FCC SAR Test Report

Report No.	:	**1813C50331312501**
Applicant	:	**Shenzhen Arington Technology Co., Ltd.**
Address	:	**501, Bldg D, Huawan Industrial Park, No.4159 Baoan Avenue,Baoan District Shenzhen, 518000 China**
Product Name	:	**Mobile phone**
Report Date	:	**2025-08-28**

Shenzhen Anbotek Compliance Laboratory Limited

Contents

TEST REPORT

Applicant	:	Shenzhen Arington Technology Co., Ltd.
Manufacturer	:	Shenzhen Arington Technology Co., Ltd.
Product Name	:	Mobile phone
Model No.	:	C8, C8A, C81, SLV41 4G DS
Trade Mark	:	N/A
Rating(s)	:	DC 5V,550mA;DC3.7V,1400mAh battery inside
Test Standard(s)	**:**	**IEEE Std 1528™-2013; FCC 47 CFR Part 2.1093; ANSI/IEEE C95.1:2019; Reference FCC KDB 447498 D01 v06; KDB 248227 D01 v02r02; KDB 865664 D01**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the IEEE Std 1528™-2013, FCC 47 CFR Part 2.1093, IEEE Std C95.1-2019 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt	2025-07-24
Date of Test	2025-07-25 to 2025-07-28
Prepared By	Qiangfei Yang (Qiangfei Yang)
Approved & Authorized Signer	Yufan Xie (Yufan Xie)

Version

Version No.	Date	Description
R00	2025-08-28	Original

1. Statement of Compliance

<Body>

Frequency Band	Highest Reported 1g-SAR(W/Kg)	SAR Test Limit (W/Kg)
	Body-worn (5mm)	
GSM850	0.424	1.6
PCS1900	0.064	
LTE Band 2	0.845	
LTE Band 7	0.254	
LTE Band 12	0.135	
LTE Band 17	0.134	
Test Result	PASS	

<Head>

Frequency Band	Highest Reported 1g-SAR(W/Kg)	SAR Test Limit (W/Kg)
	Head-worn	
GSM850	0.390	1.6
PCS1900	0.289	
LTE Band 2	0.654	
LTE Band 7	0.787	
LTE Band 12	0.780	
LTE Band 17	0.207	
Test Result	PASS	

This 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 2.1093 and IEEE Std C95.1-2019, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528™-2013.

2. General Information

2.1. Client Information

Applicant	:	Shenzhen Arington Technology Co., Ltd.
Address	:	501, Bldg D, Huawan Industrial Park, No.4159 Baoan Avenue, Baoan District Shenzhen, 518000 China
Manufacturer	:	Shenzhen Arington Technology Co., Ltd.
Address	:	501, Bldg D, Huawan Industrial Park, No.4159 Baoan Avenue, Baoan District Shenzhen, 518000 China
Factory	:	Shenzhen Arington Technology Co., Ltd.
Address	:	501, Bldg D, Huawan Industrial Park, No.4159 Baoan Avenue, Baoan District Shenzhen, 518000 China

2.2. Description of Equipment Under Test (EUT)

Product Name	:	Mobile phone
Model No.	:	C8, C8A, C81, SLV41 4G DS (Note: All samples are the same except the model name, so we prepare "C8 for test only.)
Trade Mark	:	N/A
Test Power Supply	:	DC3.7V,1400mAh battery inside
Test Sample No.	:	1-2-1(Engineering Sample)
Tx Frequency	:	BT:2402MHz-2480MHz GSM 850:824MHz-849MHz PCS1900:1850MHz-1910MHz FDD Band 2:1850MHz-1910MHz FDD Band 7:2500MHz-2570MHz FDD Band 12:699MHz-716MHz FDD Band 17:704MHz-716MHz
Type of Modulation	:	BT:GFSK,Π/4-DQPSK,8DPSK GSM850/PCS1900: GMSK LTE:QPSK,16QAM
Category of device	:	Portable device

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

2.3. Device Category and SAR Limits

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user. Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

2.4. Applied Standard

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2.1093
- IEEE Std C95.1-2019
- IEEE Std 1528™-2013
- KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- KDB 865664 D02 RF Exposure Reporting v01r02
- KDB 447498 D01 General RF Exposure Guidance v06
- KDB 248227 D01 802 11 Wi-Fi SAR v02r02
- KDB 941225 D05 SAR for LTE Devices v02r05

2.5. Environment of Test Site

Items	Required	Actual
Temperature (℃)	18-25	22~23
Humidity (%RH)	30-70	55~65

2.6. Test Configuration

For GSM,LTE connect to CMW500 and set to the highest power to test.

2.7. Description of Test Facility

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

FCC-Registration No.:279531

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 279531

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.

Sogood Industrial Zone Laboratory & 1/F. of Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Subdistrict, Bao'an District, Shenzhen, Guangdong, China.

3. Specific Absorption Rate (SAR)

3.1. 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 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.

3.2. 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:

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

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

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

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

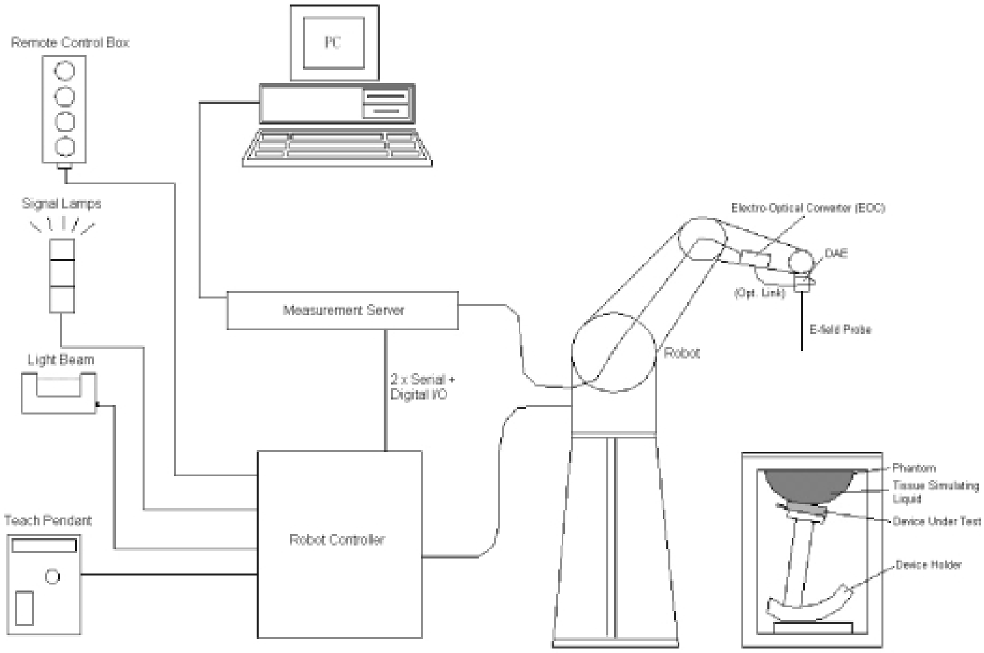
Where: C is the specific head capacity, δT is the temperature rise and δtisthe exposure duration, or related to the electrical field in the tissue by

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

Where:σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

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

4. SAR Measurement System



DASY System Configurations

The DASYsystem for performance compliance tests is illustrated above graphically. This system consists of the following items:

- ➢ A standard high precision 6-axis robot with controller, a teach pendant and software
- ➢ A data acquisition electronic (DAE) attached to the robot arm extension
- ➢ A dosimetric probe equipped with an optical surface detector system
- ➢ The electro-optical converter (EOC) performs the conversion between optical and electrical signals
- ➢ A measurement server performs the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- ➢ A probe alignment unit which improves the accuracy of the probe positioning
- ➢ A computer operating Windows XP
- ➢ DASY software
- ➢ Remove control with teach pendant and additional circuitry for robot safety such as warming lamps, etc.
- ➢ The SAM twin phantom and ELI4 Phantom
- ➢ A device holder
- ➢ Tissue simulating liquid
- ➢ Dipole for evaluating the proper functioning of the system

components are described in details in the following sub-sections.

4.1. E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

- **E-Field Probe Specification**

<EX3DV4 Probe>

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	10 MHz to 6 GHz; Linearity: ± 0.2 dB
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 μW/g to 100 W/kg; Linearity: ± 0.2 dB (noise: typically< 1 μW/g)
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm

Photo of EX3DV4

- **E-Field Probe Calibration**

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy shall be evaluated and within ± 0.25dB. The sensitivity parameters (NormX, NormY, and NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested. The calibration data can be referred to appendix C of this report.

4.2. Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80dB.

Photo of DAE

4.3. Robot

The SPEAG DASY system uses the high precision robots (DASY5: TX60L) type from Stäubli SA (France). For the 6-axis controllersystem, the robot controller version (DASY5: CS8c) from Stäubli is used. The Stäublirobot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

Photo of DASY5

4.4. Measurement Server

The measurement server is based on a PC/104 CPU board with CPU (DASY5: 400 MHz, Intel Celeron), chipdisk (DASY5: 128 MB), RAM (DASY5: 128 MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all the real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operations.

Photo of Server for DASY5

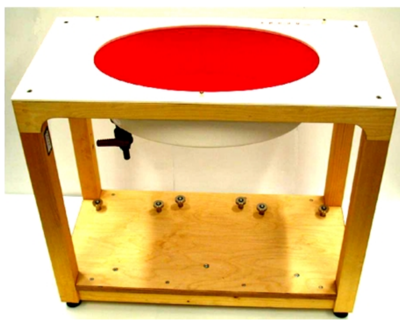
4.5. Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm	
Filling Volume	Approx. 25 liters	
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet	
Measurement Areas	Left Hand, Right Hand, Flat Phantom	**Photo of SAM Phantom**

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI4 Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)	
Filling Volume	Approx. 30 liters	
Dimensions	Major ellipse axis: 600 mm Minor axis:400 mm	**Photo of ELI4 Phantom**

The ELI4 phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

4.6. 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 ±0.5mm 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.

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

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity ε = 3 and loss tangent δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

Device Holder

4.7. Data Storage and Evaluation

- Data Storage

The DASY software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files. The post-processing software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of erroneous parameter settings. For example, if a measurement has been performed with an incorrect crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be reevaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type (e.g., [V/m], [A/m], [W/kg]). Some of these units are not available in certain situations or give meaningless results, e.g., a SAR-output in a non-lose media, will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

- Data Evaluation

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

Probe parameters:	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcp_i
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ

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

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power.

The formula for each channel can be given as：

$$\mathbf{V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}}$$

with V_i= compensated signal of channel i, (i = x, y, z)
U_i = input signal of channel i, (i = x, y, z)
cf = crest factor of exciting field (DASY parameter)
dcp_i = diode compression point (DASY parameter)

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

E-field Probes： $\mathbf{E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}}$

H-field Probes： $\mathbf{H_i} = \sqrt{\mathbf{V_i}} \cdot \frac{\mathbf{a_{i0} + a_{i1}f + a_{i2}f^2}}{\mathbf{f}}$

with V_i = compensated signal of channel i,(i= x, y, z)
$Norm_i$= sensor sensitivity of channel i, (i= x, y, z), μV/(V/m)^2 for E-field Probes
ConvF= sensitivity enhancement in solution
a_{ij}= sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
E_i= electric field strength of channel iin V/m
H_i= magnetic field strength of channel iin A/m

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

$$\mathbf{E_{tot}} = \sqrt{\mathbf{E_x^2 + E_y^2 + E_z^2}}$$

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

$$\mathbf{SAR} = \mathbf{E_{tot}^2} \cdot \frac{\boldsymbol{\sigma}}{\boldsymbol{\rho} \cdot \mathbf{1000}}$$

with SAR = local specific absorption rate in W/kg
E_{tot}= total field strength in V/m
σ = conductivity in [mho/m] or [Siemens/m]
ρ = equivalent tissue density in g/cm^3

Note that the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

5. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1118	Jun. 04,2024	Jun. 03,2027
SPEAG	835MHz System Validation Kit	D835V2	4d164	Jun. 11,2024	Jun. 10,2027
SPEAG	1900MHz System Validation Kit	D1900V2	5d089	Mar. 28,2025	Mar. 27,2028
SPEAG	2600MHz System Validation Kit	D2600V2	1058	Jun. 12,2024	Jun. 11,2027
Rohde & Schwarz	UNIVERSAL RADIO COMMUNICATION TESTER	CMW 500	104209	Oct.26, 2024	Oct.25, 2025
SPEAG	Data Acquisition Electronics	DAE4	387	Sep.02, 2024	Sep.01, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	7396	May 06,2025	May 05,2026
Agilent	ENA Series Network Analyzer	E5071C	MY46317418	Oct.26, 2024	Oct.25, 2025
SPEAG	DAK	DAK-3.5	1226	Oct.26, 2024	Oct.25, 2025
SPEAG	SAM Twin Phantom	QD000P40CD	1802	NCR	NCR
SPEAG	ELI Phantom	QDOVA004AA	2058	NCR	NCR
Mini-Circuits	Amplifier	ZVA-183W-S+	932502132	NCR	NCR
Agilent	Power Meter	N1914A	MY50001102	Oct.26, 2024	Oct.25, 2025
Agilent	Power Sensor	E9323A	US40410647	Jan. 23, 2025	Jan. 22, 2026
Agilent	Power Sensor	E9323A	MY53100007	Jan. 23, 2025	Jan. 22, 2026
CDKMV	Attenuator	6610	6610-1	Oct.20, 2024	Oct.19, 2025
CDKMV	Attenuator	6606	6606-1	Oct.20, 2024	Oct.19, 2025
CDKMV	Attenuator	6603	6603-1	Oct.20, 2024	Oct.19, 2025
Agilent	Spectrum Analyzer	N9020A	MY51170037	Oct.26, 2024	Oct.25, 2025
Agilent	Signal Generation	N5182A	MY48180656	Oct.26, 2024	Oct.25, 2025
Worken	Directional Coupler	0110A05601O-10	COM5BNW1A2	Oct.26, 2024	Oct.25, 2025

Note:

1. The calibration certificate of DASY can be referred to appendix C of this report.
2. The dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The Insertion Loss calibration of Dual Directional Coupler and Attenuator were characterized via the network analyzer and compensated during system check.
4. The dielectric probe kit was calibrated via the network analyzer, with the specified procedure (calibrated in pure water) and calibration kit (standard) short circuit, before the dielectric measurement. The specific procedure and calibration kit are provided by Agilent.
5. In system check we need to monitor the level on the power meter, and adjust the power amplifier level to have precise power level to the dipole; the measured SAR will be normalized to 1W input power according to the ratio of 1W to the input power to the dipole. For system check, the calibration of the power amplifier is deemed not critically required for correct measurement; the power meter is critical and we do have calibration for it.

6. Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, 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, which is shown in Fig. 6.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown as followed:

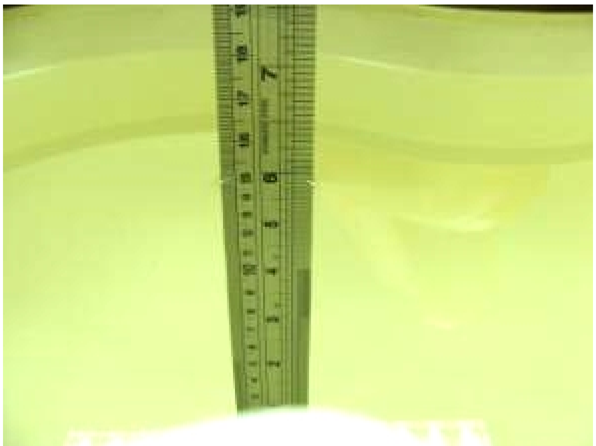


Photo of Liquid Height for Head SAR

The following table shows the measuring results for simulating liquid.

Measured Frequency (MHz)	Measured Tissue		Target Tissue		Dev. (%)		Liquid Temp.	Test Date
	Conductivity (σ)	Permittivity (εr)	Conductivity Target (σ)	Permittivity Target (εr)	Delta (σ) (%)	Delta (εr) (%)		
707.5	0.79	42.85	0.83	42.62	-4.82	0.54	0.79	2025-07-25
711	0.81	42.83	0.83	42.60	-2.41	0.54	0.81	2025-07-25
750	0.88	41.76	0.89	41.90	-1.12	-0.33	0.88	2025-07-25
835	0.93	41.68	0.95	41.48	-2.11	0.48	0.93	2025-07-26
836.6	0.93	41.68	0.96	41.46	-3.12	0.53	0.93	2025-07-26
1850.2	1.41	40.16	1.38	40.04	2.17	0.30	1.41	2025-07-27
1860	1.42	40.12	1.39	40.03	2.16	0.22	1.42	2025-07-27
1900	1.44	40.23	1.38	40.00	4.35	0.57	1.44	2025-07-27

2510	1.84	39.25	1.88	39.18	-2.13	0.18	1.84	2025-07-28
2600	1.95	39.02	1.96	39.00	-0.51	0.05	1.95	2025-07-28

7. System Verification Procedures

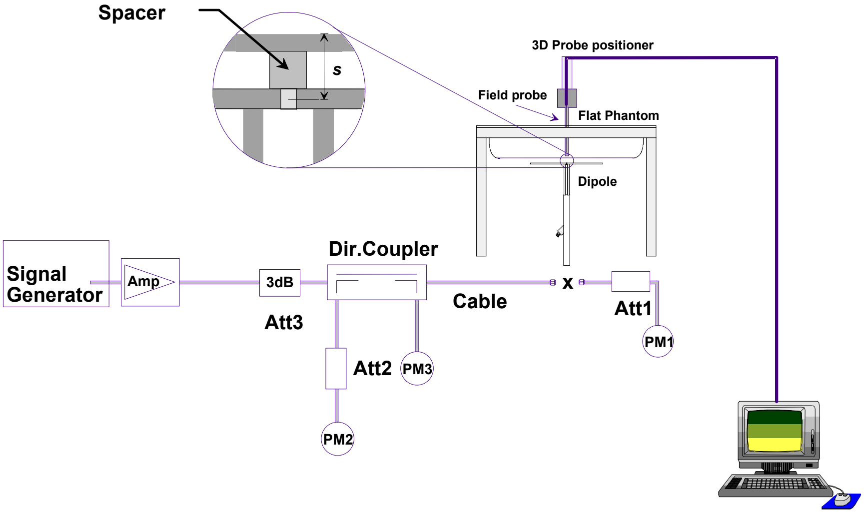
Each DASY system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the DASY software, enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix it underneath the flat phantom and a corresponding distance holder.

