FCC / IC

SAR EVALUATION REPORT

For

FCC ID：K7T-WIFIHU52

IC：2377A-WIFIHU52

Model：WiFiHU52E Series Model： WiFiHU52E-T

Report Type：Original Report	**Product Name**：WiFiHU52 Dongle

Report Number：**RXZ240408022SA02**

Report Date：**2024-12-03**

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Statement of Compliance

Applicant (Certification Holder)	Radicom Research, Inc.
	671 E.Brokaw Road,San Jose,CA 95112,United States
Brand (Trade) Name	Radicom
Host Name	WiFiHU52E, WiFiHU52E-T
Host Discrepancy	WiFiHU52E : WiFi module in Plastic Enclosure with embedded on-board antennas and mini USB A connector. WiFiHU52E-T : WiFi module in Plastic Enclosure with embedded on-board antennas with pig tail USB A type cable.

Measurement Procedures and Standards Used:

☒ IEC/IEEE62209-1528:2020
☒ RSS-102 Issue 5
☒ FCC 47 CFR part 2.1093
☒ KDB 447498 D04 Interim General RF Exposure Guidance v01
☒ KDB 447498 D02 SAR Procedures for Dongle Xmtr v02r01
☒ KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
☒ KDB 248227 D01 802.11 Wi-Fi SAR v02r02

The measurement results in this report were performed at Bay Area Compliance Laboratories Corp. (New Taipei Laboratory)
Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
The determination of the test results does not require consideration of the uncertainty of the measurement, unless the assessment is required by customer agreement, regulation or standard document specification.
Bay Area Compliance Laboratories Corp. (New Taipei Laboratory) is not responsible for the authenticity of the information provided by the applicant that affects the test results.

Report Issued Date: 2024-12-03

Reviewed By: Rory Cheng 

Revision History

Revision	No.	Report Number	Issue Date	Description	Author/ Revised by
0.0	RXZ240408022	RXZ240408022SA02	2024.12.03	Original Report	Anson Lu

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EUT RESULTS

Attestation of Test Results for Body SAR(WiFiHU52E-T)			
Frequency Band	Maxi. 1g SAR Level(s) Reported(W/kg)		Limit(W/kg)
	Position	Maxi. 1g SAR(W/kg)	
WLAN 2.4GHz	Body SAR(1g)	0.297	1.6
WLAN 5GHz	Body SAR(1g)	0.926	1.6
Attestation of Test Results for Body SAR(WiFiHU52E)			
Frequency Band	Maxi. 1g SAR Level(s) Reported(W/kg)		Limit(W/kg)
	Position	Maxi. 1g SAR(W/kg)	
WLAN 2.4GHz	Body SAR(1g)	0.272	1.6
WLAN 5GHz	Body SAR(1g)	0.977	1.6

Note: This wireless device has been shown to be capable of compliance for localized specific absorption rate (SAR) for General Population/Uncontrolled Exposure limits specified in FCC 47 CFR part 2.1093 and has been tested in accordance with the measurement procedures specified in IEC/IEEE 62209-1528 and RF exposure KDB procedures.
The results and statements contained in this report pertain only to the device(s) evaluated.

EUT DESCRIPTION

Technical Specification

Applicant	Radicom Research, Inc.
Exposure Category	Population / Uncontrolled
Modulation Type	2.4GHz： IEEE 802.11b mode: DSSS IEEE 802.11g / n HT20 / HT40 mode: OFDM 5GHz： IEEE 802.11a mode: OFDM IEEE 802.11n HT20 / HT40 mode: OFDM IEEE 802.11ac VHT20 / VHT40 / VHT80 mode: OFDM
Frequency Band	IEEE 802.11b/g/n HT20 mode: 2412 ~ 2462 MHz IEEE 802.11n HT40 Mode: 2422 ~ 2452 MHz IEEE 802.11a mode: 5150 ~ 5250 MHz / 5725 ~ 5850 MHz IEEE 802.11n HT20 / HT40 mode: 5150 ~ 5250 MHz / 5725 ~ 5850 MHz IEEE 802.11ac VHT20 / 802.11ac VHT40 / VHT80 mode: 5150 ~ 5250 MHz / 5725 ~ 5850 MHz
Conducted RF Power (Avg/Tune-Up)	IEEE 802.11b mode：21.0 dBm IEEE 802.11g mode：16.0dBm IEEE 802.11n HT20 mode：14.0 dBm IEEE 802.11n HT40 mode：14.0 dBm IEEE 802.11a mode 5150~5250MHz：16 dBm IEEE 802.11a mode 5725~5850MHz：17 dBm IEEE 802.11ac VHT20 mode 5150~5250MHz：16.5 dBm IEEE 802.11ac VHT20 mode 5725~5850MHz：17.5 dBm IEEE 802.11ac VHT40 mode 5150~5250MHz：13.5 dBm IEEE 802.11ac VHT40 mode 5725~5850MHz：14.5 dBm IEEE 802.11ac VHT80 mode 5150~5250MHz：11.0 dBm IEEE 802.11ac VHT80 mode 5725~5850MHz：12.5 dBm
Antenna Information	Antenna Type: Chip antenna Antenna Gain_2.4GHz: 2.71 dBi Antenna Gain_5GHz: 3.42 dBi
Power Source	DC 5V from USB
Normal Operation	Body
Received Date	2024/04/08

Note:

1) All measurement and test data in this report was gathered from production sample serial number：RXZ240408022-01 and RXZ240408022-02 (Assigned by BACL, (New Taipei Laboratory)).

2) C2PC Declaration:
The intention of this application is to enable the modular FCC ID: K7T-WIFIHU52 granted on 2024/10/23 and IC:2377A-WIFIHU52 granted on 2024/10/28 to be integrated in USB Dongle: WiFiHU52E / WiFiHU52E-T.

The module installed into host platform mentioned above is electronically and mechanically identical to the original certified module. The Original FCC testing on module under FCC ID: K7T-WIFIHU52 and IC:2377A-WIFIHU52, was performed with an antenna of the same gain, and the antenna was connected to the module in an open environment. The current host platform under application uses an antenna of the same type / same gain and is installed inside the host platform enclosure.

REFERENCE, STANDARDS, AND GUIDELINES

FCC/ISED：

The Report and Order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 1.6 mW/g as recommended by the ANSI/IEEE standard C95.1 [6] for an uncontrolled environment (Paragraph 65). According to the Supplement C of OET Bulletin 65 “Evaluating Compliance with FCC Guide-lines for Human Exposure to Radio frequency Electromagnetic Fields", released on Jun 29, 2001 by the FCC, the device should be evaluated at maximum output power (radiated from the antenna) under “worst-case” conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

ISED SAR limit is According RSS-102 issue 5 table 3. for an uncontrolled environment.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in North America is 1.6 mW/g average over 1 gram of tissue mass.

SAR Limits

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

ISED Limit

Table 3: SAR basic restrictions limits (100 kHz to 6 GHz)

Body region	Uncontrolled environment average SAR (W/kg)	Controlled environment average SAR (W/kg)	Averaging time (minutes)	Averaging mass (g)
Whole body	0.08	0.4	6	whole body
Localized head, neck and trunk	1.6	8	6	1
Localized limbs	4	20	6	10

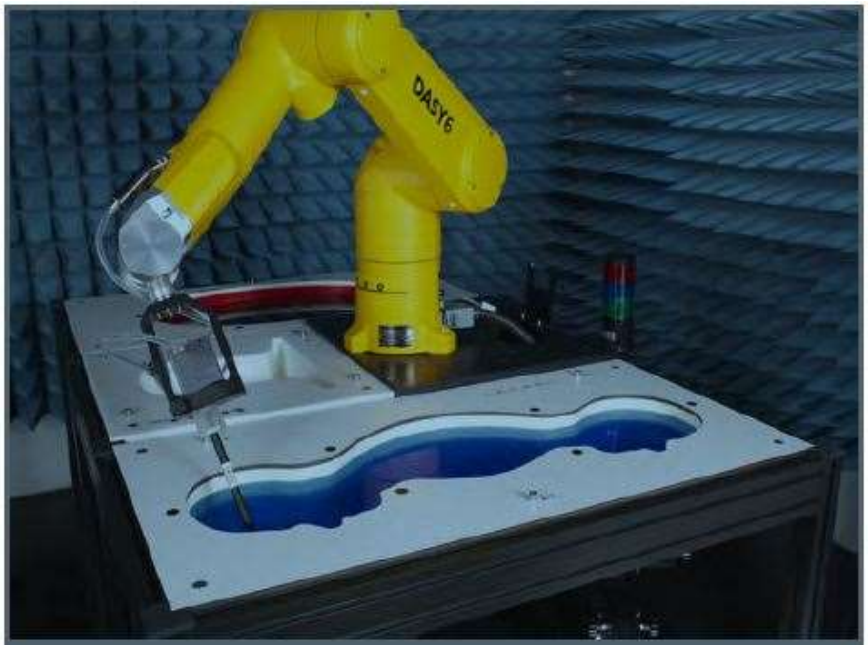
Population/Uncontrolled Environments are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.

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

General Population/Uncontrolled environments Spatial Peak limit 1g 1.6W/kg (FCC & ISED) applied to the EUT.

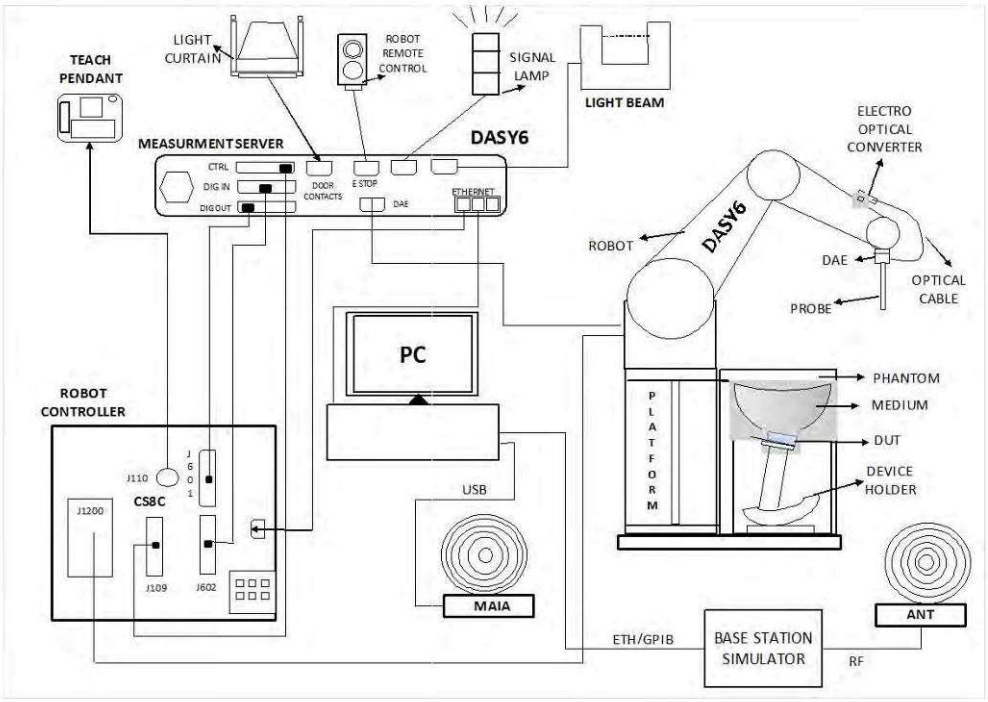
DESCRIPTION OF TEST SYSTEM

These measurements were performed with the automated near-field scanning system DASY6 from Schmid& Partner Engineering AG (SPEAG) which is the Fifth generation of the system shown in the figure hereinafter:



DASY6 System Description

The DASY6 system for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot (Staubli TX=RX family) 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.

DASY6 Measurement Server

The DASY6 measurement server is based on a PC/104 CPU board with a 400 MHz Intel ULV Celeron, 128 MB chip-disk and 128 MB 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 the DASY6 I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all real-time data evaluations of field measurements and surface detection, controls robot movements, and handles safety operations. 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 pinout, and therefore only devices provided by SPEAG can be connected. Connection of devices from any other supplier could seriously damage the measurement server.

Data Acquisition Electronics

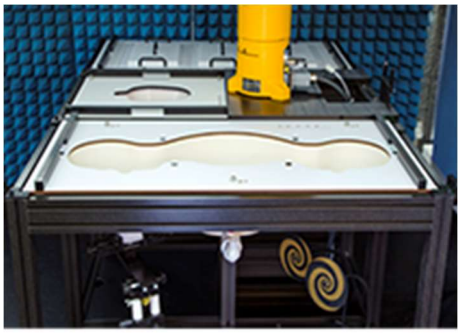
The data acquisition electronics (DAE4) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through 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	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 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 SAR and higher, EASY4/MRI



SAM Twin Phantom

The SAM Twin Phantom (shown in front of DASY6) is a fiberglass shell phantom with shell thickness 2 mm, except in the ear region where the thickness is increased to 6 mm. The phantom has three measurement areas: 1) Left Head, 2) Right Head, and 3) Flat Section. For larger devices, the use of the ELI-Phantom (shown behind DASY6) is required. For devices such as glasses with a wireless link, the Face Down Phantom is the most suitable (between the SAM Twin and ELI phantoms).

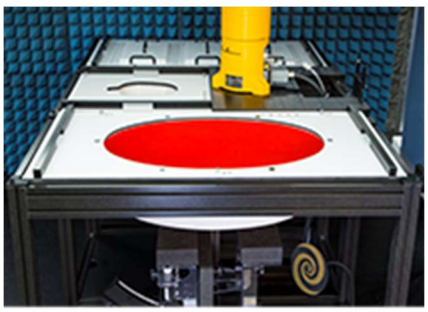
When the phantom is mounted inside allocated slot of the DASY6 platform, phantom reference points can be taught directly in the DASY5 V5.2 software. When the DASY6 platform is used to mount the phantom, some of the phantom teaching points cannot be reached by the robot in DASY5 V5.2. A special tool called P1a-P2aX-Former is provided to transform two of the three points, P1 and P2, to reachable locations. To use these new teaching points, a revised phantom configuration file is required.

