
		Normalize to 1 Watt	178.11	60.22						

Note:

- (1) We use a CW signal of 20dBm(2450MHz) and 10dBm(5000-6000MHz) for system check, and then all SAR values are normalized to 1W forward power. The result must be within $\pm 10\%$ of target value.



6. SAR Evaluation Procedures

The procedure for assessing the average SAR value consists of the following steps:

The following steps are used for each test position

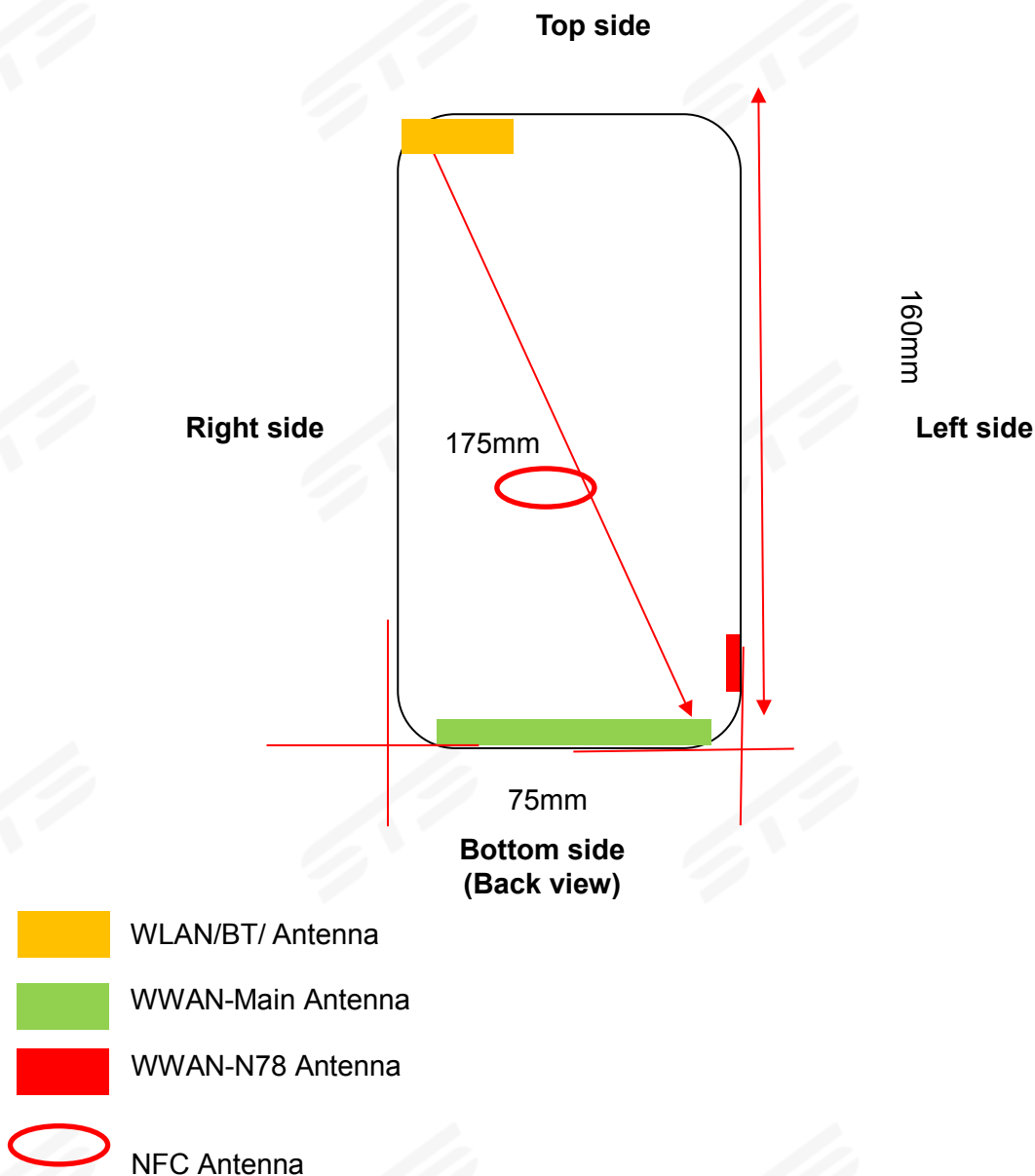
- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

➤ Area Scan& Zoom Scan

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01 quoted below. When the 1-g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

7. EUT Antenna Location Sketch

It is a Smart Phone, support GSM/WCDMA/LTE/WLAN/BT/NFC mode.



Antenna Separation Distance(cm)						
ANT	Back Side	Front Side	Left Side	Right Side	Top Side	Bottom Side
WLAN/BT	≤0.5	≤0.5	7	≤0.5	≤0.5	16
WWAN-Main	≤0.5	≤0.5	≤0.5	≤0.5	16	≤0.5
WWAN-N78	≤0.5	≤0.5	7.3	≤0.5	14.7	1.8
NFC	≤0.5	≤0.5	2	4	5	4

Note 1: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.



7.1 SAR test exclusion consider table

The WWAN/WLAN/BT SAR evaluation of Maximum power (dBm) summing tolerance.

Exposure Position	Wireless Interface	GSM850	PCS1900	WCDMA II	WCDMA IV	WCDMA V	LTE Band 2	LTE Band 4	LTE Band 5
	Calculated Frequency(GHz)	0.8242	1.8502	1.88	1.7524	0.8466	1.88	1.745	0.829
	Maximum Turn-up power (dBm)	33.5	29.5	24	24.5	24.5	23	22.5	23
	Maximum rated power(mW)	2238.72	891.25	251.19	281.84	281.84	199.53	177.83	199.53
	Separation distance (cm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Back Side	exclusion threshold(mW)	9.42	3.44	3.39	3.27	6.43	3.39	3.60	9.34
	Testing required?	YES	YES	YES	YES	YES	YES	YES	YES
	Separation distance (cm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Front Side	exclusion threshold(mW)	9.42	3.44	3.39	3.27	6.43	3.39	3.60	9.34
	Testing required?	YES	YES	YES	YES	YES	YES	YES	YES
	Separation distance (cm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Left Side	exclusion threshold(mW)	9.42	3.44	3.39	3.27	6.43	3.39	3.60	9.34
	Testing required?	YES	YES	YES	YES	YES	YES	YES	YES
	Separation distance (cm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Right Side	exclusion threshold(mW)	9.42	3.44	3.39	3.27	6.43	3.39	3.60	9.34
	Testing required?	YES	YES	YES	YES	YES	YES	YES	YES
	Separation distance (cm)	16	16	16	16	16	16	16	16
Top Side	exclusion threshold(mW)	1228.72	2029.05	2027.48	2341.16	2107.39	2027.48	2034.81	1234.83
	Testing required?	YES	NO	NO	NO	NO	NO	NO	NO
	Separation distance (cm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Bottom Side	exclusion threshold(mW)	9.42	3.44	3.39	3.27	6.43	3.39	3.60	9.34
	Testing required?	YES	YES	YES	YES	YES	YES	YES	YES
	Separation distance (cm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Exposure Position	Wireless Interface	LTE Band 7	LTE Band 12	NR Band 5	NSA 78	NFC	BT	2.4G WLAN	5.2G WLAN	5.8G WLAN
	Calculated Frequency(GHz)	2.535	0.704	0.844	3.55	0.01356	2.48	2.462	5.24	5.825
	Maximum Turn-up power (dBm)	23.5	24	24	24	-7.5	2.5	20	14	13
	Maximum rated power(mW)	223.87	251.19	251.19	251.19	0.18	1.78	100.00	25.12	19.95
	Separation distance (cm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Back Side	exclusion threshold(mW)	2.67	11.75	9.11	1.21	176.28	2.72	2.73	1.49	1.37
	Testing required?	YES	YES	YES	YES	NO	NO	YES	YES	YES
	Separation distance (cm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Front Side	exclusion threshold(mW)	2.67	11.75	9.11	1.21	176.28	2.72	2.73	1.49	1.37
	Testing required?	YES	YES	YES	YES	NO	NO	YES	YES	YES
	Separation distance (cm)	0.5	0.5	0.5	7.3	2	7	7	7	7
Left Side	exclusion threshold(mW)	2.67	11.75	9.11	673.38	515.25	414.25	414.94	349.30	340.98
	Testing required?	YES	YES	YES	NO	NO	NO	NO	NO	NO
	Separation distance (cm)	0.5	0.5	0.5	0.5	4	0.5	0.5	0.5	0.5
Right Side	exclusion threshold(mW)	2.67	11.75	9.11	1.21	880.90	2.72	2.73	1.49	1.37
	Testing required?	YES	YES	YES	YES	NO	NO	YES	YES	YES
	Separation distance (cm)	16	16	16	14.7	5	0.5	0.5	0.5	0.5
Top Side	exclusion threshold(mW)	1998.32	1073.85	1253.90	3505.27	1046.91	2.72	2.73	1.49	1.37
	Testing required?	NO	NO	NO	NO	NO	NO	YES	YES	YES
	Separation distance (cm)	0.5	0.5	0.5	1.8	4	16	16	16	16
Bottom Side	exclusion threshold(mW)	2.67	11.75	9.11	24.84	880.90	2000.45	2001.16	1929.24	1919.37
	Testing required?	YES	YES	YES	YES	NO	NO	NO	NO	NO
	Separation distance (cm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Note:

1. maximum power is the source-based time-average power and represents the maximum RF output power among production units.
2. Per KDB 447498 D04, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
3. Per KDB 447498 D04, if the maximum time-averaged power available does not exceed 1 mW. This stand-alone SAR exemption test.



4. Per KDB 447498 D04, the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

d = the separation distance (cm);

5. Per KDB 447498 D04, An alternative to the SAR-based exemption is using below table and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in below table to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

RF Source frequency (MHz)	Threshold ERP(watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.



