Correction1:May 30,2025

No.: GJWSZ2025-0188-SAR

TEST REPORT

NAME OF SAMPLE	:	Camera
CLIENT	:	Arashi Vision Inc.
CLASSIFICATION OF TEST	:	N/A
FCC ID	:	2AWWH-CINSAAHA
Max. SAR (1g):	:	Body : **0.67** W/kg

CVC Testing Technology (Shenzhen) Co., Ltd.

检验检测专用章

Applicant	**Name :** Arashi Vision Inc. **Address :** 11th Floor, Building 2, Jinlitong Financial Center, Bao'an District, 518000 Shenzhen, Guangdong, China
Manufacturer	**Name :** Arashi Vision Inc. **Address :** 11th Floor, Building 2, Jinlitong Financial Center, Bao'an District, 518000 Shenzhen, Guangdong, China
Equipment Under Test	**Name :** Camera **Model/Type:** CINSAAHA **Trade mark :** Insta360 **SerialNO.:** GTS2024110147-6 **Sampe NO.:**1-1

Date of Receipt.	Mar.28,2025	Date of Testing	Apr.01,2025

Test Specification	**Test Result**
ANSI/IEEE Std. C95.1 FCC 47 CFR Part 2 (2.1093) IEEE 1528: 2013 Published RF exposure KDB procedures	Pass

Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied. Seal of CVC **Date of issue:Apr.08,2025,Correction 1:May.30,2025**

Compiled by:	Reviewed by:	Approved by:
Liang Jiatong	Mo Xianbiao	Dong Sanbi
Name Signature	Name Signature	Name Signature

Other Aspects: NONE.

Abbreviations: Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
GJWSZ2025-0188-SAR	Original release	Apr.08.2025
GJWSZ2025-0188-SAR	Modify the applicant's address and product name	May 30.2025

1 GENERAL INFORMATION

1.1 GENERAL PRODUCT INFORMATION

PRODUCT	Camera
BRAND	Insta360
MODEL	CINSAAHA
ADDITIONAL MODEL	CINSAAHY (where Y would be any English letters or blank, different packing method, model designations on the marking plate for different commercial purpose)
MODEL DIFFERENCES	Only model name is different
POWER SUPPLY	Rechargeable Li-ion Battery
MODULATION MODE	802.11b: DSSS WLAN 2.4G 802.11g/n (HT20): OFDM WLAN 5G 802.11a/n (HT20)/HT40 /ac(VHT80): OFDM Bluetooth GFSK, π/4-DQPSK, 8-DPSK
OPERATING FREQUENCY	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz to 2480 MHz
BATTERY	Rated Voltage:3.87V Charge Limit Voltage:4.50V Capacity: 2800mAh
ANTENNA TYPE	FPC Antenna
ANTENNA GAIN	2.4G:1.2dBi; 5.2G:2.6dBi; 5.8G:2.0dBi

Remark:

1. For more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.
2. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power
3. This is provided by the manufacturer. The laboratory is not responsible for technical data provided by the customer

1.2 TEST Environment

Ambient conditions in the SAR laboratory:

Items	Required
Temperature (℃)	20.8
Humidity (%RH)	47

1.3 TEST Location

The tests and measurements refer to this report were performed by EMC testing Lab. of CVC Testing Technology (Shenzhen) Co., Ltd.

Lab Address: No. 1301-14&16, Guanguang Road, Xinlan Community, Guanlan Subdistrict, Longhua District, Shenzhen, Guangdong,China
Post Code：518110 Tel：0755-23763060-8805
Fax：0755-23763060 E-mail：sz-kf@cvc.org.cn
FCC(Test firm designation number：CN1363)
IC(Test firm CAB identifier number：CN0137)
CNAS(Test firm designation number：L16091)

1.4 TEST Standards and Limits

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	ANSI/IEEE Std. C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	IEEE Std. 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
4	FCC KDB 447498 D01 v06	Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
5	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
6	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
7	FCC KDB 941225 D06 v02r01	SAR EVALUATION PROCEDURES FOR PORTABLE DEVICES WITH WIRELESS ROUTER CAPABILITIES
8	KDB 248227 D01 v02r02	802 11 Wi-Fi SAR
9	FCC KDB 447498 D04 v01	Interim General RF Exposure Guidance

(A). Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

(B). Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

NOTE: Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1 gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

Population/Uncontrolled Environments:

Are defined as locations where there is the exposure of individuals 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).