The phantom shell is compatible with SPEAG's tissue simulating liquids (sugar and oil based). Use of other liquids may render the phantom warranty void (see note or consult SPEAG support).

Do not use other organic solvents without previously testing the solvent resistivity of the phantom.

Approximately 25 liters of liquid is required to fill the SAM Twin phantom.

ELI Phantom



The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30MHz to 6 GHz. ELI is fully compatible with the latest draft of the standard IEC/IEEE 62209-1528 and the use of all known tissue simulating liquids. ELI has been optimized for performance and can be integrated into a SPEAG standard phantom table. A cover is provided to prevent evaporation of water and changes in liquid parameters. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points.

The phantom shell is compatible with SPEAG's tissue simulating liquids (sugar and oil based). Use of other liquids may render the phantom warranty void (see note or consult SPEAG support).

Approximately 30 liters of liquid is required to fill the ELI phantom.

Robots

The DASY6 system uses the high-precision industrial robots TX60L, TX90XL, and RX160L from StaubliSA (France). The TX robot family - the successor of the well-known RX robot family - continues to offer the features important for DASY6 applications:

- 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 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 provided

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 15mm^2 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.

Zoom Scan (Cube Scan Averaging)

The averaging zoom scan volume utilized in the DASY6 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 10mm, 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.

Recommended Tissue Dielectric Parameters for Head and Body

Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEC/IEEE 62209-1528

Recommended Tissue Dielectric Parameters for Head liquid

Table 2 – Dielectric properties of the tissue-equivalent medium

Frequency(MHz)	permittivity,(ε'r)	Conductivity, σ(S/m)
4	*55,0*	*0,75*
13	*55,0*	*0,75*
30	55,0	0,75
150	52,3	0,76
300	45,3	0,87
450	43,5	0,87
750	*41,9*	*0,89*
835	41,5	0,90
900	41,5	0,97
1450	40,5	1,20
1800	40,0	1,40
1900	40,0	1,40
1950	40,0	1,40
2000	40,0	1,40
2100	*39,8*	*1,49*
2450	39,2	1,80
2600	*39,0*	*1,96*
3000	38,5	2,40
3500	*37,9*	*2,91*
4000	*37,4*	*3,43*
4500	*36,8*	*3,94*
5000	*36,2*	*4,45*
5200	*36,0*	*4,66*
5400	*35,8*	*4,86*
5600	*35,5*	*5,07*
5800	35,3	5,27
6000	*35,1*	*5,48*
6500	*34,5*	*6,07*
7000	*33,9*	*6,65*
7500	*33,3*	*7,24*
8000	*32,7*	*7,84*
8500	*32,1*	*8,46*
9000	*31,6*	*9,08*

9500	*31,0*	*9,71*
10000	*30,4*	*10,40*

NOTE For convenience, permittivity and conductivity values are linearly interpolated for frequencies that are not a part of the original data from Drossos et al. [2]. They are shown in italics in Table 2. The italicized values are linearly interpolated (below 5800 MHz) or extrapolated (above 5800 MHz) from the non-italicized values that are immediately above and below these values.

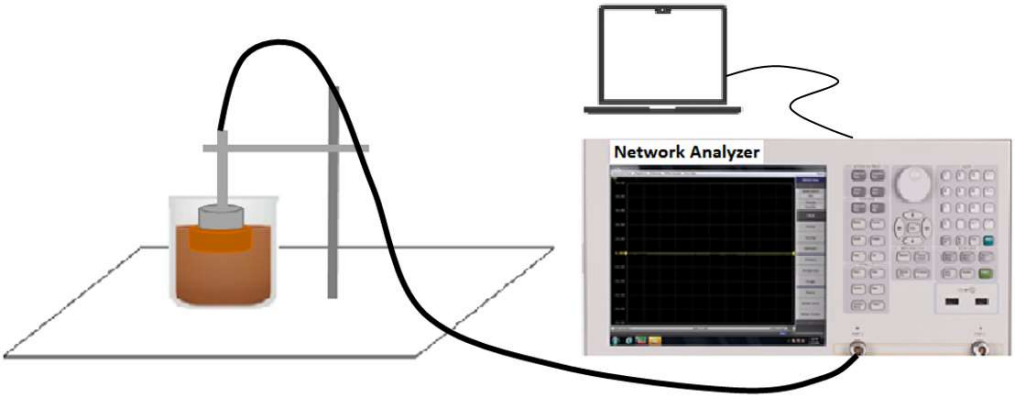
EQUIPMENT LIST AND CALIBRATION

Equipment's List & Calibration Information

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Robot	TX90	5N26A1	N.C.R	N.C.R
DASY5 Test Software	DASY5.2	N/A	N.C.R	N.C.R
DASY6 Measurement Server	DASY 6.0	1588	N/A	N/A
Data Acquisition Electronics	DAE	1561	2023/12/06	2024/12/05
E-Field Probe	EX3DV4	7520	2023/12/13	2024/12/12
Dipole, 2450 MHz	D2450V2	1068	2021/10/11	2024/10/10
Dipole, 5GHz	D5GHzV2	1336	2021/10/12	2024/10/11
Twin ELI	Twin ELI V8.0	2088	N/A	N/A
Simulated Tissue 0.6G~6GHz Head	TS-6GHz-H	N/A	Each Time/	
Mounting Device	N/A	SD 000 H01 KA	N/A	N/A
Network Analyzer	E5063A	MY54402093	2023/12/21	2024/12/20
Dielectric probe kit	85070B	50207	N/A	N/A
MXG Signal Generator	N5183A	MY50140407	2023/12/26	2024/12/25
EPM Series Power Meter	E4419B	GB43312279	2023/12/27	2024/12/26
Avg Power Sensor	E9304A H18	MZ54110016	2023/12/29	2024/12/28
Power Amplifier	ZVE-8G+	365701647	2024/1/11	2025/1/10
Power Amplifier	ZHL-42W+	329401642	2024/1/11	2025/1/10
Temperature and Humidity Recoder	HTC-1	005	2023/10/23	2024/10/22
Directional Coupler	488Z	810	N.C.R	N.C.R
Attenuator	20dB, 100W	1453	N.C.R	N.C.R

SAR MEASUREMENT SYSTEM VERIFICATION

Liquid Verification



Liquid Verification Setup Block Diagram

Liquid Verification Results

Test Date	Frequency (MHz)	Liquid Type	Liquid parameter		Target Value		Delta (%)		Tolerance (%)
			σ (S/m)	εr	σ (S/m)	εr	σ (S/m)	εr	
2024/05/10	2450	HSL	1.744	41.487	1.80	39.20	-3.11	5.83	±10
	2412	HSL	1.707	41.518	1.77	39.270	-3.56	5.72	±10
	2437	HSL	1.735	41.479	1.79	39.210	-3.07	5.79	±10
	2462	HSL	1.749	41.481	1.82	39.170	-3.9	5.9	±10

Test Date	Frequency (MHz)	Liquid Type	Liquid parameter		Target Value		Delta (%)		Tolerance (%)
			σ (S/m)	εr	σ (S/m)	εr	σ (S/m)	εr	
2024/05/16	5250	HSL	4.684	36.954	4.71	35.95	-0.55	2.79	±10
	5180	HSL	4.575	37.094	4.64	36.02	-1.40	2.98	±10
	5200	HSL	4.610	37.055	4.66	36.00	-1.07	2.93	±10
	5240	HSL	4.667	36.954	4.70	35.96	-0.70	2.76	±10

Test Date	Frequency (MHz)	Liquid Type	Liquid parameter		Target Value		Delta (%)		Tolerance (%)
			σ (S/m)	εr	σ (S/m)	εr	σ (S/m)	εr	
2024/05/16	5800	HSL	5.383	35.842	5.27	35.30	2.14	1.54	±10
	5745	HSL	5.312	35.931	5.22	35.36	1.76	1.61	±10
	5785	HSL	5.371	35.903	5.26	35.32	2.11	1.65	±10
	5825	HSL	5.426	35.790	5.30	35.28	2.38	1.45	±10

Test Date	Frequency (MHz)	Liquid Type	Liquid parameter		Target Value		Delta (%)		Tolerance (%)
			Ơ (S/m)	εr	Ơ (S/m)	εr	Ơ (S/m)	εr	
2024/05/17	5250	HSL	4.814	38.464	4.71	35.95	2.21	6.99	±10
	5180	HSL	4.702	38.606	4.64	36.02	1.34	7.18	±10
	5200	HSL	4.738	38.564	4.66	36.00	1.67	7.12	±10
	5210	HSL	4.746	38.553	4.67	35.99	1.63	7.12	±10
	5240	HSL	4.797	38.463	4.70	35.96	2.06	6.96	±10

Test Date	Frequency (MHz)	Liquid Type	Liquid parameter		Target Value		Delta (%)		Tolerance (%)
			Ơ (S/m)	εr	Ơ (S/m)	εr	Ơ (S/m)	εr	
2024/05/17	5800	HSL	5.536	37.317	5.27	35.3	5.05	5.71	±10
	5745	HSL	5.464	37.414	5.22	35.36	4.67	5.81	±10
	5775	HSL	5.521	37.385	5.25	35.33	5.16	5.82	±10
	5785	HSL	5.523	37.382	5.26	35.32	5	5.84	±10
	5825	HSL	5.581	37.262	5.30	35.28	5.30	5.62	±10

Test Date	Frequency (MHz)	Liquid Type	Liquid parameter		Target Value		Delta (%)		Tolerance (%)
			Ơ (S/m)	εr	Ơ (S/m)	εr	Ơ (S/m)	εr	
2024/05/20	2450	HSL	1.75	41.736	1.80	39.20	-2.78	6.47	±10
	2412	HSL	1.714	41.764	1.77	39.270	-3.16	6.35	±10
	2437	HSL	1.741	41.730	1.79	39.210	-2.74	6.43	±10
	2462	HSL	1.755	41.728	1.82	39.170	-3.57	6.53	±10

Test Date	Frequency (MHz)	Liquid Type	Liquid parameter		Target Value		Delta (%)		Tolerance (%)
			Ơ (S/m)	εr	Ơ (S/m)	εr	Ơ (S/m)	εr	
2024/05/22	5250	HSL	4.878	39.124	4.71	35.95	3.57	8.83	±10
	5180	HSL	4.766	39.267	4.64	36.02	2.72	9.01	±10
	5200	HSL	4.802	39.229	4.66	36.00	3.05	8.97	±10
	5240	HSL	4.861	39.124	4.70	35.96	3.43	8.8	±10

Test Date	Frequency (MHz)	Liquid Type	Liquid parameter		Target Value		Delta (%)		Tolerance (%)
			σ (S/m)	εr	σ (S/m)	εr	σ (S/m)	εr	
2024/05/22	5800	HSL	5.613	37.961	5.27	35.30	6.51	7.54	±10
	5745	HSL	5.539	38.056	5.22	35.36	6.11	7.62	±10
	5785	HSL	5.599	38.023	5.26	35.32	6.44	7.65	±10
	5825	HSL	5.658	37.908	5.30	35.28	6.75	7.45	±10

Test Date	Frequency (MHz)	Liquid Type	Liquid parameter		Target Value		Delta (%)		Tolerance (%)
			σ (S/m)	εr	σ (S/m)	εr	σ (S/m)	εr	
2024/05/23	5250	HSL	4.901	38.835	4.71	35.95	4.06	8.03	±10
	5180	HSL	4.787	38.977	4.64	36.02	3.17	8.21	±10
	5200	HSL	4.823	38.933	4.66	36.00	3.5	8.15	±10
	5210	HSL	4.833	38.921	4.67	35.99	3.49	8.14	±10
	5240	HSL	4.884	38.833	4.70	35.96	3.91	7.99	±10

Test Date	Frequency (MHz)	Liquid Type	Liquid parameter		Target Value		Delta (%)		Tolerance (%)
			σ (S/m)	εr	σ (S/m)	εr	σ (S/m)	εr	
2024/05/23	5800	HSL	5.637	37.664	5.27	35.3	6.96	6.7	±10
	5745	HSL	5.564	37.758	5.22	35.36	6.59	6.78	±10
	5775	HSL	5.621	37.736	5.25	35.33	7.07	6.81	±10
	5785	HSL	5.623	37.73	5.26	35.32	6.9	6.82	±10
	5825	HSL	5.682	37.603	5.30	35.28	7.21	6.58	±10

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.

