

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 1 of 43

FCC SAR TEST REPORT

Application No.: SUCR2505000420AT
Applicant: SYNLAN TECHNOLOGY PTE. LTD.
Manufacturer: SYNLAN TECHNOLOGY PTE. LTD.
Factory: Huizhou Miki Technology Co., LTD
Product Name: iFLYTEK AI Recorder P1 Pro
Model No.(EUT): AIR2521
Trade Mark: iFLYTEK
FCC ID: 2BH7A-AIR2521
Standards: FCC 47CFR §2.1093
Date of Receipt: 2025-05-12
Date of Test: 2025-07-15
Date of Issue: 2025-07-30
Test conclusion: **PASS ***

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone:(86-755) 8307 1443, or email: CN.Doccheck@sgs.com



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001
Rev.: 01
Page: 2 of 43

Revision Record			
Version	Description	Date	Remark
01	Original	2025/07/30	/

Authorized for issue by:		
Prepared By		Leon Liu
		Leon Liu/ Project Manager
Approved By		Nick Hu
		Nick Hu/ Technical Manager



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 3 of 43

TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)
	Extremity
WI-FI (2.4GHz)	0.51
WI-FI (5GHz)	0.26
BT	<0.10
SAR Limited(W/kg)	4.0

Frequency Band	Maximum Reported SAR(W/kg)
	Body
WI-FI (2.4GHz)	1.34
WI-FI (5GHz)	1.14
BT	<0.10
SAR Limited(W/kg)	1.6

CONTENTS

1 General Information	6
1.1 Details of Client	6
1.2 Test Location	6
1.3 Test Facility	6
1.4 General Description of EUT	7
1.4.1 DUT Antenna Locations (Back View)	8
1.5 Test Specification	9
1.6 RF exposure limits	10
2 Laboratory Environment	11
3 SAR Measurements System Configuration	12
3.1 The SAR Measurement System	12
3.2 Isotropic E-field Probe EX3DV4	14
3.3 Data Acquisition Electronics (DAE)	15
3.4 SAM Twin Phantom	15
3.5 ELI Phantom	16
3.6 Device Holder for Transmitters	17
3.7 Measurement procedure	18
3.7.1 Scanning procedure	18
3.7.2 Data Storage	20
3.7.3 Data Evaluation by SEMCAD	20
4 SAR measurement variability and uncertainty	22
4.1 SAR measurement variability	22
4.2 SAR measurement uncertainty	22
5 Description of Test Position	23
5.1 Extremity exposure conditions	23
6 SAR System Verification Procedure	24
6.1 Tissue Simulate Liquid	24
6.1.1 Recipes for Tissue Simulate Liquid	24
6.1.2 Measurement for Tissue Simulate Liquid	25
6.2 SAR System Check	26
6.2.1 Justification for Extended SAR Dipole Calibrations	27
6.2.2 Summary System Check Result(s)	28
6.2.3 Detailed System Check Results	28
7 Test Configuration	29
7.1 Operation Configurations	29
7.1.1 WiFi Test Configuration	29
7.1.2 Duty cycle	29
7.1.3 BT Test Configuration	35
8 Test Result	36
8.1 Measurement of RF Conducted Power	36
8.2 Measurement of SAR Data	37
8.2.1 SAR Result of WIFI 2.4G	38
8.2.2 SAR Result of WIFI 5G	39
8.2.3 SAR Result of BT	40
8.2.4 Repeated SAR	41
9 Equipment list	42



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001
Rev.: 01
Page: 5 of 43

10 Calibration certificate 43
11 Photographs..... 43
Appendix A: Detailed System Check Results 43
Appendix B: Detailed Test Results 43
Appendix C: Calibration certificate..... 43
Appendix D: Photographs 43
Appendix E: Conducted RF Output Power..... 43



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 6 of 43

1 General Information

1.1 Details of Client

Applicant:	SYNLAN TECHNOLOGY PTE. LTD.
Address:	7 TEMASEK BOULEVARD #29-01D SUNTEC TOWER ONE SINGAPORE (038987)
Manufacturer:	SYNLAN TECHNOLOGY PTE. LTD.
Address:	7 TEMASEK BOULEVARD #29-01D SUNTEC TOWER ONE SINGAPORE (038987)

1.2 Test Location

Company:	SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.
Address:	South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone
Post code:	215000
Test Engineer:	Koller Chen

