FCC SAR Test Report

Report No.:	RWAZ202300121-SAA
Applicant:	Shenzhen Youmi Intelligent Technology Co., Ltd.
Address:	406-407 Jinqi Zhigu Building, 4/F, 1 Tangling Road, Nanshan District, Shenzhen City, China
Product Name:	Smart Tablet
Product Model:	TG3DBG1MA
Multiple Models:	TG3DBG2MA, TG2405GBA, TG4JBG2PA
Trade Mark:	UMIDIGI
FCC ID:	2ATZ4-G1TABMINI
Standards:	FCC CFR Title 47 CFR Part 2(2.1093)
Test Date:	2024/01/24
Test Result:	PASS
Report Date:	2024/01/26

Reviewed by: Abel Chen

Abel Chen
Project Engineer

Approved by: Jacob Kong

Jacob Kong
Manager

Prepared by:

World Alliance Testing and Certification (Shenzhen) Co., Ltd

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TESTING
NVLAP LAB CODE 600335-0

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Revision History

Version No.	Issued Date	Description
00	*2024/01/26*	*Original*

SAR TEST RESULTS SUMMARY

Operation Frequency Band	Highest Reported SAR(W/kg)	Limit (W/kg)
	Body SAR (Gap 0mm)	
WLAN 2.4G	**1.05**	1.6
WLAN 5.2G	0.83	
WLAN 5.8G	1.01	
Max. Simultaneous Transmission SAR(W/kg)		
Items	**Body SAR (Gap 0mm)**	**Limit (W/kg)**
Sum SAR	NA	1.6
SPLSR	NA	0.04

Contents

1 General Information

1.1 Client Information

Applicant:	Shenzhen Youmi Intelligent Technology Co., Ltd.
Address:	406-407 Jinqi Zhigu Building, 4/F, 1 Tangling Road, Nanshan District, Shenzhen City, China
Manufacturer:	Shenzhen Youmi Intelligent Technology Co., Ltd.
Address:	406-407 Jinqi Zhigu Building, 4/F, 1 Tangling Road, Nanshan District, Shenzhen City, China

1.2 Product Description of EUT

Sample Serial Number	2FEZ-2(assigned by WATC)
Sample Received Date	2024-01-10
Sample Status	Good Condition
Device Type	Portable
Exposure Category	Population / Uncontrolled
Antenna Type(s)	Internal Antenna
Body-Worn Accessories	None
Proximity Sensor	None
Carrier Aggregation	None
Operation modes	WLAN and Bluetooth
Frequency Range	WLAN 2.4G:2412MHz - 2462MHz/2422MHz - 2452MHz WLAN 5.2G: 5150MHz - 5250MHz WLAN 5.8G: 5745MHz - 5850MHz Bluetooth: 2402MHz - 2480MHz
Maximum Conducted Peak Output Power	WLAN 2.4G: 17.63 dBm WLAN 5.2G: 9.08 dBm WLAN 5.8G: 12.31 dBm Bluetooth(BDR/EDR): 3.85dBm BLE: 3.18 dBm
Power Supply	DC 3.8 V from Rechargeable Battery
Dimensions (L*W*H)	201.62mm (L) *124.04mm (W) *9.10mm (H)
Normal Operation	Body Supported

1.3 Laboratory Location

World Alliance Testing and Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China

Tel: +86-755-29691511, Email: qa@watc.com.cn

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 463912, the FCC Designation No. : CN5040.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0160.

1.4 Test Methodology

FCC 47 CFR § 2.1093

IEEE 1528:2013

IEC 62209-1

IEC 62209-2

KDB 447498 D01 General RF Exposure Guidance v06

KDB 616217 D04 SAR for laptop and tablets

KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04

KDB 865664 D02 RF Exposure Reporting v01r02

KDB 248227 D01 802.11 Wi-Fi SAR v02r02

1.5 SAR Limit

FCC Limit

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 1 g of tissue)	**1.60**	8.0
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

Population/Uncontrolled Environments are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.

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

General Population/Uncontrolled environments Spatial Peak limit 1.6W/kg for 1g SAR applied to the EUT.

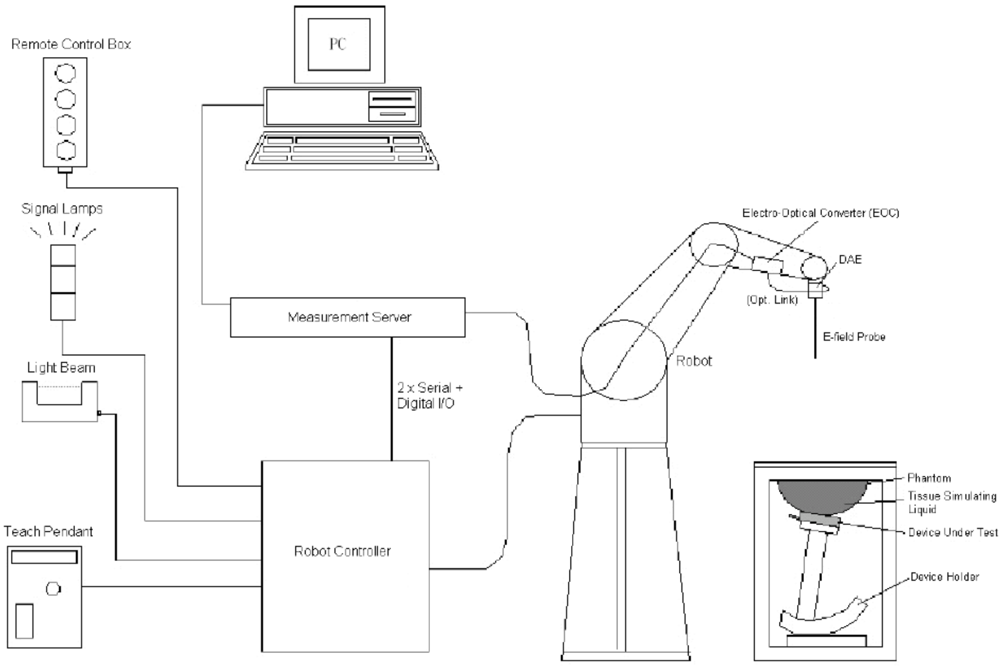
2 SAR Measurement System & Test Equipment

2.1 SAR Measurement System

These measurements were performed with the automated near-field scanning system DASY5 from Schmid & Partner Engineering AG (SPEAG) which is the Fifth generation of the system shown in the figure hereinafter:

DASY5 System Description

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal application, 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.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 professional operating system and the DASY52 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

DASY5 Measurement Server

The DASY5 measurement server is based on a PC/104 CPU board with a 400MHz Intel ULV Celeron, 128MB chip-disk and 128MB RAM. The necessary circuits for communication with the DAE4 (or DAE3) electronics box, as well as the 16 bit AD-converter system for optical detection and digital I/O interface are contained on theDASY5 I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all real-time data evaluation of field measurements and surface detection, controls robot movements and handles safety operation. The PC operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with an expansion port which is reserved for future applications. Please note that this expansion port does not have a standardized point out, and therefore only devices provided by SPEAG can be connected. Devices from any other supplier could seriously damage the measurement server.

