TEST REPORT

Report No.:	BCTC2407320629E
Applicant:	Shenzhen Feiyufei Digital Technology Co., Ltd
Product Name:	Tablet
Test Model:	NET S
Tested Date:	2024-06-21 to 2024-07-02
Issued Date:	2024-07-12

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2BCOA-NETS

Product Name:	Tablet
Trademark:	Krono
Model/Type Ref.:	NET S
Applicant:	Shenzhen Feiyufei Digital Technology Co., Ltd
Address:	3A18, Building A2, Fuhai Technology Industrial Park, Fuyong Community, Baoan, Shenzhen, Guangdong, China.
Manufacturer:	Shenzhen Feiyufei Digital Technology Co., Ltd
Address:	3A18, Building A2, Fuhai Technology Industrial Park, Fuyong Community, Baoan, Shenzhen, Guangdong, China.
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2024-06-21
Sample tested Date:	2024-06-21 to 2024-07-02
Issue Date:	2024-07-12
SAR Max. Values is:	1.186 W/kg (1g) for Body
Test Standards:	IEEE Std C95.1, 2019 IEEE Std 1528™-2013 FCC Part 2.1093
Test Results:	PASS
Remark:	This is SAR test report

Tested by:

Min Zhi Cheng/ Project Handler

Approved by:

Zero Zhou/Reviewer

Table Of Content

(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2407320629E	2024-07-12	Original	Valid

2. Test Standards

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.
FCC Part 2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices
KDB 447498 D01 General RF Exposure Guidance v06: Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04: SAR Measurement Requirements for 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting v01r02: RF Exposure Compliance Reporting and Documentation Considerations
KDB 248227 D01 802.11 Wi-Fi SAR v02r02: SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS
KDB 941225 D01 3G SAR Procedures: 3G SAR MEAUREMENT PROCEDURES
KDB 941225 D05 SAR for LTE Devices: SAR EVALUATION CONSIDERATIONS FOR LTE DEVICES
KDB 941225 D06 Hotspot Mode v02r01: SAR EVALUATION PROCEDURES FOR PORTABLE DEVICES WITH WIRELESS ROUTER CAPABILITIES
KDB 648474 D04 Handset SAR v01r03: SAR EVALUATION CONSIDERATIONS FOR WIRELESS HANDSETS
KDB 648474 D04 Handset SAR v01r03: SAR EVALUATION CONSIDERATIONS FOR WIRELESS HANDSETS

3. Test Summary

The maximum results of Specific Absorption Rate (SAR) have found during testing are as follows:

Frequency Band	Report SAR_{1g} (W/kg)	SAR_{1g} Limit (W/kg)
	Body (0mm Gap)	
Bluetooth	0.084	1.6
WIFI	0.311	1.6
GSM	0.805	1.6
WCDMA	0.934	1.6
LTE	1.165	1.6
Simultaneous Transmission	1.476	1.6

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-2019, and had been tested in accordance with the measurement methods and procedure specified in IEEE 1528-2013.

4. SAR Limits

FCC Limit (1g Tissue)

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average(averaged over the whole body)	0.08	0.4
Spatial Peak(averaged over any 1 g of tissue)	1.6	8.0
Spatial Peak(hands/wrists/ feet/anklesaveraged over 10 g)	4.0	20.0

Population/Uncontrolled Environments are defined as locations where there is the exposure of individual 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).

5. Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is <3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k=2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

Therefore, the measurement uncertainty is not required.

6. Product Information and Test Setup

6.1 Product Information

Model/Type reference:	NET S
Model differences:	N/A
Hardware Version:	N/A
Software Version:	N/A
Adapter:	Input: AC100-240V,50/60HZ,0.3A Output :DC 5V/2A
Battery:	DC 3.8V, 6000mAh

Bluetooth

Operation Frequency:	2402-2480MHz
Type of Modulation:	GFSK, π/ 4 DQPSK, 8DPSK
Number Of Channel	79CH
Antenna installation:	Internal antenna
Antenna Gain:	2 dBi Remark: ☒ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☐ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.

BLE

Operation Frequency:	2402-2480MHz
Type of Modulation:	GFSK
Number Of Channel	40CH
Antenna installation:	Internal antenna
Antenna Gain:	2 dBi Remark: ☒ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☐ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.

WIFI 2.4G

Operation Frequency:	802.11b/g/n20MHz:2412~2462 MHz 802.11n40MHz:2422~2452 MHz
Bit Rate of Transmitter	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n Up to 150Mbps
Type of Modulation:	OFDM/DSSS
Number Of Channel	802.11b/g/n20MHz:11 CH 802.11n40MHz: 7 CH
Antenna installation:	Internal antenna
Antenna Gain:	2 dBi Remark: ☒ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☐ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.

2G, 3G

Operation Frequency:	GSM/GPRS/EGPRS 850: TX: 824~849MHz; RX: 869~894MHz; GSM/GPRS/EGPRS 1900: TX:1850~1910MHz; RX:1930~1990MHz; WCDMA Band II: TX: 1852.40~1907.60MHz; Rx: 1932.60~1987.40MHz; WCDMA Band V: TX: 826.40~846.60MHz; RX: 871.40~ 891.60MHz;
GPRS Class:	Class 12
Max RF Output Power:	GSM/ GPRS/ EGPRS 850:32.29 dBm, GSM/ GPRS/ EGPRS 1900: 30.65dBm WCDMA Band II: 22.55dBm WCDMA Band V: 22.55dBm
Type of Modulation:	GSM with GMSK Modulation WCDMA Mode with BPSK Modulation HSDPA Mode with QPSK, 16QAM Modulation HSUPA Mode with QPSK, 16QAM Modulation
Type of Emission:	GSM/GPRS 850: 248KGXW GSM/GPRS 1900: 246KGXW WCDMA Band II: 4M22F9W WCDMA Band V: 4M17F9W
Antenna installation:	Internal antenna
Antenna Gain:	GSM850: -3.06dBi GSM1900: -0.14dBi WCDMA Band II: -0.14dBi WCDMA Band V: -2.91dBi Remark: ☒ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☐ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.

4G

Tx Frequency:	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 7: 2500MHz-2570MH
Rx Frequency:	LTE Band 2: 1930 MHz ~ 1990 MHz LTE Band 4: 2110 MHz ~ 2155 MHz LTE Band 7: 2620MHz-2690MHz
Bandwidth:	LTE Band 2: 1.4MHz /3MHz /5MHz /10MHz /15MHz /20MHz LTE Band 4: 1.4MHz /3MHz /5MHz /10MHz /15MHz /20MHz LTE Band 7: 5MHz /10MHz /15MHz /20MHz
The Max RF Output Power (EIRP/ERP)	LTE Band 2: 23.20dBm LTE Band 4: 24.72dBm LTE Band 7: 22.56dBm
99% Occupied Bandwidth:	LTE Band 2: 18M0G7D LTE Band 4: 18M0G7D LTE Band 7: 18M0W7D
Type of Modulation:	QPSK/16QAM
Antenna Type:	Internal Antenna
Antenna Gain:	LTE Band 2: -0.14dBi LTE Band 4: 1.18dBi LTE Band 7: 0.82dBi Remark: ☒ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☐ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.

6.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

6.3 Support Equipment

Cable of Product

No.	Cable Type	Quantity	Provider	Length (m)	Shielded	Note
1	--	--	Applicant	---	Yes/No	--
2	--	--	BCTC	--	Yes/No	--

No.	Device Type	Brand	Model	Series No.	Note
1.	---	---	---	---	---
2.	--	--	--	--	--

Notes:
1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

6.4 Test Environment

1. Normal Test Conditions:

Humidity(%):	35-75
Atmospheric Pressure(kPa):	95-105
Temperature(℃):	18-25

2. Extreme Test Conditions:
N/A

7. Test Facility and Test Instrument Used

7.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850
A2LA certificate registration number is: CN1212
ISED Registered No.: 23583
ISED CAB identifier: CN0017

7.2 Test Instrument Used

Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
PC	DELL	\	\	N/A	N/A
SAR Measurement system	SATIMO	\	\	N/A	N/A
Signal Generator	Keysight	83711B	US37100131	Aug. 29, 2023	Aug. 28, 2024
Multimeter	Keithley	1160271	\	Nov. 10, 2023	Nov 09, 2024
S-parameter Network Analyzer	R&S	ZVB 8	101353	Dec. 07, 2023	Dec. 06, 2024
Wideband Radio Communication Tester	R&S	CMW500	\	Nov. 10, 2023	Nov 09, 2024
E SAR PROBE 6GHz	MVG	SSE2	2623-EPGO-420	July 18, 2023	July 17, 2024
DIPOLE 835	SATIMO	SID835	SN 47/21 DIP 0G835-621	Nov. 25, 2021	Nov. 24, 2024
DIPOLE 1800	SATIMO	SID1800	SN 47/21 DIP 1G800-623	Nov. 25, 2021	Nov. 24, 2024
DIPOLE 1900	SATIMO	SID1900	SN 47/21 DIP 1G900-624	Nov. 25, 2021	Nov. 24, 2024
DIPOLE 2450	SATIMO	SID2450	SN 47/21 DIP 2G450-627	Nov. 25, 2021	Nov. 24, 2024
DIPOLE 2600	SATIMO	SID2600	SN 47/21 DIP 2G600-628	Nov. 25, 2021	Nov. 24, 2024
COMOSAR OPENCoaxial Probe	SATIMO	\	\	Nov. 18, 2023	Nov. 17, 2024
SAR Locator	SATIMO	\	\	Nov. 18, 2023	Nov. 17, 2024
Communication Antenna	SATIMO	\	\	Nov. 18, 2023	Nov. 17, 2024
FEATURE PHONEPOSITIONING DEVICE	SATIMO	\	\	N/A	N/A

LIMESAR DIELECTRIC PROBE	SATIMO	\	\	N/A	N/A
SAM Phantom	MVG	\	SN 13/09 SAM68	N/A	N/A
Liquid measurement Kit	HP	85033D	3423A08186	N/A	N/A
Power meter	Agilent	E4419	\	May 15, 2024	May 14, 2025
Power meter	Agilent	E4419	\	May 15, 2024	May 14, 2025
Power sensor	Agilent	E9300A	\	May 15, 2024	May 14, 2025
Power sensor	Agilent	E9300A	\	May 15, 2024	May 14, 2025
Directional Coupler	Krytar 158020	131467	\	Nov. 10, 2023	Nov 09, 2024
Thermometer	BTE	\	\	Dec. 02, 2023	Dec. 01, 2024
Broad Band Tissue Simulation Liquid	Schmid	\	\	N/A	N/A

8. Specific Absorption Rate (SAR)

8.1 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 techiques 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.

8.2 SAR Definition

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:

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

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

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

$$\mathbf{SAR} = \mathbf{C}\left(\frac{\boldsymbol{\delta}\mathbf{T}}{\boldsymbol{\delta}\mathbf{t}}\right)$$

Where: C is the specific heat capacity, δ T is the temperature rise and δ t is the exposure duration, or related to the

electrical field in the tissue by

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

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.

9. SAR Measurement System

9.1 The Measurement System

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

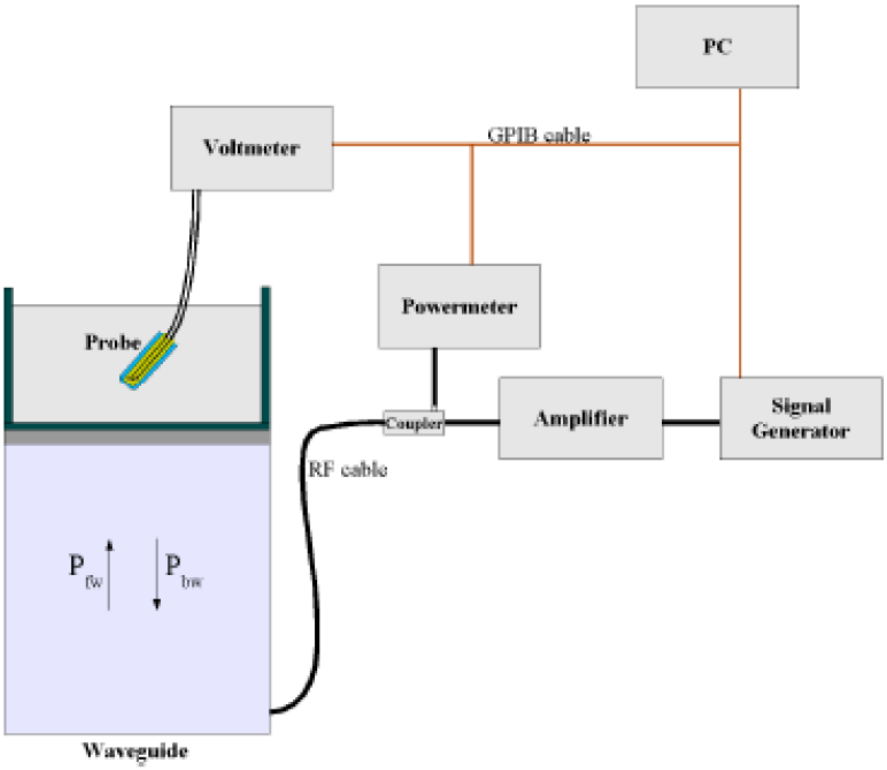
The following figure shows the system.

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 OpenSAR software computes the results to give a SAR value in a 1g or 10g mass.

9.2 Probe

For the measurements the Specific Dosimetric E-Field Probe SN 46/21 EPGO362 with following specifications is used
- Dynamic range: 0.01-100 W/kg
- Tip Diameter: 5 mm
- Distance between probe tip and sensor center: 2.10mm
- Distance between sensor center and the inner phantom surface: 4 mm (repeatability better than +/- 1mm)
- Probe linearity: ＜0.25 dB
- Axial Isotropy: ＜0.25 dB
- Spherical Isotropy: ＜0.50 dB
- Calibration range: 835 to 2500MHz for head & body simulating liquid.

Angle between probe axis (evaluation axis) and surface normal line:1ess than 30°
Probe calibration is realized, in compliance with EN 62209-1 and IEEE 1528 STD, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 62209-1 annex technique using reference guide at the five frequencies.



$$SAR = \frac{4(p_{\int w} - p_{Pbw})}{ab\delta} cos^2 \left(\pi \frac{y}{a}\right) c^{(2\pi/\delta)}$$

Where :
Pfw = Forward Power
Pbw = Backward Power
a and b =Waveguide dimensions
l = Skin depth

Keithley configuration:
Rate = Medium; Filter = ON; RDGS = 10; Filter type = Moving Average; Range auto after each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

The calibration factors, CF(N), for the 3 sensors corresponding to dipole 1, dipole 2 and dipole 3 are:

CF(N)=SAR(N)/Vlin(N) (N=1,2,3)

The linearised output voltage Vlin(N) is obtained from the displayed output voltage V(N) using

Vlin(N)=V(N)*(1+V(N)/DCP(N)) (N=1,2,3)

where DCP is the diode compression point in mV.