NOTE

GENERAL POPULATION/UNCONTROLLED EXPOSURE

PARTIAL BODY LIMIT

1.6 W/kg

1.5 STATEMENT of Compliance

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

Mode	Highest Reported Body SAR_{1g} (0 cm Gap) (W/kg)
2.4G WLAN	0.62
5.2G WLAN	0.56
5.8G WLAN	0.67
Bluetooth	0.10
Max. SAR	**0.67**

Note:

1. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6W/kg as averaged over any 1 gram of tissue; 10-gram SAR for Product Specific 10g SAR, limit: 4.0W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992 and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

2 SAR Measurement System

2.1 Definition of Specific Absorption Rate (SAR)

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

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

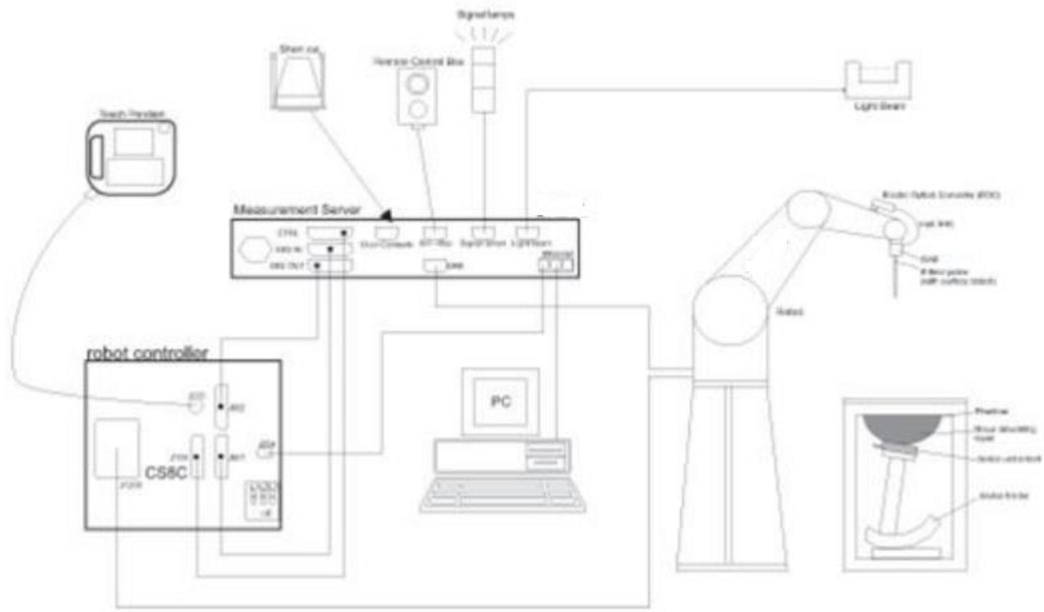
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

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

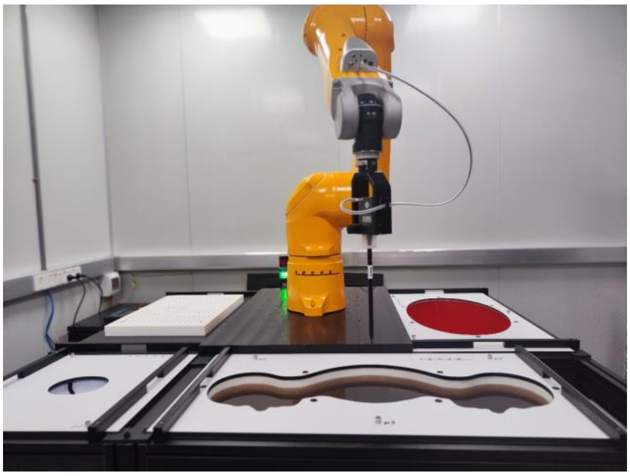
2.2 SAR System

DASY System Diagram:



DASY is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The DASY system consists of the following items:
- Main computer to control all the system
- 6 axis robot
- Data acquisition Electronics
- Miniature E-field probe
- Phone holder
- Head simulating tissue

The following figure shows the system.



The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The Open SAR software computes the results to give a SAR value in a 1g or 10g mass.