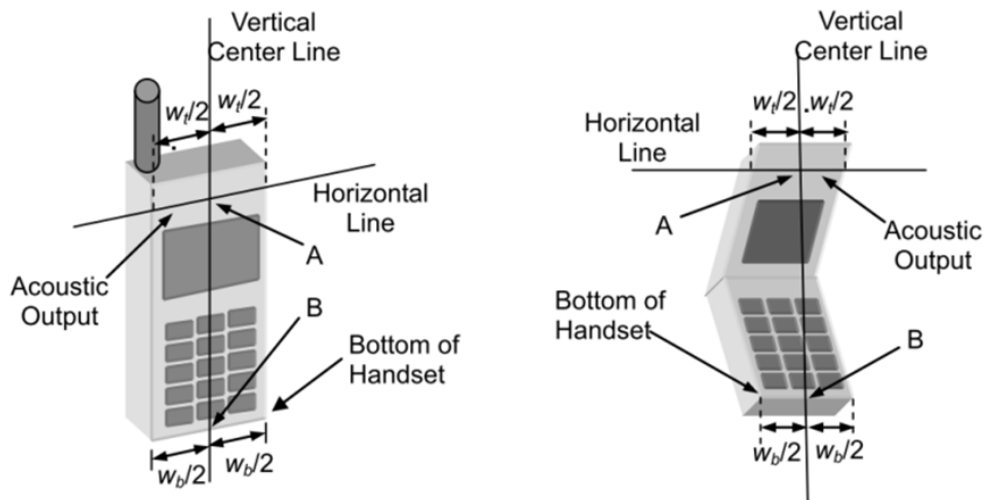
6. Per KDB 248227 D01, choose the highest output power channel to test SAR and determine further SAR exclusion 8. for each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of each of these configurations is less than 1/4db higher than those measured at the lower data rate than 11b mode, thus the SAR can be excluded.
7. Per KDB 616217 D04, SAR evaluation for the front surface of tablet display screens are generally not necessary.
8. Per KDB 248227, as maximum rated power for U-NII-2A > U-NII-1, U-NII-2A was chosen for SAR evaluation. Based on the measurements obtained, SAR measurements on U-NII-1 are not required as highest reported SAR from U-NII-2A band is $\leq 1.2\text{W/Kg}$.

8. EUT Test Position

This EUT was tested in Right Cheek, Right Titled, Left Cheek, Left Titled, Front Face and Rear Face.

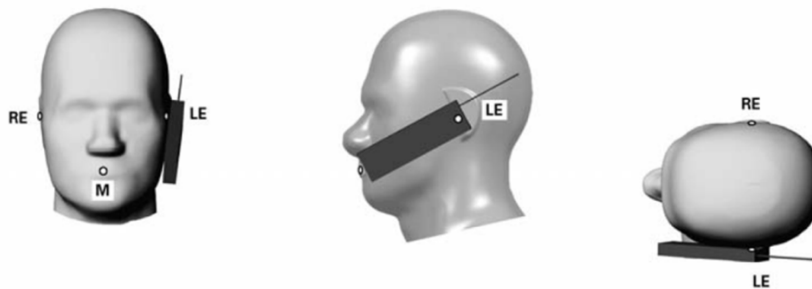
8.1 Define Two Imaginary Lines on the Handset

- (1) The vertical centerline passes through two points on the front side of the handset: the midpoint of the width w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b of the handset.
- (2) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.
- (3) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.



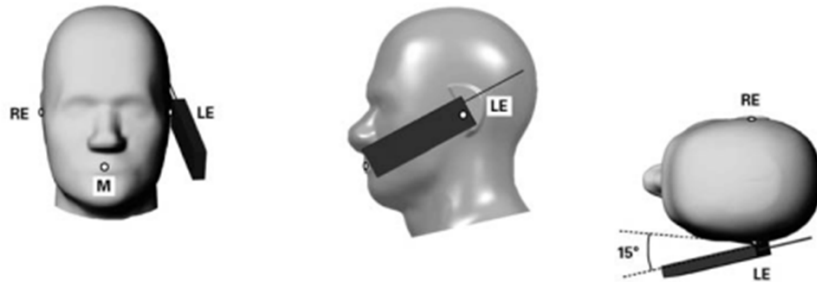
Cheek Position

- 1) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.
- 2) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.



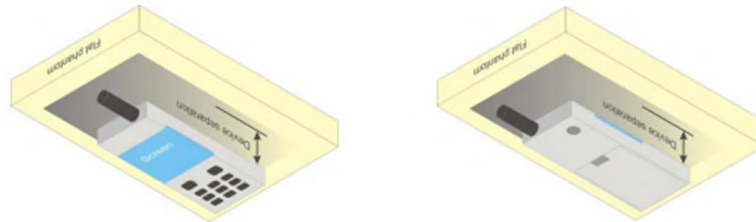
Title Position

- (1) To position the device in the “cheek” position described above.
- (2) While maintaining the device in the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until with the ear is lost.



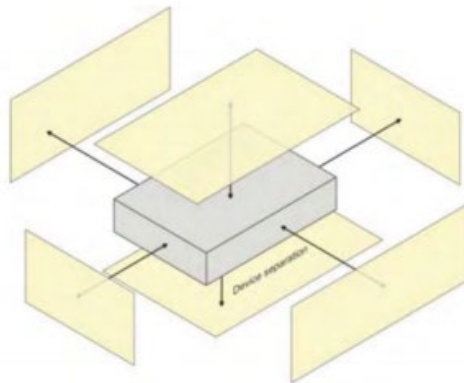
Body-worn Position Conditions:

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 KDB Publication 447498 D04 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. When the same wireless transmission configuration is used for testing body-worn accessory and hotspot mode SAR, respectively, in voice and data mode, SAR results for the most conservative *test separation distance* configuration may be used to support both SAR conditions. When the *reported* SAR for a body-worn accessory, measured without a headset connected to the handset, is $> 1.2 \text{ W/kg}$, the highest *reported* SAR configuration for that wireless mode and frequency band should be repeated for the body-worn accessory with a headset attached to the handset.



8.2 Hotspot mode exposure position condition

For handsets that support hotspot mode operations, with wireless router capabilities and various web browsing function, the relevant hand and body exposure condition are tested according to the hotspot SAR procedures in KDB 941225. A test separation distance of 10 mm is required between the phantom and all surface and edges with a transmitting antenna located within 25 mm from that surface or edge. When form factor of a handset is smaller than 9cm x 5cm, a test separation distance of 5mm (instead of 10mm) is required for testing hotspot mode. When the separate distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, in the same wireless mode and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).





9. Uncertainty

9.1 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in IEEE 1528: 2013. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

SATIMO Uncertainty- SN 08/21 EPG0352									
Measurement uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+/- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+- %)	10g Ui (+- %)	vi
Measurement System									
Probe calibration	E.2.1	5.72	N	1.00	1.00	1.00	5.72	5.72	∞
Axial Isotropy	E.2.2	0.18	R	1.73	0.71	0.71	0.07	0.07	∞
Hemispherical Isotropy	E.2.2	1.04	R	1.73	0.71	0.71	0.42	0.42	∞
Boundary effect	E.2.3	0.80	R	1.73	1.00	1.00	0.46	0.46	∞
Linearity	E.2.4	1.25	R	1.73	1.00	1.00	0.72	0.72	∞
System detection limits	E.2.4	1.20	R	1.73	1.00	1.00	0.69	0.69	∞
Modulation response	E.2.5	3.42	R	1.73	1.00	1.00	1.97	1.97	∞
Readout Electronics	E.2.6	0.26	N	1.00	1.00	1.00	0.26	0.26	∞
Response Time	E.2.7	0.17	R	1.73	1.00	1.00	0.10	0.10	∞
Integration Time	E.2.8	1.43	R	1.73	1.00	1.00	0.83	0.83	∞
RF ambient conditions-Noise	E.6.1	3.51	R	1.73	1.00	1.00	2.03	2.03	∞
RF ambient conditions-reflections	E.6.1	3.15	R	1.73	1.00	1.00	1.82	1.82	∞
Probe positioner mechanical tolerance	E.6.2	1.20	R	1.73	1.00	1.00	0.69	0.69	∞
Probe positioning with respect to phantom shell	E.6.3	1.40	R	1.73	1.00	1.00	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.10	R	1.73	1.00	1.00	1.21	1.21	∞
Test sample Related									
Test sample positioning	E.4.2	3.10	N	1.00	1.00	1.00	3.10	3.10	∞
Device holder uncertainty	E.4.1	3.80	N	1.00	1.00	1.00	3.80	3.80	∞
Output power variation—SAR drift measurement	E.2.9	4.50	R	1.73	1.00	1.00	2.60	2.60	∞
SAR scaling	E.6.5	1.80	R	1.73	1.00	1.00	1.04	1.04	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	3.70	R	1.73	1.00	1.00	2.14	2.14	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.90	N	1.00	1.00	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	2.40	R	1.73	0.78	0.71	1.08	0.98	M
Liquid permittivity measurement	E.3.3	4.10	N	1.00	0.78	0.71	3.20	2.91	M
Liquid conductivity—temperature uncertainty	E.3.4	2.70	R	1.73	0.23	0.26	0.36	0.41	∞
Liquid permittivity—temperature uncertainty	E.3.4	4.80	N	1.00	0.23	0.26	1.10	1.25	∞
Combined Standard Uncertainty			RSS				10.08	9.59	
Expanded Uncertainty (95% Confidence interval)			K=2				19.58	19.18	