9.3 Probe Calibration Process

Dosimetric Assessment Procedure
Each E-Probe/Probe Amplifier combination has unique calibration parameters. SATIMO Probe calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm2) using an with CALISAR, Antenna proprietary calibration system.

Free Space Assessment Procedure
The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and in a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1mW/cm2.

Temperature Assessment Procedure
E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated head tissue. The E-field in the medium correlates with the temperature rise in the dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

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

Where:
Δt = exposure time (30 seconds),
C = heat capacity of tissue (brain or muscle),
ΔT = temperature increase due to RF exposure.

SAR is proportional to $\Delta T/\Delta t$, the initial rate of tissue heating, before thermal diffusion takes place. The electric field in the simulated tissue can be used to estimate SAR by equating the thermally derived SAR to that with the E- field component.

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

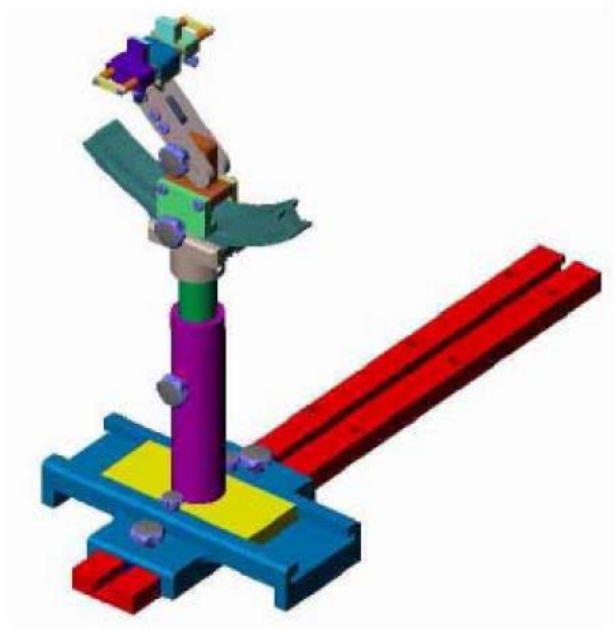
Where:
σ = simulated tissue conductivity,
ρ = Tissue density (1.25 g/cm3 for brain tissue)

9.4 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.

9.5 Device Holder

The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1°.



System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

10. Tissue Simulating Liquids

10.1 Composition of Tissue Simulating Liquid

For the measurement of the field distribution inside the SAM phantom with SMTIMO, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. Please see the following photos for the liquid height.

Liquid Height for Body SAR

The Composition of Tissue Simulating Liquid

Frequency (MHz)	Water (%)	Salt (%)	1,2-Propane diol (%)	HEC (%)	Preventol (%)	DGBE (%)
Head/Body						
835	40.3	1.4	57.9	0.2	0.2	0
900	40.3	1.4	57.9	0.2	0.2	0
1800-2000	55.2	0.3	0	0	0	44.5
2450	55.0	0.1	0	0	0	44.9
2600	54.9	0.1	0	0	0	45.0

Frequency (MHz)	Water (%)	Hexyl Carbitol (%)	Triton X-100 (%)
Head/Body			
5000-6000	65.52	17.24	17.24

10.2 Limit

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 variations 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.

Target Frequency (MHz)	Head	
	Conductivity (σ)	Permittivity (ε_r)
150	0.76	52.3
300	0.87	45.3
450	0.87	43.5
750	0.89	41.9
835	0.90	41.5
900	0.97	41.5
915	0.98	41.5
1450	1.20	40.5
1610	1.29	40.3
1800-2000	1.40	40.0
2450	1.80	39.2
2600	1.96	39.0
3000	2.40	38.5
5200	4.66	36.0
5400	4.86	35.8
5600	5.07	35.5
5800	5.27	35.3

10.3 Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an R&S ZVB 8. Dielectric Probe Kit and an Agilent Network Analyzer.

Calibration Result for Dielectric Parameters of Tissue Simulating Liquid

Frequency (MHz)	Liquid	Target (σ)	Target (ε_r)	Measured (σ)	Measured (ε_r)	Delta (σ)%	Delta (ε_r)%	Limit (%)	Temp. TSL (°C)	Date
835	Head	0.90	41.5	0.913	40.134	1.44	-3.29	±5	23.1	25/6/2024
1800	Head	1.40	40.0	1.448	40.684	3.43	1.71	±5	23.1	25/6/2024
1900	Head	1.40	40.0	1.387	40.272	-0.93	0.68	±5	23.4	26/6/2024
2450	Head	1.80	39.20	1.746	38.889	-3.00	-0.79	±5	22.4	8/7/2024
2600	Head	1.96	39.00	2.025	39.585	3.32	1.50	±5	22.4	8/7/2024

Remark:

1. The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.
2. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

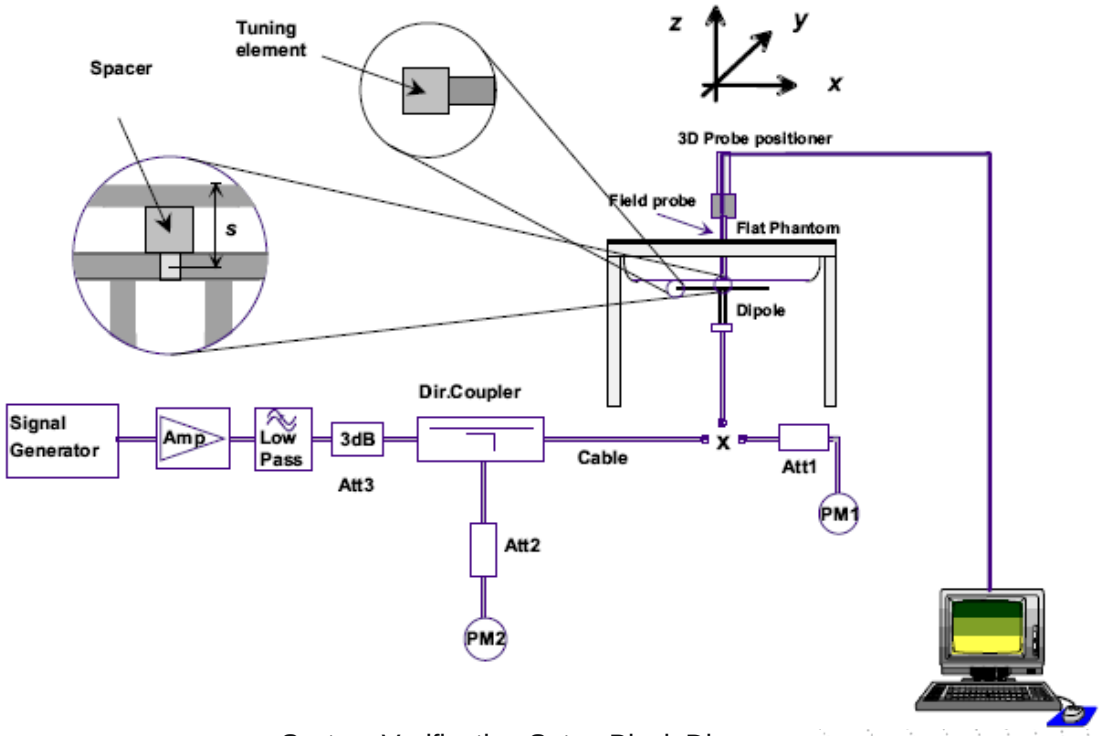
11. System Check

11.1 Purpose of System Performance Check

At the device test frequencies. System check verifies the measurement repeatability of a SAR system before compliance testing and is not a validation of all system specifications. The latter is not required for testing a device but is mandatory before the system is deployed. The system check detects possible short-term drift and unacceptable measurement errors or uncertainties in the system.

11.2 System Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave which comes from a signal generator at frequency 600MHz-6000MHz. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The output power on dipole port must be calibrated to 20 dBm (100 mW) before dipole is connected.



System Verification Setup Block Diagram

Setup Photo of Dipole Antenna

11.3 Validation Results

Comparing to the original SAR value provided by SATIMO, the validation data should be within its specification of 10 %. The following table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion.

Frequency (MHz)	Power	Measured SAR_{1g} (W/Kg)	Normalize to 1 Watt	Drift (%)	1W Target SAR_{1g} (W/Kg)	Difference Percentage (%)	Limit (%)	Liquid Temp	Date
835	250mW	2.529	10.114	0.854	10.01	1.039	±10	23.2	25/6/2024
1800	250mW	10.067	40.267	-3.189	39.74	1.326	±10	23.2	25/6/2024
1900	250mW	10.005	40.019	-1.273	41.26	-3.008	±10	23.1	26/6/2024
2450	250mW	13.955	55.818	3.829	55.16	1.193	±10	22.9	8/7/2024
2600	250mW	14.564	58.256	1.528	56.5	3.108	±10	22.9	8/7/2024

12. EUT Testing Position

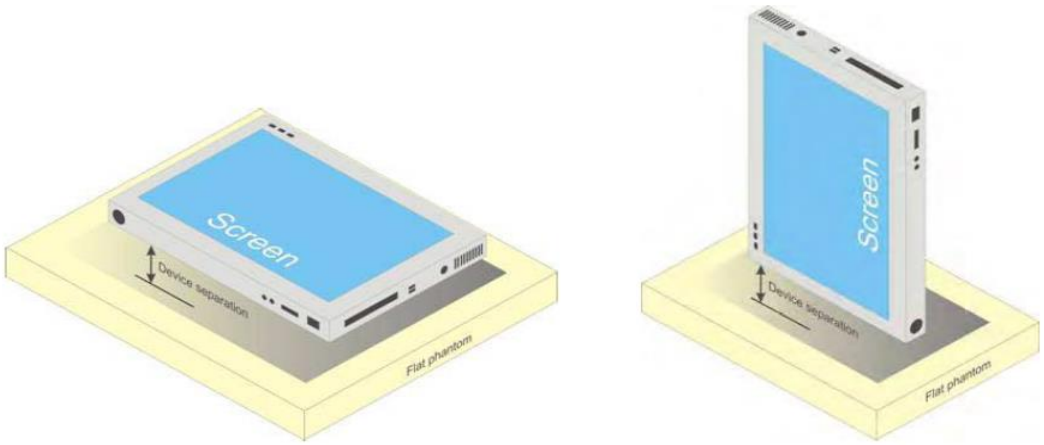
Body Position

A typical example of a body supported device is a wireless enabled laptop device that among other orientations may be supported on the thighs of a sitting user. To represent this orientation, the device shall be positioned with its base against the flat phantom. Other orientations may be specified by the manufacturer in the user instructions. If the intended use is not specified, the device shall be tested directly against the flat phantom in all usable orientations.

The example shows a tablet form factor portable computer for which SAR should be separately assessed with

a). each surface and

b). the separation distances



Tablet form factor portable computer

13. SAR Measurement Procedures

13.1 Measurement Procedures

The measurement procedures are as follows:
(a) Use base station simulator (if applicable) or engineering software to transmit RF power continuously (continuous Tx) in the highest power channel.
(b) Keep EUT to radiate maximum output power or 100% factor (if applicable)
(c) Measure output power through RF cable and power meter.
(d) Place the EUT in the positions as Annex D demonstrates.
(e) Set scan area, grid size and other setting on the SATIMO software.
(f) Measure SAR results for the highest power channel on each testing position.
(g) Find out the largest SAR result on these testing positions of each band
(h) Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:
(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

13.2 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The SATIMO software includes all numerical procedures necessary to evaluate the spatial peak SAR value.
The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.
The entire evaluation of the spatial peak values is performed within the post-processing engine. The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:
(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

13.3 Area & Zoom Scan Procedures

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 measures 5x5x7 points with step size 8, 8 and 5 mm for 300 MHz to 3 GHz, and 8x8x8 points with step size 4, 4 and 2.5 mm for 3 GHz to 6 GHz. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5 mm ± 1 mm</td><td>½·δ·ln(2) mm ± 0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30° ± 1°</td><td>20° ± 1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3 – 4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$ mm</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.
* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

13.4 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing (step-size is 4, 4 and 2.5 mm). When all volume scan were completed, the software can combine and subsequently superpose these measurement data to calculating the multiband SAR.

13.5 SAR Averaged Methods

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimize measurements errors, but the highest local SAR will occur at the surface of the phantom.

An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1mm step.

The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10g and 1 g requires a very fine resolution in the three dimensional scanned data array.

13.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In SATIMO measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

14. SAR Test Result

14.1 Conducted RF Output Power

Bluetooth			
Modulation	Frequency (MHz)	Output Power (dBm)	Tune-up power (dBm)
1-DH5	2402	2.56	3.0
	2441	0.01	
	2480	-1.47	
2-DH5	2402	-1.38	0.0
	2441	-0.58	
	2480	-1.96	
3-DH5	2402	-1.44	0.0
	2441	-0.47	
	2480	-1.90	

BLE			
Mode	Frequency (MHz)	Output Power (dBm)	Tune-up power (dBm)
GFSK BLE 1M	2402	-0.98	2.5
	2440	1.97	
	2480	0.73	

Note:
Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for1-g SAR and ≤ 7.5 for 10-g extremity SAR
f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation
The result is rounded to one decimal place for comparison

Bluetooth Turn up Power (dBm)	Bluetooth Turn up Power (mW)	Separation Distance (mm)	Frequency (GHz)	Result	Exclusion Thresholds
3.0	2.0	5	2.480	0.63	3.0

Per KDB 447498 D01v06, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
According to the calculation results in the table above, Bluetooth SAR does not need to be tested.