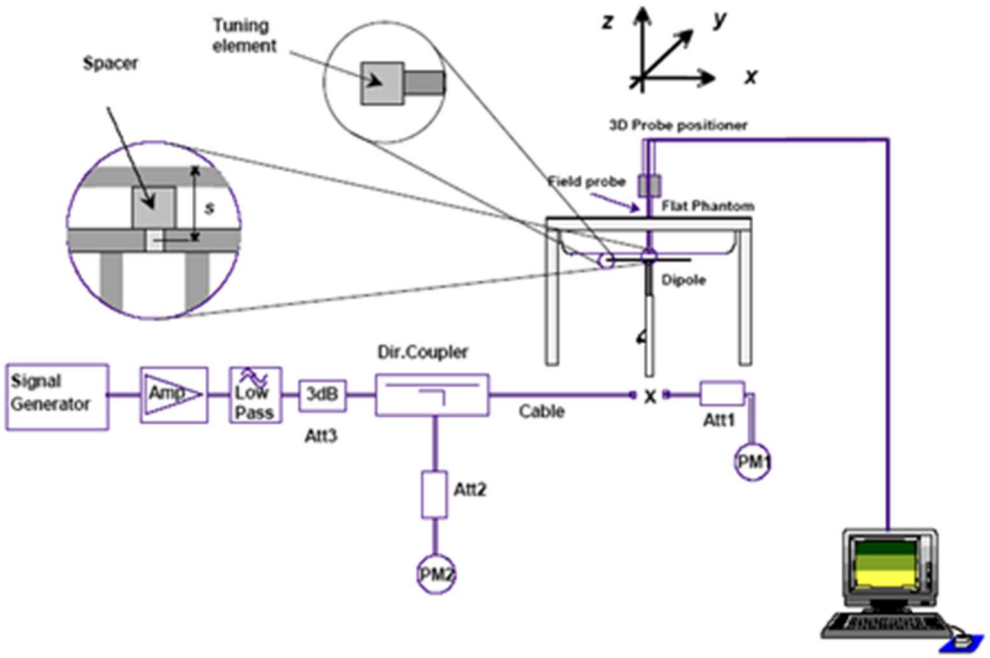
The spacing distance*s* in the **System Verification Setup Block Diagram** is given by the following:

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



System Accuracy Check Results

System Check for 1g SAR

Test Date	Frequency Band (MHz)	Liquid Type	Input Power (mW)	Measured SAR (W/kg)	Target Value (W/kg)	Normalized to 1W (W/kg)	Delta (%)	Tolerance (%)
2024/05/10	2450	HSL	250	13.4	54.20	53.6	-1.11	±10
2024/05/16	5250	HSL	100	8.92	81.90	89.2	8.91	±10
2024/05/16	5800	HSL	100	8.89	83.30	88.9	6.72	±10
2024/05/17	5250	HSL	100	8.59	81.90	85.9	4.88	±10
2024/05/17	5800	HSL	100	8.85	83.30	88.5	6.24	±10
2024/05/20	2450	HSL	250	14.5	54.20	58	7.01	±10
2024/05/22	5250	HSL	100	8.92	81.90	89.2	8.91	±10
2024/05/22	5800	HSL	100	9.08	83.30	90.8	9	±10
2024/05/23	5250	HSL	100	8.66	81.90	86.6	5.74	±10
2024/05/23	5800	HSL	100	8.79	83.30	87.9	5.52	±10

Note:

1) *Below 5GHz, The power inputted to dipole is 0.25Watt; the SAR values are normalized to 1 Watt forward power by multiplying 4 times.*
2) *Upper 5GHz, The power inputted to dipole is 0.10Watt; the SAR values are normalized to 1 Watt forward power by multiplying 10 times.*
3) *SAR System check testing date 2024/05/10 is using HSL 2450 Medium.*
4) *SAR System check testing date 2024/05/16 is using HSL 5G-1 Medium.*
5) *SAR System check testing date 2024/05/17 is using HSL 5G-2 Medium.*
6) *SAR System check testing date 2024/05/20 is using HSL 2450-2 Medium.*
7) *SAR System check testing date 2024/05/22 is using HSL 5G-3 Medium.*
8) *SAR System check testing date 2024/05/23 is using HSL 5G-4 Medium.*

SAR SYSTEM VALIDATION DATA

Test Laboratory:BACL.SAR TestingLab

System Check_2450MHz_D2450V2

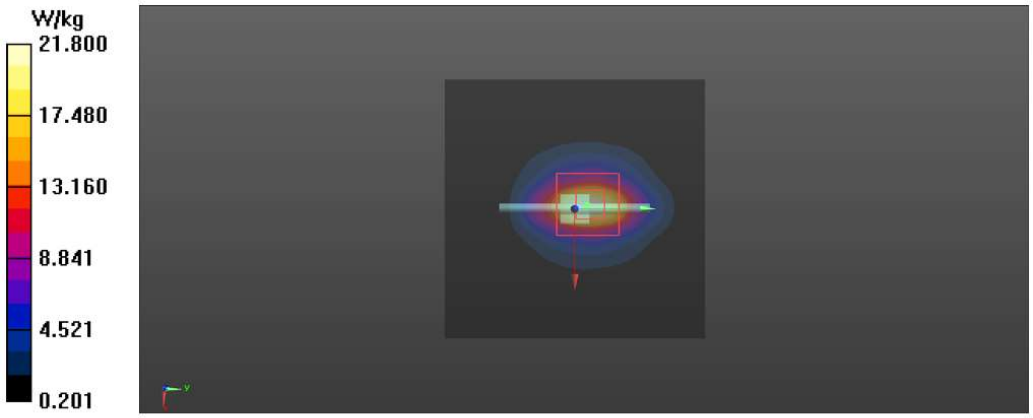
DUT: D2450V2-1068

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL 2450 Medium parameters used: f = 2450 MHz; σ = 1.744 S/m; ε_r = 41.487; ρ = 1000 kg/m^3

DASY5 Configuration:
- Probe: EX3DV4 - SN7520; ConvF(7.41, 7.17, 7.09) @ 2450 MHz; Calibrated: 12/13/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1561; Calibrated: 12/6/2023
- Phantom: ELI-Righr-ELI V8.0 (20deg probe tilt); Type: QD OVA 004 Ax; Serial: 2088
- Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 22.0 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 116.5 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 26.5 W/kg
SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.42 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 51.3%
Maximum value of SAR (measured) = 21.8 W/kg



Test Laboratory:BACL.SAR TestingLab

System Check_5250MHz_D5GHzV2_1

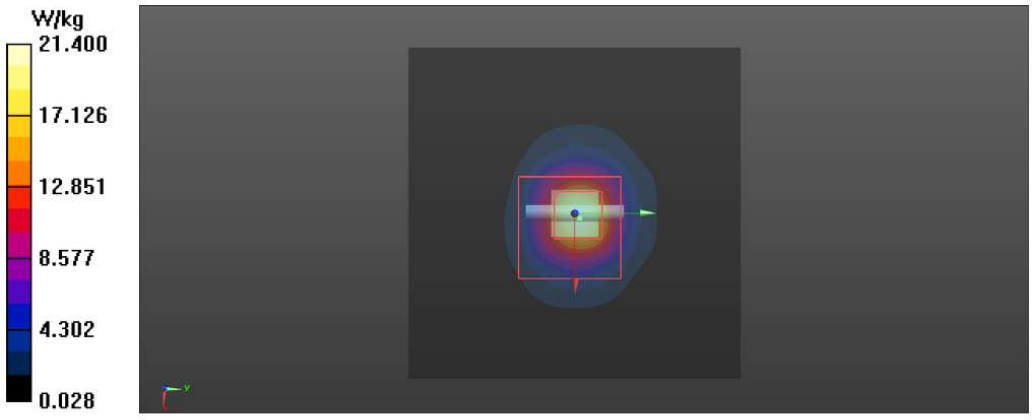
DUT: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: HSL 5G-1 Medium parameters used: f = 5250 MHz; σ = 4.684 S/m; ε_r = 36.954; ρ = 1000 kg/m^3

DASY5 Configuration:
- Probe: EX3DV4 - SN7520; ConvF(5.77, 5.49, 5.51) @ 5250 MHz; Calibrated: 12/13/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1561; Calibrated: 12/6/2023
- Phantom: ELI-Righr-ELI V8.0 (20deg probe tilt); Type: QD OVA 004 Ax; Serial: 2088
- Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 21.4 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.96 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 39.1 W/kg
SAR(1 g) = 8.92 W/kg; SAR(10 g) = 2.51 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 62.2%
Maximum value of SAR (measured) = 21.9 W/kg



Test Laboratory:BACL.SAR TestingLab

System Check_5800MHz_D5GHzV2_1

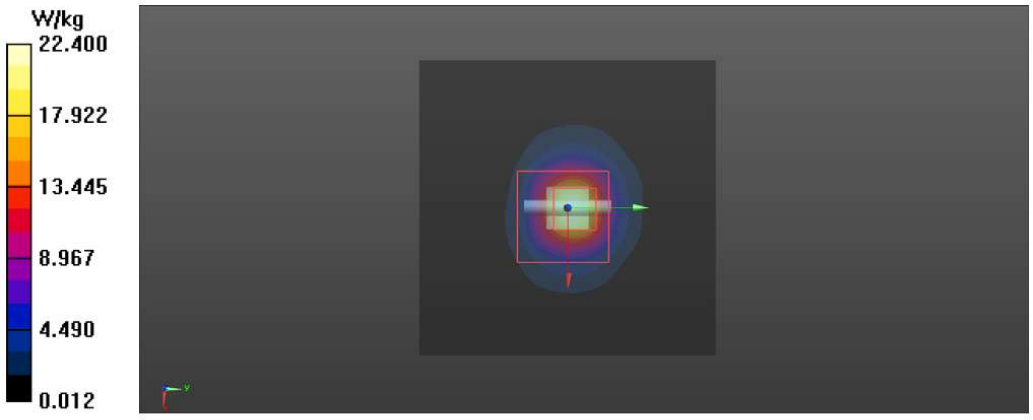
DUT: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: HSL 5G-1 Medium parameters used: f = 5800 MHz; σ = 5.383 S/m; ε_r = 35.842; ρ = 1000 kg/m^3

DASY5 Configuration:
- Probe: EX3DV4 - SN7520; ConvF(5.01, 4.86, 4.91) @ 5800 MHz; Calibrated: 12/13/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1561; Calibrated: 12/6/2023
- Phantom: ELI-Righr-ELI V8.0 (20deg probe tilt); Type: QD OVA 004 Ax; Serial: 2088
- Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 22.4 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.40 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 41.6 W/kg
SAR(1 g) = 8.89 W/kg; SAR(10 g) = 2.5 W/kg
Smallest distance from peaks to all points 3 dB below = 7.9 mm
Ratio of SAR at M2 to SAR at M1 = 59.7%
Maximum value of SAR (measured) = 22.4 W/kg



Test Laboratory:BACL.SAR TestingLab

System Check_5250MHz_D5GHzV2_2

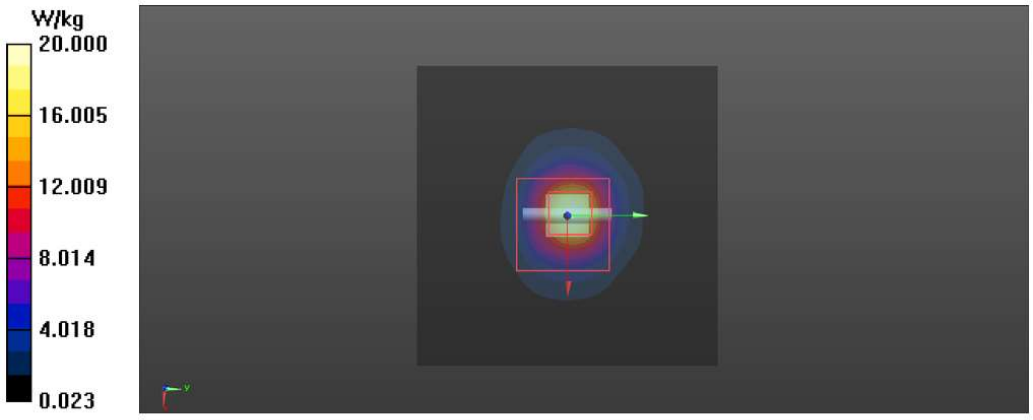
DUT: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: HSL 5G-2 Medium parameters used: f = 5250 MHz; σ = 4.814 S/m; ε_r = 38.464; ρ = 1000 kg/m^3

DASY5 Configuration:
- Probe: EX3DV4 - SN7520; ConvF(5.77, 5.49, 5.51) @ 5250 MHz; Calibrated: 12/13/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1561; Calibrated: 12/6/2023
- Phantom: ELI-Righr-ELI V8.0 (20deg probe tilt); Type: QD OVA 004 Ax; Serial: 2088
- Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.0 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 69.42 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 35.7 W/kg
SAR(1 g) = 8.59 W/kg; SAR(10 g) = 2.49 W/kg
Smallest distance from peaks to all points 3 dB below = 7.9 mm
Ratio of SAR at M2 to SAR at M1 = 63.2%
Maximum value of SAR (measured) = 20.6 W/kg



Test Laboratory:BACL.SAR TestingLab

System Check_5800MHz_D5GHzV2_2

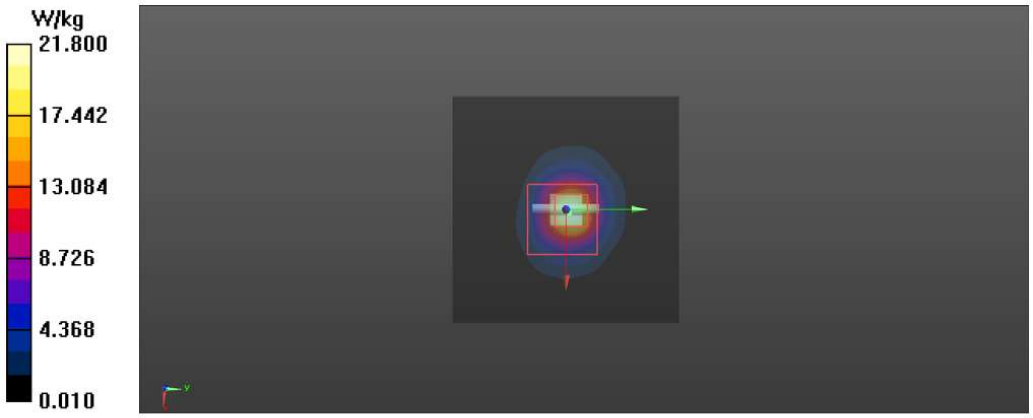
DUT: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: HSL 5G-2 Medium parameters used: f = 5800 MHz; σ = 5.536 S/m; ε_r = 37.317; ρ = 1000 kg/m^3

DASY5 Configuration:
- Probe: EX3DV4 - SN7520; ConvF(5.01, 4.86, 4.91) @ 5800 MHz; Calibrated: 12/13/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1561; Calibrated: 12/6/2023
- Phantom: ELI-Righr-ELI V8.0 (20deg probe tilt); Type: QD OVA 004 Ax; Serial: 2088
- Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 21.8 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.78 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 40.1 W/kg
SAR(1 g) = 8.85 W/kg; SAR(10 g) = 2.53 W/kg
Smallest distance from peaks to all points 3 dB below = 7.5 mm
Ratio of SAR at M2 to SAR at M1 = 60.4%
Maximum value of SAR (measured) = 22.4 W/kg



