



TEST REPORT

For SAR



Report No. : **CHEW23090013** Report Verification:

Project No...... : **SHT2308025702EW**

FCC ID..... : **2AJDD-IDIAGSF9S1**

Applicant's name..... : **SHENZHEN FCAR TECHNOLOGY CO.,LTD**

Address..... : 8th floor, Chuangyi Building, No. 3025 Nanhai Ave., Nanshan, Shenzhen, Guangdong, China 518060

Test item description : **Auto Diagnostic System**

Trade Mark : FCAR

Model/Type reference..... : F9S

Listed Model(s) : F9S-D,F9S-G,F9S-W,F9S-M,F9S-E,F9S-N,F9S-A,F9S-L,F9S Pro

Standard : **FCC 47 CFR Part2.1093**
IEEE Std C95.1: 1999 Edition
IEEE Std 1528: 2013

Date of receipt of test sample..... : Aug. 30, 2023

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Result..... : **PASS**

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Testing Laboratory Name : **Shenzhen Huatongwei International Inspection Co., Ltd**

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The test report merely correspond to the test sample.

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1. Statement of Compliance

Maximum Reported SAR (W/kg @1g)					
Type	Test setting	WWLAN	WIFI 2.4G	WIFI 5G	Simultaneous TX
Body	Dist.= 0mm	0.785	0.459	0.646	1.431

Note:

1. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg@1g) specified in FCC 47 CFR part 2 (2.1093) and IEEE Std C95.1,
2. This device had been tested in accordance with the measurement methods and procedures specified in IEEE 1528 and FCC KDB publications.

2 . Test Standards and Report version

2.1. Test Standards

The tests were performed according to following standards:

[FCC 47 Part 2.1093](#): Radiofrequency radiation exposure evaluation: portable devices.

[IEEE Std C95.1, 1999 Edition](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz

[IEEE Std 1528™-2013](#): IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

FCC published RF exposure KDB procedures:

[865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04](#): SAR Measurement Requirements for 100 MHz to 6 GHz

[865664 D02 RF Exposure Reporting v01r02](#): RF Exposure Compliance Reporting and Documentation Considerations

[447498 D04 Interim General RF Exposure Guidance v01](#): Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies

[248227 D01 802.11 Wi-Fi SAR v02r02](#): SAR Measurement Procedures for 802.11 a/b/g Transmitters

[941225 D05 SAR for LTE Devices v02r05](#): SAR Evaluation Considerations for LTE Devices

[616217 D04 SAR for laptop and tablets v01r02](#): describes the SAR evaluation requirements for laptop, notebook, netbook and tablet computers

[TCB workshop](#) April, 2019; Page 19, Tissue Simulating Liquids (TSL)

2.2. Report version

Revision No.	Date of issue	Description
N/A	2023-09-08	Original

3. Summary

3.1. Client Information

Applicant:	SHENZHEN FCAR TECHNOLOGY CO.,LTD
Address:	8th floor, Chuangyi Building, No. 3025 Nanhai Ave., Nanshan, Shenzhen, Guangdong, China 518060
Manufacturer:	SHENZHEN FCAR TECHNOLOGY CO.,LTD
Address:	8th floor, Chuangyi Building, No. 3025 Nanhai Ave., Nanshan, Shenzhen, Guangdong, China 518060
Factory:	SHENZHEN FCAR TECHNOLOGY CO.,LTD
Address:	4th Floor, Building A, Jianggu Industrial Park, No. 1 Zhenye Road, Tangxiayong Community, Yanluo Street, Songgang, Shenzhen

3.2. Product Description

Main unit	
Name of EUT:	Auto Diagnostic System
Trade Mark:	FCAR
Model No.:	F9S
Listed Model(s):	F9S-D,F9S-G,F9S-W,F9S-M,F9S-E,F9S-N,F9S-A,F9S-L,F9S Pro
Power supply:	DC 3.7V from Battery
Hardware version:	V1.1
Software version:	V3.17
Device Dimension:	Length x Width x Thickness (mm): 305 x 198 x 25
Device Category:	Portable
Product stage:	Production unit
RF Exposure Environment:	General Population/Uncontrolled
HTW test sample No.:	YPHT23080257001
Support SIM card quantity:	<input checked="" type="checkbox"/> Single card <input type="checkbox"/> Double card

3.3. RF Specification Description

LTE				
Operation Band:	<input checked="" type="checkbox"/> Band 2	<input checked="" type="checkbox"/> Band 4	<input checked="" type="checkbox"/> Band 5	<input type="checkbox"/> Band 7
	<input checked="" type="checkbox"/> Band 12	<input checked="" type="checkbox"/> Band 13	<input type="checkbox"/> Band 17	<input checked="" type="checkbox"/> Band 25
	<input type="checkbox"/> Band 26	<input type="checkbox"/> Band 30	<input checked="" type="checkbox"/> Band 66	<input type="checkbox"/> Band 71
	<input type="checkbox"/> Band 38	<input type="checkbox"/> Band 41		
Support type:	<input checked="" type="checkbox"/> Single Carrier	<input type="checkbox"/> CA-UL	<input type="checkbox"/> CA-DL	<input type="checkbox"/> MIMO-UL
Modulation type:	<input checked="" type="checkbox"/> QPSK	<input checked="" type="checkbox"/> 16QAM		
Power Class:	<input checked="" type="checkbox"/> Class 3	<input type="checkbox"/> Class 2		
Wi-Fi 2.4G				
Support type:	<input checked="" type="checkbox"/> 802.11b	<input checked="" type="checkbox"/> 802.11g	<input checked="" type="checkbox"/> 802.11n	<input type="checkbox"/> 802.11ax
Support bandwidth:	<input checked="" type="checkbox"/> 20MHz	<input type="checkbox"/> 40MHz		
Wi-Fi 5G				
Operation Band:	<input checked="" type="checkbox"/> U-NII-1	<input type="checkbox"/> U-NII-2A	<input type="checkbox"/> U-NII-2C	<input checked="" type="checkbox"/> U-NII-3
Support type:	<input checked="" type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n	<input type="checkbox"/> 802.11ac	<input type="checkbox"/> 802.11ax
Support bandwidth:	<input checked="" type="checkbox"/> 20MHz	<input checked="" type="checkbox"/> 40MHz	<input type="checkbox"/> 80MHz	<input type="checkbox"/> 160MHz
Bluetooth				
Support type:	<input checked="" type="checkbox"/> BR	<input checked="" type="checkbox"/> EDR	<input checked="" type="checkbox"/> BLE-1Mbps	<input type="checkbox"/> BLE-2Mbps

3.4. Testing Laboratory Information

Laboratory Name	Shenzhen Huatongwei International Inspection Co., Ltd.	
Laboratory Location	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China	
Contact information:	Tel: 86-755-26715499 E-mail: cs@szhtw.com.cn http://www.szhtw.com.cn	
Qualifications	Type	Accreditation Number
	FCC	762235

3.5. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Ambient temperature	18 °C to 25 °C
Ambient humidity	30%RH to 70%RH
Air Pressure	950-1050mbar

4. Equipments Used during the Test

Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Cal. date (YY-MM-DD)	Due date (YY-MM-DD)
●	Data Acquisition Electronics DAEx	SPEAG	HTWE0313-05	DAE4	1549	2023/03/27	2024/03/26
●	E-field Probe	SPEAG	HTWE0313-06	EX3DV4	7494	2023/04/17	2024/04/16
●	Universal Radio Communication Tester	R&S	HTWE0323	CMW500	137681	2023/05/04	2024/05/03
Tissue-equivalent liquids Validation							
●	Dielectric Assessment Kit	SPEAG	HTWE0315-02	DAK-3.5	1267	N/A	N/A
●	Network analyzer	Keysight	HTWE0331	E5071C	MY46733048	2023/08/18	2024/08/17
System Validation							
●	System Validation Dipole	SPEAG	HTWE0314-03	D750V3	1180	2021/01/22	2024/01/21
●	System Validation Dipole	SPEAG	HTWE0314-04	D835V2	4d238	2021/01/22	2024/01/21
●	System Validation Dipole	SPEAG	HTWE0314-05	D1750V2	1164	2021/01/22	2024/01/21
●	System Validation Dipole	SPEAG	HTWE0314-06	D1900V2	5d226	2021/01/22	2024/01/21
●	System Validation Dipole	SPEAG	HTWE0314-07	D2450V2	1009	2021/01/25	2024/01/24
●	System Validation Dipole	SPEAG	HTWE0314-09	D5GHzV2	1273	2021/01/26	2024/01/25
●	Signal Generator	R&S	HTWE0276	SMB100A	114360	2023/05/23	2024/05/22
●	Power Viewer for Windows	R&S		N/A	N/A	N/A	N/A
●	Power sensor	R&S	HTWE0278	NRP18A	101010	2023/05/23	2024/05/22
●	Power sensor	R&S	HTWE0389	NRP18A	101386	2023/03/29	2024/03/28
●	Power Amplifier	BONN	HTWE0336	BLWA 0160-2M	1811887	2022/11/10	2023/11/09
●	Dual Directional Coupler	Mini-Circuits	HTWE0335	ZHDC-10-62-S+	F975001814	2022/11/10	2023/11/09
●	Attenuator	Mini-Circuits	HTWE0333	VAT-3W2+	1819	2022/11/10	2023/11/09
●	Attenuator	Mini-Circuits	HTWE0334	VAT-10W2+	1741	2022/11/10	2023/11/09

Note:

1. The Probe, Dipole and DAE calibration reference to the Appendix E and F.
2. Referring to KDB865664 D01, the dipole calibration interval can be extended to 3 years with justification. The dipole are also not physically damaged or repaired during the interval.

5. Measurement Uncertainty

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

Therefore, the measurement uncertainty is not required.

6. SAR Measurement System Configuration

6.1. SAR Measurement Set-up

The DASY5 system for performing compliance tests consists of the following items:

A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).

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

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

A unit to operate the optical surface detector which is connected to the EOC.

The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.

The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2003.

DASY5 software and SEMCAD data evaluation software.

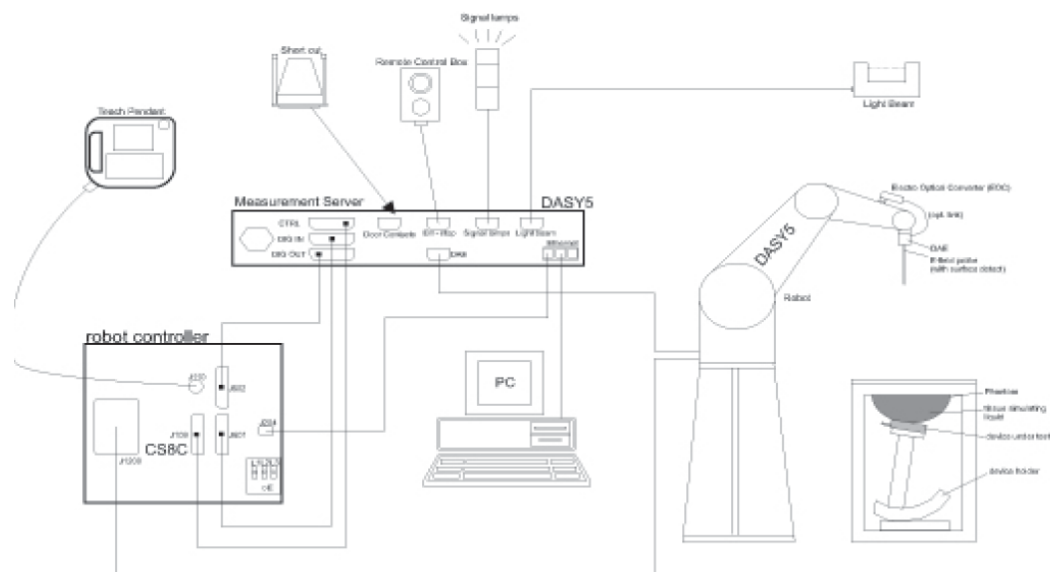
Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.

The generic twin phantom enabling the testing of left-hand and right-hand usage.

The device holder for handheld Mobile Phones.

Tissue simulating liquid mixed according to the given recipes.

System validation dipoles allowing to validate the proper functioning of the system.



6.2. DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

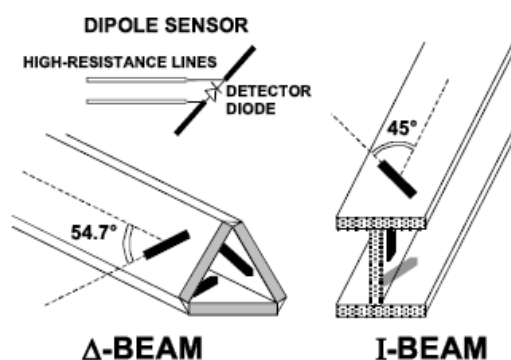
● Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	4 MHz to 10 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 μ W/g to > 100 W/kg; Linearity: ± 0.2 dB
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1.0 mm
Application	General dosimetry up to 6 GHz Dosimetry in strong gradient fields Compliance tests of Mobile Phones
Compatibility	DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI

◆ Isotropic E-Field Probe

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

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



6.3. Phantoms

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

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



SAM-Twin Phantom

6.4. Device Holder

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

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



Device holder supplied by SPEAG

7. SAR Test Procedure

7.1. Scanning Procedure

Step 1: 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. Measure the local SAR at a test point within 8 mm of the phantom inner surface that is closest to the DUT. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan

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 locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) 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 Resolutions per FCC KDB Publication 865664 D01v04

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 mm ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2)$ mm ± 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.	

Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1g and 10g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose 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 g and 10 g and displays these values next to the job's label.

Zoom Scan Resolutions per FCC KDB Publication 865664 D01v04

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 1 st 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	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$ mm	
Minimum zoom scan volume	x, y, z	≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm	
<p>Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.</p> <p>* When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</p>				

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1. The SAR drift shall be kept within ± 5 %.