WIFI 2.4G			
Mode	Frequency	Maximum Conducted Output Power	Tune-up power
	(MHz)	(dBm)	(dBm)
b	2412	16.24	17.0
	2437	16.32	
	2462	16.40	
g	2412	15.96	16.5
	2437	16.21	
	2462	16.16	
n20	2412	15.92	16.5
	2437	15.34	
	2462	15.54	
n40	2422	15.19	15.5
	2437	14.71	
	2452	14.46	

GSM - Burst Average Power (dBm)								
Band	**GSM850**			**Tune-up**	**GSM1900**			**Tune-up**
Channel	**128**	**190**	**251**		**512**	**661**	**810**	
Frequency (MHz)	**824.2**	**836.6**	**848.8**		**1850.2**	**1880**	**1909.8**	
GSM	32.35	32.27	32.11	33.0	29.77	29.35	28.88	30.0
GPRS Slot -1	32.42	32.34	32.15	33.0	29.92	29.5	29.03	30.5
GPRS Slot -2	31.65	31.56	31.29	32.0	29.51	29.14	28.67	30.0
GPRS Slot -3	29.82	29.67	29.31	30.5	28.21	27.95	27.46	29.0
GPRS Slot -4	28.62	28.52	28.11	29.0	27.17	26.93	26.47	27.5
EGPRS Slot -1	25.11	25.37	24.86	26.0	26.79	26.65	25.95	27.0
EGPRS Slot -2	23.69	24.45	24.14	25.0	24.59	24.79	24.18	25.0
EGPRS Slot -3	21.89	21.99	21.48	22.5	22.64	22.18	22.07	23.0
EGPRS Slot -4	19.57	19.74	18.83	20.0	20.46	20.36	20.11	21.0

GSM - Source-Based Time-Average Power (dBm)						
Band	**GSM850**			**GSM1900**		
Channel	**128**	**190**	**251**	**512**	**661**	**810**
Frequency (MHz)	**824.2**	**836.6**	**848.8**	**1850.2**	**1880**	**1909.8**
GSM	23.35	23.27	23.11	20.77	20.35	19.88
GPRS Slot -1	23.42	23.34	23.15	20.92	20.50	20.03
GPRS Slot -2	**25.65**	25.56	25.29	23.51	23.14	22.67
GPRS Slot -3	25.57	25.42	25.06	23.96	23.70	23.21
GPRS Slot -4	25.62	25.52	25.11	**24.17**	23.93	23.47
EGPRS Slot -1	16.11	16.37	15.86	17.79	17.65	16.95
EGPRS Slot -2	17.69	18.45	18.14	18.59	18.79	18.18
EGPRS Slot -3	17.64	17.74	17.23	18.39	17.93	17.82
EGPRS Slot -4	16.57	16.74	15.83	17.46	17.36	17.11

Notes:

1. Division Factors
   To average the power, the division factor is as follows:
   1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.00dB
   2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.00dB
   3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB
   4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.00dB
2. According to the conducted power as above, the GPRS measurements are performed with 2Txslot for GPRS850 and 4Txslot GPRS1900.
3. Per KDB 941225 D01, SAR is not required for EDGE mode because the maximum output power and tune-up limit is ≤ 1/4dB higher than GPRS/EDGE or the adjusted SAR of the highest reported SAR of GPRS/EDGE is ≤ 1.2W/kg.

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Band	WCDMA Band II				WCDMA Band V			
Channel	9262	9400	9538	Tune-up	4132	4182	4233	Tune-up
Frequency (MHz)	1852.4	1880.0	1907.6		826.4	836.4	846.6	
RMC 12.2K	23.42	22.98	22.59	24.0	23.66	23.71	23.69	24.0
HSDPA Subtest-1	22.39	22.00	21.61	23.0	22.69	22.77	22.77	23.0
HSDPA Subtest-2	21.97	21.45	21.25		22.33	22.30	22.27	
HSDPA Subtest-3	21.03	20.56	20.27		21.29	21.10	21.35	
HSDPA Subtest-4	20.99	20.69	19.81		20.35	20.01	20.25	
HSUPA Subtest-1	22.95	22.81	22.46	23.5	21.60	22.58	22.61	23.0
HSUPA Subtest-2	22.26	22.93	22.53		22.60	22.59	22.67	
HSUPA Subtest-3	21.59	21.71	21.28		21.81	21.42	21.53	
HSUPA Subtest-4	20.36	20.00	20.61		22.74	22.78	22.78	
HSUPA Subtest-5	19.02	19.20	19.78		20.27	20.80	20.06	

Note:
1. The 12.2kbps RMC mode was selected for SAR testing (the primary mode).
2. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤1/4dB higher than the primary mode (RMC12.2kbps) or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	Verdict
Band2	1.4	18607	1	#0	QPSK	22.87	PASS
Band2	1.4	18607	1	#Mid	QPSK	23.10	PASS
Band2	1.4	18607	1	#Max	QPSK	22.90	PASS
Band2	1.4	18607	3	#0	QPSK	23.03	PASS
Band2	1.4	18607	3	#Mid	QPSK	23.04	PASS
Band2	1.4	18607	3	#Max	QPSK	23.02	PASS
Band2	1.4	18607	6	#0	QPSK	21.93	PASS
Band2	1.4	18607	1	#0	16QAM	22.11	PASS
Band2	1.4	18607	1	#Mid	16QAM	22.25	PASS
Band2	1.4	18607	1	#Max	16QAM	22.19	PASS
Band2	1.4	18607	3	#0	16QAM	22.22	PASS
Band2	1.4	18607	3	#Mid	16QAM	22.27	PASS
Band2	1.4	18607	3	#Max	16QAM	22.26	PASS
Band2	1.4	18607	6	#0	16QAM	21.15	PASS
Band2	1.4	18900	1	#0	QPSK	22.55	PASS
Band2	1.4	18900	1	#Mid	QPSK	22.66	PASS
Band2	1.4	18900	1	#Max	QPSK	22.51	PASS
Band2	1.4	18900	3	#0	QPSK	22.58	PASS
Band2	1.4	18900	3	#Mid	QPSK	22.59	PASS
Band2	1.4	18900	3	#Max	QPSK	22.56	PASS
Band2	1.4	18900	6	#0	QPSK	21.55	PASS
Band2	1.4	18900	1	#0	16QAM	21.41	PASS
Band2	1.4	18900	1	#Mid	16QAM	21.58	PASS
Band2	1.4	18900	1	#Max	16QAM	21.38	PASS
Band2	1.4	18900	3	#0	16QAM	21.74	PASS
Band2	1.4	18900	3	#Mid	16QAM	21.75	PASS
Band2	1.4	18900	3	#Max	16QAM	21.75	PASS
Band2	1.4	18900	6	#0	16QAM	20.75	PASS
Band2	1.4	19193	1	#0	QPSK	22.08	PASS
Band2	1.4	19193	1	#Mid	QPSK	22.29	PASS
Band2	1.4	19193	1	#Max	QPSK	22.09	PASS
Band2	1.4	19193	3	#0	QPSK	22.05	PASS
Band2	1.4	19193	3	#Mid	QPSK	22.08	PASS
Band2	1.4	19193	3	#Max	QPSK	22.07	PASS
Band2	1.4	19193	6	#0	QPSK	21.09	PASS
Band2	1.4	19193	1	#0	16QAM	21.20	PASS
Band2	1.4	19193	1	#Mid	16QAM	21.31	PASS
Band2	1.4	19193	1	#Max	16QAM	21.18	PASS
Band2	1.4	19193	3	#0	16QAM	21.29	PASS
Band2	1.4	19193	3	#Mid	16QAM	21.27	PASS
Band2	1.4	19193	3	#Max	16QAM	21.22	PASS
Band2	1.4	19193	6	#0	16QAM	20.28	PASS
Band2	3	18615	1	#0	QPSK	22.95	PASS
Band2	3	18615	1	#Mid	QPSK	23.30	PASS
Band2	3	18615	1	#Max	QPSK	23.02	PASS
Band2	3	18615	8	#0	QPSK	21.92	PASS
Band2	3	18615	8	#Mid	QPSK	21.97	PASS
Band2	3	18615	8	#Max	QPSK	21.96	PASS
Band2	3	18615	15	#0	QPSK	21.93	PASS
Band2	3	18615	1	#0	16QAM	21.83	PASS
Band2	3	18615	1	#Mid	16QAM	22.17	PASS
Band2	3	18615	1	#Max	16QAM	21.85	PASS
Band2	3	18615	8	#0	16QAM	20.96	PASS
Band2	3	18615	8	#Mid	16QAM	20.99	PASS
Band2	3	18615	8	#Max	16QAM	21.02	PASS

Band2	3	18615	15	#0	16QAM	21.08	PASS
Band2	3	18900	1	#0	QPSK	22.49	PASS
Band2	3	18900	1	#Mid	QPSK	22.80	PASS
Band2	3	18900	1	#Max	QPSK	22.54	PASS
Band2	3	18900	8	#0	QPSK	21.51	PASS
Band2	3	18900	8	#Mid	QPSK	21.56	PASS
Band2	3	18900	8	#Max	QPSK	21.50	PASS
Band2	3	18900	15	#0	QPSK	21.48	PASS
Band2	3	18900	1	#0	16QAM	21.94	PASS
Band2	3	18900	1	#Mid	16QAM	22.31	PASS
Band2	3	18900	1	#Max	16QAM	21.95	PASS
Band2	3	18900	8	#0	16QAM	20.61	PASS
Band2	3	18900	8	#Mid	16QAM	20.65	PASS
Band2	3	18900	8	#Max	16QAM	20.63	PASS
Band2	3	18900	15	#0	16QAM	20.62	PASS
Band2	3	19185	1	#0	QPSK	22.08	PASS
Band2	3	19185	1	#Mid	QPSK	22.47	PASS
Band2	3	19185	1	#Max	QPSK	22.00	PASS
Band2	3	19185	8	#0	QPSK	21.14	PASS
Band2	3	19185	8	#Mid	QPSK	21.13	PASS
Band2	3	19185	8	#Max	QPSK	21.09	PASS
Band2	3	19185	15	#0	QPSK	21.08	PASS
Band2	3	19185	1	#0	16QAM	21.31	PASS
Band2	3	19185	1	#Mid	16QAM	21.42	PASS
Band2	3	19185	1	#Max	16QAM	21.15	PASS
Band2	3	19185	8	#0	16QAM	20.19	PASS
Band2	3	19185	8	#Mid	16QAM	20.17	PASS
Band2	3	19185	8	#Max	16QAM	20.13	PASS
Band2	3	19185	15	#0	16QAM	20.09	PASS
Band2	5	18625	1	#0	QPSK	22.81	PASS
Band2	5	18625	1	#Mid	QPSK	23.20	PASS
Band2	5	18625	1	#Max	QPSK	22.84	PASS
Band2	5	18625	12	#0	QPSK	21.82	PASS
Band2	5	18625	12	#Mid	QPSK	22.03	PASS
Band2	5	18625	12	#Max	QPSK	22.00	PASS
Band2	5	18625	25	#0	QPSK	21.94	PASS
Band2	5	18625	1	#0	16QAM	22.33	PASS
Band2	5	18625	1	#Mid	16QAM	22.82	PASS
Band2	5	18625	1	#Max	16QAM	22.40	PASS
Band2	5	18625	12	#0	16QAM	20.93	PASS
Band2	5	18625	12	#Mid	16QAM	21.07	PASS
Band2	5	18625	12	#Max	16QAM	21.04	PASS
Band2	5	18625	25	#0	16QAM	20.99	PASS
Band2	5	18900	1	#0	QPSK	22.39	PASS
Band2	5	18900	1	#Mid	QPSK	22.76	PASS
Band2	5	18900	1	#Max	QPSK	22.40	PASS
Band2	5	18900	12	#0	QPSK	21.52	PASS
Band2	5	18900	12	#Mid	QPSK	21.57	PASS
Band2	5	18900	12	#Max	QPSK	21.54	PASS
Band2	5	18900	25	#0	QPSK	21.54	PASS
Band2	5	18900	1	#0	16QAM	21.79	PASS
Band2	5	18900	1	#Mid	16QAM	22.19	PASS
Band2	5	18900	1	#Max	16QAM	21.81	PASS
Band2	5	18900	12	#0	16QAM	20.49	PASS
Band2	5	18900	12	#Mid	16QAM	20.60	PASS
Band2	5	18900	12	#Max	16QAM	20.52	PASS
Band2	5	18900	25	#0	16QAM	20.63	PASS

Band2	5	19175	1	#0	QPSK	22.01	PASS
Band2	5	19175	1	#Mid	QPSK	22.40	PASS
Band2	5	19175	1	#Max	QPSK	21.85	PASS
Band2	5	19175	12	#0	QPSK	21.15	PASS
Band2	5	19175	12	#Mid	QPSK	21.18	PASS
Band2	5	19175	12	#Max	QPSK	21.04	PASS
Band2	5	19175	25	#0	QPSK	21.14	PASS
Band2	5	19175	1	#0	16QAM	21.41	PASS
Band2	5	19175	1	#Mid	16QAM	21.72	PASS
Band2	5	19175	1	#Max	16QAM	21.20	PASS
Band2	5	19175	12	#0	16QAM	20.19	PASS
Band2	5	19175	12	#Mid	16QAM	20.26	PASS
Band2	5	19175	12	#Max	16QAM	20.12	PASS
Band2	5	19175	25	#0	16QAM	20.14	PASS
Band2	10	18650	1	#0	QPSK	22.87	PASS
Band2	10	18650	1	#Mid	QPSK	23.03	PASS
Band2	10	18650	1	#Max	QPSK	22.83	PASS
Band2	10	18650	25	#0	QPSK	21.85	PASS
Band2	10	18650	25	#Mid	QPSK	21.94	PASS
Band2	10	18650	25	#Max	QPSK	22.06	PASS
Band2	10	18650	50	#0	QPSK	21.98	PASS
Band2	10	18650	1	#0	16QAM	22.29	PASS
Band2	10	18650	1	#Mid	16QAM	22.49	PASS
Band2	10	18650	1	#Max	16QAM	22.24	PASS
Band2	10	18650	25	#0	16QAM	20.91	PASS
Band2	10	18650	25	#Mid	16QAM	21.04	PASS
Band2	10	18650	25	#Max	16QAM	21.12	PASS
Band2	10	18650	50	#0	16QAM	21.00	PASS
Band2	10	18900	1	#0	QPSK	22.43	PASS
Band2	10	18900	1	#Mid	QPSK	22.63	PASS
Band2	10	18900	1	#Max	QPSK	22.49	PASS
Band2	10	18900	25	#0	QPSK	21.53	PASS
Band2	10	18900	25	#Mid	QPSK	21.50	PASS
Band2	10	18900	25	#Max	QPSK	21.56	PASS
Band2	10	18900	50	#0	QPSK	21.51	PASS
Band2	10	18900	1	#0	16QAM	21.66	PASS
Band2	10	18900	1	#Mid	16QAM	21.84	PASS
Band2	10	18900	1	#Max	16QAM	21.70	PASS
Band2	10	18900	25	#0	16QAM	20.58	PASS
Band2	10	18900	25	#Mid	16QAM	20.54	PASS
Band2	10	18900	25	#Max	16QAM	20.63	PASS
Band2	10	18900	50	#0	16QAM	20.64	PASS
Band2	10	19150	1	#0	QPSK	22.36	PASS
Band2	10	19150	1	#Mid	QPSK	22.33	PASS
Band2	10	19150	1	#Max	QPSK	22.11	PASS
Band2	10	19150	25	#0	QPSK	21.38	PASS
Band2	10	19150	25	#Mid	QPSK	21.17	PASS
Band2	10	19150	25	#Max	QPSK	21.13	PASS
Band2	10	19150	50	#0	QPSK	21.25	PASS
Band2	10	19150	1	#0	16QAM	21.07	PASS
Band2	10	19150	1	#Mid	16QAM	21.15	PASS
Band2	10	19150	1	#Max	16QAM	20.87	PASS
Band2	10	19150	25	#0	16QAM	20.49	PASS
Band2	10	19150	25	#Mid	16QAM	20.27	PASS
Band2	10	19150	25	#Max	16QAM	20.20	PASS
Band2	10	19150	50	#0	16QAM	20.29	PASS
Band2	15	18675	1	#0	QPSK	22.91	PASS