SATIMO Uncertainty- SN 08/21 EPG0352									
System Validation uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+ - %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+- %)	10g Ui (+-%)	vi
Measurement System									
Probe calibration	E.2.1	5.72	N	1.00	1.00	1.00	5.72	5.72	∞
Axial Isotropy	E.2.2	0.18	R	1.73	1.00	1.00	0.10	0.10	∞
Hemispherical Isotropy	E.2.2	1.04	R	1.73	0.00	0.00	0.00	0.00	∞
Boundary effect	E.2.3	0.80	R	1.73	1.00	1.00	0.46	0.46	∞
Linearity	E.2.4	1.25	R	1.73	1.00	1.00	0.72	0.72	∞
System detection limits	E.2.4	1.20	R	1.73	1.00	1.00	0.69	0.69	∞
Modulation response	E.2.5	3.42	R	1.73	0.00	0.00	0.00	0.00	∞
Readout Electronics	E.2.6	0.26	N	1.00	1.00	1.00	0.26	0.26	∞
Response Time	E.2.7	0.17	R	1.73	0.00	0.00	0.00	0.00	∞
Integration Time	E.2.8	1.43	R	1.73	0.00	0.00	0.00	0.00	∞
RF ambient conditions- Noise	E.6.1	3.51	R	1.73	1.00	1.00	2.03	2.03	∞
RF ambient conditions- reflections	E.6.1	3.15	R	1.73	1.00	1.00	1.82	1.82	∞
Probe positioner mechanical tolerance	E.6.2	1.20	R	1.73	1.00	1.00	0.69	0.69	∞
Probe positioning with respect to phantom shell	E.6.3	1.40	R	1.73	1.00	1.00	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	2.10	R	1.73	1.00	1.00	1.21	1.21	∞
System validation source									
Deviation of experimental dipole from numerical dipole	E.6.4	4.80	N	1.00	1.00	1.00	4.80	4.80	∞
Input power and SAR drift measurement	8,6.6.4	5.10	R	1.73	1.00	1.00	2.94	2.94	∞
Dipole axis to liquid distance	8,E.6.6	2.40	R	1.73	1.00	1.00	1.39	1.39	∞
Phantom and set-up									
Phantom shell uncertainty— shape, thickness, and permittivity	E.3.1	3.70	R	1.73	1.00	1.00	2.14	2.14	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.90	N	1.00	1.00	0.84	1.90	1.60	∞
Liquid conductivity (temperature uncertainty)	E.3.3	2.40	R	1.73	0.78	0.71	1.08	0.98	∞
Liquid conductivity (measured)	E.3.3	4.10	N	1.00	0.78	0.71	3.20	2.91	M
Liquid permittivity (temperature uncertainty)	E.3.4	2.70	R	1.73	0.23	0.26	0.36	0.41	∞
Liquid permittivity (measured)	E.3.4	4.80	N	1.00	0.23	0.26	1.10	1.25	M
Combined Standard Uncertainty			RSS				9.72	9.52	
Expanded Uncertainty (95% Confidence interval)			K=2				19.44	19.03	



SATIMO Uncertainty- SN 08/21 EPG0352									
。 System Check uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
		(+-%)							
Measurement System									
Probe calibration drift	E.2.1.3	5.72	N	1.00	1.00	1.00	5.72	5.72	∞
Axial Isotropy	E.2.2	0.18	R	1.73	0.00	0.00	0.00	0.00	∞
Hemispherical Isotropy	E.2.2	1.04	R	1.73	0.00	0.00	0.00	0.00	∞
Boundary effect	E.2.3	0.8	R	1.73	0.00	0.00	0.00	0.00	∞
Linearity	E.2.4	1.25	R	1.73	0.00	0.00	0.00	0.00	∞
System detection limits	E.2.4	1.20	R	1.73	0.00	0.00	0.00	0.00	∞
Modulation response	E.2.5	3.42	R	1.73	0.00	0.00	0.00	0.00	∞
Readout Electronics	E.2.6	0.26	N	1.00	0.00	0.00	0.00	0.00	∞
Response Time	E.2.7	0.17	R	1.73	0.00	0.00	0.00	0.00	∞
Integration Time	E.2.8	1.43	R	1.73	0.00	0.00	0.00	0.00	∞
RF ambient conditions-Noise	E.6.1	3.51	R	1.73	0.00	0.00	0.00	0.00	∞
RF ambient conditions-reflections	E.6.1	3.15	R	1.73	0.00	0.00	0.00	0.00	∞
Probe positioner mechanical tolerance	E.6.2	1.2	R	1.73	1.00	1.00	0.69	0.69	∞
Probe positioning with respect to phantom shell	E.6.3	1.4	R	1.73	1.00	1.00	0.81	0.81	∞
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	E.5	3.9	R	1.73	0.00	0.00	0.00	0.00	∞
System check source (dipole)									
Deviation of experimental dipoles	E.6.4	4.8	N	1.00	1.00	1.00	4.80	4.80	∞
Input power and SAR drift measurement	8,6.6.4	5.1	R	1.73	1.00	1.00	2.94	2.94	∞
Dipole axis to liquid distance	8,E.6.6	2.4	R	1.73	1.00	1.00	1.39	1.39	∞
Phantom and tissue parameters									
Phantom shell uncertainty—shape, thickness, and permittivity	E.3.1	3.7	R	1.73	1.00	1.00	2.14	2.14	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	E.3.2	1.9	N	1.00	1.00	0.84	1.90	1.60	∞
Liquid conductivity measurement	E.3.3	2.4	R	1.73	0.78	0.71	1.08	0.98	∞
Liquid permittivity measurement	E.3.3	4.1	N	1.00	0.78	0.71	3.20	2.91	M
Liquid conductivity—temperature uncertainty	E.3.4	2.7	R	1.73	0.23	0.26	0.36	0.41	∞
Liquid permittivity—temperature uncertainty	E.3.4	4.8	N	1.00	0.23	0.26	1.10	1.25	M
Combined Standard Uncertainty			RSS				5.56	5.20	
Expanded Uncertainty (95% Confidence interval)			K=2				11.12	10.41	



10. Conducted Power Measurement

10.1 Test Result

Burst Average Power (dBm)						
Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
GSM(GMSK, 1-Slot)	34.04	34.07	34.02	30.36	30.20	29.75
GPRS (GMSK, 1-Slot)	34.06	34.12	34.03	30.26	30.08	29.61
GPRS (GMSK, 2-Slot)	33.19	33.18	33.04	29.44	29.19	28.66
GPRS (GMSK, 3-Slot)	31.25	31.10	31.03	27.60	27.37	26.91
GPRS (GMSK, 4-Slot)	30.09	30.00	29.83	26.26	25.93	25.32
EGPRS(8PSK, 1-Slot)	27.55	28.05	28.15	26.37	26.14	26.14
EGPRS(8PSK, 2-Slot)	26.21	26.21	26.22	25.16	24.75	24.89
EGPRS(8PSK, 3-Slot)	23.88	24.35	24.36	22.60	22.86	22.55
EGPRS(8PSK, 4-Slot)	22.34	22.57	22.43	21.11	21.32	20.84
Remark: GPRS, CS4 coding scheme. EGPRS, MCS5 coding scheme. Multi-Slot Class 8, Support Max 4 downlink, 1 uplink, 5 working link Multi-Slot Class 10, Support Max 4 downlink, 2 uplink, 5 working link Multi-Slot Class 12, Support Max 4 downlink, 4 uplink, 5 working link						

Frame- Average Power(dBm)						
Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
GSM(GMSK, 1-Slot)	25.01	25.04	24.99	21.33	21.17	20.72
GPRS (GMSK, 1-Slot)	25.03	25.09	25.00	21.23	21.05	20.58
GPRS (GMSK, 2-Slot)	27.17	27.16	27.02	23.42	23.17	22.64
GPRS (GMSK, 3-Slot)	26.99	26.84	26.77	23.34	23.11	22.65
GPRS (GMSK, 4-Slot)	27.08	26.99	26.82	23.25	22.92	22.31
EGPRS(8PSK, 1-Slot)	18.52	19.02	19.12	17.34	17.11	17.11
EGPRS(8PSK, 2-Slot)	20.19	20.19	20.20	19.14	18.73	18.87
EGPRS(8PSK, 3-Slot)	19.62	20.09	20.10	18.34	18.60	18.29
EGPRS(8PSK, 4-Slot)	19.33	19.56	19.42	18.10	18.31	17.83
Remark : 1. SAR testing was performed on the maximum frame-averaged power mode. 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 = Burst averaged power (1 TX Slot) – 9.03 dB Frame-averaged power = Burst averaged power (2 TX Slots) – 6.02 dB Frame-averaged power = Burst averaged power (3 TX Slots) - 4.26 dB Frame-averaged power = Burst averaged power (4 TX Slots) – 3.01 dB						

**WCDMA**

Band	WCDMA Band 2			WCDMA Band 4			WCDMA Band 5		
Channel	9262	9400	9538	1312	1413	1513	4132	4183	4233
Frequency (MHz)	1852.4	1880	1907.6	1712.6	1740	1752.4	826.4	836.6	846.6
RMC 12.2Kbps	23.73	23.83	23.52	24.03	23.97	24.03	24.01	24.01	24.02
HSDPA Subtest-1	22.83	22.31	20.86	23.03	22.74	21.78	23.06	22.57	21.41
HSDPA Subtest-2	21.43	22.89	22.11	21.75	22.99	22.47	21.44	22.97	22.70
HSDPA Subtest-3	21.47	21.47	22.54	21.57	21.53	23.02	21.54	21.93	23.01
HSDPA Subtest-4	22.07	21.24	20.92	22.73	21.47	21.36	22.48	21.30	21.34
HSUPA Subtest-1	19.37	22.84	21.40	22.86	22.84	22.08	22.88	22.95	21.74
HSUPA Subtest-2	23.58	21.89	23.01	23.05	22.18	22.75	23.01	22.22	22.77
HSUPA Subtest-3	23.54	21.76	23.67	22.92	21.84	23.02	22.91	21.61	22.95
HSUPA Subtest-4	22.07	23.25	23.60	22.37	22.85	22.99	22.38	22.78	22.84
HSUPA Subtest-5	22.11	23.64	22.04	21.97	23.06	22.44	21.44	23.01	21.88

According to 3GPP 25.101 sub-clause 6.2.2, the maximum output power is allowed to be reduced by following the table.