2.3 Probe

EX3DV4 – Smallest isotropic dosimetric probe for high precision SAR measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 10 GHz with a precision of better than 30%
- Frequency range: 4 MHz – 10 GHz
-Dynamic range: 0.01 W/kg – >100 W/kg
-Tip diameter: 2.5 mm
-Scanning distance: ≥1.4 mm

Figure 1-Speag COMOSAR Dosimetric E field Dipole

2.4 Date Acquisition Electronics 4 (DAE4)

High precision 3-channel differential voltmeter for use with SPEAG's field, SAR, and temperature probes. Serial optical link for communication with the DASY8 measurement server. Two-step probe touch detector for mechanical surface detection and emergency robot stop.
- Measurement range: -100 – +300 mV (16-bit resolution and two range settings: 4 mV, 400 mV)
- Input offset voltage: <5 µV (with auto zero)
- Input resistance: 200 MOhm
- Input bias current: <50 fA
- Battery power: >10 hours of operation (with two 9.6 V NiMH batteries)
- Dimensions (L × W × H): 60 × 60 × 68 mm
- Calibration: ISO/IEC 17025 calibration service available.

2.4.1 SAM-Twin Phantom

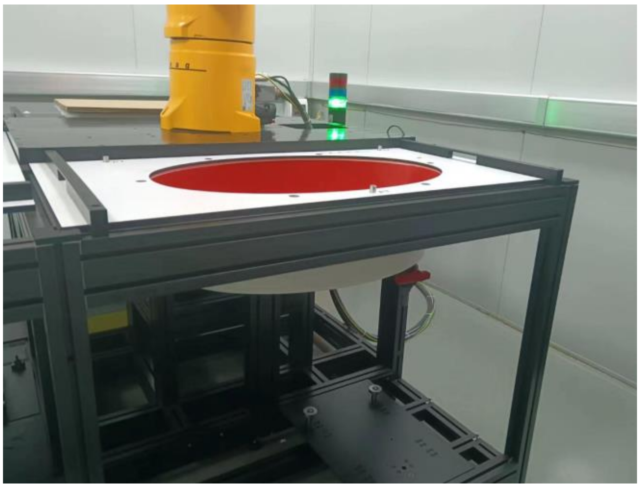
The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEC/IEEE 62209-1528. It enables the dosimetric evaluation of left and right hand phone usage as well as body-mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.SAM-Twin V5.0 and higher has the same shell geometry and is manufactured from the same material as SAM-Twin V4.0 but with reinforced top structure.

- Material: Vinyl ester, fiberglass reinforced (VE-GF)
- Shell Thickness: 2 ± 0.2 mm (6 ± 0.2 mm at ear point)
- Dimensions:Length: 1000 mm
  Width: 500 mm
  Height: adjustable feet

2.4.2 ELI Phantom

The ELI phantom is used for compliance testing of handheld and body-mounted wireless devices in the frequency range of 4 MHz to 10 GHz. ELI is fully compatible with the IEC/IEEE 62209-1528 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. 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 is compatible with all of SPEAG's dosimetric probes and dipoles.The latest ELI V8.0 phantom shell has optimized pretension in the bottom surface during production, such that the phantom is more robust and with reduced sagging.

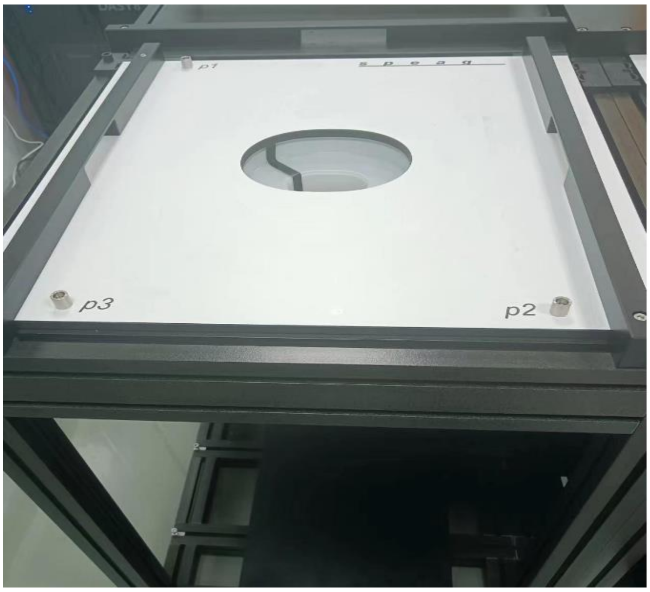
- Material:Vinyl ester, fiberglass reinforced (VE-GF)
- Shell Thickness:2.0 ± 0.2 mm (bottom plate)
- Dimensions:Major axis: 600 mm,
  Minor axis: 400 mm
- Filling Volume:approx. 30 liters.



2.5 Wrist Phantom

The Wrist Phantom V10 is shape-compatible with the CTIA approved OTA GFPC-V1 and optimized for specific absorption rate evaluation of watches and other wireless hand accessories.