Data Acquisition Electronics

The data acquisition electronics (DAE4) consist 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 with a 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 mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

The input impedance of both the DAE4 as well as of the DAE3 box is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

EX3DV4 E-Field Probes

Frequency	4 MHz - 10 GHz Linearity: ± 0.2 dB (30 MHz to 10 GHz)
Directivity	± 0.1 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 μW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μW/g)
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
Compatibility	DASY3, DASY4, DASY52, DASY6, DASY8 SAR, EASY6, EASY4/MRI

SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with

2mm shell thickness (except the ear region, where shell thickness increases to 6 mm). The phantom has three measurement areas:

_ Left Head

_ Right Head

_ Flat phantom

The phantom table for the DASY systems based on the

robots have the size of 100 x 50 x 85 cm (L xWx H).

For easy dislocation these tables have fork lift cut outs at the bottom.

The bottom plate contains three pairs of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. Only one device holder is necessary if two phantoms are used (e.g., for different liquids)

A white cover is provided to cover the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. Free space scans of devices on top of this phantom cover are possible.

Three reference marks are provided on the phantom counter. These reference marks are used to teach the absolute phantom position relative to the robot.

Robots

The DASY5 system uses the high precision industrial robot. The robot offers the same features important for our application:

- High precision (repeatability 0.02mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements (brushless synchrony motors; no stepper motors)
- Low ELF interference (motor control fields shielded via the closed metallic construction shields)

The above mentioned robots are controlled by the Staubli CS8c robot controllers. All information regarding the use and maintenance of the robot arm and the robot controller is contained on the CDs delivered along with the robot. Paper manuals are available upon request direct from Staubli.

2.2 SAR Scan Procedures

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. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 1.4 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 15mm2 step integral, with 1.5mm interpolation used to locate the peak SAR area used for zoom scan assessments.

Where the system identifies multiple SAR peaks (which are within 25% of peak value) the system will provide the user with the option of assessing each peak location individually for zoom scan averaging.

Area Scan Parameters extracted from 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 mm ± 1 mm	½·δ·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 (Cube Scan Averaging)

The averaging zoom scan volume utilized in the DASY5 software is in the shape of a cube and the side dimension of a 1 g or 10 g mass is dependent on the density of the liquid representing the simulated tissue. A density of 1000 kg/m^3 is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1g cube is 5mm,with the side length of the 10g cube is 21.5mm.

When the cube intersects with the surface of the phantom, it is oriented so that 3 vertices touch the surface of the shell or the center of a face is tangent to the surface. The face of the cube closest to the surface is modified in order to conform to the tangent surface.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications (including FCC) utilize a physical step of 7 x7 x 7 (5mmx5mmx5mm) providing a volume of 30 mm in the X & Y & Z axis.

Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

<table>
<tr><td colspan="3"></td><td>$\leq$ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>$\leq$ 2 GHz: $\leq$ 8 mm
2 – 3 GHz: $\leq$ 5 mm*</td><td>3 – 4 GHz: $\leq$ 5 mm*
4 – 6 GHz: $\leq$ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>$\leq$ 5 mm</td><td>3 – 4 GHz: $\leq$ 4 mm
4 – 5 GHz: $\leq$ 3 mm
5 – 6 GHz: $\leq$ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>$\leq$ 4 mm</td><td>3 – 4 GHz: $\leq$ 3 mm
4 – 5 GHz: $\leq$ 2.5 mm
5 – 6 GHz: $\leq$ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$ mm</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>$\geq$ 30 mm</td><td>3 – 4 GHz: $\geq$ 28 mm
4 – 5 GHz: $\geq$ 25 mm
5 – 6 GHz: $\geq$ 22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.
* When zoom scan is required and the <u>reported</u> SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is $\leq$ 1.4 W/kg, $\leq$ 8 mm, $\leq$ 7 mm and $\leq$ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

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.

2.3 Test Equipment

Description	Model	SN	Calibration Date	Calibration Due Date
DASY5 Test Software	DASY52.8	N/A	NCR	NCR
DASY5 Measurement Server	DASY5 5.0.28	1123	NCR	NCR
Data Acquisition Electronics	DAE4	1354	2023/11/17	2024/11/16
E-Field Probe	EX3DV4	3801	2023/6/23	2024/6/22
Mounting Device	MD4HHTV5	BJPCTC0152	NCR	NCR
Twin SAM	Twin SAM V5.0	1470	NCR	NCR
Dipole, 2450 MHz	D2450V2	1014	2021/5/19	2024/5/18
Dipole,5GHz	D5GHzV2	1280	2021/5/17	2024/5/16
Simulated Tissue Liquid Head(500-9500 MHz)	HBBL600-1000 0V6	230728-1	Each Time	/
Network Analyzer	8753D	3410A08288	2023/12/18	2024/12/17
Dielectric assessment kit	85070B	US33020324	NCR	NCR
Vector Signal Generator	SMBV100A	256300	2023/9/12	2024/9/11
USB Power Sensor	MA24418A	12620	2023/7/12	2024/7/11
SPECTRUM ANALYZER	FSV40	101419	2023/9/12	2024/9/11
Amplifier	ZHL-5W-202S+	416402571	NCR	NCR
Amplifier	ZVE-8G+	558621401	NCR	NCR
Directional Coupler	441498	523Z	NCR	NCR
10dB attenuator	10dB	10-1	NCR	NCR
10dB attenuator	DC-6GHz	10-2	NCR	NCR
Thermometer	0~50℃	N/A	2023/11/16	2024/11/15

Note: All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or International standards.

3 SAR Measurements Verification

3.1 Tissue Verification

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.

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.

Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

The head tissue dielectric parameters recommended by the IEC 62209-1

Table A.3 – Dielectric properties of the head tissue-equivalent liquid

Frequency MHz	Relative permittivity ε_r	Conductivity (σ) S/m
300	45,3	0,87
450	43,5	0,87
750	*41,9*	*0,89*
835	41,5	0,90
900	41,5	0,97
1 450	40,5	1,20
1 500	*40,4*	*1,23*
1 640	*40,2*	*1,31*
1 750	*40,1*	*1,37*
1 800	40,0	1,40
1 900	40,0	1,40
2 000	40,0	1,40
2 100	*39,8*	*1,49*
2 300	*39,5*	*1,67*
2 450	39,2	1,80
2 600	*39,0*	*1,96*
3 000	38,5	2,40
3 500	*37,9*	*2,91*
4 000	*37,4*	*3,43*
4 500	*36,8*	*3,94*
5 000	*36,2*	*4,45*
5 200	*36,0*	*4,66*
5 400	*35,8*	*4,86*
5 600	*35,5*	*5,07*
5 800	*35,3*	*5,27*
6 000	*35,1*	*5,48*

NOTE For convenience, permittivity and conductivity values at those frequencies which are not part of the original data provided by Drossos et al. [33] or the extension to 5 800 MHz are provided (i.e. the values shown *in italics*). These values were linearly interpolated between the values in this table that are immediately above and below these values, except the values at 6 000 MHz that were linearly extrapolated from the values at 3 000 MHz and 5 800 MHz.