Table 6.1A: UE maximum output power with HS-DPCCH and E-DCH

UE Transmit Channel Configuration	CM(db)	MPR(db)
For all combinations of ,DPDCH,DPCCH HS-DPDCH,E-DPDCH and E-DPCCH	$0 \leq CM \leq 3.5$	$MAX(CM-1,0)$
Note: 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.		

The device supports MPR to solve linearity issues (ACLR or SEM) due to the higher peak-to average ratios (PAR) of the HSUPA signal. This prevents saturating the full range of the TX DAC inside of device and provides a reduced power output to the RF transceiver chip according to the Cubic Metric (a function of the combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH).

When E-DPDCH channels are present the beta gains on those channels are reduced firsts to try to get the power under the allowed limit. If the beta gains are lowered as far as possible, then a hard limiting is applied at the maximum allowed level.

The SW currently recalculates the cubic metric every time the beta gains on the E-DPDCH are reduced. The cubic metric will likely get lower each time this is done .However, there is no reported reduction of maximum output power in the HSUPA mode since the device also provides a compensation for the power back-off by increasing the gain of TX_AGC in the transceiver (PA) device.

The end effect is that the DUT output power is identical to the case where there is no MPR in the device.

**2.4G WLAN**

2.4GWIFI				
Mode	Channel Number	Frequency (MHz)	Conducted Power (dBm)	Output Power (mW)
802.11b	1	2412	16.20	41.69
	7	2437	16.59	45.60
	11	2462	16.76	47.42
802.11g	1	2412	18.89	77.45
	7	2437	19.48	88.72
	11	2462	19.63	91.83
802.11 n-HT20	1	2412	19.27	84.53
	7	2437	19.01	79.62
	11	2462	19.45	88.10
802.11 n-HT40	3	2422	19.51	89.33
	6	2437	18.26	66.99
	9	2452	18.47	70.31

Bluetooth

BT				
Mode	Channel Number	Frequency (MHz)	Conducted Power (dBm)	Output Power (mW)
GFSK(1Mbps)	0	2402	1.52	1.42
	39	2441	1.14	1.30
	78	2480	1.77	1.50
$\pi/4$ -QPSK(2Mbps)	0	2402	1.71	1.48
	39	2441	1.15	1.30
	78	2480	1.83	1.52
8DPSK(3Mbps)	0	2402	1.9	1.55
	39	2441	1.63	1.46
	78	2480	2.17	1.65

BLE

BLE				
Mode	Channel Number	Frequency (MHz)	Conducted Power (dBm)	Output Power (mW)
GFSK(1Mbps)	0	2402	0.48	1.12
	19	2440	-0.07	0.98
	39	2480	0.76	1.19

**5.2G WIFI**

5.2G WLAN				
Mode	Channel Number	Frequency (MHz)	Total Power (dBm)	Output Power (mW)
802.11a	36	5180	13.21	20.94
	40	5200	13.21	20.94
	48	5240	13.63	23.07
802.11ac-VHT20	36	5180	13.19	20.84
	40	5200	13.18	20.80
	48	5240	13.45	22.13

5.8G WIFI

5.8G WLAN				
Mode	Channel Number	Frequency (MHz)	Total Power (dBm)	Output Power (mW)
802.11a	149	5745	12.80	19.05
	157	5785	12.94	19.68
	165	5825	12.96	19.77
802.11ac-VHT20	149	5745	12.76	18.88
	157	5785	12.84	19.23
	165	5825	12.90	19.50

NFC

NFC		
Mode	Conducted Power (dBm)	Output Power (mW)
ASK	-42.19	0.00



LTE Conducted Power

General Note:

1. Anritsu CMW500 base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05, 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.
4. Per KDB 941225 D05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05, 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 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.
6. Per KDB 941225 D05, 16QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05, Smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ 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; Per KDB 941225 D05, smaller bandwidth SAR testing is not required.



LTE Band 2

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.44	22.3	22.32
1.4	1	2		22.47	22.33	22.35
1.4	1	5		22.41	22.42	22.3
1.4	3	0		22.62	22.52	22.34
1.4	3	1		22.65	22.54	22.39
1.4	3	2		22.65	22.52	22.38
1.4	6	0		21.47	21.48	21.44
1.4	1	0	16-QAM	21.61	21.46	21.5
1.4	1	2		21.62	21.48	21.53
1.4	1	5		21.61	21.41	21.48
1.4	3	0		21.69	21.56	21.51
1.4	3	1		21.64	21.53	21.5
1.4	3	2		21.64	21.52	21.45
1.4	6	0		20.74	20.64	20.61
3	1	0	QPSK	22.43	22.38	22.47
3	1	7		22.49	22.53	22.54
3	1	14		22.44	22.51	22.46
3	8	0		21.44	21.51	21.41
3	8	4		21.44	21.51	21.38
3	8	7		21.42	21.49	21.42
3	15	0		21.51	21.56	21.44
3	1	0	16-QAM	21.6	21.66	21.62
3	1	7		21.64	21.74	21.67
3	1	14		21.68	21.75	21.65
3	8	0		20.77	20.45	20.44
3	8	4		20.76	20.48	20.44
3	8	7		20.76	20.45	20.45
3	15	0		20.61	20.63	20.35



LTE BAND 2

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.45	22.64	22.52
5	1	12		22.44	22.66	22.53
5	1	24		22.45	22.67	22.55
5	12	0		21.56	21.57	21.4
5	12	6		21.54	21.56	21.4
5	12	11		21.54	21.57	21.41
5	25	0		21.54	21.56	21.45
5	1	0	16-QAM	21.55	21.75	21.73
5	1	12		21.64	21.86	21.74
5	1	24		21.59	21.8	21.68
5	12	0		20.86	20.66	20.39
5	12	6		20.82	20.63	20.36
5	12	11		20.59	20.65	20.39
5	25	0		20.72	20.6	20.45
10	1	0	QPSK	22.59	22.53	22.17
10	1	24		22.62	22.64	22.26
10	1	49		22.55	22.55	22.3
10	25	0		21.5	21.59	21.5
10	25	12		21.56	21.57	21.44
10	25	24		21.54	21.58	21.48
10	50	0		21.57	21.61	21.52
10	1	0	16-QAM	21.68	21.65	21.36
10	1	24		21.78	21.7	21.45
10	1	49		21.69	21.7	21.55
10	25	0		20.77	20.58	20.52
10	25	12		20.61	20.58	20.44
10	25	24		20.6	20.57	20.47
10	50	0		20.52	20.58	20.52



LTE BAND 2

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.49	22.29	22.36
15	1	37		22.51	22.48	22.52
15	1	74		22.39	22.38	22.46
15	36	0		21.45	21.5	21.51
15	36	18		21.44	21.51	21.39
15	36	39		21.45	21.5	21.39
15	75	0		21.46	21.49	21.42
15	1	0	16-QAM	21.55	21.68	21.52
15	1	38		21.56	21.74	21.62
15	1	75		21.48	21.63	21.59
15	36	0		20.48	20.43	20.41
15	36	18		20.46	20.45	20.32
15	36	39		20.48	20.45	20.4
15	75	0		20.42	20.5	20.4
20	1	0	QPSK	22.54	22.55	22.28
20	1	49		22.53	22.71	22.24
20	1	99		22.42	22.53	22.27
20	50	0		21.48	21.55	21.53
20	50	24		21.52	21.52	21.44
20	50	49		21.48	21.52	21.31
20	100	0		21.45	21.54	21.44
20	1	0	16-QAM	21.54	21.5	21.43
20	1	49		21.54	21.64	21.34
20	1	99		21.41	21.4	21.42
20	50	0		20.41	20.51	20.45
20	50	24		20.49	20.51	20.38
20	50	49		20.43	20.52	20.26
20	100	0		20.4	20.54	20.32



LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	21.69	21.91	21.89
1.4	1	2		21.66	21.92	21.93
1.4	1	5		21.44	21.89	21.88
1.4	3	0		22.06	21.93	21.95
1.4	3	1		22.06	21.94	21.92
1.4	3	2		22.07	21.87	21.95
1.4	6	0		20.96	20.88	20.97
1.4	1	0	16-QAM	21.26	20.81	21.03
1.4	1	2		21.25	20.84	21.06
1.4	1	5		21.26	20.82	21.03
1.4	3	0		21.18	20.93	21.03
1.4	3	1		21.2	20.93	21.02
1.4	3	2		21.18	20.89	20.96
1.4	6	0		20.23	20.25	20.31
3	1	0	QPSK	21.93	21.87	21.97
3	1	7		21.98	21.91	22.01
3	1	14		21.94	21.86	21.99
3	8	0		20.93	20.89	20.93
3	8	4		20.92	20.87	20.89
3	8	7		20.95	20.81	20.91
3	15	0		20.98	20.85	20.91
3	1	0	16-QAM	21.05	21.17	21.11
3	1	7		21.09	21.12	21.17
3	1	14		21.08	21.12	21.16
3	8	0		20.23	20.06	20.25
3	8	4		20.23	20.05	20.2
3	8	7		20.26	19.99	20.2
3	15	0		20.09	20.14	20.1



LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.15	21.89	22.13
5	1	12		22.14	21.85	22.05
5	1	24		22.2	21.88	22.07
5	12	0		20.97	20.9	20.99
5	12	6		20.97	20.9	20.95
5	12	11		21.02	20.85	20.94
5	25	0		20.98	20.88	20.96
5	1	0	16-QAM	21.33	21.05	21.18
5	1	12		21.41	21.11	21.12
5	1	24		21.37	21.03	21.14
5	12	0		20.21	20.17	20.31
5	12	6		20.17	20.19	20.25
5	12	11		20.22	20.15	20.18
5	25	0		20.22	20.1	20.17
10	1	0	QPSK	21.92	21.96	21.92
10	1	24		21.98	21.97	21.92
10	1	49		21.99	22	21.96
10	25	0		20.93	20.89	20.91
10	25	12		21.01	20.88	20.88
10	25	24		21.03	20.87	20.92
10	50	0		20.99	20.89	20.96
10	1	0	16-QAM	21.18	21.16	20.97
10	1	24		21.18	21.11	21
10	1	49		21.21	21.11	21.03
10	25	0		20.16	20.2	20.19
10	25	12		20.22	20.15	20.15
10	25	24		20.24	20.16	20.17
10	50	0		20.21	20.1	20.13



LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.01	21.88	21.79
15	1	37		22.09	21.96	21.84
15	1	74		21.88	21.84	21.86
15	36	0		20.93	20.87	20.86
15	36	18		20.95	20.83	20.89
15	36	39		20.92	20.84	20.89
15	75	0		20.93	20.87	20.89
15	1	0	16-QAM	21.16	20.99	21.02
15	1	38		21.22	21	21.18
15	1	75		21.07	20.95	21.03
15	36	0		20.14	20.06	20.04
15	36	18		20.2	20.1	20.05
15	36	39		20.16	20.11	20.06
15	75	0		20.15	20.05	20.11
20	1	0	QPSK	21.87	21.82	21.88
20	1	49		21.99	21.92	22.06
20	1	99		21.86	21.89	21.98
20	50	0		20.97	20.91	20.9
20	50	24		21	20.92	20.92
20	50	49		20.94	20.89	20.9
20	100	0		20.92	20.88	20.89
20	1	0	16-QAM	21	20.93	20.84
20	1	49		21.09	21.02	21.05
20	1	99		21.01	20.95	20.93
20	50	0		20.12	20.1	20.11
20	50	24		20.16	20.08	20.14
20	50	49		20.12	20.09	20.11
20	100	0		20.09	20.06	20.05



LTE BAND 5

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.37	22.63	22.26
1.4	1	2		22.39	22.36	22.24
1.4	1	5		22.33	22.35	22.19
1.4	3	0		22.41	22.39	22.51
1.4	3	1		22.41	22.4	22.37
1.4	3	2		22.43	22.37	22.35
1.4	6	0		21.31	21.34	21.18
1.4	1	0	16-QAM	21.18	21.36	21.48
1.4	1	2		21.2	21.4	21.44
1.4	1	5		21.18	21.36	21.40
1.4	3	0		21.32	21.41	21.44
1.4	3	1		21.32	21.4	21.46
1.4	3	2		21.4	21.33	21.45
1.4	6	0		20.33	20.4	20.15
3	1	0	QPSK	22.87	22.92	22.95
3	1	7		22.96	23	23.02
3	1	14		22.92	23	23
3	8	0		21.91	21.96	21.94
3	8	4		21.92	22	21.9
3	8	7		21.96	21.98	21.87
3	15	0		21.97	22.01	21.9
3	1	0	16-QAM	21.98	22.21	22.06
3	1	7		22.04	22.24	21.48
3	1	14		22.04	22.23	21.5
3	8	0		21.03	20.94	20.21
3	8	4		20.98	20.95	20.24
3	8	7		21.04	20.93	20.15
3	15	0		20.88	21.06	20.02



LTE BAND 5

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.83	22.42	22.51
5	1	12		22.85	22.49	22.43
5	1	24		22.87	22.43	22.41
5	12	0		21.94	21.27	21.14
5	12	6		21.94	21.25	21.12
5	12	11		21.68	21.26	20.93
5	25	0		21.38	21.25	21.1
5	1	0	16-QAM	21.29	21.46	21.54
5	1	12		21.25	21.45	21.54
5	1	24		21.15	21.44	21.56
5	12	0		20.23	20.3	20.07
5	12	6		20.27	20.28	20.05
5	12	11		20.24	20.21	19.88
5	25	0		20.12	20.22	20.08
10	1	0	QPSK	22.81	22.43	22.27
10	1	24		22.85	22.46	22.29
10	1	49		22.89	22.44	22.26
10	25	0		21.91	21.19	21.7
10	25	12		21.98	21.17	21.68
10	25	24		22.02	21.15	21.48
10	50	0		21.99	21.17	21.67
10	1	0	16-QAM	21.36	21.39	21.52
10	1	24		21.23	21.47	21.3
10	1	49		21.28	21.48	21.27
10	25	0		19.97	20.2	20.59
10	25	12		20.09	20.16	20.72
10	25	24		20.16	20.14	20.49
10	50	0		20.14	20.06	20.7



LTE BAND 7

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.56	23	22.47
5	1	12		22.53	23.04	22.47
5	1	24		22.56	23.01	22.44
5	12	0		21.54	21.86	21.52
5	12	6		21.54	21.86	21.54
5	12	11		21.48	21.86	21.57
5	25	0		21.49	21.86	21.53
5	1	0	16-QAM	21.77	22.16	21.6
5	1	12		21.8	22.21	21.69
5	1	24		21.84	22.17	21.56
5	12	0		20.67	20.83	20.61
5	12	6		20.63	20.83	20.64
5	12	11		20.59	20.89	20.65
5	25	0		20.58	20.92	20.54
10	1	0	QPSK	22.29	22.92	22.67
10	1	24		22.42	22.97	22.63
10	1	49		22.32	22.99	22.52
10	25	0		21.59	21.83	21.6
10	25	12		21.52	21.94	21.64
10	25	24		21.45	21.94	21.68
10	50	0		21.57	21.93	21.67
10	1	0	16-QAM	21.5	22.11	21.72
10	1	24		21.6	22.14	21.73
10	1	49		21.52	22.15	21.62
10	25	0		20.64	20.88	20.64
10	25	12		20.57	20.98	20.66
10	25	24		20.52	21.04	20.7
10	50	0		20.6	20.92	20.71



LTE BAND 7

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.33	22.92	22.74
15	1	37		22.41	23.01	22.7
15	1	74		22.35	22.92	22.52
15	36	0		21.51	21.78	21.65
15	36	18		21.51	21.89	21.66
15	36	39		21.45	21.9	21.65
15	75	0		21.48	21.86	21.66
15	1	0	16-QAM	21.61	22.07	21.76
15	1	37		21.76	22.12	21.73
15	1	74		21.61	22.06	21.58
15	36	0		20.54	20.78	20.71
15	36	18		20.51	20.91	20.69
15	36	39		20.46	20.89	20.71
15	75	0		20.6	20.83	20.67
20	1	0	QPSK	22.25	23.07	22.77
20	1	49		22.33	22.89	22.83
20	1	99		22.36	22.82	22.61
20	50	0		21.73	21.76	21.8
20	50	24		21.56	21.96	21.79
20	50	49		21.51	21.93	21.86
20	100	0		21.63	21.87	21.83
20	1	0	16-QAM	21.35	21.8	21.75
20	1	49		21.4	21.99	21.83
20	1	99		21.45	21.9	21.6
20	50	0		20.71	20.77	20.81
20	50	24		20.57	20.96	20.82
20	50	49		20.51	20.94	20.86
20	100	0		20.64	20.85	20.83



LTE BAND 12

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	23.41	23.37	23.34
1.4	1	2		23.49	23.4	23.38
1.4	1	5		23.44	23.34	23.34
1.4	3	0		23.53	23.4	23.5
1.4	3	1		23.54	23.38	23.55
1.4	3	2		23.49	23.4	23.61
1.4	6	0		22.45	22.43	22.39
1.4	1	0	16-QAM	22.33	22.51	22.57
1.4	1	2		22.41	22.51	22.59
1.4	1	5		22.34	22.47	22.61
1.4	3	0		22.51	22.49	22.63
1.4	3	1		22.53	22.5	22.64
1.4	3	2		22.5	22.45	22.65
1.4	6	0		21.59	21.55	21.45
3	1	0	QPSK	23.52	23.35	23.33
3	1	7		23.51	23.42	23.4
3	1	14		23.48	23.32	23.33
3	8	0		22.43	22.32	22.46
3	8	4		22.44	22.32	22.38
3	8	7		22.39	22.38	22.37
3	15	0		22.42	22.38	22.44
3	1	0	16-QAM	22.65	22.42	22.57
3	1	7		22.68	22.48	22.58
3	1	14		22.63	22.49	22.52
3	8	0		21.44	21.4	21.35
3	8	4		21.43	21.41	21.32
3	8	7		21.39	21.47	21.32
3	15	0		21.32	21.26	21.5



LTE BAND 12

LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	23.54	23.31	23.42
5	1	12		23.56	23.34	23.47
5	1	24		23.54	23.32	23.47
5	12	0		22.44	22.36	22.5
5	12	6		22.38	22.4	22.43
5	12	11		22.28	22.48	22.3
5	25	0		22.42	22.4	22.38
5	1	0	16-QAM	22.72	22.43	22.49
5	1	12		22.81	22.52	22.59
5	1	24		22.71	22.35	22.7
5	12	0		21.43	21.41	21.56
5	12	6		21.39	21.45	21.43
5	12	11		21.28	21.57	21.37
5	25	0		21.45	21.39	21.36
10	1	0	QPSK	23.46	23.3	23.39
10	1	24		23.44	23.33	23.64
10	1	49		23.4	23.28	23.5
10	25	0		22.55	22.31	22.22
10	25	12		22.43	22.36	22.37
10	25	24		22.55	22.43	22.17
10	50	0		22.59	22.44	22.26
10	1	0	16-QAM	22.51	22.48	22.54
10	1	24		22.5	22.51	22.59
10	1	49		22.48	22.49	22.66
10	25	0		21.57	21.29	21.29
10	25	12		21.46	21.39	21.42
10	25	24		21.56	21.47	21.23
10	50	0		21.6	21.44	21.2