- Material:Photosensitive epoxy acrylates
- Shell Thickness:2 ± 0.2 mm
- Wrist Shape:Design compatible with CTIA forearm.



2.6 Device Holder

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ± 0.5 mm would produce a SAR uncertainty of ± 20 %. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

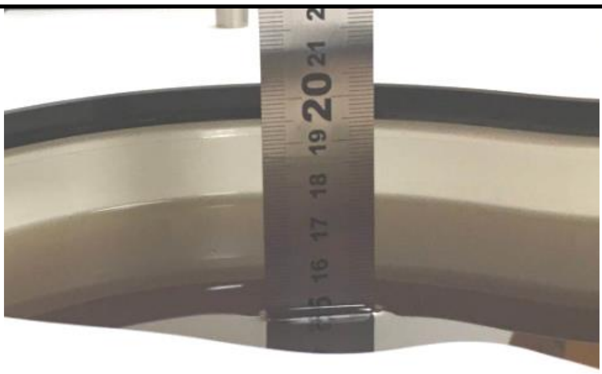
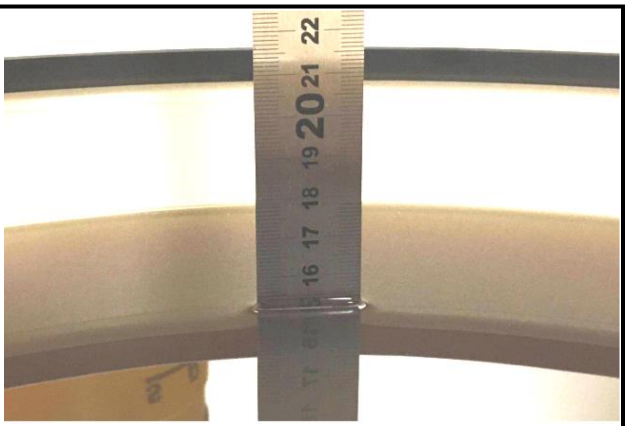
2.7 System Validation Dipoles

Symmetrical dipole with l/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.
- Frequency: 300 MHz to 10 GHz
- Return loss: >20 dB
- Power capability: >40 W

3 TISSUE Simulating Liquids

3.1 Simulating Liquids Parameter Check

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed.

	
Liquid Height for Head Position	**Liquid Height for Body Position**

The dielectric properties of the tissue simulating liquids are defined in IEC 62209-1528. The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using a dielectric assessment kit and a network analyzer.

Dielectric properties of Tissue Simulating Liquid

Frequency (MHz)	Target Permittivity	Target Conductivity
750	41.9	0.89
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1640	40.3	1.29
1750	40.1	1.37
1800	40.0	1.40
1900	40.0	1.40
2000	40.0	1.40
2100	39.8	1.49
2300	39.5	1.67
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
5300	35.9	4.76
5500	35.6	4.96
5600	35.5	5.07
5800	35.3	5.27
6000	35.1	5.48

3.2 LIQUIDS Measurement Results

The measuring results for tissue simulating liquid are shown as below.

Tissue Type	Frequency (MHz)	Measured Conductivity (σ)	Measured Permittivity (ε_r)	Target Conductivity (σ)	Target Permittivity (ε_r)	Conductivity Deviation (%)	Permittivity Deviation (%)	Test Date
HSL600-10000	2450	1.840	39.400	1.80	39.20	2.22	0.51	Dec. 06, 2024
	5200	4.570	37.200	4.66	36.00	-1.93	3.33	Dec. 06, 2024
	5800	5.240	36.100	5.27	35.30	-0.57	2.27	Dec. 06, 2024

Note:

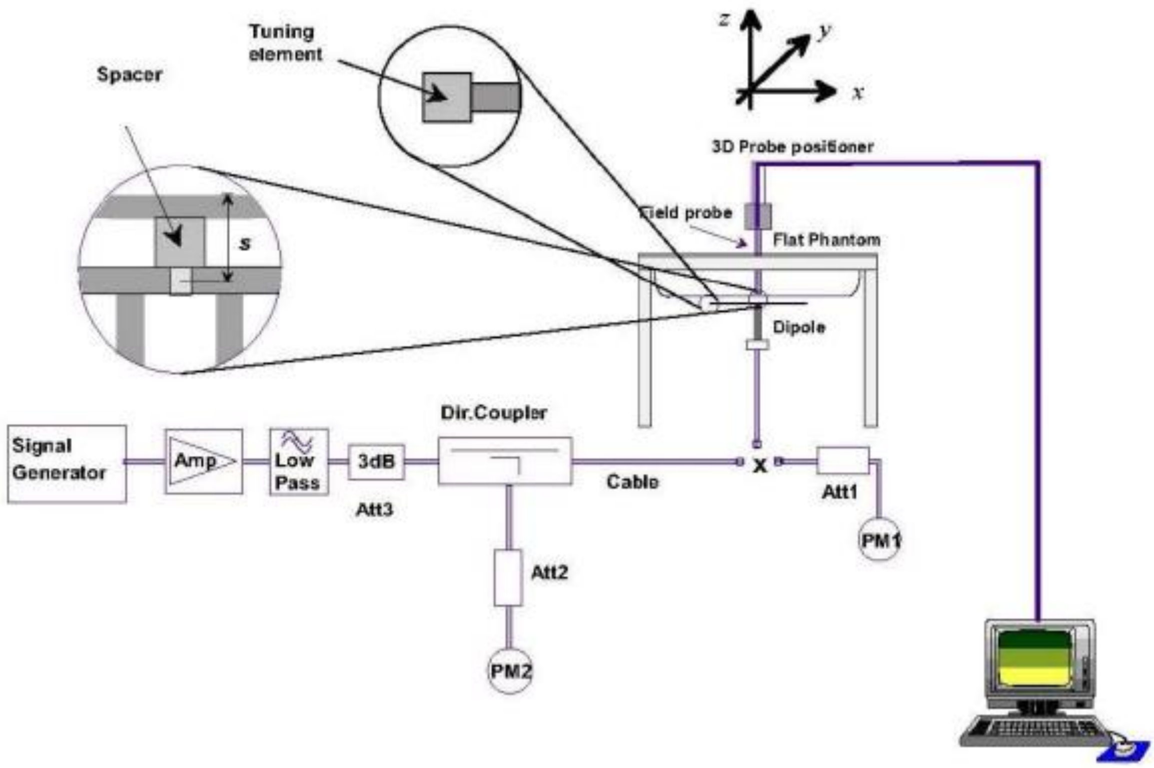
1. The dielectric properties of the tissue simulating liquid must be measured within 24 hours before the SAR testing and within ±5% of the target values. Liquid temperature during the SAR testing must be within ±2 ℃.
2. Since the maximum deviation of dielectric properties of the tissue simulating liquid is within 5%.

4 SAR System Validation

4.1 Validation System

Each DASY system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the DASY software, enable the user to conduct the system performance check and system validation. System kit includes a dipole, and dipole device holder.

The system check verifies that the system operates within its specifications. It's performed daily or before every SAR measurement. The system check uses normal SAR measurement in the flat section of the phantom with a matched dipole at a specified distance. The system validation setup is shown as below.



4.2 SYSTEM Validation Result

The measuring result for system verification is tabulated as below.

Test Date	Frequency (MHz)	1W Target SAR-1g (W/kg)	Measured SAR-1g (W/kg)	Normalized to 1W SAR-1g (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N
Dec. 06, 2024	2450	51.40	12.90	51.60	0.39	1081	7628	1557
Dec. 06, 2024	5200	77.80	7.87	78.70	1.16	1353	7628	1557
Dec. 06, 2024	5800	80.40	7.91	79.10	-1.62	1353	7628	1557

Note:

Comparing to the reference SAR value provided by SPEAG, the validation data should be within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots can be referred to Appendix A of this report.

5 SAR Evaluation Procedures

To evaluate the peak spatial-average SAR values with respect to 1 g or 10 g cubes, fine resolution volume scans, called zoom scans, are performed at the peak SAR locations identified during the area scan. If the cube volume within the zoom scan chosen to calculate the peak spatial-average SAR touches any boundary of the zoom-scan volume, the zoom scan shall be repeated with the center of the zoom-scan volume shifted to the new maximum SAR location. For any secondary peaks found in the area scan that are within 2 dB of the maximum peak and are not within this zoom scan, the zoom scan shall be performed for such peaks, unless the peak spatial-average SAR at the location of the maximum peak is more than 2 dB below the applicable SAR limit (i.e., 1 W/kg for a 1.6 W/kg 1 g limit, or 1.26 W/kg for a 2 W/kg 10 g limit). The zoom scan resolutions specified in the table below must be applied to the SAR measurements.

