SAR TEST REPORT

Application No.:	SZCR2405001878AT
Applicant:	MeiG Smart Technology Co., Ltd
Manufacturer:	MeiG Smart Technology Co., Ltd
Product Name:	Multi-mode 5G/LTE Smart Module
Model No.(EUT):	SRM955
FCC ID:	2APJ4-SRM955
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2024/05/23
Date of Test:	2024/05/25-2024/06/01
Date of Issue:	2024/06/03
Test conclusion:	**PASS ***

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Authorized Signature:

Keny Xu
Laboratory Manager

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REVISION HISTORY

Report Number	Revision	Description	Issue Date
SZCR240500187801	01	Original	2024/06/03

Prepared By	Vito Wang **Vito Wang**
Checked By	Roman Pan **Roman Pan**

TEST SUMMARY

Frequency Band	Max Reported SAR1g(W/kg)			Max Reported SAR10g(W/kg)
	Head	Body worn	Hotspot	Product specific 10gSAR
WI-FI (6GHz)	0.16	0.17	0.33	0.38
SAR Limited(W/kg)	1.60			4.00

Frequency Band	Max Reported PD $4m^2$(W/m^2)
WI-FI (6GHz)	5.79
PD Limited (W/m^2)	10.0

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1 General Information

1.1 Details of Client

Applicant:	MeiG Smart Technology Co., Ltd
Address:	Floor 5, Building G, Weijing Center, No. 2337 Guodai Road, Minhang District, Shanghai, China
Manufacturer:	MeiG Smart Technology Co., Ltd
Address:	Floor 5, Building G, Weijing Center, No. 2337 Guodai Road, Minhang District, Shanghai, China

1.2 Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China
Post code:	518057
Test Engineer:	Charley Yi, Durant Lin

1.3 Test Facility

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

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

1.4 General Description of EUT

Product Name:	Multi-mode 5G/LTE Smart Module		
Model No. (EUT):	SRM955		
Product Phase:	production unit		
Device Type:	Portable device		
Exposure Category:	uncontrolled environment / general population		
Hardware Version:	1.02		
Software Version:	MT918_EQ000_2774.3A84745.A0F816C.84C1BFC_231106_100_V01_T01		
Antenna Type:	LDS Antenna		
Device Operating Configurations:			
Modulation Mode:	**WIFI:** OFDM, OFDMA		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	WIFI 6E	5925-7125	5925-7125
RF Cable:	☒ Provided by the applicant ☐ Provided by the laboratory		
Battery Information:	Model:	U-Link	
	Normal Voltage:	DC 3.87V	
	Rated capacity:	4900mAh	
	Manufacturer:	ZHONGSHAN TIANMAO BATTERY CO., LTD.	

Note: *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.
Remark:
As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

1.5 Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI/IEEE C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
IEC/IEEE 63195-1:2022	Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body (frequency range of 6 GHz to 300 GHz) – Part 1: Measurement procedure
KDB 941225 D06	Hotspot Mode SAR v02r01
KDB 248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02r02
KDB 447498 D04	Interim General RF Exposure Guidance v01
KDB 690783 D01	SAR Listings on Grants v01r03

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1.6 RF exposure limits

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR* (Brain*Trunk)	1.60 mW/g	8.00 mW/g
Spatial Average SAR** (Whole Body)	0.08 mW/g	0.40 mW/g
Spatial Peak SAR*** (Hands/Feet/Ankle/Wrist)	4.00 mW/g	20.00 mW/g

Notes:
* The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time
** The Spatial Average value of the SAR averaged over the whole body.
*** The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.
Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation.)

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.
Peak Spatially Averaged Power Density was evaluated over a circular area of 4cm2 per interim FCC Guidance for near-field power density evaluations per October 2018 TCB Workshop notes

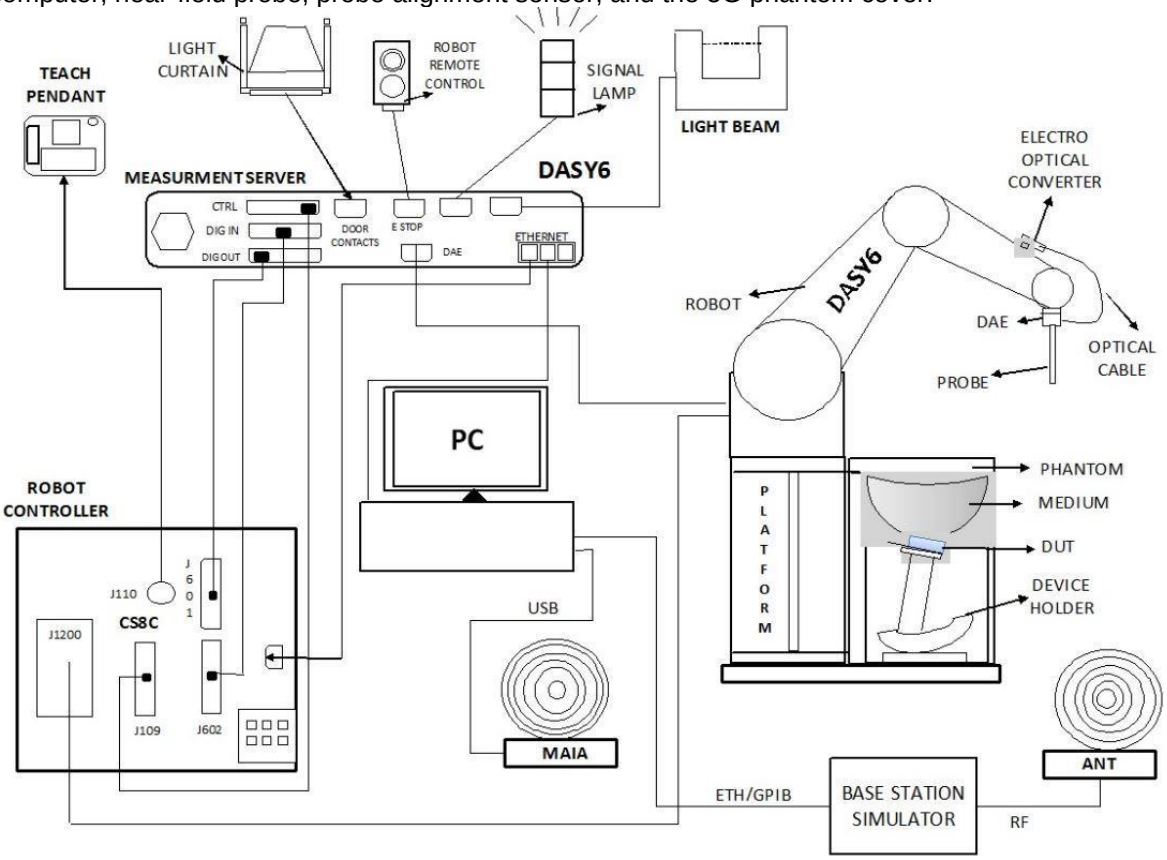
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

Note: 1.0 mW/cm^2 is 10 W/m^2

2 Measurements System Configuration

2.1 Power density measurement system

Power density measurements for mmWave frequencies were performed using SPEAG DASY6 with cDASY6 5G module. The DASY6 included a high precision robotics system (Staubli), robot controller, desktop computer, near-field probe, probe alignment sensor, and the 5G phantom cover.



EUmmWVx probe:

The EUmmWVx probe is based on the pseudo-vector probe design, which not only measures the field magnitude but also derives its polarization ellipse. The design entails two small 0.8mm dipole sensors mechanically protected by high-density foam, printed on both sides of a 0.9mm wide and 0.12mm thick glass substrate. The body of the probe is specifically constructed to minimize distortion by the scattered fields. The probe consists of two sensors with different angles (1 and 2) arranged in the same plane in the probe axis. Three or more measurements of the two sensors are taken for different probe rotational angles to derive the amplitude and polarization information. The probe design allows measurements at distances as small as 2mm from the sensors to the surface of the device under test (DUT). The typical sensor to probe tip distance is 1.5 mm. The exact distance is calibrated.

2.2 The SAR Measurement System

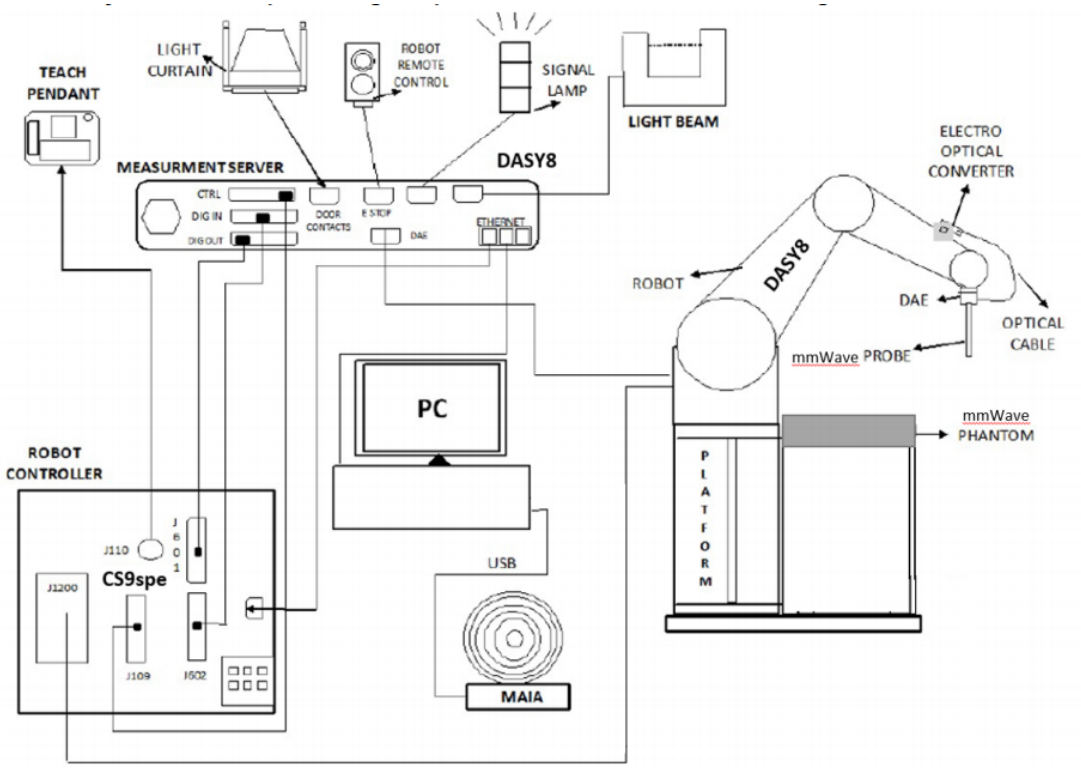
This SAR Measurement System uses a computer-controlled 3-D stepper motor system (SPEAG DASY8 professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

The DASY8 system for performing compliance tests consists of the following items:
A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software. An arm extension for accommodation the data acquisition electronics (DAE).