Dielectric Property Measurements Results:

Date	Band (MHz)	Tissue Type	Frequency (MHz)	Conductivity, σ (S/m)			Relative Permittivity, ε_r			Tolerance (%)
				Meas.	Target	Delta(%)	Meas.	Target	Delta(%)	
2024/01/24	2450	Head	2412	1.807	1.77	2.09	38.444	39.28	-2.13	±5
			2437	1.85	1.79	3.35	38.334	39.23	-2.28	±5
			2450	1.861	1.8	3.39	38.267	39.2	-2.38	±5
			2462	1.869	1.81	3.26	38.014	39.18	-2.99	±5
2024/01/24	5250	Head	5180	4.587	4.64	-1.14	36.102	36.02	0.23	±5
			5200	4.606	4.66	-1.16	35.173	36	-2.3	±5
			5240	4.655	4.7	-0.96	35.007	35.96	-2.65	±5
			5250	4.692	4.71	-0.38	35.123	35.95	-2.3	±5
2024/01/24	5750	Head	5745	5.255	5.22	0.67	35.538	35.36	0.5	±5
			5785	5.303	5.26	0.82	35.35	35.32	0.08	±5
			5800	5.325	5.27	1.04	35.273	35.3	-0.08	±5
			5825	5.379	5.3	1.49	35.037	35.28	-0.69	±5

3.2 System Accuracy Verification

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

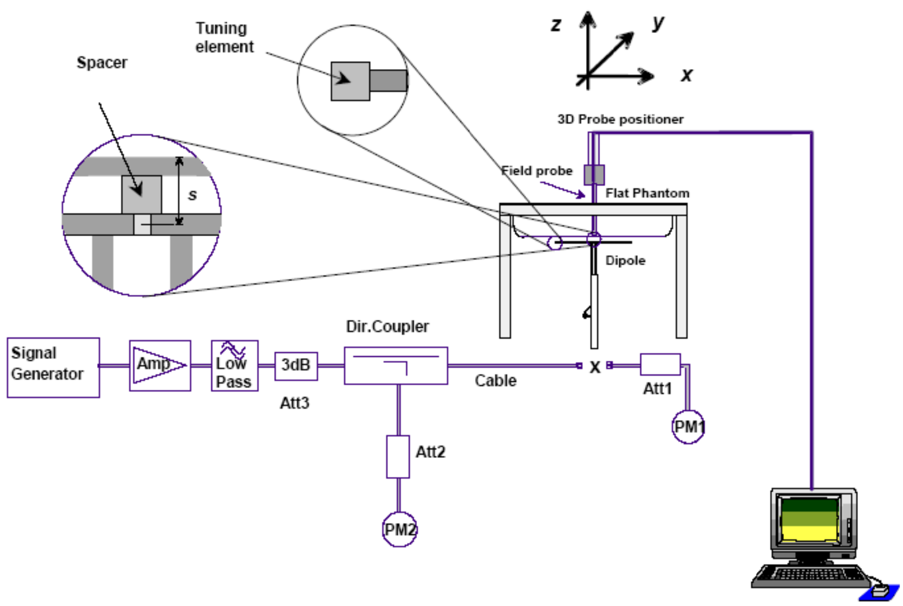
The spacing distances in the **System Verification Setup Block Diagram** is given by the following:

a) s = 15 mm ± 0,2 mm for 300 MHz ≤ f ≤ 1 000 MHz;

b) s = 10 mm ± 0,2 mm for 1 000 MHz < f ≤ 3 000 MHz;

c) s = 10 mm ± 0,2 mm for 3 000 MHz < f ≤ 6 000 MHz.

System Verification Setup Block Diagram



3.3 SAR System Validation Results

Date	Frequency Band	Liquid Type	Input Power (mW)	Measured 1g SAR (W/kg)	Normalized to 1W (W/kg)	Target Value (W/kg)	Delta (%)	Tolerance (%)
2024/01/24	2450MHz	Head	100	4.85	48.5	51.8	-6.37	±10
2024/01/24	5250MHz	Head	100	7.68	76.8	79.2	-3.03	±10
2024/01/24	5800MHz	Head	100	7.47	74.7	80.6	-7.32	±10

3.4 SAR System Validation Data

System Performance 2450MHz Head

DUT: D2450V2; Type: 2450 MHz; Serial: 1014

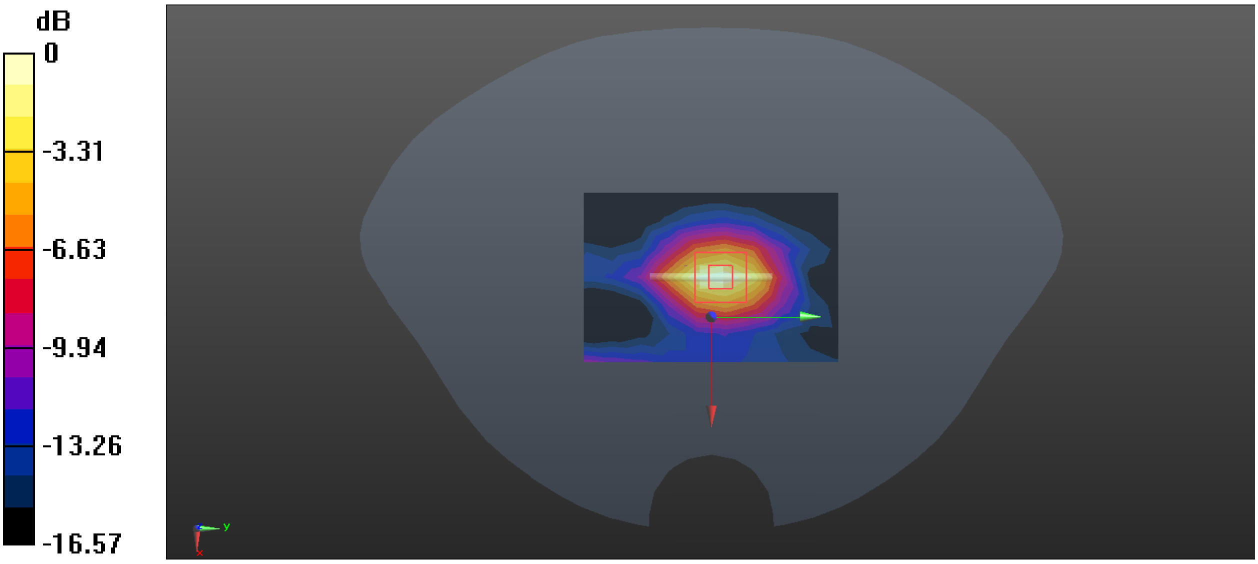
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.861 S/m; ε_r = 38.267; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3801; ConvF(7.38, 7.38, 7.38) @ 2450 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2023/11/17
- Phantom: Twin SAM V5.0; Type: QD000P40CD; Serial: TP:1470
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (6x7x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 6.42 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.96 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 9.47 W/kg
SAR(1 g) = 4.85 W/kg; SAR(10 g) = 2.28 W/kg
Maximum value of SAR (measured) = 7.18 W/kg