7.2. Data Storage and Evaluation

Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors),s together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension “.DA4”. The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [W/kg], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

Data Evaluation

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

Probe parameters:	Sensitivity:	Normi, ai0, ai1, ai2
	Conversion factor:	ConvFi
	Diode compression point:	Dcpi
Device parameters:	Frequency:	f
	Crest factor:	cf
Media parameters:	Conductivity:	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 DASY5 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

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

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

Vi:	compensated signal of channel (i = x, y, z)
Ui:	input signal of channel (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:

$$E - \text{fieldprobes} : \quad E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

$$H - \text{fieldprobes} : \quad H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1}f + a_{i2}f^2}{f}$$

Vi:	compensated signal of channel (i = x, y, z)
Norm _i :	sensor sensitivity of channel (i = x, y, z), [mV/(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 i in V/m
H _i :	magnetic field strength of channel i in A/m

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

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

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

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1'000}$$

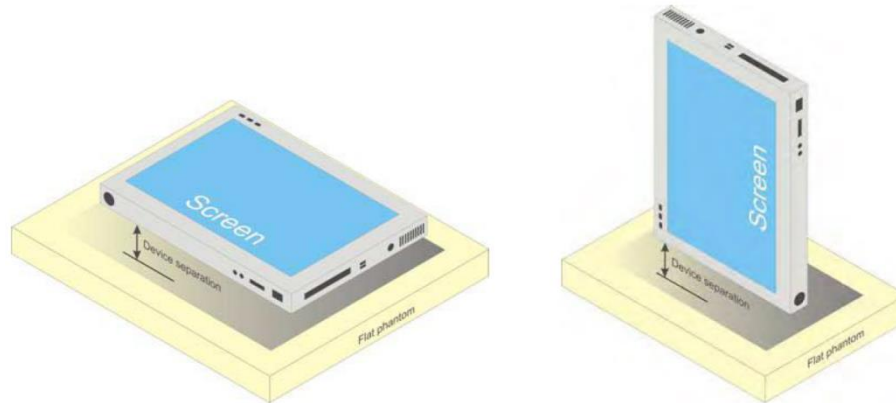
SAR: local specific absorption rate in W/kg
Etot: total field strength in V/m
 σ : conductivity in [mho/m] or [Siemens/m]
 ρ : equivalent tissue density in g/cm³

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid.

8. Position of the wireless device in relation to the phantom

8.1. Body Position

Other devices that fall into this category include tablet type portable computers and credit card transaction authorisation terminals, point-of-sale and/or inventory terminals. Where these devices may be torso or limb-supported, the same principles for body-supported devices are applied.



b) Tablet form factor portable computer

9. Dielectric Property Measurements & System Check

9.1. Tissue Dielectric Parameters

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within $\pm 2^\circ\text{C}$ of the temperature when the tissue parameters are characterized.

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3-4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

The dielectric constant (ϵ_r) and conductivity (σ) of typical tissue-equivalent media recipes are expected to be within $\pm 5\%$ of the required target values; but for SAR measurement systems that have implemented the SAR error compensation algorithms documented in IEEE Std 1528, to automatically compensate the measured SAR results for deviations between the measured and required tissue dielectric parameters, the tolerance for ϵ_r and σ may be relaxed to $\pm 10\%$. This is limited to frequencies ≤ 3 GHz.

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

Tissue dielectric parameters for Head		
Target Frequency (MHz)	Head	
	ϵ_r	$\sigma(\text{S/m})$
750	41.9	0.89
835	41.5	0.90
1750	40.1	1.37
1800-2000	40.0	1.40
2450	39.2	1.80
2600	39.0	1.96
5200	36.0	4.66
5300	35.9	4.76
5500	35.6	4.96
5600	35.5	5.07
5800	35.3	5.27

Measurement Results:

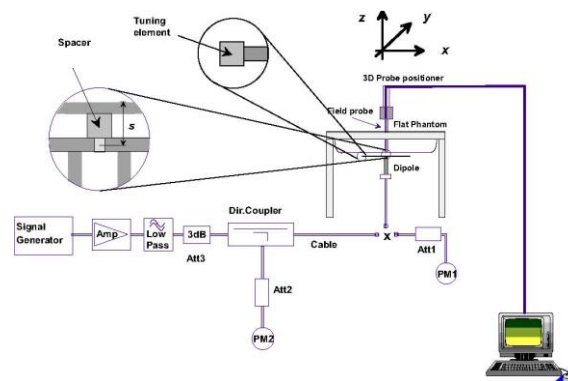
Dielectric performance of Head tissue simulating liquid									
Frequency (MHz)	ϵ_r		$\sigma(\text{S/m})$		Delta (ϵ_r)	Delta (σ)	Limit	Temp ($^\circ\text{C}$)	Date
	Target	Measured	Target	Measured					
750	41.90	43.06	0.890	0.898	2.77%	0.90%	$\pm 5\%$	22.2	2023/9/5
835	41.50	42.78	0.900	0.912	3.08%	1.33%	$\pm 5\%$	22.2	2023/9/5
1750	40.10	41.39	1.370	1.381	3.22%	0.80%	$\pm 5\%$	22.2	2023/9/4
1900	40.00	41.21	1.400	1.415	3.03%	1.07%	$\pm 5\%$	22.2	2023/9/4
2450	39.20	40.13	1.800	1.811	2.37%	0.61%	$\pm 5\%$	22.2	2023/9/5
5250	35.93	37.15	4.706	4.642	3.40%	-1.36%	$\pm 5\%$	22.2	2023/9/5
5750	35.36	36.33	5.219	5.230	2.74%	0.21%	$\pm 5\%$	22.2	2023/9/5

9.2. System Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are re-measured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

System Performance Check Measurement Conditions:

- ◆ The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ± 0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- ◆ The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm for measurements > 3 GHz.
- ◆ The DASY system with an E-Field Probe was used for the measurements.
- ◆ The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- ◆ The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- ◆ Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- ◆ The results are normalized to 1 W input power.



System Performance Check Setup

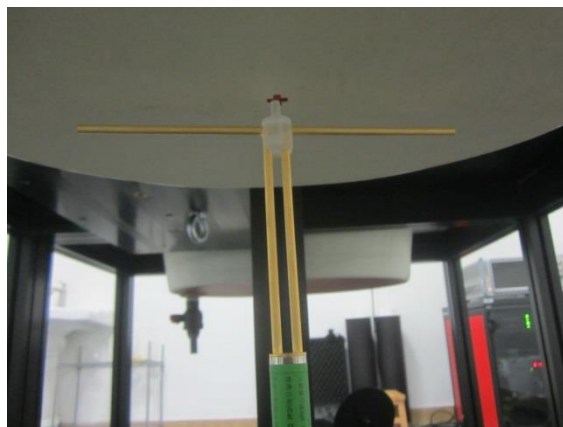


Photo of Dipole Setup

Measurement Results:

Head											
Frequency (MHz)	1g SAR			10g SAR			Delta (1g)	Delta (10g)	Limit	Temp (°C)	Date
	Target 1W	Normalize to 1W	Measured 250mW	Target 1W	Normalize to 1W	Measured 250mW					
750	8.43	8.68	2.17	5.59	5.64	1.41	2.97%	0.89%	±10%	22.2	2023/9/5
835	9.39	9.96	2.49	6.14	6.44	1.61	6.07%	4.89%	±10%	22.2	2023/9/5
1750	36.40	37.44	9.36	19.20	19.88	4.97	2.86%	3.54%	±10%	22.2	2023/9/4
1900	39.80	42.00	10.50	20.30	21.76	5.44	5.53%	7.19%	±10%	22.2	2023/9/4
2450	52.00	56.00	14.00	23.90	26.04	6.51	7.69%	8.95%	±10%	22.2	2023/9/5
Frequency (MHz)	1g SAR			10g SAR			Delta (1g)	Delta (10g)	Limit	Temp (°C)	Date
	Target 1W	Normalize to 1W	Measured 100mW	Target 1W	Normalize to 1W	Measured 100mW					
5250	78.20	82.10	8.21	22.30	23.40	2.34	4.99%	4.93%	±10%	22.2	2023/9/5
5750	79.30	78.70	7.87	22.50	22.60	2.26	-0.76%	0.44%	±10%	22.2	2023/9/5

Note:

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within ±10% of the manufacturer calibrated dipole SAR target.

Plots of System Performance Check**SystemPerformanceCheck-Head 750MHz**

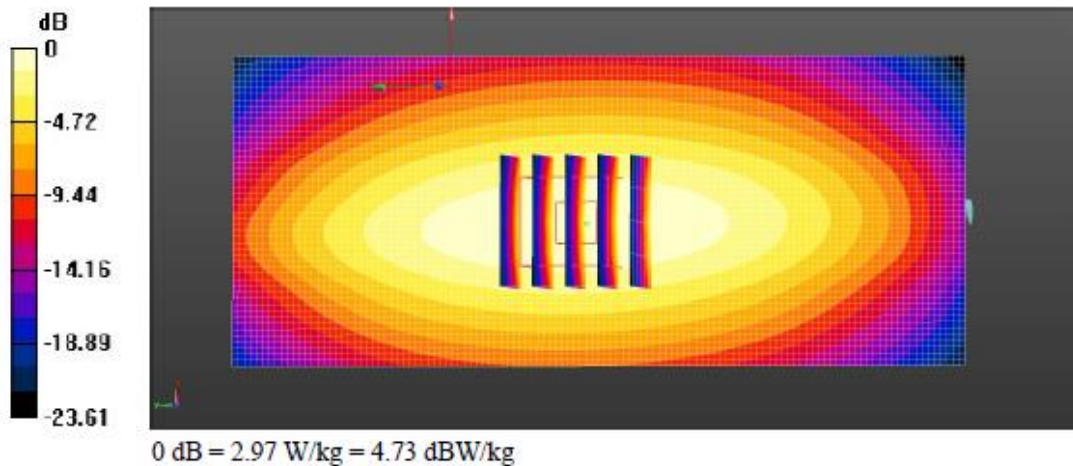
Communication System: UID 0, A-CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 750$ MHz; $\sigma = 0.898$ S/m; $\epsilon_r = 43.061$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Ambient Temperature: 22.7°C; Liquid Temperature: 22.4°C;

DASY Configuration:

- Probe: EX3DV4 - SN7494; ConvF(10.8, 10.8, 10.8) @ 750 MHz; Calibrated: 4/17/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1549; Calibrated: 3/27/2023
- Phantom: ELI V8.0 ; Type: QD OVA 004 AA; Serial: 2078
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Head/d=15mm, Pin=250mW/Area Scan (51x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.97 W/kg

Head/d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.62 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.47 W/kg
SAR(1 g) = 2.17 W/kg; SAR(10 g) = 1.41 W/kg
Maximum value of SAR (measured) = 2.99 W/kg



SystemPerformanceCheck-Head 835MHz

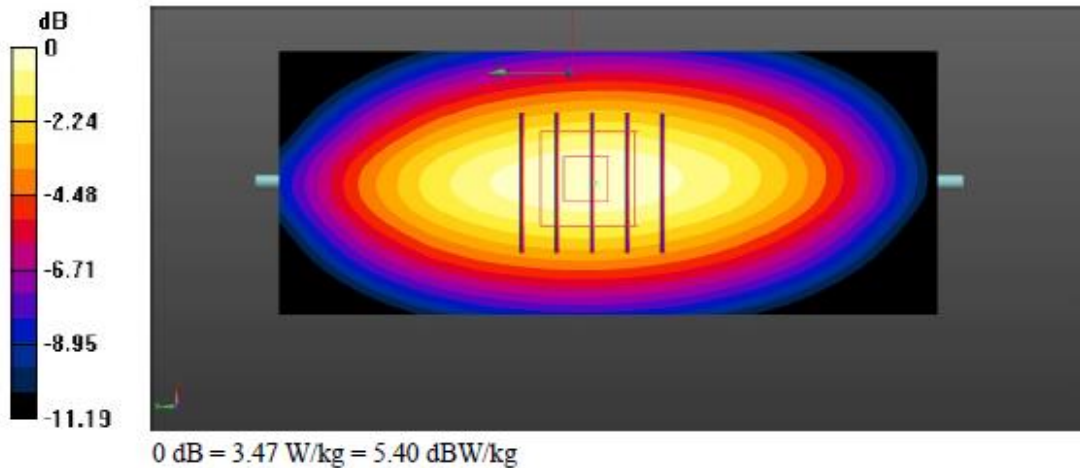
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 835$ MHz; $\sigma = 0.912$ S/m; $\epsilon_r = 42.777$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Ambient Temperature:22.7°C;Liquid Temperature:22.2°C;

DASY Configuration:

- Probe: EX3DV4 - SN7494; ConvF(10.4, 10.4, 10.4) @ 835 MHz; Calibrated: 4/17/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1549; Calibrated: 3/27/2023
- Phantom: ELI V8.0 ; Type: QD OVA 004 AA; Serial: 2078
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Head/d=15mm, Pin=250mW/Area Scan (41x101x1): Interpolated grid: dx=1.500 mm,
dy=1.500 mm
Maximum value of SAR (interpolated) = 3.47 W/kg

Head/d=15mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,
dy=8mm, dz=5mm
Reference Value = 63.28 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 4.05 W/kg
SAR(1 g) = 2.49 W/kg; SAR(10 g) = 1.61 W/kg
Maximum value of SAR (measured) = 3.47 W/kg



SystemPerformanceCheck-Head 1750MHz

Communication System: UID 0, CW (0); Frequency: 1750 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.381$ S/m; $\epsilon_r = 41.394$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.7°C;Liquid Temperature:22.2°C;

DASY Configuration:

- Probe: EX3DV4 - SN7494; ConvF(8.99, 8.99, 8.99) @ 1750 MHz; Calibrated: 4/17/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1549; Calibrated: 3/27/2023
- Phantom: ELI V8.0 ; Type: QD OVA 004 AA; Serial: 2078
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Head/d=10mm,Pin=250mW/Area Scan (41x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 14.7 W/kg

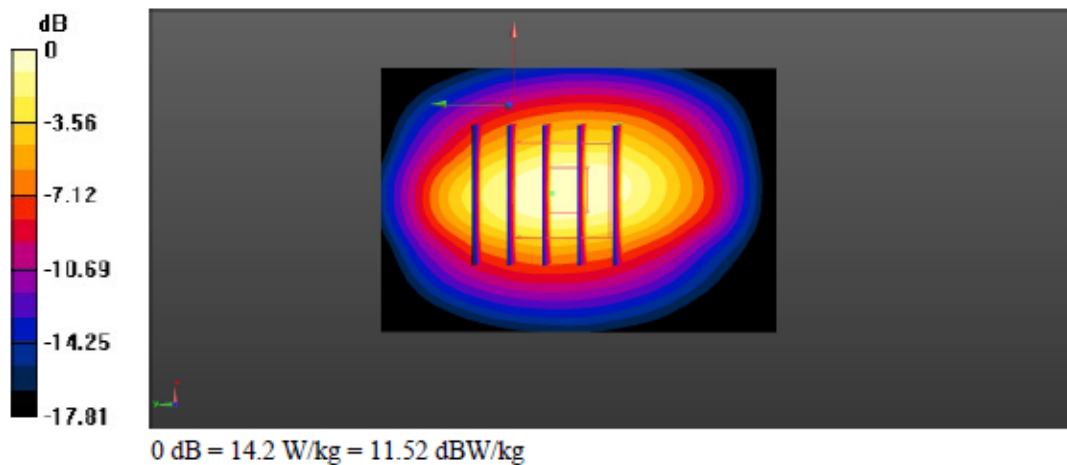
Head/d=10mm,Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 103.0 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 17.3 W/kg