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

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

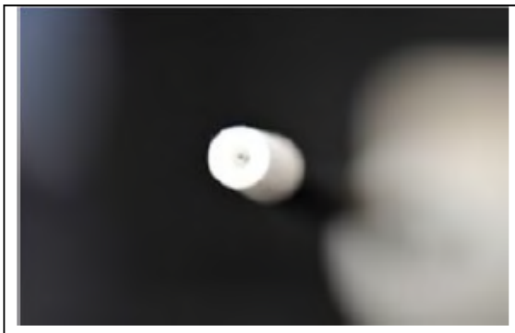
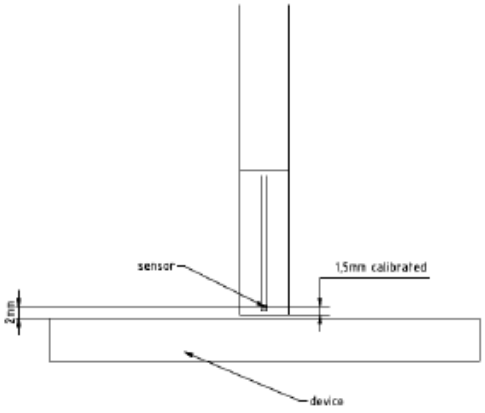
The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.



F-1. SAR Measurement System Configuration

- 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.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows system.
- DASY software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand, right-hand and Body Worn usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validate the proper functioning of the system.

2.3 Isotropic EUmmWVx probe

	Two dipoles optimally arranged to obtain pseudo-vector information.Minimum 3 measurements/ point, 120° rotated around probe axis. Sensors (0.8mm length) printed on glass substrate protected by high density foam.Low perturbation of the measured field. Requires positioner which can do accurate probe rotation.
Frequency Range	750 MHz – 110 GHz
Dynamic Range	< 20 V/m – 10,000 V/m with PRE-10 (min < 50 V/m - 3000 V/m)
Position Precision	< 0.2 mm (DASY6)
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: encapsulation 8 mm (internal sensor < 1mm) Distance from probe tip to dipole centers: < 2 mm. Sensor displacement to probe's calibration point: < 0.3 mm
Applications 	E-field measurements of 5G devices and other mm-wave transmitters operating above 10GHz in < 2 mm distance from device (free-space).Power density, H-field and far-field analysis using total field reconstruction (cDASY6 5G module required)
Compatibility	cDASY6 + 5G-Module SW1.0 and higher

2.4 Isotropic E-field Probe EX3DV4

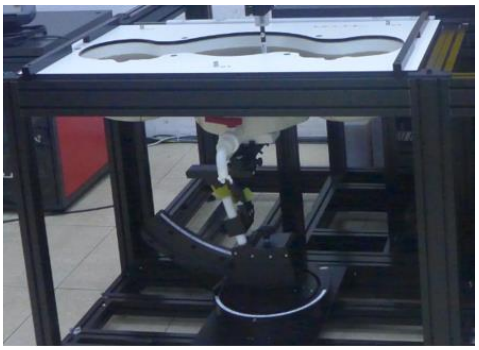
	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	10 MHz to > 7.2 GHz Linearity: ± 0.2 dB (30 MHz to 7.2 GHz)
Directivity	± 0.3 dB in 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	DASY52 SAR and higher, EASY4/MRI

2.5 Data Acquisition Electronics (DAE)

Model	DAE
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detectors for mechanical surface detection and emergency robot stop.
Measurement Range	-100 to +300 mV (16-bit resolution and two range settings: 4mV,400mV)
Input Offset Voltage	< 5μV (with auto zero)
Input Bias Current	< 50 f A
Dimensions	60 x 60 x 68 mm

2.6 SAM Twin Phantom

Material	Vinylester, glass fiber reinforced (VE-GF)
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)
Dimensions (incl. Wooden Support)	Length: 1000 mm Width: 500 mm Height: adjustable feet
Filling Volume	16pprox.. 25 liters
Wooden Support	SPEAG standard phantom table



The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. 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.

Twin SAM V8.0 has the same shell geometry and is manufactured from the same material as Twin SAM V4.0 but has reinforced top structure.

2.7 Device Holder for Transmitters

F-2. **Device Holder for Transmitters**

- The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation centres for both scales are the ear reference point (ERP). Thus, the device needs no repositioning when changing the angles.
- The DASY device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity ε=3 and loss tangent δ=0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

2.8 Measurement procedure

2.8.1 Scanning procedure

Step 1: Power reference measurement

The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure.

Step 2: *Area scan*

The SAR distribution at the exposed side of the head was measured at a distance of 4mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 15mm*15mm.Based on the area scan data, the area of the maximum absorption was determined by spline interpolation.

Step 3: *Zoom scan*

Around this point, a volume of 30mm*30mm*30mm (fine resolution volume scan, zoom scan) was assessed by measuring 5x5x7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

The data at the surface was extrapolated, since the centre of the dipoles is 2.0mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. (This can be variable. Refer to the probe specification). 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. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The volume was integrated with the trapezoidal algorithm. One thousand points were interpolated to calculate the average. All neighbouring volumes were evaluated until no neighboring volume with a higher average value was found.

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 10-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in EN 62209-1/2.

Step 4: Power reference measurement (drift)

The Power Drift Measurement job measures the field at the same location as the most recent power reference measurement job within the same procedure, and with the same settings. The indicated drift is mainly the variation of the DUT’s output power and should vary max. ± 5 %

2.8.2 Data Storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension “DAE”. The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards, and the data can be re-evaluated. The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

2.8.3 Data Evaluation by SEMCAD

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

Probe parameters:	- Sensitivity	Normi, ai0, ai1, ai2
	- Conversion factor	ConvFi
	- Diode compression point	Dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	ε
	- Density	ρ

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

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot cf / dcp_i$$

With Vi = compensated signal of channel I (I = x, y, z)

Ui = input signal of channel I (I = x, y, z)

cf = crest factor of exciting field (DASY parameter)

dcp I = diode compression point (DASY parameter)
From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes:

$$E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$$

H-field probes:

$$H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) / f$$

With Vi = compensated signal of channel I (I = x, y, z)
Normi = sensor sensitivity of channel I (I = x, y, z)
[mV/(V/m)2] for E-field Probes
ConvF = sensitivity enhancement in solution
aij = sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
Ei = electric field strength of channel I in V/m

Hi = magnetic field strength of channel I in A/m

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

$$E_{tot} = (E_x^2 + E_Y^2 + E_z^2)^{1/2}$$

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

$$SAR = (Etot^2 \cdot \sigma) / (\varepsilon \cdot 1000)$$

with SAR = local specific absorption rate in mW/g

Etot = total field strength in V/m

σ= conductivity in [mho/m] or [Siemens/m]

ε= equivalent tissue density in g/cm3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = E_{tot}{}^2{}_2 / 3770 \quad \text{or} \quad P_{pwe} = H_{tot}^2 \cdot 37.7$$

with Ppwe = equivalent power density of a plane wave in mW/cm2
Etot = total electric field strength in V/m

Htot = total magnetic field strength in A/m

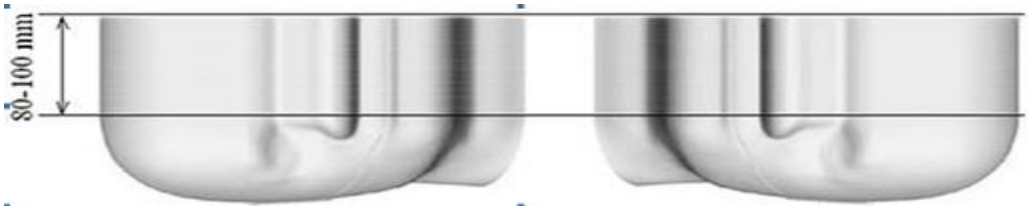
3 Description of Test Position

3.1 The Head Test Position

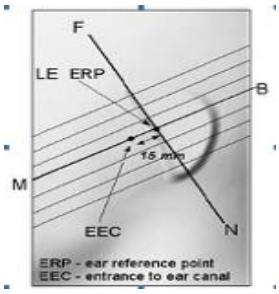
3.1.1 SAM Phantom Shape

F-3. Front, back, and side views of SAM (model for the phantom shell). Full-head model is for illustration purposes only-procedures in this recommended practice are intended primarily for the phantom setup.

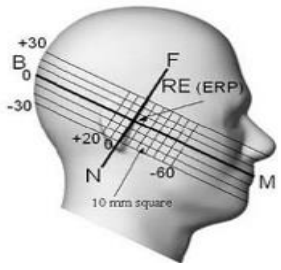
Note: The centre strip including the nose region has a different thickness tolerance.



F-4. Sagittally bisected phantom with extended perimeter (shown placed on its side as used for SAR measurements)

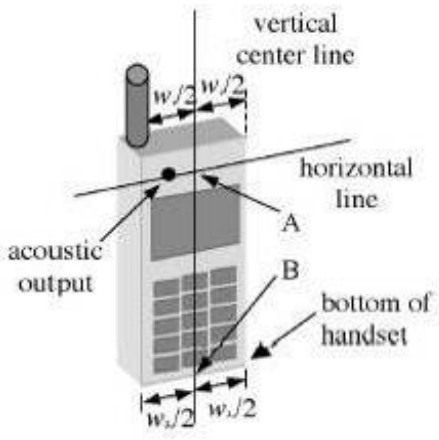


F-5. Close-up side view of phantom, showing the ear region, N-F and B-M lines, and seven cross-sectional plane locations

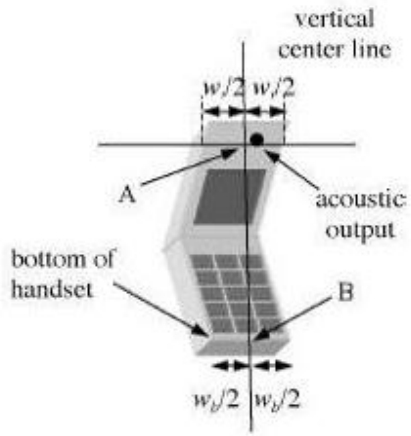


F-6. Side view of the phantom showing relevant markings and seven cross-sectional plane locations

3.1.2 EUT constructions



F-7. Handset vertical and horizontal reference lines-“fixed case”



F-8. Handset vertical and horizontal reference lines-“clam-shell case”

3.1.3 Definition of the “cheek” position

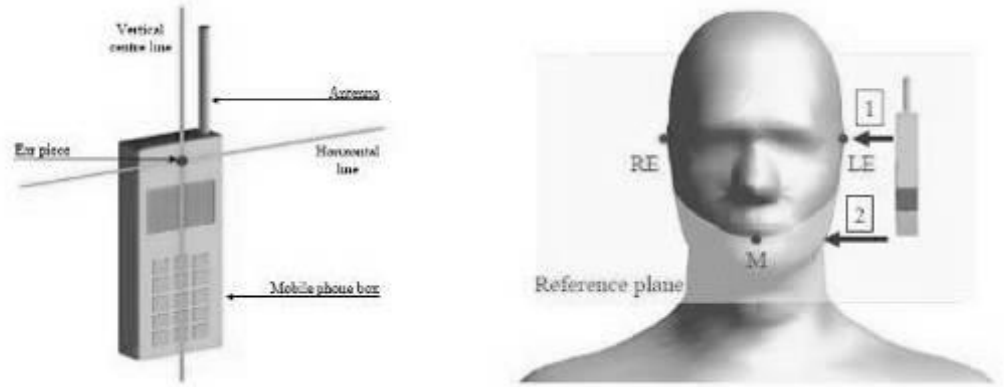
a) Position the device with the vertical centre line of the body of the device and the horizontal line crossing the centre of the ear piece in a plane parallel to the sagittal plane of the phantom (“initial position”). While maintaining the device in this plane, align the vertical centre line with the reference plane containing the three ear and mouth reference points (M, RE and LE) and align the centre of the ear piece with the line RE-LE.

b) Translate the mobile phone box towards the phantom with the ear piece aligned with the line LE-RE until telephone touches the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the box until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.