0 dB = 7.18 W/kg = 8.56 dBW/kg

System Performance 5250 MHz Head

DUT: D5GHzV2; Type: 5250 MHz; Serial: 1280

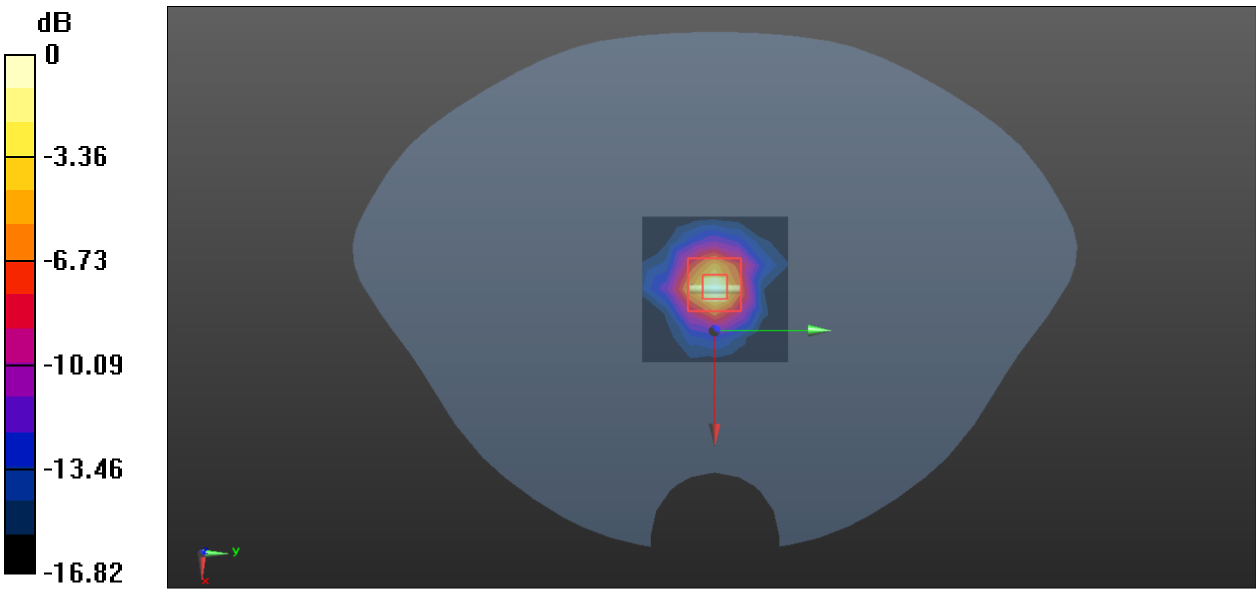
Communication System: CW; Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; σ = 4.692 S/m; ε_r = 35.123; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3801; ConvF(5.19, 5.19, 5.19) @ 5250 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2023/11/17
- Phantom: Twin SAM V5.0; Type: QD000P40CD; Serial: TP:1470
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (9x11x1): Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (measured) = 22.4 W/kg

Zoom Scan (9x9x16)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 40.58 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 32.2 W/kg
SAR(1 g) = 7.68 W/kg; SAR(10 g) = 2.14 W/kg
Maximum value of SAR (measured) = 23.6 W/kg



0 dB = 23.6 W/kg = 13.73 dBW/kg

System Performance 5800 MHz Head

DUT: D5GHzV2; Type: 5800 MHz; Serial: 1280

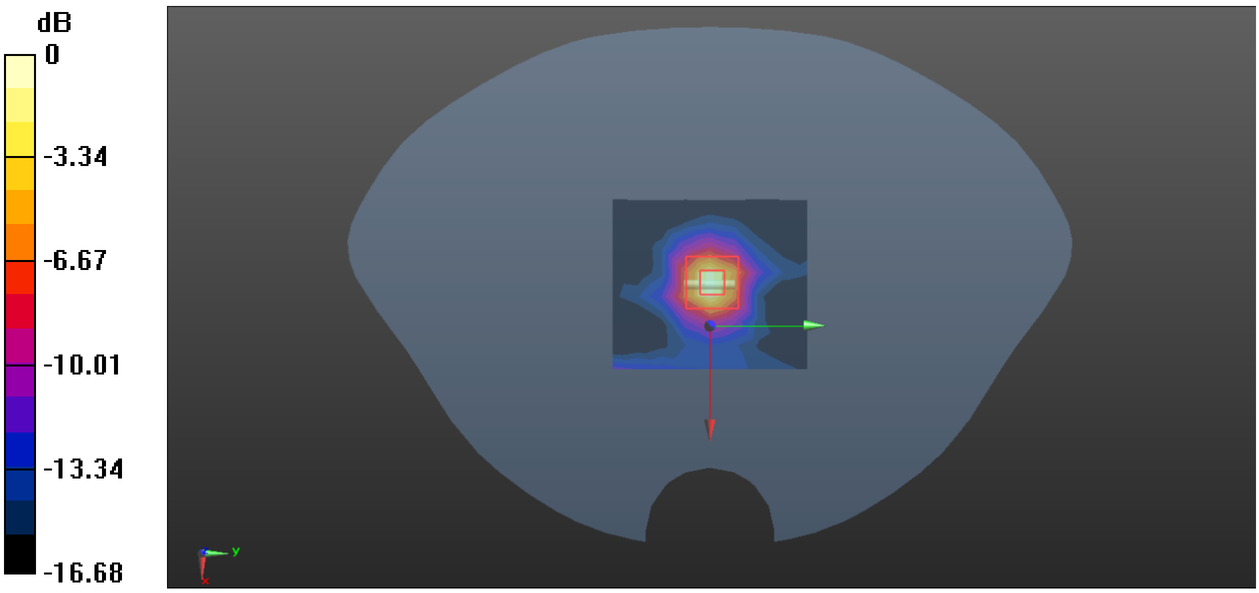
Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 5.325 S/m; ε_r = 35.273; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3801; ConvF(4.89, 4.89, 4.89) @ 5800 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2023/11/17
- Phantom: Twin SAM V5.0; Type: QD000P40CD; Serial: TP:1470
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (8x8x1): Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (measured) = 25.6 W/kg

Zoom Scan (9x9x16)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 46.47 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 32.5 W/kg
SAR(1 g) = 7.47 W/kg; SAR(10 g) = 2.19 W/kg
Maximum value of SAR (measured) = 24.3 W/kg



0 dB = 24.3 W/kg = 13.86 dBW/kg

4 EUT Test Positions and Methodology

4.1 Test positions for body-supported device

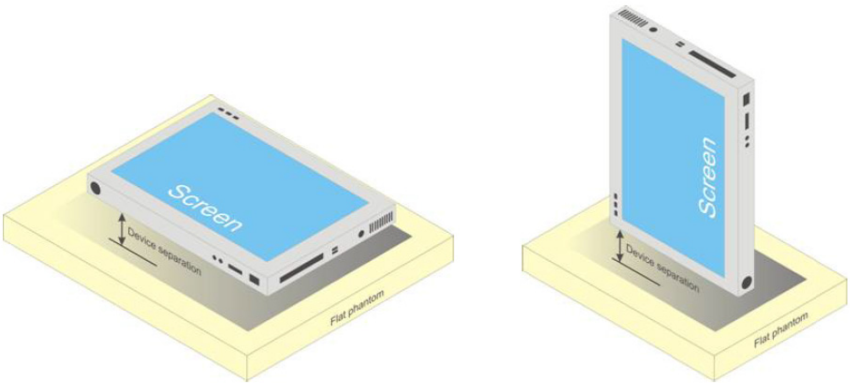
A typical example of a body supported device is a wireless enabled laptop device that among other orientations may be supported on the thighs of a sitting user. To represent this orientation, the device shall be positioned with its base against the flat phantom. Other orientations may be specified by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

The example in Figure 7b) shows a tablet form factor portable computer for which SAR should be separately assessed with

d) each surface and

e) the separation distances

positioned against the flat phantom that correspond to the intended use as specified by the manufacturer. If the intended use is not specified in the user instructions, the device shall be tested directly against the flat phantom in all usable orientations.