Band2	15	18675	1	#Mid	QPSK	23.34	PASS
Band2	15	18675	1	#Max	QPSK	22.79	PASS
Band2	15	18675	36	#0	QPSK	21.93	PASS
Band2	15	18675	36	#Mid	QPSK	21.99	PASS
Band2	15	18675	36	#Max	QPSK	21.96	PASS
Band2	15	18675	75	#0	QPSK	21.96	PASS
Band2	15	18675	1	#0	16QAM	21.98	PASS
Band2	15	18675	1	#Mid	16QAM	22.39	PASS
Band2	15	18675	1	#Max	16QAM	21.84	PASS
Band2	15	18675	36	#0	16QAM	20.85	PASS
Band2	15	18675	36	#Mid	16QAM	20.95	PASS
Band2	15	18675	36	#Max	16QAM	20.95	PASS
Band2	15	18675	75	#0	16QAM	21.02	PASS
Band2	15	18900	1	#0	QPSK	22.40	PASS
Band2	15	18900	1	#Mid	QPSK	22.74	PASS
Band2	15	18900	1	#Max	QPSK	22.44	PASS
Band2	15	18900	36	#0	QPSK	21.57	PASS
Band2	15	18900	36	#Mid	QPSK	21.53	PASS
Band2	15	18900	36	#Max	QPSK	21.59	PASS
Band2	15	18900	75	#0	QPSK	21.58	PASS
Band2	15	18900	1	#0	16QAM	21.86	PASS
Band2	15	18900	1	#Mid	16QAM	22.16	PASS
Band2	15	18900	1	#Max	16QAM	21.90	PASS
Band2	15	18900	36	#0	16QAM	20.56	PASS
Band2	15	18900	36	#Mid	16QAM	20.59	PASS
Band2	15	18900	36	#Max	16QAM	20.64	PASS
Band2	15	18900	75	#0	16QAM	20.61	PASS
Band2	15	19125	1	#0	QPSK	22.42	PASS
Band2	15	19125	1	#Mid	QPSK	22.45	PASS
Band2	15	19125	1	#Max	QPSK	22.00	PASS
Band2	15	19125	36	#0	QPSK	21.57	PASS
Band2	15	19125	36	#Mid	QPSK	21.40	PASS
Band2	15	19125	36	#Max	QPSK	21.16	PASS
Band2	15	19125	75	#0	QPSK	21.36	PASS
Band2	15	19125	1	#0	16QAM	21.54	PASS
Band2	15	19125	1	#Mid	16QAM	21.74	PASS
Band2	15	19125	1	#Max	16QAM	21.16	PASS
Band2	15	19125	36	#0	16QAM	20.58	PASS
Band2	15	19125	36	#Mid	16QAM	20.43	PASS
Band2	15	19125	36	#Max	16QAM	20.25	PASS
Band2	15	19125	75	#0	16QAM	20.37	PASS
Band2	20	18700	1	#0	QPSK	22.80	PASS
Band2	20	18700	1	#Mid	QPSK	23.04	PASS
Band2	20	18700	1	#Max	QPSK	22.54	PASS
Band2	20	18700	50	#0	QPSK	21.78	PASS
Band2	20	18700	50	#Mid	QPSK	21.86	PASS
Band2	20	18700	50	#Max	QPSK	21.80	PASS
Band2	20	18700	100	#0	QPSK	21.73	PASS
Band2	20	18700	1	#0	16QAM	22.06	PASS
Band2	20	18700	1	#Mid	16QAM	22.24	PASS
Band2	20	18700	1	#Max	16QAM	21.78	PASS
Band2	20	18700	50	#0	16QAM	20.86	PASS
Band2	20	18700	50	#Mid	16QAM	21.00	PASS
Band2	20	18700	50	#Max	16QAM	20.87	PASS
Band2	20	18700	100	#0	16QAM	20.80	PASS
Band2	20	18900	1	#0	QPSK	22.46	PASS
Band2	20	18900	1	#Mid	QPSK	22.61	PASS

Band2	20	18900	1	#Max	QPSK	22.43	PASS
Band2	20	18900	50	#0	QPSK	21.58	PASS
Band2	20	18900	50	#Mid	QPSK	21.51	PASS
Band2	20	18900	50	#Max	QPSK	21.63	PASS
Band2	20	18900	100	#0	QPSK	21.60	PASS
Band2	20	18900	1	#0	16QAM	21.79	PASS
Band2	20	18900	1	#Mid	16QAM	21.97	PASS
Band2	20	18900	1	#Max	16QAM	21.79	PASS
Band2	20	18900	50	#0	16QAM	20.71	PASS
Band2	20	18900	50	#Mid	16QAM	20.61	PASS
Band2	20	18900	50	#Max	16QAM	20.70	PASS
Band2	20	18900	100	#0	16QAM	20.66	PASS
Band2	20	19100	1	#0	QPSK	22.43	PASS
Band2	20	19100	1	#Mid	QPSK	22.56	PASS
Band2	20	19100	1	#Max	QPSK	22.01	PASS
Band2	20	19100	50	#0	QPSK	21.43	PASS
Band2	20	19100	50	#Mid	QPSK	21.39	PASS
Band2	20	19100	50	#Max	QPSK	20.98	PASS
Band2	20	19100	100	#0	QPSK	21.24	PASS
Band2	20	19100	1	#0	16QAM	21.64	PASS
Band2	20	19100	1	#Mid	16QAM	21.61	PASS
Band2	20	19100	1	#Max	16QAM	21.22	PASS
Band2	20	19100	50	#0	16QAM	20.44	PASS
Band2	20	19100	50	#Mid	16QAM	20.39	PASS
Band2	20	19100	50	#Max	16QAM	20.03	PASS
Band2	20	19100	100	#0	16QAM	20.29	PASS

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	Verdict
Band4	1.4	19957	1	#0	QPSK	23.01	PASS
Band4	1.4	19957	1	#Mid	QPSK	23.08	PASS
Band4	1.4	19957	1	#Max	QPSK	22.92	PASS
Band4	1.4	19957	3	#0	QPSK	23.01	PASS
Band4	1.4	19957	3	#Mid	QPSK	23.03	PASS
Band4	1.4	19957	3	#Max	QPSK	23.01	PASS
Band4	1.4	19957	6	#0	QPSK	21.90	PASS
Band4	1.4	19957	1	#0	16QAM	22.16	PASS
Band4	1.4	19957	1	#Mid	16QAM	22.26	PASS
Band4	1.4	19957	1	#Max	16QAM	22.13	PASS
Band4	1.4	19957	3	#0	16QAM	22.22	PASS
Band4	1.4	19957	3	#Mid	16QAM	22.26	PASS
Band4	1.4	19957	3	#Max	16QAM	22.25	PASS
Band4	1.4	19957	6	#0	16QAM	21.17	PASS
Band4	1.4	20175	1	#0	QPSK	23.06	PASS
Band4	1.4	20175	1	#Mid	QPSK	23.22	PASS
Band4	1.4	20175	1	#Max	QPSK	23.09	PASS
Band4	1.4	20175	3	#0	QPSK	23.18	PASS
Band4	1.4	20175	3	#Mid	QPSK	23.15	PASS
Band4	1.4	20175	3	#Max	QPSK	23.14	PASS
Band4	1.4	20175	6	#0	QPSK	22.07	PASS
Band4	1.4	20175	1	#0	16QAM	21.99	PASS
Band4	1.4	20175	1	#Mid	16QAM	22.12	PASS
Band4	1.4	20175	1	#Max	16QAM	21.99	PASS
Band4	1.4	20175	3	#0	16QAM	22.30	PASS
Band4	1.4	20175	3	#Mid	16QAM	22.30	PASS
Band4	1.4	20175	3	#Max	16QAM	22.27	PASS
Band4	1.4	20175	6	#0	16QAM	21.33	PASS
Band4	1.4	20393	1	#0	QPSK	22.64	PASS
Band4	1.4	20393	1	#Mid	QPSK	22.77	PASS
Band4	1.4	20393	1	#Max	QPSK	22.61	PASS
Band4	1.4	20393	3	#0	QPSK	22.60	PASS
Band4	1.4	20393	3	#Mid	QPSK	22.61	PASS
Band4	1.4	20393	3	#Max	QPSK	22.65	PASS
Band4	1.4	20393	6	#0	QPSK	21.63	PASS
Band4	1.4	20393	1	#0	16QAM	21.74	PASS
Band4	1.4	20393	1	#Mid	16QAM	21.81	PASS
Band4	1.4	20393	1	#Max	16QAM	21.69	PASS
Band4	1.4	20393	3	#0	16QAM	21.76	PASS
Band4	1.4	20393	3	#Mid	16QAM	21.81	PASS
Band4	1.4	20393	3	#Max	16QAM	21.78	PASS
Band4	1.4	20393	6	#0	16QAM	20.83	PASS
Band4	3	19965	1	#0	QPSK	23.12	PASS
Band4	3	19965	1	#Mid	QPSK	23.35	PASS
Band4	3	19965	1	#Max	QPSK	23.06	PASS
Band4	3	19965	8	#0	QPSK	22.03	PASS
Band4	3	19965	8	#Mid	QPSK	22.04	PASS
Band4	3	19965	8	#Max	QPSK	22.03	PASS
Band4	3	19965	15	#0	QPSK	22.01	PASS
Band4	3	19965	1	#0	16QAM	22.26	PASS
Band4	3	19965	1	#Mid	16QAM	22.53	PASS
Band4	3	19965	1	#Max	16QAM	22.24	PASS
Band4	3	19965	8	#0	16QAM	21.10	PASS
Band4	3	19965	8	#Mid	16QAM	21.12	PASS
Band4	3	19965	8	#Max	16QAM	21.05	PASS

Band4	3	19965	15	#0	16QAM	21.00	PASS
Band4	3	20175	1	#0	QPSK	23.19	PASS
Band4	3	20175	1	#Mid	QPSK	23.54	PASS
Band4	3	20175	1	#Max	QPSK	23.18	PASS
Band4	3	20175	8	#0	QPSK	22.10	PASS
Band4	3	20175	8	#Mid	QPSK	22.16	PASS
Band4	3	20175	8	#Max	QPSK	22.13	PASS
Band4	3	20175	15	#0	QPSK	22.11	PASS
Band4	3	20175	1	#0	16QAM	22.10	PASS
Band4	3	20175	1	#Mid	16QAM	22.38	PASS
Band4	3	20175	1	#Max	16QAM	22.08	PASS
Band4	3	20175	8	#0	16QAM	21.19	PASS
Band4	3	20175	8	#Mid	16QAM	21.22	PASS
Band4	3	20175	8	#Max	16QAM	21.17	PASS
Band4	3	20175	15	#0	16QAM	21.25	PASS
Band4	3	20385	1	#0	QPSK	22.57	PASS
Band4	3	20385	1	#Mid	QPSK	22.88	PASS
Band4	3	20385	1	#Max	QPSK	22.60	PASS
Band4	3	20385	8	#0	QPSK	21.63	PASS
Band4	3	20385	8	#Mid	QPSK	21.68	PASS
Band4	3	20385	8	#Max	QPSK	21.64	PASS
Band4	3	20385	15	#0	QPSK	21.62	PASS
Band4	3	20385	1	#0	16QAM	22.03	PASS
Band4	3	20385	1	#Mid	16QAM	22.33	PASS
Band4	3	20385	1	#Max	16QAM	22.01	PASS
Band4	3	20385	8	#0	16QAM	20.72	PASS
Band4	3	20385	8	#Mid	16QAM	20.78	PASS
Band4	3	20385	8	#Max	16QAM	20.72	PASS
Band4	3	20385	15	#0	16QAM	20.70	PASS
Band4	5	19975	1	#0	QPSK	22.87	PASS
Band4	5	19975	1	#Mid	QPSK	23.32	PASS
Band4	5	19975	1	#Max	QPSK	22.88	PASS
Band4	5	19975	12	#0	QPSK	22.02	PASS
Band4	5	19975	12	#Mid	QPSK	22.02	PASS
Band4	5	19975	12	#Max	QPSK	22.00	PASS
Band4	5	19975	25	#0	QPSK	22.01	PASS
Band4	5	19975	1	#0	16QAM	22.23	PASS
Band4	5	19975	1	#Mid	16QAM	22.64	PASS
Band4	5	19975	1	#Max	16QAM	22.27	PASS
Band4	5	19975	12	#0	16QAM	21.10	PASS
Band4	5	19975	12	#Mid	16QAM	21.12	PASS
Band4	5	19975	12	#Max	16QAM	21.09	PASS
Band4	5	19975	25	#0	16QAM	21.01	PASS
Band4	5	20175	1	#0	QPSK	23.05	PASS
Band4	5	20175	1	#Mid	QPSK	23.30	PASS
Band4	5	20175	1	#Max	QPSK	22.97	PASS
Band4	5	20175	12	#0	QPSK	22.12	PASS
Band4	5	20175	12	#Mid	QPSK	22.19	PASS
Band4	5	20175	12	#Max	QPSK	22.13	PASS
Band4	5	20175	25	#0	QPSK	22.14	PASS
Band4	5	20175	1	#0	16QAM	22.64	PASS
Band4	5	20175	1	#Mid	16QAM	22.94	PASS
Band4	5	20175	1	#Max	16QAM	22.63	PASS
Band4	5	20175	12	#0	16QAM	21.23	PASS
Band4	5	20175	12	#Mid	16QAM	21.28	PASS
Band4	5	20175	12	#Max	16QAM	21.21	PASS
Band4	5	20175	25	#0	16QAM	21.18	PASS