Table 3 - Area scan parameters

Parameter	DUT transmit frequency being tested	
	f≤ 3 GHz	3 GHz <f≤ 10 GHz
Maximum distance between the measured points (geometric centre of the sensors) and the inner phantom surface (z_{M1} in Figure 20 in mm)	5 ± 1	δ ln(2)/2 ± 0,5[a]
Maximum spacing between adjacent measured points in mm (see O.8.3.1) [b]	20, or half of the corresponding zoom scan length, whichever is smaller	60/f, or half of the corresponding zoom scan length,whichever is smaller
Maximum angle between the probe axis and the phantom surface normal (a in Figure 20)[c]	5° (flat phantom only) 30° (other phantoms)	5° (flat phantom only) 20° (other phantoms)
Tolerance in the probe angle	1°	1°

a δ is the penetration depth for a plane-wave incident normally on a planar half-space.

b See Clause O.8 on how Δx and Δy may be selected for individual area scan requirements.

c The probe angle relative to the phantom surface normal is restricted due to the degradation in the measurement accuracy in fields with steep spatial gradients. The measurement accuracy decreases with increasing probe angle and increasing frequency. This is the reason for the tighter probe angle restriction at frequencies above 3 GHz.

Table 4 - Zoom scan parameters

Parameter	DUT transmit frequency being tested	
	f≤ 3 GHz	3 GHz <f≤ 10 GHz
Maximum distance between the closest measured points and the phantom surface (z_{M1} in Figure 20 and Table 3, in mm)	5	δ ln(2)/2 ± 0,5[a]
Maximum angle between the probe axis and the phantom surface normal (α in Figure 20)	5° (flat phantom only) 30° (other phantoms)	5° (flat phantom only) 20° (other phantoms)
Maximum spacing between measured points in the x- and y-directions (Δx and Δy, in mm)	8	24/f b
For uniform grids: Maximum spacing between measured points in the direction normal to the phantom shell (Δz_1 in Figure 20, in mm)	5	10/(f - 1)
For graded grids: Maximum spacing between the two closest measured points in the direction normal to the phantom shell (Δz_1 in Figure 20, in mm)	4	12/f
For graded grids: Maximum incremental increase in the spacing between measured points in the direction normal to the phantom shell ($R_z = \Delta z_2/\Delta z_1$ in Figure 20)	1,5	1,5
Minimum edge length of the zoom scan volume in the x- and y-directions (L_z, in O.8.3.2, in mm)	30	22
Minimum edge length of the zoom scan volume in the direction normal to the phantom shell (L_h in O.8.3.2 in mm)	30	22
Tolerance in the probe angle	1°	1°

a δ is the penetration depth for a plane-wave incident normally on a planar half-space.
b This is the maximum spacing allowed, which might not work for all circumstances.

6 SAR Measurement Evaluation

6.1 EUT Configuration and Setting

<Considerations Related to WLAN for Setup and Testing>

In general, various vendor specific external test software and chipset based internal test modes are typically used for SAR measurement. These chipset based test mode utilities are generally hardware and manufacturer dependent, and often include substantial flexibility to reconfigure or reprogram a device. A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement. The test frequencies established using test mode must correspond to the actual channel frequencies. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. In addition, a periodic transmission duty factor is required for current generation SAR systems to measure SAR correctly. The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

According to KDB 248227 D01, this device has installed WLAN engineering testing software which can provide continuous transmitting RF signal. During WLAN SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

Initial Test Configuration

An initial test configuration is determined for OFDM transmission modes in 2.4 GHz and 5 GHz bands according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.

Subsequent Test Configuration

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. Additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. When the highest reported SAR for the initial test configuration according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

SAR Test Configuration and Channel Selection

When multiple channel bandwidth configurations in a frequency band have the same specified maximum output power, the initial test configuration is using largest channel bandwidth, lowest order modulation, lowest data rate, and lowest order 802.11 mode (i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n). After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following.

1) The channel closest to mid-band frequency is selected for SAR measurement.

2) For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

<Considerations Related to Bluetooth for Setup and Testing>

This device has installed Bluetooth engineering testing software which can provide continuous transmitting RF signal. During Bluetooth SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

6.2 EUT Testing Position

6.2.1 Body Exposure Conditions

This variant report is made for verification. All the worst SAR configurations specified in the original SAR report was repeated and verified to ensure the device remains compliant.

7 MAXIMUM Output Power

7.1 Maximum Conducted Power

Refer to the original report

7.2 MEASURED Conducted Power Result

Refer to the original report

8 SAR Testing Results

8.1 SAR Results for Body Exposure Condition (Separation Distance is 0 cm Gap)

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
P1	802.11b	-	Top Side	0	1	15.0	14.52	1.12	-0.06	0.555	**0.62**
P2	802.11ac	VHT80	Top Side	0	42	13.0	12.76	1.06	0.03	0.527	**0.56**
P3	802.11n	HT40	Top Side	0	151	14.0	13.67	1.08	0.02	0.621	**0.67**
P4	BLE	1M	Top Side	0	19	4.5	4.11	1.09	0.00	0.087	**0.10**

8.2 SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10, the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. 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.