- **Purpose of System Performance check**

  The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

- **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 that comes from a signal generator. 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 equipment setup is shown below:



System Setup for System Evaluation

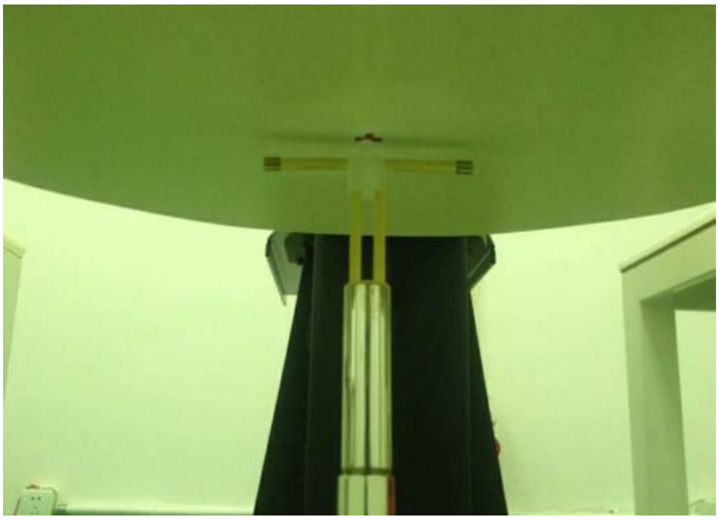


Photo of Dipole Setup

➢ **Validation Results**

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10%. The table below shows the target SAR and measured SAR after normalized to 1W input power. It indicates that the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Frequency (MHz)	Power fed onto reference dipole (mW)	Targeted SAR 1g(W/kg)	Measured SAR 1g(W/kg)	Normalized SAR 1g(W/kg)	Deviation (%)	Test Date
750	250	8.31	2.25	9.00	8.30	205-07-25
835	250	9.24	2.43	9.72	5.19	205-07-26
1900	250	42.4	10.21	40.84	-3.68	205-07-27
2600	250	57.2	15.23	60.92	6.50	205-07-28

Target and Measurement SAR after Normalized

8. EUT Testing Position

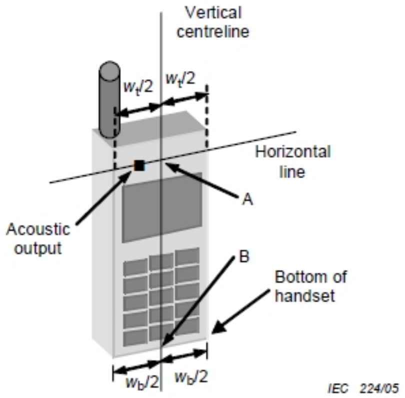
8.1. Head Position

The wireless device define two imaginary lines on the handset, the vertical centreline and the horizontal line, for the handset in vertical orientation as shown in Figures 5a and 5b.

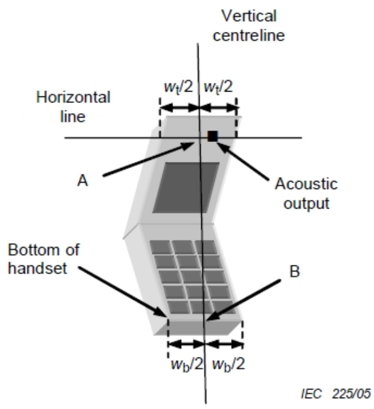
The vertical centreline passes through two points on the front side of the handset: the midpoint of the width W_t of the handset at the level of the acoustic output (point A in Figures 5a and 5b), and the midpoint of the width W_b of the bottom of the handset (point B).

The horizontal line is perpendicular to the vertical centreline and passes through the centre of the acoustic output (see Figures 5a and 5b). The two lines intersect at point A.

Note that for many handsets, point A coincides with the centre of the acoustic output. However, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centreline is not necessarily parallel to the front face of the handset (see Figure 5b), especially for clam-shell handsets, handsets with flip cover pieces, and other irregularly shaped handsets.



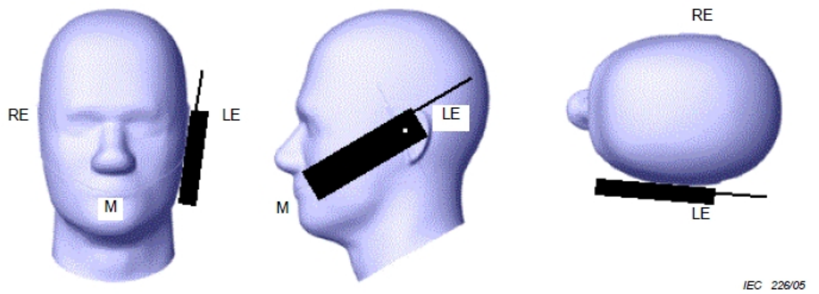
Figures 5a



Figures 5b

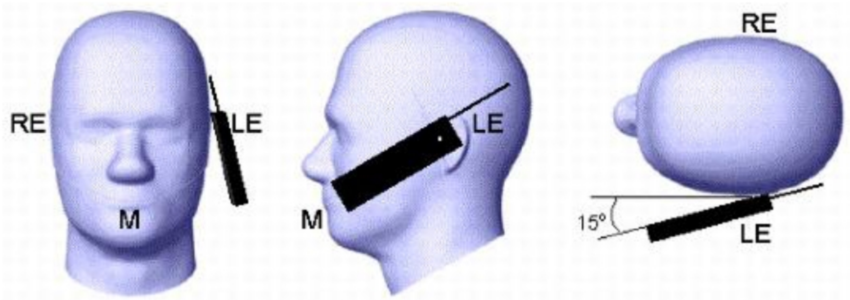
W_t	Width of the handset at the level of the acoustic
W_b	Width of the bottom of the handset
A	Midpoint of the widthwt of the handset at the level of the acoustic output
B	Midpoint of the width wb of the bottom of the handset

Cheek position



Cheek position of the wireless device on the left side of SAM

Tilt position



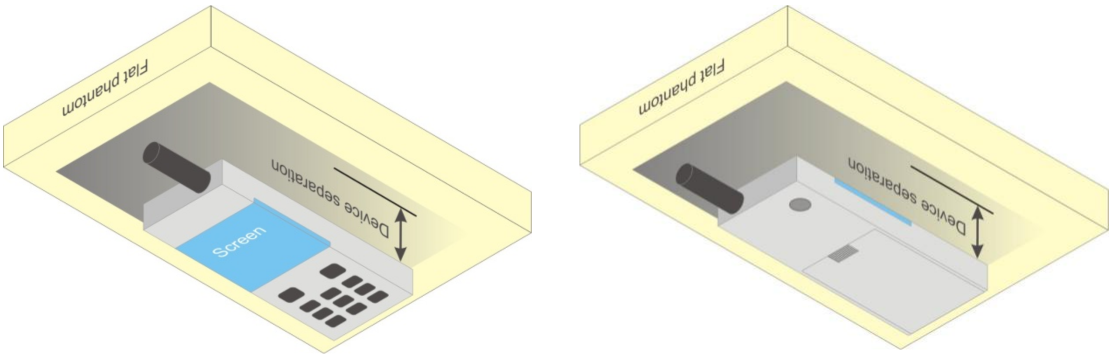
Tilt position of the wireless device on the left side of SAM

8.2. Body Worn Position

(a) To position the device parallel to the phantom surface with either keypad up or down.

(b) To adjust the device parallel to the flat phantom.

(c) To adjust the distance between the device surface and the flat phantom to 0.5 cm.



Body Worn Position

9. 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 middle channel.
(b) Keep EUT to radiate maximum output power or 100% duty factor (if applicable)
(c) Measure output power through RF cable and power meter.
(d) Place the EUT in the positions as setup photos demonstrates.
(e) Set scan area, grid size and other setting on the DASY software.
(f) Measure SAR transmitting at the middle channel for all applicable exposure positions.
(g) Identify the exposure position and device configuration resulting the highest SAR
(h) Measure SAR at the lowest and highest channels attheworst exposure position and device configuration if applicable.

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

9.1. 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 DASY 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 (SEMCAD). 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 (A/D values and measurement parameters)
(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 3-D 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

9.2. Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

9.3. Area Scan Procedures

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

9.4. Zoom Scan Procedures

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 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.				

9.5. 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 aggregateSAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

9.6. Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY 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.

10. Conducted Power

<GSM>

Band GSM850	Burst Average Power (dBm)			Frame-Average Power (dBm)			
TX Channel	128	190	251	128	190	251	Tune-Up Power(dBm)
Frequency (MHz)	824.2	836.6	848.8	824.2	836.6	848.8	
GSM	32.48	32.53	32.09	23.45	23.50	23.06	23.50
GPRS (GMSK, 1 Tx slot) – CS1	32.45	32.47	32.04	23.42	23.44	23.01	23.50
GPRS (GMSK, 2 Tx slots) – CS1	30.38	30.45	30.05	24.36	24.43	24.03	24.50
GPRS (GMSK, 3 Tx slots) – CS1	28.70	28.80	28.44	24.44	24.54	24.18	25.00
GPRS (GMSK, 4 Tx slots) – CS1	26.63	26.76	26.44	23.62	23.75	23.43	24.00
Band PCS1900	Burst Average Power (dBm)			Frame-Average Power (dBm)			
TX Channel	512	661	810	512	661	810	Tune-Up Power(dBm)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	
PCS	27.97	27.83	27.85	18.94	18.80	18.82	19.00
GPRS (GMSK, 1 Tx slot) – CS1	28.00	27.93	27.93	18.97	18.90	18.90	19.00
GPRS (GMSK, 2 Tx slots) – CS1	25.96	25.81	25.81	19.94	19.79	19.79	20.00
GPRS (GMSK, 3 Tx slots) – CS1	24.48	24.33	24.33	20.22	20.07	20.07	20.50
GPRS (GMSK, 4 Tx slots) – CS1	22.53	22.38	22.37	19.52	19.37	19.36	20.00
Frame-averaged power = Maximum burst averaged power (1 Tx Slot) – 9.03 dB Frame-averaged power = Maximum burst averaged power (2 Tx Slots) – 6.02 dB Frame-averaged power = Maximum burst averaged power (3 Tx Slots) - 4.26 dB Frame-averaged power = Maximum burst averaged power (4 Tx Slots) – 3.01 dB							

Note:

1. For Body-worn SAR testing, the mode of highest source-based time-average power amongGPRS and EDGE is selected to be tested; therefore GSM850 and PCS1900 bandGPRS 4 Tx slots are selected.
2. Start tests at middle channel and determine the worst configuration for further high/low channel tests.

<LTE>

Band 2

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Tune-up
Band2	1.4MHz	QPSK	18607	1RB#0	21.50	22.00
Band2	1.4MHz	QPSK	18607	1RB#2	21.67	22.00
Band2	1.4MHz	QPSK	18607	1RB#5	21.45	22.00
Band2	1.4MHz	QPSK	18607	3RB#0	21.53	22.00
Band2	1.4MHz	QPSK	18607	3RB#1	21.46	22.00
Band2	1.4MHz	QPSK	18607	3RB#3	21.46	22.00
Band2	1.4MHz	QPSK	18607	6RB#0	20.45	21.00
Band2	1.4MHz	QPSK	18900	1RB#0	20.74	21.00
Band2	1.4MHz	QPSK	18900	1RB#2	20.78	21.00
Band2	1.4MHz	QPSK	18900	1RB#5	20.54	21.00
Band2	1.4MHz	QPSK	18900	3RB#0	20.69	21.00
Band2	1.4MHz	QPSK	18900	3RB#1	20.68	21.00
Band2	1.4MHz	QPSK	18900	3RB#3	20.59	21.00
Band2	1.4MHz	QPSK	18900	6RB#0	20.34	21.00
Band2	1.4MHz	QPSK	19193	1RB#0	19.29	20.00
Band2	1.4MHz	QPSK	19193	1RB#2	19.64	20.00
Band2	1.4MHz	QPSK	19193	1RB#5	19.68	20.00
Band2	1.4MHz	QPSK	19193	3RB#0	19.43	20.00
Band2	1.4MHz	QPSK	19193	3RB#1	19.60	20.00
Band2	1.4MHz	QPSK	19193	3RB#3	19.69	20.00
Band2	1.4MHz	QPSK	19193	6RB#0	19.57	20.00
Band2	1.4MHz	16QAM	18607	1RB#0	19.88	20.00
Band2	1.4MHz	16QAM	18607	1RB#2	20.97	21.00
Band2	1.4MHz	16QAM	18607	1RB#5	19.83	20.00
Band2	1.4MHz	16QAM	18607	3RB#0	20.22	21.00
Band2	1.4MHz	16QAM	18607	3RB#1	20.22	21.00
Band2	1.4MHz	16QAM	18607	3RB#3	20.21	21.00
Band2	1.4MHz	16QAM	18607	6RB#0	19.48	20.00
Band2	1.4MHz	16QAM	18900	1RB#0	20.44	21.00
Band2	1.4MHz	16QAM	18900	1RB#2	19.96	20.00
Band2	1.4MHz	16QAM	18900	1RB#5	20.28	21.00
Band2	1.4MHz	16QAM	18900	3RB#0	20.32	21.00
Band2	1.4MHz	16QAM	18900	3RB#1	20.26	21.00
Band2	1.4MHz	16QAM	18900	3RB#3	20.21	21.00
Band2	1.4MHz	16QAM	18900	6RB#0	19.61	20.00
Band2	1.4MHz	16QAM	19193	1RB#0	19.23	20.00
Band2	1.4MHz	16QAM	19193	1RB#2	19.67	20.00

Band2	1.4MHz	16QAM	19193	1RB#5	19.66	20.00
Band2	1.4MHz	16QAM	19193	3RB#0	19.26	20.00
Band2	1.4MHz	16QAM	19193	3RB#1	19.54	20.00
Band2	1.4MHz	16QAM	19193	3RB#3	19.43	20.00
Band2	1.4MHz	16QAM	19193	6RB#0	19.10	20.00
Band2	3MHz	QPSK	18615	1RB#0	21.54	22.00
Band2	3MHz	QPSK	18615	1RB#8	21.81	22.00
Band2	3MHz	QPSK	18615	1RB#14	21.48	22.00
Band2	3MHz	QPSK	18615	8RB#0	20.54	21.00
Band2	3MHz	QPSK	18615	8RB#4	20.46	21.00
Band2	3MHz	QPSK	18615	8RB#7	20.42	21.00
Band2	3MHz	QPSK	18615	15RB#0	20.45	21.00
Band2	3MHz	QPSK	18900	1RB#0	20.42	21.00
Band2	3MHz	QPSK	18900	1RB#8	20.31	21.00
Band2	3MHz	QPSK	18900	1RB#14	20.14	21.00
Band2	3MHz	QPSK	18900	8RB#0	20.34	21.00
Band2	3MHz	QPSK	18900	8RB#4	20.33	21.00
Band2	3MHz	QPSK	18900	8RB#7	20.25	21.00
Band2	3MHz	QPSK	18900	15RB#0	20.28	21.00
Band2	3MHz	QPSK	19185	1RB#0	18.65	19.00
Band2	3MHz	QPSK	19185	1RB#8	19.23	20.00
Band2	3MHz	QPSK	19185	1RB#14	19.68	20.00
Band2	3MHz	QPSK	19185	8RB#0	18.86	19.00
Band2	3MHz	QPSK	19185	8RB#4	19.20	20.00
Band2	3MHz	QPSK	19185	8RB#7	19.43	20.00
Band2	3MHz	QPSK	19185	15RB#0	19.14	20.00
Band2	3MHz	16QAM	18615	1RB#0	19.90	20.00
Band2	3MHz	16QAM	18615	1RB#8	20.94	21.00
Band2	3MHz	16QAM	18615	1RB#14	19.85	20.00
Band2	3MHz	16QAM	18615	8RB#0	19.83	20.00
Band2	3MHz	16QAM	18615	8RB#4	19.52	20.00
Band2	3MHz	16QAM	18615	8RB#7	19.80	20.00
Band2	3MHz	16QAM	18615	15RB#0	19.46	20.00
Band2	3MHz	16QAM	18900	1RB#0	20.13	21.00
Band2	3MHz	16QAM	18900	1RB#8	19.93	20.00
Band2	3MHz	16QAM	18900	1RB#14	19.90	20.00
Band2	3MHz	16QAM	18900	8RB#0	19.63	20.00
Band2	3MHz	16QAM	18900	8RB#4	19.20	20.00
Band2	3MHz	16QAM	18900	8RB#7	19.40	20.00
Band2	3MHz	16QAM	18900	15RB#0	19.59	20.00

Band2	3MHz	16QAM	19185	1RB#0	18.63	19.00
Band2	3MHz	16QAM	19185	1RB#8	19.21	20.00
Band2	3MHz	16QAM	19185	1RB#14	19.71	20.00
Band2	3MHz	16QAM	19185	8RB#0	18.92	19.00
Band2	3MHz	16QAM	19185	8RB#4	19.06	20.00
Band2	3MHz	16QAM	19185	8RB#7	19.22	20.00
Band2	3MHz	16QAM	19185	15RB#0	19.07	20.00
Band2	5MHz	QPSK	18625	1RB#0	21.50	22.00
Band2	5MHz	QPSK	18625	1RB#12	21.46	22.00
Band2	5MHz	QPSK	18625	1RB#24	21.45	22.00
Band2	5MHz	QPSK	18625	12RB#0	20.47	21.00
Band2	5MHz	QPSK	18625	12RB#6	20.50	21.00
Band2	5MHz	QPSK	18625	12RB#13	20.48	21.00
Band2	5MHz	QPSK	18625	25RB#0	20.41	21.00
Band2	5MHz	QPSK	18900	1RB#0	20.04	21.00
Band2	5MHz	QPSK	18900	1RB#12	20.24	21.00
Band2	5MHz	QPSK	18900	1RB#24	19.63	20.00
Band2	5MHz	QPSK	18900	12RB#0	20.19	21.00
Band2	5MHz	QPSK	18900	12RB#6	20.26	21.00
Band2	5MHz	QPSK	18900	12RB#13	20.02	21.00
Band2	5MHz	QPSK	18900	25RB#0	20.11	21.00
Band2	5MHz	QPSK	19175	1RB#0	18.20	19.00
Band2	5MHz	QPSK	19175	1RB#12	18.74	19.00
Band2	5MHz	QPSK	19175	1RB#24	19.31	20.00
Band2	5MHz	QPSK	19175	12RB#0	18.44	19.00
Band2	5MHz	QPSK	19175	12RB#6	18.79	19.00
Band2	5MHz	QPSK	19175	12RB#13	19.09	20.00
Band2	5MHz	QPSK	19175	25RB#0	18.75	19.00
Band2	5MHz	16QAM	18625	1RB#0	19.95	20.00
Band2	5MHz	16QAM	18625	1RB#12	20.22	21.00
Band2	5MHz	16QAM	18625	1RB#24	19.85	20.00
Band2	5MHz	16QAM	18625	12RB#0	19.57	20.00
Band2	5MHz	16QAM	18625	12RB#6	19.50	20.00
Band2	5MHz	16QAM	18625	12RB#13	19.58	20.00
Band2	5MHz	16QAM	18625	25RB#0	19.64	20.00
Band2	5MHz	16QAM	18900	1RB#0	20.08	21.00
Band2	5MHz	16QAM	18900	1RB#12	20.37	21.00
Band2	5MHz	16QAM	18900	1RB#24	19.72	20.00
Band2	5MHz	16QAM	18900	12RB#0	19.77	20.00
Band2	5MHz	16QAM	18900	12RB#6	19.69	20.00