Band4	5	20375	1	#0	QPSK	22.55	PASS
Band4	5	20375	1	#Mid	QPSK	22.86	PASS
Band4	5	20375	1	#Max	QPSK	22.57	PASS
Band4	5	20375	12	#0	QPSK	21.59	PASS
Band4	5	20375	12	#Mid	QPSK	21.69	PASS
Band4	5	20375	12	#Max	QPSK	21.62	PASS
Band4	5	20375	25	#0	QPSK	21.65	PASS
Band4	5	20375	1	#0	16QAM	21.90	PASS
Band4	5	20375	1	#Mid	16QAM	22.23	PASS
Band4	5	20375	1	#Max	16QAM	21.86	PASS
Band4	5	20375	12	#0	16QAM	20.61	PASS
Band4	5	20375	12	#Mid	16QAM	20.72	PASS
Band4	5	20375	12	#Max	16QAM	20.63	PASS
Band4	5	20375	25	#0	16QAM	20.71	PASS
Band4	10	20000	1	#0	QPSK	23.00	PASS
Band4	10	20000	1	#Mid	QPSK	23.06	PASS
Band4	10	20000	1	#Max	QPSK	22.94	PASS
Band4	10	20000	25	#0	QPSK	22.05	PASS
Band4	10	20000	25	#Mid	QPSK	22.01	PASS
Band4	10	20000	25	#Max	QPSK	21.92	PASS
Band4	10	20000	50	#0	QPSK	21.96	PASS
Band4	10	20000	1	#0	16QAM	22.39	PASS
Band4	10	20000	1	#Mid	16QAM	22.53	PASS
Band4	10	20000	1	#Max	16QAM	22.35	PASS
Band4	10	20000	25	#0	16QAM	21.09	PASS
Band4	10	20000	25	#Mid	16QAM	21.09	PASS
Band4	10	20000	25	#Max	16QAM	20.99	PASS
Band4	10	20000	50	#0	16QAM	21.03	PASS
Band4	10	20175	1	#0	QPSK	23.12	PASS
Band4	10	20175	1	#Mid	QPSK	23.24	PASS
Band4	10	20175	1	#Max	QPSK	23.14	PASS
Band4	10	20175	25	#0	QPSK	22.16	PASS
Band4	10	20175	25	#Mid	QPSK	22.18	PASS
Band4	10	20175	25	#Max	QPSK	22.23	PASS
Band4	10	20175	50	#0	QPSK	22.23	PASS
Band4	10	20175	1	#0	16QAM	22.31	PASS
Band4	10	20175	1	#Mid	16QAM	22.41	PASS
Band4	10	20175	1	#Max	16QAM	22.27	PASS
Band4	10	20175	25	#0	16QAM	21.26	PASS
Band4	10	20175	25	#Mid	16QAM	21.28	PASS
Band4	10	20175	25	#Max	16QAM	21.26	PASS
Band4	10	20175	50	#0	16QAM	21.32	PASS
Band4	10	20350	1	#0	QPSK	22.78	PASS
Band4	10	20350	1	#Mid	QPSK	22.83	PASS
Band4	10	20350	1	#Max	QPSK	22.68	PASS
Band4	10	20350	25	#0	QPSK	21.68	PASS
Band4	10	20350	25	#Mid	QPSK	21.74	PASS
Band4	10	20350	25	#Max	QPSK	21.76	PASS
Band4	10	20350	50	#0	QPSK	21.73	PASS
Band4	10	20350	1	#0	16QAM	21.64	PASS
Band4	10	20350	1	#Mid	16QAM	21.61	PASS
Band4	10	20350	1	#Max	16QAM	21.55	PASS
Band4	10	20350	25	#0	16QAM	20.73	PASS
Band4	10	20350	25	#Mid	16QAM	20.73	PASS
Band4	10	20350	25	#Max	16QAM	20.81	PASS
Band4	10	20350	50	#0	16QAM	20.75	PASS
Band4	15	20025	1	#0	QPSK	23.00	PASS

Band4	15	20025	1	#Mid	QPSK	23.28	PASS
Band4	15	20025	1	#Max	QPSK	23.00	PASS
Band4	15	20025	36	#0	QPSK	22.06	PASS
Band4	15	20025	36	#Mid	QPSK	22.01	PASS
Band4	15	20025	36	#Max	QPSK	21.97	PASS
Band4	15	20025	75	#0	QPSK	22.01	PASS
Band4	15	20025	1	#0	16QAM	22.05	PASS
Band4	15	20025	1	#Mid	16QAM	22.35	PASS
Band4	15	20025	1	#Max	16QAM	22.12	PASS
Band4	15	20025	36	#0	16QAM	21.00	PASS
Band4	15	20025	36	#Mid	16QAM	20.99	PASS
Band4	15	20025	36	#Max	16QAM	20.94	PASS
Band4	15	20025	75	#0	16QAM	21.03	PASS
Band4	15	20175	1	#0	QPSK	22.98	PASS
Band4	15	20175	1	#Mid	QPSK	23.35	PASS
Band4	15	20175	1	#Max	QPSK	22.92	PASS
Band4	15	20175	36	#0	QPSK	22.18	PASS
Band4	15	20175	36	#Mid	QPSK	22.20	PASS
Band4	15	20175	36	#Max	QPSK	22.17	PASS
Band4	15	20175	75	#0	QPSK	22.15	PASS
Band4	15	20175	1	#0	16QAM	22.47	PASS
Band4	15	20175	1	#Mid	16QAM	22.81	PASS
Band4	15	20175	1	#Max	16QAM	22.37	PASS
Band4	15	20175	36	#0	16QAM	21.18	PASS
Band4	15	20175	36	#Mid	16QAM	21.23	PASS
Band4	15	20175	36	#Max	16QAM	21.24	PASS
Band4	15	20175	75	#0	16QAM	21.16	PASS
Band4	15	20325	1	#0	QPSK	22.95	PASS
Band4	15	20325	1	#Mid	QPSK	23.00	PASS
Band4	15	20325	1	#Max	QPSK	22.57	PASS
Band4	15	20325	36	#0	QPSK	21.85	PASS
Band4	15	20325	36	#Mid	QPSK	21.79	PASS
Band4	15	20325	36	#Max	QPSK	21.77	PASS
Band4	15	20325	75	#0	QPSK	21.83	PASS
Band4	15	20325	1	#0	16QAM	22.13	PASS
Band4	15	20325	1	#Mid	16QAM	22.15	PASS
Band4	15	20325	1	#Max	16QAM	21.73	PASS
Band4	15	20325	36	#0	16QAM	20.96	PASS
Band4	15	20325	36	#Mid	16QAM	20.88	PASS
Band4	15	20325	36	#Max	16QAM	20.79	PASS
Band4	15	20325	75	#0	16QAM	20.81	PASS
Band4	20	20050	1	#0	QPSK	22.95	PASS
Band4	20	20050	1	#Mid	QPSK	23.08	PASS
Band4	20	20050	1	#Max	QPSK	23.06	PASS
Band4	20	20050	50	#0	QPSK	22.10	PASS
Band4	20	20050	50	#Mid	QPSK	22.02	PASS
Band4	20	20050	50	#Max	QPSK	21.99	PASS
Band4	20	20050	100	#0	QPSK	22.04	PASS
Band4	20	20050	1	#0	16QAM	22.19	PASS
Band4	20	20050	1	#Mid	16QAM	22.43	PASS
Band4	20	20050	1	#Max	16QAM	22.41	PASS
Band4	20	20050	50	#0	16QAM	21.15	PASS
Band4	20	20050	50	#Mid	16QAM	21.12	PASS
Band4	20	20050	50	#Max	16QAM	21.09	PASS
Band4	20	20050	100	#0	16QAM	21.09	PASS
Band4	20	20175	1	#0	QPSK	22.94	PASS
Band4	20	20175	1	#Mid	QPSK	23.34	PASS

Band4	20	20175	1	#Max	QPSK	22.91	PASS
Band4	20	20175	50	#0	QPSK	22.12	PASS
Band4	20	20175	50	#Mid	QPSK	22.18	PASS
Band4	20	20175	50	#Max	QPSK	22.14	PASS
Band4	20	20175	100	#0	QPSK	22.14	PASS
Band4	20	20175	1	#0	16QAM	22.22	PASS
Band4	20	20175	1	#Mid	16QAM	22.57	PASS
Band4	20	20175	1	#Max	16QAM	22.20	PASS
Band4	20	20175	50	#0	16QAM	21.17	PASS
Band4	20	20175	50	#Mid	16QAM	21.27	PASS
Band4	20	20175	50	#Max	16QAM	21.20	PASS
Band4	20	20175	100	#0	16QAM	21.21	PASS
Band4	20	20300	1	#0	QPSK	22.96	PASS
Band4	20	20300	1	#Mid	QPSK	22.93	PASS
Band4	20	20300	1	#Max	QPSK	22.54	PASS
Band4	20	20300	50	#0	QPSK	21.88	PASS
Band4	20	20300	50	#Mid	QPSK	21.88	PASS
Band4	20	20300	50	#Max	QPSK	21.77	PASS
Band4	20	20300	100	#0	QPSK	21.83	PASS
Band4	20	20300	1	#0	16QAM	22.25	PASS
Band4	20	20300	1	#Mid	16QAM	22.17	PASS
Band4	20	20300	1	#Max	16QAM	21.76	PASS
Band4	20	20300	50	#0	16QAM	20.99	PASS
Band4	20	20300	50	#Mid	16QAM	21.01	PASS
Band4	20	20300	50	#Max	16QAM	20.87	PASS
Band4	20	20300	100	#0	16QAM	20.87	PASS

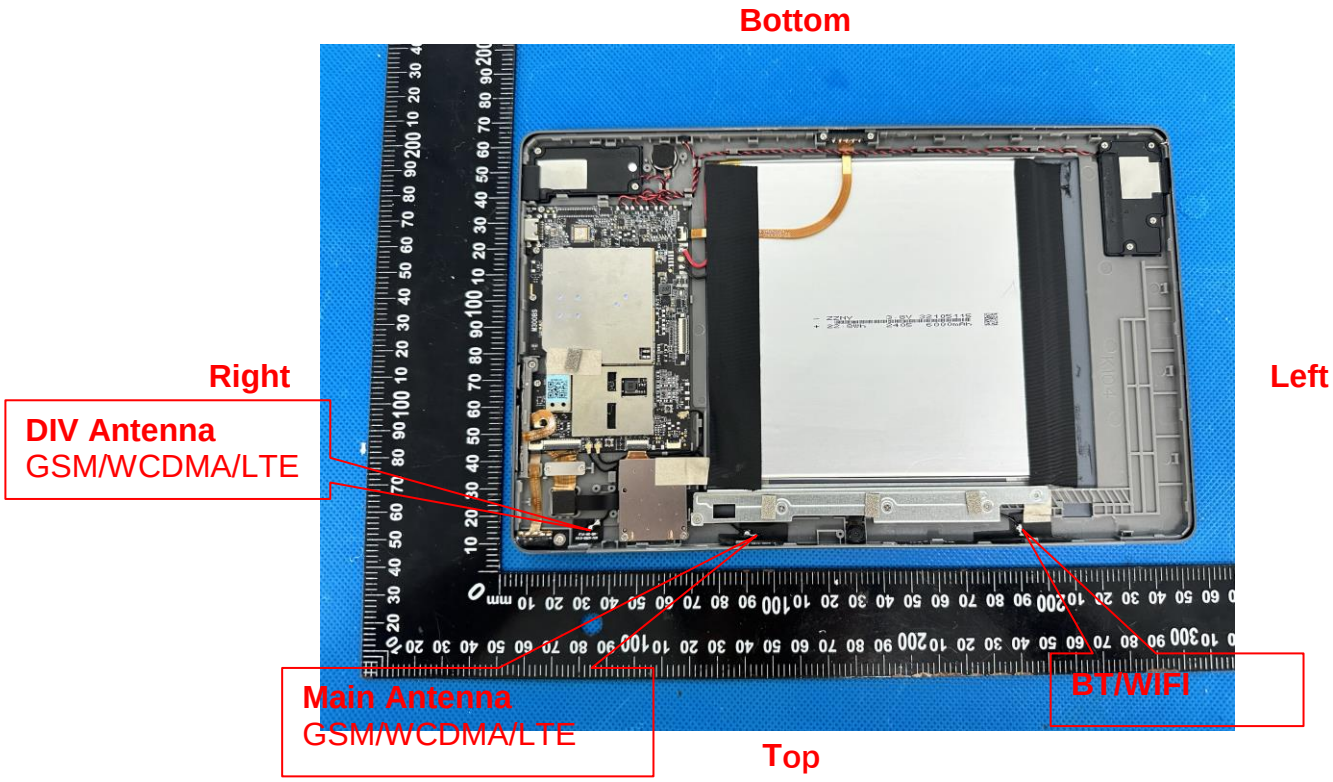
Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	Verdict
Band7	5	20775	1	#0	QPSK	21.33	PASS
Band7	5	20775	1	#Mid	QPSK	21.74	PASS
Band7	5	20775	1	#Max	QPSK	21.44	PASS
Band7	5	20775	12	#0	QPSK	20.36	PASS
Band7	5	20775	12	#Mid	QPSK	20.43	PASS
Band7	5	20775	12	#Max	QPSK	20.41	PASS
Band7	5	20775	25	#0	QPSK	20.41	PASS
Band7	5	20775	1	#0	16QAM	20.45	PASS
Band7	5	20775	1	#Mid	16QAM	20.90	PASS
Band7	5	20775	1	#Max	16QAM	20.62	PASS
Band7	5	20775	12	#0	16QAM	19.24	PASS
Band7	5	20775	12	#Mid	16QAM	19.34	PASS
Band7	5	20775	12	#Max	16QAM	19.28	PASS
Band7	5	20775	25	#0	16QAM	19.38	PASS
Band7	5	21100	1	#0	QPSK	21.12	PASS
Band7	5	21100	1	#Mid	QPSK	21.70	PASS
Band7	5	21100	1	#Max	QPSK	21.22	PASS
Band7	5	21100	12	#0	QPSK	20.27	PASS
Band7	5	21100	12	#Mid	QPSK	20.37	PASS
Band7	5	21100	12	#Max	QPSK	20.36	PASS
Band7	5	21100	25	#0	QPSK	20.34	PASS
Band7	5	21100	1	#0	16QAM	20.42	PASS
Band7	5	21100	1	#Mid	16QAM	20.78	PASS
Band7	5	21100	1	#Max	16QAM	20.48	PASS
Band7	5	21100	12	#0	16QAM	19.23	PASS
Band7	5	21100	12	#Mid	16QAM	19.37	PASS
Band7	5	21100	12	#Max	16QAM	19.40	PASS
Band7	5	21100	25	#0	16QAM	19.28	PASS
Band7	5	21425	1	#0	QPSK	20.87	PASS
Band7	5	21425	1	#Mid	QPSK	21.32	PASS
Band7	5	21425	1	#Max	QPSK	20.88	PASS
Band7	5	21425	12	#0	QPSK	19.99	PASS
Band7	5	21425	12	#Mid	QPSK	20.02	PASS
Band7	5	21425	12	#Max	QPSK	20.00	PASS
Band7	5	21425	25	#0	QPSK	19.96	PASS
Band7	5	21425	1	#0	16QAM	20.36	PASS
Band7	5	21425	1	#Mid	16QAM	20.69	PASS
Band7	5	21425	1	#Max	16QAM	20.32	PASS
Band7	5	21425	12	#0	16QAM	18.92	PASS
Band7	5	21425	12	#Mid	16QAM	18.96	PASS
Band7	5	21425	12	#Max	16QAM	18.95	PASS
Band7	5	21425	25	#0	16QAM	18.92	PASS
Band7	10	20800	1	#0	QPSK	21.32	PASS
Band7	10	20800	1	#Mid	QPSK	21.55	PASS
Band7	10	20800	1	#Max	QPSK	21.42	PASS
Band7	10	20800	25	#0	QPSK	20.45	PASS
Band7	10	20800	25	#Mid	QPSK	20.44	PASS
Band7	10	20800	25	#Max	QPSK	20.42	PASS
Band7	10	20800	50	#0	QPSK	20.41	PASS
Band7	10	20800	1	#0	16QAM	20.59	PASS
Band7	10	20800	1	#Mid	16QAM	20.87	PASS
Band7	10	20800	1	#Max	16QAM	20.78	PASS
Band7	10	20800	25	#0	16QAM	19.38	PASS
Band7	10	20800	25	#Mid	16QAM	19.39	PASS
Band7	10	20800	25	#Max	16QAM	19.42	PASS