SA

SA N5 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	Tune up
5	1	1	DFT_BPSK	23.94	24.08	23.7	23.5±1dBm
5	25	0	DFT_QPSK	23.09	23.14	22.7	22.5±1dBm
5	12	6		24.13	24.14	23.99	23.5±1dBm
5	1	1		24.05	24.1	23.96	23.5±1dBm
5	1	23		24.13	24.06	24.09	23.5±1dBm
5	1	1	DFT_QAM16	23.17	23.18	23.13	22.5±1dBm
5	1	1	DFT_QAM64	21.87	21.84	21.45	21±1dBm
5	1	1	DFT_QAM256	19.64	19.52	19.19	19±1dBm
5	1	1	CP_QPSK	22.44	22.55	22.36	22±1dBm
10	1	1	DFT_BPSK	23.61	23.57	23.53	23±1dBm
10	50	0	DFT_QPSK	22.73	22.64	22.67	22±1dBm
10	25	12		23.8	23.8	23.8	23±1dBm
10	1	1		23.75	23.6	23.61	23±1dBm
10	1	50		23.59	23.71	23.79	23±1dBm
10	1	1	DFT_QAM16	22.67	22.88	22.72	22±1dBm
10	1	1	DFT_QAM64	21.14	21.17	21.49	20.5±1dBm
10	1	1	DFT_QAM256	18.96	18.91	18.93	19±1dBm
10	1	1	CP_QPSK	22.11	21.83	22.07	21.5±1dBm
15	1	1	DFT_BPSK	23.65	23.57	23.58	23±1dBm
15	75	0	DFT_QPSK	22.98	22.75	22.9	22±1dBm
15	36	18		23.79	23.82	23.91	23±1dBm
15	1	1		23.65	23.62	23.78	23±1dBm
15	1	77		23.82	23.62	23.78	23±1dBm
15	1	1	DFT_QAM16	22.96	22.63	22.73	22±1dBm
15	1	1	DFT_QAM64	21.27	21.21	21.37	20.5±1dBm
15	1	1	DFT_QAM256	18.93	19.02	19.1	18.5±1dBm
15	1	1	CP_QPSK	22.14	21.94	22.2	21.5±1dBm
20	1	1	DFT_BPSK	23.55	23.59	23.54	23±1dBm
20	100	0	DFT_QPSK	22.66	22.62	22.8	22±1dBm
20	50	25		23.82	23.79	23.92	23±1dBm
20	1	1		23.66	23.59	23.68	23±1dBm
20	1	104		23.73	23.6	23.76	23±1dBm
20	1	1	DFT_QAM16	22.67	22.62	22.62	22±1dBm
20	1	1	DFT_QAM64	21.37	21.41	21.17	20.5±1dBm
20	1	1	DFT_QAM256	19.11	19.02	18.85	18.5±1dBm
20	1	1	CP_QPSK	22.12	22.01	21.93	21.5±1dBm



NSA

Radiated Power (EIRP) for DC_5A_n78A / SCS 30KHz(3450-3550MHz)							
Bnad	BW (MHz)	UL Channel	RB Size	RB offset	Modulation	Conduction AVG Power(dBm)	Tune up
Bnad5	5	Lowest	1	Low	QPSK	25.94	25±1dBm
n78	10	Lowest	1	0	DFT QPSK	24.11	23.5±1dBm
sum	/	/	/	/	/	28.13	27.5±1dBm
Bnad5	5	Middle	8	Low	QPSK	26	25.5±1dBm
n78	10	Middle	12	6	DFT QPSK	23.71	23±1dBm
sum	/	/	/	/	/	28.01	27.8±1dBm
Bnad5	5	Middle	8	Low	QPSK	25.97	25±1dBm
n78	10	Middle	12	6	DFT QPSK	23.77	23±1dBm
sum	/	/	/	/	/	28.01	27.5±1dBm
Bnad5	5	Highest	1	High	QPSK	26.06	25.5±1dBm
n78	10	Highest	1	22	DFT QPSK	23.93	23±1dBm
sum	/	/	/	/	/	28.13	27.5±1dBm
Bnad5	5	Highest	8	High	QPSK	25.83	25±1dBm
n78	10	Highest	12	6	DFT QPSK	23.94	23±1dBm
sum	/	/	/	/	/	27.99	27±1dBm
Bnad5	5	Highest	1	High	QPSK	26.02	25.5±1dBm
n78	10	Highest	1	22	DFT QPSK	23.94	23±1dBm
sum	/	/	/	/	/	28.11	27.5±1dBm
Bnad5	5	Highest	8	High	QPSK	25.85	25±1dBm
n78	10	Highest	12	6	DFT QPSK	23.96	23±1dBm
sum	/	/	/	/	/	28.01	27.5±1dBm
Bnad5	5	Lowest	1	Low	QPSK	26.03	25.5±1dBm
n78	10	Lowest	1	0	DFT QPSK	23.01	22.5±1dBm
sum	/	/	/	/	/	27.78	27±1dBm
Bnad5	5	Middle	18	Low	QPSK	25.98	25±1dBm
n78	10	Highest	135	67	DFT QPSK	22.77	22±1dBm
sum	/	/	/	/	/	27.67	27±1dBm
Bnad5	5	Middle	18	Low	QPSK	25.93	25±1dBm
n78	10	Highest	135	67	DFT QPSK	23.78	23±1dBm
sum	/	/	/	/	/	27.99	27±1dBm
Bnad5	5	Highest	1	High	QPSK	26.01	25.5±1dBm
n78	10	Highest	1	272	DFT QPSK	22.7	22±1dBm
sum	/	/	/	/	/	27.67	27±1dBm
Bnad5	5	Highest	18	High	QPSK	25.87	25±1dBm
n78	10	Highest	135	67	DFT QPSK	23.83	23±1dBm
sum	/	/	/	/	/	27.97	27±1dBm



Radiated Power (EIRP) for DC_5A_n78A / SCS 30KHz(3700-3800MHz)							
Bnad	BW (MHz)	UL Channel	RB Size	RB offset	Modulation	Conduction AVG Power(dBm)	Tune up
Bnad5	5	Lowest	1	Low	QPSK	26.02	25±1dBm
n78	10	Lowest	1	0	DFT_BPSK	24.53	24±1dBm
sum	/	/	/	/	/	28.34	27.5±1dBm
Bnad5	5	Middle	8	Low	QPSK	25.98	25±1dBm
n78	10	Middle	12	6	DFT_BPSK	24.71	24±1dBm
sum	/	/	/	/	/	28.4	27.5±1dBm
Bnad5	5	Middle	8	Low	QPSK	25.98	25±1dBm
n78	10	Middle	12	6	DFT_QPSK	24.72	24±1dBm
sum	/	/	/	/	/	28.4	27.5±1dBm
Bnad5	5	Highest	1	High	QPSK	26.01	25.5±1dBm
n78	10	Highest	1	22	DFT_BPSK	24.53	24±1dBm
sum	/	/	/	/	/	28.34	27.5±1dBm
Bnad5	5	Highest	8	High	QPSK	25.8	25±1dBm
n78	10	Highest	12	6	DFT_BPSK	24.66	24±1dBm
sum	/	/	/	/	/	28.27	27.5±1dBm
Bnad5	5	Highest	1	High	QPSK	26	25.5±1dBm
n78	10	Highest	1	22	DFT_QPSK	24.48	23.5±1dBm
sum	/	/	/	/	/	28.31	27.5±1dBm
Bnad5	5	Highest	8	High	QPSK	25.86	25±1dBm
n78	10	Highest	12	6	DFT_QPSK	24.65	24±1dBm
sum	/	/	/	/	/	28.3	27.5±1dBm
Bnad5	5	Lowest	1	Low	QPSK	26.02	25.5±1dBm
n78	10	Middle	1	0	DFT_BPSK	23.44	22.5±1dBm
sum	/	/	/	/	/	27.92	27±1dBm