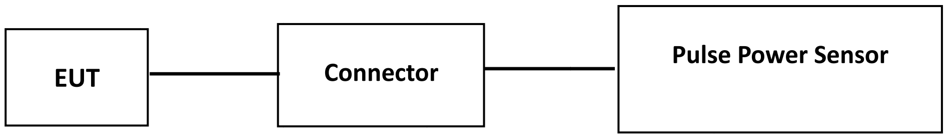


b) Tablet form factor portable computer

5 Conducted Output Power Measurements

5.1 Test Procedure

The RF output of the transmitter was connected to the input port of the Pulse Power Sensor through Connector.



BT/WLAN

5.2 Maximum Target Output Power

Mode/Band	Max. Target Power(dBm)		
	Low Channel	Middle Channel	High Channel
2.4G WLAN (802.11b)	17.8	17.8	17.8
2.4G WLAN (802.11g)	10	10	10
2.4G WLAN (802.11 n20)	10	10	10
2.4G WLAN (802.11 n40)	7.5	7.5	7.5
2.4G WLAN (802.11 ax20)	10	10	10
2.4G WLAN (802.11 ax40)	7.5	7.5	7.5
5.2G WLAN (802.11a)	9.5	9.5	9.5
5.2G WLAN (802.11 n20)	8	8	8
5.2G WLAN (802.11 n40)	7	/	7
5.2G WLAN (802.11 ac80)	/	9.5	/
5.2G WLAN (802.11 ax20)	8	8	8
5.2G WLAN (802.11 ax40)	7	/	7
5.2G WLAN (802.11 ax80)	/	9	/
5.8G WLAN (802.11a)	12.5	12.5	12.5
5.8G WLAN (802.11 n20)	12.5	12.5	12.5
5.8G WLAN (802.11 n40)	12.5	/	12.5
5.8G WLAN (802.11 ac80)	/	9	/
5.8G WLAN (802.11 ax20)	12.5	12.5	12.5
5.8G WLAN (802.11 ax40)	12.5	/	12.5
5.8G WLAN (802.11 ax80)	/	7.5	/
Bluetooth(BDR/EDR)	4	4	4
BLE_1M	4	4	4
BLE_2M	4	4	4

5.3 Maximum Conducted Output Power

2.4G WLAN:

Test Mode	Channel [MHz]	Data Rate	Duty Cycle [%]	Max. Conducted Average Output Power [dBm]
802.11b	2412	1Mbps	49.63	**17.63**
	2437			17.02
	2462			16.31
802.11g	2412	6Mbps	52.99	9.74
	2437			9.35
	2462			8.67
802.11 n ht20	2412	MCS0	51.88	9.86
	2437			9.35
	2462			8.75
802.11 n ht40	2422	MCS0	49.76	7.01
	2437			7.22
	2452			6.35
802.11 ax hew20	2412	MCS0	45.00	9.87
	2437			9.46
	2462			9.15
802.11 ax hew40	2422	MCS0	44.75	7.11
	2437			7.27
	2452			6.36

5.2G WLAN:

Test Mode	Channel [MHz]	Data Rate	Duty Cycle [%]	Max. Conducted Average Output Power [dBm]
802.11a	5180	6Mbps	52.94	**9.08**
	5200			8.37
	5240			8.39
802.11n ht20	5180	MCS0	51.93	7.87
	5200			7.55
	5240			7.36
802.11 n ht40	5190	MCS0	49.76	6.68
	5230			6.76
802.11 ac80	5210	MCS0	45.90	9.02
802.11 ax hew20	5180	MCS0	44.95	7.97
	5200			7.61
	5240			7.67
802.11 ax hew40	5190	MCS0	44.75	6.6
	5230			6.35
802.11 ax hew80	5210		42.70	8.76

5.8G WLAN:

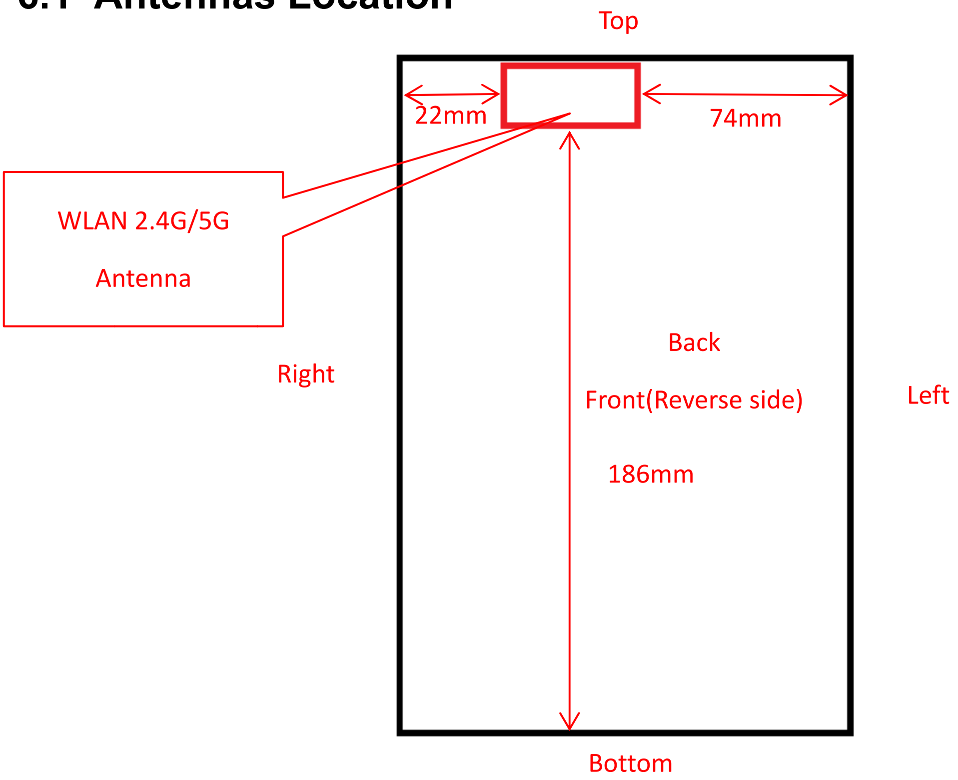
Test Mode	Channel [MHz]	Data Rate	Duty Cycle [%]	Max. Conducted Average Output Power [dBm]
802.11a	5745	6Mbps	52.94	11.36
	5785			**12.31**
	5825			11.24
802.11n ht20	5745	MCS0	51.93	11.33
	5785			12.22
	5825			11.01
802.11 n ht40	5755	MCS0	49.76	11.78
	5795			12.16
802.11 ac80	5775	MCS0	45.90	8.57
802.11 ax hew20	5745	MCS0	44.95	12.18
	5785			12.23
	5825			12.17
802.11 ax hew40	5755	MCS0	44.75	12.25
	5795			12.24
802.11 ax hew80	5775	MCS0	42.70	7.04