1.3 Test Facility

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

- **A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

- **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 0031225543

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 7 of 43

1.4 General Description of EUT

Device Type:	portable device		
Exposure Category:	uncontrolled environment / general population		
Product Name:	iFLYTEK AI Recorder P1 Pro		
Model No.(EUT):	AIR2521		
Trade Mark:	iFLYTEK		
Product Phase:	Production Unit		
Antenna Type:	FPC Antenna		
Device Operating Configurations :			
Modulation Mode:	WIFI: DSSS, OFDM; BT: GFSK, $\pi/4$ DQPSK, 8DPSK		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	Wi-Fi 2.4G	2412 - 2462	2412 - 2462
	Wi-Fi 5G	5150 - 5250	5150 - 5250
		5725 - 5850	5725 - 5850
	Bluetooth	2400 - 2483.5	2400 - 2483.5
RF Cable:	☒ Provided by the applicant ☐ Provided by the laboratory		
Battery Information:	Model:	411842 1ICP5/19/42	
	Normal Voltage/ Energy:	3.87Vdc, 420mAh	
	Limited charge Voltage:	DC 4.45V	
	Typical Capacity:	420mAh	
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.			



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 8 of 43

1.4.1 DUT Antenna Locations (Back View)

The DUT Antenna Locations can be referred to Appendix D



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 9 of 43

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
KDB 248227 D01	SAR Guidance for IEEE 802.11 Wi-Fi SAR v02r02
KDB 447498 D01	General RF Exposure Guidance v06
KDB 865664 D01	SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02	RF Exposure Reporting v01r02
KDB 690783 D01	SAR Listings on Grants v01r03



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 10 of 43

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.)



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 11 of 43

2 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

Table 1: The Ambient Conditions



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 12 of 43

3 SAR Measurements System Configuration

3.1 The SAR Measurement System

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

The DASY 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.

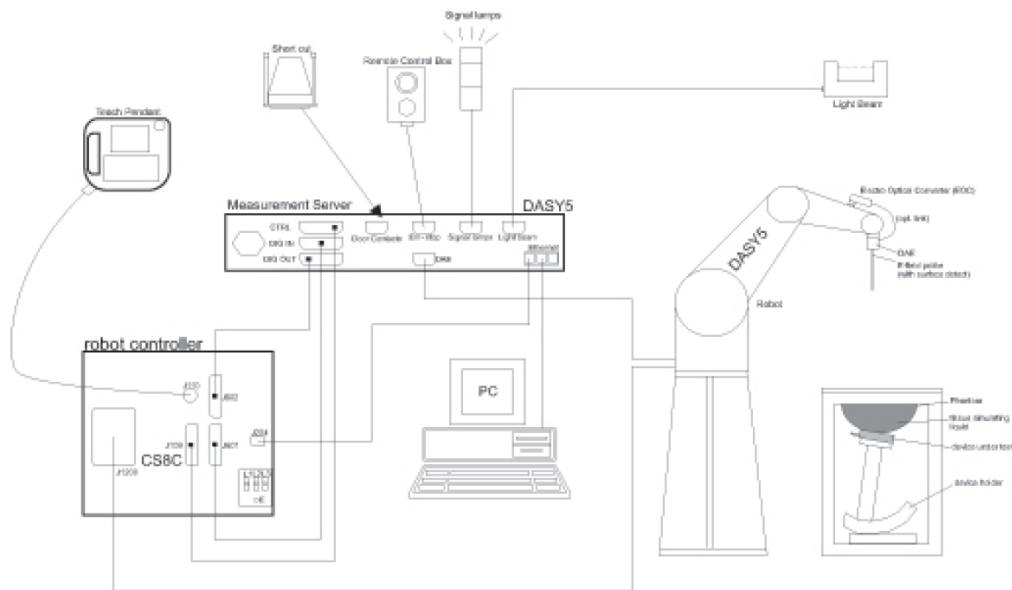
The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 13 of 43



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 7.
- 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 validating the proper functioning of the system.

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 14 of 43

3.2 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 > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 μW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μW/g)
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
Compatibility	DASY52 SAR and higher, EASY4/MRI

3.3 Data Acquisition Electronics (DAE)

Model	DAE	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY4/5 embedded system (fully remote controlled). Two step probe touch detector 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	

3.4 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	approx. 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 V5.0 has the same shell geometry and is manufactured from the same material as Twin SAM V4.0, but has reinforced top structure.

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 16 of 43

3.5 ELI Phantom

Material	Vinylester, glass fiber reinforced (VE-GF)	
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)	
Shell Thickness	2.0 ± 0.2 mm (bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	approx. 30 liters	
Wooden Support	SPEAG standard phantom table	

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 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 SPEAG dosimetric probes and dipoles. ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4, but has reinforced top structure.