11. EUT and Test Setup Photo

11.1 EUT Photo

Front side



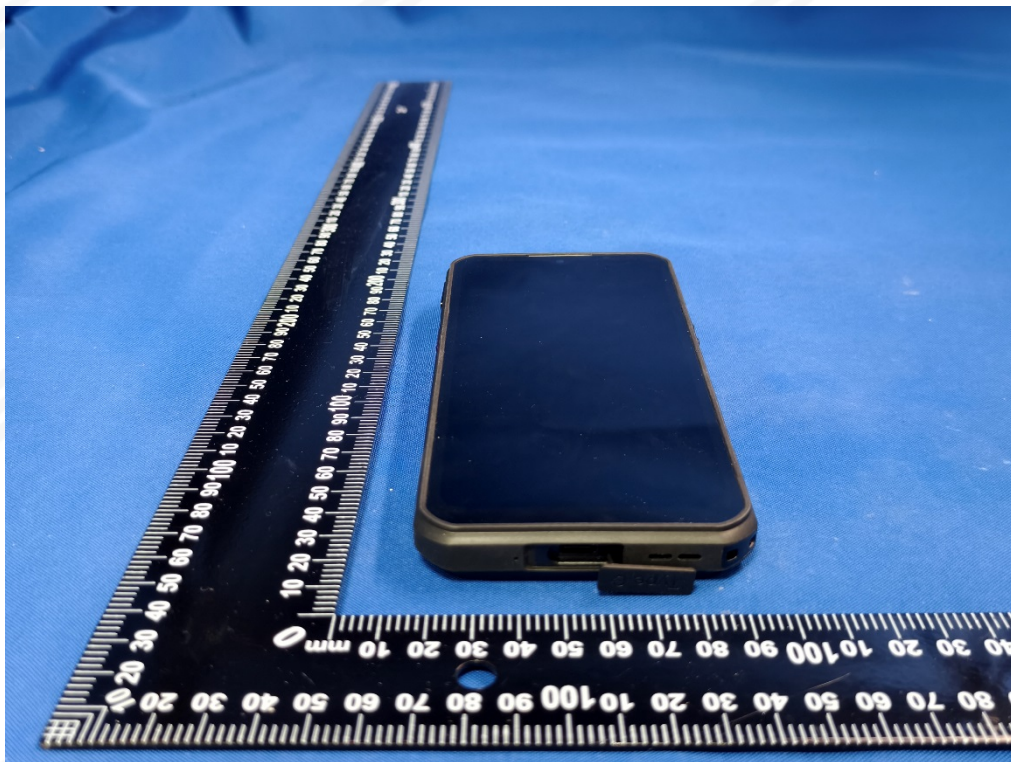
Back side



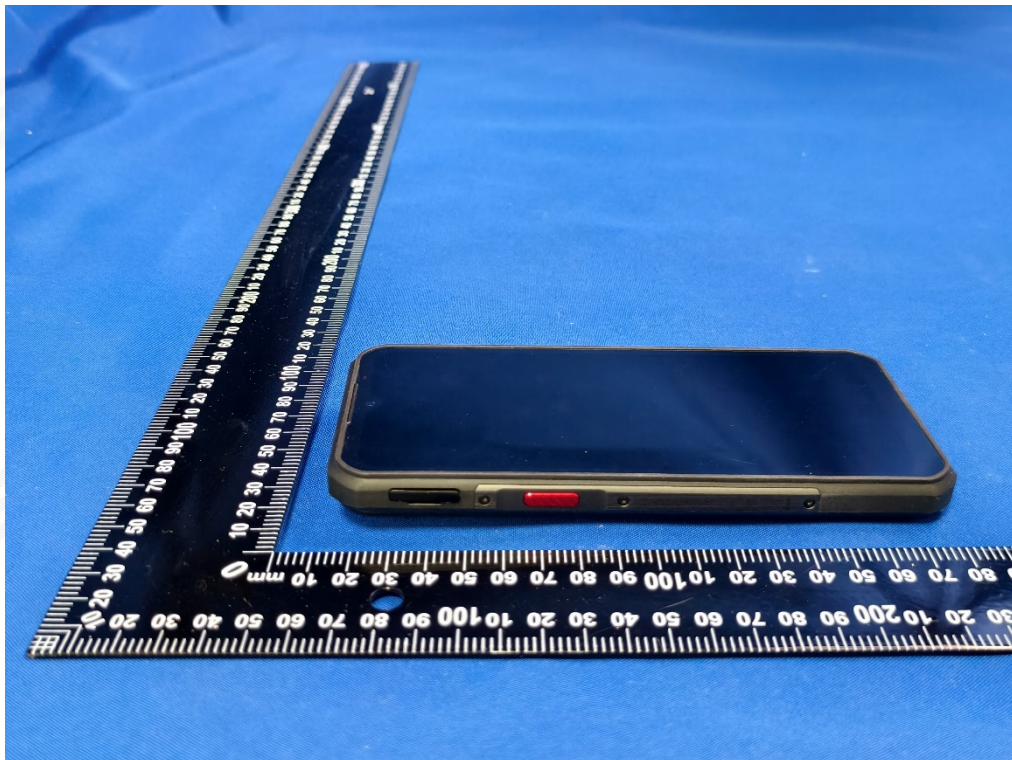
Top side



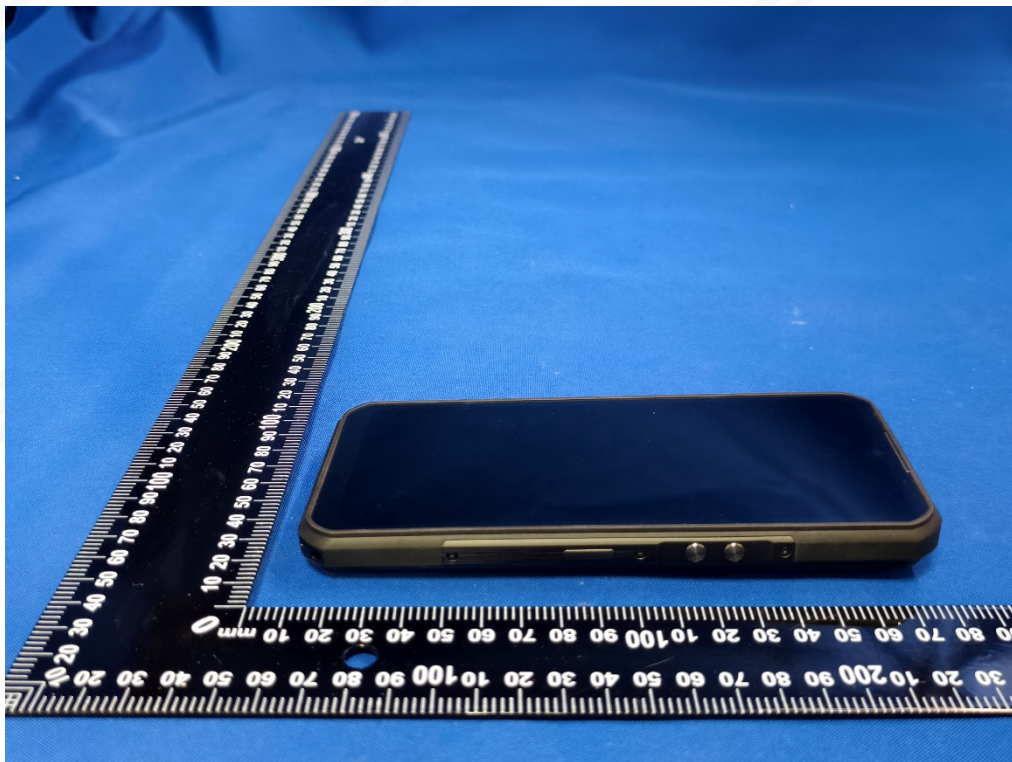
Bottom side



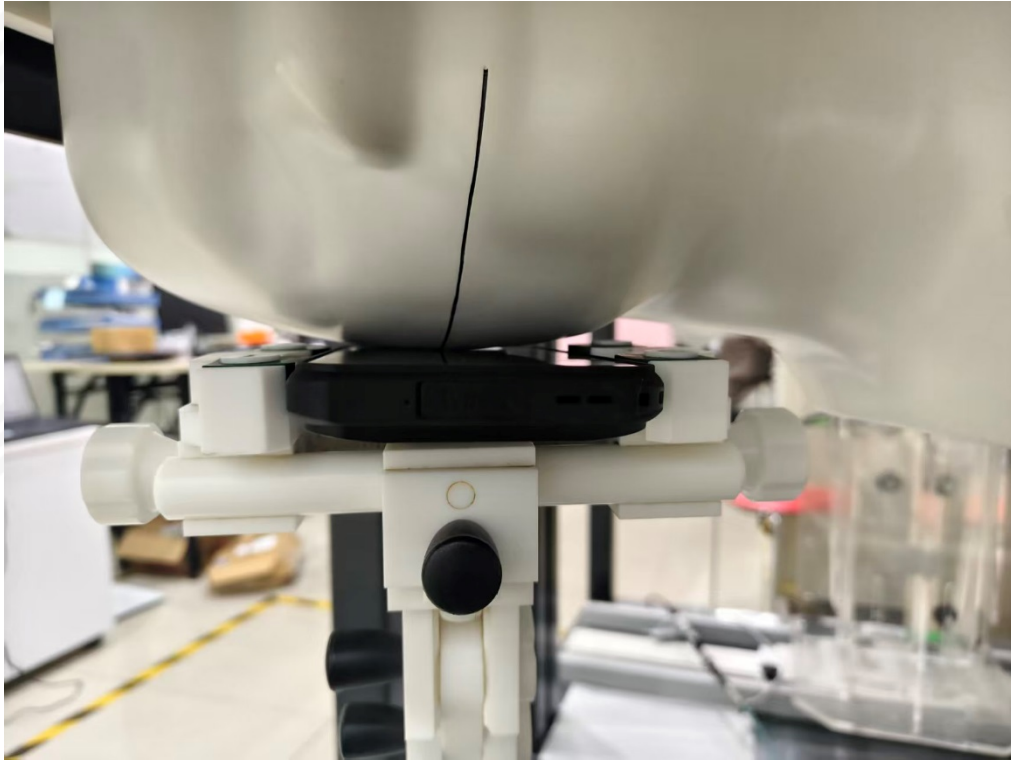
Left side



Right side



Right Touch



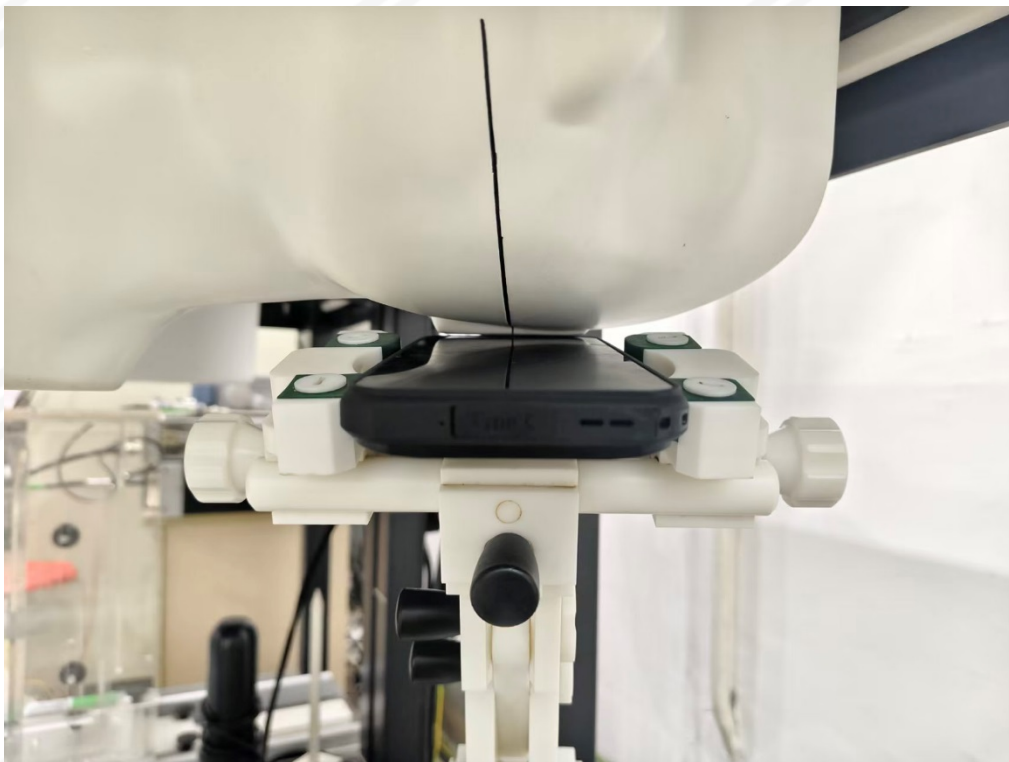
Right Tilt



Left Touch



Left Tilt