Bluetooth:

Test Mode	Channel [MHz]	Max. Peak Conducted Output Power [dBm]
BDR(GFSK)	2402	2.64
	2441	3.34
	2480	3.84
EDR(π/4-DQPSK)	2402	3.06
	2441	3.27
	2480	3.85
EDR(8DPSK)	2402	3.72
	2441	3.58
	2480	3.67
BLE_1M	2402	3.17
	2440	2.5
	2480	2.76
BLE_2M	2402	3.18
	2440	2.68
	2480	3.18

6 Standalone SAR Test Exclusion Considerations

6.1 Antennas Location



6.2 Antennas Distance To Edge

Antenna Distance To Edge(mm)						
Antenna	Back	Front	Left	Right	Top	Bottom
WLAN 2.4G/5G Antnna	< 5	< 5	74	22	< 5	186

6.3 Standalone SAR Test Exclusion Considerations

Mode	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Distance (mm)	Calculated value	Threshold (1-g)	SAR Test Exclusion
WLAN 2.4G	2462	17.8	60.3	0	18.9	3	NO
WLAN 5.2G	5240	9.5	8.9	0	4.1	3	NO
WLAN 5.8G	5825	12.5	17.8	0	8.6	3	NO
Bluetooth	2480	4	2.5	0	0.8	3	YES

NOTE:

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, where

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

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

3. The result is rounded to one decimal place for comparison.

4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion.

6.4 SAR Test Exclusion For The EUT Edge Considerations Result

Mode	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Test Exclusion Distance (mm)
WLAN 2.4G	2462	17.8	60.3	31.5
WLAN 5.2G	5240	9.5	8.9	6.7
WLAN 5.8G	5825	12.5	17.8	14.3

Mode	Back	Front	Left	Right	Top	Bottom
WLAN 2.4G	**Required**	**Required**	Exclusion	**Required**	**Required**	Exclusion
WLAN 5.2G	**Required**	**Required**	Exclusion	Exclusion	**Required**	Exclusion
WLAN 5.8G	**Required**	**Required**	Exclusion	Exclusion	**Required**	Exclusion
BT	Exclusion*	Exclusion*	Exclusion*	Exclusion*	Exclusion*	Exclusion*

Note:

Required: The distance is less than **Test Exclusion Distance**, the SAR test is required.
Exclusion: The distance is large than **Test Exclusion Distance**, SAR test is not required.
Exclusion*: SAR test exclusion evaluation has been done above.

SAR test exclusion for the EUT edge considerations detail:

Distance< 50mm(To Edges)

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, where

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

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

3. The result is rounded to one decimal place for comparison.

4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion.

5. The Time based average Power is used for calculation

Distance> 50mm(To Edges)

At 100 MHz to 6 GHz and for *test separation distances* > 50 mm, the SAR test exclusion threshold is determined according to the following:

a) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz

b) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

7 SAR Measurement Results

7.1 SAR Test Conditions

Temperature:	22.7-23.5℃
Relative Humidity:	55%
ATM Pressure:	100.4 kPa
Test Date:	2024/01/24

Testing was performed by Eric Zhang, Mason Xu.

7.2 Measured and Reported (Scaled) SAR Results

2.4G WLAN

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)				
					Scaled Factor	Duty cycle Factor	Meas. SAR	Scaled SAR	Plot
Body Front (0mm)	2412	802.11b	/	/	/	/	/	/	/
	2437	802.11b	17.02	17.80	1.197	2.02	0.247	0.60	/
	2462	802.11b	/	/	/	/	/	/	/
Body Back (0mm)	2412	802.11b	17.63	17.80	1.04	2.02	0.364	0.76	/
	2437	802.11b	17.02	17.80	1.197	2.02	0.395	0.96	/
	2462	802.11b	16.31	17.80	1.409	2.02	0.347	0.99	/
Body Right (0mm)	2412	802.11b	/	/	/	/	/	/	/
	2437	802.11b	17.02	17.80	1.197	2.02	0.0084	0.02	/
	2462	802.11b	/	/	/	/	/	/	/
Body Top (0mm)	2412	802.11b	17.63	17.80	1.04	2.02	0.397	0.83	/
	2437	802.11b	17.02	17.80	1.197	2.02	0.434	**1.05**	1#
	2462	802.11b	16.31	17.80	1.409	2.02	0.309	0.88	/

Note:

1. When the 1-g SAR is≤ 0.8W/kg, testing for other channels are optional.

2.When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.

3.For 802.11b mode power is the largest among 802.11b/g/n, 802.11 b mode as initial test configuration is selected to test.

5.2G WLAN

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)				
					Scaled Factor	Duty cycle Factor	Meas. SAR	Scaled SAR	Plot
Body Front (0mm)	5180	802.11a	/	/	/	/	/	/	/
	5200	802.11a	8.37	9.50	1.297	1.89	0.149	0.37	/
	5240	802.11a	/	/	/	/	/	/	/
Body Back (0mm)	5180	802.11a	/	/	/	/	/	/	/
	5200	802.11a	8.37	9.50	1.297	1.89	0.113	0.28	/
	5240	802.11a	/	/	/	/	/	/	/
Body Top (0mm)	5180	802.11a	9.08	9.50	1.102	1.89	0.334	0.70	/
	5200	802.11a	8.37	9.50	1.297	1.89	0.33	0.81	/
	5240	802.11a	8.39	9.50	1.291	1.89	0.342	**0.83**	2#

5.8G WLAN

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)				
					Scaled Factor	Duty cycle Factor	Meas. SAR	Scaled SAR	Plot
Body Front (0mm)	5745	802.11a	/	/	/	/	/	/	/
	5785	802.11a	12.31	12.50	1.045	1.89	0.169	0.33	/
	5825	802.11a	/	/	/	/	/	/	/
Body Back (0mm)	5745	802.11a	/	/	/	/	/	/	/
	5785	802.11a	12.31	12.50	1.045	1.89	0.097	0.19	/
	5825	802.11a	/	/	/	/	/	/	/
Body Top (0mm)	5745	802.11a	11.36	12.50	1.3	1.89	0.411	**1.01**	3#
	5785	802.11a	12.31	12.50	1.045	1.89	0.397	0.78	/
	5825	802.11a	11.24	12.50	1.337	1.89	0.36	0.91	/

Note:

1. When the 1-g SAR is≤ 0.8W/kg, testing for other channels are optional.

2.When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.

3.For 802.11a mode power is the largest among 802.11a/n/ac, 802.11 a mode as initial test configuration is selected to test.

8 SAR Measurement Variability

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Note: The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

The Highest Measured SAR Configuration in Each Frequency Band

Body

SAR probe calibration point	Frequency Band	Freq.(MHz)	EUT Position	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio
				Original	Repeated	
/	/	/	/	/	/	/

Note:

1. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.
2. The measured SAR results do not have to be scaled to the maximum tune-up tolerance to determine if repeated measurements are required.
3. SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements.