Band2	5MHz	16QAM	18900	12RB#13	19.52	20.00
Band2	5MHz	16QAM	18900	25RB#0	19.61	20.00
Band2	5MHz	16QAM	19175	1RB#0	18.09	19.00
Band2	5MHz	16QAM	19175	1RB#12	18.82	19.00
Band2	5MHz	16QAM	19175	1RB#24	19.24	20.00
Band2	5MHz	16QAM	19175	12RB#0	18.50	19.00
Band2	5MHz	16QAM	19175	12RB#6	18.79	19.00
Band2	5MHz	16QAM	19175	12RB#13	19.00	19.00
Band2	5MHz	16QAM	19175	25RB#0	18.83	19.00
Band2	10MHz	QPSK	18650	1RB#0	21.50	22.00
Band2	10MHz	QPSK	18650	1RB#24	21.73	22.00
Band2	10MHz	QPSK	18650	1RB#49	21.51	22.00
Band2	10MHz	QPSK	18650	25RB#0	20.55	21.00
Band2	10MHz	QPSK	18650	25RB#12	20.44	21.00
Band2	10MHz	QPSK	18650	25RB#25	20.53	21.00
Band2	10MHz	QPSK	18650	50RB#0	20.41	21.00
Band2	10MHz	QPSK	18900	1RB#0	20.93	21.00
Band2	10MHz	QPSK	18900	1RB#24	20.49	21.00
Band2	10MHz	QPSK	18900	1RB#49	20.65	21.00
Band2	10MHz	QPSK	18900	25RB#0	20.44	21.00
Band2	10MHz	QPSK	18900	25RB#12	20.29	21.00
Band2	10MHz	QPSK	18900	25RB#25	20.30	21.00
Band2	10MHz	QPSK	18900	50RB#0	20.36	21.00
Band2	10MHz	QPSK	19150	1RB#0	20.14	21.00
Band2	10MHz	QPSK	19150	1RB#24	18.92	19.00
Band2	10MHz	QPSK	19150	1RB#49	20.05	21.00
Band2	10MHz	QPSK	19150	25RB#0	19.46	20.00
Band2	10MHz	QPSK	19150	25RB#12	19.03	20.00
Band2	10MHz	QPSK	19150	25RB#25	19.26	20.00
Band2	10MHz	QPSK	19150	50RB#0	19.34	20.00
Band2	10MHz	16QAM	18650	1RB#0	20.46	21.00
Band2	10MHz	16QAM	18650	1RB#24	21.20	22.00
Band2	10MHz	16QAM	18650	1RB#49	20.40	21.00
Band2	10MHz	16QAM	18650	25RB#0	19.76	20.00
Band2	10MHz	16QAM	18650	25RB#12	19.63	20.00
Band2	10MHz	16QAM	18650	25RB#25	19.67	20.00
Band2	10MHz	16QAM	18650	50RB#0	19.55	20.00
Band2	10MHz	16QAM	18900	1RB#0	20.63	21.00
Band2	10MHz	16QAM	18900	1RB#24	20.48	21.00
Band2	10MHz	16QAM	18900	1RB#49	20.40	21.00

Band2	10MHz	16QAM	18900	25RB#0	19.60	20.00
Band2	10MHz	16QAM	18900	25RB#12	19.77	20.00
Band2	10MHz	16QAM	18900	25RB#25	19.34	20.00
Band2	10MHz	16QAM	18900	50RB#0	19.71	20.00
Band2	10MHz	16QAM	19150	1RB#0	19.99	20.00
Band2	10MHz	16QAM	19150	1RB#24	18.89	19.00
Band2	10MHz	16QAM	19150	1RB#49	20.08	21.00
Band2	10MHz	16QAM	19150	25RB#0	19.25	20.00
Band2	10MHz	16QAM	19150	25RB#12	19.05	20.00
Band2	10MHz	16QAM	19150	25RB#25	19.10	20.00
Band2	10MHz	16QAM	19150	50RB#0	19.37	20.00
Band2	15MHz	QPSK	18675	1RB#0	21.53	22.00
Band2	15MHz	QPSK	18675	1RB#38	21.53	22.00
Band2	15MHz	QPSK	18675	1RB#74	21.52	22.00
Band2	15MHz	QPSK	18675	38RB#0	20.49	21.00
Band2	15MHz	QPSK	18675	38RB#18	20.46	21.00
Band2	15MHz	QPSK	18675	38RB#37	20.51	21.00
Band2	15MHz	QPSK	18675	75RB#0	20.50	21.00
Band2	15MHz	QPSK	18900	1RB#0	21.23	22.00
Band2	15MHz	QPSK	18900	1RB#38	20.46	21.00
Band2	15MHz	QPSK	18900	1RB#74	20.50	21.00
Band2	15MHz	QPSK	18900	38RB#0	20.51	21.00
Band2	15MHz	QPSK	18900	38RB#18	20.41	21.00
Band2	15MHz	QPSK	18900	38RB#37	20.51	21.00
Band2	15MHz	QPSK	18900	75RB#0	20.50	21.00
Band2	15MHz	QPSK	19125	1RB#0	21.05	22.00
Band2	15MHz	QPSK	19125	1RB#38	19.47	20.00
Band2	15MHz	QPSK	19125	1RB#74	19.64	20.00
Band2	15MHz	QPSK	19125	38RB#0	20.05	21.00
Band2	15MHz	QPSK	19125	38RB#18	19.80	20.00
Band2	15MHz	QPSK	19125	38RB#37	20.08	21.00
Band2	15MHz	QPSK	19125	75RB#0	20.07	21.00
Band2	15MHz	16QAM	18675	1RB#0	20.60	21.00
Band2	15MHz	16QAM	18675	1RB#38	21.16	22.00
Band2	15MHz	16QAM	18675	1RB#74	20.57	21.00
Band2	15MHz	16QAM	18675	38RB#0	20.49	21.00
Band2	15MHz	16QAM	18675	38RB#18	19.54	20.00
Band2	15MHz	16QAM	18675	38RB#37	20.50	21.00
Band2	15MHz	16QAM	18675	75RB#0	19.52	20.00
Band2	15MHz	16QAM	18900	1RB#0	20.41	21.00

Band2	15MHz	16QAM	18900	1RB#38	20.44	21.00
Band2	15MHz	16QAM	18900	1RB#74	20.03	21.00
Band2	15MHz	16QAM	18900	38RB#0	20.51	21.00
Band2	15MHz	16QAM	18900	38RB#18	19.71	20.00
Band2	15MHz	16QAM	18900	38RB#37	20.50	21.00
Band2	15MHz	16QAM	18900	75RB#0	19.68	20.00
Band2	15MHz	16QAM	19125	1RB#0	20.65	21.00
Band2	15MHz	16QAM	19125	1RB#38	19.47	20.00
Band2	15MHz	16QAM	19125	1RB#74	19.37	20.00
Band2	15MHz	16QAM	19125	38RB#0	20.07	21.00
Band2	15MHz	16QAM	19125	38RB#18	19.38	20.00
Band2	15MHz	16QAM	19125	38RB#37	20.07	21.00
Band2	15MHz	16QAM	19125	75RB#0	19.35	20.00
Band2	20MHz	QPSK	18700	1RB#0	21.76	22.00
Band2	20MHz	QPSK	18700	1RB#49	21.53	22.00
Band2	20MHz	QPSK	18700	1RB#99	21.80	22.00
Band2	20MHz	QPSK	18700	50RB#0	20.42	21.00
Band2	20MHz	QPSK	18700	50RB#25	20.47	21.00
Band2	20MHz	QPSK	18700	50RB#50	20.51	21.00
Band2	20MHz	QPSK	18700	100RB#0	20.51	21.00
Band2	20MHz	QPSK	18900	1RB#0	21.75	22.00
Band2	20MHz	QPSK	18900	1RB#49	20.40	21.00
Band2	20MHz	QPSK	18900	1RB#99	21.33	22.00
Band2	20MHz	QPSK	18900	50RB#0	20.60	21.00
Band2	20MHz	QPSK	18900	50RB#25	20.42	21.00
Band2	20MHz	QPSK	18900	50RB#50	20.29	21.00
Band2	20MHz	QPSK	18900	100RB#0	20.42	21.00
Band2	20MHz	QPSK	19100	1RB#0	21.09	22.00
Band2	20MHz	QPSK	19100	1RB#49	20.66	21.00
Band2	20MHz	QPSK	19100	1RB#99	20.23	21.00
Band2	20MHz	QPSK	19100	50RB#0	20.13	21.00
Band2	20MHz	QPSK	19100	50RB#25	20.08	21.00
Band2	20MHz	QPSK	19100	50RB#50	19.68	20.00
Band2	20MHz	QPSK	19100	100RB#0	20.10	21.00
Band2	20MHz	16QAM	18700	1RB#0	20.38	21.00
Band2	20MHz	16QAM	18700	1RB#49	19.87	20.00
Band2	20MHz	16QAM	18700	1RB#99	20.48	21.00
Band2	20MHz	16QAM	18700	50RB#0	19.63	20.00
Band2	20MHz	16QAM	18700	50RB#25	19.58	20.00
Band2	20MHz	16QAM	18700	50RB#50	19.71	20.00

Band2	20MHz	16QAM	18700	100RB#0	19.65	20.00
Band2	20MHz	16QAM	18900	1RB#0	21.10	22.00
Band2	20MHz	16QAM	18900	1RB#49	20.53	21.00
Band2	20MHz	16QAM	18900	1RB#99	20.68	21.00
Band2	20MHz	16QAM	18900	50RB#0	19.55	20.00
Band2	20MHz	16QAM	18900	50RB#25	19.72	20.00
Band2	20MHz	16QAM	18900	50RB#50	19.42	20.00
Band2	20MHz	16QAM	18900	100RB#0	19.73	20.00
Band2	20MHz	16QAM	19100	1RB#0	19.86	20.00
Band2	20MHz	16QAM	19100	1RB#49	19.87	20.00
Band2	20MHz	16QAM	19100	1RB#99	19.91	20.00
Band2	20MHz	16QAM	19100	50RB#0	19.14	20.00
Band2	20MHz	16QAM	19100	50RB#25	19.24	20.00
Band2	20MHz	16QAM	19100	50RB#50	19.58	20.00
Band2	20MHz	16QAM	19100	100RB#0	19.18	20.00

Band 7

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Tune-up
Band7	5MHz	QPSK	20775	1RB#0	20.39	21.00
Band7	5MHz	QPSK	20775	1RB#12	20.42	21.00
Band7	5MHz	QPSK	20775	1RB#24	20.34	21.00
Band7	5MHz	QPSK	20775	12RB#0	19.32	20.00
Band7	5MHz	QPSK	20775	12RB#6	19.33	20.00
Band7	5MHz	QPSK	20775	12RB#13	19.33	20.00
Band7	5MHz	QPSK	20775	25RB#0	19.32	20.00
Band7	5MHz	QPSK	21100	1RB#0	19.80	20.00
Band7	5MHz	QPSK	21100	1RB#12	19.62	20.00
Band7	5MHz	QPSK	21100	1RB#24	19.89	20.00
Band7	5MHz	QPSK	21100	12RB#0	18.90	19.00
Band7	5MHz	QPSK	21100	12RB#6	18.94	19.00
Band7	5MHz	QPSK	21100	12RB#13	18.78	19.00
Band7	5MHz	QPSK	21100	25RB#0	18.83	19.00
Band7	5MHz	QPSK	21425	1RB#0	19.23	20.00
Band7	5MHz	QPSK	21425	1RB#12	19.18	20.00
Band7	5MHz	QPSK	21425	1RB#24	19.04	20.00
Band7	5MHz	QPSK	21425	12RB#0	18.20	19.00
Band7	5MHz	QPSK	21425	12RB#6	18.27	19.00
Band7	5MHz	QPSK	21425	12RB#13	18.11	19.00
Band7	5MHz	QPSK	21425	25RB#0	18.23	19.00
Band7	5MHz	16QAM	20775	1RB#0	19.53	20.00
Band7	5MHz	16QAM	20775	1RB#12	19.96	20.00
Band7	5MHz	16QAM	20775	1RB#24	19.48	20.00
Band7	5MHz	16QAM	20775	12RB#0	18.29	19.00
Band7	5MHz	16QAM	20775	12RB#6	18.22	19.00
Band7	5MHz	16QAM	20775	12RB#13	18.32	19.00
Band7	5MHz	16QAM	20775	25RB#0	18.31	19.00
Band7	5MHz	16QAM	21100	1RB#0	18.96	19.00
Band7	5MHz	16QAM	21100	1RB#12	19.15	20.00
Band7	5MHz	16QAM	21100	1RB#24	18.88	19.00
Band7	5MHz	16QAM	21100	12RB#0	18.03	19.00
Band7	5MHz	16QAM	21100	12RB#6	17.93	18.00
Band7	5MHz	16QAM	21100	12RB#13	17.99	18.00
Band7	5MHz	16QAM	21100	25RB#0	18.07	19.00
Band7	5MHz	16QAM	21425	1RB#0	19.01	20.00
Band7	5MHz	16QAM	21425	1RB#12	19.02	20.00
Band7	5MHz	16QAM	21425	1RB#24	18.81	19.00

Band7	5MHz	16QAM	21425	12RB#0	17.44	18.00
Band7	5MHz	16QAM	21425	12RB#6	17.32	18.00
Band7	5MHz	16QAM	21425	12RB#13	17.30	18.00
Band7	5MHz	16QAM	21425	25RB#0	17.25	18.00
Band7	10MHz	QPSK	20800	1RB#0	20.18	21.00
Band7	10MHz	QPSK	20800	1RB#24	20.26	21.00
Band7	10MHz	QPSK	20800	1RB#49	19.82	20.00
Band7	10MHz	QPSK	20800	25RB#0	19.30	20.00
Band7	10MHz	QPSK	20800	25RB#12	19.22	20.00
Band7	10MHz	QPSK	20800	25RB#25	19.19	20.00
Band7	10MHz	QPSK	20800	50RB#0	19.29	20.00
Band7	10MHz	QPSK	21100	1RB#0	20.03	21.00
Band7	10MHz	QPSK	21100	1RB#24	20.16	21.00
Band7	10MHz	QPSK	21100	1RB#49	19.86	20.00
Band7	10MHz	QPSK	21100	25RB#0	18.93	19.00
Band7	10MHz	QPSK	21100	25RB#12	18.91	19.00
Band7	10MHz	QPSK	21100	25RB#25	19.10	20.00
Band7	10MHz	QPSK	21100	50RB#0	18.87	19.00
Band7	10MHz	QPSK	21400	1RB#0	17.77	18.00
Band7	10MHz	QPSK	21400	1RB#24	19.15	20.00
Band7	10MHz	QPSK	21400	1RB#49	18.91	19.00
Band7	10MHz	QPSK	21400	25RB#0	18.21	19.00
Band7	10MHz	QPSK	21400	25RB#12	18.17	19.00
Band7	10MHz	QPSK	21400	25RB#25	18.17	19.00
Band7	10MHz	QPSK	21400	50RB#0	18.26	19.00
Band7	10MHz	16QAM	20800	1RB#0	19.85	20.00
Band7	10MHz	16QAM	20800	1RB#24	20.39	21.00
Band7	10MHz	16QAM	20800	1RB#49	19.73	20.00
Band7	10MHz	16QAM	20800	25RB#0	18.32	19.00
Band7	10MHz	16QAM	20800	25RB#12	18.26	19.00
Band7	10MHz	16QAM	20800	25RB#25	18.17	19.00
Band7	10MHz	16QAM	20800	50RB#0	18.29	19.00
Band7	10MHz	16QAM	21100	1RB#0	19.40	20.00
Band7	10MHz	16QAM	21100	1RB#24	20.19	21.00
Band7	10MHz	16QAM	21100	1RB#49	19.24	20.00
Band7	10MHz	16QAM	21100	25RB#0	18.18	19.00
Band7	10MHz	16QAM	21100	25RB#12	18.07	19.00
Band7	10MHz	16QAM	21100	25RB#25	18.35	19.00
Band7	10MHz	16QAM	21100	50RB#0	18.12	19.00
Band7	10MHz	16QAM	21400	1RB#0	17.37	18.00