Test Laboratory:BACL.SAR TestingLab

System Check_2450MHz_D2450V2

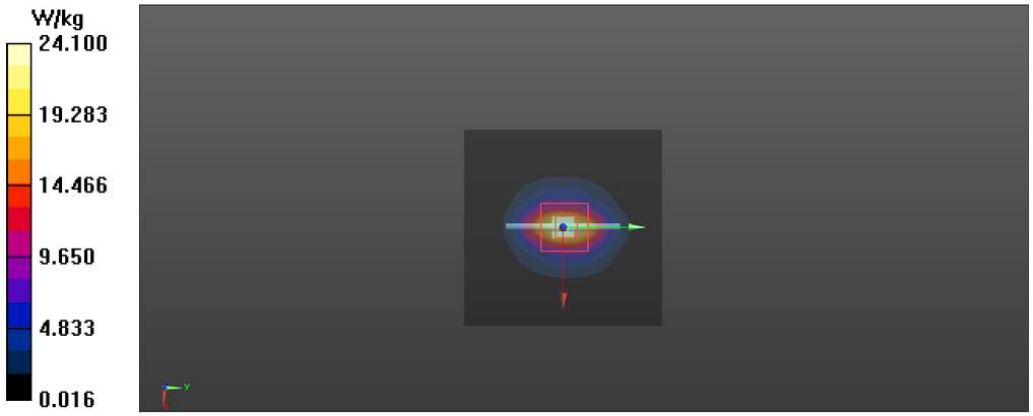
DUT: D2450V2-1068

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL 2450-2 Medium parameters used: f = 2450 MHz; σ = 1.75 S/m; ε_r = 41.736; ρ = 1000 kg/m^3

DASY5 Configuration:
- Probe: EX3DV4 - SN7520; ConvF(7.41, 7.17, 7.09) @ 2450 MHz; Calibrated: 12/13/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1561; Calibrated: 12/6/2023
- Phantom: ELI-Righr-ELI V8.0 (20deg probe tilt); Type: QD OVA 004 Ax; Serial: 2088
- Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 24.1 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 126.0 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 30.3 W/kg
SAR(1 g) = 14.5 W/kg; SAR(10 g) = 6.74 W/kg
Smallest distance from peaks to all points 3 dB below = 9.6 mm
Ratio of SAR at M2 to SAR at M1 = 47.8%
Maximum value of SAR (measured) = 24.1 W/kg



Test Laboratory:BACL.SAR TestingLab

System Check_5250MHz_D5GHzV2_1

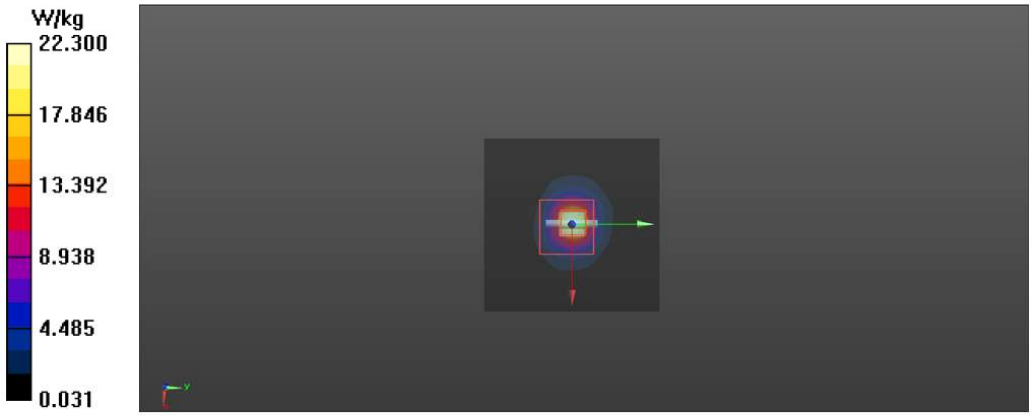
DUT: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: HSL 5G-3 Medium parameters used: f = 5250 MHz; σ = 4.878 S/m; ε_r = 39.124; ρ = 1000 kg/m^3

DASY5 Configuration:
- Probe: EX3DV4 - SN7520; ConvF(5.77, 5.49, 5.51) @ 5250 MHz; Calibrated: 12/13/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1561; Calibrated: 12/6/2023
- Phantom: ELI-Righr-ELI V8.0 (20deg probe tilt); Type: QD OVA 004 Ax; Serial: 2088
- Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 22.3 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.57 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 39.6 W/kg
SAR(1 g) = 8.92 W/kg; SAR(10 g) = 2.45 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 62.1%
Maximum value of SAR (measured) = 22.4 W/kg



Test Laboratory:BACL.SAR TestingLab

System Check_5800MHz_D5GHzV2_1

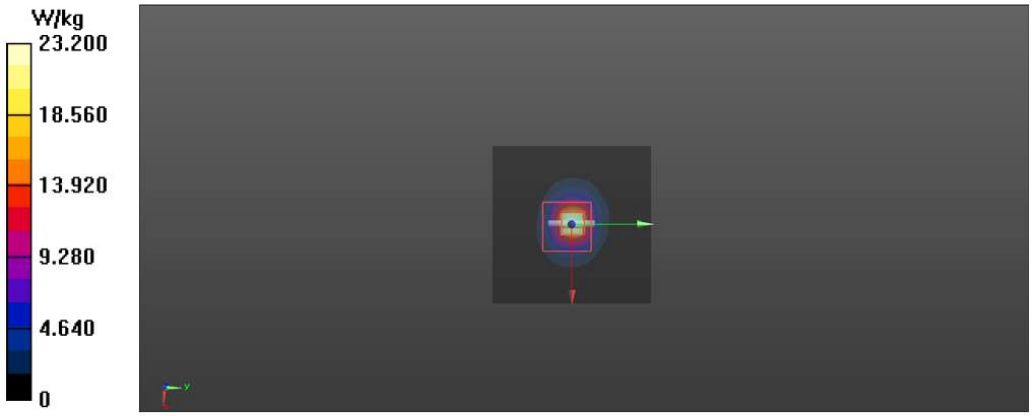
DUT: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: HSL 5G-3 Medium parameters used: f = 5800 MHz; σ = 5.613 S/m; ε_r = 37.961; ρ = 1000 kg/m^3

DASY5 Configuration:
- Probe: EX3DV4 - SN7520; ConvF(5.01, 4.86, 4.91) @ 5800 MHz; Calibrated: 12/13/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1561; Calibrated: 12/6/2023
- Phantom: ELI-Righr-ELI V8.0 (20deg probe tilt); Type: QD OVA 004 Ax; Serial: 2088
- Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 23.2 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 71.46 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 43.6 W/kg
SAR(1 g) = 9.08 W/kg; SAR(10 g) = 2.46 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 59.4%
Maximum value of SAR (measured) = 23.6 W/kg



Test Laboratory:BACL.SAR TestingLab

System Check_5250MHz_D5GHzV2_2

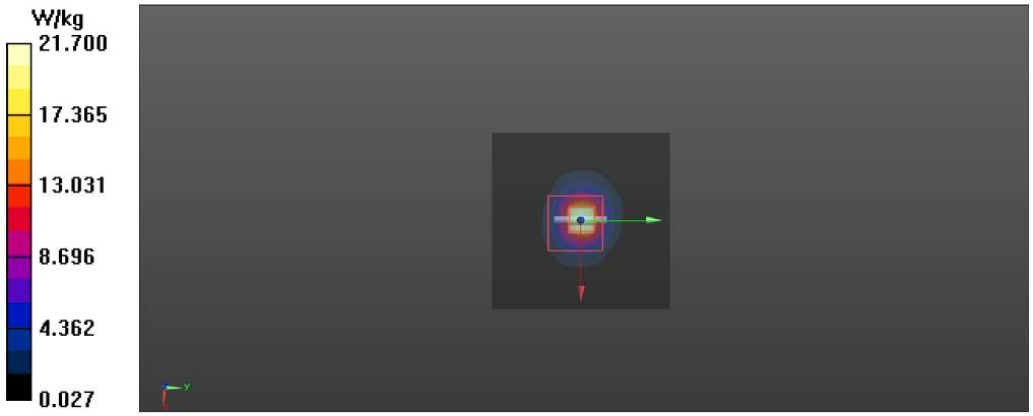
DUT: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: HSL 5G-4 Medium parameters used: f = 5250 MHz; σ = 4.901 S/m; ε_r = 38.835; ρ = 1000 kg/m^3

DASY5 Configuration:
- Probe: EX3DV4 - SN7520; ConvF(5.77, 5.49, 5.51) @ 5250 MHz; Calibrated: 12/13/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1561; Calibrated: 12/6/2023
- Phantom: ELI-Righr-ELI V8.0 (20deg probe tilt); Type: QD OVA 004 Ax; Serial: 2088
- Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 21.7 W/kg

Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.45 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 37.8 W/kg
SAR(1 g) = 8.66 W/kg; SAR(10 g) = 2.38 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 62.5%
Maximum value of SAR (measured) = 21.6 W/kg



Test Laboratory:BACL.SAR TestingLab

System Check_5800MHz_D5GHzV2_2

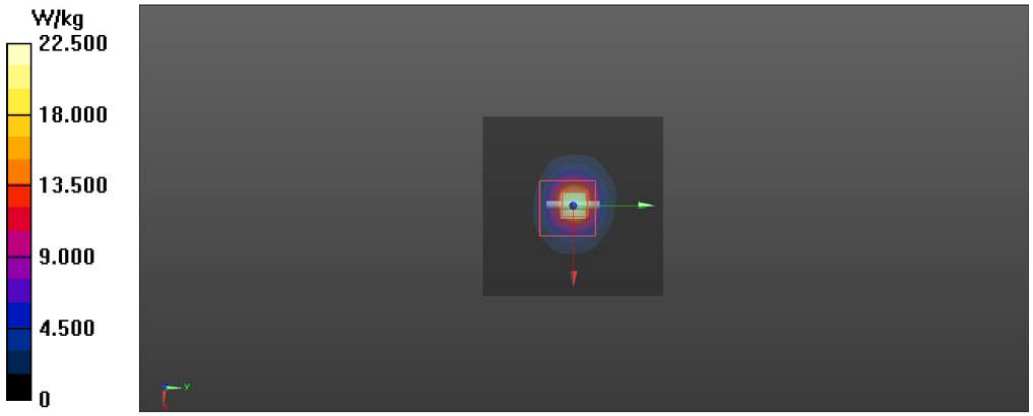
DUT: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: HSL 5G-4 Medium parameters used: f = 5800 MHz; σ = 5.637 S/m; ε_r = 37.664; ρ = 1000 kg/m^3

DASY5 Configuration:
- Probe: EX3DV4 - SN7520; ConvF(5.01, 4.86, 4.91) @ 5800 MHz; Calibrated: 12/13/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1561; Calibrated: 12/6/2023
- Phantom: ELI-Righr-ELI V8.0 (20deg probe tilt); Type: QD OVA 004 Ax; Serial: 2088
- Measurement SW: DASY52, Version 52.10 (4);SEMCAD X Version 14.6.14 (7483)

Pin=100mW/Area Scan (71x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 22.5 W/kg

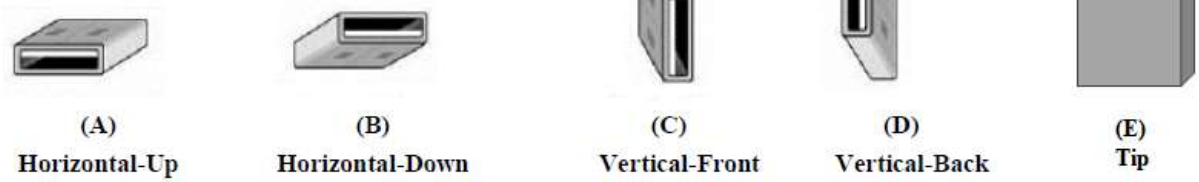
Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.49 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 42.6 W/kg
SAR(1 g) = 8.79 W/kg; SAR(10 g) = 2.38 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 59.1%
Maximum value of SAR (measured) = 23.2 W/kg



EUT TEST STRATEGY AND METHODOLOGY

Test Distance for SAR Evaluation

USB dongle SAR testing is according KDB 447498 D02 SAR Procedures for Dongle Xmtr and add Tip position. USB dongle transmitters must show compliance at a test separation distance of 5 mm. SAR setup photo please refer to the Attachment “APPENDIX B EUT TEST POSITION PHOTOS”. SAR test position as:



(A) Horizontal-Up (B) Horizontal-Down (C) Vertical-Front (D) Vertical-Back (E) Tip

SAR Evaluation Procedure

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the central position was used as a reference value for assessing the power drop. The SAR at this point is measured at the start of the test and then again at the end of the testing.

Step 2: The SAR distribution at the exposed side of the head was measured at a distance of 4 mm from the inner surface of the shell. The area covered the entire dimension of the radiating structures of the EUT, the horizontal grid spacing was 15 mm x 15 mm, and the SAR distribution was determined by integrated grid of 1.5mm x 1.5mm. Based on these data, the area of the maximum absorption was determined by spline interpolation. The first Area Scan covers the entire dimension of the EUT to ensure that the hotspot was correctly identified.

Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7x 7 x 7 points. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

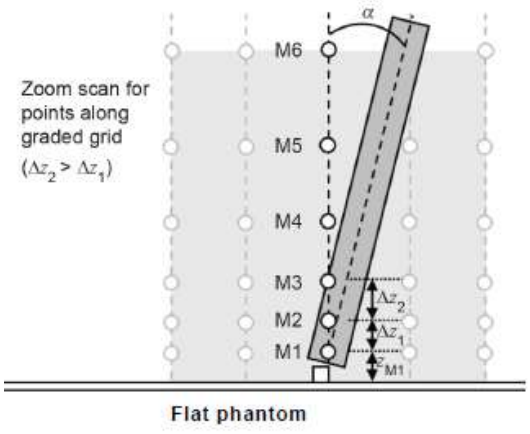
1) The data at the surface were extrapolated, since the center of the dipoles is 1.2 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

2) The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one dimensional splines with the “Not a knot"-condition (in x, y and z-directions). The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the averages.

All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Re-measurement of the SAR value at the same location as in Step 1, If the value changed by more than 5%, the evaluation was repeated.