SAR(1 g) = 9.36 W/kg; SAR(10 g) = 4.97 W/kg

Maximum value of SAR (measured) = 14.2 W/kg



SystemPerformanceCheck-Head 1900MHz

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.415$ S/m; $\epsilon_r = 41.206$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.7°C; Liquid Temperature: 22.2°C;

DASY Configuration:

- Probe: EX3DV4 - SN7494; ConvF(8.64, 8.64, 8.64) @ 1900 MHz; Calibrated: 4/17/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1549; Calibrated: 3/27/2023
- Phantom: ELI V8.0 ; Type: QD OVA 004 AA; Serial: 2078
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Head/d=10mm, Pin=250mW/Area Scan (41x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 16.6 W/kg

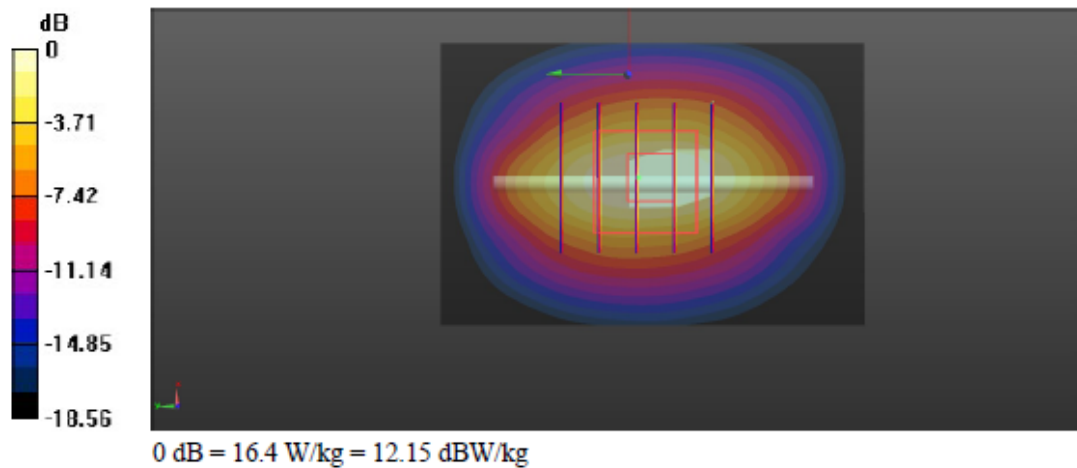
Head/d=10mm, Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 111.6 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 19.8 W/kg

SAR(1 g) = 10.5 W/kg; SAR(10 g) = 5.44 W/kg

Maximum value of SAR (measured) = 16.4 W/kg



SystemPerformanceCheck-Head 2450MHz

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.811$ S/m; $\epsilon_r = 40.131$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.7°C; Liquid Temperature: 22.2°C;

DASY Configuration:

- Probe: EX3DV4 - SN7494; ConvF(8.01, 8.01, 8.01) @ 2450 MHz; Calibrated: 4/17/2023
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1549; Calibrated: 3/27/2023
- Phantom: ELI V8.0 ; Type: QD OVA 004 AA; Serial: 2078
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Head/d=10mm, Pin=250mW/Area Scan (41x61x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 19.9 W/kg

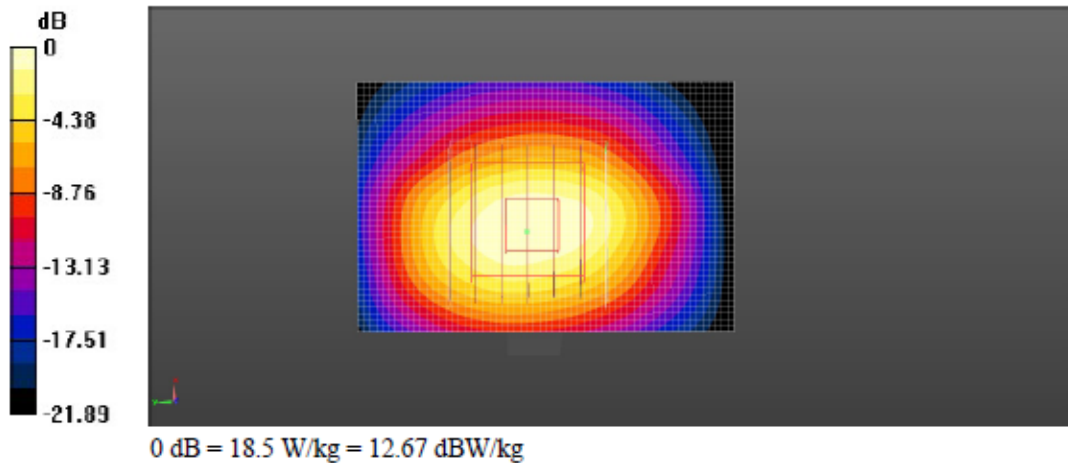
Head/d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 95.29 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 29.0 W/kg

SAR(1 g) = 14 W/kg; SAR(10 g) = 6.51 W/kg

Maximum value of SAR (measured) = 18.5 W/kg



SystemPerformanceCheck-Head 5250MHz

Communication System: UID 0, Generic WIFI (0); Frequency: 5250 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5250$ MHz; $\sigma = 4.642$ S/m; $\epsilon_r = 37.151$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.7°C;Liquid Temperature:22.2°C;

DASY Configuration:

- Probe: EX3DV4 - SN7494; ConvF(5.67, 5.67, 5.67) @ 5250 MHz; Calibrated: 4/17/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1549; Calibrated: 3/27/2023
- Phantom: ELI V8.0 ; Type: QD OVA 004 AA; Serial: 2078
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Head/d=10mm,pin=100mW/Area Scan (31x31x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 21.8 W/kg

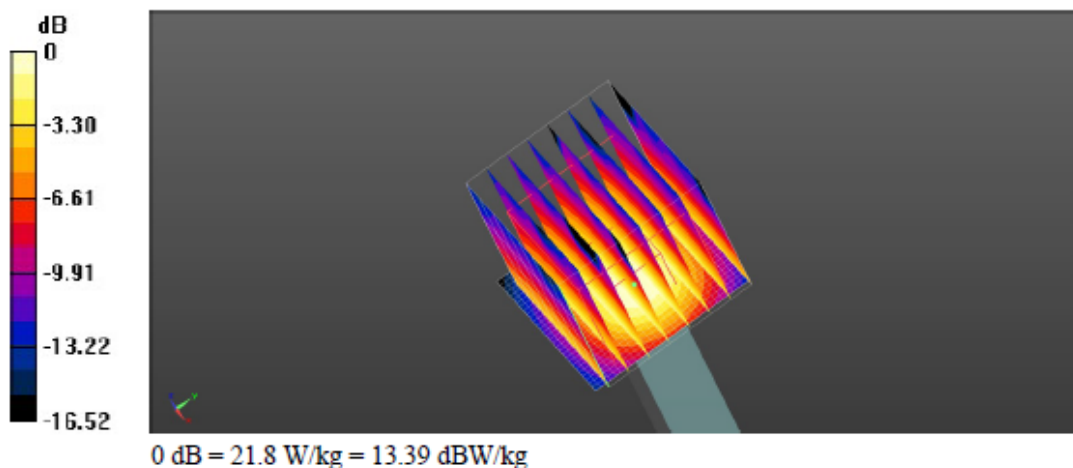
Head/d=10mm,pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 71.95 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 34.2 W/kg

SAR(1 g) = 8.21 W/kg; SAR(10 g) = 2.34 W/kg

Maximum value of SAR (measured) = 19.4 W/kg



SystemPerformanceCheck-Head 5750MHz

Communication System: UID 0, Generic WIFI (0); Frequency: 5750 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5750$ MHz; $\sigma = 5.23$ S/m; $\epsilon_r = 36.327$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature:22.7°C;Liquid Temperature:22.2°C;

DASY Configuration:

- Probe: EX3DV4 - SN7494; ConvF(5.14, 5.14, 5.14) @ 5750 MHz; Calibrated: 4/17/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1549; Calibrated: 3/27/2023
- Phantom: ELI V8.0 ; Type: QD OVA 004 AA; Serial: 2078
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Head/d=10mm, Pin=100mW/Area Scan (41x41x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 20.2 W/kg

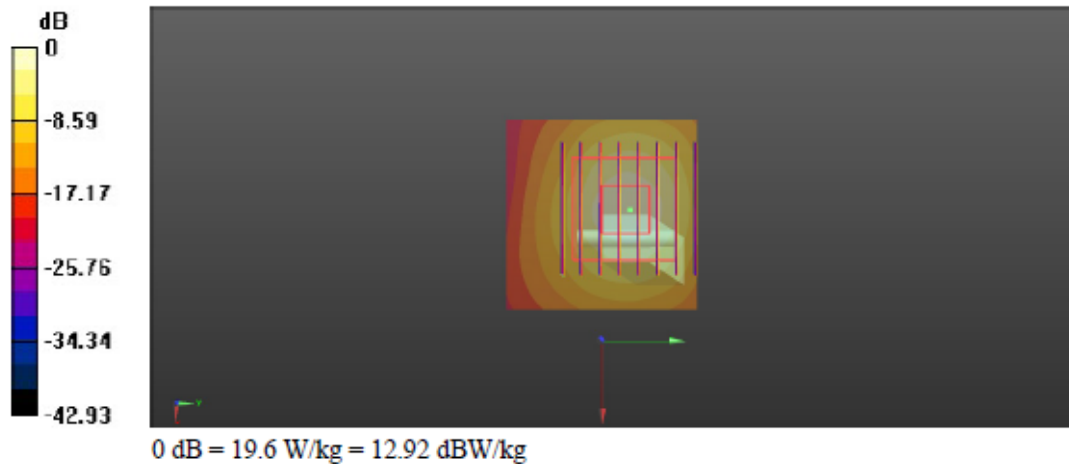
Head/d=10mm, Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 52.76 V/m; Power Drift = 0.21 dB

Peak SAR (extrapolated) = 34.6 W/kg

SAR(1 g) = 7.87 W/kg; SAR(10 g) = 2.26 W/kg

Maximum value of SAR (measured) = 19.6 W/kg



10. SAR Exposure Limits

SAR assessments have been made in line with the requirements of FCC 47 CFR § 2.1093.

Type Exposure	Limit (W/kg)	
	General Population/ Uncontrolled Exposure Environment	Occupational/ Controlled Exposure Environment
Spatial Average SAR (whole body)	0.08	0.4
Spatial Peak SAR (1g cube tissue for head and trunk)	1.6	8.0
Spatial Peak SAR (10g for limb)	4.0	20.0

Note:

- 1. Population/Uncontrolled Environments: are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.*
- 2. Occupational/Controlled Environments: are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).*

11. Conducted Power Measurement Results and Tune-up

Please refer to Appendix Report

Note:

LTE

General:

1. CMW500 base station simulator was used to setup the connection with EUT; the frequency band, channel, bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r03, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r03, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r03, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.

LTE (TDD) Considerations

1. According to KDB 941225 D05 SAR for LTE Devices, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.
2. SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.
3. LTE TDD Bands support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink/downlink configurations and Table 4.2-1 for Special subframe configurations.

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$(1+X) \cdot 2192 \cdot T_s$	$(1+X) \cdot 2560 \cdot T_s$	$7680 \cdot T_s$	$(1+X) \cdot 2192 \cdot T_s$	$(1+X) \cdot 2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$		
5	$6592 \cdot T_s$	$(2+X) \cdot 2192 \cdot T_s$	$(2+X) \cdot 2560 \cdot T_s$	$20480 \cdot T_s$	$(2+X) \cdot 2192 \cdot T_s$	$(2+X) \cdot 2560 \cdot T_s$
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-		
9	$13168 \cdot T_s$			-		
10	$13168 \cdot T_s$	$13152 \cdot T_s$	$12800 \cdot T_s$	-	-	-

Table 4.2-2: Uplink-downlink configurations

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

Calculated Duty Cycle = Extended cyclic prefix in uplink x (Ts) x # of S + # of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle = $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$

where

$T_s = 1/(15000 \times 2048)$ seconds

This device supports uplink-downlink configurations 0-6. The configuration with highest duty cycle was used-configuration 0 at 63.3% duty cycle.