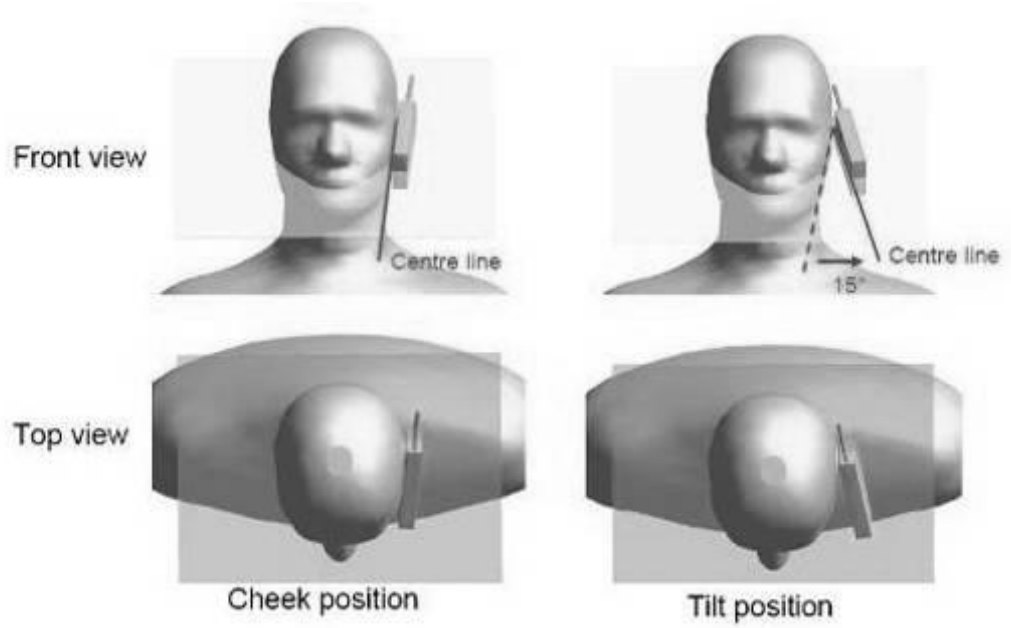
3.1.4 Definition of the “tilted” position

a) Position the device in the “cheek” position described above.

b) While maintaining the device in the reference plane described above and pivoting against the ear, move it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.



F-9. **Definition of the reference lines and points, on the phone and on the phantom and initial position**



F-10. **“Cheek” and “tilt” positions of the mobile phone on the left side**

3.2 The Body Test Position

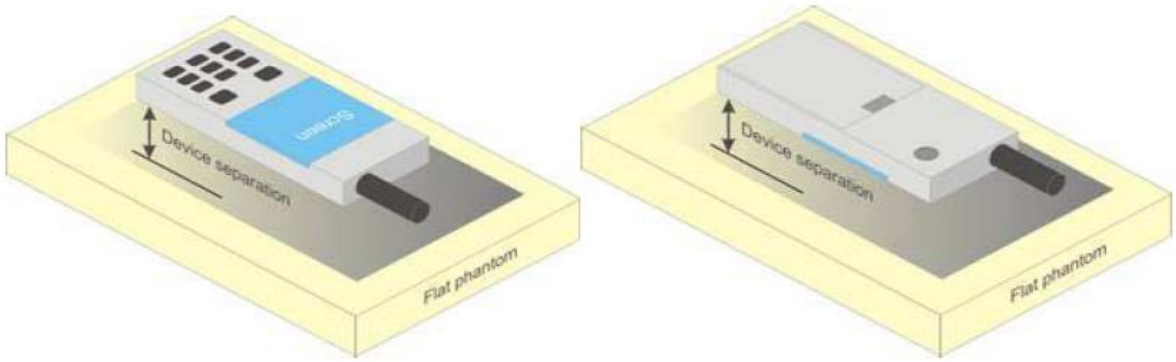
3.2.1 Body-worn accessory exposure conditions

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. The body-worn accessory procedures in FCC KDB Publication 447498 D04 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.



F-11. **Test positions for body-worn devices**

3.2.2 Wireless Router exposure conditions

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed-use conditions for this type of devices. For devices with form factors smaller than 9 cm x 5 cm, a test separation distance of 5 mm is required.

3.3 The Extremity Test Position

Due to the lack of a dedicated limb SAR testing model, we use an equivalent plat phantom for limb SAR testing, with a testing distance of 0mm.

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4 System Verification Procedure

4.1 Tissue Simulate Liquid

4.1.1 Recipes for Tissue Simulate Liquid

The bellowing tables give the recipes for tissue simulating liquids to be used in different frequency bands：

Ingredients (% by weight)	Frequency (MHz)				
	450	700-1000	1700-2000	2300-2500	2500-2700
Water	38.56	40.30	55.24	55.00	54.92
Salt (NaCl)	3.95	1.38	0.31	0.2	0.23
Sucrose	56.32	57.90	0	0	0
HEC	0.98	0.24	0	0	0
Bactericide	0.19	0.18	0	0	0
Tween	0	0	44.45	44.80	44.85

Salt: 99⁺% Pure Sodium Chloride　　Sucrose: 98⁺% Pure Sucrose

Water: De-ionized, 16 MΩ⁺ resistivity　　HEC: Hydroxyethyl Cellulose

Tween: Polyoxyethylene (20) sorbitan monolaurate

HSL5GHz is composed of the following ingredients：(Manufactured by SPEAG)
Water：50-65%
Mineral oil：10-30%
Emulsifiers：8-25%
Sodium salt：0-1.5%

Table 1： Recipe of Tissue Simulate Liquid

4.1.2 Measurement for Tissue Simulate Liquid

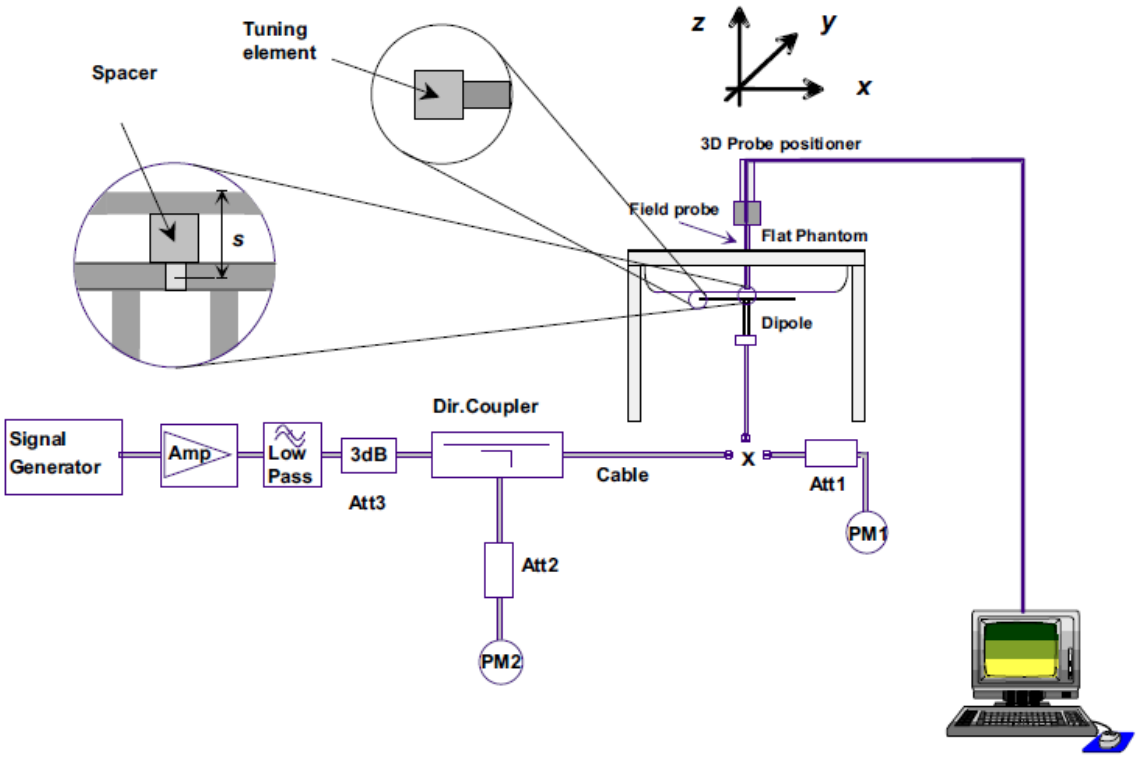
The Conductivity (σ) and Permittivity (ε_r) are listed in Table 2. For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was 22±2°C.

Tissue Type	Measured Frequency（MHz）	Measured Tissue		Target Tissue (±5%)		Deviation (Within ±5%)		Liquid Temp. (℃)	Test Date
		ε_r	σ(S/m)	ε_r	σ(S/m)	ε_r	σ(S/m)		
6500 Head	6500	33.500	6.010	34.50	6.07	-2.90%	-0.99%	22.1	2024/5/28
6500 Head	6500	34.000	6.080	34.50	6.07	-1.45%	0.16%	22.2	2024/5/29

Table 2： Measurement result of Tissue electric parameters

4.2 SAR System Check

The microwave circuit arrangement for system Check is sketched as below. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the following table (A power level of 250mW (below 3GHz) or 100mW (3-6GHz) was input to the dipole antenna). During the tests, the ambient temperature of the laboratory was in the range 22±2°C, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15±0.5 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



F-12. The microwave circuit arrangement used for SAR system Check

4.2.1 Justification for Extended SAR Dipole Calibrations

1) Instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.

a) There is no physical damage on the dipole.
b) System check with specific dipole is within 10% of calibrated value.
c) Return-loss is within 20% of calibrated measurement.
d) Impedance is within 5Ω from the previous measurement.

2) Network analyzer probe calibration against air, distilled water and a shorting block performed before measuring liquid parameters.