3.6 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 $\epsilon=3$ and loss tangent $\delta=0.02$. 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.



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 18 of 43

3.7 Measurement procedure

3.7.1 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 or 12mm*12mm or 10mm*10mm. 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 32mm*32mm*30mm ($f \leq 2\text{GHz}$), 30mm*30mm*30mm (f for 2-3GHz) and 24mm*24mm*22mm (f for 5-6GHz) was assessed by measuring 5x5x7 points ($f \leq 2\text{GHz}$), 7x7x7 points (f for 2-3GHz) and 7x7x12 points (f for 5-6GHz). 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 1-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 IEEE Std. 1528-2013.

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 19 of 43

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: Δx_{Area} , Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom} , Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

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. $\pm 5\%$

3.7.2 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 “.DAE4”. 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.

3.7.3 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 V_i = compensated signal of channel i ($i = x, y, z$)

U_i = input signal of channel i ($i = x, y, z$)

cf = crest factor of exciting field (DASY parameter)

dcp i = diode compression point (DASY parameter)

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 21 of 43

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes:

$$E_i = (V_i / \text{Norm}_i \cdot \text{ConvF})^{1/2}$$

H-field probes:

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

With V_i = compensated signal of channel i ($i = x, y, z$)

Norm_i = sensor sensitivity of channel i ($i = x, y, z$)

[mV/(V/m)²] for E-field Probes

ConvF = sensitivity enhancement in solution

a_{ij} = sensor sensitivity factors for H-field probes

f = carrier frequency [GHz]

E_i = electric field strength of channel i in V/m

H_i = magnetic field strength of channel i in A/m

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

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

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

$$SAR = (E_{tot}^2 \cdot \sigma) / (\epsilon \cdot 1000)$$

with SAR = local specific absorption rate in mW/g

E_{tot} = 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.

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

with P_{pwe} = equivalent power density of a plane wave in mW/cm²

E_{tot} = total electric field strength in V/m

H_{tot} = total magnetic field strength in A/m



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 22 of 43

4 SAR measurement variability and uncertainty

4.1 SAR measurement variability

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

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

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

4.2 SAR measurement uncertainty

Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 23 of 43

5 Description of Test Position

5.1 Extremity exposure conditions

Per FCC KDB 648474 D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the device is marketed as "Phablet". The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for Product Specific 10-g SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 24 of 43

6 SAR System Verification Procedure

6.1 Tissue Simulate Liquid

6.1.1 Recipes for Tissue Simulate Liquid

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

Ingredients (% by weight)	Frequency (MHz)				
	450	700-900	1750-2000	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					
HSL13MHz is composed of the following ingredients: Water: 50-90% Non-ionic detergents: 5-50% NaCl: 0-2% Preservative: 0.03-0.1% HSL5GHz is composed of the following ingredients: Water: 50-65% Mineral oil: 10-30% Emulsifiers: 8-25% Sodium salt: 0-1.5%					

Table 2: Recipe of Tissue Simulate Liquid



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001
Rev.: 01
Page: 25 of 43

6.1.2 Measurement for Tissue Simulate Liquid

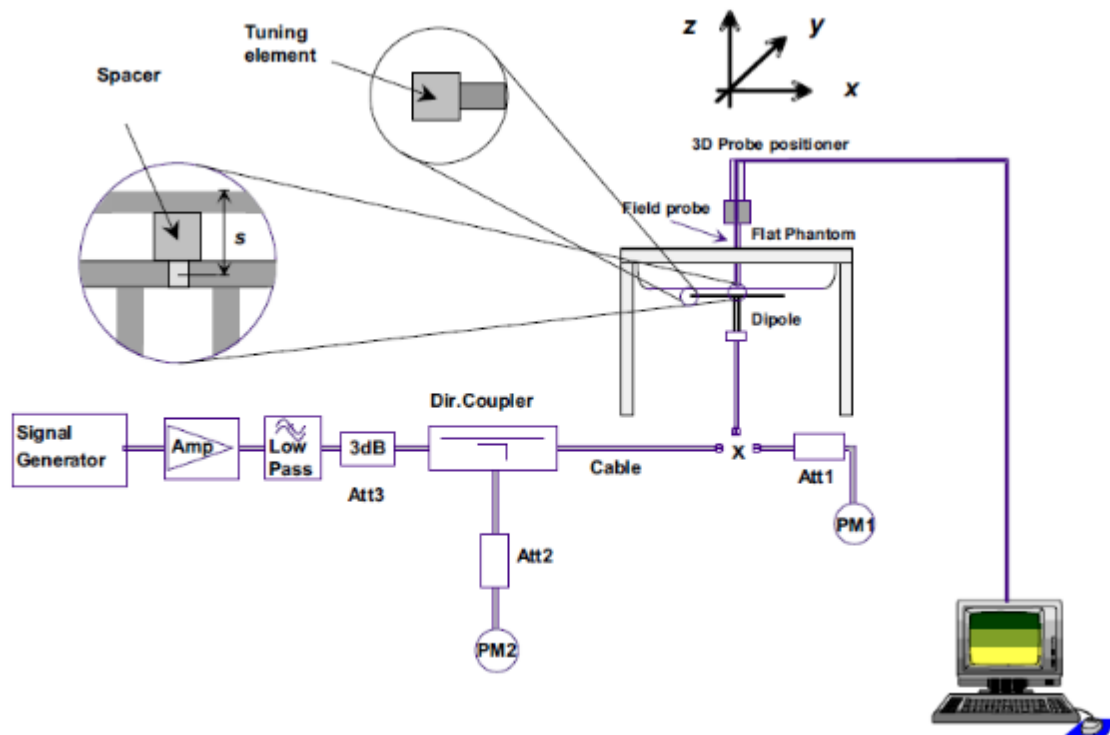
The Conductivity (σ) and Permittivity (ρ) are listed in bellow table. For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was $22\pm2^{\circ}\text{C}$.