Wi-Fi

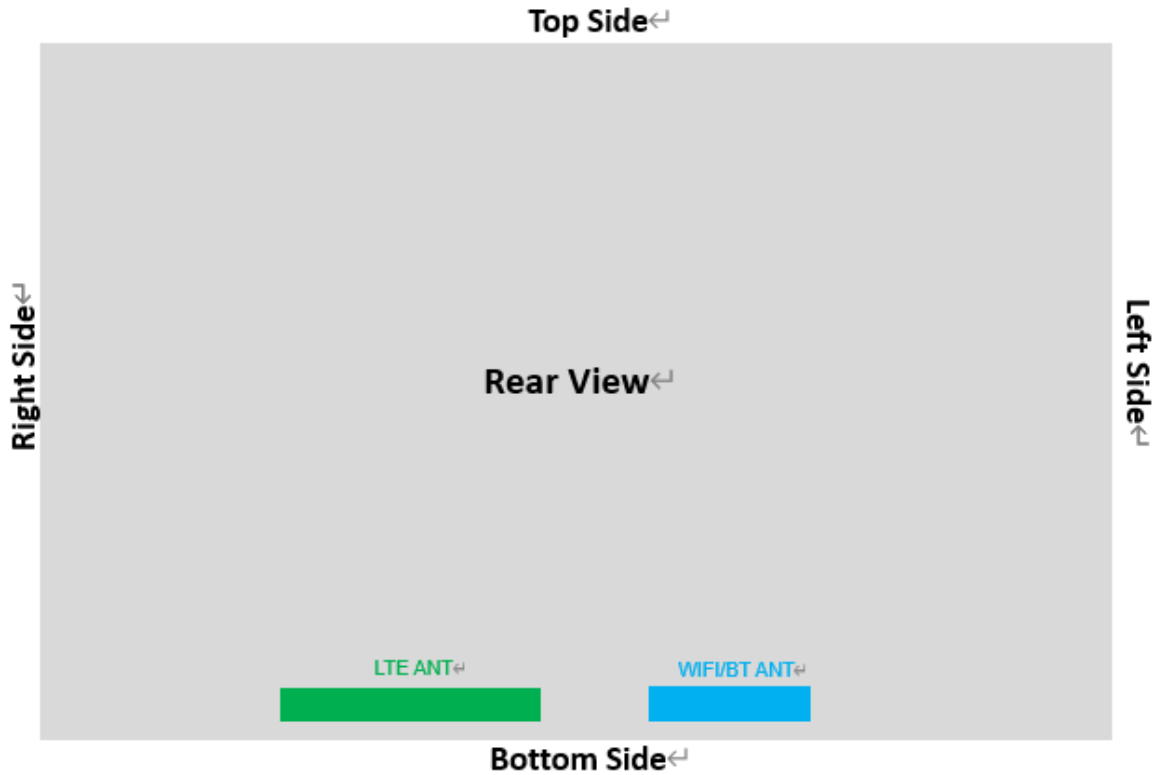
For 2.4GHz Wi-Fi SAR testing, highest average RF output power channel for the lowest data rate for 802.11b were for SAR evaluation.

The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is $\leq 1.2 \text{ W/kg}$.

12. RF Exposure Conditions (Test Configurations)

12.1. Antenna Location



12.2. Standalone SAR test exclusion considerations

KDB 447498 D04 Appendix B:

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B.2})$$

where

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

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).

Tx Interface	Frequency (GHz)	Output Power		separation distances (mm)					Calculated Threshold Value(mW)				
		dBm	mW	Back	Left	Right	Top	Bottom	Back	Left	Right	Top	Bottom
LTE Band 5	0.849	25.50	354.81	5	163	68	180	7	9.0 Measured	1294.1 Exempt	372.4 Exempt	1490.5 Exempt	14.6 Measured
LTE Band 12	0.716	24.50	281.84	5	163	68	180	7	11.5 Measured	1116.4 Exempt	354.0 Exempt	1271.8 Exempt	17.9 Measured
LTE Band 13	0.787	22.50	177.83	5	163	68	180	7	10.0 Measured	1211.7 Exempt	364.1 Exempt	1388.9 Exempt	16.0 Measured
LTE Band 2	1.91	23.50	223.87	5	163	68	180	7	3.3 Measured	2096.7 Exempt	416.7 Exempt	2518.6 Exempt	6.2 Measured
LTE Band 4	1.755	24.00	251.19	5	163	68	180	7	3.6 Measured	2104.6 Exempt	425.1 Exempt	2523.5 Exempt	6.6 Measured
LTE Band 25	1.915	23.50	223.87	5	163	68	180	7	3.3 Measured	2096.4 Exempt	416.5 Exempt	2518.4 Exempt	6.2 Measured
LTE Band 66	1.78	23.50	223.87	5	163	68	180	7	3.5 Measured	2103.3 Exempt	423.7 Exempt	2522.7 Exempt	6.6 Measured
WIFI 2.4G	2.462	17.00	50.12	5	110	160	180	7	2.7 Measured	980.8 Exempt	2001.2 Exempt	2504.0 Exempt	5.2 Measured
WIFI 5G U-NII-1	5.25	11.50	14.13	5	110	160	180	7	1.5 Measured	889.0 Exempt	1929.1 Exempt	2461.0 Exempt	3.0 Measured
WIFI 5G U-NII-3	5.825	11.50	14.13	5	110	160	180	7	1.4 Measured	877.0 Exempt	1919.4 Exempt	2455.2 Exempt	2.8 Measured
BT	2.48	-10.00	0.10	5	110	160	180	7	2.7 Exempt	979.9 Exempt	2000.4 Exempt	2503.6 Exempt	5.2 Exempt

12.3. Required Test Configurations

The table below identifies the standalone test configurations required for this device according to the findings in Section 13:

Test Configurations	Back	Left	Right	Top	Bottom
LTE B2	Yes	No	No	No	Yes
LTE B4	Yes	No	No	No	Yes
LTE B5	Yes	No	No	No	Yes
LTE B12	Yes	No	No	No	Yes
LTE B13	Yes	No	No	No	Yes
LTE B25	Yes	No	No	No	Yes
LTE B66	Yes	No	No	No	Yes
WIFI 2.4G	Yes	No	No	No	Yes
WIFI 5G U-NII-1	Yes	No	No	No	Yes
WIFI 5G U-NII-3	Yes	No	No	No	Yes
Bluetooth	No	No	No	No	No

13. Measured and Reported SAR Results

Measurement Results:

Please refer to Appendix Report

Measurement data plots:

Please refer to Appendix D

Note:

SAR Test Reduction criteria are as follows:

- Reported SAR(W/kg) for WWAN = Measured SAR *Tune-up Scaling Factor
- Reported SAR(W/kg) for Wi-Fi and Bluetooth = Measured SAR * Tune-up scaling factor * Duty Cycle scaling factor
- Duty Cycle scaling factor = 1 / Duty cycle (%)

KDB 447498 D04 Interim General RF Exposure Guidance v01:

Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

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

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

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

TDD LTE requirement:

For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9%) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $63.3\%/62.9\% = 1.006$ is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

KDB 248227 D01 SAR meas for 802.11:

When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

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

and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; these are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the initial test position(s) by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The initial test position(s) is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the reported SAR for the initial test position is:

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- > 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions are tested.
 - For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
 - When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required test channels are considered.
 - The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.
- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

To determine the initial test position, Area Scans were performed to determine the position with the Maximum Value of SAR (measured). The position that produced the highest Maximum Value of SAR is considered the worst case position; thus used as the initial test position.

14. Simultaneous Transmission analysis

14.1. Simultaneous Transmission

No.	Simultaneous Transmission Configurations	Body	Note
1	LTE + Bluetooth (data)	Yes	
2	LTE + WLAN (data)	Yes	

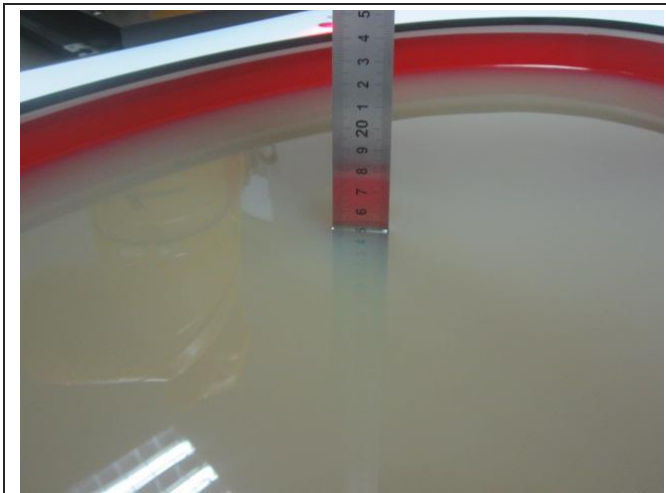
General note:

1. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
2. EUT will choose either GSM or WCDMA LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
3. The reported SAR summation is calculated based on the same configuration and test position

Simultaneous Transmission data:

Please refer to Appendix Report

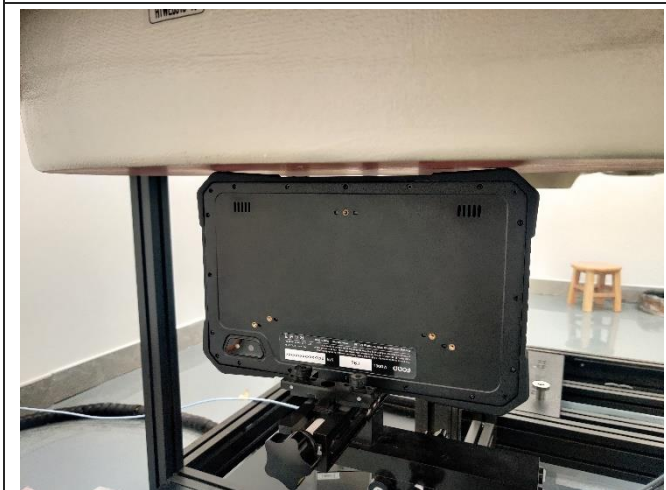
15. Test Setup Photos



Liquid depth in the Body phantom



Back (0mm)



Bottom (0mm)

16. External and Internal Photos of the EUT

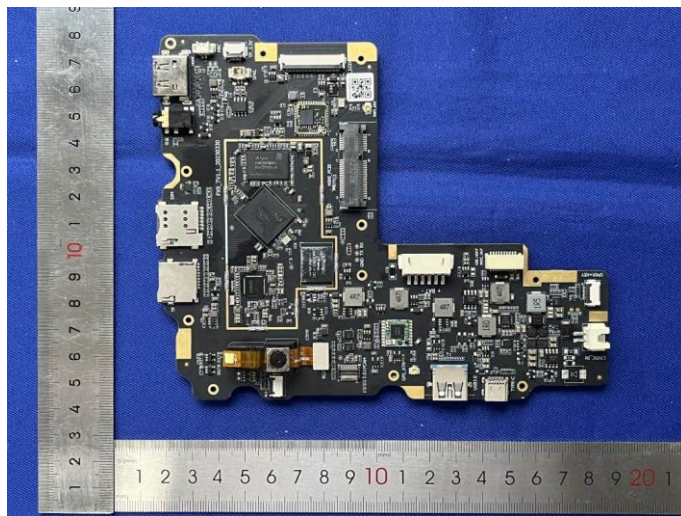
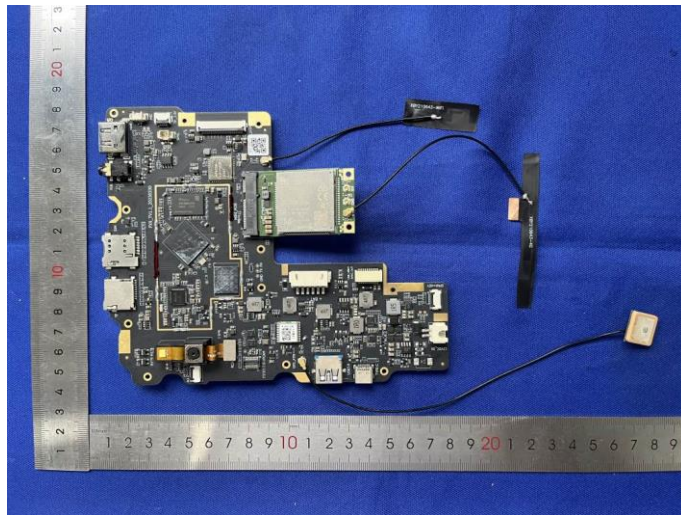
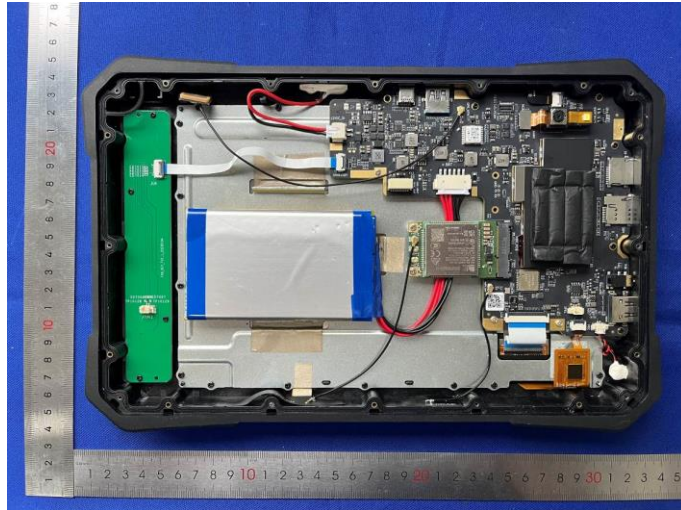
External Photos

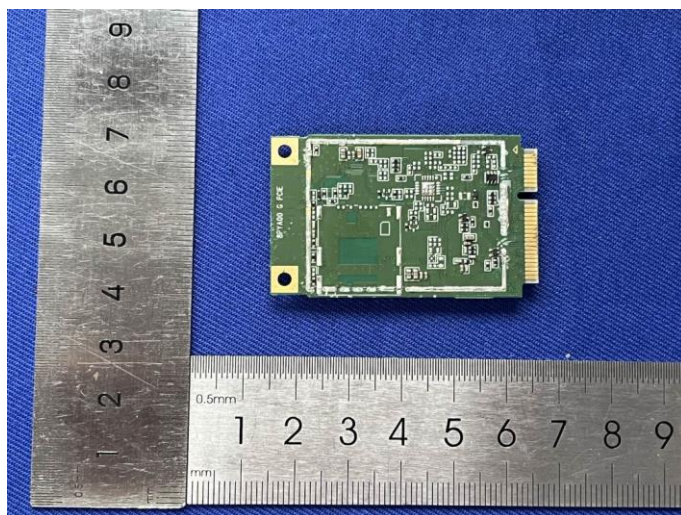
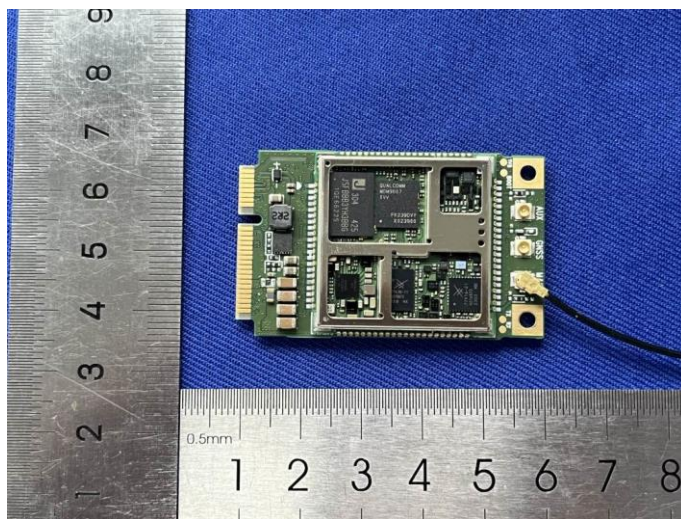
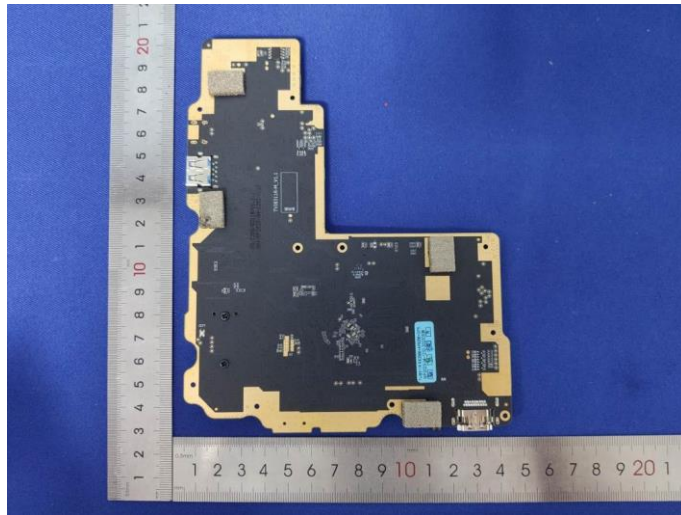