During SAR testing, Area scan and Zoom scan test is according IEC/EEE 62209-1528 7.4.2 d) 2)



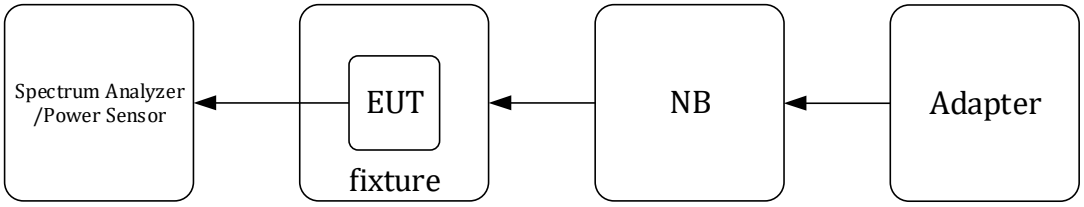
CONDUCTED OUTPUT POWER MEASUREMENT

Provision Applicable

The measured peak output power should be greater and within 5% than EMI measurement.

Test Procedure

The RF output power testing please refer to report no: RXZ240408022RF01 / RXZ240408022RF02.



WiFi 2.4G/5G

Support Equipment List and Details：

Description	Manufacturer	Model Number	Serial Number	Calibration Date	Calibration Due Date
NB	DELL	E6410	n/a	n/a	n/a
Fixture	RADICOM RESEARCH INC	A9 REV. A1	n/a	n/a	n/a
Spectrum Analyzer	Rohde & Schwarz(R&S)	FSV40	101204	2023/5/30	2024/5/28
Power Sensor	Agilent	U2021XA	MY54080018	2024/1/30	2025/1/28
Attenuator	MCL	BW-S10W5+	1419	2024/2/23	2025/2/21
Cable	UTIFLEX	UFA210A	9435	2023/10/2	2024/9/30

Channel List

WiFi 2.4G:

Mode	Channel	Freq.(MHz)	Data Rate
802.11b	Low	2412	1Mbps
	Middle	2437	
	High	2462	
802.11g	Low	2412	6Mbps
	Middle	2437	
	High	2462	
802.11n HT20	Low	2412	MCS0
	Middle	2437	
	High	2462	
802.11n HT40	Low	2422	MCS0
	Middle	2437	
	High	2452	

WiFi 5G:

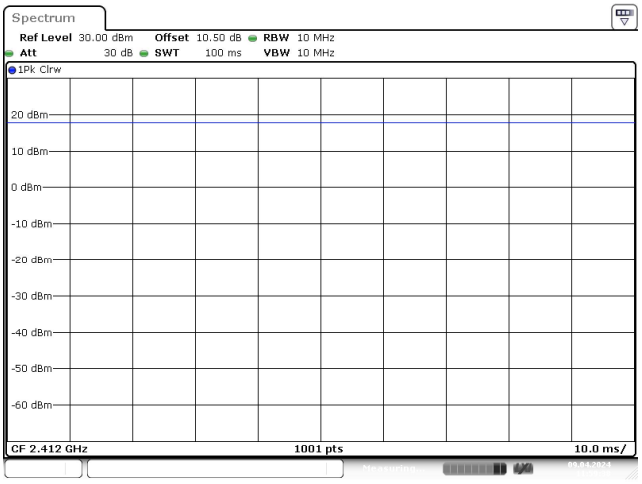
Band	Mode	Channel		Freq.(MHz)	Data Rate
U-NII-1	802.11a	36	Low	5180	6Mbps
		40	Middle	5200	
		48	High	5240	
U-NII-3	802.11a	149	Low	5745	6Mbps
		157	Middle	5785	
		165	High	5825	
U-NII-1	802.11n HT20	36	Low	5180	MCS0
		40	Middle	5200	
		48	High	5240	
U-NII-3	802.11n HT20	149	Low	5745	MCS0
		157	Middle	5785	
		165	High	5825	
U-NII-1	802.11n HT40	38	Low	5190	MCS0
		46	High	5230	
U-NII-3	802.11n HT40	151	Low	5755	MCS0
		159	High	5795	
U-NII-1	802.11ac VHT20	36	Low	5180	MCS0
		40	Middle	5200	
		48	High	5240	
U-NII-3	802.11ac VHT20	149	Low	5745	MCS0
		157	Middle	5785	
		165	High	5825	
U-NII-1	802.11ac VHT40	38	Low	5190	MCS0
		46	High	5230	
U-NII-3	802.11ac VHT40	151	Low	5755	MCS0
		159	High	5795	
U-NII-1	802.11ac VHT80	42	Low	5210	MCS0
U-NII-3	802.11ac VHT80	155	High	5775	MCS0

Duty Cycle:

According IEC/IEEE 62209-1528 section 7.6.6 c) The radio communication test set shall be set to request maximum TX power and duty factor from the DUT according to wireless technology requirements.

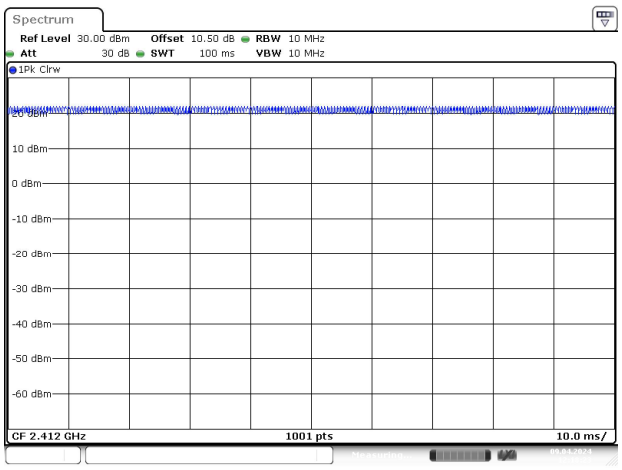
WiFi 2.4GHz:

802.11b



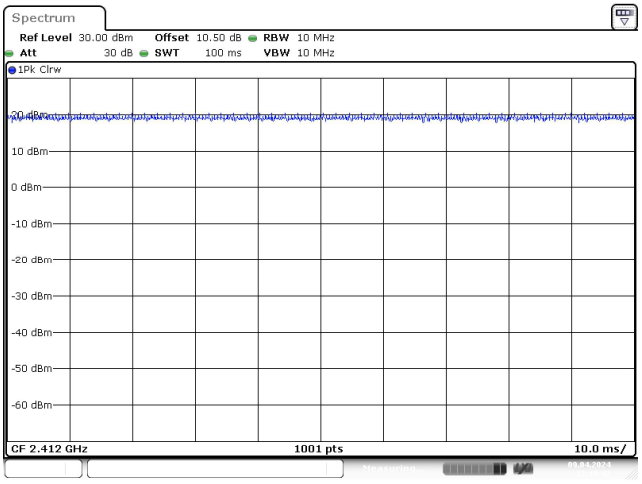
Date: 9.APR.2024 11:59:39

802.11g



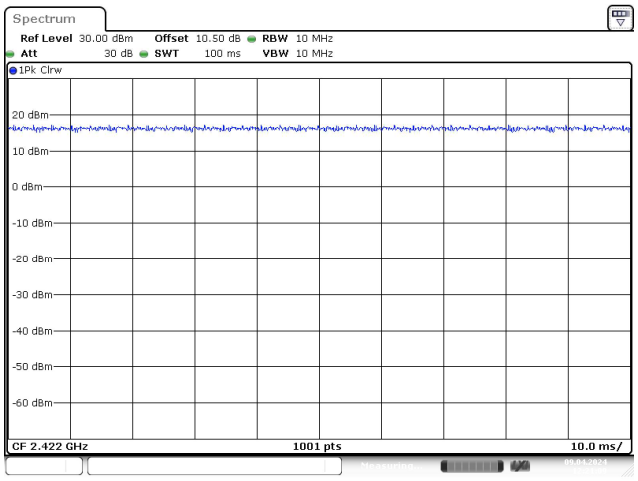
Date: 9.APR.2024 12:18:23

802.11nHT20



Date: 9.APR.2024 12:19:43

802.11nHT40

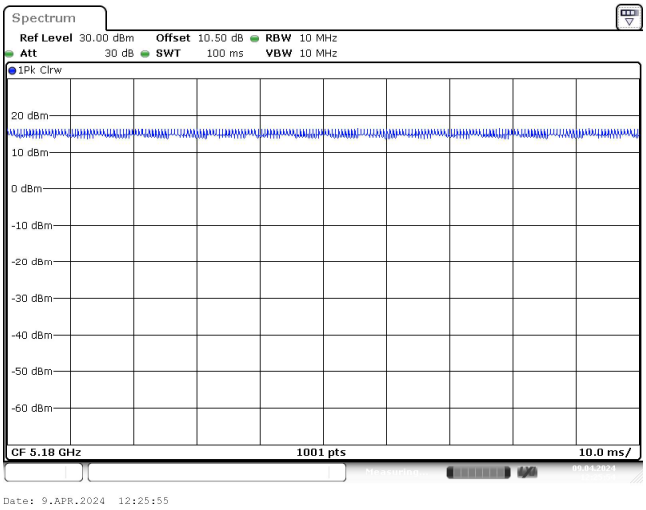


Date: 9.APR.2024 12:21:09

Test Modes	802.11b	802.11g	802.11n HT20	802.11n HT40
Duty Cycle(%)	100%	100%	100%	100%
Duty Factor	1.0	1.0	1.0	1.0

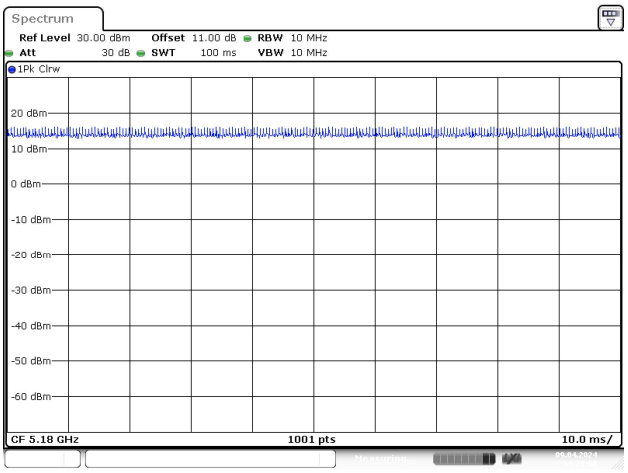
WiFi 5GHz:

802.11a



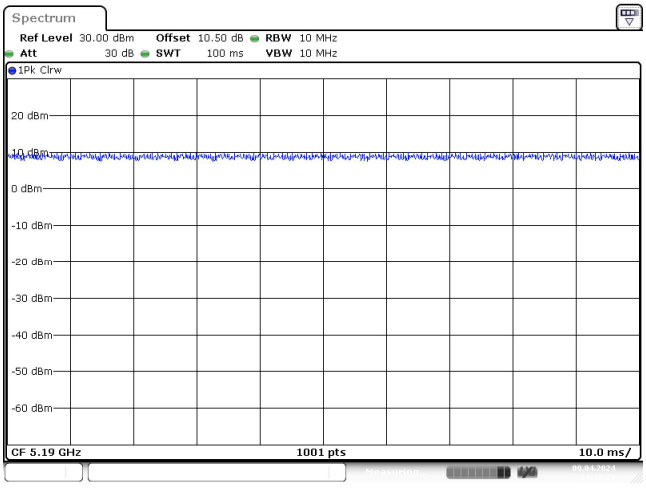
Date: 9.APR.2024 12:25:55

802.11ac20



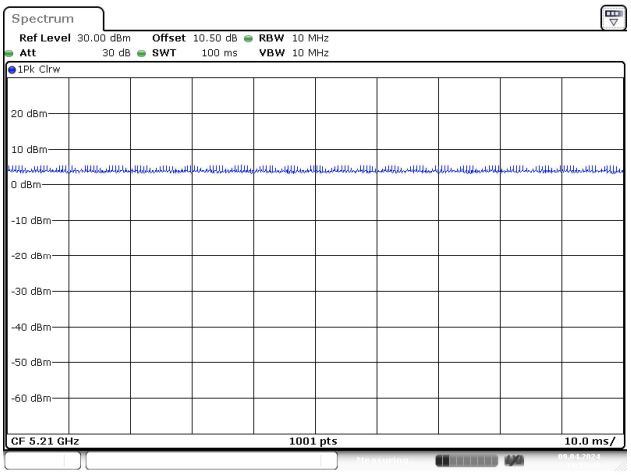
Date: 9.APR.2024 14:21:08

802.11ac40



Date: 9.APR.2024 14:32:29

802.11ac80



Date: 9.APR.2024 14:12:48

Test Modes	802.11a	802.11ac20	802.11ac40	802.11ac80
Duty Cycle(%)	100%	100%	100%	100%
Duty Factor	1.0	1.0	1.0	1.0

WiFi 2.4G Conducted Power Table(Peak):

Mode	Channel	Freq.(MHz)	Model:WiFiHU52E-T Conducted Power (Peak/dBm)	Model:WiFiHU52E Conducted Power (Peak/dBm)
802.11b	1	2412	23.01	23.00
	6	2437	23.04	23.04
	11	2462	22.85	22.84
802.11g	1	2412	23.86	23.85
	6	2437	24.15	24.14
	11	2462	24.09	24.08
802.11nHT20	1	2412	22.42	22.41
	6	2437	22.49	22.49
	11	2462	22.18	22.17
802.11nHT40	3	2422	22.42	22.41
	6	2437	22.51	22.51
	9	2452	22.30	22.29

WiFi 2.4G Conducted Power Table(Avg):

Mode	Channel	Freq.(MHz)	Model:WiFiHU52E-T Conducted Power (Avg/dBm)	Model:WiFiHU52E Conducted Power (Avg/dBm)
802.11b	1	2412	20.97	20.96
	6	2437	20.98	20.99
	11	2462	20.59	20.60
802.11g	1	2412	15.13	15.12
	6	2437	15.89	15.88
	11	2462	15.78	15.77
802.11nHT20	1	2412	13.70	13.68
	6	2437	13.72	13.72
	11	2462	13.47	13.46
802.11nHT40	3	2422	13.65	13.65
	6	2437	13.75	13.74
	9	2452	13.63	13.63

WiFi 2.4GHz Maximum Target Output Power:

Maximum Target Power for Avg(dBm)			
Mode	Channel 1 / 2412MHz	Channel 6 / 2437MHz	Channel 11 / 2462MHz
802.11b	21	21	21
802.11g	16	16	16
802.11n HT20	14	14	14
802.11n HT40	14	14	14

WiFi 5G Conducted Power Table(Avg):

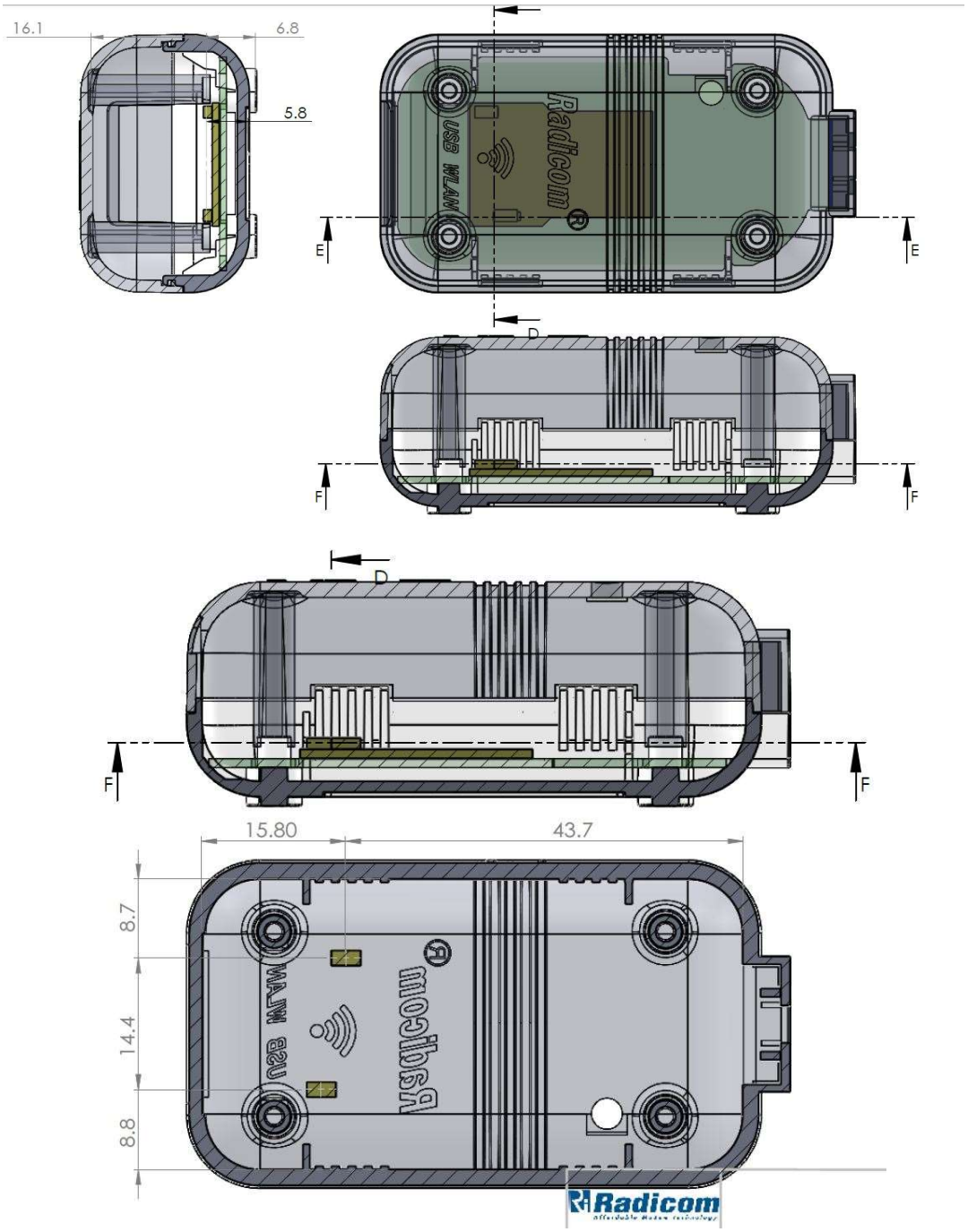
Mode	Channel	Frequency (MHz)	Model:WiFiHU52E-T Conducted Power (Avg/dBm)	Model:WiFiHU52E Conducted Power (Avg/dBm)
802.11a	36	5180	15.42	15.40
	40	5200	15.88	15.87
	48	5240	15.86	15.84
	149	5745	16.82	16.81
	157	5785	16.88	16.87
	165	5825	16.85	16.83
802.11n HT20	36	5180	15.66	15.63
	40	5200	16.19	16.17
	48	5240	16.13	16.11
	149	5745	17.21	17.19
	157	5785	17.25	17.23
	165	5825	17.19	17.17
802.11n HT40	38	5190	12.68	12.66
	46	5230	13.02	13.01
	151	5755	14.26	14.24
	159	5795	14.17	14.15
802.11acVHT20	36	5180	15.70	15.68
	40	5200	16.34	16.32
	48	5240	16.33	16.29
	149	5745	17.30	17.33
	157	5785	17.35	17.34
	165	5825	17.25	17.22
802.11acVHT40	38	5190	12.73	12.72
	46	5230	13.08	13.06
	151	5755	14.31	14.29
	159	5795	14.28	14.26
802.11acVHT80	42	5210	10.75	10.72
	155	5775	12.25	12.23

WiFi 5GHz Maximum Target Output Power:

Maximum Target Power for Avg(dBm)			
Mode	**Low Channel**	**Middle Channel**	**High Channel**
802.11a UNII-1	16	16	16
802.11a UNII-3	17	17	17
802.11n HT20 UNII-1	16.5	16.5	16.5
802.11n HT20 UNII-3	17.5	17.5	17.5
802.11n HT40 UNII-1	13.5	---	13.5
802.11n HT40 UNII-3	14.5	---	14.5
802.11ac VHT20 UNII-1	16.5	16.5	16.5
802.11ac VHT20 UNII-3	17.5	17.5	17.5
802.11ac VHT40 UNII-1	13.5	---	13.5
802.11ac VHT40 UNII-3	14.5	---	14.5
802.11an VHT80 UNII-1	11	---	---
802.11an VHT80 UNII-3	---	---	12.5

STANDALONE SAR TEST EXCLUSION CONSIDERATIONS

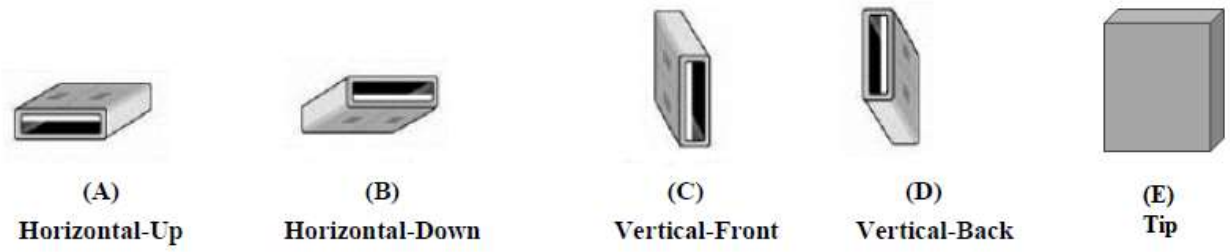
Antennas Location for EUT:



	Horizontal Up	Horizontal Down	Vertical Front	Vertical Back	Tip
2.4GHz ant. To edge distance	6.8	16.1	8.7	23.2	15.8
5GHz ant. To edge distance	6.8	16.1	23.1	8.8	14.2
					unit：mm

SAR test confoguration:

USB dongle SAR testing is according KDB 447498 D02 SAR Procedures for Dongle Xmtr and add Tip position. USB dongle transmitters must show compliance at a test separation distance of 5 mm. SAR setup photo please refer to the Attachment “APPENDIX B EUT TEST POSITION PHOTOS”. SAR test position as:



(A) Horizontal-Up (B) Horizontal-Down (C) Vertical-Front (D) Vertical-Back (E) Tip

SAR MEASUREMENT RESULTS

This page summarizes the results of the performed diametric evaluation.

During SAR testing use a 0.3M high quality USB cable for testing these other orientations, and that the USB cable does not influence the radiating characteristics and output power of the transmitter.

For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to “1/(duty cycle)”.

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

For WLAN, Reported SAR(W/kg) = Measured SAR(W/kg) * Duty Cycle scaling factor * Scaling factor.

For WiFi 5GHz have 802.11a, 802.11n HT20/HT40, 802.11acVHT20/VHT40 and 802.11ac VHT80 mode, according “KDB 248227 D01 802.11 Wi-Fi SAR v02r02” test 802.11a, 802.11ac VHT20 and 802.11ac VHT80 mode.
802.11ac VHT80 mode only verify testing 5GHz worst SAR.

SAR Test Data

Environmental Conditions

Test Date	2024/05/10	2024/05/16	2024/05/17
7Freq. Band(MHz)	2450	5250/5800	5250/5800
Temperature	23.6℃	23.2℃	20.6℃
Relative Humidity	58%	62%	63%
Test Engineer	Anson Lu	Anson Lu	Anson Lu

Test Date	2024/05/20	2024/05/22	2024/05/23
7Freq. Band(MHz)	2450	5250/5800	5250/5800
Temperature	22.3℃	22.7℃	23.9℃
Relative Humidity	62%	73%	71%
Test Engineer	Anson Lu	Anson Lu	Anson Lu

WLAN 2.4GHz (Model：WiFiHU52E-T)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Horizontal Up	802.11b	2437	20.98	21.00	1.005	100%	1	0.240	0.241	1.6	1
Horizontal Up	802.11b	2412	20.97	21.00	1.007	100%	1	0.286	0.288	1.6	1-1
Horizontal Up	802.11b	2462	20.59	21.00	1.099	100%	1	0.245	0.269	1.6	1-2
Horizontal Down	802.11b	2437	20.98	21.00	1.005	100%	1	0.048	0.048	1.6	2
Vertical Front	802.11b	2437	20.98	21.00	1.005	100%	1	0.080	0.080	1.6	3
Vertical Back	802.11b	2437	20.98	21.00	1.005	100%	1	0.111	0.112	1.6	4
Tip	802.11b	2437	20.98	21.00	1.005	100%	1	0.050	0.050	1.6	5

Note:

0) SAR testing date 2024/05/10 and using HSL 2450 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

WLAN 5.2GHz (Model：WiFiHU52E-T)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Horizontal Up	802.11 ac20	5200	16.34	16.50	1.038	100%	1	0.629	0.653	1.6	11
Horizontal Down	802.11 ac20	5200	16.34	16.50	1.038	100%	1	0.054	0.056	1.6	12
Vertical Front	802.11 ac20	5200	16.34	16.50	1.038	100%	1	0.728	0.756	1.6	13
Vertical Back	802.11 ac20	5200	16.34	16.50	1.038	100%	1	0.322	0.334	1.6	14
Tip	802.11 ac20	5200	16.34	16.50	1.038	100%	1	0.163	0.169	1.6	15
Vertical Front	802.11 ac20	5180	15.70	16.50	1.202	100%	1	0.711	0.855	1.6	16
Vertical Front	802.11 ac20	5180	15.70	16.50	1.202	100%	1	0.665	0.799	1.6	16-1
Vertical Front	802.11 ac20	5240	16.33	16.50	1.04	100%	1	0.886	0.921	1.6	17
Vertical Front	802.11 ac20	5240	16.33	16.50	1.04	100%	1	0.813	0.846	1.6	17-1

Note:

0) SAR testing date 2024/05/16 and using HSL 5G-1 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

WLAN 5.8GHz (Model：WiFiHU52E-T)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Horizontal Up	802.11 ac20	5785	17.35	17.50	1.035	100%	1	0.217	0.225	1.6	21
Horizontal Down	802.11 ac20	5785	17.35	17.50	1.035	100%	1	0.023	0.024	1.6	22
Vertical Front	802.11 ac20	5785	17.35	17.50	1.035	100%	1	0.695	0.719	1.6	23
Vertical Back	802.11 ac20	5785	17.35	17.50	1.035	100%	1	0.131	0.136	1.6	24
Tip	802.11 ac20	5785	17.35	17.50	1.035	100%	1	0.180	0.186	1.6	25
Vertical Front	802.11 ac20	5745	17.30	17.50	1.047	100%	1	0.846	0.886	1.6	26
Vertical Front	802.11 ac20	5745	17.30	17.50	1.047	100%	1	0.757	0.793	1.6	26-1
Vertical Front	802.11 ac20	5825	17.25	17.50	1.059	100%	1	0.648	0.686	1.6	27

Note:

0) SAR testing date 2024/05/16 and using HSL 5G-1 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

WLAN 5.2GHz (Model：WiFiHU52E-T)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Horizontal Up	802.11a	5200	15.88	16.00	1.028	100%	1	0.607	0.624	1.6	31
Horizontal Down	802.11a	5200	15.88	16.00	1.028	100%	1	0.053	0.054	1.6	32
Vertical Front	802.11a	5200	15.88	16.00	1.028	100%	1	0.711	0.731	1.6	33
Vertical Back	802.11a	5200	15.88	16.00	1.028	100%	1	0.307	0.316	1.6	34
Tip	802.11a	5200	15.88	16.00	1.028	100%	1	0.161	0.166	1.6	35
Vertical Front	802.11a	5180	15.42	16.00	1.143	100%	1	0.642	0.734	1.6	36
Vertical Front	802.11a	5240	15.86	16.00	1.033	100%	1	0.793	0.819	1.6	37
Vertical Front	802.11a	5240	15.86	16.00	1.033	100%	1	0.780	0.806	1.6	37-1

Note:

0) SAR testing date 2024/05/17 and using HSL 5G-2 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