Band7	10	20800	50	#0	16QAM	19.38	PASS
Band7	10	21100	1	#0	QPSK	21.15	PASS
Band7	10	21100	1	#Mid	QPSK	21.41	PASS
Band7	10	21100	1	#Max	QPSK	21.37	PASS
Band7	10	21100	25	#0	QPSK	20.21	PASS
Band7	10	21100	25	#Mid	QPSK	20.34	PASS
Band7	10	21100	25	#Max	QPSK	20.46	PASS
Band7	10	21100	50	#0	QPSK	20.31	PASS
Band7	10	21100	1	#0	16QAM	20.29	PASS
Band7	10	21100	1	#Mid	16QAM	20.52	PASS
Band7	10	21100	1	#Max	16QAM	20.47	PASS
Band7	10	21100	25	#0	16QAM	19.16	PASS
Band7	10	21100	25	#Mid	16QAM	19.32	PASS
Band7	10	21100	25	#Max	16QAM	19.44	PASS
Band7	10	21100	50	#0	16QAM	19.33	PASS
Band7	10	21400	1	#0	QPSK	21.08	PASS
Band7	10	21400	1	#Mid	QPSK	21.16	PASS
Band7	10	21400	1	#Max	QPSK	21.04	PASS
Band7	10	21400	25	#0	QPSK	20.04	PASS
Band7	10	21400	25	#Mid	QPSK	19.96	PASS
Band7	10	21400	25	#Max	QPSK	20.06	PASS
Band7	10	21400	50	#0	QPSK	19.99	PASS
Band7	10	21400	1	#0	16QAM	19.87	PASS
Band7	10	21400	1	#Mid	16QAM	19.94	PASS
Band7	10	21400	1	#Max	16QAM	19.79	PASS
Band7	10	21400	25	#0	16QAM	19.00	PASS
Band7	10	21400	25	#Mid	16QAM	18.96	PASS
Band7	10	21400	25	#Max	16QAM	18.99	PASS
Band7	10	21400	50	#0	16QAM	18.99	PASS
Band7	15	20825	1	#0	QPSK	21.28	PASS
Band7	15	20825	1	#Mid	QPSK	21.65	PASS
Band7	15	20825	1	#Max	QPSK	21.23	PASS
Band7	15	20825	36	#0	QPSK	20.52	PASS
Band7	15	20825	36	#Mid	QPSK	20.56	PASS
Band7	15	20825	36	#Max	QPSK	20.45	PASS
Band7	15	20825	75	#0	QPSK	20.53	PASS
Band7	15	20825	1	#0	16QAM	20.34	PASS
Band7	15	20825	1	#Mid	16QAM	20.77	PASS
Band7	15	20825	1	#Max	16QAM	20.37	PASS
Band7	15	20825	36	#0	16QAM	19.46	PASS
Band7	15	20825	36	#Mid	16QAM	19.53	PASS
Band7	15	20825	36	#Max	16QAM	19.42	PASS
Band7	15	20825	75	#0	16QAM	19.45	PASS
Band7	15	21100	1	#0	QPSK	21.14	PASS
Band7	15	21100	1	#Mid	QPSK	21.69	PASS
Band7	15	21100	1	#Max	QPSK	21.43	PASS
Band7	15	21100	36	#0	QPSK	20.23	PASS
Band7	15	21100	36	#Mid	QPSK	20.38	PASS
Band7	15	21100	36	#Max	QPSK	20.45	PASS
Band7	15	21100	75	#0	QPSK	20.41	PASS
Band7	15	21100	1	#0	16QAM	20.18	PASS
Band7	15	21100	1	#Mid	16QAM	20.60	PASS
Band7	15	21100	1	#Max	16QAM	20.43	PASS
Band7	15	21100	36	#0	16QAM	19.12	PASS
Band7	15	21100	36	#Mid	16QAM	19.24	PASS
Band7	15	21100	36	#Max	16QAM	19.38	PASS
Band7	15	21100	75	#0	16QAM	19.38	PASS

Band7	15	21375	1	#0	QPSK	21.10	PASS
Band7	15	21375	1	#Mid	QPSK	21.24	PASS
Band7	15	21375	1	#Max	QPSK	20.85	PASS
Band7	15	21375	36	#0	QPSK	20.26	PASS
Band7	15	21375	36	#Mid	QPSK	20.10	PASS
Band7	15	21375	36	#Max	QPSK	20.05	PASS
Band7	15	21375	75	#0	QPSK	20.14	PASS
Band7	15	21375	1	#0	16QAM	20.42	PASS
Band7	15	21375	1	#Mid	16QAM	20.58	PASS
Band7	15	21375	1	#Max	16QAM	20.22	PASS
Band7	15	21375	36	#0	16QAM	19.22	PASS
Band7	15	21375	36	#Mid	16QAM	19.09	PASS
Band7	15	21375	36	#Max	16QAM	19.04	PASS
Band7	15	21375	75	#0	16QAM	19.09	PASS
Band7	20	20850	1	#0	QPSK	21.24	PASS
Band7	20	20850	1	#Mid	QPSK	21.57	PASS
Band7	20	20850	1	#Max	QPSK	21.17	PASS
Band7	20	20850	50	#0	QPSK	20.41	PASS
Band7	20	20850	50	#Mid	QPSK	20.41	PASS
Band7	20	20850	50	#Max	QPSK	20.25	PASS
Band7	20	20850	100	#0	QPSK		PASS
Band7	20	20850	1	#0	16QAM	20.39	PASS
Band7	20	20850	1	#Mid	16QAM	20.73	PASS
Band7	20	20850	1	#Max	16QAM	20.35	PASS
Band7	20	20850	50	#0	16QAM	19.48	PASS
Band7	20	20850	50	#Mid	16QAM	19.43	PASS
Band7	20	20850	50	#Max	16QAM	19.28	PASS
Band7	20	20850	100	#0	16QAM	19.33	PASS
Band7	20	21100	1	#0	QPSK	21.02	PASS
Band7	20	21100	1	#Mid	QPSK	21.50	PASS
Band7	20	21100	1	#Max	QPSK	21.36	PASS
Band7	20	21100	50	#0	QPSK	20.09	PASS
Band7	20	21100	50	#Mid	QPSK	20.29	PASS
Band7	20	21100	50	#Max	QPSK	20.38	PASS
Band7	20	21100	100	#0	QPSK	20.22	PASS
Band7	20	21100	1	#0	16QAM	20.32	PASS
Band7	20	21100	1	#Mid	16QAM	20.70	PASS
Band7	20	21100	1	#Max	16QAM	20.60	PASS
Band7	20	21100	50	#0	16QAM	19.07	PASS
Band7	20	21100	50	#Mid	16QAM	19.34	PASS
Band7	20	21100	50	#Max	16QAM	19.41	PASS
Band7	20	21100	100	#0	16QAM	19.21	PASS
Band7	20	21350	1	#0	QPSK	21.28	PASS
Band7	20	21350	1	#Mid	QPSK	21.30	PASS
Band7	20	21350	1	#Max	QPSK	20.90	PASS
Band7	20	21350	50	#0	QPSK	20.34	PASS
Band7	20	21350	50	#Mid	QPSK	20.12	PASS
Band7	20	21350	50	#Max	QPSK	19.94	PASS
Band7	20	21350	100	#0	QPSK	20.16	PASS
Band7	20	21350	1	#0	16QAM	20.38	PASS
Band7	20	21350	1	#Mid	16QAM	20.42	PASS
Band7	20	21350	1	#Max	16QAM	20.03	PASS
Band7	20	21350	50	#0	16QAM	19.34	PASS
Band7	20	21350	50	#Mid	16QAM	19.08	PASS
Band7	20	21350	50	#Max	16QAM	18.90	PASS
Band7	20	21350	100	#0	16QAM	19.12	PASS

14.2 Transmit Antennas and SAR Measurement Position

EUT Antenna Location:



Antennas	Support Band
Main	GSM 850/1900 + WCDMA Band 2/5 + LTE Band 2/4/7 TX
DIV	GSM 850/1900 + WCDMA Band 2/5 + LTE Band 2/4/7 RX
BT/WIFI	Bluetooth + WIFI 2.4G

Distance of The Antenna to the EUT surface and edge (mm)						
Antennas	Front	Back	Top Side	Bottom Side	Left Side	Right Side
Main	<25	<25	<25	146	54	178
BT/WIFI	<25	<25	<25	146	208	28

Body mode: Positions for SAR tests						
Antennas	Front	Back	Top Side	Bottom Side	Left Side	Right Side
Main	Yes	Yes	Yes	No	No	No
BT/WIFI	Yes	Yes	Yes	No	No	No

Note:

1. Referring to KDB 616217 D04 v01r02, KDB 248227 D01 v02r02 and KDB 447498 D01 v06, this device is overall diagonal dimension (>20cm) tablet, tested in direct contact (no gap) with flat phantom.

14.3 Measured and Reported (Scaled) SAR Results

The calculated SAR is obtained by the following formula:
1. Reported SAR for WWAN=Measured SAR * Tune-up Scaling factor
2. Reported SAR for WLAN and Bluetooth=Measured SAR * Tune-up Scaling factor * Duty Cycle Scaling factor
3. Duty Cycle Scaling factor=1/ Duty Cycle (%)

KDB 447498 D01 General RF Exposure Guidance:
Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:
- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

KDB 648474 D04 Handset SAR v01r03:
1. When the *reported* SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest *reported* SAR configuration for that wireless mode and frequency band should be repeated for the body-worn accessory with a headset attached to the handset.
2. when the separation distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, using the same wireless mode test configuration for voice and data, such as UMTS, LTE and Wi-Fi, 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)
3. For Smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

KDB 941225 D01 3G SAR Procedures:
When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤1/4dB higher than the primary mode (RMC12.2kbps) or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

KDB 941225 D05 SAR for LTE Devices:
1. Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.
2. When the reported SAR is > 0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
3. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
4. SAR measurement is not required for the 16QAM and 64QAM. When the highest maximum output power for 16QAM and 64QAM is ≤ ½ dB higher than the QPSK or when the reported SAR for the QPSK configuration is ≤ 1.45 W/kg.
5. Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

KDB 248227 D01 802.11 Wi-Fi SAR

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements.

For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions.

DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.16 The initial test position procedure is described in the following:

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

Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.

When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR

WIFI 2.4G										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)	Turn up (dBm)	Turn-up Scaling Factor	SAR1g (W/kg)		Plot No.
								Meas.	Scaled	
Body (0mm)	b	Front Face	11	2462	16.40	17.0	1.148	0.205	0.235	
		Back Face	11	2462	16.40	17.0	1.148	0.123	0.141	
		Top Side	11	2462	16.40	17.0	1.148	0.271	**0.311**	1

GSM 850										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)	Turn up (dBm)	Turn-up Scaling Factor	SAR1g (W/kg)		Plot No.
								Meas.	Scaled	
Body (0mm)	GSM	Front Face	128	824.2	32.35	33.0	1.161	0.483	0.561	
		Back Face	128	824.2	32.35	33.0	1.161	0.310	0.360	
	GPRS	Front Face	128	824.2	31.65	32.0	1.084	0.737	**0.799**	2
		Back Face	128	824.2	31.65	32.0	1.084	0.467	0.506	
		Top Side	128	824.2	31.65	32.0	1.084	0.507	0.550	

GSM1900										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)	Turn up (dBm)	Turn-up Scaling Factor	SAR1g (W/kg)		Plot No.
								Meas.	Scaled	
Body (0mm)	GSM	Front Face	512	1850.2	29.77	30.0	1.054	0.708	0.747	
		Back Face	512	1850.2	29.77	30.0	1.054	0.549	0.579	
	GPRS	Front Face	512	1850.2	27.17	27.5	1.079	0.746	**0.805**	3
		Back Face	512	1850.2	27.17	27.5	1.079	0.663	0.715	
		Top Side	512	1850.2	27.17	27.5	1.079	0.722	0.779	

WCDMA Band II										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)	Turn up (dBm)	Turn-up Scaling Factor	SAR1g (W/kg)		Plot No.
								Meas.	Scaled	
Body (0mm)	RMC	Front Face	9262	1852.4	23.42	24.0	1.143	0.704	0.805	
		Back Face	9262	1852.4	23.42	24.0	1.143	0.470	0.537	
		Top Side	9262	1852.4	23.42	24.0	1.143	0.791	**0.904**	4

WCDMA Band V										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)	Turn up (dBm)	Turn-up Scaling Factor	SAR1g (W/kg)		Plot No.
								Meas.	Scaled	
Body (0mm)	RMC	Front Face	4182	836.4	23.71	24.0	1.069	0.573	0.613	
		Back Face	4182	836.4	23.71	24.0	1.069	0.778	0.832	
		Top Side	4182	836.4	23.71	24.0	1.069	0.874	**0.934**	5
		Top Side	4132	826.4	23.66	24.0	1.081	0.810	0.876	
		Top Side	4233	846.6	23.69	24.0	1.074	0.833	0.895	