Since all the measured SAR are less than 0.8 W/kg, the repeated measurement is not required.

9 EQUITPMENT List

Equipment	Manufacturer	Model	SN	Cal. Data	Cal. interval
System Validation Dipole	SPEAG	D2450V2	1081	May. 25, 2022	3 years
System Validation Dipole	SPEAG	D5GHzV2	1353	May. 27, 2022	3 years
Dosimetric E-Field Probe	SPEAG	EX3DV4	7628	July. 03, 2024	1 year
Data Acquisition Electronics	SPEAG	DAE4	1557	Oct. 08, 2024	1 year
Wideband Radio Communication Tester	R&S	CMW500	168558	May. 25, 2024	1 year
Signal Analyzer	R&S	FSV	104408	May. 22, 2024	1 year
Vector Network Analyzer	R&S	ZNB 40	101544	May. 25, 2024	1 year
Dielectric assessment Kit	SPEAG	DAK-3.5	1327	Oct. 22, 2022	N/A
Signal Generator	R&S	SMB 100B	101440	Sep. 23, 2024	1 year
Power Sensor	R&S	NRP18S-10	101843	Sep. 20, 2024	1 year
Power Sensor	R&S	NRP18S-10	101845	Sep. 20, 2024	1 year
DC Power Supply	Topward	3303D	810984	Sep. 20, 2024	1 year
Cavity Coupler	/	/	LS0300103	Jan. 08, 2025	1 year
Directional Couper	/	SHX-DC04/12-20N	2206171042	Jan. 08, 2025	1 year
Coaxial attenuator	R&S	8491A	1424.6721k02-101845-HX	Sep. 20, 2024	1 year
Coaxial attenuator	R&S	8491A	1424.6721K02-101843-aM	Sep. 20, 2024	1 year
Digital Thermometer	LKM	DTM3000	3946	Jan. 15, 2025	1 year
temperature and humidity indicator	LINI-T	A10T	C193561473	Apr. 28, 2024	1 year
Power Amplifier Mini circuit	mini-circuits	ZVA-183W-S+	726202215	Jan. 08, 2025	1 year
Head Tissue Simulating Liquid	SPEAG	HBBL600-10000V6	SL AAH U16 BC	Jun.01,2022	N/A
PHANTOM	SPEAG	ELI V8.0	2171	N/A	N/A
PHANTOM	SPEAG	SAM-Twin V8.0	2097	N/A	N/A

10 MEASUREMENT Uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Source of Uncertainty	Tolerance (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)	Vi Veff
Measurement System Errors								
Probe Calibration	±11.0%	Normal (k=2)	2	1	1	± 5.5 %	± 5.5 %	∞
Probe Calibration Drift	±1.7%	Rectangular	√3	1	1	±1.0%	±1.0%	∞
Probe Linearity	±4.7%	Rectangular	√3	1	1	±2.7%	±2.7%	∞
Broadband Signal	±3.0%	Rectangular	√3	1	1	±1.7%	±1.7%	∞
Probe Isotropy	±7.6%	Rectangular	√3	1	1	±4.4%	±4.4%	∞
Other Probe + Electronic	±0.7%	Normal	1	1	1	±0.7%	±0.7%	∞
RF Ambient	±1.8%	Normal	1	1	1	±1.8%	±1.8%	∞
Probe Positioning	±0.006mm	Normal	1	0.14	0.14	±0.10%	±0.10%	∞
Data Processing	±1.2%	Normal	1	1	1	±1.2%	±1.2%	∞
Phantom and Device Errors								
Conductivity (meas.)[DAK]	±2.5%	Normal	1	0.78	0.71	±2.0%	±1.8%	100
Conductivity (temp.)[BB]	±3.3%	Rectangular	√3	0.78	0.71	±1.5%	±1.4%	∞
Phantom Permittivity	±14.0%	Rectangular	√3	0	0	±0%	±0%	∞
Distance DUT – TSL	±2.0%	Normal	1	2	2	±4.0%	±4.0%	∞
Device Positioning	±2.4%/±2.8%	Normal	1	1	1	±2.8%	±2.8%	30
Device Holder	±3.4%/±3.5%	Normal	1	1	1	±3.5%	±3.5%	30
DUT Modulation[m]	±2.4%	Rectangular	√3	1	1	±1.4%	±1.4%	∞
Time-average SAR	±1.7%	Rectangular	√3	1	1	±1.0%	±1.0%	∞
DUT drift	±2.5%	Normal	1	1	1	±2.5%	±2.5%	30
Val Antenna Unc.[val]	±0.0%	Normal	1	1	1	±0%	±0%	
Unc. Input Power[val]	±0.0%	Normal	1	1	1	±0%	±0%	
Correction to the SAR results								
C(ε,σ)	±1.9%	Normal	1	1	0.84	±1.9%	±1.6%	
SAR scaling[p]	±0.0%	Rectangular	√3	1	1	±0%	±0%	
Combined Standard Uncertainty (K = 1)						±12.54%	±12.44%	
Expanded Uncertainty (K = 2)						**±25.1%**	**±24.9%**	