Tissue Type	Measured Frequency (MHz)	Measured Tissue		Target Tissue ($\pm 5\%$)		Deviation (Within $\pm 5\%$)		Liquid Temp. ($^{\circ}\text{C}$)	Test Date
		ϵ_r	$\sigma(\text{S/m})$	ϵ_r	$\sigma(\text{S/m})$	ϵ_r	$\sigma(\text{S/m})$		
2450 Head	2450	39.158	1.785	39.20	1.80	-0.11%	-0.83%	21.9	2025/6/24
5250 Head	5250	36.867	4.756	35.90	4.71	2.69%	0.98%	22.1	2025/6/27
5750 Head	5750	35.818	5.335	35.40	5.22	1.18%	2.20%	22.2	2025/6/29

Table 3: Measurement result of Tissue electric parameters.

6.2 SAR System Check

The microwave circuit arrangement for system Check is sketched in F-3. 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 $\pm 10\%$ 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 $22\pm 2^{\circ}\text{C}$, 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-3. the microwave circuit arrangement used for SAR system check



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 27 of 43

6.2.1 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.



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 28 of 43

6.2.2 Summary System Check Result(s)

Validation Kit	Measured SAR 250mW	Measured SAR 250mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W)	Target SAR (normalized to 1W)	Deviation (Within $\pm 10\%$)		Liquid Temp. ($^{\circ}\text{C}$)	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)		
D2450V2_Head	13.80	6.24	55.20	24.96	52.70	24.60	4.74%	1.46%	21.9	2025/6/24
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 $\pm 10\%$)		Liquid Temp. ($^{\circ}\text{C}$)	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)		
D5GHzV2_5.25G_Head	7.34	2.07	73.40	20.70	77.20	21.90	-4.92%	-5.48%	22.1	2025/6/27
D5GHzV2_5.75G_Head	7.14	1.99	71.40	19.90	77.80	21.70	-8.23%	-8.29%	22.2	2025/6/29

Table 4: SAR System Check Result.

6.2.3 Detailed System Check Results

Please see the Appendix A



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 29 of 43

7 Test Configuration

7.1 Operation Configurations

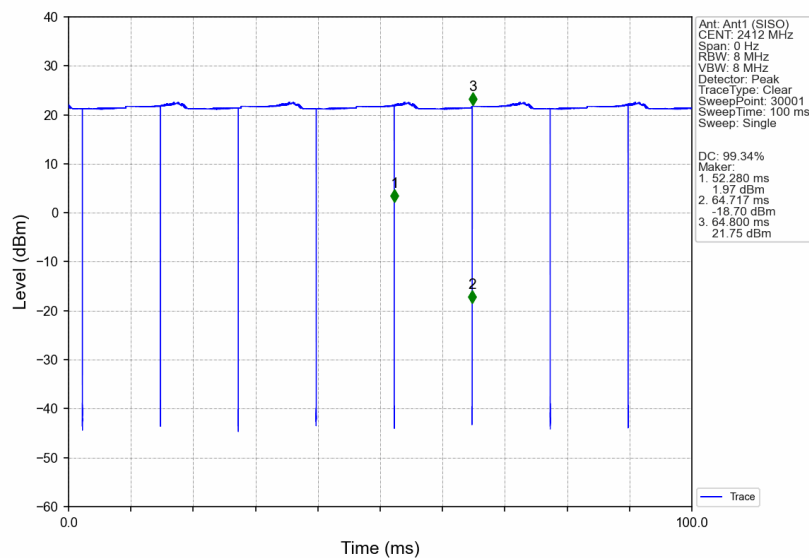
7.1.1 WiFi Test Configuration

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.