LTE Band 2 (20MHz Bandwidth)										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)	Turn up (dBm)	Turn-up Scaling Factor	SAR1g (W/kg)		Plot No.
								Meas.	Scaled	
Body (0mm)	QPSK 1RB	Front Face	18700	1860	23.04	23.5	1.112	0.792	0.880	
		Back Face	18700	1860	23.04	23.5	1.112	0.385	0.428	
		Top Side	18700	1860	23.04	23.5	1.112	0.981	1.091	
		Top Side	18900	1880	22.61	23.5	1.227	0.848	1.041	
		Top Side	19100	1900	22.56	23.5	1.242	0.938	**1.165**	6
	QPSK 50%RB	Front Face	18700	1860	21.86	22.5	1.159	0.657	0.761	
		Back Face	18700	1860	21.86	22.5	1.159	0.318	0.368	
		Top Side	18700	1860	21.86	22.5	1.159	0.765	0.886	
		Top Side	18900	1880	21.63	22.5	1.222	0.614	0.750	
		Top Side	19100	1900	21.43	22.5	1.279	0.695	0.889	

LTE Band 4 (20MHz Bandwidth)										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)	Turn up (dBm)	Turn-up Scaling Factor	SAR1g (W/kg)		Plot No.
								Meas.	Scaled	
Body (0mm)	QPSK 1RB	Front Face	20175	1732.5	23.34	24.0	1.164	0.417	0.485	
		Back Face	20175	1732.5	23.34	24.0	1.164	0.469	0.546	
		Top Side	20175	1732.5	23.34	24.0	1.164	0.701	**0.816**	7
	QPSK 50%RB	Front Face	20175	1732.5	22.18	22.5	1.076	0.405	0.436	
		Back Face	20175	1732.5	22.18	22.5	1.076	0.441	0.475	
		Top Side	20175	1732.5	22.18	22.5	1.076	0.657	0.707	

LTE Band 7 (20MHz Bandwidth)										
RF Exposure Conditions	Mode	Test Position	CH.	Freq. (MHz)	Output Power (dBm)	Turn up (dBm)	Turn-up Scaling Factor	SAR1g (W/kg)		Plot No.
								Meas.	Scaled	
Body (0mm)	QPSK 1RB	Front Face	20775	2502.5	21.57	22.0	1.104	0.634	0.700	
		Back Face	20775	2502.5	21.57	22.0	1.104	0.931	1.028	
		Top Side	20775	2502.5	21.57	22.0	1.104	0.873	0.964	
		Back Face	21100	2535	21.50	22.0	1.122	0.905	1.015	
		Back Face	21425	2567.5	21.30	22.0	1.175	0.893	**1.049**	8
	QPSK 50%RB	Front Face	20775	2502.5	20.41	21.0	1.146	0.433	0.496	
		Back Face	20775	2502.5	20.41	21.0	1.146	0.812	0.930	
		Top Side	20775	2502.5	20.41	21.0	1.146	0.709	0.812	
		Back Face	21100	2535	20.38	21.0	1.153	0.861	0.993	
		Back Face	21425	2567.5	20.34	21.0	1.164	0.815	0.949	
	QPSK 100%RB	Back Face	20775	2502.5	20.35	21.0	1.161	0.613	0.712	

14.4 SAR Measurement Variability

According to KDB865664, Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations, which may introduce significant compliance concerns. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%, which are often related to device and measurement setup difficulties. The following procedures are applied to determine if repeated measurements are required. The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.19 The repeated measurement results must be clearly identified in the SAR report. All measured SAR, including the repeated results, must be considered to determine compliance and for reporting according to KDB 690783.Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

1) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
2) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20

Test Mode	Frequency Band (MHz)	RF Exposure Configuration	Test Position	Repeated SAR (yes/no)	Highest Measured SAR1-g (W/Kg)	First Repeated	
						Measured SAR1-g (W/Kg)	Largest to Smallest SAR Ratio
WCDMA Band V	836.4	Body	Top Side	YES	0.874	0.853	1.025
LTE Band 2	1900	Body	Top Side	YES	0.938	0.908	1.033
LTE Band 7	2567.5	Body	Back Face	YES	0.931	0.907	1.026

14.5 Simultaneous Transmission Evaluation

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmiting antenna.

Application Simultaneous Transmission information:

No.	Configurations	Body SAR
1	WWAN + WIFI	Yes
2	WWAN + Bluetooth	Yes
3	WIFI 2.4G + WIFI 5G	No
4	WIFI + Bluetooth	No

Remark:

1. Wi-Fi 2.4GHz and Wi-Fi 5GHz cannot transmit simultaneously.
2. WIFI2.4G and Bluetooth are the same antenna and cannot be sent at the same time.
3. According to the KDB 447498 D01 v06, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

● (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;
where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.
● 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm

Estimated stand alone SAR					
Mode	**Frequency (MHz)**	**Maximum Power (mW)**	**Separation Distance (mm)**	**X**	**Estimated SAR1-g (W/kg)**
Bluetooth	2480	2.0	5	3.0	0.084
Bluetooth	2480	2.0	10	7.5	0.042

Note:

1. Maximum average power including tune-up tolerance;
2. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

4. Per FCC KD B447498 D01, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the transmitting antenna in a specific a physical test configuration is ≤1.6 W/Kg. When the sum is greater than the SAR limit, SAR test exclusion is determined by the SAR to peak location separation ratio.

$$\text{Ratio}=\frac{(SAR_1+SAR_2)^{1.5}}{(\text{peak location separation,mm})}<0.04$$

5. Simultaneous transmission of maximum SAR sum calculation.

RF Exposure Conditions	Test Position	Standalone SAR (W/kg)			Summed SAR (W/kg)	
		1	2	3	1+2	1+3
		WWAN	WIFI	Bluetooth		
Body	Front	0.880	0.235	0.084	1.115	0.964
	Back	1.049	0.141	0.084	1.190	1.133
	Top	1.165	0.311	0.084	1.476	1.249
	Bottom	/	/	0.084	/	0.084
	Left	/	/	0.084	/	0.084
	Right	/	/	0.084	/	0.084

15. Test Plots

15.1 System Performance Check

System check at 835 MHz
Date of measurement: 25/6/2024

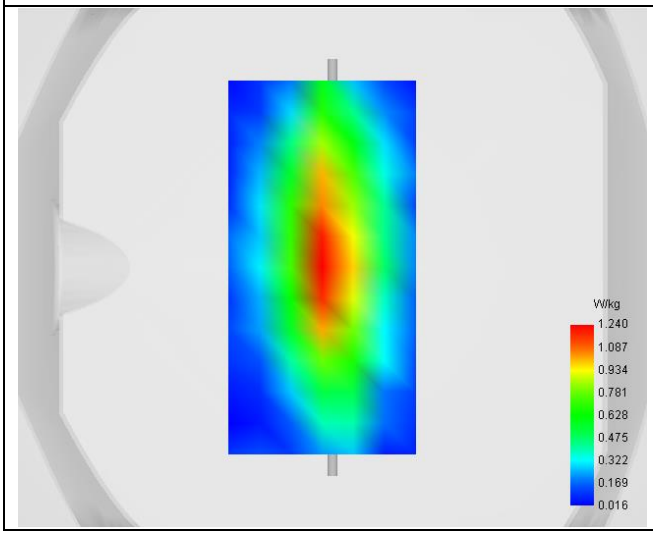
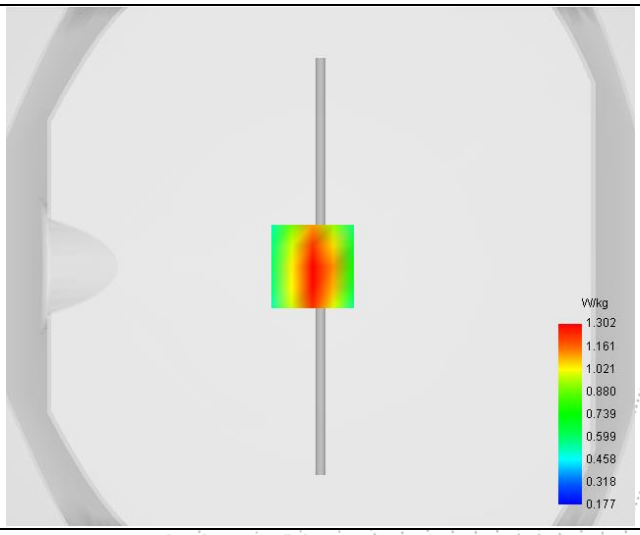
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	0.80
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	835.000
Relative permitivity (real part)	40.134
Relative permitivity (imaginary part)	20.910
Conductivity (S/m)	0.913

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

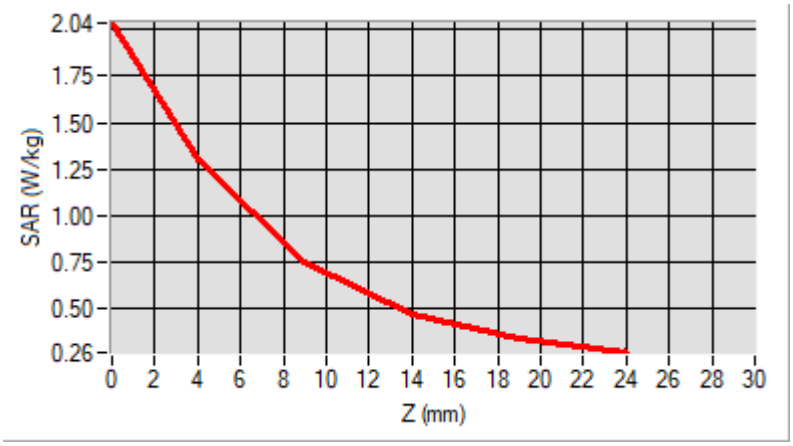
Maximum location: X=-3.00, Y=0.00 ; SAR Peak: 2.06 W/kg

D. SAR 1g & 10g

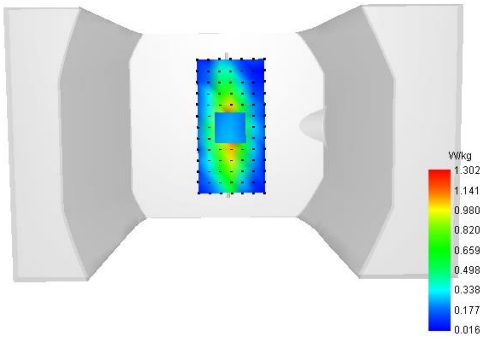
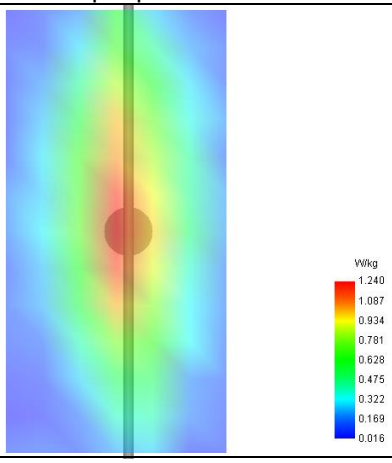
SAR 10g (W/Kg)	1.071
SAR 1g (W/Kg)	2.529
Variation (%)	0.854
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	2.036	1.302	0.747	0.462	0.331



F. 3D Image

3D screen shot	Hot spot position
	

System check at 1800 MHz

Date of measurement: 25/6/2024

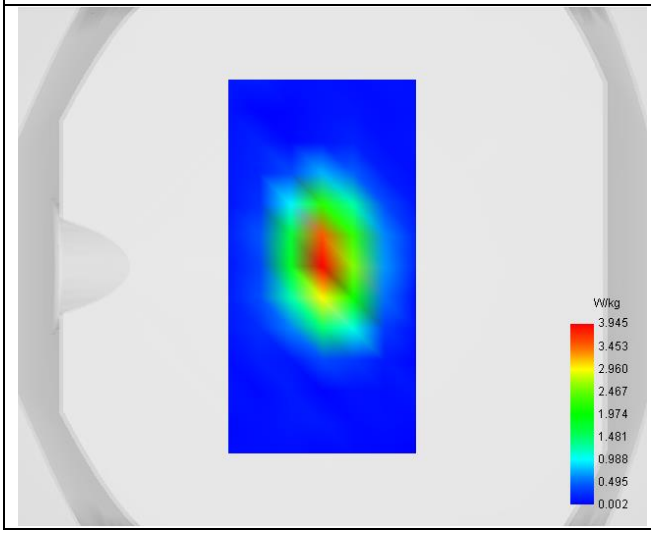
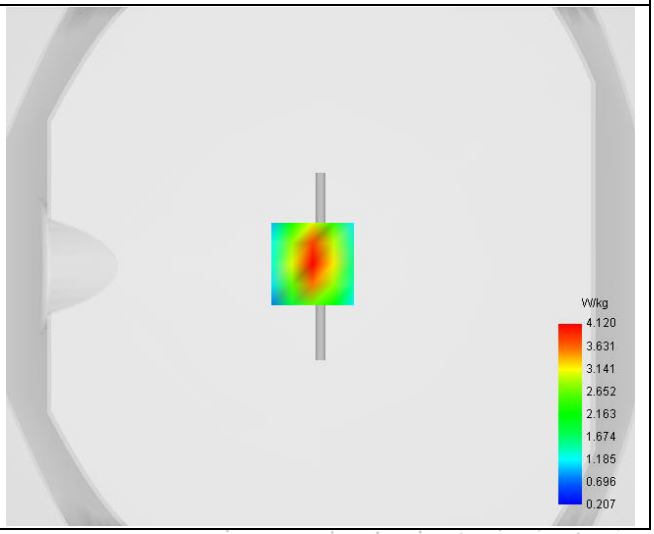
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.01
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	1800.000
Relative permitivity (real part)	40.684
Relative permitivity (imaginary part)	15.200
Conductivity (S/m)	1.448

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

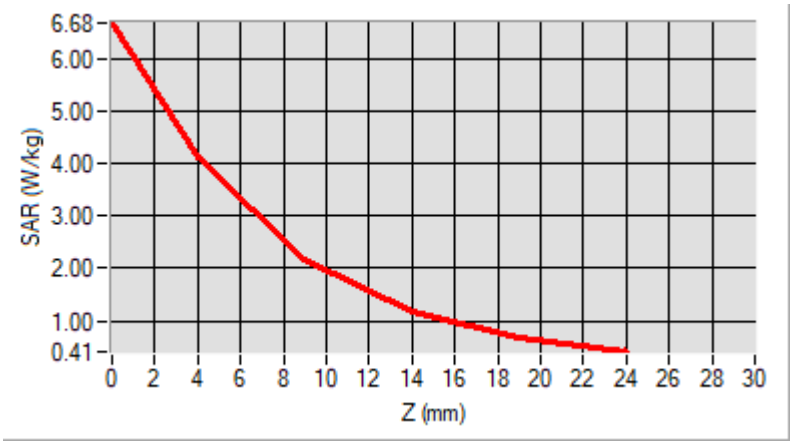
Maximum location: X=-3.00, Y=1.00 ; SAR Peak: 6.69 W/kg