4.2.2 Summary System Check Result(s)

Validation Kit		Measured SAR 100mW	Measured SAR 100mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W)	Target SAR (normalized to 1W)	Deviation (Within ±10%)		Liquid Temp. (℃)	Test Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)	1-g(W/kg)	10-g(W/kg)		
D6500V2	Head(6.5GHz)	28.70	5.28	287.00	52.80	291.00	53.90	-1.37%	-2.04%	22.1	2024/5/28
D6500V2	Head(6.5GHz)	30.10	5.64	301.00	56.40	291.00	53.90	3.44%	4.64%	22.2	2024/5/29

Table 3： SAR System Check Result

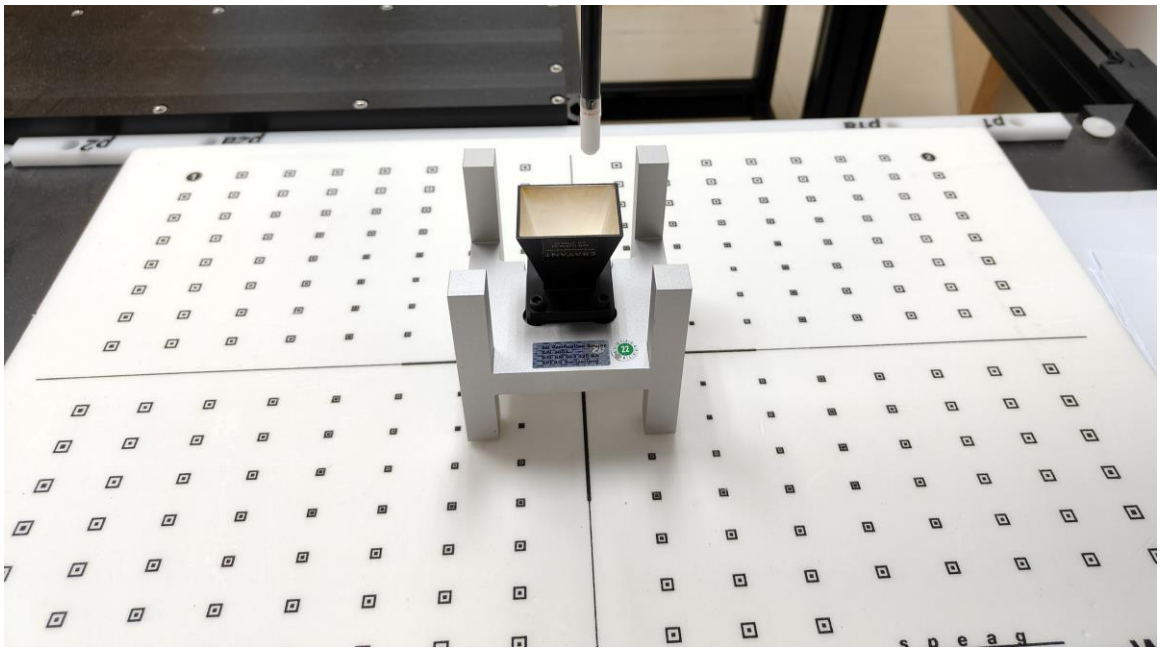
4.2.3 Detailed System Check Results

Please see the Appendix A

4.3 PD Test System Verification

The system was verified to be within ±0.66 dB of the power density targets on the calibration certificate according to the test system specification in the user's manual and calibration facility recommendation. The 0.66 dB deviation threshold represents the expanded uncertainty for system performance checks using SPEAG's mmWave verification sources. The same spatial resolution and measurement region used in the source calibration was applied during the system check.

The measured power density distribution of verification source was also confirmed through visual inspection to have no noticeable differences, both spatially (shape) and numerically (level) from the distribution provided by the manufacturer, per November 2017 TCBC Workshop Notes.



System Verification Setup Photo

4.3.1 PD System Verification Results

Frequency (GHz)	PD Verification Source	Distance (mm)	Prad (mW)	Measured 4cm^2 (W/m^2)	Target 4cm^2 (W/m^2)	Deviation (dB)	Measured Date
10G	10G	10	124.5	191	174	0.40	2024/6/1

4.3.2 Detailed System Check Results

Please see the Appendix A

5 Test Configuration

5.1 WiFi Test Configuration

According to TCB Workshop requirements, at least 5 channels need to be selected in WIFI 6E to cover four bands for PD and SAR testing.

5.1.1 DUT Antenna Locations

Please see the Appendix D

6 Test results and Measurement Data

6.1 Measurement of RF Conducted Power

6.1.1 Conducted Power of WiFi

WIFI 6E Ant6						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Average Power (dBm)	Tune up
U-NII-5 6.2GHz	802.11ax HE20	1	5955	MCS0	9.80	11
		45	6175		9.78	11
		93	6415		9.88	11
	802.11ax HE40	3	5985	MCS0	12.57	14.5
		43	6165		12.52	14.5
		91	6405		12.72	14.5
	802.11ax HE80	7	5985	MCS0	13.13	14.5
		39	6145		13.53	14.5
		87	6385		13.81	14.5
	802.11ax HE160	15	6025	MCS0	13.35	14.5
		47	6185		13.74	14.5
		79	6345		13.99	14.5
U-NII-6 6.5GHz	802.11ax HE20	97	6435	MCS0	9.72	11
		105	6475		9.59	11
		113	6515		9.49	11
	802.11ax HE40	99	6445	MCS0	12.62	14.5
		107	6485		12.55	14.5
	802.11ax HE80	103	6465	MCS0	13.60	14.5
		119	6545		13.28	14.5
	802.11ax HE160	111	6505	MCS0	13.58	14.5
U-NII-7 6.7GHz	802.11ax HE20	117	6535	MCS0	10.18	11.2
		149	6695		9.75	11.2
		181	6855		9.81	11.2
	802.11ax HE40	115	6525	MCS0	12.02	13
		147	6685		12.91	13
		179	6845		12.67	13
	802.11ax HE80	135	6625	MCS0	12.87	13
		151	6705		14.28	15.5
		167	6785		15.52	16
		143	6665	MCS0	13.30	14.5

	802.11ax HE160	175	6825		15.65	16
U-NII-8 7.0GHz	802.11ax HE20	185	6875	MCS0	9.10	10.5
		209	6995		9.11	10.5
		233	7115		-1.15	-1
	802.11ax HE40	187	6885	MCS0	11.66	12
		227	7085		11.65	12
	802.11ax HE80	183	6865	MCS0	14.41	15.5
		199	6945		14.31	15.5
		215	7025		12.51	13
	802.11ax HE160	207	6985	MCS0	13.81	15.5

WIFI 6E Ant7						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Average Power (dBm)	Tune up
U-NII-5 6.2GHz	802.11ax HE20	1	5955	MCS0	9.63	11
		45	6175		9.50	11
		93	6415		9.83	11
	802.11ax HE40	3	5985	MCS0	11.46	12
		43	6165		9.92	11
		91	6405		9.79	11
	802.11ax HE80	7	5985	MCS0	11.40	12
		39	6145		10.32	11
		87	6385		10.04	11
	802.11ax HE160	15	6025	MCS0	11.43	12
		47	6185		10.39	11
		79	6345		10.28	11
U-NII-6 6.5GHz	802.11ax HE20	97	6435	MCS0	9.84	11
		105	6475		9.71	11
		113	6515		9.66	11
	802.11ax HE40	99	6445	MCS0	9.77	11
		107	6485		9.78	11
	802.11ax HE80	103	6465	MCS0	9.63	11
		119	6545		9.40	11
	802.11ax HE160	111	6505	MCS0	9.67	11
U-NII-7 6.7GHz	802.11ax HE20	117	6535	MCS0	10.17	11.2
		149	6695		10.01	11.2

		181	6855		10.01	11.2
	802.11ax HE40	115	6525	MCS0	12.96	13
		147	6685		12.94	13
		179	6845		12.74	13
	802.11ax HE80	135	6625	MCS0	13.52	15.5
		151	6705		13.71	15.5
		167	6785		14.43	15.5
	802.11ax HE160	143	6665	MCS0	13.63	15.5
		175	6825		14.97	15.5
U-NII-8 7.0GHz	802.11ax HE20	185	6875	MCS0	8.99	10.5
		209	6995		8.78	10.5
		233	7115		-2.10	-2
	802.11ax HE40	187	6885	MCS0	11.91	12
		227	7085		11.80	12
	802.11ax HE80	183	6865	MCS0	14.69	15.5
		199	6945		14.72	15.5
		215	7025		14.85	15.5
	802.11ax HE160	207	6985	MCS0	14.97	15.5

WIFI 6E MIMO						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Average Power (dBm)	Tune up
U-NII-5 6.2GHz	802.11ax HE20	1	5955	MCS0	8.94	10
		45	6175		9.07	11
		93	6415		9.16	11
	802.11ax HE40	3	5985	MCS0	12.23	13
		43	6165		11.51	12
		91	6405		10.80	12
	802.11ax HE80	7	5985	MCS0	12.71	14.5
		39	6145		12.45	14
		87	6385		12.41	14
	802.11ax HE160	15	6025	MCS0	12.77	14.5
		47	6185		12.65	14.5
		79	6345		12.74	14.5
U-NII-6 6.5GHz	802.11ax HE20	97	6435	MCS0	9.70	11
		105	6475		9.60	11
		113	6515		9.60	11

	802.11ax HE40	99	6445	MCS0	11.30	12
		107	6485		11.27	12
	802.11ax HE80	103	6465	MCS0	12.25	13
		119	6545		12.01	13
	802.11ax HE160	111	6505	MCS0	12.28	13
U-NII-7 6.7GHz	802.11ax HE20	117	6535	MCS0	9.64	11.2
		149	6695		9.81	11.2
		181	6855		9.45	11.2
	802.11ax HE40	115	6525	MCS0	12.46	13
		147	6685		12.60	13
		179	6845		12.43	13
	802.11ax HE80	135	6625	MCS0	13.04	14
		151	6705		13.87	15.5
		167	6785		14.91	15.5
	802.11ax HE160	143	6665	MCS0	13.37	14
		175	6825		15.18	15.5
U-NII-8 7.0GHz	802.11ax HE20	185	6875	MCS0	8.74	10.5
		209	6995		8.65	10.5
		233	7115		-0.08	0
	802.11ax HE40	187	6885	MCS0	11.53	12
		227	7085		11.26	12
	802.11ax HE80	183	6865	MCS0	14.48	15.5
		199	6945		13.85	15.5
		215	7025		12.94	13
	802.11ax HE160	207	6985	MCS0	13.67	14

Note: For each frequency band, testing at higher data rates is not required when the maximum average output power for each of these configurations is less than 0.25dB higher than those measured at the lowest data rate.