Band7	10MHz	16QAM	21400	1RB#24	19.14	20.00
Band7	10MHz	16QAM	21400	1RB#49	18.96	19.00
Band7	10MHz	16QAM	21400	25RB#0	17.45	18.00
Band7	10MHz	16QAM	21400	25RB#12	17.47	18.00
Band7	10MHz	16QAM	21400	25RB#25	17.29	18.00
Band7	10MHz	16QAM	21400	50RB#0	17.45	18.00
Band7	15MHz	QPSK	20825	1RB#0	20.13	21.00
Band7	15MHz	QPSK	20825	1RB#38	20.09	21.00
Band7	15MHz	QPSK	20825	1RB#74	19.11	20.00
Band7	15MHz	QPSK	20825	38RB#0	19.24	20.00
Band7	15MHz	QPSK	20825	38RB#18	19.23	20.00
Band7	15MHz	QPSK	20825	38RB#37	19.16	20.00
Band7	15MHz	QPSK	20825	75RB#0	19.15	20.00
Band7	15MHz	QPSK	21100	1RB#0	19.71	20.00
Band7	15MHz	QPSK	21100	1RB#38	20.06	21.00
Band7	15MHz	QPSK	21100	1RB#74	19.40	20.00
Band7	15MHz	QPSK	21100	38RB#0	18.95	19.00
Band7	15MHz	QPSK	21100	38RB#18	18.94	19.00
Band7	15MHz	QPSK	21100	38RB#37	18.86	19.00
Band7	15MHz	QPSK	21100	75RB#0	18.85	19.00
Band7	15MHz	QPSK	21375	1RB#0	18.38	19.00
Band7	15MHz	QPSK	21375	1RB#38	18.45	19.00
Band7	15MHz	QPSK	21375	1RB#74	18.85	19.00
Band7	15MHz	QPSK	21375	38RB#0	18.30	19.00
Band7	15MHz	QPSK	21375	38RB#18	18.26	19.00
Band7	15MHz	QPSK	21375	38RB#37	18.27	19.00
Band7	15MHz	QPSK	21375	75RB#0	18.21	19.00
Band7	15MHz	16QAM	20825	1RB#0	19.82	20.00
Band7	15MHz	16QAM	20825	1RB#38	19.82	20.00
Band7	15MHz	16QAM	20825	1RB#74	19.05	20.00
Band7	15MHz	16QAM	20825	38RB#0	19.26	20.00
Band7	15MHz	16QAM	20825	38RB#18	18.27	19.00
Band7	15MHz	16QAM	20825	38RB#37	19.15	20.00
Band7	15MHz	16QAM	20825	75RB#0	18.34	19.00
Band7	15MHz	16QAM	21100	1RB#0	19.59	20.00
Band7	15MHz	16QAM	21100	1RB#38	20.32	21.00
Band7	15MHz	16QAM	21100	1RB#74	19.36	20.00
Band7	15MHz	16QAM	21100	38RB#0	18.75	19.00
Band7	15MHz	16QAM	21100	38RB#18	18.07	19.00
Band7	15MHz	16QAM	21100	38RB#37	18.85	19.00

Band7	15MHz	16QAM	21100	75RB#0	18.02	19.00
Band7	15MHz	16QAM	21375	1RB#0	17.98	18.00
Band7	15MHz	16QAM	21375	1RB#38	18.35	19.00
Band7	15MHz	16QAM	21375	1RB#74	18.89	19.00
Band7	15MHz	16QAM	21375	38RB#0	18.27	19.00
Band7	15MHz	16QAM	21375	38RB#18	17.50	18.00
Band7	15MHz	16QAM	21375	38RB#37	18.24	19.00
Band7	15MHz	16QAM	21375	75RB#0	17.51	18.00
Band7	20MHz	QPSK	20850	1RB#0	20.37	21.00
Band7	20MHz	QPSK	20850	1RB#49	19.45	20.00
Band7	20MHz	QPSK	20850	1RB#99	19.42	20.00
Band7	20MHz	QPSK	20850	50RB#0	19.28	20.00
Band7	20MHz	QPSK	20850	50RB#25	19.04	20.00
Band7	20MHz	QPSK	20850	50RB#50	19.01	20.00
Band7	20MHz	QPSK	20850	100RB#0	19.21	20.00
Band7	20MHz	QPSK	21100	1RB#0	20.04	21.00
Band7	20MHz	QPSK	21100	1RB#49	19.81	20.00
Band7	20MHz	QPSK	21100	1RB#99	19.76	20.00
Band7	20MHz	QPSK	21100	50RB#0	19.03	20.00
Band7	20MHz	QPSK	21100	50RB#25	18.74	19.00
Band7	20MHz	QPSK	21100	50RB#50	18.70	19.00
Band7	20MHz	QPSK	21100	100RB#0	18.87	19.00
Band7	20MHz	QPSK	21350	1RB#0	19.52	20.00
Band7	20MHz	QPSK	21350	1RB#49	17.65	18.00
Band7	20MHz	QPSK	21350	1RB#99	19.09	20.00
Band7	20MHz	QPSK	21350	50RB#0	18.18	19.00
Band7	20MHz	QPSK	21350	50RB#25	17.91	18.00
Band7	20MHz	QPSK	21350	50RB#50	18.26	19.00
Band7	20MHz	QPSK	21350	100RB#0	18.20	19.00
Band7	20MHz	16QAM	20850	1RB#0	19.63	20.00
Band7	20MHz	16QAM	20850	1RB#49	19.15	20.00
Band7	20MHz	16QAM	20850	1RB#99	19.20	20.00
Band7	20MHz	16QAM	20850	50RB#0	18.43	19.00
Band7	20MHz	16QAM	20850	50RB#25	18.15	19.00
Band7	20MHz	16QAM	20850	50RB#50	18.24	19.00
Band7	20MHz	16QAM	20850	100RB#0	18.16	19.00
Band7	20MHz	16QAM	21100	1RB#0	20.09	21.00
Band7	20MHz	16QAM	21100	1RB#49	19.75	20.00
Band7	20MHz	16QAM	21100	1RB#99	19.84	20.00
Band7	20MHz	16QAM	21100	50RB#0	18.02	19.00

Band7	20MHz	16QAM	21100	50RB#25	17.92	18.00
Band7	20MHz	16QAM	21100	50RB#50	17.85	18.00
Band7	20MHz	16QAM	21100	100RB#0	17.96	18.00
Band7	20MHz	16QAM	21350	1RB#0	18.88	19.00
Band7	20MHz	16QAM	21350	1RB#49	17.51	18.00
Band7	20MHz	16QAM	21350	1RB#99	18.44	19.00
Band7	20MHz	16QAM	21350	50RB#0	17.59	18.00
Band7	20MHz	16QAM	21350	50RB#25	17.38	18.00
Band7	20MHz	16QAM	21350	50RB#50	17.36	18.00
Band7	20MHz	16QAM	21350	100RB#0	17.29	18.00

Band 12

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Tune-up
Band12	1.4MHz	QPSK	23017	1RB#0	21.67	22.00
Band12	1.4MHz	QPSK	23017	1RB#2	21.48	22.00
Band12	1.4MHz	QPSK	23017	1RB#5	21.61	22.00
Band12	1.4MHz	QPSK	23017	3RB#0	21.68	22.00
Band12	1.4MHz	QPSK	23017	3RB#1	21.78	22.00
Band12	1.4MHz	QPSK	23017	3RB#3	21.76	22.00
Band12	1.4MHz	QPSK	23017	6RB#0	20.74	21.00
Band12	1.4MHz	QPSK	23095	1RB#0	21.57	22.00
Band12	1.4MHz	QPSK	23095	1RB#2	21.95	22.00
Band12	1.4MHz	QPSK	23095	1RB#5	21.66	22.00
Band12	1.4MHz	QPSK	23095	3RB#0	21.85	22.00
Band12	1.4MHz	QPSK	23095	3RB#1	21.89	22.00
Band12	1.4MHz	QPSK	23095	3RB#3	21.85	22.00
Band12	1.4MHz	QPSK	23095	6RB#0	20.64	21.00
Band12	1.4MHz	QPSK	23173	1RB#0	21.90	22.00
Band12	1.4MHz	QPSK	23173	1RB#2	22.16	23.00
Band12	1.4MHz	QPSK	23173	1RB#5	21.82	22.00
Band12	1.4MHz	QPSK	23173	3RB#0	22.00	22.00
Band12	1.4MHz	QPSK	23173	3RB#1	21.91	22.00
Band12	1.4MHz	QPSK	23173	3RB#3	21.92	22.00
Band12	1.4MHz	QPSK	23173	6RB#0	20.87	21.00
Band12	1.4MHz	16QAM	23017	1RB#0	20.77	21.00
Band12	1.4MHz	16QAM	23017	1RB#2	20.47	21.00
Band12	1.4MHz	16QAM	23017	1RB#5	20.82	21.00
Band12	1.4MHz	16QAM	23017	3RB#0	20.46	21.00
Band12	1.4MHz	16QAM	23017	3RB#1	20.40	21.00
Band12	1.4MHz	16QAM	23017	3RB#3	20.56	21.00

Band12	1.4MHz	16QAM	23017	6RB#0	19.88	20.00
Band12	1.4MHz	16QAM	23095	1RB#0	21.00	21.00
Band12	1.4MHz	16QAM	23095	1RB#2	21.63	22.00
Band12	1.4MHz	16QAM	23095	1RB#5	20.97	21.00
Band12	1.4MHz	16QAM	23095	3RB#0	20.26	21.00
Band12	1.4MHz	16QAM	23095	3RB#1	20.70	21.00
Band12	1.4MHz	16QAM	23095	3RB#3	20.17	21.00
Band12	1.4MHz	16QAM	23095	6RB#0	19.86	20.00
Band12	1.4MHz	16QAM	23173	1RB#0	20.37	21.00
Band12	1.4MHz	16QAM	23173	1RB#2	21.16	22.00
Band12	1.4MHz	16QAM	23173	1RB#5	20.37	21.00
Band12	1.4MHz	16QAM	23173	3RB#0	20.53	21.00
Band12	1.4MHz	16QAM	23173	3RB#1	20.70	21.00
Band12	1.4MHz	16QAM	23173	3RB#3	20.51	21.00
Band12	1.4MHz	16QAM	23173	6RB#0	19.87	20.00
Band12	3MHz	QPSK	23025	1RB#0	21.59	22.00
Band12	3MHz	QPSK	23025	1RB#8	21.88	22.00
Band12	3MHz	QPSK	23025	1RB#14	21.55	22.00
Band12	3MHz	QPSK	23025	8RB#0	20.72	21.00
Band12	3MHz	QPSK	23025	8RB#4	20.67	21.00
Band12	3MHz	QPSK	23025	8RB#7	20.80	21.00
Band12	3MHz	QPSK	23025	15RB#0	20.68	21.00
Band12	3MHz	QPSK	23095	1RB#0	21.73	22.00
Band12	3MHz	QPSK	23095	1RB#8	22.03	23.00
Band12	3MHz	QPSK	23095	1RB#14	21.79	22.00
Band12	3MHz	QPSK	23095	8RB#0	20.78	21.00
Band12	3MHz	QPSK	23095	8RB#4	20.79	21.00
Band12	3MHz	QPSK	23095	8RB#7	20.84	21.00
Band12	3MHz	QPSK	23095	15RB#0	20.83	21.00
Band12	3MHz	QPSK	23165	1RB#0	21.94	22.00
Band12	3MHz	QPSK	23165	1RB#8	21.89	22.00
Band12	3MHz	QPSK	23165	1RB#14	22.07	23.00
Band12	3MHz	QPSK	23165	8RB#0	20.97	21.00
Band12	3MHz	QPSK	23165	8RB#4	20.93	21.00
Band12	3MHz	QPSK	23165	8RB#7	21.02	22.00
Band12	3MHz	QPSK	23165	15RB#0	20.85	21.00
Band12	3MHz	16QAM	23025	1RB#0	20.24	21.00
Band12	3MHz	16QAM	23025	1RB#8	21.28	22.00
Band12	3MHz	16QAM	23025	1RB#14	20.33	21.00
Band12	3MHz	16QAM	23025	8RB#0	19.79	20.00

Band12	3MHz	16QAM	23025	8RB#4	19.65	20.00
Band12	3MHz	16QAM	23025	8RB#7	19.93	20.00
Band12	3MHz	16QAM	23025	15RB#0	19.78	20.00
Band12	3MHz	16QAM	23095	1RB#0	20.14	21.00
Band12	3MHz	16QAM	23095	1RB#8	21.01	22.00
Band12	3MHz	16QAM	23095	1RB#14	20.16	21.00
Band12	3MHz	16QAM	23095	8RB#0	20.00	20.00
Band12	3MHz	16QAM	23095	8RB#4	19.93	20.00
Band12	3MHz	16QAM	23095	8RB#7	19.96	20.00
Band12	3MHz	16QAM	23095	15RB#0	19.70	20.00
Band12	3MHz	16QAM	23165	1RB#0	21.05	22.00
Band12	3MHz	16QAM	23165	1RB#8	20.58	21.00
Band12	3MHz	16QAM	23165	1RB#14	21.14	22.00
Band12	3MHz	16QAM	23165	8RB#0	20.03	21.00
Band12	3MHz	16QAM	23165	8RB#4	19.87	20.00
Band12	3MHz	16QAM	23165	8RB#7	19.92	20.00
Band12	3MHz	16QAM	23165	15RB#0	19.94	20.00
Band12	5MHz	QPSK	23035	1RB#0	21.68	22.00
Band12	5MHz	QPSK	23035	1RB#12	21.72	22.00
Band12	5MHz	QPSK	23035	1RB#24	21.76	22.00
Band12	5MHz	QPSK	23035	12RB#0	20.62	21.00
Band12	5MHz	QPSK	23035	12RB#6	20.71	21.00
Band12	5MHz	QPSK	23035	12RB#13	20.79	21.00
Band12	5MHz	QPSK	23035	25RB#0	20.74	21.00
Band12	5MHz	QPSK	23095	1RB#0	21.78	22.00
Band12	5MHz	QPSK	23095	1RB#12	21.75	22.00
Band12	5MHz	QPSK	23095	1RB#24	21.78	22.00
Band12	5MHz	QPSK	23095	12RB#0	20.70	21.00
Band12	5MHz	QPSK	23095	12RB#6	20.84	21.00
Band12	5MHz	QPSK	23095	12RB#13	20.82	21.00
Band12	5MHz	QPSK	23095	25RB#0	20.85	21.00
Band12	5MHz	QPSK	23155	1RB#0	21.86	22.00
Band12	5MHz	QPSK	23155	1RB#12	22.03	23.00
Band12	5MHz	QPSK	23155	1RB#24	21.79	22.00
Band12	5MHz	QPSK	23155	12RB#0	20.85	21.00
Band12	5MHz	QPSK	23155	12RB#6	20.97	21.00
Band12	5MHz	QPSK	23155	12RB#13	20.92	21.00
Band12	5MHz	QPSK	23155	25RB#0	20.85	21.00
Band12	5MHz	16QAM	23035	1RB#0	20.14	21.00
Band12	5MHz	16QAM	23035	1RB#12	20.34	21.00

Band12	5MHz	16QAM	23035	1RB#24	20.23	21.00
Band12	5MHz	16QAM	23035	12RB#0	19.57	20.00
Band12	5MHz	16QAM	23035	12RB#6	19.81	20.00
Band12	5MHz	16QAM	23035	12RB#13	19.64	20.00
Band12	5MHz	16QAM	23035	25RB#0	19.78	20.00
Band12	5MHz	16QAM	23095	1RB#0	20.88	21.00
Band12	5MHz	16QAM	23095	1RB#12	21.02	22.00
Band12	5MHz	16QAM	23095	1RB#24	20.99	21.00
Band12	5MHz	16QAM	23095	12RB#0	19.97	20.00
Band12	5MHz	16QAM	23095	12RB#6	19.90	20.00
Band12	5MHz	16QAM	23095	12RB#13	19.93	20.00
Band12	5MHz	16QAM	23095	25RB#0	19.85	20.00
Band12	5MHz	16QAM	23155	1RB#0	20.42	21.00
Band12	5MHz	16QAM	23155	1RB#12	20.96	21.00
Band12	5MHz	16QAM	23155	1RB#24	20.48	21.00
Band12	5MHz	16QAM	23155	12RB#0	20.27	21.00
Band12	5MHz	16QAM	23155	12RB#6	19.87	20.00
Band12	5MHz	16QAM	23155	12RB#13	19.78	20.00
Band12	5MHz	16QAM	23155	25RB#0	19.90	20.00
Band12	10MHz	QPSK	23060	1RB#0	21.62	22.00
Band12	10MHz	QPSK	23060	1RB#24	21.72	22.00
Band12	10MHz	QPSK	23060	1RB#49	21.76	22.00
Band12	10MHz	QPSK	23060	25RB#0	20.79	21.00
Band12	10MHz	QPSK	23060	25RB#12	20.86	21.00
Band12	10MHz	QPSK	23060	25RB#25	20.88	21.00
Band12	10MHz	QPSK	23060	50RB#0	20.75	21.00
Band12	10MHz	QPSK	23095	1RB#0	21.77	22.00
Band12	10MHz	QPSK	23095	1RB#24	22.04	23.00
Band12	10MHz	QPSK	23095	1RB#49	21.99	22.00
Band12	10MHz	QPSK	23095	25RB#0	20.71	21.00
Band12	10MHz	QPSK	23095	25RB#12	20.82	21.00
Band12	10MHz	QPSK	23095	25RB#25	20.78	21.00
Band12	10MHz	QPSK	23095	50RB#0	20.83	21.00
Band12	10MHz	QPSK	23130	1RB#0	21.74	22.00
Band12	10MHz	QPSK	23130	1RB#24	21.73	22.00
Band12	10MHz	QPSK	23130	1RB#49	21.89	22.00
Band12	10MHz	QPSK	23130	25RB#0	20.82	21.00
Band12	10MHz	QPSK	23130	25RB#12	20.73	21.00
Band12	10MHz	QPSK	23130	25RB#25	20.86	21.00
Band12	10MHz	QPSK	23130	50RB#0	20.76	21.00

Band12	10MHz	16QAM	23060	1RB#0	20.76	21.00
Band12	10MHz	16QAM	23060	1RB#24	21.33	22.00
Band12	10MHz	16QAM	23060	1RB#49	20.89	21.00
Band12	10MHz	16QAM	23060	25RB#0	19.74	20.00
Band12	10MHz	16QAM	23060	25RB#12	19.71	20.00
Band12	10MHz	16QAM	23060	25RB#25	19.80	20.00
Band12	10MHz	16QAM	23060	50RB#0	19.80	20.00
Band12	10MHz	16QAM	23095	1RB#0	20.55	21.00
Band12	10MHz	16QAM	23095	1RB#24	21.70	22.00
Band12	10MHz	16QAM	23095	1RB#49	20.70	21.00
Band12	10MHz	16QAM	23095	25RB#0	19.97	20.00
Band12	10MHz	16QAM	23095	25RB#12	19.92	20.00
Band12	10MHz	16QAM	23095	25RB#25	19.96	20.00
Band12	10MHz	16QAM	23095	50RB#0	19.87	20.00
Band12	10MHz	16QAM	23130	1RB#0	21.43	22.00
Band12	10MHz	16QAM	23130	1RB#24	21.59	22.00
Band12	10MHz	16QAM	23130	1RB#49	21.52	22.00
Band12	10MHz	16QAM	23130	25RB#0	19.89	20.00
Band12	10MHz	16QAM	23130	25RB#12	19.89	20.00
Band12	10MHz	16QAM	23130	25RB#25	20.08	21.00
Band12	10MHz	16QAM	23130	50RB#0	19.88	20.00