7.1.2 Duty cycle

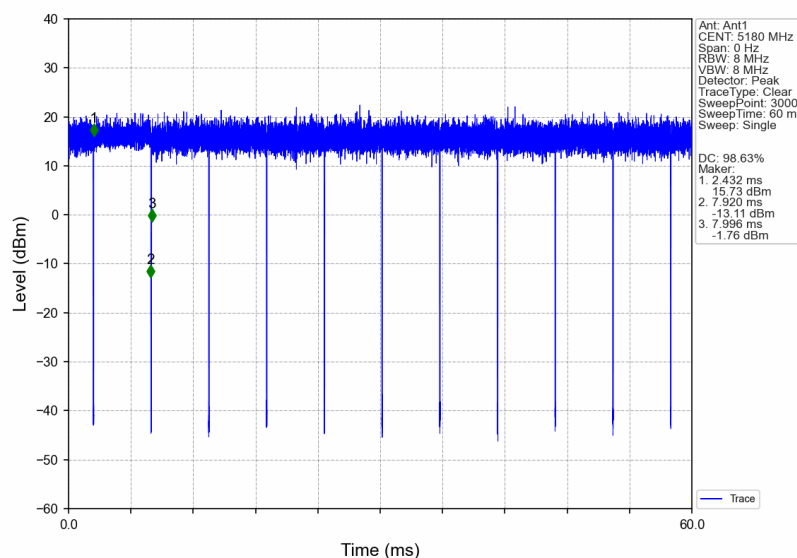
Wi-Fi 2.4GHz 802.11b:

Duty cycle= 99.34%



Wi-Fi 5GHz 802.11a:

Duty cycle=98.63%



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 30 of 43

7.1.2.1 Initial Test Position SAR Test Reduction Procedure

DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures. The initial test position procedure is described in the following:

- 1) . When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other (remaining) test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band. SAR is also not required for that exposure configuration in the subsequent test configuration(s).
- 2) . When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest extrapolated or estimated 1-g SAR conditions determined by area scans or next closest/smallest test separation distance and maximum RF coupling test positions based on manufacturer justification, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions (left, right, touch, tilt or subsequent surfaces and edges) are tested.
- 3) . For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested. a) Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

7.1.2.2 Initial Test Configuration Procedures

An initial test configuration is determined for OFDM transmission modes 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. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required. SAR test reduction for subsequent highest output test channels is determined according to *reported* SAR of the initial test configuration.

For next to the ear, hotspot mode and UMC mini-tablet exposure configurations where multiple test positions are required, the initial test position procedure is applied to minimize the number of test positions required for SAR measurement using the initial test configuration transmission mode. For fixed exposure conditions that do not have multiple SAR test positions, SAR is measured in the transmission mode determined by the initial test configuration.

When the *reported* SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until *reported* SAR is ≤ 1.2 W/kg or all required channels are tested.

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 31 of 43

7.1.2.3 Subsequent Test Configuration Procedures

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. The initial test position procedure is applied to next to the ear, UMPC mini-tablet and hotspot mode configurations. When the same maximum output power is specified for multiple transmission modes, additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. The subsequent test configuration and SAR measurement procedures are described in the following.

- 1) . When SAR test exclusion provisions of KDB Publication 447498 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.
- 2) . When the highest *reported* SAR for the initial test configuration (when applicable, include subsequent highest output channels), 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.
- 3) . The number of channels in the initial test configuration and subsequent test configuration can be different due to differences in channel bandwidth. When SAR measurement is required for a subsequent test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel. This step requires additional power measurement to identify the highest maximum output power channel in the subsequent test configuration to determine SAR test reduction.
 - a) SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.
 - b) SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the *reported* SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested. i) For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration.
- 4) . SAR measurements for the remaining highest specified maximum output power OFDM transmission mode configurations that have not been tested in the initial test configuration (highest maximum output) or subsequent test configuration(s) (subsequent next highest maximum output power) is determined by recursively applying the subsequent test configuration procedures in this section to the remaining configurations according to the following:
 - a) replace "subsequent test configuration" with "next subsequent test configuration" (i.e., subsequent next highest specified maximum output power configuration)
 - b) replace "initial test configuration" with "all tested higher output power configurations"

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 32 of 43

7.1.2.4 2.4 GHz WiFi SAR Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions. When SAR measurement is required for an OFDM configuration, the initial test configuration, subsequent test configuration and initial test position procedures are applied. The SAR test exclusion requirements for 802.11g/n OFDM configurations are described in following.