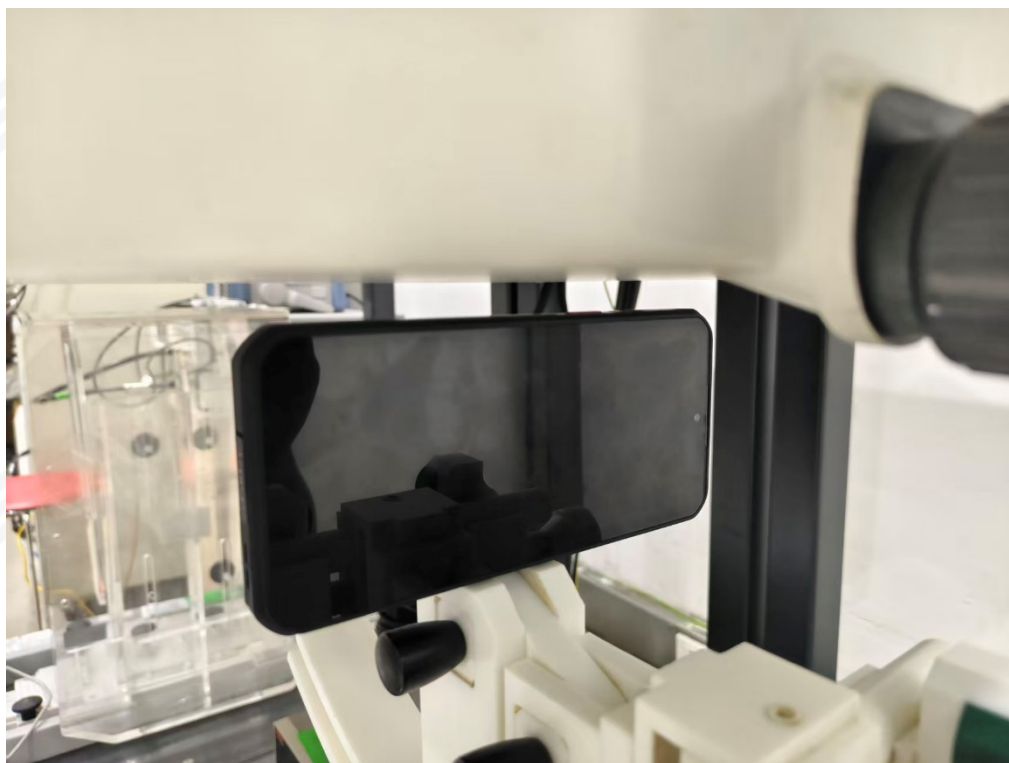
Body Front side(separation distance is 10mm)



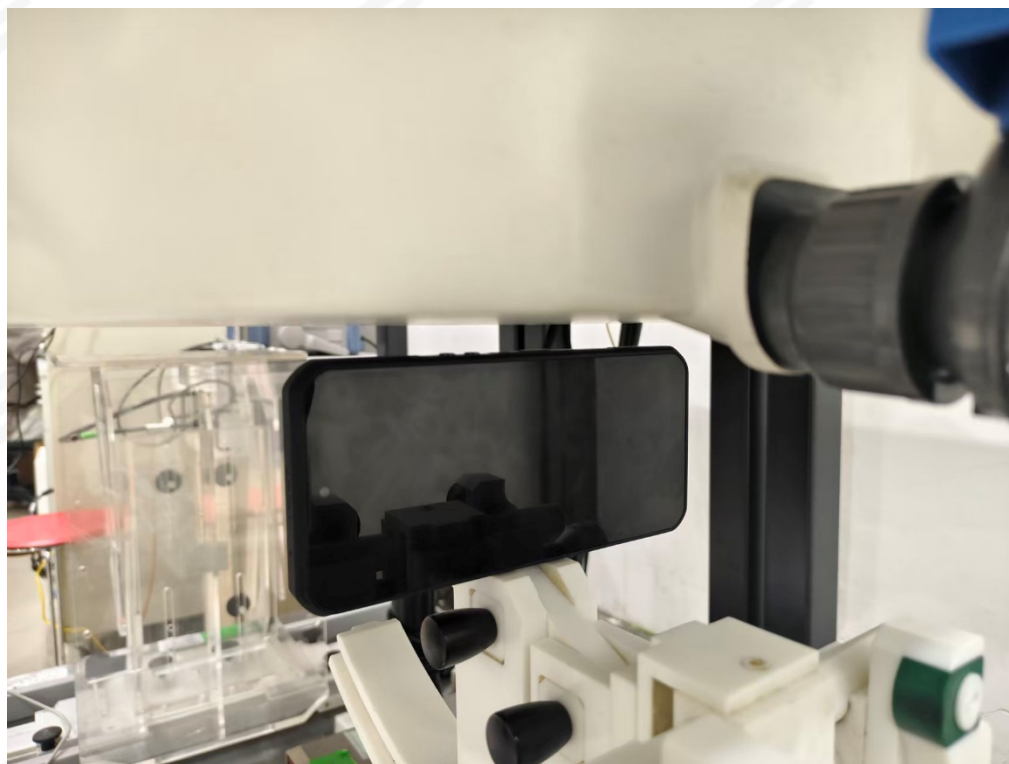
Body Back side(separation distance is 10mm)



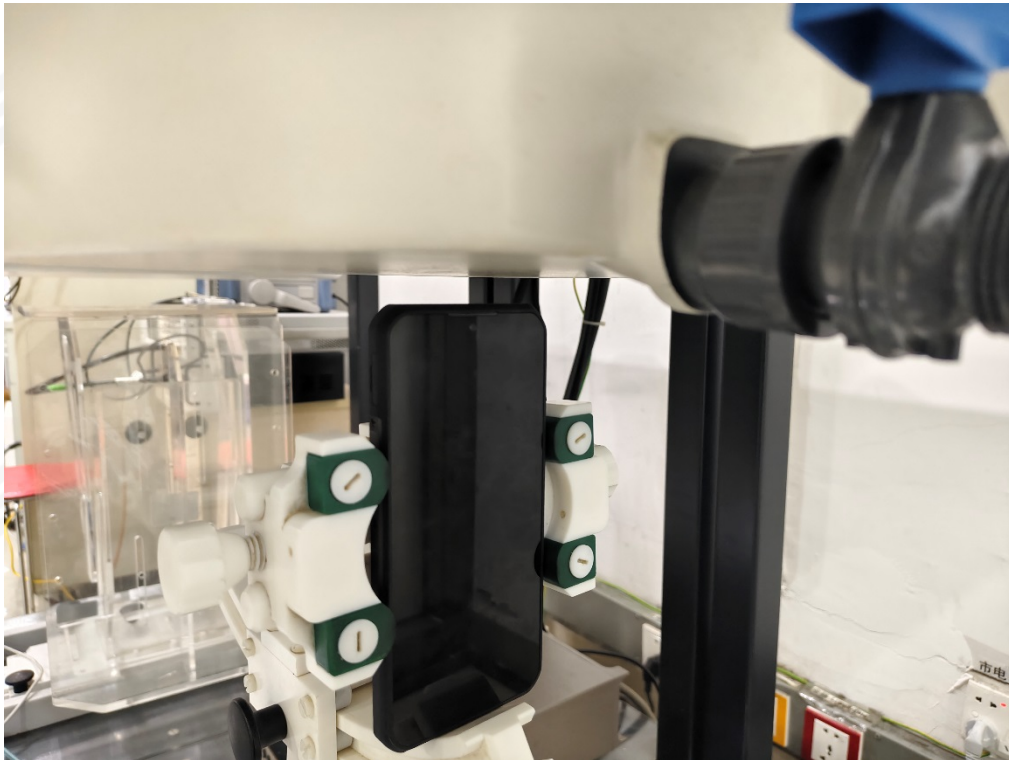
Body Left side(separation distance is 10mm)



Body Right side(separation distance is 10mm)



Body Bottom side(separation distance is 10mm)



Body Top side(separation distance is 10mm)