WLAN 5.8GHz (Model：WiFiHU52E-T)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Horizontal Up	802.11a	5785	16.88	17.00	1.028	100%	1	0.210	0.216	1.6	41
Horizontal Down	802.11a	5785	16.88	17.00	1.028	100%	1	0.042	0.043	1.6	42
Vertical Front	802.11a	5785	16.88	17.00	1.028	100%	1	0.671	0.69	1.6	43
Vertical Back	802.11a	5785	16.88	17.00	1.028	100%	1	0.153	0.157	1.6	44
Tip	802.11a	5785	16.88	17.00	1.028	100%	1	0.169	0.174	1.6	45
Vertical Front	802.11a	5745	16.82	17.00	1.042	100%	1	0.725	0.755	1.6	46
Vertical Front	802.11a	5825	16.85	17.00	1.035	100%	1	0.555	0.574	1.6	47

Note:

0) SAR testing date 2024/05/17 and using HSL 5G-2 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

WLAN 5.2GHz (Model：WiFiHU52E-T)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Vertical Front	802.11 ac80	5210	10.75	11.00	1.059	100%	1	0.254	0.269	1.6	51

WLAN 5.8GHz (Model：WiFiHU52E-T)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Vertical Front	802.11 ac80	5775	12.25	12.50	1.059	100%	1	0.219	0.232	1.6	52

Note:

0) SAR testing date 2024/05/17 and using HSL 5G-2 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

WLAN 2.4GHz (Model：WiFiHU52E)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Horizontal Up	802.11b	2437	20.99	21.00	1.002	100%	1	0.255	0.256	1.6	61
Horizontal Down	802.11b	2437	20.99	21.00	1.002	100%	1	0.054	0.054	1.6	62
Vertical Front	802.11b	2437	20.99	21.00	1.002	100%	1	0.073	0.073	1.6	63
Vertical Back	802.11b	2437	20.99	21.00	1.002	100%	1	0.077	0.077	1.6	64
Tip	802.11b	2437	20.99	21.00	1.002	100%	1	0.069	0.069	1.6	65
Horizontal Up	802.11b	2412	20.96	21.00	1.009	100%	1	0.262	0.264	1.6	66
Horizontal Up	802.11b	2462	20.60	21.00	1.096	100%	1	0.239	0.262	1.6	67

Note:

0) SAR testing date 2024/05/20 and using HSL 2450-2 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

WLAN 5.2GHz (Model：WiFiHU52E)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Horizontal Up	802.11 ac20	5200	16.32	16.50	1.042	100%	1	0.689	0.718	1.6	71
Horizontal Down	802.11 ac20	5200	16.32	16.50	1.042	100%	1	0.126	0.131	1.6	72
Vertical Front	802.11 ac20	5200	16.32	16.50	1.042	100%	1	0.806	0.84	1.6	73
Vertical Front	802.11 ac20	5200	16.32	16.50	1.042	100%	1	0.8	0.834	1.6	73-1
Vertical Back	802.11 ac20	5200	16.32	16.50	1.042	100%	1	0.329	0.343	1.6	74
Tip	802.11 ac20	5200	16.32	16.50	1.042	100%	1	0.237	0.247	1.6	75
Vertical Front	802.11 ac20	5180	15.68	16.50	1.208	100%	1	0.722	0.872	1.6	76
Vertical Front	802.11 ac20	5180	15.68	16.50	1.208	100%	1	0.715	0.864	1.6	76-1
Vertical Front	802.11 ac20	5240	16.29	16.50	1.05	100%	1	0.883	0.927	1.6	77
Vertical Front	802.11 ac20	5240	16.29	16.50	1.05	100%	1	0.88	0.924	1.6	77-1

Note:

0) SAR testing date 2024/05/22 and using HSL 5G-3 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

WLAN 5.8GHz (Model：WiFiHU52E)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Horizontal Up	802.11 ac20	5785	17.34	17.50	1.038	100%	1	0.341	0.354	1.6	81
Horizontal Down	802.11 ac20	5785	17.34	17.50	1.038	100%	1	0.071	0.074	1.6	82
Vertical Front	802.11 ac20	5785	17.34	17.50	1.038	100%	1	0.880	0.913	1.6	83
Vertical Front	802.11 ac20	5785	17.34	17.50	1.038	100%	1	0.876	0.909	1.6	83-1
Vertical Back	802.11 ac20	5785	17.34	17.50	1.038	100%	1	0.208	0.216	1.6	84
Tip	802.11 ac20	5785	17.34	17.50	1.038	100%	1	0.180	0.187	1.6	85
Vertical Front	802.11 ac20	5745	17.33	17.50	1.04	100%	1	0.923	0.96	1.6	86
Vertical Front	802.11 ac20	5745	17.33	17.50	1.04	100%	1	0.909	0.945	1.6	86-1
Vertical Front	802.11 ac20	5825	17.22	17.50	1.067	100%	1	0.673	0.718	1.6	87

Note:

0) SAR testing date 2024/05/22 and using HSL 5G-3 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

WLAN 5.2GHz (Model：WiFiHU52E)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Horizontal Up	802.11a	5200	15.87	16.00	1.03	100%	1	0.569	0.586	1.6	91
Horizontal Down	802.11a	5200	15.87	16.00	1.03	100%	1	0.098	0.101	1.6	92
Vertical Front	802.11a	5200	15.87	16.00	1.03	100%	1	0.685	0.706	1.6	93
Vertical Back	802.11a	5200	15.87	16.00	1.03	100%	1	0.362	0.373	1.6	94
Tip	802.11a	5200	15.87	16.00	1.03	100%	1	0.235	0.242	1.6	95
Vertical Front	802.11a	5180	15.40	16.00	1.148	100%	1	0.608	0.698	1.6	96
Vertical Front	802.11a	5240	15.84	16.00	1.038	100%	1	0.776	0.805	1.6	97

Note:

0) SAR testing date 2024/05/23 and using HSL 5G-4 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

WLAN 5.8GHz (Model：WiFiHU52E)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Horizontal Up	802.11a	5785	16.87	17.00	1.03	100%	1	0.288	0.297	1.6	101
Horizontal Down	802.11a	5785	16.87	17.00	1.03	100%	1	0.054	0.056	1.6	102
Vertical Front	802.11a	5785	16.87	17.00	1.03	100%	1	0.745	0.767	1.6	103
Vertical Back	802.11a	5785	16.87	17.00	1.03	100%	1	0.118	0.122	1.6	104
Tip	802.11a	5785	16.87	17.00	1.03	100%	1	0.171	0.176	1.6	105
Vertical Front	802.11a	5745	16.81	17.00	1.045	100%	1	0.808	0.844	1.6	106
Vertical Front	802.11a	5745	16.81	17.00	1.045	100%	1	0.808	0.844	1.6	106-1
Vertical Front	802.11a	5825	16.83	17.00	1.04	100%	1	0.618	0.643	1.6	107

Note:

0) SAR testing date 2024/05/23 and using HSL 5G-4 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

WLAN 5.2GHz (Model：WiFiHU52E)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Vertical Front	802.11 ac80	5210	10.72	11.00	1.067	100%	1	0.200	0.213	1.6	111

WLAN 5.8GHz (Model：WiFiHU52E)：

EUT Position	Test Mode	Freq. (MHz)	Maxi. Meas. Power (dBm)	Maxi. Rated Power (dBm)	Scaled Factor	1g SAR (W/Kg)					
						Duty Cycle(%)	Duty Factor	Meas. SAR	Scaled SAR	Limit	Plot
Vertical Front	802.11 ac80	5775	12.23	12.50	1.064	100%	1	0.234	0.249	1.6	112

Note:

0) SAR testing date 2024/05/23 and using HSL 5G-4 Medium.

1) Maxi. meas. Power is using time based Avg power.

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

3) According KDB865664 D01 Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%.

SAR correction for deviations of complex permittivity from targets

In this standard, dielectric parameters of the tissue-equivalent liquid used for SAR measurement are chosen so as to give an SAR value that is conservative with respect to the exposure in a person. Deviations of the dielectric parameters from the target values can lead to measurement uncertainty. One way to reduce measurement uncertainty is to keep the dielectric parameters of the tissue-equivalent liquids within a tight tolerance of the targets (e.g., within ± 5 %). However, it can be difficult to find suitable and stable liquid recipes whose dielectric parameters are close to the targets, particularly at frequencies above 2 GHz. There are three solutions to this problem:
a) change the target dielectric parameters to match those of available liquid recipes;
b) widen the tolerance (without correcting the SAR for the deviation in dielectric parameters);
c) allow a wider tolerance, and correct the SAR for the deviation of the measured dielectric parameters from the target values.
The third solution is the best because changing the targets may restrict the standard to particular liquid recipes, and simply widening the tolerance increases the measurement uncertainty.

$$\Delta SAR = c_\varepsilon \Delta\varepsilon_r + c_\sigma \Delta\sigma \quad (F.1)$$

$$c_\varepsilon = -7{,}854\times10^{-4} f^3 + 9{,}402\times10^{-3} f^2 - 2{,}742\times10^{-2} f - 0{,}202\,6 \quad (F.2)$$

$$c_\sigma = 9{,}804\times10^{-3} f^3 - 8{,}661\times10^{-2} f^2 + 2{,}981\times10^{-2} f + 0{,}782\,9 \quad (F.3)$$

$$c_\varepsilon = 3{,}456\times10^{-3} f^3 - 3{,}531\times10^{-2} f^2 + 7{,}675\times10^{-2} f - 0{,}186\,0 \quad (F.4)$$

$$c_\sigma = 4{,}479\times10^{-3} f^3 - 1{,}586\times10^{-2} f^2 - 0{,}197\,2 f + 0{,}771\,7 \quad (F.5)$$

Model：WiFiHU52E-T

Freq. (MHz)	δ	εr	Target δ	Target εr	Δδ %	Δεr %	Cε 1g	Cδ 1g	ΔSAR 1g	Scale SAR 1g	Corr. SAR 1g	SAR Plot
2437	1.735	41.479	1.79	39.21	-3.07	5.79	-0.225	0.483	-2.78556	0.241	0.248	1
2412	1.707	41.518	1.77	39.27	-3.56	5.72	-0.225	0.489	-3.02784	0.288	0.297	1-1
2462	1.749	41.481	1.82	39.17	-3.9	5.9	-0.225	0.478	-3.1917	0.269	0.278	1-2
2437	1.735	41.479	1.79	39.21	-3.07	5.79	-0.225	0.483	-2.78556	0.048	0.049	2
2437	1.735	41.479	1.79	39.21	-3.07	5.79	-0.225	0.483	-2.78556	0.08	0.082	3
2437	1.735	41.479	1.79	39.21	-3.07	5.79	-0.225	0.483	-2.78556	0.112	0.115	4
2437	1.735	41.479	1.79	39.21	-3.07	5.79	-0.225	0.483	-2.78556	0.05	0.051	5
5200	4.61	37.055	4.66	36	-1.07	2.93	-0.201	-0.026	-0.56111	0.653	0.657	11
5200	4.61	37.055	4.66	36	-1.07	2.93	-0.201	-0.026	-0.56111	0.056	0.056	12
5200	4.61	37.055	4.66	36	-1.07	2.93	-0.201	-0.026	-0.56111	0.756	0.76	13

5200	4.61	37.055	4.66	36	-1.07	2.93	-0.201	-0.026	-0.56111	0.334	0.336	14
5200	4.61	37.055	4.66	36	-1.07	2.93	-0.201	-0.026	-0.56111	0.169	0.17	15
5180	4.575	37.094	4.64	36.02	-1.4	2.98	-0.202	-0.024	-0.56836	0.855	0.86	16
5180	4.575	37.094	4.64	36.02	-1.4	2.98	-0.202	-0.024	-0.56836	0.799	0.804	16-1
5240	4.667	36.954	4.7	35.96	-0.7	2.76	-0.201	-0.028	-0.53516	0.921	0.926	17
5240	4.667	36.954	4.7	35.96	-0.7	2.76	-0.201	-0.028	-0.53516	0.846	0.851	17-1
5785	5.371	35.903	5.26	35.32	2.11	1.65	-0.199	-0.045	-0.4233	0.225	0.226	21
5785	5.371	35.903	5.26	35.32	2.11	1.65	-0.199	-0.045	-0.4233	0.024	0.024	22
5785	5.371	35.903	5.26	35.32	2.11	1.65	-0.199	-0.045	-0.4233	0.719	0.722	23
5785	5.371	35.903	5.26	35.32	2.11	1.65	-0.199	-0.045	-0.4233	0.136	0.137	24
5785	5.371	35.903	5.26	35.32	2.11	1.65	-0.199	-0.045	-0.4233	0.186	0.187	25
5745	5.312	35.931	5.22	35.36	1.76	1.61	-0.199	-0.045	-0.39959	0.886	0.89	26
5745	5.312	35.931	5.22	35.36	1.76	1.61	-0.199	-0.045	-0.39959	0.793	0.796	26-1
5825	5.426	35.79	5.3	35.28	2.38	1.45	-0.199	-0.044	-0.39327	0.686	0.689	27
5200	4.738	38.564	4.66	36	1.67	7.12	-0.201	-0.026	-1.47454	0.624	0.633	31
5200	4.738	38.564	4.66	36	1.67	7.12	-0.201	-0.026	-1.47454	0.054	0.055	32
5200	4.738	38.564	4.66	36	1.67	7.12	-0.201	-0.026	-1.47454	0.731	0.742	33
5200	4.738	38.564	4.66	36	1.67	7.12	-0.201	-0.026	-1.47454	0.316	0.321	34
5200	4.738	38.564	4.66	36	1.67	7.12	-0.201	-0.026	-1.47454	0.166	0.168	35
5180	4.702	38.606	4.64	36.02	1.34	7.18	-0.202	-0.024	-1.48252	0.734	0.745	36
5240	4.797	38.463	4.7	35.96	2.06	6.96	-0.201	-0.028	-1.45664	0.819	0.831	37
5240	4.797	38.463	4.7	35.96	2.06	6.96	-0.201	-0.028	-1.45664	0.806	0.818	37-1
5785	5.523	37.382	5.26	35.32	5	5.84	-0.199	-0.045	-1.38716	0.216	0.219	41
5785	5.523	37.382	5.26	35.32	5	5.84	-0.199	-0.045	-1.38716	0.043	0.044	42
5785	5.523	37.382	5.26	35.32	5	5.84	-0.199	-0.045	-1.38716	0.69	0.7	43
5785	5.523	37.382	5.26	35.32	5	5.84	-0.199	-0.045	-1.38716	0.157	0.159	44
5785	5.523	37.382	5.26	35.32	5	5.84	-0.199	-0.045	-1.38716	0.174	0.176	45
5745	5.464	37.414	5.22	35.36	4.67	5.81	-0.199	-0.045	-1.36634	0.755	0.765	46
5825	5.581	37.262	5.3	35.28	5.3	5.62	-0.199	-0.044	-1.35158	0.574	0.582	47
5210	4.746	38.553	4.67	35.99	1.63	7.12	-0.201	-0.026	-1.4735	0.269	0.273	51
5775	5.521	37.385	5.25	35.33	5.16	5.82	-0.199	-0.045	-1.39038	0.232	0.235	52