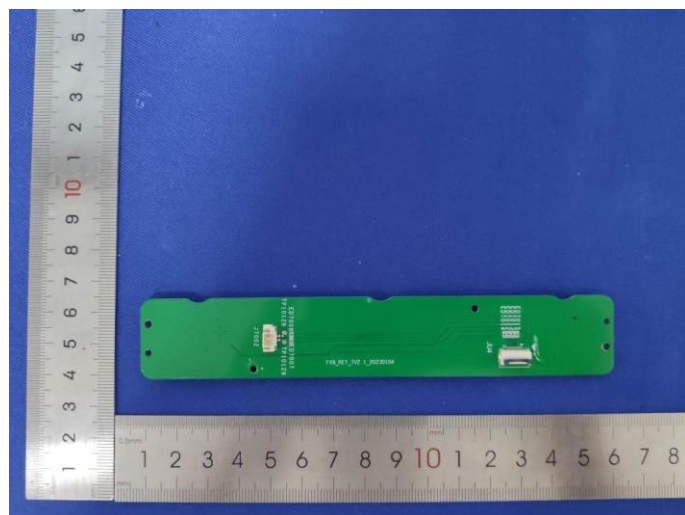
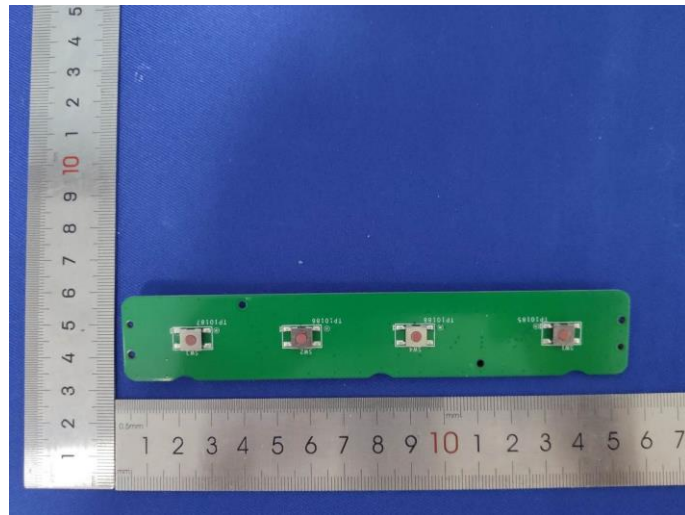
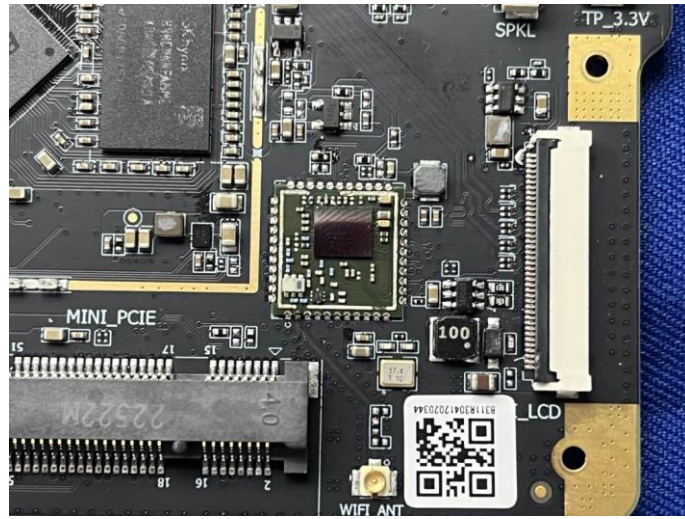


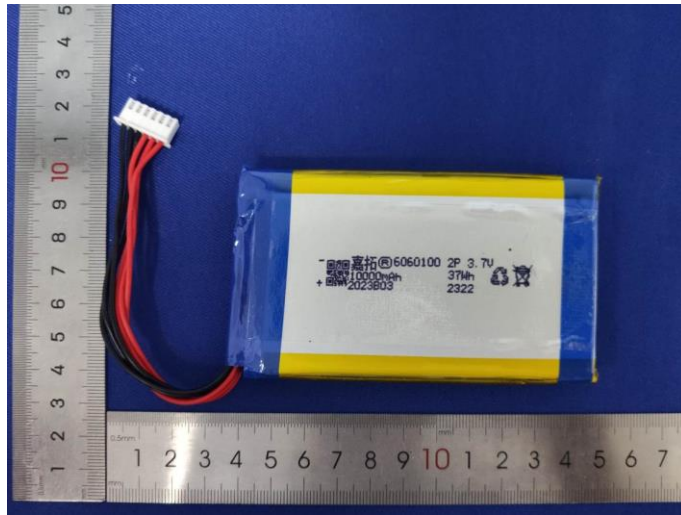


Internal Photos









-----End of Report-----

Project No.	SHT2308025702EW		
Test sample No.	YPHT23080257001	Model No.	F9S
Start test date	2023/9/4	Finish date	2023/9/5
Temperature	22.7°C	Humidity	54%
Test Engineer	Xiaodong Zhao	Auditor	<i>Xiaodong Zhao</i>

Appendix clause	Test Item	Result
A	Conducted Power Measurement Results	PASS
B	SAR Measurement Results	PASS
C	Simultaneous Transmission analysis	PASS

Appendix A:Conducted Power Measurement Results-LTE

LTE-FDD Band 2				Conducted Power (dBm)			Tune-up Limit(dBm)
Band-width (MHz)	Modulation	RB allocation	RB offset	Low	Middle	High	
1.4	QPSK	1	0	22.86	22.93	22.88	23.00
			2	22.61	22.72	22.62	
			5	22.40	22.45	22.33	
		3	0	22.11	22.19	22.12	22.50
			1	21.87	21.96	21.85	
			3	21.61	21.68	21.56	
	6	0	21.33	21.46	21.36	21.50	
	16QAM	1	0	22.64	22.71	22.67	23.00
			2	22.39	22.41	22.38	
			5	22.13	22.11	22.13	
		3	0	21.85	21.90	21.91	22.00
			1	21.55	21.66	21.70	
3			21.31	21.37	21.43		
6	0	21.11	21.09	21.20	21.50		
3	QPSK	1	0	23.07	23.01	22.96	23.50
			8	22.86	22.79	22.74	
			14	22.58	22.55	22.54	
		8	0	22.33	22.30	22.27	22.50
			4	22.11	22.08	22.05	
			7	21.87	21.78	21.77	
	15	0	21.64	21.56	21.47	22.00	
	16QAM	1	0	22.85	22.71	22.69	23.00
			8	22.65	22.44	22.40	
			14	22.40	22.17	22.16	
		8	0	22.16	22.19	21.95	22.50
			4	21.94	21.94	21.66	
			7	21.66	21.39	21.45	
	15	0	21.42	21.12	21.15	21.50	
	5	QPSK	1	0	22.77	22.92	22.83
12				22.55	22.68	22.57	
24				22.34	22.47	22.29	
12			0	22.07	22.17	22.08	22.50
			6	21.79	21.88	21.86	
			13	21.57	21.59	21.63	
25		0	21.35	21.31	21.42	21.50	
16QAM		1	0	22.49	22.67	22.57	23.00
			12	22.27	22.39	22.36	
			24	21.98	22.12	22.10	
		12	0	21.77	21.84	21.82	22.00
			6	21.55	21.62	21.56	
			13	21.27	21.33	21.26	
25		0	21.01	21.11	21.03	21.50	

10	QPSK	1	0	22.89	23.09	22.66	23.50
			24	22.59	22.82	22.45	
			49	22.36	22.58	22.22	
		25	0	22.15	22.29	22.01	22.50
			12	21.90	22.06	21.73	
			25	21.65	21.78	21.46	
	50	0	21.44	21.52	21.25	22.00	
	16QAM	1	0	22.68	22.83	22.38	23.00
			24	22.40	22.56	22.12	
			49	22.10	22.33	21.84	
		25	0	21.84	22.10	21.63	22.50
			12	21.54	21.85	21.35	
25			21.32	21.57	21.14		
50	0	21.10	21.35	20.90	21.50		
15	QPSK	1	0	22.99	22.97	22.77	23.00
			38	22.69	22.70	22.51	
			74	22.47	22.43	22.24	
		38	0	22.22	22.15	21.96	22.50
			18	22.01	21.89	21.73	
			37	21.74	21.63	21.45	
	75	0	21.53	21.36	21.21	22.00	
	16QAM	1	0	22.74	22.73	22.55	23.00
			38	22.46	22.49	22.33	
			74	22.25	22.25	22.09	
		38	0	22.01	21.97	21.80	22.50
			18	21.80	21.76	21.58	
37			21.52	21.50	21.35		
75	0	21.26	21.24	21.15	21.50		
20	QPSK	1	0	23.18	23.20	23.16	23.50
			49	22.91	22.98	22.95	
			99	22.62	22.76	22.66	
		50	0	22.37	22.52	22.38	23.00
			25	22.09	22.29	22.14	
			50	21.80	22.00	21.90	
	100	0	21.50	21.78	21.65	22.00	
	16QAM	1	0	22.88	22.93	22.87	23.00
			49	22.62	22.68	22.63	
			99	22.36	22.43	22.42	
		50	0	22.12	22.20	22.15	22.50
			25	21.87	21.92	21.94	
50			21.58	21.64	21.73		
100	0	21.35	21.42	21.53	22.00		

LTE-FDD Band 4				Conducted Power (dBm)			Tune-up Limit(dBm)
Band-width(MHz)	Modulation	RB allocation	RB offset	Low	Middle	High	
1.4	QPSK	1	0	23.41	23.36	23.42	23.50
			2	23.17	23.13	23.20	
			5	22.89	22.87	22.94	
		3	0	22.62	22.57	22.71	23.00
			1	22.36	22.33	22.45	
			3	22.14	22.05	22.16	
	6	0	21.93	21.82	21.92	22.00	
	16QAM	1	0	23.20	23.09	23.16	23.50
			2	22.93	22.86	22.91	
			5	22.67	22.59	22.67	
		3	0	22.39	22.36	22.41	22.50
			1	22.16	22.12	22.12	
3			21.93	21.91	21.87		
6	0	21.70	21.65	21.57	22.00		
3	QPSK	1	0	23.40	23.52	23.49	24.00
			8	23.12	23.29	23.24	
			14	22.84	23.06	22.98	
		8	0	22.61	22.86	22.72	23.00
			4	22.31	22.61	22.52	
			7	22.05	22.33	22.28	
	15	0	21.77	22.05	22.02	22.50	
	16QAM	1	0	23.13	23.32	23.25	23.50
			8	22.88	23.03	23.04	
			14	22.62	22.74	22.81	
		8	0	22.33	22.49	22.61	23.00
			4	22.10	22.21	22.39	
7			21.81	21.97	22.12		
15	0	21.56	21.68	21.89	22.00		
5	QPSK	1	0	23.38	23.43	23.40	23.50
			12	23.18	23.20	23.14	
			24	22.91	22.99	22.90	
		12	0	22.66	22.79	22.68	23.00
			6	22.38	22.49	22.39	
			13	22.08	22.25	22.12	
	25	0	21.80	21.98	21.89	22.00	
	16QAM	1	0	23.14	23.22	23.14	23.50
			12	22.89	22.98	22.86	
			24	22.60	22.77	22.59	
		12	0	22.40	22.48	22.36	22.50
			6	22.11	22.22	22.07	
13			21.89	22.02	21.87		
25	0	21.65	22.75	21.65	23.00		

10	QPSK	1	0	23.49	23.44	23.33	24.00
			24	23.23	23.22	23.10	
			49	22.95	22.99	23.84	
		25	0	22.67	22.70	22.60	23.00
			12	22.40	22.45	22.34	
			25	22.16	22.15	22.13	
	50	0	21.94	21.95	21.85	22.00	
	16QAM	1	0	23.20	23.15	23.11	24.00
			24	22.94	22.86	23.83	
			49	22.72	22.62	22.58	
		25	0	22.46	22.37	22.37	22.50
			12	22.23	22.07	22.13	
25			22.03	21.85	21.92		
50	0	21.79	21.56	21.70	22.00		
15	QPSK	1	0	23.42	23.19	23.39	23.50
			38	23.18	22.90	23.16	
			74	22.94	22.65	22.88	
		38	0	22.70	22.40	22.60	23.00
			18	22.48	22.18	22.32	
			37	22.21	21.93	22.11	
	75	0	21.93	21.93	22.11	22.50	
	16QAM	1	0	23.15	22.95	23.18	23.50
			38	22.89	22.66	22.93	
			74	22.69	22.38	22.69	
		38	0	22.45	22.10	22.45	22.50
			18	21.18	21.81	22.18	
37			21.94	21.59	21.97		
75	0	21.73	21.32	21.73	22.00		
20	QPSK	1	0	23.62	23.59	23.67	24.00
			49	23.33	23.34	23.45	
			99	23.03	23.04	23.00	
		50	0	22.78	22.83	22.99	23.00
			25	22.58	22.57	22.73	
			50	22.38	22.35	22.45	
	100	0	22.14	22.11	22.21	22.50	
	16QAM	1	0	23.39	23.35	23.40	23.50
			49	23.17	23.05	23.11	
			99	22.89	22.84	22.82	
		50	0	22.60	22.63	22.56	23.50
			25	23.36	22.35	22.32	
50			22.11	22.09	22.11		
100	0	21.88	21.80	21.82	22.00		