6.2 Measurement of SAR Data

Note:

1) The maximum reported SAR value is marked in **bold.** Graph results refer to Appendix B

6.2.1 SAR Result of WiFi 6E

Wi-Fi 6E SAR Test Record												
Head												
Ant6 Test Record												
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data of U-NII-5												
Left cheek	802.11ax 160M	79/6345	99.58%	1.004	0.035	0.010	0.03	13.99	14.50	1.125	0.040	22.1
Left tilted	802.11ax 160M	79/6345	99.58%	1.004	0.018	0.007	0.02	13.99	14.50	1.125	0.020	22.1
Right cheek	802.11ax 160M	79/6345	99.58%	1.004	0.025	0.008	0.03	13.99	14.50	1.125	0.028	22.1
Right tilted	802.11ax 160M	79/6345	99.58%	1.004	0.016	0.006	-0.05	13.99	14.50	1.125	0.018	22.1
Head Test Data of U-NII-6												
Left cheek	802.11ax 160M	111/6505	99.58%	1.004	0.035	0.011	-0.06	13.58	14.50	1.236	0.043	22.1
Left tilted	802.11ax 160M	111/6505	99.58%	1.004	0.005	0.001	0.02	13.58	14.50	1.236	0.006	22.1
Right cheek	802.11ax 160M	111/6505	99.58%	1.004	0.028	0.009	0.15	13.58	14.50	1.236	0.035	22.1
Right tilted	802.11ax 160M	111/6505	99.58%	1.004	0.018	0.006	0.16	13.58	14.50	1.236	0.022	22.1
Head Test Data of U-NII-7												
Left cheek	802.11ax 160M	175/6825	99.58%	1.004	0.033	0.080	0.05	15.65	16.00	1.084	0.036	21.9
Left tilted	802.11ax 160M	175/6825	99.58%	1.004	0.021	0.007	0.04	15.65	16.00	1.084	0.023	21.9
Right cheek	802.11ax 160M	175/6825	99.58%	1.004	0.027	0.008	0.05	15.65	16.00	1.084	0.029	21.9
Right tilted	802.11ax 160M	175/6825	99.58%	1.004	0.016	0.006	0.02	15.65	16.00	1.084	0.017	21.9
Left cheek	802.11ax 160M	143/6665	99.58%	1.004	0.025	0.006	0.01	13.30	14.50	1.318	0.033	21.9
Head Test Data of U-NII-8												
Left cheek	802.11ax 160M	207/6985	99.58%	1.004	0.073	0.025	0.05	13.81	15.50	1.476	0.108	22.2
Left tilted	802.11ax 160M	207/6985	99.58%	1.004	0.109	0.018	0.04	13.81	15.50	1.476	**0.162**	22.2
Right cheek	802.11ax 160M	207/6985	99.58%	1.004	0.022	0.007	0.04	13.81	15.50	1.476	0.033	22.2
Right tilted	802.11ax 160M	207/6985	99.58%	1.004	0.020	0.004	0.06	13.81	15.50	1.476	0.030	22.2
Ant7 Test Record												
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data of U-NII-5												
Left cheek	802.11ax 160M	79/6345	99.58%	1.004	0.006	0.001	0.08	11.43	12.00	1.140	0.007	22.3
Left tilted	802.11ax 160M	79/6345	99.58%	1.004	0.013	0.004	-0.09	11.43	12.00	1.140	0.015	22.3
Right cheek	802.11ax 160M	79/6345	99.58%	1.004	0.018	0.005	0.09	11.43	12.00	1.140	0.021	22.3
Right tilted	802.11ax 160M	79/6345	99.58%	1.004	0.009	0.002	0.04	11.43	12.00	1.140	0.010	22.3
Head Test Data of U-NII-6												
Left cheek	802.11ax 160M	111/6505	99.58%	1.004	0.019	0.005	0.06	9.67	11.00	1.358	0.026	22.3
Left tilted	802.11ax 160M	111/6505	99.58%	1.004	0.011	0.003	-0.02	9.67	11.00	1.358	0.015	22.3
Right cheek	802.11ax 160M	111/6505	99.58%	1.004	0.009	0.002	0.08	9.67	11.00	1.358	0.012	22.3
Right tilted	802.11ax 160M	111/6505	99.58%	1.004	0.013	0.003	0.13	9.67	11.00	1.358	0.018	22.3
Head Test Data of U-NII-7												
Left cheek	802.11ax 160M	175/6825	99.58%	1.004	0.014	0.005	0.02	14.97	15.50	1.130	0.016	22.3
Left tilted	802.11ax 160M	175/6825	99.58%	1.004	0.020	0.005	0.08	14.97	15.50	1.130	0.023	22.3
Right cheek	802.11ax 160M	175/6825	99.58%	1.004	0.025	0.007	0.06	14.97	15.50	1.130	0.028	22.3
Right tilted	802.11ax 160M	175/6825	99.58%	1.004	0.018	0.005	0.06	14.97	15.50	1.130	0.020	22.3
Head Test Data of U-NII-8												
Left cheek	802.11ax 160M	207/6985	99.58%	1.004	0.008	0.002	0.01	14.97	15.50	1.130	0.009	22.6
Left tilted	802.11ax 160M	207/6985	99.58%	1.004	0.010	0.003	0.07	14.97	15.50	1.130	0.011	22.6
Right cheek	802.11ax 160M	207/6985	99.58%	1.004	0.006	0.001	0.05	14.97	15.50	1.130	0.007	22.6
Right tilted	802.11ax 160M	207/6985	99.58%	1.004	0.004	0.000	-0.07	14.97	15.50	1.130	0.005	22.6
MIMO Test Record												

Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data of U-NII-5												
Left cheek	802.11ax 160M	15/6025	99.58%	1.004	0.014	0.002	0.06	12.77	14.50	1.489	0.021	22.1
Left tilted	802.11ax 160M	15/6025	99.58%	1.004	0.005	0.001	0.03	12.77	14.50	1.489	0.007	22.1
Right cheek	802.11ax 160M	15/6025	99.58%	1.004	0.022	0.060	0.03	12.77	14.50	1.489	0.033	22.1
Right tilted	802.11ax 160M	15/6025	99.58%	1.004	0.007	0.001	0.01	12.77	14.50	1.489	0.010	22.1
Head Test Data of U-NII-6												
Left cheek	802.11ax 160M	111/6505	99.58%	1.004	0.018	0.003	0.05	12.28	13.00	1.180	0.021	22.1
Left tilted	802.11ax 160M	111/6505	99.58%	1.004	0.015	0.002	0.06	12.28	13.00	1.180	0.018	22.1
Right cheek	802.11ax 160M	111/6505	99.58%	1.004	0.023	0.005	0.03	12.28	13.00	1.180	0.027	22.1
Right tilted	802.11ax 160M	111/6505	99.58%	1.004	0.016	0.004	0.01	12.28	13.00	1.180	0.019	22.1
Head Test Data of U-NII-7												
Left cheek	802.11ax 160M	175/6825	99.58%	1.004	0.028	0.004	0.03	15.18	15.50	1.076	0.030	21.9
Left tilted	802.11ax 160M	175/6825	99.58%	1.004	0.039	0.004	0.03	15.18	15.50	1.076	0.042	21.9
Right cheek	802.11ax 160M	175/6825	99.58%	1.004	0.014	0.002	0.05	15.18	15.50	1.076	0.015	21.9
Right tilted	802.11ax 160M	175/6825	99.58%	1.004	0.011	0.002	0.06	15.18	15.50	1.076	0.012	21.9
Head Test Data of U-NII-8												
Left cheek	802.11ax 80M	183/6865	99.58%	1.004	0.021	0.005	0.12	14.48	15.50	1.265	0.027	21.9
Left tilted	802.11ax 80M	183/6865	99.58%	1.004	0.012	0.001	0.05	14.48	15.50	1.265	0.015	21.9
Right cheek	802.11ax 80M	183/6865	99.58%	1.004	0.011	0.001	0.05	14.48	15.50	1.265	0.014	21.9
Right tilted	802.11ax 80M	183/6865	99.58%	1.004	0.012	0.003	-0.06	14.48	15.50	1.265	0.015	21.9
Hotspot												
Ant6 Test Record												
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Hotspot Test data of U-NII-5 (Separate 10mm)												
Front side	802.11ax 160M	79/6345	99.58%	1.004	0.026	0.011	0.03	13.99	14.50	1.125	0.029	22.1
Back side	802.11ax 160M	79/6345	99.58%	1.004	0.031	0.011	-0.05	13.99	14.50	1.125	0.035	22.1
Left side	802.11ax 160M	79/6345	99.58%	1.004	0.024	0.008	-0.06	13.99	14.50	1.125	0.027	22.1
Right side	802.11ax 160M	79/6345	99.58%	1.004	0.030	0.012	0.05	13.99	14.50	1.125	0.034	22.1
Top side	802.11ax 160M	79/6345	99.58%	1.004	0.021	0.008	0.01	13.99	14.50	1.125	0.024	22.1
Bottom side	802.11ax 160M	79/6345	99.58%	1.004	0.042	0.011	0.05	13.99	14.50	1.125	0.047	22.1
Hotspot Test data of U-NII-6 (Separate 10mm)												
Front side	802.11ax 160M	111/6505	99.58%	1.004	0.028	0.011	0.15	13.58	14.50	1.236	0.035	22.1
Back side	802.11ax 160M	111/6505	99.58%	1.004	0.031	0.012	-0.05	13.58	14.50	1.236	0.038	22.1
Left side	802.11ax 160M	111/6505	99.58%	1.004	0.016	0.007	-0.19	13.58	14.50	1.236	0.020	22.1
Right side	802.11ax 160M	111/6505	99.58%	1.004	0.023	0.017	-0.03	13.58	14.50	1.236	0.029	22.1
Top side	802.11ax 160M	111/6505	99.58%	1.004	0.021	0.009	-0.05	13.58	14.50	1.236	0.026	22.1
Bottom side	802.11ax 160M	111/6505	99.58%	1.004	0.021	0.007	0.05	13.58	14.50	1.236	0.026	22.1
Hotspot Test data of U-NII-7 (Separate 10mm)												
Front side	802.11ax 160M	175/6825	99.58%	1.004	0.042	0.017	-0.08	15.65	16.00	1.084	0.046	22.1
Back side	802.11ax 160M	175/6825	99.58%	1.004	0.037	0.014	-0.19	15.65	16.00	1.084	0.040	22.1
Left side	802.11ax 160M	175/6825	99.58%	1.004	0.016	0.040	0.02	15.65	16.00	1.084	0.017	22.1
Right side	802.11ax 160M	175/6825	99.58%	1.004	0.024	0.005	0.02	15.65	16.00	1.084	0.026	22.1
Top side	802.11ax 160M	175/6825	99.58%	1.004	0.024	0.009	0.08	15.65	16.00	1.084	0.026	22.1
Bottom side	802.11ax 160M	175/6825	99.58%	1.004	0.026	0.010	0.05	15.65	16.00	1.084	0.028	22.1
Front side	802.11ax 160M	143/6665	99.58%	1.004	0.016	0.006	0.01	13.30	14.50	1.318	0.021	21.9
Hotspot Test data of U-NII-8 (Separate 10mm)												
Front side	802.11ax 160M	207/6985	99.58%	1.004	0.038	0.016	0.02	13.81	15.50	1.476	0.056	22.2
Back side	802.11ax 160M	207/6985	99.58%	1.004	0.030	0.011	0.06	13.81	15.50	1.476	0.044	22.2
Left side	802.11ax 160M	207/6985	99.58%	1.004	0.021	0.008	0.06	13.81	15.50	1.476	0.031	22.2
Right side	802.11ax 160M	207/6985	99.58%	1.004	0.025	0.007	0.04	13.81	15.50	1.476	0.037	22.2