Model：WiFiHU52E

Freq. (MHz)	δ	εr	Target δ	Target εr	△δ %	△εr %	Cε 1g	Cδ 1g	△SAR 1g	Scale SAR 1g	Corr. SAR 1g	SAR Plot
2437	1.741	41.73	1.79	39.21	-2.74	6.43	-0.225	0.483	-2.77017	0.256	0.263	61
2437	1.741	41.73	1.79	39.21	-2.74	6.43	-0.225	0.483	-2.77017	0.054	0.055	62
2437	1.741	41.73	1.79	39.21	-2.74	6.43	-0.225	0.483	-2.77017	0.073	0.075	63
2437	1.741	41.73	1.79	39.21	-2.74	6.43	-0.225	0.483	-2.77017	0.077	0.079	64
2437	1.741	41.73	1.79	39.21	-2.74	6.43	-0.225	0.483	-2.77017	0.069	0.071	65
2412	1.714	41.764	1.77	39.27	-3.16	6.35	-0.225	0.489	-2.97399	0.264	0.272	66
2462	1.755	41.728	1.82	39.17	-3.57	6.53	-0.225	0.478	-3.17571	0.262	0.27	67
5200	4.802	39.229	4.66	36	3.05	8.97	-0.201	-0.026	-1.88227	0.718	0.732	71
5200	4.802	39.229	4.66	36	3.05	8.97	-0.201	-0.026	-1.88227	0.131	0.133	72
5200	4.802	39.229	4.66	36	3.05	8.97	-0.201	-0.026	-1.88227	0.84	0.856	73
5200	4.802	39.229	4.66	36	3.05	8.97	-0.201	-0.026	-1.88227	0.834	0.85	73-1
5200	4.802	39.229	4.66	36	3.05	8.97	-0.201	-0.026	-1.88227	0.343	0.349	74
5200	4.802	39.229	4.66	36	3.05	8.97	-0.201	-0.026	-1.88227	0.247	0.252	75
5180	4.766	39.267	4.64	36.02	2.72	9.01	-0.202	-0.024	-1.8853	0.872	0.888	76
5180	4.766	39.267	4.64	36.02	2.72	9.01	-0.202	-0.024	-1.8853	0.864	0.88	76-1
5240	4.861	39.124	4.7	35.96	3.43	8.8	-0.201	-0.028	-1.86484	0.927	0.944	77
5240	4.861	39.124	4.7	35.96	3.43	8.8	-0.201	-0.028	-1.86484	0.924	0.941	77-1
5785	5.599	38.023	5.26	35.32	6.44	7.65	-0.199	-0.045	-1.81215	0.354	0.36	81
5785	5.599	38.023	5.26	35.32	6.44	7.65	-0.199	-0.045	-1.81215	0.074	0.075	82
5785	5.599	38.023	5.26	35.32	6.44	7.65	-0.199	-0.045	-1.81215	0.913	0.93	83
5785	5.599	38.023	5.26	35.32	6.44	7.65	-0.199	-0.045	-1.81215	0.909	0.925	83-1
5785	5.599	38.023	5.26	35.32	6.44	7.65	-0.199	-0.045	-1.81215	0.216	0.22	84
5785	5.599	38.023	5.26	35.32	6.44	7.65	-0.199	-0.045	-1.81215	0.187	0.19	85
5745	5.539	38.056	5.22	35.36	6.11	7.62	-0.199	-0.045	-1.79133	0.96	0.977	86
5745	5.539	38.056	5.22	35.36	6.11	7.62	-0.199	-0.045	-1.79133	0.945	0.962	86-1
5825	5.658	37.908	5.3	35.28	6.75	7.45	-0.199	-0.044	-1.77955	0.718	0.731	87
5200	4.823	38.933	4.66	36	3.5	8.15	-0.201	-0.026	-1.72915	0.586	0.596	91
5200	4.823	38.933	4.66	36	3.5	8.15	-0.201	-0.026	-1.72915	0.101	0.103	92
5200	4.823	38.933	4.66	36	3.5	8.15	-0.201	-0.026	-1.72915	0.706	0.718	93
5200	4.823	38.933	4.66	36	3.5	8.15	-0.201	-0.026	-1.72915	0.373	0.379	94
5200	4.823	38.933	4.66	36	3.5	8.15	-0.201	-0.026	-1.72915	0.242	0.246	95
5180	4.787	38.977	4.64	36.02	3.17	8.21	-0.202	-0.024	-1.7345	0.698	0.71	96
5240	4.884	38.833	4.7	35.96	3.91	7.99	-0.201	-0.028	-1.71547	0.805	0.819	97
5785	5.623	37.73	5.26	35.32	6.9	6.82	-0.199	-0.045	-1.66768	0.297	0.302	101
5785	5.623	37.73	5.26	35.32	6.9	6.82	-0.199	-0.045	-1.66768	0.056	0.057	102
5785	5.623	37.73	5.26	35.32	6.9	6.82	-0.199	-0.045	-1.66768	0.767	0.78	103
5785	5.623	37.73	5.26	35.32	6.9	6.82	-0.199	-0.045	-1.66768	0.122	0.124	104

5785	5.623	37.73	5.26	35.32	6.9	6.82	-0.199	-0.045	-1.66768	0.176	0.179	105
5745	5.564	37.758	5.22	35.36	6.59	6.78	-0.199	-0.045	-1.64577	0.844	0.858	106
5745	5.564	37.758	5.22	35.36	6.59	6.78	-0.199	-0.045	-1.64577	0.844	0.858	106-1
5825	5.682	37.603	5.3	35.28	7.21	6.58	-0.199	-0.044	-1.62666	0.643	0.653	107
5210	4.833	38.921	4.67	35.99	3.49	8.14	-0.201	-0.026	-1.72688	0.213	0.217	111
5775	5.621	37.736	5.25	35.33	7.07	6.81	-0.199	-0.045	-1.67334	0.249	0.253	112

SAR SIMULTANEOUS TRANSMISSION DESCRIPTION

Simultaneous Transmission:

Description of Simultaneous Transmit Capabilities	
Transmitter Combination	**Simultaneous?**
WLAN 2.4GHz	×
WLAN 5GHz	×

Conclusion:

WLAN 2.4GHz and 5GHz can’t simultaneous.

APPENDIX A MEASUREMENT UNCERTAINTY

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

SAR Uncertainty Budget
According to IEC/IEEE 62209-1528
(Frequency band: 300MHz - 3GHz range)

Symbol	Input quantity X_i (source of uncertainty)	Unc. Value	Prob. Dist.	Div.	ci (1g)	ci (10g)	Std.Unc. (1g) (±%)	Std.Unc. (10g) (±%)	Ref.
Measurement system errors									
CF	Probe calibration(±%)	12.0	N	2	1	1	6.0	6.0	8.4.1.1
CF_{drift}	Probe calibration drift(±%)	1.7	R	√3	1	1	1.0	1.0	8.4.1.2
LIN	Probe linearity and detection limit(±%)	4.7	R	√3	1	1	2.7	2.7	8.4.1.3
BBS	Broadband signal(±%)	3.0	R	√3	1	1	1.7	1.7	8.4.1.4
ISO	Probe isotropy(±%)	7.6	R	√3	1	1	4.4	4.4	8.4.1.5
DAE	Other probe and data acquisition errors(±%)	0.3	N	1	1	1	0.3	0.3	8.4.1.6
AMB	RF ambient and noise(±%)	1.8	N	1	1	1	1.8	1.8	8.4.1.7
Δ_{pos}	Probe positioning errors(±mm)	0.006	N	1	0.14	0.14	0.08	0.08	8.4.1.8
DAT	Data processing errors(±%)	1.2	N	1	1	1	1.2	1.2	8.4.1.9
Phantom and device (DUT or validation antenna) errors									
$LI(\sigma)$	Conductivity (meas.)(±%)	2.5	N	1	0.78	0.71	2.0	1.8	8.4.2.1
$LI(T_c)$	Conductivity (temp.)(±%)	3.2	R	√3	0.78	0.71	1.4	1.3	8.4.2.2
EPS	Phantom Permittivity(±%)	14	R	√3	0	0	0.0	0.0	8.4.2.3
DIS	Distance DUT - TSL(±%)	2	N	1	2	2	4.0	4.0	8.4.2.4
D_{pos}	Device Positioning(±%)	2.5	N	1	1	1	2.5	2.5	8.4.2.5
H	Device Holder(±%)	2.7	N	1	1	1	2.7	2.7	8.4.2.6
MOD	DUT Modulationm(±%)	2.4	R	√3	1	1	1.4	1.4	8.4.2.7
TAS	Time-average SAR(±%)	1.7	R	√3	1	1	1.0	1.0	8.4.2.8
RF_{drift}	DUT drift(±%)	5	N	1	1	1	5.0	5.0	8.4.2.9
VAL	Val Antenna Unc.(±%)	0	N	1	1	1	0.0	0.0	8.4.2.10
P_{in}	Unc. Input Power(±%)	0	N	1	1	1	0.0	0.0	8.4.2.11
Corrections to the SAR result									
$C(\varepsilon',\sigma)$	Deviation to Target(±%)	1.9	N	1	1	0.84	1.9	1.6	8.4.3.1
$C(R)$	SAR scaling(±%)	0	R	√3	1	1	0.0	0.0	8.4.3.2
$u(\Delta SAR)$	Combined uncertainty						11.8	11.7	
U	Expanded uncertainty					U =	23.5	23.3	

a Other probability distributions and divisors may be used if they better represent available knowledge of the quantities concerned.

SAR Uncertainty Budget
According to IEC/IEEE 62209-1528
(Frequency band: 3GHz - 6GHz range)

Symbol	Input quantity X_i (source of uncertainty)	Unc. Value	Prob. Dist.	Div.	ci (1g)	ci (10g)	Std.Unc. (1g) (±%)	Std.Unc. (10g) (±%)	Ref.
Measurement system errors									
CF	Probe calibration(±%)	13.1	N	2	1	1	6.6	6.6	8.4.1.1
CF_{drift}	Probe calibration drift(±%)	1.7	R	√3	1	1	1.0	1.0	8.4.1.2
LIN	Probe linearity and detection limit(±%)	4.7	R	√3	1	1	2.7	2.7	8.4.1.3
BBS	Broadband signal(±%)	2.6	R	√3	1	1	1.5	1.5	8.4.1.4
ISO	Probe isotropy(±%)	7.6	R	√3	1	1	4.4	4.4	8.4.1.5
DAE	Other probe and data acquisition errors(±%)	0.3	N	1	1	1	0.3	0.3	8.4.1.6
AMB	RF ambient and noise(±%)	1.8	N	1	1	1	1.8	1.8	8.4.1.7
Δ_{pos}	Probe positioning errors(±mm)	0.005	N	1	0.29	0.29	0.15	0.15	8.4.1.8
DAT	Data processing errors(±%)	2.3	N	1	1	1	2.3	2.3	8.4.1.9
Phantom and device (DUT or validation antenna) errors									
$LI(\sigma)$	Conductivity (meas.)(±%)	2.5	N	1	0.78	0.71	2.0	1.8	8.4.2.1
$LI(T_c)$	Conductivity (temp.)(±%)	2.5	R	√3	0.78	0.71	1.1	1.0	8.4.2.2
EPS	Phantom Permittivity(±%)	14	R	√3	0.25	0.25	2.0	2.0	8.4.2.3
DIS	Distance DUT - TSL(±%)	2	N	1	2	2	4.0	4.0	8.4.2.4
D_{pos}	Device Positioning(±%)	2.5	N	1	1	1	2.5	2.5	8.4.2.5
H	Device Holder(±%)	2.5	N	1	1	1	2.5	2.5	8.4.2.6
MOD	DUT Modulationm(±%)	2.4	R	√3	1	1	1.4	1.4	8.4.2.7
TAS	Time-average SAR(±%)	1.7	R	√3	1	1	1.0	1.0	8.4.2.8
RF_{drift}	DUT drift(±%)	5	N	1	1	1	5.0	5.0	8.4.2.9
VAL	Val Antenna Unc.(±%)	0	N	1	1	1	0.0	0.0	8.4.2.10
P_{in}	Unc. Input Power(±%)	0	N	1	1	1	0.0	0.0	8.4.2.11
Corrections to the SAR result									
$C(\varepsilon',\sigma)$	Deviation to Target(±%)	1.9	N	1	1	0.84	1.9	1.6	8.4.3.1
$C(R)$	SAR scaling(±%)	0	R	√3	1	1	0.0	0.0	8.4.3.2
$u(\Delta SAR)$	Combined uncertainty						12.3	12.2	
U	Expanded uncertainty					U =	24.5	24.4	

* Other probability distributions and divisors may be used if they better represent available knowledge of the quantities concerned.

APPENDIX B EUT TEST POSITION PHOTOS

Please Refer to the Attachment APPENDIX B EUT TEST POSITION PHOTOS_1210

APPENDIX C SAR PLOTS OF SAR MEASUREMENT

Please Refer to the Attachment APPENDIX C SAR PLOTS OF SAR MEASUREMEN_1210

APPENDIX D PROBE & DAE CALIBRATION CERTIFICATES

Please refer to the file document APPENDIX D PROBE and DAE CALIBRATION CERTIFICATES_1210

APPENDIX E DIPOLE CALIBRATION CERTIFICATES

Please refer to the file document APPENDIX E DIPOLE CALIBRATION CERTIFICATES_1210

******* END OF REPORT *******