LTE-FDD Band 5				Conducted Power (dBm)			Tune-up Limit(dBm)
Band-width(MHz)	Modulation	RB allocation	RB offset	Low	Middle	High	
1.4	QPSK	1	0	24.92	24.97	25.06	25.50
			2	24.67	24.73	24.86	
			5	24.40	24.49	24.66	
		3	0	24.14	24.23	24.38	24.50
			1	23.88	23.93	24.15	
			3	23.58	23.71	23.88	
	6	0	23.37	23.48	23.60	24.00	
	16QAM	1	0	24.71	24.74	24.82	25.00
			2	24.45	24.47	24.58	
			5	24.24	24.17	24.31	
		3	0	23.99	23.87	24.02	24.50
			1	23.70	23.59	23.73	
3			23.47	23.34	23.52		
6	0	23.25	23.04	23.32	23.50		
3	QPSK	1	0	24.76	25.11	25.06	25.50
			8	24.54	24.83	24.76	
			14	24.29	24.58	24.48	
		8	0	24.01	24.30	24.26	24.50
			4	23.80	24.09	24.06	
			7	23.51	23.88	23.78	
	15	0	23.21	23.66	23.48	24.00	
	16QAM	1	0	24.52	24.81	24.81	25.00
			8	24.29	24.56	24.57	
			14	24.08	24.35	24.33	
		8	0	23.79	24.06	24.11	24.50
			4	23.50	23.83	23.84	
7			23.20	23.61	23.55		
15	0	23.00	23.33	23.32	23.50		
5	QPSK	1	0	25.04	24.99	25.18	25.50
			12	24.77	24.71	24.90	
			24	24.51	24.47	24.60	
		12	0	24.29	24.27	24.37	24.50
			6	24.05	24.06	24.15	
			13	23.77	23.83	23.94	
	25	0	23.50	23.58	23.70	24.00	
	16QAM	1	0	24.19	24.76	24.97	25.00
			12	24.51	24.49	24.68	
			24	24.30	24.24	24.39	
		12	0	24.07	23.95	24.16	24.50
			6	23.83	23.68	23.92	
13			23.59	23.42	23.71		
25	0	23.34	23.20	23.43	23.50		
10	QPSK	1	0	25.26	25.30	25.28	25.50
			24	24.97	25.02	24.98	
			49	24.77	24.79	24.73	
		25	0	24.54	24.56	24.49	25.00
			12	24.27	24.28	24.23	
			25	24.01	24.01	23.95	
	50	0	23.76	23.75	23.70	24.00	
	16QAM	1	0	25.00	25.02	24.99	25.50
			24	24.80	24.72	24.69	
			49	24.55	24.46	24.49	
		25	0	24.47	24.18	24.19	24.50
			12	24.06	23.93	23.92	
25			23.82	23.68	23.70		
50	0	23.54	23.48	23.44	24.00		

LTE-FDD Band 12				Conducted Power (dBm)			Tune-up Limit(dBm)
Band-width(MHz)	Modulation	RB allocation	RB offset	Low	Middle	High	
1.4	QPSK	1	0	24.07	24.25	24.16	24.50
			2	23.87	23.98	23.89	
			5	23.60	23.72	23.66	
		3	0	23.38	23.45	23.45	23.50
			1	23.13	23.18	23.19	
			3	22.86	22.92	22.91	
	6	0	22.62	22.66	22.69	23.00	
	16QAM	1	0	23.83	24.03	23.87	24.50
			2	23.62	23.81	23.65	
			5	23.33	23.55	23.43	
		3	0	23.09	23.30	23.23	23.50
			1	22.82	23.03	22.95	
3			22.59	22.73	22.67		
6	0	22.36	22.43	22.46	22.50		
3	QPSK	1	0	23.85	23.92	24.01	24.50
			8	23.60	23.67	23.73	
			14	23.39	23.40	23.48	
		8	0	23.12	23.19	23.24	23.50
			4	22.91	22.99	23.03	
			7	22.70	22.74	22.81	
	15	0	22.44	22.53	22.59	23.00	
	16QAM	1	0	23.62	23.65	23.77	24.00
			8	23.40	23.40	23.56	
			14	23.10	23.12	23.35	
		8	0	22.85	22.84	23.09	23.50
			4	22.62	22.63	22.83	
7			22.34	22.37	22.60		
15	0	22.04	22.09	22.32	22.50		
5	QPSK	1	0	24.22	24.03	23.97	24.50
			12	23.83	23.76	23.76	
			24	23.71	23.50	23.55	
		12	0	23.47	23.25	23.33	23.50
			6	23.20	23.05	23.07	
			13	22.91	22.83	22.83	
	25	0	22.64	22.59	22.56	23.00	
	16QAM	1	0	24.01	23.82	23.73	24.50
			12	23.76	22.59	23.49	
			24	23.52	23.36	23.25	
		12	0	23.25	23.10	22.99	23.50
			6	22.95	22.84	22.71	
13			22.68	22.62	22.41		
25	0	22.42	22.41	22.13	22.50		
10	QPSK	1	0	24.31	24.25	24.35	24.50
			24	24.10	23.98	24.09	
			49	23.81	23.74	23.83	
		25	0	23.58	23.49	23.57	24.00
			12	23.37	23.22	23.33	
			25	23.10	23.02	23.12	
	50	0	22.88	22.79	22.87	23.00	
	16QAM	1	0	24.10	24.00	24.13	24.50
			24	23.89	23.71	23.92	
			49	23.63	23.49	23.64	
		25	0	23.63	23.24	23.42	24.00
			12	23.35	23.04	23.16	
25			23.07	22.82	22.88		
50	0	22.81	22.62	22.59	23.00		

LTE-FDD Band 13				Conducted Power (dBm)			Tune-up Limit(dBm)
Band-width(MHz)	Modulation	RB allocation	RB offset	Low	Middle	High	
5	QPSK	1	0	21.36	21.41	21.46	21.50
			12	21.14	21.21	21.18	
			24	20.89	20.94	20.91	
		12	0	20.67	20.66	20.67	21.00
			6	20.43	20.44	20.46	
			13	20.21	20.14	20.17	
	25	0	19.92	19.86	19.89	20.00	
	16QAM	1	0	21.07	21.19	21.19	21.50
			12	20.81	20.91	20.89	
			24	20.52	20.71	20.62	
		12	0	20.30	20.45	20.33	20.50
			6	20.04	20.18	20.09	
13			19.76	19.95	19.79		
25	0	19.50	19.75	19.58	20.00		
10	QPSK	1	0	-	22.06	-	22.50
			24	-	21.80	-	
			49	-	21.60	-	
		25	0	-	21.34	-	21.50
			12	-	21.12	-	
			25	-	20.84	-	
	50	0	-	20.59	-	21.00	
	16QAM	1	0	-	21.85	-	22.00
			24	-	21.60	-	
			49	-	21.35	-	
		25	0	-	21.10	-	21.50
			12	-	20.86	-	
			25	-	20.61	-	
		50	0	-	20.35	-	20.50

LTE-FDD Band 25				Conducted Power (dBm)			Tune-up Limit(dBm)	
Band-width(MHz)	Modulation	RB allocation	RB offset	Low	Middle	High		
1.4	QPSK	1	0	23.16	23.05	23.20	23.50	
			2	22.91	22.78	22.98		
			5	22.68	22.52	22.73		
		3	0	22.45	22.32	22.46	22.50	
			1	22.22	22.02	22.23		
			3	22.01	21.78	22.00		
	6	0	21.75	21.49	21.75	22.00		
		16QAM	1	0	22.88	22.79	22.97	23.00
				2	22.63	22.52	22.71	
	5			22.37	22.23	22.41		
	3	16QAM	3	0	22.15	21.98	22.18	22.50
				1	21.85	21.72	21.96	
3				21.59	21.52	21.74		
6	0	21.34	21.30	21.44	21.50			
3	QPSK	1	0	22.85	22.91	23.03	23.50	
			8	22.64	22.69	22.83		
			14	22.40	22.44	22.55		
		8	0	22.19	22.16	22.28	22.50	
			4	21.95	21.95	22.06		
			7	21.72	21.68	21.77		
	15	0	21.50	21.38	21.49	22.00		
	16QAM	1	0	22.62	22.63	22.76	23.00	
			8	22.34	22.35	22.49		
			14	22.06	22.09	22.20		
		8	0	21.77	21.79	22.00	22.50	
			4	21.54	21.53	21.71		
			7	21.25	21.24	21.50		
	15	0	21.01	20.98	21.24	21.50		
	5	QPSK	1	0	22.71	22.80	22.84	23.00
12				22.49	22.55	22.62		
24				22.25	22.31	22.38		
12			0	21.97	22.02	22.15	22.50	
			6	21.68	21.79	21.91		
			13	21.40	21.52	21.66		
25		0	21.18	21.29	21.36	21.50		
16QAM		1	0	22.46	22.59	22.58	23.00	
			12	22.20	22.38	22.32		
			24	21.96	22.17	22.09		
		12	0	21.67	21.87	21.86	22.00	
			6	21.44	21.62	21.64		
	13		21.16	21.35	21.40			
25	0	20.93	21.07	21.17	21.50			

10	QPSK	1	0	23.18	23.05	23.16	23.50
			24	22.94	22.83	22.94	
			49	22.71	22.57	22.71	
		25	0	22.45	22.30	22.42	22.50
			12	22.20	22.07	22.16	
			25	21.94	21.79	21.92	
	50	0	21.73	21.58	21.66	22.00	
	16QAM	1	0	22.94	22.75	22.93	23.00
			24	22.71	22.52	22.73	
			49	22.50	22.31	22.47	
		25	0	22.28	22.07	22.17	22.50
			12	22.05	21.86	21.93	
25			21.82	21.60	21.71		
50	0	21.52	21.32	21.47	22.00		
15	QPSK	1	0	23.06	23.17	23.22	23.50
			38	22.82	22.92	22.93	
			74	22.52	22.68	22.67	
		38	0	22.29	22.43	22.39	22.50
			18	22.07	22.20	22.18	
			37	21.83	21.95	21.95	
	75	0	21.27	21.69	21.65	22.00	
	16QAM	1	0	22.79	22.94	22.99	23.00
			38	22.52	22.66	22.70	
			74	22.25	22.44	22.45	
		38	0	22.03	22.16	22.21	22.50
			18	21.81	21.89	21.99	
37			21.52	21.62	21.70		
75	0	21.25	21.41	21.47	21.50		
20	QPSK	1	0	23.35	23.40	23.46	23.50
			49	23.07	23.16	23.21	
			99	22.82	22.87	22.98	
		50	0	22.62	22.65	22.75	23.00
			25	22.34	22.42	22.49	
			50	22.13	22.12	22.24	
	100	0	21.85	21.88	22.03	22.50	
	16QAM	1	0	23.06	23.12	23.26	23.50
			49	22.83	22.88	23.02	
			99	22.62	22.61	22.73	
		50	0	22.33	22.41	22.51	23.00
			25	22.06	22.14	22.26	
50			21.83	21.85	22.02		
100	0	21.55	21.63	21.76	22.00		

LTE-FDD Band 66				Conducted Power (dBm)			Tune-up Limit(dBm)
Band-width(MHz)	Modulation	RB allocation	RB offset	Low	Middle	High	
1.4	QPSK	1	0	22.83	22.91	22.85	23.00
			2	22.57	22.62	22.61	
			5	22.33	22.32	22.32	
		3	0	22.09	22.06	22.03	22.50
			1	21.81	21.84	21.82	
			3	21.60	21.57	21.61	
	6	0	21.39	21.31	21.33	21.50	
	16QAM	1	0	22.63	22.67	22.59	23.00
			2	22.34	22.47	22.32	
			5	22.09	22.21	22.06	
		3	0	21.80	21.98	21.80	22.00
			1	21.52	21.76	21.56	
			3	21.26	21.51	21.31	
	6	0	20.98	21.25	21.03	21.50	
	3	QPSK	1	0	22.65	22.68	22.70
8				22.40	22.46	22.46	
14				22.16	21.93	22.19	
8			0	21.94	21.93	21.97	22.00
			4	21.65	21.70	21.75	
			7	21.40	21.45	21.45	
15		0	21.13	21.25	21.16	21.50	
16QAM		1	0	22.42	22.43	22.43	22.50
			8	22.16	22.20	22.15	
			14	21.94	21.99	21.85	
		8	0	21.73	21.78	21.62	22.00
			4	21.53	21.51	21.41	
			7	21.25	21.27	21.20	
15		0	20.99	21.02	20.96	21.50	
5		QPSK	1	0	22.71	22.69	22.63
	12			22.49	22.40	22.36	
	24			22.29	22.10	22.14	
	12		0	22.08	21.87	21.90	22.50
			6	21.83	21.64	21.66	
			13	21.56	21.38	21.41	
	25	0	21.34	21.08	21.15	21.50	
	16QAM	1	0	22.42	22.42	22.34	22.50
			12	22.15	22.19	22.14	
			24	21.85	21.92	21.85	
		12	0	21.69	21.71	21.62	22.00
			6	21.46	21.43	21.37	
			13	21.20	21.21	21.11	
	25	0	20.97	20.98	20.82	21.00	

10	QPSK	1	0	22.47	22.39	22.52	23.00
			24	22.19	22.13	22.30	
			49	21.89	21.92	22.00	
		25	0	21.69	21.66	21.74	22.00
			12	21.46	21.37	21.51	
			25	21.18	21.16	21.25	
	50	0	20.90	20.88	20.98	21.00	
	16QAM	1	0	22.23	22.15	22.27	22.50
			24	22.02	21.87	22.04	
			49	21.81	21.66	21.82	
		25	0	21.57	21.36	21.59	22.00
			12	21.29	21.16	21.30	
25			21.00	20.90	21.06		
50	0	20.78	20.65	20.78	21.00		
15	QPSK	1	0	22.66	22.75	22.80	23.00
			38	22.37	22.52	22.80	
			74	22.10	22.26	22.56	
		38	0	21.81	22.06	22.33	22.50
			18	21.58	21.81	22.06	
			37	21.30	21.57	21.86	
	75	0	21.02	21.32	21.63	22.00	
	16QAM	1	0	22.38	22.49	21.38	23.00
			38	22.14	22.23	22.52	
			74	21.94	22.00	22.27	
		38	0	21.64	21.72	22.01	22.50
			18	21.35	21.49	21.76	
37			21.09	21.22	21.48		
75	0	20.81	20.94	21.27	21.50		
20	QPSK	1	0	22.95	23.08	21.00	23.50
			49	22.73	22.82	22.06	
			99	22.52	22.59	22.67	
		50	0	22.28	22.32	22.47	22.50
			25	22.03	22.05	22.19	
			50	21.74	21.79	21.97	
	100	0	21.51	21.58	21.70	22.00	
	16QAM	1	0	22.67	22.81	21.46	23.00
			49	22.43	22.57	22.66	
			99	22.17	22.30	22.39	
		50	0	21.91	22.02	22.13	22.50
			25	21.71	21.79	21.88	
50			21.41	21.54	21.66		
100	0	21.16	21.29	21.41	21.50		