9 Simultaneous Transmission Description

9.1 Simultaneous Transmission

Description of Simultaneous Transmit Capabilities		
Transmitter Combination	**Simultaneous?**	**Hotspot?**
WLAN 2.4G + WLAN 5G	×	×
WLAN 2.4G/5G + BT	×	×

10 SAR Plots

Test Plots 1#: WLAN 2.4G_Mid_Body Top

DUT: Smart Tablet; Type: TG3DBG1MA; Serial: 2FEZ-2

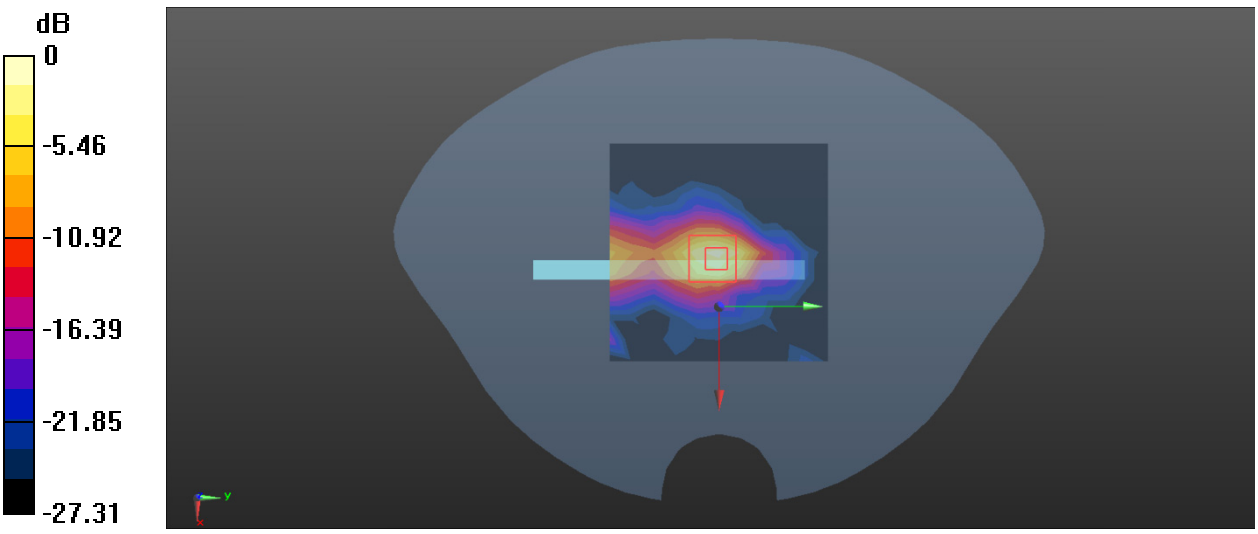
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:2.02
Medium parameters used: f = 2437 MHz; σ = 1.85 S/m; ε_r = 38.334; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3801; ConvF(7.38, 7.38, 7.38) @ 2437 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2023/11/17
- Phantom: Twin SAM V5.0; Type: QD000P40CD; Serial: TP:1470
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (11x11x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.689 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.98 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.434 W/kg; SAR(10 g) = 0.157 W/kg
Maximum value of SAR (measured) = 0.849 W/kg



0 dB = 0.849 W/kg = -0.71 dBW/kg

Test Plots 2#: WLAN 5.2G_High_Body Top

DUT: Smart Tablet; Type: TG3DBG1MA; Serial: 2FEZ-2

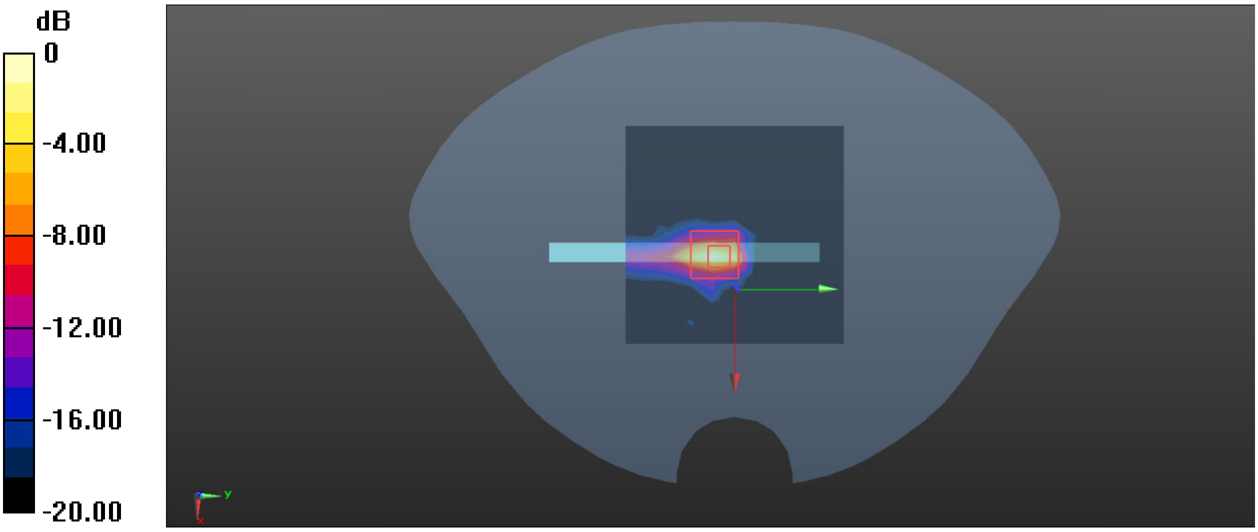
Communication System: 802.11a; Frequency: 5240 MHz;Duty Cycle: 1:1.89
Medium parameters used: f = 5240 MHz; σ = 4.655 S/m; ε_r = 35.007; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3801; ConvF(5.19, 5.19, 5.19) @ 5240 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2023/11/17
- Phantom: Twin SAM V5.0; Type: QD000P40CD; Serial: TP:1470
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (11x11x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.848 W/kg

Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.912 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.38 W/kg
SAR(1 g) = 0.342 W/kg; SAR(10 g) = 0.083 W/kg
Maximum value of SAR (measured) = 0.886 W/kg