Band 17

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Tune-up
Band17	5MHz	QPSK	23755	1RB#0	21.83	22.00
Band17	5MHz	QPSK	23755	1RB#12	21.75	22.00
Band17	5MHz	QPSK	23755	1RB#24	21.81	22.00
Band17	5MHz	QPSK	23755	12RB#0	20.87	21.00
Band17	5MHz	QPSK	23755	12RB#6	20.74	21.00
Band17	5MHz	QPSK	23755	12RB#13	20.83	21.00
Band17	5MHz	QPSK	23755	25RB#0	20.81	21.00
Band17	5MHz	QPSK	23790	1RB#0	21.78	22.00
Band17	5MHz	QPSK	23790	1RB#12	22.06	23.00
Band17	5MHz	QPSK	23790	1RB#24	21.88	22.00
Band17	5MHz	QPSK	23790	12RB#0	20.83	21.00
Band17	5MHz	QPSK	23790	12RB#6	20.87	21.00
Band17	5MHz	QPSK	23790	12RB#13	20.92	21.00
Band17	5MHz	QPSK	23790	25RB#0	20.90	21.00
Band17	5MHz	QPSK	23825	1RB#0	21.83	22.00

Band17	5MHz	QPSK	23825	1RB#12	22.06	23.00
Band17	5MHz	QPSK	23825	1RB#24	21.85	22.00
Band17	5MHz	QPSK	23825	12RB#0	20.90	21.00
Band17	5MHz	QPSK	23825	12RB#6	20.97	21.00
Band17	5MHz	QPSK	23825	12RB#13	20.79	21.00
Band17	5MHz	QPSK	23825	25RB#0	20.89	21.00
Band17	5MHz	16QAM	23755	1RB#0	20.29	21.00
Band17	5MHz	16QAM	23755	1RB#12	20.51	21.00
Band17	5MHz	16QAM	23755	1RB#24	20.24	21.00
Band17	5MHz	16QAM	23755	12RB#0	19.81	20.00
Band17	5MHz	16QAM	23755	12RB#6	19.81	20.00
Band17	5MHz	16QAM	23755	12RB#13	19.85	20.00
Band17	5MHz	16QAM	23755	25RB#0	20.02	21.00
Band17	5MHz	16QAM	23790	1RB#0	20.94	21.00
Band17	5MHz	16QAM	23790	1RB#12	21.13	22.00
Band17	5MHz	16QAM	23790	1RB#24	21.05	22.00
Band17	5MHz	16QAM	23790	12RB#0	19.97	20.00
Band17	5MHz	16QAM	23790	12RB#6	19.96	20.00
Band17	5MHz	16QAM	23790	12RB#13	20.57	21.00
Band17	5MHz	16QAM	23790	25RB#0	19.88	20.00
Band17	5MHz	16QAM	23825	1RB#0	20.47	21.00
Band17	5MHz	16QAM	23825	1RB#12	20.93	21.00
Band17	5MHz	16QAM	23825	1RB#24	20.49	21.00
Band17	5MHz	16QAM	23825	12RB#0	20.33	21.00
Band17	5MHz	16QAM	23825	12RB#6	19.87	20.00
Band17	5MHz	16QAM	23825	12RB#13	19.80	20.00
Band17	5MHz	16QAM	23825	25RB#0	19.94	20.00
Band17	10MHz	QPSK	23780	1RB#0	21.75	22.00
Band17	10MHz	QPSK	23780	1RB#24	21.78	22.00
Band17	10MHz	QPSK	23780	1RB#49	21.93	22.00
Band17	10MHz	QPSK	23780	25RB#0	20.80	21.00
Band17	10MHz	QPSK	23780	25RB#12	20.84	21.00
Band17	10MHz	QPSK	23780	25RB#25	21.01	22.00
Band17	10MHz	QPSK	23780	50RB#0	20.84	21.00
Band17	10MHz	QPSK	23790	1RB#0	21.71	22.00
Band17	10MHz	QPSK	23790	1RB#24	21.84	22.00
Band17	10MHz	QPSK	23790	1RB#49	21.89	22.00
Band17	10MHz	QPSK	23790	25RB#0	20.81	21.00
Band17	10MHz	QPSK	23790	25RB#12	20.92	21.00
Band17	10MHz	QPSK	23790	25RB#25	20.85	21.00

Band17	10MHz	QPSK	23790	50RB#0	20.81	21.00
Band17	10MHz	QPSK	23800	1RB#0	21.87	22.00
Band17	10MHz	QPSK	23800	1RB#24	22.09	23.00
Band17	10MHz	QPSK	23800	1RB#49	21.96	22.00
Band17	10MHz	QPSK	23800	25RB#0	20.85	21.00
Band17	10MHz	QPSK	23800	25RB#12	20.73	21.00
Band17	10MHz	QPSK	23800	25RB#25	20.93	21.00
Band17	10MHz	QPSK	23800	50RB#0	20.78	21.00
Band17	10MHz	16QAM	23780	1RB#0	21.45	22.00
Band17	10MHz	16QAM	23780	1RB#24	21.58	22.00
Band17	10MHz	16QAM	23780	1RB#49	21.54	22.00
Band17	10MHz	16QAM	23780	25RB#0	19.96	20.00
Band17	10MHz	16QAM	23780	25RB#12	19.94	20.00
Band17	10MHz	16QAM	23780	25RB#25	20.53	21.00
Band17	10MHz	16QAM	23780	50RB#0	20.03	21.00
Band17	10MHz	16QAM	23790	1RB#0	20.87	21.00
Band17	10MHz	16QAM	23790	1RB#24	21.42	22.00
Band17	10MHz	16QAM	23790	1RB#49	21.07	22.00
Band17	10MHz	16QAM	23790	25RB#0	19.77	20.00
Band17	10MHz	16QAM	23790	25RB#12	19.72	20.00
Band17	10MHz	16QAM	23790	25RB#25	20.36	21.00
Band17	10MHz	16QAM	23790	50RB#0	19.86	20.00
Band17	10MHz	16QAM	23800	1RB#0	20.56	21.00
Band17	10MHz	16QAM	23800	1RB#24	21.76	22.00
Band17	10MHz	16QAM	23800	1RB#49	20.74	21.00
Band17	10MHz	16QAM	23800	25RB#0	19.95	20.00
Band17	10MHz	16QAM	23800	25RB#12	19.92	20.00
Band17	10MHz	16QAM	23800	25RB#25	20.06	21.00
Band17	10MHz	16QAM	23800	50RB#0	19.92	20.00

<Bluetooth Conducted Power>

BT

Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Tune-up Power(dBm)
DH5	0	2402	-3.45	-3.00
DH5	39	2441	-4.74	-4.00
DH5	78	2480	-3.96	-3.00
2DH5	39	2441	-3.48	-3.00
2DH5	39	2441	-4.22	-4.00
2DH5	00	2402	-3.11	-3.00
3DH5	39	2441	-2.88	-2.00
3DH5	78	2480	-3.79	-3.00
3DH5	39	2441	-2.75	-2.00

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 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR

f(GHz) is the RF channel transmit frequency in GHz

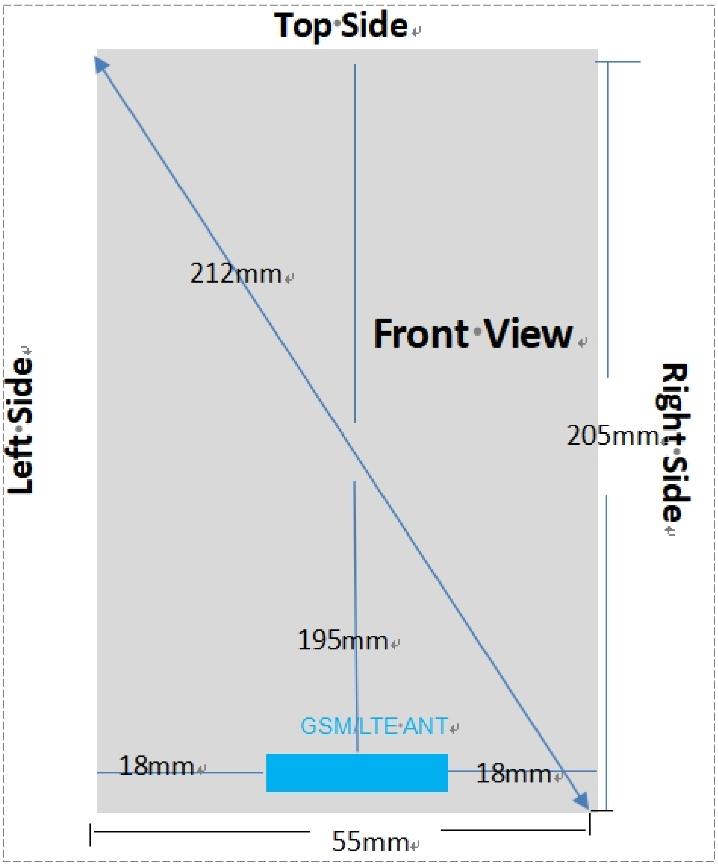
Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

Bluetooth Max. Power (dBm)	Separation Distance (mm)	Frequency (GHz)	exclusion thresholds
-2.00	5	2.441	1.25

The test exclusion threshold is 0.2 which is<= 3, SAR testing is not required.

11. Antenna Location



Distance of The Antenna to the EUT surface and edge						
Antennas	**Front**	**Back**	**Top Side**	**Bottom Side**	**Left Side**	**Right Side**
GSM/LTE ANT	<25mm	<25mm	>25mm	<25mm	<25mm	<25mm

Positions for SAR tests; Body mode						
Antennas	**Front**	**Back**	**Top Side**	**Bottom Side**	**Left Side**	**Right Side**
WIFI/BT ANT	Yes	Yes	No	Yes	Yes	Yes

12. SAR Test Results Summary

General Note:
1.Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.

Scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.

Reported SAR(W/kg)= Measured SAR(W/kg) Scaling Factor*

2. Per KDB 447498 D01v06, for each exposure position, if the highest output channel reported SAR≤0.8W/kg, other channels SAR testing are not necessary

12.1. Body-worn SAR Results

<GSM>

Band	Test Position	Gap (mm)	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)	Plot
GSM850	Front	5	190	836.6	24.54	25.00	1.112	-0.14	0.125	0.139	
GSM850	Back	5	190	836.6	24.54	25.00	1.112	0.16	0.340	0.378	
GSM850	Left	5	190	836.6	24.54	25.00	1.112	-0.04	0.054	0.061	
GSM850	Right	5	190	836.6	24.54	25.00	1.112	0.11	0.224	0.249	
GSM850	Top	5	190	836.6	24.54	25.00	1.112	N/A	N/A	N/A	
GSM850	Bottom	5	190	836.6	24.54	25.00	1.112	0.05	0.381	**0.424**	#1

Band	Test Position	Gap (mm)	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)	Plot
DCS1900	Front	5	512	1850.2	20.22	20.5	1.067	-0.19	0.020	0.021	
DCS1900	Back	5	512	1850.2	20.22	20.5	1.067	-0.17	0.054	0.057	
DCS1900	Left	5	512	1850.2	20.22	20.5	1.067	0.06	0.009	0.009	
DCS1900	Right	5	512	1850.2	20.22	20.5	1.067	-0.14	0.035	0.038	
DCS1900	Top	5	512	1850.2	20.22	20.5	1.067	N/A	N/A	N/A	
DCS1900	Bottom	5	512	1850.2	20.22	20.5	1.067	-0.10	0.060	**0.064**	#2

<LTE>

<Band 2,Bandwidth:20MHz,Mode:QPSK>

Band	Mode	Test Position	Gap (mm)	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)	Plot
Band2	1RB#99	Front	5	18700	1860	21.8	22.00	1.047	-0.09	0.265	0.278	
Band2	1RB#99	Back	5	18700	1860	21.8	22.00	1.047	0.01	0.721	0.754	
Band2	1RB#99	Left	5	18700	1860	21.8	22.00	1.047	-0.07	0.115	0.121	
Band2	1RB#99	Right	5	18700	1860	21.8	22.00	1.047	-0.02	0.475	0.497	
Band2	1RB#99	Top	5	18700	1860	21.8	22.00	1.047	N/A	N/A	N/A	
Band2	1RB#99	Bottom	5	18700	1860	21.8	22.00	1.047	-0.09	0.807	**0.845**	#3
Band2	1RB#99	Bottom	5	18900	1880	21.33	22.00	1.167	0.15	0.719	0.839	
Band2	1RB#99	Bottom	5	19100	1900	20.23	21.00	1.194	0.08	0.685	0.818	
Band2	100RB#0	Bottom	5	18700	1860	20.51	21.00	1.119	0.05	0.711	0.796	
Band2	50RB#50	Front	5	18700	1860	20.51	21.00	1.119	-0.09	0.227	0.254	
Band2	50RB#50	Back	5	18700	1860	20.51	21.00	1.119	0.12	0.617	0.691	
Band2	50RB#50	Left	5	18700	1860	20.51	21.00	1.119	0.08	0.098	0.110	
Band2	50RB#50	Right	5	18700	1860	20.51	21.00	1.119	0.16	0.407	0.455	
Band2	50RB#50	Top	5	18700	1860	20.51	21.00	1.119	N/A	N/A	N/A	
Band2	50RB#50	Bottom	5	18700	1860	20.51	21.00	1.119	0.13	0.691	0.774	

<Band 7,Bandwidth:20MHz,Mode:QPSK>

Band	Mode	Test Position	Gap (mm)	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)	Plot
Band7	1RB#0	Front	5	20850	2510	20.37	21.00	1.156	0.01	0.072	0.084	
Band7	1RB#0	Back	5	20850	2510	20.37	21.00	1.156	-0.13	0.196	0.227	
Band7	1RB#0	Left	5	20850	2510	20.37	21.00	1.156	0.10	0.031	0.036	
Band7	1RB#0	Right	5	20850	2510	20.37	21.00	1.156	-0.13	0.129	0.150	
Band7	1RB#0	Top	5	20850	2510	20.37	21.00	1.156	N/A	N/A	N/A	
Band7	1RB#0	Bottom	5	20850	2510	20.37	21.00	1.156	0.06	0.220	**0.254**	#4
Band7	50RB#0	Front	5	20850	2510	19.28	20.00	1.180	0.16	0.055	0.065	
Band7	50RB#0	Back	5	20850	2510	19.28	20.00	1.180	0.18	0.150	0.177	
Band7	50RB#0	Left	5	20850	2510	19.28	20.00	1.180	0.02	0.024	0.028	
Band7	50RB#0	Right	5	20850	2510	19.28	20.00	1.180	-0.05	0.099	0.117	
Band7	50RB#0	Top	5	20850	2510	19.28	20.00	1.180	N/A	N/A	N/A	
Band7	50RB#0	Bottom	5	20850	2510	19.28	20.00	1.180	0.05	0.168	0.198	

<Band 12,Bandwidth:10MHz,Mode:QPSK>

Band	Mode	Test Position	Gap (mm)	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)	Plot
Band12	1RB#24	Front	5	23095	707.5	22.04	23.00	1.247	0.10	0.036	0.044	
Band12	1RB#24	Back	5	23095	707.5	22.04	23.00	1.247	0.02	0.096	0.120	
Band12	1RB#24	Left	5	23095	707.5	22.04	23.00	1.247	0.07	0.015	0.019	
Band12	1RB#24	Right	5	23095	707.5	22.04	23.00	1.247	0.02	0.064	0.079	
Band12	1RB#24	Top	5	23095	707.5	22.04	23.00	1.247	N/A	N/A	N/A	
Band12	1RB#24	Bottom	5	23095	707.5	22.04	23.00	1.247	-0.09	0.108	**0.135**	#5
Band12	25RB#12	Front	5	23095	707.5	20.82	21.00	1.042	0.04	0.025	0.026	
Band12	25RB#12	Back	5	23095	707.5	20.82	21.00	1.042	-0.06	0.068	0.071	
Band12	25RB#12	Left	5	23095	707.5	20.82	21.00	1.042	0.11	0.011	0.011	
Band12	25RB#12	Right	5	23095	707.5	20.82	21.00	1.042	0.18	0.045	0.047	
Band12	25RB#12	Top	5	23095	707.5	20.82	21.00	1.042	N/A	N/A	N/A	
Band12	25RB#12	Bottom	5	23095	707.5	20.82	21.00	1.042	0.08	0.076	0.079	

<Band 17,Bandwidth:10MHz,Mode:QPSK>

Band	Mode	Test Position	Gap (mm)	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)	Plot
Band17	1RB#24	Front	5	23800	711	22.09	23.00	1.233	-0.12	0.010	0.012	
Band17	1RB#24	Back	5	23800	711	22.09	23.00	1.233	0.00	0.085	0.105	
Band17	1RB#24	Left	5	23800	711	22.09	23.00	1.233	-0.05	0.016	0.019	
Band17	1RB#24	Right	5	23800	711	22.09	23.00	1.233	-0.01	0.061	0.075	
Band17	1RB#24	Top	5	23800	711	22.09	23.00	1.233	N/A	N/A	N/A	
Band17	1RB#24	Bottom	5	23800	711	22.09	23.00	1.233	-0.12	0.109	**0.134**	#6
Band17	25RB#25	Front	5	23800	711	20.93	21.00	1.016	-0.15	0.024	0.024	
Band17	25RB#25	Back	5	23800	711	20.93	21.00	1.016	0.14	0.064	0.065	
Band17	25RB#25	Left	5	23800	711	20.93	21.00	1.016	0.08	0.010	0.010	
Band17	25RB#25	Right	5	23800	711	20.93	21.00	1.016	0.16	0.042	0.043	
Band17	25RB#25	Top	5	23800	711	20.93	21.00	1.016	N/A	N/A	N/A	
Band17	25RB#25	Bottom	5	23800	711	20.93	21.00	1.016	0.08	0.072	0.073	