- **802.11b DSSS SAR Test Requirements**

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

- 1) . When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- 2) . When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

- **2.4 GHz 802.11g/n OFDM SAR Test Exclusion Requirements**

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3, including sub-sections). SAR is not required for the following 2.4 GHz OFDM conditions.

- 1) . When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
- 2) . When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

- **SAR Test Requirements for OFDM configurations**

When SAR measurement is required for 802.11 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 33 of 43

7.1.2.5 WiFi 5G SAR Test Procedures

7.1.2.5.1 U-NII-1 and U-NII-2A Bands

For devices that operate in only one of the U-NII-1 and U-NII-2A bands, the normally required SAR procedures for OFDM configurations are applied. For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following:

- 1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest *reported* SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, both bands are tested independently for SAR.
- 2) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest *reported* SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, both bands are tested independently for SAR.
- 3) The two U-NII bands may be aggregated to support a 160 MHz channel on channel number 50. Without additional testing, the maximum output power for this is limited to the lower of the maximum output power certified for the two bands. When SAR measurement is required for at least one of the bands and the highest *reported* SAR adjusted by the ratio of specified maximum output power of aggregated to standalone band is > 1.2 W/kg, SAR is required for the 160 MHz channel. This procedure does not apply to an aggregated band with maximum output higher than the standalone band(s); the aggregated band must be tested independently for SAR. SAR is not required when the 160 MHz channel is operating at a reduced maximum power and also qualifies for SAR test exclusion.

7.1.2.5.2 U-NII-2C and U-NII-3 Bands

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

When the same transmitter and antenna(s) are used for U-NII-2C band and U-NII-3 band or 5.8 GHz band of §15.247, the bands may be aggregated to enable additional channels with 20, 40 or 80 MHz bandwidth to span across the band gap, as illustrated in Appendix B. The maximum output power for the additional band gap channels is limited to the lower of those certified for the bands. Unless band gap channels are permanently disabled, they must be considered for SAR testing. The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels. When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 34 of 43

7.1.2.5.3 OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements

The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined according to the following steps applied sequentially.

- 1) The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
- 2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
- 3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.
- 4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; 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. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.
 - The channel closest to mid-band frequency is selected for SAR measurement.
 - 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.

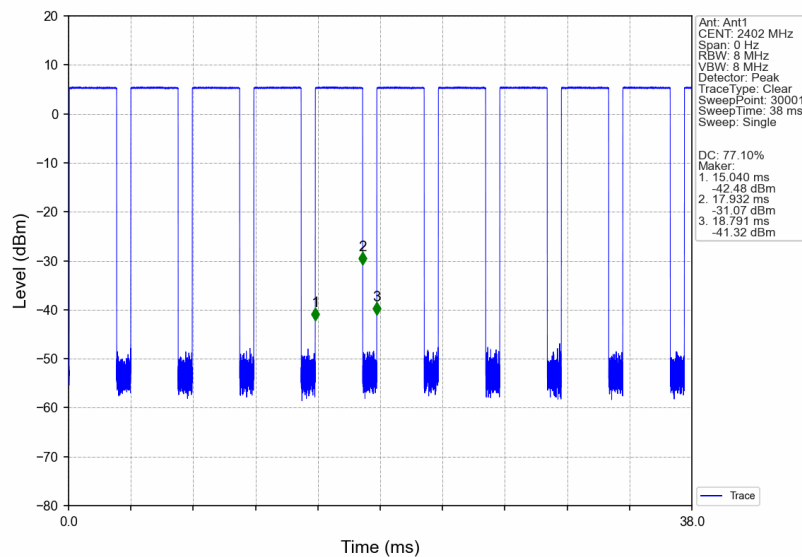
7.1.2.5.4 SAR Test Requirements for OFDM configurations

When SAR measurement is required for 802.11 a/n/ac OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. When the same transmitter and antenna(s) are used for U-NII-1 and U-NII-2A bands, additional SAR test reduction applies. When band gap channels between U-NII-2C band and 5.8 GHz U-NII-3 or §15.247 band are supported, the highest maximum output power transmission mode configuration and maximum output power channel across the bands must be used to determine SAR test reduction, according to the initial test configuration and subsequent test configuration requirements. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

7.1.3 BT Test Configuration

For the Bluetooth SAR tests, a communication link is set up with the test mode software for BT mode test. Bluetooth USES frequency hopping technology to divide the transmitted data into packets and transmit the packets respectively through 79 designated Bluetooth channels, frequency hops at 1600 hops/second per the Bluetooth standard, the EUT is operated at the RF continuous emission mode.