Top side	802.11ax 160M	207/6985	99.58%	1.004	0.016	0.006	0.05	13.81	15.50	1.476	0.024	21.9
Bottom side	802.11ax 160M	207/6985	99.58%	1.004	0.029	0.010	0.01	13.81	15.50	1.476	0.043	21.9
Ant7 Test Record												
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Hotspot Test data of U-NII-5 (Separate 10mm)												
Front side	802.11ax 160M	79/6345	99.58%	1.004	0.005	0.001	-0.09	11.43	12.00	1.140	0.006	22.6
Back side	802.11ax 160M	79/6345	99.58%	1.004	0.115	0.039	0.01	11.43	12.00	1.140	0.132	22.6
Left side	802.11ax 160M	79/6345	99.58%	1.004	0.078	0.028	-0.07	11.43	12.00	1.140	0.089	22.6
Right side	802.11ax 160M	79/6345	99.58%	1.004	0.002	0.001	-0.02	11.43	12.00	1.140	0.002	22.6
Top side	802.11ax 160M	79/6345	99.58%	1.004	0.007	0.003	-0.05	11.43	12.00	1.140	0.008	22.6
Bottom side	802.11ax 160M	79/6345	99.58%	1.004	0.002	0.000	-0.07	11.43	12.00	1.140	0.002	22.6
Hotspot Test data of U-NII-6 (Separate 10mm)												
Front side	802.11ax 160M	111/6505	99.58%	1.004	0.005	0.001	0.09	9.67	11.00	1.358	0.007	22.6
Back side	802.11ax 160M	111/6505	99.58%	1.004	0.057	0.018	0.06	9.67	11.00	1.358	0.078	22.6
Left side	802.11ax 160M	111/6505	99.58%	1.004	0.049	0.018	0.09	9.67	11.00	1.358	0.067	22.3
Right side	802.11ax 160M	111/6505	99.58%	1.004	0.009	0.003	-0.03	9.67	11.00	1.358	0.012	22.3
Top side	802.11ax 160M	111/6505	99.58%	1.004	0.010	0.004	0.01	9.67	11.00	1.358	0.014	22.6
Bottom side	802.11ax 160M	111/6505	99.58%	1.004	0.006	0.003	-0.05	9.67	11.00	1.358	0.008	22.3
Hotspot Test data of U-NII-7 (Separate 10mm)												
Front side	802.11ax 160M	175/6825	99.58%	1.004	0.008	0.002	0.00	14.97	15.50	1.130	0.009	22.3
Back side	802.11ax 160M	175/6825	99.58%	1.004	0.204	0.069	0.00	14.97	15.50	1.130	0.231	22.3
Left side	802.11ax 160M	175/6825	99.58%	1.004	0.189	0.065	0.04	14.97	15.50	1.130	0.214	22.3
Right side	802.11ax 160M	175/6825	99.58%	1.004	0.007	0.003	-0.01	14.97	15.50	1.130	0.008	22.3
Top side	802.11ax 160M	175/6825	99.58%	1.004	0.027	0.012	0.01	14.97	15.50	1.130	0.031	22.3
Bottom side	802.11ax 160M	175/6825	99.58%	1.004	0.002	0.000	0.00	14.97	15.50	1.130	0.002	22.3
Hotspot Test data of U-NII-8 (Separate 10mm)												
Front side	802.11ax 160M	207/6985	99.58%	1.004	0.004	0.000	0.09	14.97	15.50	1.130	0.005	22.3
Back side	802.11ax 160M	207/6985	99.58%	1.004	0.069	0.025	-0.08	14.97	15.50	1.130	0.078	22.3
Left side	802.11ax 160M	207/6985	99.58%	1.004	0.069	0.024	0.02	14.97	15.50	1.130	0.078	22.3
Right side	802.11ax 160M	207/6985	99.58%	1.004	0.001	0.000	0.09	14.97	15.50	1.130	0.001	22.3
Top side	802.11ax 160M	207/6985	99.58%	1.004	0.006	0.000	-0.09	14.97	15.50	1.130	0.007	22.3
Bottom side	802.11ax 160M	207/6985	99.58%	1.004	0.001	0.000	-0.01	14.97	15.50	1.130	0.001	22.3
MIMO Test Record												
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Hotspot Test data of U-NII-5 (Separate 10mm)												
Front side	802.11ax 160M	15/6025	99.58%	1.004	0.014	0.006	0.08	12.77	14.50	1.489	0.021	22.1
Back side	802.11ax 160M	15/6025	99.58%	1.004	0.181	0.064	0.14	12.77	14.50	1.489	0.271	22.1
Left side	802.11ax 160M	15/6025	99.58%	1.004	0.119	0.043	-0.04	12.77	14.50	1.489	0.178	22.1
Right side	802.11ax 160M	15/6025	99.58%	1.004	0.045	0.011	0.05	12.77	14.50	1.489	0.067	22.1
Top side	802.11ax 160M	15/6025	99.58%	1.004	0.027	0.011	0.03	12.77	14.50	1.489	0.040	22.1
Bottom side	802.11ax 160M	15/6025	99.58%	1.004	0.030	0.003	0.02	12.77	14.50	1.489	0.045	22.1
Hotspot Test data of U-NII-6 (Separate 10mm)												
Front side	802.11ax 160M	111/6505	99.58%	1.004	0.029	0.011	0.05	12.28	13.00	1.180	0.034	22.1
Back side	802.11ax 160M	111/6505	99.58%	1.004	0.203	0.067	-0.05	12.28	13.00	1.180	0.241	22.1
Left side	802.11ax 160M	111/6505	99.58%	1.004	0.158	0.062	0.03	12.28	13.00	1.180	0.187	22.1
Right side	802.11ax 160M	111/6505	99.58%	1.004	0.018	0.006	0.08	12.28	13.00	1.180	0.021	22.1
Top side	802.11ax 160M	111/6505	99.58%	1.004	0.042	0.018	0.05	12.28	13.00	1.180	0.050	22.1
Bottom side	802.11ax 160M	111/6505	99.58%	1.004	0.013	0.005	0.02	12.28	13.00	1.180	0.015	22.1
Hotspot Test data of U-NII-7 (Separate 10mm)												
Front side	802.11ax 160M	175/6825	99.58%	1.004	0.028	0.011	0.01	15.18	15.50	1.076	0.030	22.1
Back side	802.11ax 160M	175/6825	99.58%	1.004	0.302	0.105	0.06	15.18	15.50	1.076	**0.326**	22.1

Left side	802.11ax 160M	175/6825	99.58%	1.004	0.200	0.071	0.12	15.18	15.50	1.076	0.216	22.1
Right side	802.11ax 160M	175/6825	99.58%	1.004	0.019	0.004	0.02	15.18	15.50	1.076	0.021	22.1
Top side	802.11ax 160M	175/6825	99.58%	1.004	0.019	0.007	0.05	15.18	15.50	1.076	0.021	22.1
Bottom side	802.11ax 160M	175/6825	99.58%	1.004	0.012	0.002	0.03	15.18	15.50	1.076	0.013	22.1
Hotspot Test data of U-NII-8 (Separate 10mm)												
Front side	802.11ax 80M	183/6865	99.58%	1.004	0.017	0.005	0.09	14.48	15.50	1.265	0.022	22.1
Back side	802.11ax 80M	183/6865	99.58%	1.004	0.148	0.049	-0.08	14.48	15.50	1.265	0.188	22.1
Left side	802.11ax 80M	183/6865	99.58%	1.004	0.097	0.032	0.06	14.48	15.50	1.265	0.123	22.1
Right side	802.11ax 80M	183/6865	99.58%	1.004	0.008	0.000	0.02	14.48	15.50	1.265	0.010	22.1
Top side	802.11ax 80M	183/6865	99.58%	1.004	0.000	0.000	0.00	14.48	15.50	1.265	0.000	22.1
Bottom side	802.11ax 80M	183/6865	99.58%	1.004	0.000	0.000	0.00	14.48	15.50	1.265	0.000	22.1
Body worn												
Ant6 Test Record												
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body worn Test data of U-NII-5 (Separate 15mm)												
Front side	802.11ax 160M	79/6345	99.58%	1.004	0.025	0.011	0.03	13.99	14.50	1.125	0.028	22.1
Back side	802.11ax 160M	79/6345	99.58%	1.004	0.030	0.013	0.01	13.99	14.50	1.125	0.034	22.1
Body worn Test data of U-NII-6 (Separate 15mm)												
Front side	802.11ax 160M	111/6505	99.58%	1.004	0.021	0.008	-0.09	13.58	14.50	1.236	0.026	22.1
Back side	802.11ax 160M	111/6505	99.58%	1.004	0.028	0.012	-0.03	13.58	14.50	1.236	0.035	22.1
Body worn Test data of U-NII-7 (Separate 15mm)												
Front side	802.11ax 160M	175/6825	99.58%	1.004	0.033	0.014	-0.05	15.65	16.00	1.084	0.036	22.1
Back side	802.11ax 160M	175/6825	99.58%	1.004	0.033	0.014	0.05	15.65	16.00	1.084	0.036	22.1
Front side	802.11ax 160M	143/6665	99.58%	1.004	0.023	0.009	0.01	13.30	14.50	1.318	0.030	21.9
Body worn Test data of U-NII-8 (Separate 15mm)												
Front side	802.11ax 160M	207/6985	99.58%	1.004	0.030	0.012	0.07	13.81	15.50	1.476	0.044	21.9
Back side	802.11ax 160M	207/6985	99.58%	1.004	0.030	0.011	-0.06	13.81	15.50	1.476	0.044	21.9
Ant7 Test Record												
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body worn Test data of U-NII-5 (Separate 15mm)												
Front side	802.11ax 160M	79/6345	99.58%	1.004	0.002	0.001	-0.08	11.43	12.00	1.140	0.002	22.6
Back side	802.11ax 160M	79/6345	99.58%	1.004	0.060	0.021	0.07	11.43	12.00	1.140	0.069	22.6
Body worn Test data of U-NII-6 (Separate 15mm)												
Front side	802.11ax 160M	111/6505	99.58%	1.004	0.005	0.002	0.09	9.67	11.00	1.358	0.007	22.6
Back side	802.11ax 160M	111/6505	99.58%	1.004	0.034	0.010	0.01	9.67	11.00	1.358	0.046	22.6
Body worn Test data of U-NII-7 (Separate 15mm)												
Front side	802.11ax 160M	175/6825	99.58%	1.004	0.007	0.002	0.03	14.97	15.50	1.130	0.008	22.3
Back side	802.11ax 160M	175/6825	99.58%	1.004	0.148	0.054	0.07	14.97	15.50	1.130	0.168	22.3
Body worn Test data of U-NII-8 (Separate 15mm)												
Front side	802.11ax 160M	207/6985	99.58%	1.004	0.002	0.000	-0.09	14.97	15.50	1.130	0.002	22.3
Back side	802.11ax 160M	207/6985	99.58%	1.004	0.055	0.020	0.06	14.97	15.50	1.130	0.062	22.3
MIMO Test Record												
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Body worn Test data of U-NII-5 (Separate 15mm)												
Front side	802.11ax 160M	15/6025	99.58%	1.004	0.027	0.010	0.05	12.77	14.50	1.489	0.040	22.1
Back side	802.11ax 160M	15/6025	99.58%	1.004	0.084	0.031	0.05	12.77	14.50	1.489	0.126	22.1
Body worn Test data of U-NII-6 (Separate 15mm)												
Front side	802.11ax 160M	111/6505	99.58%	1.004	0.037	0.014	0.07	12.28	13.00	1.180	0.044	22.1

Back side	802.11ax 160M	111/6505	99.58%	1.004	0.118	0.044	0.02	12.28	13.00	1.180	0.140	22.1
Body worn Test data of U-NII-7 (Separate 15mm)												
Front side	802.11ax 160M	175/6825	99.58%	1.004	0.084	0.027	0.06	15.18	15.50	1.076	0.091	22.1
Back side	802.11ax 160M	175/6825	99.58%	1.004	0.161	0.057	0.01	15.18	15.50	1.076	**0.174**	22.1
Body worn Test data of U-NII-8 (Separate 15mm)												
Front side	802.11ax 80M	183/6865	99.58%	1.004	0.015	0.005	0.06	14.48	15.50	1.265	0.019	22.1
Back side	802.11ax 80M	183/6865	99.58%	1.004	0.105	0.034	-0.01	14.48	15.50	1.265	0.133	22.1