12.2. Head SAR Results

<GSM>

Band	Test Position	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)	Plot
GSM850	Right Check	190	836.6	24.54	25.00	1.112	0.12	0.305	0.339	
GSM850	Right Tilt	190	836.6	24.54	25.00	1.112	-0.16	0.121	0.135	
GSM850	Left Check	190	836.6	24.54	25.00	1.112	-0.12	0.351	**0.390**	#7
GSM850	Left Tilt	190	836.6	24.54	25.00	1.112	-0.18	0.125	0.139	
DCS1900	Right Check	512	1850.2	20.22	20.5	1.067	0.03	0.245	0.261	
DCS1900	Right Tilt	512	1850.2	20.22	20.5	1.067	-0.05	0.073	0.078	
DCS1900	Left Check	512	1850.2	20.22	20.5	1.067	0.09	0.271	**0.289**	#8
DCS1900	Left Tilt	512	1850.2	20.22	20.5	1.067	-0.18	0.086	0.092	

<LTE>

<Band 2,Bandwidth:20MHz,Mode:QPSK>

Band	Mode	Test Position	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)	Plot
Band2	1RB#99	Right Check	18700	1860	21.8	22.00	1.047	0.00	0.613	0.642	
Band2	1RB#99	Right Tilt	18700	1860	21.8	22.00	1.047	-0.02	0.204	0.214	
Band2	1RB#99	Left Check	18700	1860	21.8	22.00	1.047	-0.19	0.625	**0.654**	#9
Band2	1RB#99	Left Tilt	18700	1860	21.8	22.00	1.047	-0.13	0.216	0.226	
Band2	50RB#50	Right Check	18700	1860	20.51	21.00	1.119	0.08	0.551	0.617	
Band2	50RB#50	Right Tilt	18700	1860	20.51	21.00	1.119	0.16	0.183	0.205	
Band2	50RB#50	Left Check	18700	1860	20.51	21.00	1.119	0.09	0.562	0.629	
Band2	50RB#50	Left Tilt	18700	1860	20.51	21.00	1.119	0.02	0.194	0.217	

<Band 7,Bandwidth:20MHz,Mode:QPSK>

Band	Mode	Test Position	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)	Plot
Band7	1RB#0	Right Check	20850	2510	20.37	21.00	1.156	-0.17	0.646	0.747	
Band7	1RB#0	Right Tilt	20850	2510	20.37	21.00	1.156	-0.11	0.213	0.246	
Band7	1RB#0	Left Check	20850	2510	20.37	21.00	1.156	-0.02	0.681	**0.787**	#10
Band7	1RB#0	Left Tilt	20850	2510	20.37	21.00	1.156	0.19	0.249	0.288	
Band7	50RB#0	Right Check	20850	2510	19.28	20.00	1.180	0.03	0.601	0.709	
Band7	50RB#0	Right Tilt	20850	2510	19.28	20.00	1.180	0.02	0.200	0.236	
Band7	50RB#0	Left Check	20850	2510	19.28	20.00	1.180	0.16	0.613	0.723	
Band7	50RB#0	Left Tilt	20850	2510	19.28	20.00	1.180	0.12	0.212	0.250	

<Band 12,Bandwidth:10MHz,Mode:QPSK>

Band	Mode	Test Position	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)	Plot
Band12	1RB#24	Right Check	20850	2510	22.04	23.00	1.247	0.02	0.618	0.771	
Band12	1RB#24	Right Tilt	20850	2510	22.04	23.00	1.247	0.04	0.144	0.180	
Band12	1RB#24	Left Check	20850	2510	22.04	23.00	1.247	0.14	0.625	**0.780**	#11
Band12	1RB#24	Left Tilt	20850	2510	22.04	23.00	1.247	0.00	0.159	0.198	
Band12	25RB#12	Right Check	20850	2510	20.82	21.00	1.042	0.08	0.477	0.497	
Band12	25RB#12	Right Tilt	20850	2510	20.82	21.00	1.042	0.16	0.159	0.165	
Band12	25RB#12	Left Check	20850	2510	20.82	21.00	1.042	0.11	0.486	0.506	
Band12	25RB#12	Left Tilt	20850	2510	20.82	21.00	1.042	0.05	0.168	0.175	

<Band 17,Bandwidth:10MHz,Mode:QPSK>

Band	Mode	Test Position	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)	Plot
Band17	1RB#24	Right Check	20850	2510	22.09	23.00	1.233	-0.02	0.162	0.200	
Band17	1RB#24	Right Tilt	20850	2510	22.09	23.00	1.233	-0.16	0.072	0.089	
Band17	1RB#24	Left Check	20850	2510	22.09	23.00	1.233	0.09	0.168	**0.207**	#12
Band17	1RB#24	Left Tilt	20850	2510	22.09	23.00	1.233	-0.07	0.084	0.104	
Band17	25RB#25	Right Check	20850	2510	20.93	21.00	1.016	0.02	0.100	0.102	
Band17	25RB#25	Right Tilt	20850	2510	20.93	21.00	1.016	0.08	0.033	0.034	
Band17	25RB#25	Left Check	20850	2510	20.93	21.00	1.016	0.17	0.102	0.104	
Band17	25RB#25	Left Tilt	20850	2510	20.93	21.00	1.016	0.11	0.035	0.036	

12.3. Estimate SAR

<BT>

Band	Mode	Gap (mm)	Channel	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Limit (mW)	Estimate SAR1g (W/kg)
BT	3DH5	5	39	-2.75	-2.00	0.63	0.026

Note: In accordance with Section 4.3.2 of Standard 447498 D01 V06,the standalone SAR value must be estimated according to the following to determine the simultaneous transmission SAR test exclusion criteria:

1) [(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.

12.4. Repeat SAR

<Band 2,Bandwidth:20MHz,Mode:QPSK>

Band	Mode	Test Position	Gap (mm)	Channel	Frequency(MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR1g (W/kg)	Reported SAR1g (W/kg)
Band2	1RB#99	Bottom	5	18700	1860	21.8	22.00	1.047	0.12	0.805	0.843

13. Simultaneous Transmission Analysis

13.1. Simultaneous TX SAR Considerations

No.	Applicable Simultaneous Transmission
1.	GSM/LTE+BT

Note: Since GSM and LTE operate on the same antenna, while the BT operates on another antenna, when considering simultaneous transmission, we only need to take into account the simultaneous transmission situation between the BT and the one with the highest SAR value among GSM and LTE.Among them, the SAR value of LTE is the highest. So, we only need to consider the simultaneous transmission situation of BT and LTE.

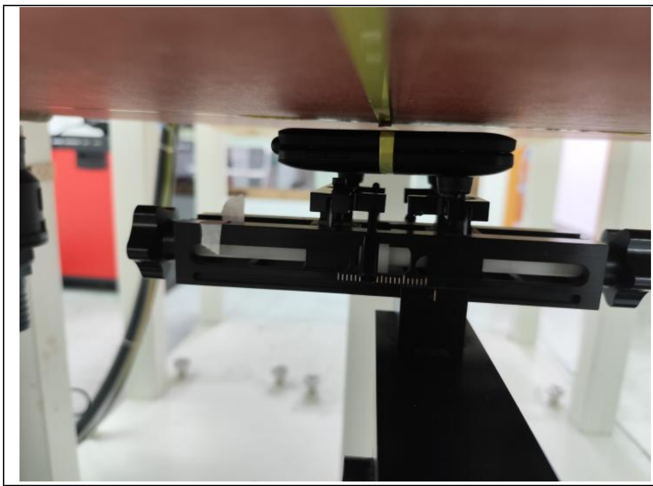
<BT+LTE Band2>

Test Position	LTE Band2 SAR_{1g} (W/Kg)	BT SAR_{1g} (W/Kg)	MAX. ΣSAR_{1g} (W/Kg)	SAR_{1g} Limit (W/Kg)
Bottom	0.845	0.026	0.871	1.6

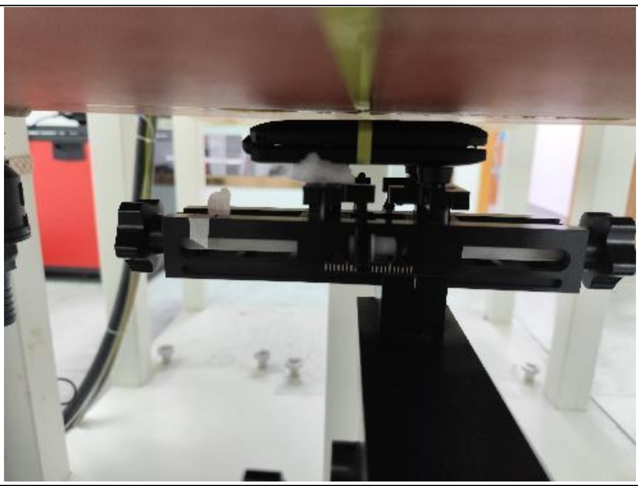
14. Measurement Uncertainty

Note: Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, 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. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.

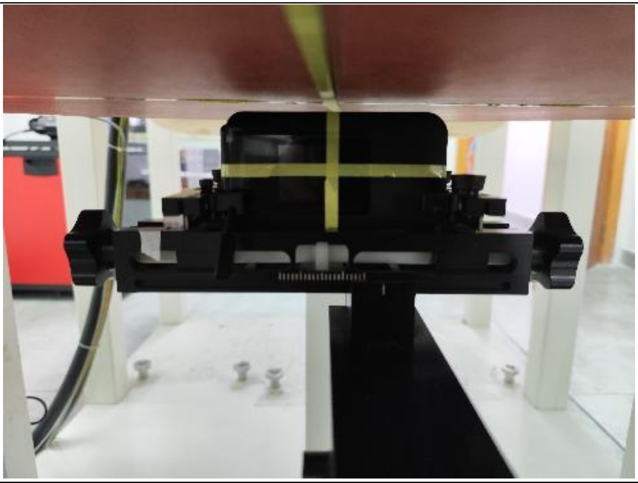
Appendix A. EUT Photos and Test Setup Photos



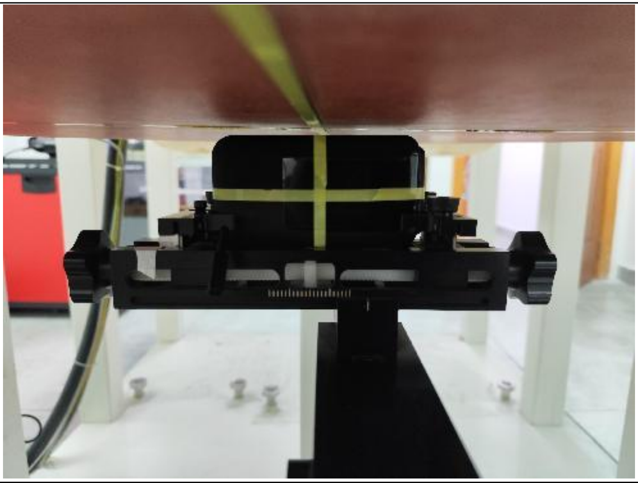
Body Front(5mm)



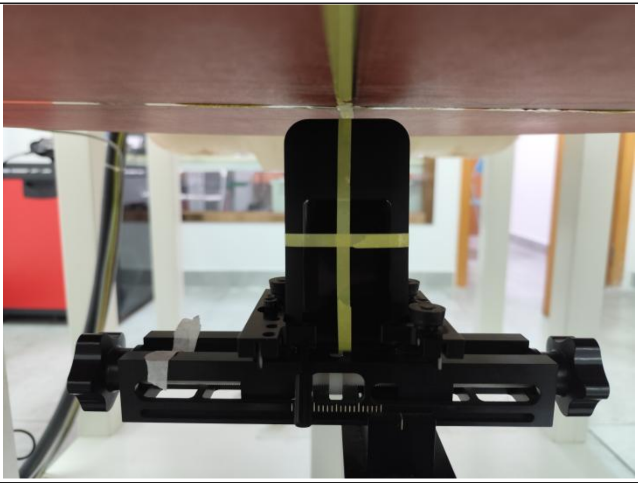
Body Back(5mm)



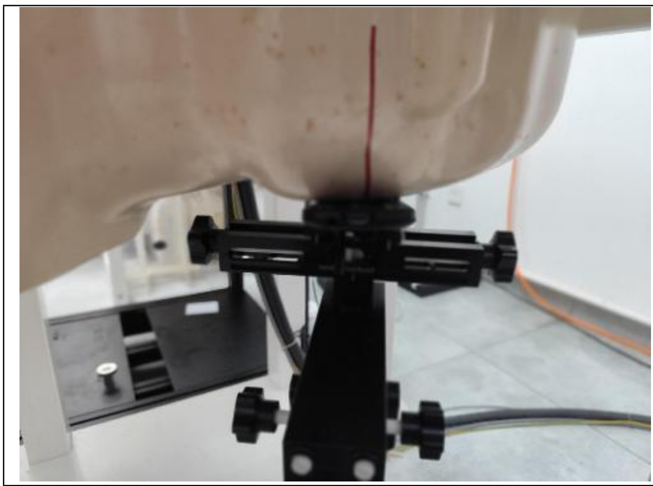
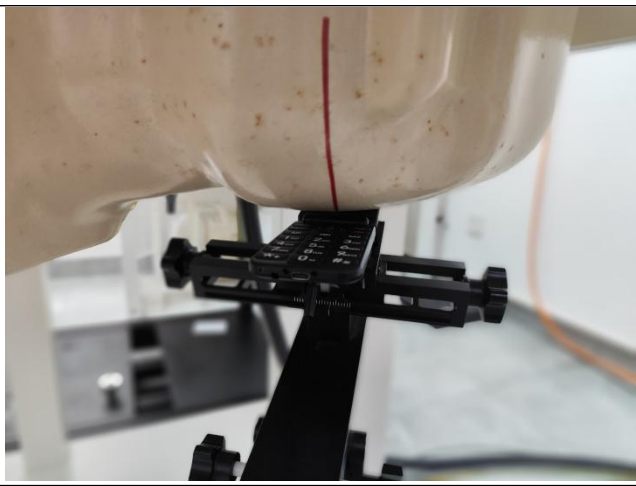
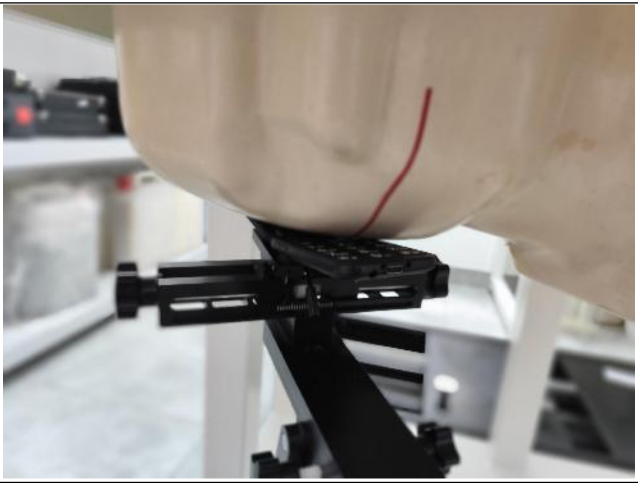
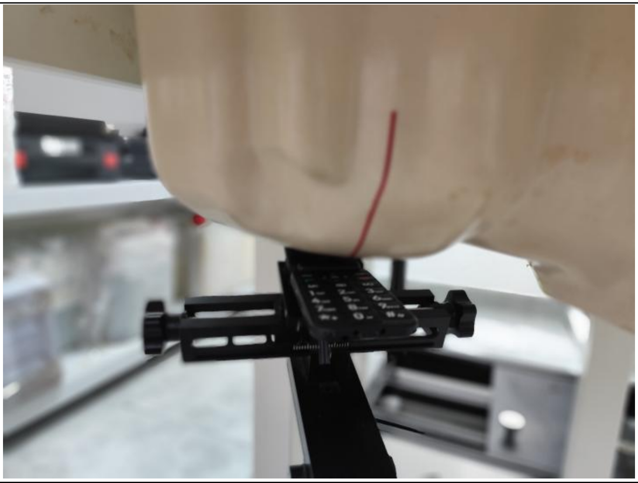
Body Left(5mm)



Body Right(5mm)



Body Bottom(5mm)

	
Left Cheek	**Left Tilt**
	
Right Cheek	**Right Tilt**

Appendix B. Plots of SAR System Check

750MHz System Check Date:2025-07-25

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1118

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 750 MHz; σ = 0.88 S/m; ε_r = 41.76; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(9.81, 9.81, 9.81); Calibrated: 6/5/2025;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn387; Calibrated: 2/9/2024

Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058

DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (61x91x1): Measurement grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.633 W/kg

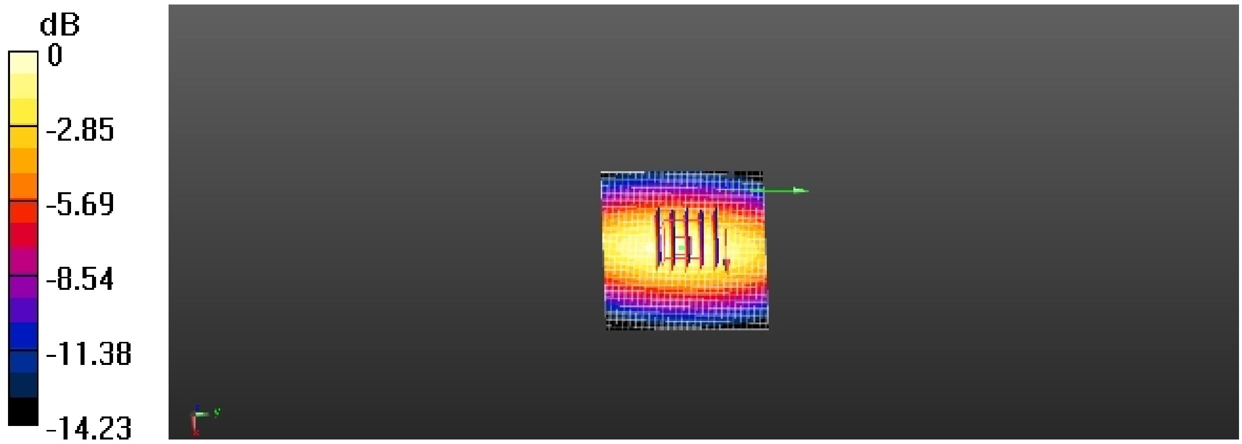
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value =48.359 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 2.762 W/kg

SAR(1 g) =2.25 W/kg; SAR(10 g) = 1.06 W/kg

Maximum value of SAR (measured) = 3.25 W/kg



835MHz System Check Date:2025-07-26

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d164

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 835 MHz; σ = 0.93 S/m; ε_r = 41.68; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(9.72, 9.72, 9.72); Calibrated: 6/5/2025;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn387; Calibrated: 2/9/2024

Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058

DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.74 W/kg

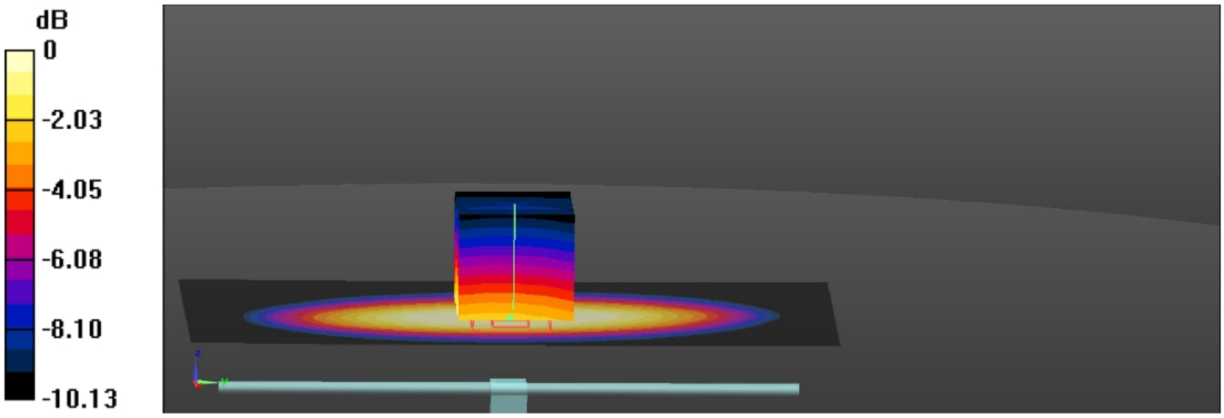
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 54.854 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 3.16 W/kg

SAR(1 g) = 2.43 W/kg; SAR(10 g) = 1.18 W/kg

Maximum value of SAR (measured) = 2.82 W/kg



1900MHz System Check Date:2025-07-27

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d089

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1900 MHz; σ = 1.44S/m; εr = 40.23; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(8.12, 8.12, 8.12); Calibrated: 6/5/2025;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn387; Calibrated: 2/9/2024

Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058

DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 7.94 W/kg

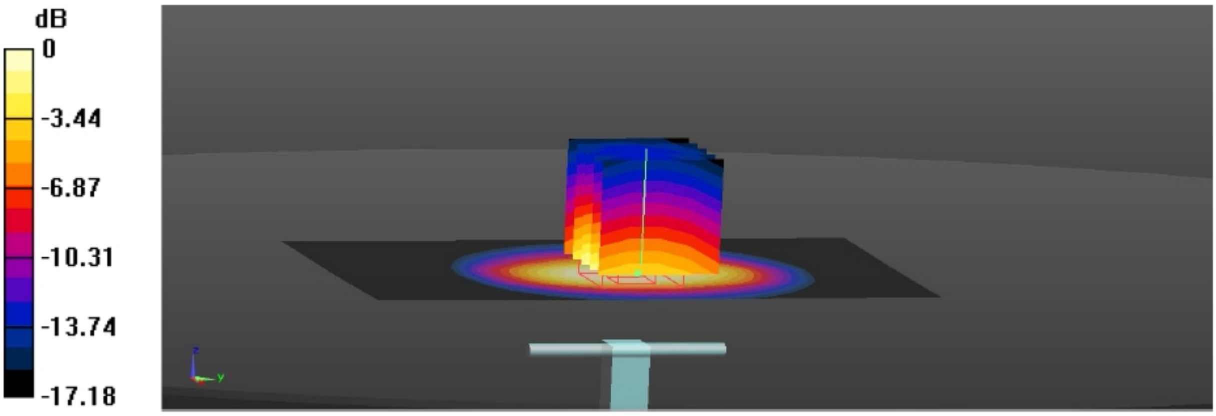
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 70.684 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 9.66 W/kg

SAR(1 g) = 10.2 W/kg; SAR(10 g) = 5.33 W/kg

Maximum value of SAR (measured) = 12.6 W/kg



2600MHz System Check Date: 2025-07-28

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1058

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2600 MHz; σ = 1.95S/m; εr = 39.02; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(7.37, 7.37, 7.37); Calibrated: 6/5/2025;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn387; Calibrated: 2/9/2024

Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058

DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 24.7 W/kg

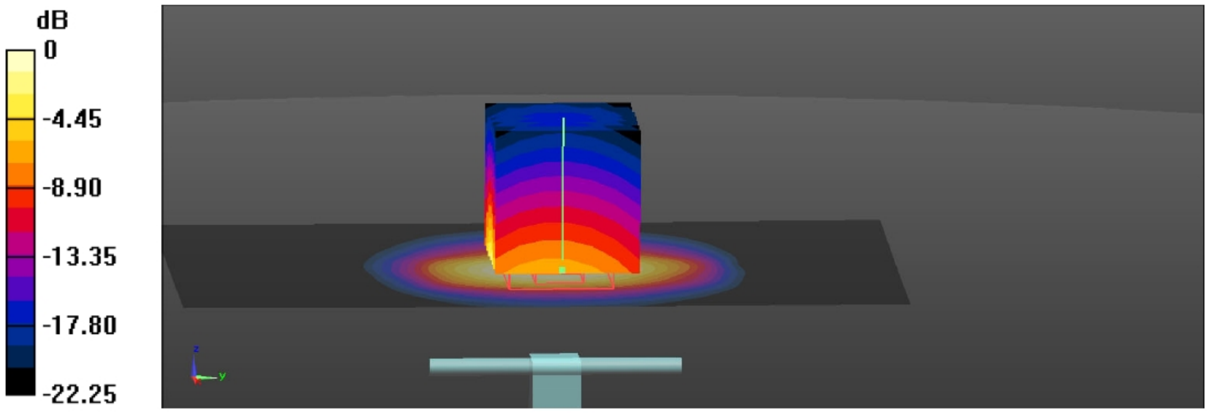
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 107.0 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 30.6 W/kg

SAR(1 g) = 15.2 W/kg; SAR(10 g) = 7.68 W/kg

Maximum value of SAR (measured) = 16.7 W/kg



Appendix C. Plots of SAR Test Data

#1 Date:2025-07-26

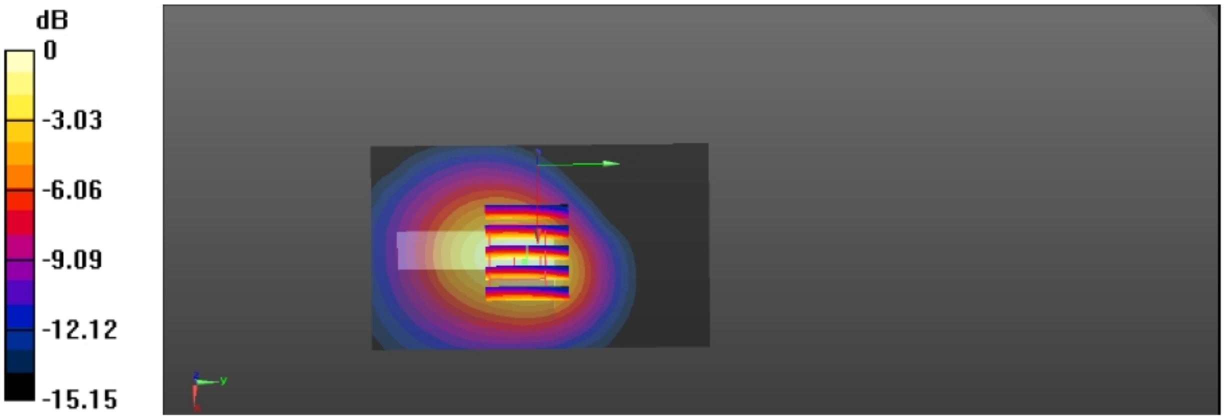
GSM 850_Body Bottom_Ch190

Communication System: UID 0; Frequency:836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.93 S/m; εr = 41.68; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(9.72, 9.72, 9.72); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.421 W/kg
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.375 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.661 W/kg
SAR(1 g) = 0.381 W/kg; SAR(10 g) = 0.223 W/kg
Maximum value of SAR (measured) = 0.419 W/kg



#2 Date:2025-07-27

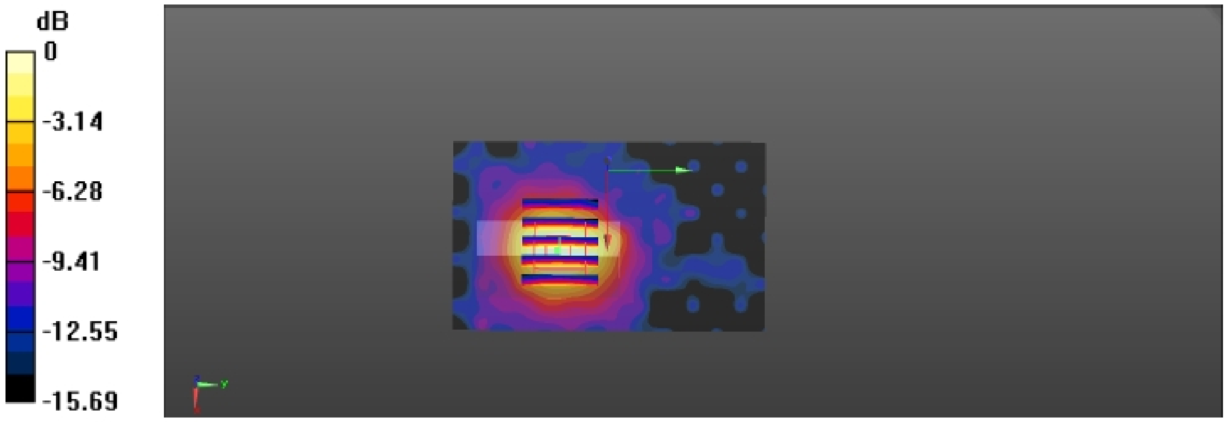
PCS 1900_ Body Bottom _Ch512

Communication System: UID 0; Frequency:1850.2 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1850.2MHz; σ = 1.41 S/m; εr = 40.16; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(8.12, 8.12, 8.12); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0664 W/kg
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.984 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.116 W/kg
SAR(1 g) = 0.060 W/kg; SAR(10 g) = 0.031 W/kg
Maximum value of SAR (measured) = 0.065 W/kg



#3 Date:2025-07-27

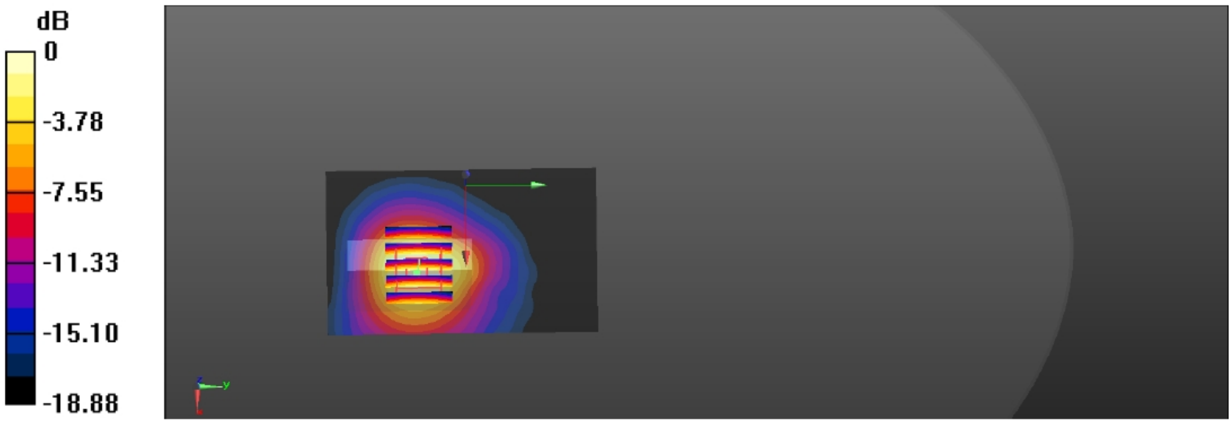
LTE Body _Band 2_Ch18700

Communication System: UID 0; Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.42 S/m; εr = 40.12; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(8.12, 8.12, 8.12); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.910 W/kg
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.322 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.807 W/kg; SAR(10 g) = 0.439 W/kg
Maximum value of SAR (measured) = 0.892 W/kg



#4 Date:2025-07-28

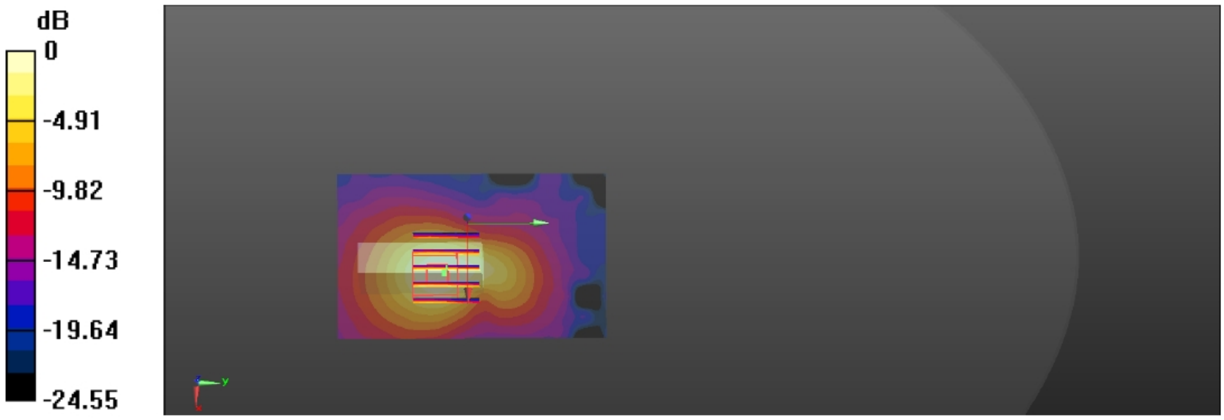
LTE Body _Band 7_Ch20850

Communication System: UID 0; Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 1.84 S/m; εr = 39.25; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(7.37, 7.37, 7.37); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.253 W/kg
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.851 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.461 W/kg
SAR(1 g) = 0.220 W/kg; SAR(10 g) = 0.103 W/kg
Maximum value of SAR (measured) = 0.226 W/kg



#5 Date:2025-07-25

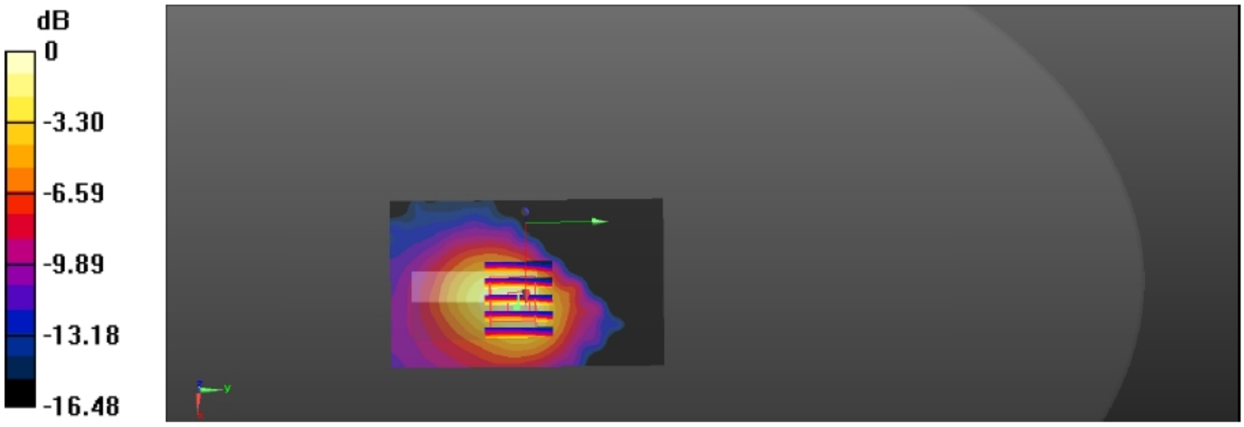
LTE Body _Band 12_Ch23095

Communication System: UID 0; Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used: f = 707.5 MHz; σ = 0.79 S/m; εr = 42.85; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(9.81, 9.81, 9.81); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.117 W/kg
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.073 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.203 W/kg
SAR(1 g) = 0.108 W/kg; SAR(10 g) = 0.059 W/kg
Maximum value of SAR (measured) = 0.122 W/kg



#6 Date:2025-07-25

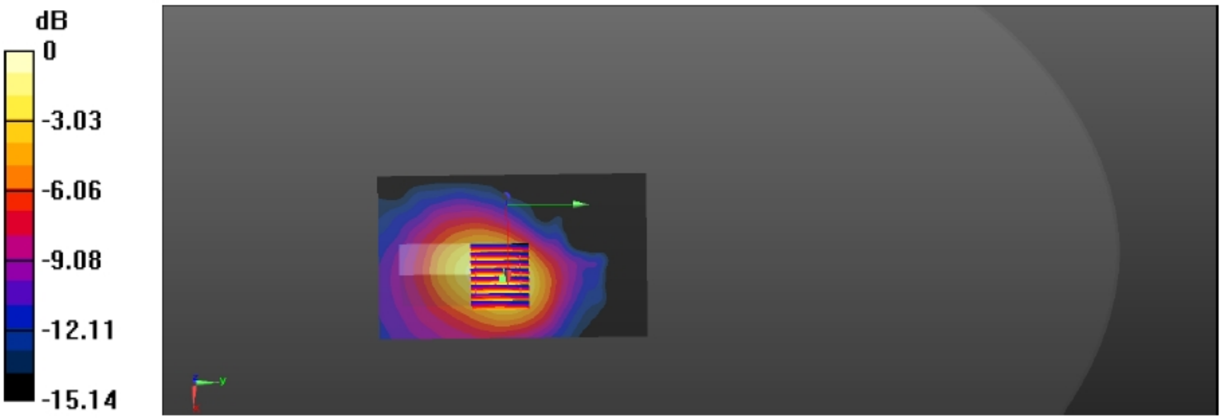
LTE Body _Band 17_Ch23800

Communication System: UID 0; Frequency:711 MHz;Duty Cycle: 1:1
Medium parameters used: f = 711 MHz; σ = 0.81S/m; εr = 42.83; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(9.81, 9.81, 9.81); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.120 W/kg
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=5mm
Reference Value = 9.117 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.214 W/kg
SAR(1 g) = 0.109 W/kg; SAR(10 g) = 0.061 W/kg
Maximum value of SAR (measured) = 0.121 W/kg