Appendix A:Conducted Power Measurement Results-WIFI/Bluetooth

WIFI 2.4G					
Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Tune-up limit (dBm)	Duty Cycle
802.11b	1	2412	16.42	17.00	97.31%
	6	2437	16.89	17.00	97.32%
	11	2462	16.04	17.00	97.32%
802.11g	1	2412	13.68	14.00	85.12%
	6	2437	14.38	14.50	85.35%
	11	2462	13.22	14.00	85.32%
802.11n (HT20)	1	2412	14.38	15.00	97.61%
	6	2437	14.59	15.00	97.61%
	11	2462	13.63	14.00	97.55%

WIFI 5G U-NII-1						
Bandwidth	Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Tune-up limit (dBm)	Duty Cycle
20	802.11n	36	5180	10.28	10.50	97.56%
		44	5220	10.07	10.50	97.57%
		48	5240	11.18	11.50	97.60%
	802.11a	36	5180	10.05	10.50	85.12%
		44	5220	9.86	10.00	85.01%
		48	5240	10.88	11.00	85.09%
40	802.11n	38	5190	10.64	11.00	95.39%
		46	5230	10.56	11.00	95.37%

WIFI 5G U-NII-3						
Bandwidth	Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Tune-up limit (dBm)	Duty Cycle
	802.11n	149	5745	10.60	11.00	97.63%
		157	5785	11.10	11.50	97.59%
		165	5825	10.80	11.00	97.59%
	802.11a	149	5745	10.46	11.00	85.36%
		157	5785	10.96	11.00	85.38%
		165	5825	11.04	11.50	85.39%
	802.11n	151	5755	10.32	11.00	95.34%
		159	5795	10.65	11.00	95.36%

Bluetooth					
Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Tune-up limit (dBm)	
EDR	GFSK	0	2402	-10.00	-10.00
		39	2441	-10.00	-10.00
		78	2480	-10.00	-10.00
	$\pi/4$ QPSK	0	2402	-10.00	-10.00
		39	2441	-10.00	-10.00
		78	2480	-10.00	-10.00
	8DPSK	0	2402	-10.00	-10.00
		39	2441	-10.00	-10.00
		78	2480	-10.00	-10.00
BLE	GFSK	0	2402	-10.00	-10.00
		19	2440	-10.00	-10.00
		39	2480	-10.00	-10.00

Appendix B:SAR Measurement Results

LTE Band 2										
Mode	Test Position	Frequency		Conducted Power (dBm)	Tune-up limit (dBm)	Tune-up scaling factor	Power Drift(dB)	Measured SAR(1g)	Report SAR(1g)	Plot No.
		CH	MHz					(W/kg)	(W/kg)	
20M QPSK 1RB	Back	18700	1860.0	23.18	23.50	1.076	-	-	-	-
		18900	1880.0	23.20	23.50	1.072	-0.12	0.718	0.769	1
		19100	1900.0	23.16	23.50	1.081	-	-	-	-
	Bottom	18700	1860.0	23.18	23.50	1.076	-	-	-	-
		18900	1880.0	23.20	23.50	1.072	-0.17	0.644	0.690	-
		19100	1900.0	23.16	23.50	1.081	-	-	-	-
20M QPSK 50RB	Back	18700	1860.0	22.37	23.00	1.156	-	-	-	-
		18900	1880.0	22.52	23.00	1.117	-0.06	0.639	0.714	-
		19100	1900.0	22.38	23.00	1.153	-	-	-	-
	Bottom	18700	1860.0	22.37	23.00	1.156	-	-	-	-
		18900	1880.0	22.52	23.00	1.117	0.07	0.581	0.649	-
		19100	1900.0	22.38	23.00	1.153	-	-	-	-

LTE Band 4										
Mode	Test Position	Frequency		Conducted Power (dBm)	Tune-up limit (dBm)	Tune-up scaling factor	Power Drift(dB)	Measured SAR(1g)	Report SAR(1g)	Plot No.
		CH	MHz					(W/kg)	(W/kg)	
20M QPSK 1RB	Back	20050	1720.0	23.62	24.00	1.091	-	-	-	-
		20175	1732.5	23.59	24.00	1.099	-	-	-	-
		20300	1745.0	23.67	24.00	1.079	-0.12	0.713	0.769	2
	Bottom	20050	1720.0	23.62	24.00	1.091	-	-	-	-
		20175	1732.5	23.59	24.00	1.099	-	-	-	-
		20300	1745.0	23.67	24.00	1.079	0.05	0.678	0.732	-
20M QPSK 50RB	Back	20050	1720.0	22.78	23.00	1.052	-	-	-	-
		20175	1732.5	22.83	23.00	1.040	-	-	-	-
		20300	1745.0	22.99	23.00	1.002	0.11	0.594	0.595	-
	Bottom	20050	1720.0	22.78	23.00	1.052	-	-	-	-
		20175	1732.5	22.83	23.00	1.040	-	-	-	-
		20300	1745.0	22.99	23.00	1.002	-0.03	0.507	0.508	-

LTE Band 5										
Mode	Test Position	Frequency		Conducted Power (dBm)	Tune-up limit (dBm)	Tune-up scaling factor	Power Drift(dB)	Measured SAR(1g)	Report SAR(1g)	Plot No.
		CH	MHz					(W/kg)	(W/kg)	
10M QPSK 1RB	Back	20450	829.0	25.26	25.50	1.057	-	-	-	-
		20525	836.5	25.30	25.50	1.047	-0.09	0.511	0.535	3
		20600	844.0	25.28	25.50	1.052	-	-	-	-
	Bottom	20450	829.0	25.26	25.50	1.057	-	-	-	-
		20525	836.5	25.30	25.50	1.047	-0.14	0.423	0.443	-
		20600	844.0	25.28	25.50	1.052	-	-	-	-
10M QPSK 25RB	Back	20450	829.0	24.54	25.00	1.112	-	-	-	-
		20525	836.5	24.56	25.00	1.107	-0.09	0.449	0.497	-
		20600	844.0	24.49	25.00	1.125	-	-	-	-
	Bottom	20450	829.0	24.54	25.00	1.112	-	-	-	-
		20525	836.5	24.56	25.00	1.107	-0.17	0.376	0.416	-
		20600	844.0	24.49	25.00	1.125	-	-	-	-

LTE Band 12										
Mode	Test Position	Frequency		Conducted Power (dBm)	Tune-up limit (dBm)	Tune-up scaling factor	Power Drift(dB)	Measured SAR(1g)	Report SAR(1g)	Plot No.
		CH	MHz					(W/kg)	(W/kg)	
10M QPSK 1RB	Back	23060	704.0	24.31	24.50	1.045	-	-	-	-
		23095	707.5	24.25	24.50	1.059	-	-	-	-
		23130	711.0	24.35	24.50	1.035	-0.11	0.472	0.489	4
	Bottom	23060	704.0	24.31	24.50	1.045	-	-	-	-
		23095	707.5	24.25	24.50	1.059	-	-	-	-
		23130	711.0	24.35	24.50	1.035	-0.05	0.405	0.419	-
10M QPSK 25RB	Back	23060	704.0	23.58	24.00	1.102	-0.18	0.413	0.455	-
		23095	707.5	23.49	24.00	1.125	-	-	-	-
		23130	711.0	23.57	24.00	1.104	-	-	-	-
	Bottom	23060	704.0	23.58	24.00	1.102	-0.02	0.369	0.406	-
		23095	707.5	23.49	24.00	1.125	-	-	-	-
		23130	711.0	23.57	24.00	1.104	-	-	-	-

LTE Band 13										
Mode	Test Position	Frequency		Conducted Power (dBm)	Tune-up limit (dBm)	Tune-up scaling factor	Power Drift(dB)	Measured SAR(1g)	Report SAR(1g)	Plot No.
		CH	MHz					(W/kg)	(W/kg)	
10M QPSK 1RB	Back	23230	782.0	22.06	22.50	1.107	-0.02	0.485	0.537	5
	Bottom	23230	782.0	22.06	22.50	1.107	-0.16	0.421	0.466	-
10M QPSK 25RB	Back	23230	782.0	21.34	21.50	1.038	-0.11	0.398	0.413	-
	Bottom	23230	782.0	21.34	21.50	1.038	-0.08	0.327	0.339	-

LTE Band 25										
Mode	Test Position	Frequency		Conducted Power (dBm)	Tune-up limit (dBm)	Tune-up scaling factor	Power Drift(dB)	Measured SAR(1g)	Report SAR(1g)	Plot No.
		CH	MHz					(W/kg)	(W/kg)	
20M QPSK 1RB	Back	26140	1860.0	23.35	23.50	1.035	-	-	-	-
		26365	1882.5	23.40	23.50	1.023	-	-	-	-
		26590	1905.0	23.46	23.50	1.009	-0.12	0.721	0.728	6
	Bottom	26140	1860.0	23.35	23.50	1.035	-	-	-	-
		26365	1882.5	23.40	23.50	1.023	-	-	-	-
		26590	1905.0	23.46	23.50	1.009	-0.06	0.669	0.675	-
20M QPSK 50RB	Back	26140	1860.0	22.62	23.00	1.091	-	-	-	-
		26365	1882.5	22.65	23.00	1.084	-	-	-	-
		26590	1905.0	22.75	23.00	1.059	-0.03	0.674	0.714	-
	Bottom	26140	1860.0	22.62	23.00	1.091	-	-	-	-
		26365	1882.5	22.65	23.00	1.084	-	-	-	-
		26590	1905.0	22.75	23.00	1.059	-0.14	0.618	0.655	-

LTE Band 66										
Mode	Test Position	Frequency		Conducted Power (dBm)	Tune-up limit (dBm)	Tune-up scaling factor	Power Drift(dB)	Measured SAR(1g)	Report SAR(1g)	Plot No.
		CH	MHz					(W/kg)	(W/kg)	
20M QPSK 1RB	Back	132072	1720.0	22.95	23.50	1.135	-	-	-	-
		132322	1745.0	23.08	23.50	1.102	-0.17	0.713	0.785	7
		132572	1770.0	21.00	23.50	1.778	-	-	-	-
	Bottom	132072	1720.0	22.95	23.50	1.135	-	-	-	-
		132322	1745.0	23.08	23.50	1.102	-0.09	0.644	0.709	-
		132572	1770.0	21.00	23.50	1.778	-	-	-	-
20M QPSK 50RB	Back	132072	1720.0	22.28	22.50	1.052	-	-	-	-
		132322	1745.0	22.32	22.50	1.042	-	-	-	-
		132572	1770.0	22.47	22.50	1.007	-0.11	0.639	0.643	-
	Bottom	132072	1720.0	22.28	22.50	1.052	-	-	-	-
		132322	1745.0	22.32	22.50	1.042	-	-	-	-
		132572	1770.0	22.47	22.50	1.007	-0.05	0.582	0.586	-

WIFI 2.4G												
Mode	Test Position	Frequency		Conducted Power (dBm)	Tune-up limit (dBm)	Tune-up scaling factor	Duty Cycle	Duty Cycle Scaling Factor	Power Drift(dB)	Measured SAR(1g)	Report SAR(1g)	Plot No.
		CH	MHz							(W/kg)	(W/kg)	
802.11b	Back	1	2412	16.42	17.00	1.144	0.973	1.028	-	-	-	-
		6	2437	16.89	17.00	1.026	0.973	1.028	-0.11	0.435	0.459	8
		11	2462	16.04	17.00	1.248	0.973	1.028	-	-	-	-
	Bottom	1	2412	16.42	17.00	1.144	0.973	1.028	-	-	-	-
		6	2437	16.89	17.00	1.026	0.973	1.028	-0.15	0.392	0.413	-
		11	2462	16.04	17.00	1.248	0.973	1.028	-	-	-	-

WIFI 5G U-NII-1												
Mode	Test Position	Frequency		Conducted Power (dBm)	Tune-up limit (dBm)	Tune-up scaling factor	Duty Cycle	Duty Cycle Scaling Factor	Power Drift(dB)	Measured SAR(1g)	Report SAR(1g)	Plot No.
		CH	MHz							(W/kg)	(W/kg)	
802.11n (HT20)	Back	36	5180	10.28	10.50	1.052	0.976	1.025	-	-	-	-
		44	5220	10.07	10.50	1.103	0.976	1.025	-	-	-	-
		48	5240	11.18	11.50	1.076	0.976	1.025	-0.15	0.510	0.562	9
	Bottom	36	5180	10.28	10.50	1.052	0.976	1.025	-	-	-	-
		44	5220	10.07	10.50	1.103	0.976	1.025	-	-	-	-
		48	5240	11.18	11.50	1.076	0.976	1.025	-0.08	0.449	0.495	-

WIFI 5G U-NII-3												
Mode	Test Position	Frequency		Conducted Power (dBm)	Tune-up limit (dBm)	Tune-up scaling factor	Duty Cycle	Duty Cycle Scaling Factor	Power Drift(dB)	Measured SAR(1g)	Report SAR(1g)	Plot No.
		CH	MHz							(W/kg)	(W/kg)	
802.11a	Back	149	5745	10.46	11.00	1.133	0.854	1.172	-	-	-	-
		157	5785	10.96	11.00	1.008	0.854	1.171	-	-	-	-
		165	5825	11.04	11.50	1.111	0.854	1.171	-0.05	0.496	0.646	10
	Bottom	149	5745	10.46	11.00	1.133	0.854	1.172	-	-	-	-
		157	5785	10.96	11.00	1.008	0.854	1.171	-	-	-	-
		165	5825	11.04	11.50	1.111	0.854	1.171	-0.07	0.411	0.535	-