Product specific 10gSAR

Ant6 Test Record

Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)
Product specific 10gSAR Test data of U-NII-5(Separate 0mm)												
Front side	802.11ax 160M	79/6345	99.58%	1.004	0.047	0.018	0.07	13.99	14.50	1.125	0.020	22.1
Back side	802.11ax 160M	79/6345	99.58%	1.004	0.038	0.010	-0.05	13.99	14.50	1.125	0.011	22.1
Left side	802.11ax 160M	79/6345	99.58%	1.004	0.036	0.014	0.02	13.99	14.50	1.125	0.016	22.1
Right side	802.11ax 160M	79/6345	99.58%	1.004	0.042	0.012	-0.07	13.99	14.50	1.125	0.014	22.1
Top side	802.11ax 160M	79/6345	99.58%	1.004	0.022	0.008	-0.06	13.99	14.50	1.125	0.009	22.1
Bottom side	802.11ax 160M	79/6345	99.58%	1.004	0.017	0.005	0.02	13.99	14.50	1.125	0.006	22.1
Product specific 10gSAR Test data of U-NII-6 (Separate 0mm)												
Front side	802.11ax 160M	111/6505	99.58%	1.004	0.045	0.016	0.02	13.58	14.50	1.236	0.020	22.1
Back side	802.11ax 160M	111/6505	99.58%	1.004	0.059	0.021	0.06	13.58	14.50	1.236	0.026	22.1
Left side	802.11ax 160M	111/6505	99.58%	1.004	0.053	0.019	-0.08	13.58	14.50	1.236	0.024	22.1
Right side	802.11ax 160M	111/6505	99.58%	1.004	0.047	0.014	-0.07	13.58	14.50	1.236	0.017	22.1
Top side	802.11ax 160M	111/6505	99.58%	1.004	0.051	0.017	-0.04	13.58	14.50	1.236	0.021	22.1
Bottom side	802.11ax 160M	111/6505	99.58%	1.004	0.057	0.020	0.19	13.58	14.50	1.236	0.025	22.1
Product specific 10gSAR Test data of U-NII-7 (Separate 0mm)												
Front side	802.11ax 160M	175/6825	99.58%	1.004	0.069	0.025	0.09	15.65	16.00	1.084	0.027	22.1
Back side	802.11ax 160M	175/6825	99.58%	1.004	0.063	0.025	0.05	15.65	16.00	1.084	0.027	22.1
Left side	802.11ax 160M	175/6825	99.58%	1.004	0.044	0.017	-0.05	15.65	16.00	1.084	0.019	22.1
Right side	802.11ax 160M	175/6825	99.58%	1.004	0.040	0.020	0.06	15.65	16.00	1.084	0.022	22.1
Top side	802.11ax 160M	175/6825	99.58%	1.004	0.025	0.009	0.05	15.65	16.00	1.084	0.010	22.1
Bottom side	802.11ax 160M	175/6825	99.58%	1.004	0.035	0.013	-0.06	15.65	16.00	1.084	0.014	22.1
Front side	802.11ax 160M	143/6665	99.58%	1.004	0.056	0.020	0.05	13.30	14.50	1.318	0.026	21.9
Product specific 10gSAR Test data of U-NII-8 (Separate 0mm)												
Front side	802.11ax 160M	207/6985	99.58%	1.004	0.074	0.028	-0.06	13.81	15.50	1.476	0.041	22.2
Back side	802.11ax 160M	207/6985	99.58%	1.004	0.062	0.018	-0.01	13.81	15.50	1.476	0.027	21.9
Left side	802.11ax 160M	207/6985	99.58%	1.004	0.052	0.017	0.08	13.81	15.50	1.476	0.025	22.2
Right side	802.11ax 160M	207/6985	99.58%	1.004	0.054	0.013	0.06	13.81	15.50	1.476	0.019	22.2
Top side	802.11ax 160M	207/6985	99.58%	1.004	0.035	0.012	0.01	13.81	15.50	1.476	0.018	22.2
Bottom side	802.11ax 160M	207/6985	99.58%	1.004	0.042	0.014	0.01	13.81	15.50	1.476	0.021	22.2

Ant7 Test Record

Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)
Product specific 10gSAR Test data of U-NII-5(Separate 0mm)												
Front side	802.11ax 160M	79/6345	99.58%	1.004	0.018	0.006	0.04	11.43	12.00	1.140	0.007	22.6
Back side	802.11ax 160M	79/6345	99.58%	1.004	0.648	0.150	0.02	11.43	12.00	1.140	0.172	22.6
Left side	802.11ax 160M	79/6345	99.58%	1.004	0.465	0.122	0.09	11.43	12.00	1.140	0.140	22.6
Right side	802.11ax 160M	79/6345	99.58%	1.004	0.008	0.002	-0.03	11.43	12.00	1.140	0.002	22.6
Top side	802.11ax 160M	79/6345	99.58%	1.004	0.028	0.010	0.01	11.43	12.00	1.140	0.011	22.6
Bottom side	802.11ax 160M	79/6345	99.58%	1.004	0.005	0.001	-0.07	11.43	12.00	1.140	0.001	22.6
Product specific 10gSAR Test data of U-NII-6 (Separate 0mm)												
Front side	802.11ax 160M	111/6505	99.58%	1.004	0.008	0.002	-0.05	9.67	11.00	1.358	0.003	22.6
Back side	802.11ax 160M	111/6505	99.58%	1.004	0.518	0.105	0.05	9.67	11.00	1.358	0.143	22.6

Left side	802.11ax 160M	111/6505	99.58%	1.004	0.297	0.073	-0.05	9.67	11.00	1.358	0.100	22.3
Right side	802.11ax 160M	111/6505	99.58%	1.004	0.004	0.002	0.02	9.67	11.00	1.358	0.002	22.3
Top side	802.11ax 160M	111/6505	99.58%	1.004	0.024	0.008	0.03	9.67	11.00	1.358	0.011	22.3
Bottom side	802.11ax 160M	111/6505	99.58%	1.004	0.003	0.001	-0.02	9.67	11.00	1.358	0.001	22.3
Product specific 10gSAR Test data of U-NII-7 (Separate 0mm)												
Front side	802.11ax 160M	175/6825	99.58%	1.004	0.035	0.011	0.00	14.97	15.50	1.130	0.012	22.3
Back side	802.11ax 160M	175/6825	99.58%	1.004	1.500	0.336	0.00	14.97	15.50	1.130	**0.381**	22.3
Left side	802.11ax 160M	175/6825	99.58%	1.004	0.867	0.204	0.01	14.97	15.50	1.130	0.231	22.3
Right side	802.11ax 160M	175/6825	99.58%	1.004	0.002	0.001	-0.06	14.97	15.50	1.130	0.001	22.3
Top side	802.11ax 160M	175/6825	99.58%	1.004	0.062	0.026	0.04	14.97	15.50	1.130	0.029	22.3
Bottom side	802.11ax 160M	175/6825	99.58%	1.004	0.001	0.001	0.09	14.97	15.50	1.130	0.001	22.3
Back side	802.11ax 160M	143/6825	99.58%	1.004	0.991	0.243	0.03	13.63	15.50	1.538	0.375	22.3
Product specific 10gSAR Test data of U-NII-8 (Separate 0mm)												
Front side	802.11ax 160M	207/6985	99.58%	1.004	0.039	0.010	0.01	14.97	15.50	1.130	0.011	22.3
Back side	802.11ax 160M	207/6985	99.58%	1.004	0.419	0.099	0.04	14.97	15.50	1.130	0.112	22.3
Left side	802.11ax 160M	207/6985	99.58%	1.004	0.183	0.039	0.04	14.97	15.50	1.130	0.044	22.3
Right side	802.11ax 160M	207/6985	99.58%	1.004	0.002	0.001	0.00	14.97	15.50	1.130	0.001	22.3
Top side	802.11ax 160M	207/6985	99.58%	1.004	0.016	0.007	-0.02	14.97	15.50	1.130	0.008	22.3
Bottom side	802.11ax 160M	207/6985	99.58%	1.004	0.004	0.001	-0.03	14.97	15.50	1.130	0.001	22.3
MIMO Test Record												
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10gSAR Test data of U-NII-5(Separate 0mm)												
Front side	802.11ax 160M	15/6025	99.58%	1.004	0.035	0.011	0.05	12.77	14.50	1.489	0.016	22.1
Back side	802.11ax 160M	15/6025	99.58%	1.004	1.010	0.235	-0.01	12.77	14.50	1.489	0.351	22.1
Left side	802.11ax 160M	15/6025	99.58%	1.004	0.726	0.173	0.06	12.77	14.50	1.489	0.259	22.1
Right side	802.11ax 160M	15/6025	99.58%	1.004	0.046	0.015	0.02	12.77	14.50	1.489	0.022	22.1
Top side	802.11ax 160M	15/6025	99.58%	1.004	0.040	0.015	-0.09	12.77	14.50	1.489	0.022	22.1
Bottom side	802.11ax 160M	15/6025	99.58%	1.004	0.010	0.003	0.02	12.77	14.50	1.489	0.004	22.1
Back side	802.11ax 160M	79/6345	99.58%	1.004	0.950	0.208	0.04	12.74	14.50	1.500	0.313	22.1
Product specific 10gSAR Test data of U-NII-6 (Separate 0mm)												
Front side	802.11ax 160M	111/6505	99.58%	1.004	0.030	0.018	0.02	12.28	13.00	1.180	0.021	22.1
Back side	802.11ax 160M	111/6505	99.58%	1.004	1.030	0.243	0.02	12.28	13.00	1.180	0.288	22.1
Left side	802.11ax 160M	111/6505	99.58%	1.004	0.677	0.185	0.05	12.28	13.00	1.180	0.219	22.1
Right side	802.11ax 160M	111/6505	99.58%	1.004	0.044	0.010	0.01	12.28	13.00	1.180	0.012	22.1
Top side	802.11ax 160M	111/6505	99.58%	1.004	0.068	0.027	0.05	12.28	13.00	1.180	0.032	22.1
Bottom side	802.11ax 160M	111/6505	99.58%	1.004	0.037	0.012	-0.08	12.28	13.00	1.180	0.014	22.1
Product specific 10gSAR Test data of U-NII-7 (Separate 0mm)												
Front side	802.11ax 160M	175/6825	99.58%	1.004	0.084	0.027	0.06	15.18	15.50	1.076	0.029	22.1
Back side	802.11ax 160M	175/6825	99.58%	1.004	1.160	0.265	0.10	15.18	15.50	1.076	0.286	22.1
Left side	802.11ax 160M	175/6825	99.58%	1.004	0.675	0.196	-0.05	15.18	15.50	1.076	0.212	22.1
Right side	802.11ax 160M	175/6825	99.58%	1.004	0.050	0.007	0.05	15.18	15.50	1.076	0.008	22.1
Top side	802.11ax 160M	175/6825	99.58%	1.004	0.072	0.026	-0.09	15.18	15.50	1.076	0.028	22.1
Bottom side	802.11ax 160M	175/6825	99.58%	1.004	0.024	0.005	0.01	15.18	15.50	1.076	0.005	22.1
Product specific 10gSAR Test data of U-NII-8 (Separate 0mm)												
Front side	802.11ax 80M	183/6865	99.58%	1.004	0.062	0.021	0.14	14.48	15.50	1.265	0.027	22.1
Back side	802.11ax 80M	183/6865	99.58%	1.004	0.624	0.157	0.06	14.48	15.50	1.265	0.199	22.1
Left side	802.11ax 80M	183/6865	99.58%	1.004	0.352	0.078	0.01	14.48	15.50	1.265	0.099	22.1
Right side	802.11ax 80M	183/6865	99.58%	1.004	0.002	0.000	0.04	14.48	15.50	1.265	0.000	22.1
Top side	802.11ax 80M	183/6865	99.58%	1.004	0.006	0.001	0.08	14.48	15.50	1.265	0.001	22.1
Bottom side	802.11ax 80M	183/6865	99.58%	1.004	0.000	0.000	0.00	14.48	15.50	1.265	0.000	22.1

Table 4： SAR of WiFi 6E for Head, Body, Limbs.