0 dB = 0.886 W/kg = -0.53 dBW/kg

Test Plots 3#: WLAN 5.8G_Low_Body Top

DUT: Smart Tablet; Type: TG3DBG1MA; Serial: 2FEZ-2

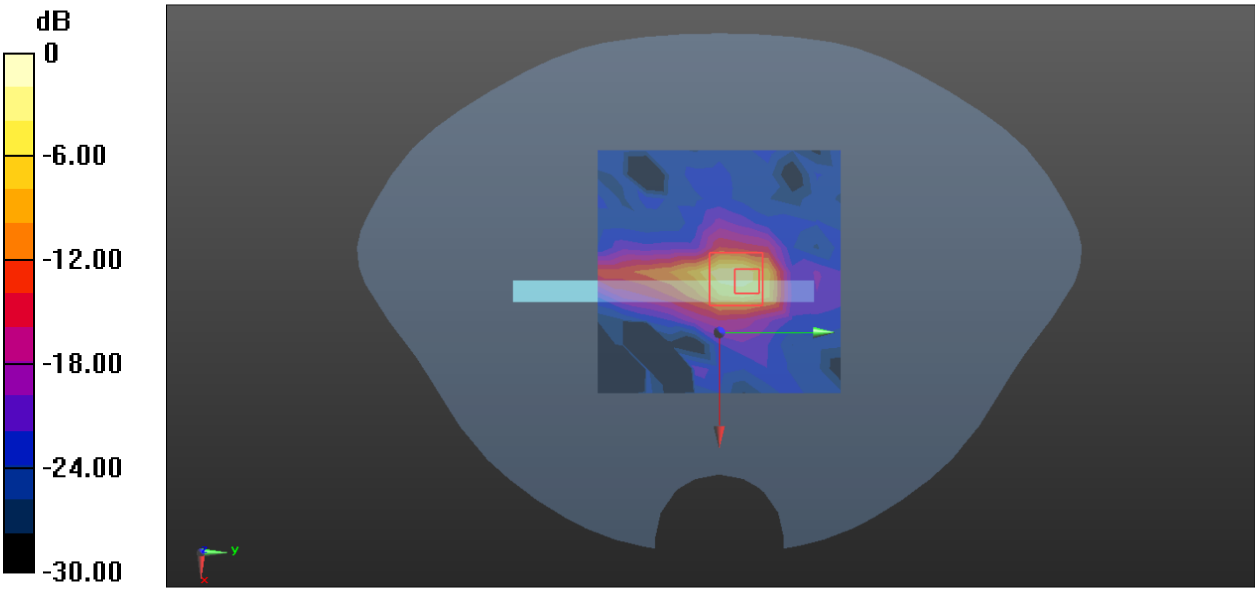
Communication System: 802.11a; Frequency: 5745 MHz;Duty Cycle: 1:1.89
Medium parameters used: f = 5745 MHz; σ = 5.255 S/m; ε_r = 35.538; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3801; ConvF(4.89, 4.89, 4.89) @ 5745 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2023/11/17
- Phantom: Twin SAM V5.0; Type: QD000P40CD; Serial: TP:1470
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (11x11x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.723 W/kg

Zoom Scan (8x8x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 7.287 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.05 W/kg
SAR(1 g) = 0.411 W/kg; SAR(10 g) = 0.109 W/kg
Maximum value of SAR (measured) = 1.16 W/kg



0 dB = 1.16 W/kg = 0.64 dBW/kg

Appendix A Measurement Uncertainty

The uncertainty budget has been determined for the measurement system and is given in the following Table.

Measurement uncertainty evaluation for IEC62209-1 SAR test

Source of uncertainty	Tolerance/ uncertainty ± %	Probability distribution	Divisor	ci (1 g)	ci (10 g)	Standard uncertainty ± %, (1 g)	Standard uncertainty ± %, (10 g)
Measurement system							
Probe calibration	6.0	N	1	1	1	6.0	6.0
Axial Isotropy	1.5	R	√3	1	1	0.9	0.9
Hemispherical Isotropy	9.4	R	√3	0	0	0.0	0.0
Boundary effect	1.2	R	√3	1	1	0.7	0.7
Linearity	0.9	R	√3	1	1	0.5	0.5
Detection limits	1.1	R	√3	1	1	0.6	0.6
Readout electronics	0.5	N	1	1	1	0.5	0.5
Response time	0	R	√3	1	1	0.0	0.0
Integration time	0	R	√3	1	1	0.0	0.0
RF ambient conditions – noise	1.1	R	√3	1	1	0.6	0.6
RF ambient conditions–reflections	1.2	R	√3	1	1	0.7	0.7
Probe positioner mech. Restrictions	0.9	R	√3	1	1	0.5	0.5
Probe positioning with respect to phantom shell	6.9	R	√3	1	1	4.0	4.0
Post-processing	2.1	R	√3	1	1	1.2	1.2
Test sample related							
Test sample positioning	2.2	N	1	1	1	2.2	2.2
Device holder uncertainty	6.1	N	1	1	1	6.1	6.1
Drift of output power	5.3	R	√3	1	1	3.1	3.1
Power scaling	3.98	R	√3	1	1	2.3	2.3
Phantom and set-up							
Phantom uncertainty (shape and thickness tolerances)	4.1	R	√3	1	1	2.4	2.4
Liquid conductivity target)	4.1	R	√3	0.64	0.43	1.5	1.0
Liquid conductivity meas.)	3	N	1	0.64	0.43	1.9	1.3
Liquid permittivity target)	4.3	R	√3	0.6	0.49	1.5	1.2
Liquid permittivity meas.)	2.9	N	1	0.6	0.49	1.7	1.4
Combined standard uncertainty		RSS				11.4	11.2
Expanded uncertainty 95 % confidence interval)						22.8	22.4

Measurement uncertainty evaluation for IEC62209-2 SAR test

Source of uncertainty	Tolerance/ uncertainty ± %	Probability distribution	Divisor	ci (1 g)	ci (10 g)	Standard uncertainty ± %, (1 g)	Standard uncertainty ± %, (10 g)
Measurement system							
Probe calibration	6.0	N	1	1	1	6.0	6.0
Axial Isotropy	1.5	R	√3	1	1	0.9	0.9
Hemispherical Isotropy	9.4	R	√3	0	0	0.0	0.0
Linearity	0.9	R	√3	1	1	0.5	0.5
Modulation Response	0	R	√3	1	1	0.0	0.0
Detection limits	1.1	R	√3	1	1	0.6	0.6
Boundary effect	1.2	R	√3	1	1	0.7	0.7
Readout electronics	0.5	N	1	1	1	0.5	0.5
Response time	0	R	√3	1	1	0.0	0.0
Integration time	0	R	√3	1	1	0.0	0.0
RF ambient conditions – noise	1.1	R	√3	1	1	0.6	0.6
RF ambient conditions–reflections	1.2	R	√3	1	1	0.7	0.7
Probe positioner mech. Restrictions	0.9	R	√3	1	1	0.5	0.5
Probe positioning with respect to phantom shell	6.9	R	√3	1	1	4.0	4.0
Post-processing	2.1	R	√3	1	1	1.2	1.2
Probe calibration							
Device holder Uncertainty	6.1	N	1	1	1	6.1	6.1
Test sample positioning	2.2	N	1	1	1	2.2	2.2
Power scaling	3.98	R	√3	1	1	2.3	2.3
Drift of output power	5.3	R	√3	1	1	3.1	3.1
Phantom and set-up							
Phantom uncertainty (shape and thickness tolerances)	4.1	R	√3	1	1	2.4	2.4
Algorithm for correcting SAR for deviations in permittivity and conductivity	2.3	N	1	1	0.84	2.3	1.9
Liquid conductivity (meas.)	2.7	N	1	0.64	0.43	1.7	1.2
Liquid permittivity (meas.)	2.9	N	1	0.6	0.49	1.7	1.4
Temp. unc. - Conductivity	1.5	R	√3	0.78	0.71	0.7	0.6
Temp. unc. - Permittivity	0.6	R	√3	0.23	0.26	0.1	0.1
Combined standard uncertainty		RSS				11.5	11.3
Expanded uncertainty 95 % confidence interval)						23.0	22.6

Appendix B Test Setup Photos

Please refer to the attachment (SAR EUT Test Position Photos_A).

Appendix C Probe Calibration Certificates

Please refer to the attachment (Appendix Probe and Dipole Calibration Certificates).

Appendix D Dipole Calibration Certificates

Please refer to the attachment (Appendix Probe and Dipole Calibration Certificates).

---End of Report---