Appendix C: Simultaneous Transmission analysis

WWAN + WIFI 2.4G					
WWAN Band		Exposure Position	Max SAR (W/kg)		Summed SAR (W/kg)
			WWAN	WIFI 2.4G	
LTE	Band 2	Back	0.769	0.459	1.228
		Bottom	0.690	0.413	1.103
	Band 4	Back	0.769	0.459	1.228
		Bottom	0.732	0.413	1.145
	Band 5	Back	0.535	0.459	0.994
		Bottom	0.443	0.413	0.856
	Band 12	Back	0.489	0.459	0.948
		Bottom	0.419	0.413	0.832
	Band 13	Back	0.537	0.459	0.996
		Bottom	0.466	0.413	0.879
	Band 25	Back	0.728	0.459	1.187
		Bottom	0.675	0.413	1.088
	Band 66	Back	0.785	0.459	1.244
		Bottom	0.709	0.413	1.122

WWAN + WIFI 5G					
WWAN Band		Exposure Position	Max SAR (W/kg)		Summed SAR (W/kg)
			WWAN	WIFI 5G	
LTE	Band 2	Back	0.769	0.646	1.415
		Bottom	0.690	0.535	1.225
	Band 4	Back	0.769	0.646	1.415
		Bottom	0.732	0.535	1.267
	Band 5	Back	0.535	0.646	1.181
		Bottom	0.443	0.535	0.978
	Band 12	Back	0.489	0.646	1.135
		Bottom	0.419	0.535	0.954
	Band 13	Back	0.537	0.646	1.183
		Bottom	0.466	0.535	1.001
	Band 25	Back	0.728	0.646	1.374
		Bottom	0.675	0.535	1.210
	Band 66	Back	0.785	0.646	1.431
		Bottom	0.709	0.535	1.244

LTE Band 2

Communication System: UID 0, Generic LTE-FDD (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.403$ S/m; $\epsilon_r = 41.214$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.7°C; Liquid Temperature: 22.2°C;

DASY Configuration:

- Probe: EX3DV4 - SN7494; ConvF(8.64, 8.64, 8.64) @ 1880 MHz; Calibrated: 4/17/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1549; Calibrated: 3/27/2023
- Phantom: ELI V8.0 ; Type: QD OVA 004 AA ; Serial: 2078
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Back 0mm/CH18900/Area Scan (71x211x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.53 W/kg

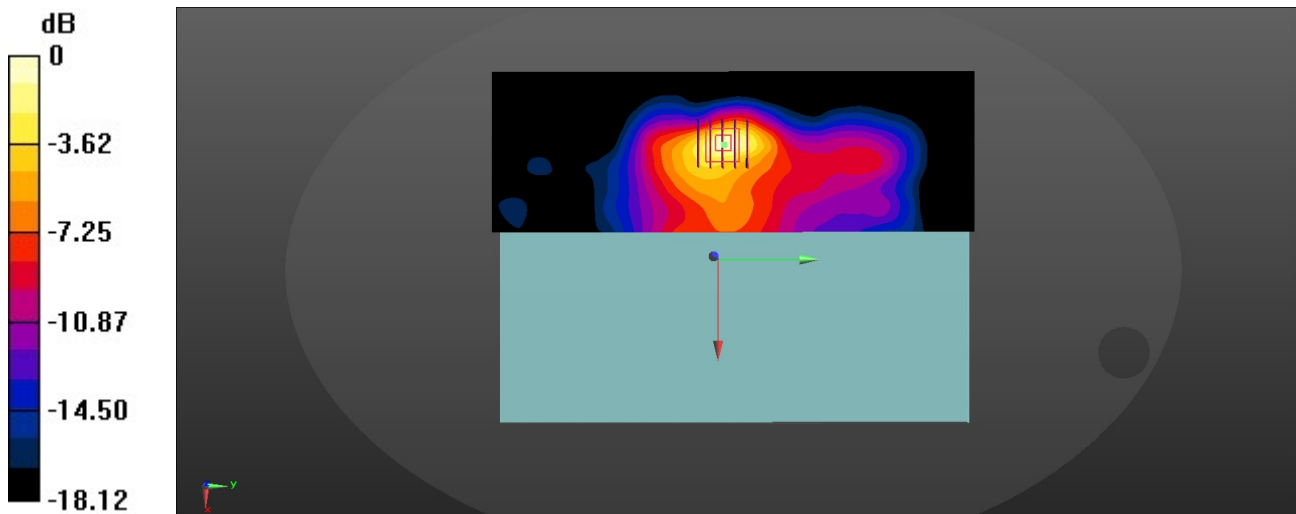
Back 0mm/CH18900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.00 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.96 W/kg

SAR(1 g) = 0.718 W/kg; SAR(10 g) = 0.395 W/kg

Maximum value of SAR (measured) = 1.57 W/kg



0 dB = 1.57 W/kg = 1.94 dBW/kg

LTE Band 4 Back

Communication System: UID 0, Generic LTE-FDD (0); Frequency: 1745 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1745$ MHz; $\sigma = 1.378$ S/m; $\epsilon_r = 41.403$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient Temperature: 22.7°C; Liquid Temperature: 22.2°C;

DASY Configuration:

- Probe: EX3DV4 - SN7494; ConvF(8.99, 8.99, 8.99) @ 1745 MHz; Calibrated: 4/17/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1549; Calibrated: 3/27/2023
- Phantom: ELI V8.0 ; Type: QD OVA 004 AA ; Serial: 2078
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Back 0mm/CH20300/Area Scan (71x211x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.44 W/kg

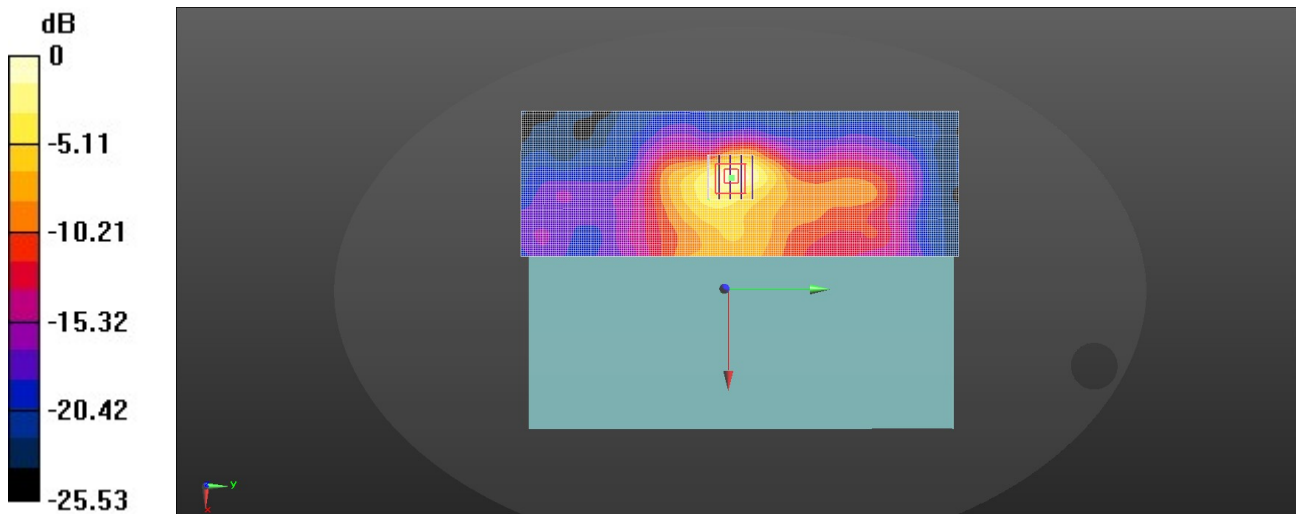
Back 0mm/CH20300/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.73 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.97 W/kg

SAR(1 g) = 0.713 W/kg; SAR(10 g) = 0.367 W/kg

Maximum value of SAR (measured) = 1.46 W/kg



0 dB = 1.46 W/kg = 2.10 dBW/kg

LTE Band 5 Back

Communication System: UID 0, Generic LTE-FDD (0); Frequency: 836.5 MHz; Duty Cycle: 1:1
 Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.913$ S/m; $\epsilon_r = 42.775$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section
 Ambient Temperature: 22.7°C; Liquid Temperature: 22.2°C;

DASY Configuration:

- Probe: EX3DV4 - SN7494; ConvF(10.4, 10.4, 10.4) @ 836.5 MHz; Calibrated: 4/17/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1549; Calibrated: 3/27/2023
- Phantom: ELI V8.0 ; Type: QD OVA 004 AA ; Serial: 2078
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Back 0mm/CH20525/Area Scan (71x211x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.843 W/kg

Back 0mm/CH20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

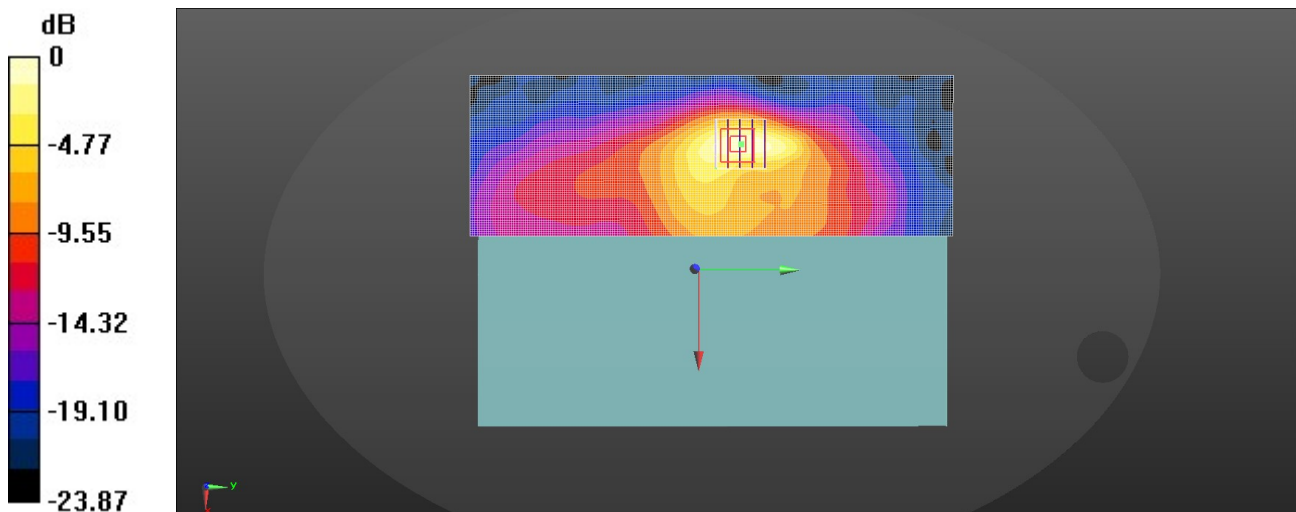
Reference Value = 8.850 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.511 W/kg; SAR(10 g) = 0.283 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.848 W/kg



0 dB = 0.843 W/kg = -0.74 dBW/kg

LTE Band 12 Back

Communication System: UID 0, Generic LTE-FDD (0); Frequency: 711 MHz; Duty Cycle: 1:1
 Medium parameters used (interpolated): $f = 711 \text{ MHz}$; $\sigma = 0.886 \text{ S/m}$; $\epsilon_r = 43.176$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section
 Ambient Temperature: 22.7°C ; Liquid Temperature: 22.2°C ;

DASY Configuration:

- Probe: EX3DV4 - SN7494; ConvF(10.8, 10.8, 10.8) @ 711 MHz; Calibrated: 4/17/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1549; Calibrated: 3/27/2023
- Phantom: ELI V8.0 ; Type: QD OVA 004 AA ; Serial: 2078
- DASY52 52.10.2(1495); SEMCAD X 14.6.12(7450)

Back 0mm/CH23130/Area Scan (71x211x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.777 W/kg

Back 0mm/CH23130/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

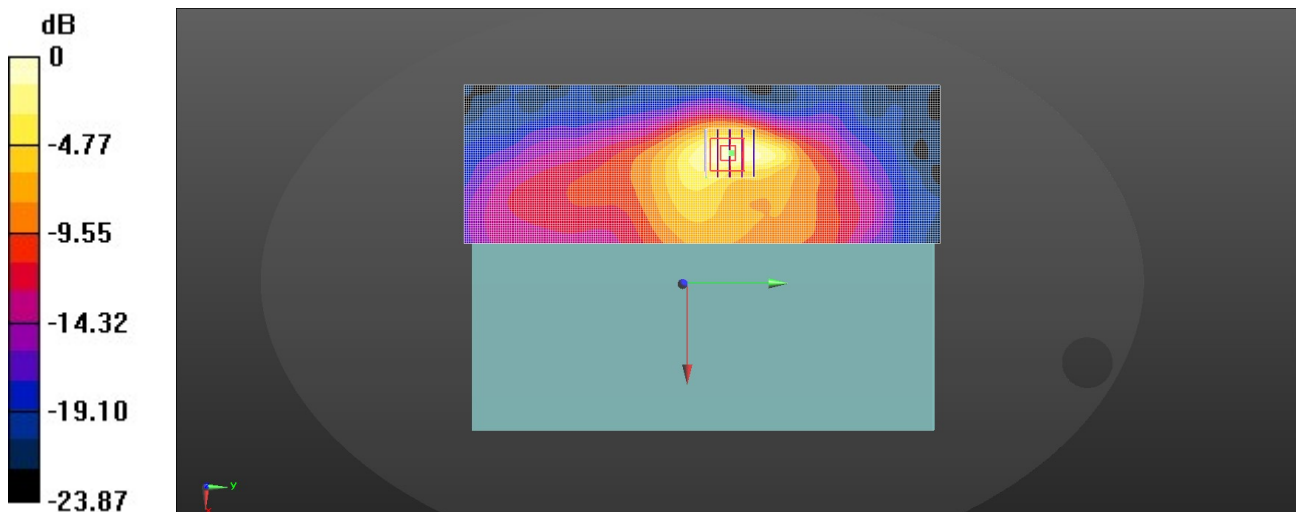
Reference Value = 8.627 V/m ; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.984 W/kg

SAR(1 g) = 0.472 W/kg ; SAR(10 g) = 0.261 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.782 W/kg



0 dB = $0.777 \text{ W/kg} = -1.10 \text{ dBW/kg}$