#7 Date:2025-07-26

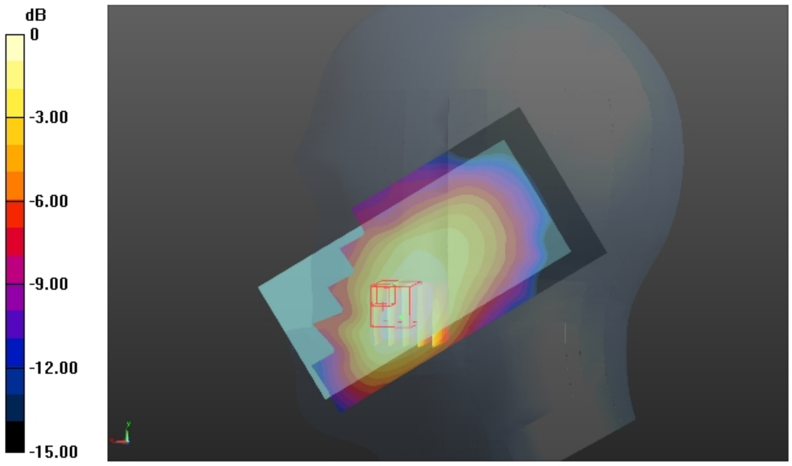
GSM 850_Head_Left Check_Ch190

Communication System: UID 0; Frequency:836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.93 S/m; εr = 41.68; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(9.72, 9.72, 9.72); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.523 W/kg
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.615 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 1.621 W/kg
SAR(1 g) = 0.351 W/kg; SAR(10 g) = 0.216 W/kg
Maximum value of SAR (measured) = 0.421 W/kg



#8 Date:2025-07-27

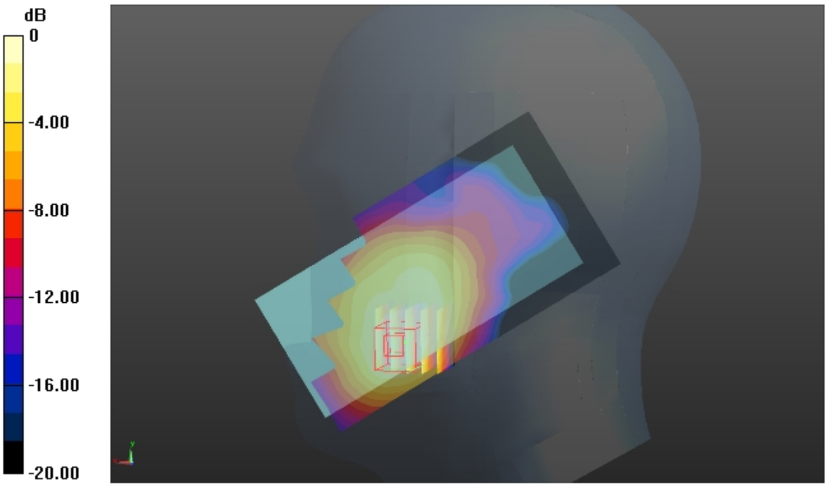
PCS 1900_ Head_Left Check _Ch512

Communication System: UID 0; Frequency:1850.2 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1850.2MHz; σ = 1.41 S/m; εr = 40.16; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(8.12, 8.12, 8.12); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.156 W/kg
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.245V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.128 W/kg
SAR(1 g) = 0.271 W/kg; SAR(10 g) = 0.115 W/kg
Maximum value of SAR (measured) = 0.359 W/kg



#9 Date:2025-07-27

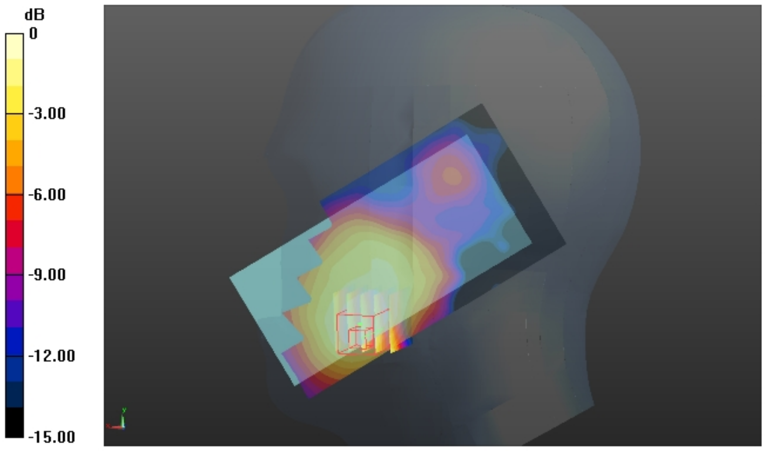
LTE_Head_Left Check _Band 2_Ch18700

Communication System: UID 0; Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.42 S/m; εr = 40.12; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(8.12, 8.12, 8.12); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.810 W/kg
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.526 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.625 W/kg; SAR(10 g) = 0.416 W/kg
Maximum value of SAR (measured) = 0.742 W/kg



#10 Date:2025-07-28

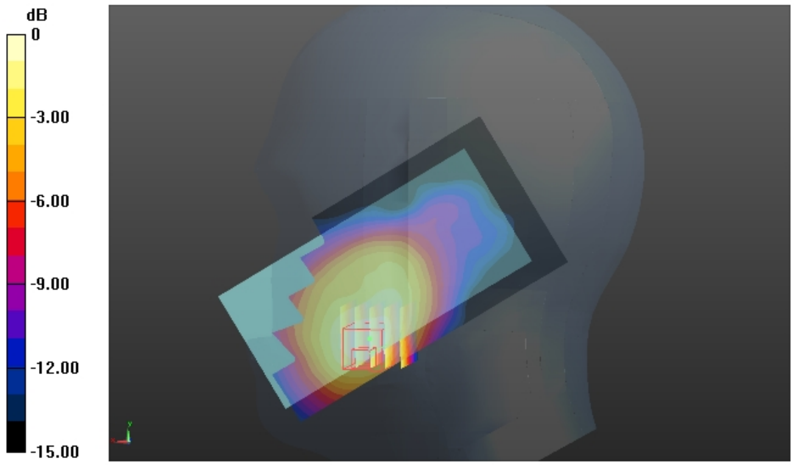
LTE_Head_Left Check_Ch20850

Communication System: UID 0; Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 1.84 S/m; εr = 39.25; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(7.37, 7.37, 7.37); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.456 W/kg
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.241 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.461 W/kg
SAR(1 g) = 0.681 W/kg; SAR(10 g) = 0.258 W/kg
Maximum value of SAR (measured) = 0.729 W/kg



#11 Date:2025-07-25

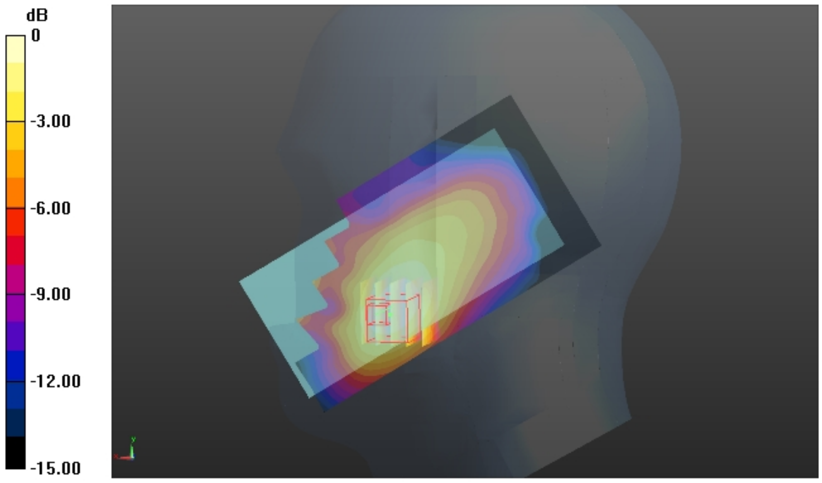
LTE_Head Check_Band 12_Ch23095

Communication System: UID 0; Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used: f = 707.5 MHz; σ = 0.79 S/m; εr = 42.85; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(9.81, 9.81, 9.81); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.259W/kg
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.688 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.351W/kg
SAR(1 g) = 0.625 W/kg; SAR(10 g) = 0.311 W/kg
Maximum value of SAR (measured) = 0.781 W/kg



#12 Date:2025-07-25

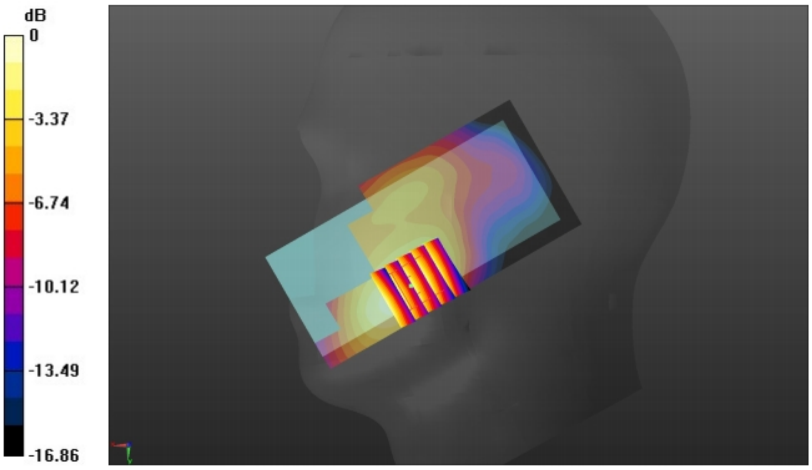
LTE_Head Left Check_Band 17_Ch23800

Communication System: UID 0; Frequency:711 MHz;Duty Cycle: 1:1
Medium parameters used: f = 711 MHz; σ = 0.81S/m; εr = 42.83; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN7396; ConvF(9.81, 9.81, 9.81); Calibrated: 6/5/2025;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn387; Calibrated: 2/9/2024
Phantom: ELI v8.0; Type: QDOVA004AA; Serial: TP:2058
DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.326 W/kg
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=5mm
Reference Value = 9.621 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.214 W/kg
SAR(1 g) = 0.168 W/kg; SAR(10 g) = 0.095 W/kg
Maximum value of SAR (measured) = 0.215 W/kg



Appendix D. DASY System Calibration Certificate

Schmid & Partner Engineering AG
s p e a g
Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

IMPORTANT NOTICE

USAGE OF THE DAE 4

The DAE unit is a delicate, high precision instrument and requires careful treatment by the user. There are no serviceable parts inside the DAE. Special attention shall be given to the following points:

Battery Exchange: The battery cover of the DAE4 unit is closed using a screw, over tightening the screw may cause the threads inside the DAE to wear out.

Shipping of the DAE: Before shipping the DAE to SPEAG for calibration, remove the batteries and pack the DAE in an antistatic bag. This antistatic bag shall then be packed into a larger box or container which protects the DAE from impacts during transportation. The package shall be marked to indicate that a fragile instrument is inside.

E-Stop Failures: Touch detection may be malfunctioning due to broken magnets in the E-stop. Rough handling of the E-stop may lead to damage of these magnets. Touch and collision errors are often caused by dust and dirt accumulated in the E-stop. To prevent E-stop failure, the customer shall always mount the probe to the DAE carefully and keep the DAE unit in a non-dusty environment if not used for measurements.

Repair: Minor repairs are performed at no extra cost during the annual calibration. However, SPEAG reserves the right to charge for any repair especially if rough unprofessional handling caused the defect.

DASY Configuration Files: Since the exact values of the DAE input resistances, as measured during the calibration procedure of a DAE unit, are not used by the DASY software, a nominal value of 200 MOhm is given in the corresponding configuration file.

Important Note:
Warranty and calibration is void if the DAE unit is disassembled partly or fully by the Customer.

Important Note:
Never attempt to grease or oil the E-stop assembly. Cleaning and readjusting of the E-stop assembly is allowed by certified SPEAG personnel only and is part of the annual calibration procedure.

Important Note:
To prevent damage of the DAE probe connector pins, use great care when installing the probe to the DAE. Carefully connect the probe with the connector notch oriented in the mating position. Avoid any rotational movement of the probe body versus the DAE while turning the locking nut of the connector. The same care shall be used when disconnecting the probe from the DAE.

Schmid & Partner Engineering

TN_BR040315AD DAE4.doc

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client Anbotek (Auden)

Certificate No: DAE4-387_Sep02

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BM - SN: 387
Calibration procedure(s)	QA CAL-06.v29 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	September 02, 2024

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	15-Aug-24 (No:22092)	Aug-25
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Auto DAE Calibration Unit	SE UWS 053 AA 1001	05-Jan-24 (in house check)	In house check: Jan-25
Calibrator Box V2.1	SE UMS 006 AA 1002	05-Jan-24 (in house check)	In house check: Jan-25

	Name	Function	Signature
Calibrated by:	Dominique Steffen	Laboratory Technician	
Approved by:	Sven Kühn	Deputy Manager	i.V.

Issued: September 02, 2024

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: DAE4-387_Sep02 Page 1 of 5

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Glossary

DAE	data acquisition electronics
Connector angle	information used in DASY system to align probe sensor X to the robot coordinate system.

Methods Applied and Interpretation of Parameters

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle*: The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.
  - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.
  - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage
  - *Input Offset Measurement*: Output voltage and statistical results over a large number of zero voltage measurements.
  - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - *Input resistance:* Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.
  - *Power consumption:* Typical value for information. Supply currents in various operating modes.

DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1μV , full range = -100...+300 mV

Low Range: 1LSB = 61nV , full range = -1.......+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Y	Z
High Range	404.489 ± 0.02% (k=2)	404.852 ± 0.02% (k=2)	404.862 ± 0.02% (k=2)
Low Range	3.97827 ± 1.50% (k=2)	3.95875 ± 1.50% (k=2)	3.97982 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	53.0 ° ± 1 °

Appendix (Additional assessments outside the scope of SCS0108)

1. **DC Voltage Linearity**

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	200032.85	-3.31	-0.00
Channel X	+ Input	20007.64	1.88	0.01
Channel X	- Input	-20003.48	1.18	-0.01
Channel Y	+ Input	200034.23	-1.43	-0.00
Channel Y	+ Input	20006.60	0.91	0.00
Channel Y	- Input	-20004.04	0.72	-0.00
Channel Z	+ Input	200035.38	-0.83	-0.00
Channel Z	+ Input	20003.69	-2.11	-0.01
Channel Z	- Input	-20006.38	-1.59	0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2001.63	0.08	0.00
Channel X	+ Input	202.29	0.70	0.35
Channel X	- Input	-197.90	0.60	-0.30
Channel Y	+ Input	2001.33	-0.07	-0.00
Channel Y	+ Input	200.86	-0.60	-0.30
Channel Y	- Input	-199.87	-1.23	0.62
Channel Z	+ Input	2001.61	0.27	0.01
Channel Z	+ Input	200.60	-0.70	-0.35
Channel Z	- Input	-199.51	-0.85	0.43

2. **Common mode sensitivity**

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	13.50	11.56
	- 200	-8.64	-11.18
Channel Y	200	-0.81	-1.28
	- 200	1.05	0.09
Channel Z	200	7.17	6.91
	- 200	-9.46	-9.01

3. **Channel separation**

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	-1.70	0.33
Channel Y	200	10.70	-	-0.38
Channel Z	200	7.11	7.89	-

4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	15969	17466
Channel Y	15661	16162
Channel Z	15990	16190

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec
Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	0.73	-2.58	3.29	0.62
Channel Y	0.41	-0.49	1.23	0.40
Channel Z	-0.80	-1.88	0.30	0.42

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	-0.01	-8	-9

In Collaboration with
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CAICT
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Client Anbotek Certificate No: Z25-98771

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:7396
Calibration Procedure(s)	FF-Z12-006-08 Calibration Procedures for Dosimetric E-field Probes
Calibration date:	May 06 , 2025

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)℃ and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	101919	20-Jun-24 (CTTL, No.J24X07447)	Jun-25
Power sensor NRP-Z91	101547	20-Jun-24 (CTTL, No.J24 X07447)	Jun-25
Power sensor NRP-Z91	101548	20-Jun-24 (CTTL, No.J24 X07447)	Jun-25
Reference10dBAttenuator	18N50W-10dB	13-Mar-25(CTTL,No.J25X01547)	Mar-26
Reference20dBAttenuator	18N50W-20dB	13-Mar-25(CTTL, No.J25X01548)	Mar-26
Reference Probe EX3DV4	SN 7433	26-Sep-24(SPEAG,No.EX3-7433_Sep24)	Sep-25
DAE4	SN 549	13-Dec-24(SPEAG, No.DAE4-549_Dec24)	Dec -25
Secondary Standards	**ID #**	**Cal Date(Calibrated by, Certificate No.)**	**Scheduled Calibration**
SignalGeneratorMG3700A	6201052605	27-Jun-24 (CTTL, No.J24X04776)	Jun-25
Network Analyzer E5071C	MY46110673	13-Jan-25 (CTTL, No.J25X00285)	Jan -26

	Name	Function	Signature
Calibrated by:	Zhao Liang	SAR Test Engineer	赵亮
Reviewed by:	Lin Hao	SAR Test Engineer	林浩
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: May06 , 2025

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

TTL In Collaboration with s p e a g CALIBRATION LABORATORY CAICT

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Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A,B,C,D	modulation dependent linearization parameters
Polarization Φ	Φ rotation around probe axis
Polarization θ	θ rotation around an axis that is in the plane normal to probe axis (at measurement center), i θ=0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013

b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300MHz to 3GHz)", February 2005

c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010

d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization θ=0 (f≤900MHz in TEM-cell; f>1800MHz: waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below ConvF).
- *NORM(f)x,y,z = NORMx,y,z* frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- PAR: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics.
- *Ax,y,z; Bx,y,z; Cx,y,z;VRx,y,z:*A,B,C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f≤800MHz) and inside waveguide using analytical field distributions based on power measurements for f >800MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty valued are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx,y,z* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from±50MHz to±100MHz.
- *Spherical isotropy (3D deviation from isotropy):* in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset:* The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle:* The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).