Uncertainty budget for frequency range 300 MHz to 3 GHz

Source of Uncertainty	Tolerance (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)	Vi Veff
Measurement System Errors								
Probe Calibration	±13.1%	Normal (k=2)	2	1	1	± 6.55 %	± 6.55 %	∞
Probe Calibration Drift	±1.7%	Rectangular	√3	1	1	±1.0%	±1.0%	∞
Probe Linearity	±4.7%	Rectangular	√3	1	1	±2.7%	±2.7%	∞
Broadband Signal	±2.6%	Rectangular	√3	1	1	±1.5%	±1.5%	∞
Probe Isotropy	±7.6%	Rectangular	√3	1	1	±4.4%	±4.4%	∞
Other Probe + Electronic	±1.2%	Normal	1	1	1	±1.2%	±1.2%	∞
RF Ambient	±1.8%	Normal	1	1	1	±1.8%	±1.8%	∞
Probe Positioning	±0.005mm	Normal	1	0.29	0.29	±0.15%	±0.15%	∞
Data Processing	±2.3%	Normal	1	1	1	±2.3%	±2.3%	∞
Phantom and Device Errors								
Conductivity (meas.)[DAK]	±2.5%	Normal	1	0.78	0.71	±2.0%	±1.8%	60
Conductivity (temp.)[BB]	±3.3%	Rectangular	√3	0.78	0.71	±1.5%	±1.4%	∞
Phantom Permittivity	±14.0%	Rectangular	√3	0.25	0.25	±2%	±2%	∞
Distance DUT – TSL	±2.0%	Normal	1	2	2	±4.0%	±4.0%	∞
Device Positioning	±2.4%/±2.8%	Normal	1	1	1	±2.8%	±2.8%	30
Device Holder	±3.4%/±3.5%	Normal	1	1	1	±3.5%	±3.5%	30
DUT Modulation[m]	±2.4%	Rectangular	√3	1	1	±1.4%	±1.4%	∞
Time-average SAR	±1.7%	Rectangular	√3	1	1	±1.0%	±1.0%	∞
DUT drift	±2.5%	Normal	1	1	1	±2.5%	±2.5%	30
Val Antenna Unc.[val]	±0.0%	Normal	1	1	1	±0%	±0%	
Unc. Input Power[val]	±0.0%	Normal	1	1	1	±0%	±0%	
Correction to the SAR results								
Deviation to Target	±1.9%	Normal	1	1	0.84	±1.9%	±1.6%	
SAR scaling[p]	±0.0%	Rectangular	√3	1	1	±0%	±0%	
Combined Standard Uncertainty (K = 1)						±12.8%	±12.7%	
Expanded Uncertainty (K = 2)						**±26.1%**	**±25.9%**	

Uncertainty budget for frequency range 3 GHz to 6 GHz

11 APPENDIXES

<u>All attachments are integral parts of this test report. This applies especially to the following appendix:</u>

11.1 Appendix A: SAR Plots of System Verification

The plots for system verification with largest deviation for each SAR system combination are shown as follows.

11.2 Appendix B: SAR Plots of SAR Measurement

11.3 Appendix C: Calibration Certificate for probe and Dipole

Refer the appendix Calibration Report.

11.4 Appendix D: Photographs of EUT and setup

Important

(1) The test report is invalid without the official stamp of CVC;

(2) Any part photocopies of the test report are forbidden without the written permission from CVC;

(3) The test report is invalid without the signatures of Approval and Reviewer;

(4) The test report is invalid if altered;

(5) Objections to the test report must be submitted to CVC within 15 days.

(6) Generally, commission test is responsible for the tested samples only.

(7) As for the test result "-" or "N" means "not applicable", "/" means "not test", "P" means "pass" and "F" means "fail"

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