6.3 Measurement of PD Data

ANT6 （chain2）														
Test position	Test mode	Test ch	Freq.	Distance (mm)	Grid Step （λ）	Duty Cycle	Duty Cycle Scaled factor	Measured PD 1cm^2 (W/m^2)	Measured PD 4cm^2 (W/m^2)	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled PD 4cm^2 (W/kg)
Power Density Test DATA														
Back side	802.11ax 160M	79	6345	2.0	0.0625	99.58%	1.004	1.00	0.78	0.08	13.99	14.50	1.125	0.875
Back side	802.11ax 160M	111	6505	2.0	0.0625	99.58%	1.004	0.45	0.35	0.07	13.58	14.50	1.236	0.434
Back side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	1.14	0.95	0.07	15.65	16.00	1.084	1.034
Back side	802.11ax 160M	207	6985	2.0	0.0625	99.58%	1.004	0.59	0.46	0.03	13.81	15.50	1.476	0.685
Back side	802.11ax 160M	143	6665	2.0	0.0625	99.58%	1.004	0.33	0.26	0.01	13.30	14.50	1.318	0.344
Front side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	0.40	0.26	0.03	15.65	16.00	1.084	0.287
Left side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	0.12	0.07	0.01	15.65	16.00	1.084	0.076
Right side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	0.25	0.13	0.04	15.65	16.00	1.084	0.141
Top side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	0.29	0.14	0.01	15.65	16.00	1.084	0.152
Bottom side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	0.04	0.01	0.09	15.65	16.00	1.084	0.011
ANT7 （chain1）														
Test position	Test mode	Test ch	Freq.	Distance (mm)	Grid Step （λ）	Duty Cycle	Duty Cycle Scaled factor	Measured PD 1cm^2 (W/m^2)	Measured PD 4cm^2 (W/m^2)	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled PD 4cm^2 (W/kg)
Power Density Test DATA														
Back side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	6.68	5.10	0.02	14.97	15.50	1.130	**5.785**
Back side	802.11ax 160M	79	6345	2.0	0.0625	99.58%	1.004	4.63	3.13	-0.06	11.43	12.00	1.140	3.583
Back side	802.11ax 160M	111	6505	2.0	0.0625	99.58%	1.004	3.68	2.52	-0.03	9.67	11.00	1.358	3.437
Back side	802.11ax 160M	207	6985	2.0	0.0625	99.58%	1.004	6.15	4.42	0.08	14.97	15.50	1.130	5.014
Back side	802.11ax 160M	143	6665	2.0	0.0625	99.58%	1.004	4.15	3.18	0.02	13.63	15.50	1.538	4.911
Front side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	1.79	1.19	0.05	14.97	15.50	1.130	1.348
Left side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	0.56	0.32	0.02	14.97	15.50	1.130	0.357
Right side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	1.17	0.59	0.17	14.97	15.50	1.130	0.669
Top side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	1.33	0.63	0.11	14.97	15.50	1.130	0.715
Bottom side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	0.15	0.06	-0.14	14.97	15.50	1.130	0.068
MIMO														
Test position	Test mode	Test ch	Freq.	Distance (mm)	Grid Step （λ）	Duty Cycle	Duty Cycle Scaled factor	Measured PD 1cm^2 (W/m^2)	Measured PD 4cm^2 (W/m^2)	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled PD 4cm^2 (W/kg)
Power Density Test DATA														

Back side	802.11ax 160M	15	6025	2.0	0.0625	99.58%	1.004	5.29	3.12	-0.01	12.77	14.50	1.489	4.665
Back side	802.11ax 160M	111	6505	2.0	0.0625	99.58%	1.004	4.28	2.79	0.06	12.28	13.00	1.180	3.306
Back side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	6.78	4.71	0.02	15.18	15.50	1.076	5.090
Back side	802.11ax 160M	183	6865	2.0	0.0625	99.58%	1.004	3.92	3.04	-0.09	14.48	15.50	1.265	3.860
Back side	802.11ax 160M	79	6345	2.0	0.0625	99.58%	1.004	3.48	2.59	-0.08	12.74	14.50	1.500	3.900
Front side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	1.65	1.08	0.02	15.18	15.50	1.076	1.167
Left side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	0.48	0.30	0.08	15.18	15.50	1.076	0.324
Right side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	1.05	0.52	0.03	15.18	15.50	1.076	0.562
Top side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	1.28	0.57	-0.14	15.18	15.50	1.076	0.616
Bottom side	802.11ax 160M	175	6825	2.0	0.0625	99.58%	1.004	0.11	0.04	0.09	15.18	15.50	1.076	0.043

Table 5： PD of WiFi 6E.

7 Equipment list

Test Platform	SPEAG DASY Professional
Description	SAR Test System (Frequency range 300MHz-6GHz)
Software Reference	DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Hardware Reference

Equipment		Manufacturer	Model	Inventory No.	Calibration Date	Due date of calibration
☒	DAE	SPEAG	DAE4ip	SZ-WSR-M-078	2023/9/12	2024/9/11
☒	DAE	SPEAG	DAE4	SZ-WSR-M-031	2024/03/18	2025/03/17
☒	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-075	2023/7/17	2024/7/16
☒	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-079	2023/09/11	2024/09/10
☒	EUmmWV Probe	SPEAG	EUmmWV4	SZ-WSR-M-048	2023/8/18	2024/8/17
☒	Validation Kits	SPEAG	D6.5GHZV2	SZ-WSR-M-080	2023/9/11	2026/9/10
☒	5G Verification Source	SPEAG	10GHz	SZ-WSR-M-049	2023/8/21	2024/8/20
☒	Dielectric parameter probes	SPEAG	DAKS-3.5	SZ-WSR-M-053	2023/06/15	2024/06/14
☒	Vector Network Analyzer and Vector Reflectometer	SPEAG	DAKS_VNA R140	SZ-WSR-M-054	2023/06/07	2024/06/06
☒	RF Bi-Directional Coupler	Agilent	86205-60001	SZ-WSR-A-004	NCR	NCR
☒	Signal Generator	Agilent	N5171B	SZ-WSR-M-006	2024/01/30	2025/01/29
☒	Preamplifier	Mini-Circuits	ZHL-42W	SZ-WSR-A-001	NCR	NCR
☒	Preamplifier	Shanghai Qiji Automation Instrument Co., Ltd	YX28982108	SZ-WSR-A-003	NCR	NCR
☒	Power Meter	Agilent	E4416A	SZ-WSR-M-007	2024/01/30	2025/01/29
☒	Power Sensor	Agilent	8481H	SZ-WSR-M-008	2024/01/30	2025/01/29
☒	Power Sensor	R&S	NRP-Z92	SZ-WSR-M-009	2024/01/30	2025/01/29
☒	Attenuator	SHX	TS2-3dB	SZ-WSR-A-012	NCR	NCR
☒	Humidity and Temperature Indicator	MingGao	TH101B	SZ-WSR-M-001	2024/1/31	2025/1/30
☒	Humidity and Temperature Indicator	AS ONE	THA-02L	SZ-WSR-M-003	2024/1/31	2025/1/30

1) All the equipments are within the valid period when the tests are performed.

8 Measurement Uncertainty

Measurements and results are all in compliance with the standards listed. All measurements and results are recorded and maintained at the laboratory performing the tests and measurement uncertainties are taken into account when comparing measurements to pass/ fail criteria. The expanded uncertainty (95% CONFIDENCE INTERVAL) is **21.77%**.

A	b1	c	d	e = f(d,k)	g	i = C*g/e	k
Uncertainty Component	Section in P1528	Tol (%)	Prob . Dist.	Div.	Ci (1g)	1g ui (%)	Vi (Veff)
Probe calibration	E.2.1	6.65	N	1	1	6.65	∞
Axial isotropy	E.2.2	0.5	R	$\sqrt{3}$	$(1-\mathrm{Cp})^{1/2}$	0.20	∞
hemispherical isotropy	E.2.2	2.6	R	$\sqrt{3}$	$\sqrt{\mathrm{Cp}}$	1.06	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	0.58	∞
Linearity	E.2.4	0.6	R	$\sqrt{3}$	1	0.35	∞
System detection limit	E.2.5	0.25	R	$\sqrt{3}$	1	0.14	∞
Readout electronics	E.2.6	0.3	N	1	1	0.30	∞
Response time	E.2.7	0	R	$\sqrt{3}$	1	0.00	∞
Integration time	E.2.8	2.6	R	$\sqrt{3}$	1	1.50	∞
RF ambient Condition – Noise	E.6.1	3	R	$\sqrt{3}$	1	1.73	∞
RF ambient Condition - reflections	E.6.1	3	R	$\sqrt{3}$	1	1.73	∞
Probe positioning- mechanical tolerance	E.6.2	1.5	R	$\sqrt{3}$	1	0.87	∞
Probe positioning- with respect to phantom	E.6.3	2.9	R	$\sqrt{3}$	1	1.67	∞
Max. SAR evaluation	E.5.2	1	R	$\sqrt{3}$	1	0.58	∞
Test sample positioning	E.4.2	3.7	N	1	1	3.70	9
Device holder uncertainty	E.4.1	3.6	N	1	1	3.60	∞

Output power variation –SAR drift measurement	6.6.2	5	R	$\sqrt{3}$	1	2.89	∞
Phantom uncertainty (shape and thickness tolerances)	E.3.1	4	R	$\sqrt{3}$	1	2.31	∞
Liquid conductivity - deviation from target values	E.3.2	5	R	$\sqrt{3}$	0.64	1.85	∞
Liquid conductivity - measurement uncertainty	E.3.2	5.78	N	1	0.64	3.68	5
Liquid permittivity - deviation from target values	E.3.3	5	R	$\sqrt{3}$	0.6	1.73	∞
Liquid permittivity - measurement uncertainty	E.3.3	0.62	N	1	0.6	0.372	5
Combined standard uncertainty				RSS		10.89	430
Expanded uncertainty (95% CONFIDENCE INTERVAL)				K=2		**21.77**	

Table 6： Measurement Uncertainty

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9 Calibration certificate

Please see the Appendix C

10 Photographs

Please see the Appendix D

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Appendix A: Detailed System Check Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

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