BT DH5 Duty Cycle=77.10%





SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 36 of 43

8 Test Result

8.1 Measurement of RF Conducted Power

The detailed conducted power table can refer to Appendix E.



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 37 of 43

8.2 Measurement of SAR Data

Note:

- 1) The maximum reported SAR value is marked in **bold**. Graph results refer to Appendix B.
- 2) Per KDB447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:
 - $\leq 0.8\text{W/kg}$ for 1-g or 2.0W/kg for 10-g respectively, when the transmission band is $\leq 100\text{MHz}$.
 - $\leq 0.6\text{ W/kg}$ or 1.5 W/kg , for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.
 - $\leq 0.4\text{ W/kg}$ or 1.0 W/kg , for 1-g or 10-g respectively, when the transmission band is $\geq 200\text{ MHz}$.
- 3) For WiFi SAR test, as the highest reported SAR is smaller than 1.2 W/kg , and the tune-up of the other 802.11 modes are not higher than SAR measurement mode, therefore the adjusted SAR is $\leq 1.2\text{ W/kg}$ for other 802.11 modes, SAR test for the other 802.11 modes are not required. For Product specific 10gSAR the highest reported SAR is smaller than 3.0 W/kg , SAR test for the other 802.11 modes are also not required.

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 38 of 43

8.2.1 SAR Result of WIFI 2.4G

Wi-Fi 2.4G SAR Test Record											
Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	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.(°C)
Extremity Test data (Separate 0mm)											
Front side	802.11b	6/2437	99.34%	1.007	0.001	0.03	17.95	18.50	1.135	0.001	21.9
Back side	802.11b	6/2437	99.34%	1.007	0.448	-0.06	17.95	18.50	1.135	0.512	21.9
Left side	802.11b	6/2437	99.34%	1.007	0.015	0.01	17.95	18.50	1.135	0.017	21.9
Right side	802.11b	6/2437	99.34%	1.007	0.009	-0.07	17.95	18.50	1.135	0.010	21.9
Top side	802.11b	6/2437	99.34%	1.007	0.013	0.02	17.95	18.50	1.135	0.015	21.9
Bottom side	802.11b	6/2437	99.34%	1.007	0.010	0.13	17.95	18.50	1.135	0.011	21.9

Wi-Fi 2.4G SAR Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp. (°C)
Body Test data (Separate 0mm)											
Front side	802.11b	6/2437	99.34%	1.007	0.002	0.03	17.95	18.50	1.135	0.002	21.9
Back side	802.11b	6/2437	99.34%	1.007	1.17	-0.06	17.95	18.50	1.135	1.337	21.9
Back side -Repeated	802.11b	6/2437	99.34%	1.007	1.15	-0.12	17.95	18.50	1.135	1.314	21.9
Left side	802.11b	6/2437	99.34%	1.007	0.044	0.01	17.95	18.50	1.135	0.050	21.9
Right side	802.11b	6/2437	99.34%	1.007	0.025	-0.07	17.95	18.50	1.135	0.029	21.9
Top side	802.11b	6/2437	99.34%	1.007	0.032	0.02	17.95	18.50	1.135	0.037	21.9
Bottom side	802.11b	6/2437	99.34%	1.007	0.029	0.13	17.95	18.50	1.135	0.033	21.9