D. SAR 1g & 10g

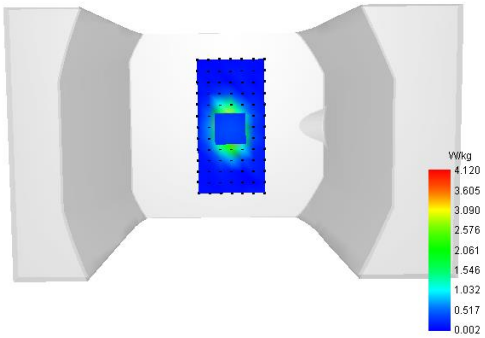
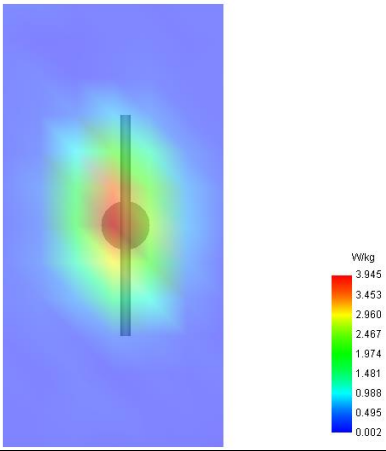
SAR 10g (W/Kg)	4.941
SAR 1g (W/Kg)	10.067
Variation (%)	-3.189
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	6.684	4.120	2.184	1.177	0.685



F. 3D Image

3D screen shot	Hot spot position
	

System check at 1900 MHz

Date of measurement: 26/6/2024

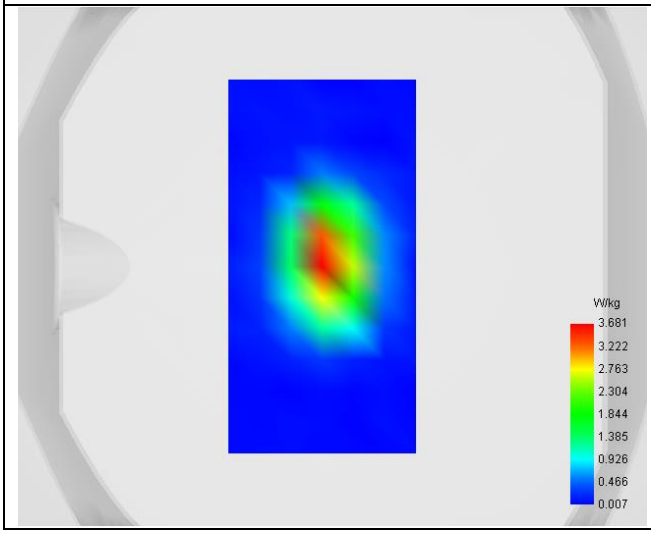
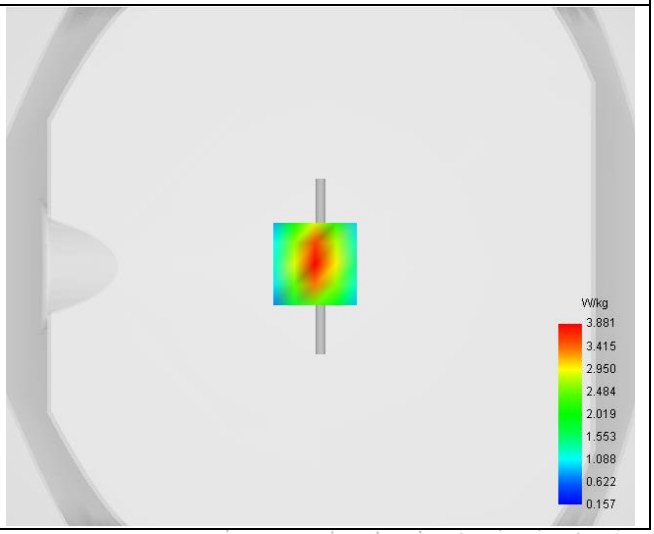
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.11
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	1900.000
Relative permitivity (real part)	40.272
Relative permitivity (imaginary part)	14.400
Conductivity (S/m)	1.387

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

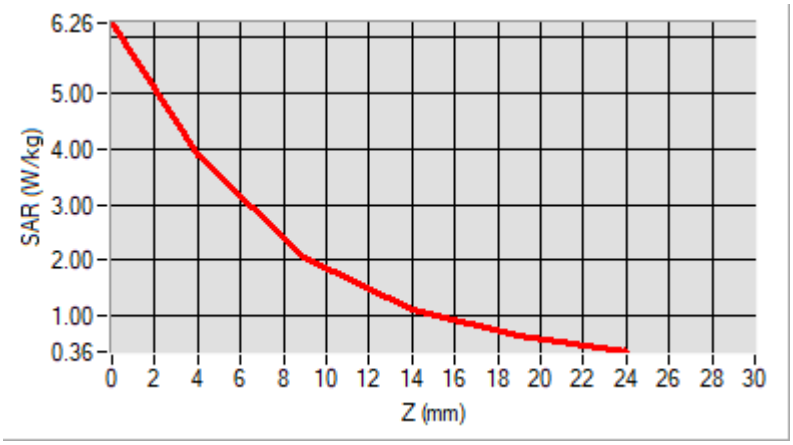
Maximum location: X=-2.00, Y=1.00 ; SAR Peak: 6.27 W/kg

D. SAR 1g & 10g

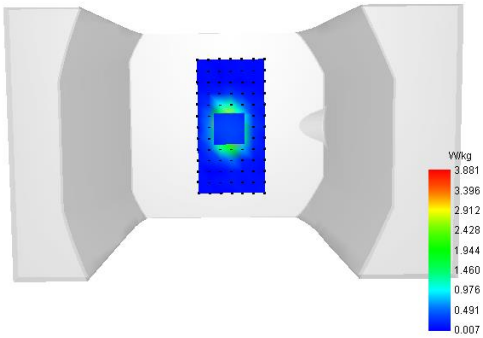
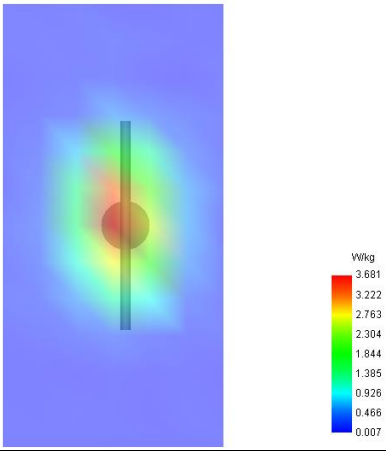
SAR 10g (W/Kg)	4.523
SAR 1g (W/Kg)	10.005
Variation (%)	-1.273
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	6.259	3.881	2.069	1.111	0.634



F. 3D Image

3D screen shot	Hot spot position
	

System check at 2450MHz
Date of measurement: 8/7/2024

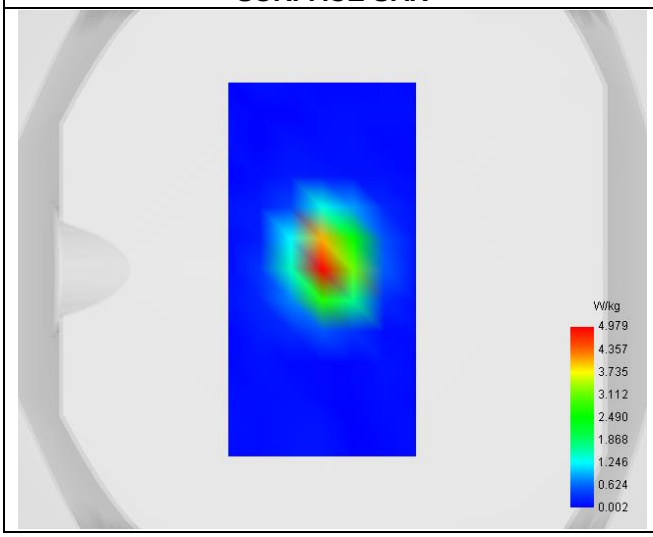
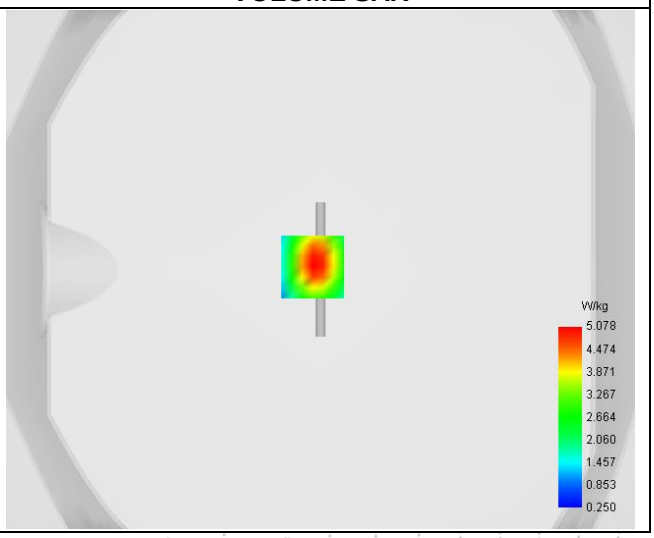
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.32
Area Scan	surf_sam_plan.txt
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	2450.000
Relative permitivity (real part)	38.889
Relative permitivity (imaginary part)	14.330
Conductivity (S/m)	1.746

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

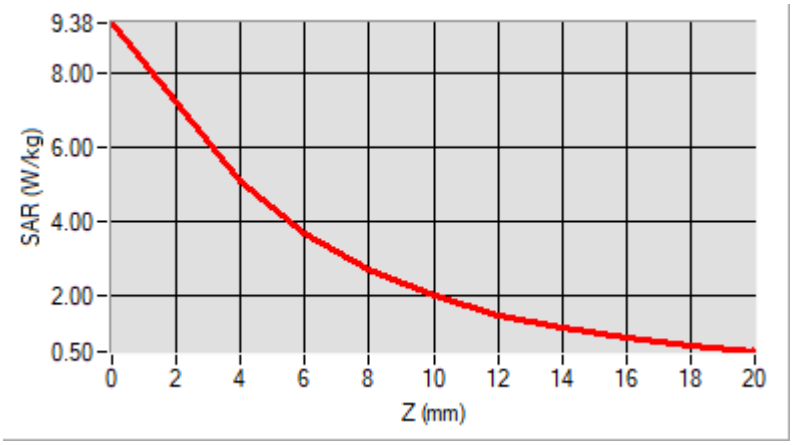
Maximum location: X=-3.00, Y=1.00 ; SAR Peak: 9.50 W/kg

D. SAR 1g & 10g

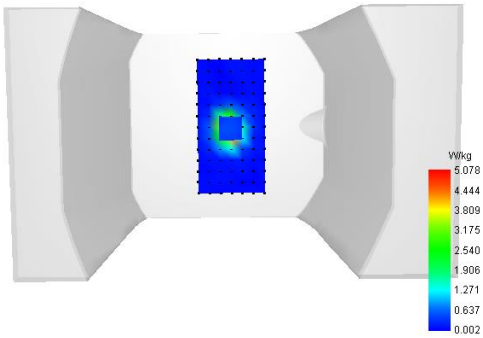
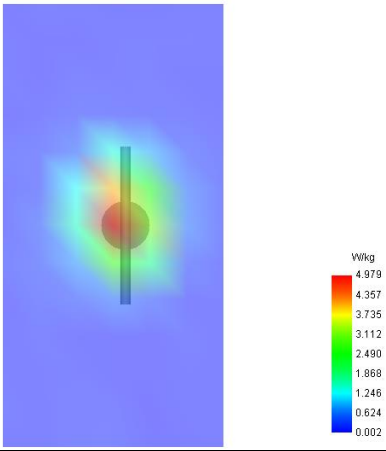
SAR 10g (W/Kg)	6.736
SAR 1g (W/Kg)	13.955
Variation (%)	3.829
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
SAR (W/Kg)	9.380	5.078	3.712	2.709	2.001	1.499	1.138	0.871	0.667



F. 3D Image

3D screen shot	Hot spot position
	

System check at 2600MHz
Date of measurement: 8/7/2024

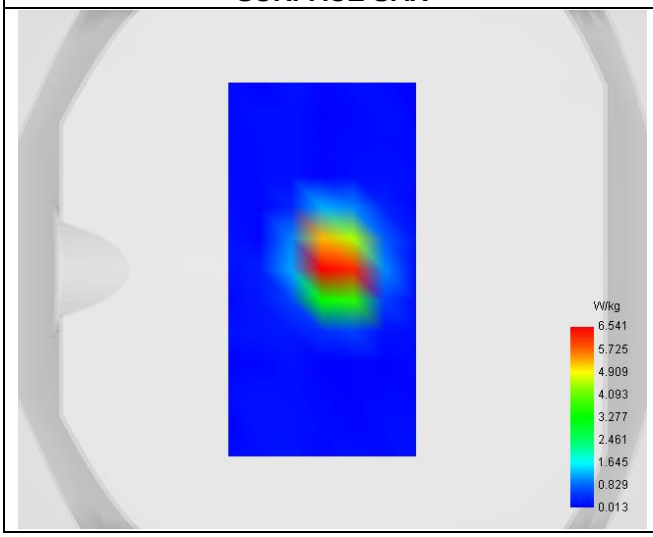
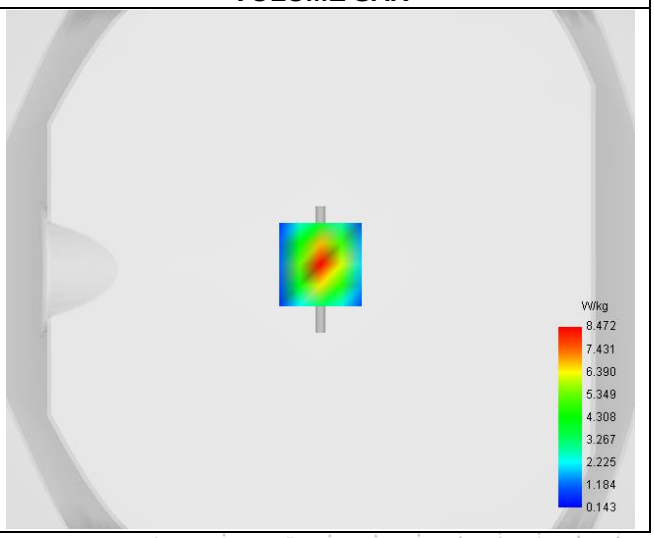
A. Experimental conditions.

Probe	SN 26/23 EPGO420
ConvF	1.19
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2600
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	2600.000
Relative permitivity (real part)	39.585
Relative permitivity (imaginary part)	14.889
Conductivity (S/m)	2.025

C. SAR Surface and Volume

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=0.00, Y=2.00 ; SAR Peak: 15.35 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	6.048
SAR 1g (W/Kg)	14.564
Variation (%)	1.528
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	15.347	8.472	3.768	1.677	0.856