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 39 of 43

8.2.2 SAR Result of WIFI 5G

Wi-Fi 5G SAR Test Record											
Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	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. (°C)
Extremity Test data of U-NII-1 (Separate 0mm)											
Front side	802.11a	36/5180	98.63%	1.014	0.025	0.06	16.91	17.50	1.146	0.029	22.1
Back side	802.11a	36/5180	98.63%	1.014	0.223	-0.04	16.91	17.50	1.146	0.259	22.1
Left side	802.11a	36/5180	98.63%	1.014	0.024	-0.01	16.91	17.50	1.146	0.028	22.1
Right side	802.11a	36/5180	98.63%	1.014	0.021	0.05	16.91	17.50	1.146	0.024	22.1
Top side	802.11a	36/5180	98.63%	1.014	0.020	-0.17	16.91	17.50	1.146	0.023	22.1
Bottom side	802.11a	36/5180	98.63%	1.014	0.015	0.08	16.91	17.50	1.146	0.017	22.1
Extremity Test data of U-NII-3 (Separate 0mm)											
Front side	802.11a	165/5825	98.63%	1.014	0.037	0.01	16.94	17.50	1.138	0.043	22.2
Back side	802.11a	165/5825	98.63%	1.014	0.173	0.09	16.94	17.50	1.138	0.200	22.2
Left side	802.11a	165/5825	98.63%	1.014	0.017	-0.04	16.94	17.50	1.138	0.020	22.2
Right side	802.11a	165/5825	98.63%	1.014	0.024	0.05	16.94	17.50	1.138	0.028	22.2
Top side	802.11a	165/5825	98.63%	1.014	0.036	-0.16	16.94	17.50	1.138	0.042	22.2
Bottom side	802.11a	165/5825	98.63%	1.014	0.022	0.12	16.94	17.50	1.138	0.025	22.2

Wi-Fi 5G SAR Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp. (°C)
Body Test data of U-NII-1 (Separate 0mm)											
Front side	802.11a	36/5180	98.63%	1.014	0.098	0.06	16.91	17.50	1.146	0.114	22.1
Back side	802.11a	36/5180	98.63%	1.014	0.979	-0.04	16.91	17.50	1.146	1.138	22.1
Back side -Repeated	802.11a	36/5180	98.63%	1.014	0.967	0.01	16.91	17.50	1.146	1.124	22.1
Left side	802.11a	36/5180	98.63%	1.014	0.081	-0.01	16.91	17.50	1.146	0.094	22.1
Right side	802.11a	36/5180	98.63%	1.014	0.076	0.05	16.91	17.50	1.146	0.088	22.1
Top side	802.11a	36/5180	98.63%	1.014	0.073	-0.17	16.91	17.50	1.146	0.085	22.1
Bottom side	802.11a	36/5180	98.63%	1.014	0.061	0.08	16.91	17.50	1.146	0.071	22.1
Body Test data of U-NII-3 (Separate 0mm)											
Front side	802.11a	165/5825	98.63%	1.014	0.116	0.01	16.94	17.50	1.138	0.134	22.2
Back side	802.11a	165/5825	98.63%	1.014	0.824	0.09	16.94	17.50	1.138	0.951	22.2
Back side -Repeated	802.11a	165/5825	98.63%	1.014	0.819	0.15	16.94	17.50	1.138	0.945	22.2
Left side	802.11a	165/5825	98.63%	1.014	0.071	-0.04	16.94	17.50	1.138	0.082	22.2
Right side	802.11a	165/5825	98.63%	1.014	0.095	0.05	16.94	17.50	1.138	0.110	22.2
Top side	802.11a	165/5825	98.63%	1.014	0.121	-0.16	16.94	17.50	1.138	0.140	22.2
Bottom side	802.11a	165/5825	98.63%	1.014	0.087	0.12	16.94	17.50	1.138	0.100	22.2

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 40 of 43

8.2.3 SAR Result of BT

Bluetooth SAR Test Record											
Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	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. (°C)
Extremity Test data (Separate 0mm)											
Front side	DH5	39/2441	77.10%	1.111	0.013	0.01	11.07	11.50	1.104	0.016	21.9
Back side	DH5	39/2441	77.10%	1.111	0.022	-0.05	11.07	11.50	1.104	0.027	21.9
Left side	DH5	39/2441	77.10%	1.111	0.009	-0.09	11.07	11.50	1.104	0.011	21.9
Right side	DH5	39/2441	77.10%	1.111	0.001	0.02	11.07	11.50	1.104	0.001	21.9
Top side	DH5	39/2441	77.10%	1.111	0.001	0.14	11.07	11.50	1.104	0.001	21.9
Bottom side	DH5	39/2441	77.10%	1.111	0.011	0.09	11.07	11.50	1.104	0.013	21.9

Bluetooth SAR Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp. (°C)
Body Test data (Separate 0mm)											
Front side	DH5	39/2441	77.10%	1.111	0.028	0.01	11.07	11.50	1.104	0.034	21.9
Back side	DH5	39/2441	77.10%	1.111	0.046	-0.05	11.07	11.50	1.104	0.056	21.9
Left side	DH5	39/2441	77.10%	1.111	0.003	-0.09	11.07	11.50	1.104	0.004	21.9
Right side	DH5	39/2441	77.10%	1.111	0.002	0.02	11.07	11.50	1.104	0.002	21.9
Top side	DH5	39/2441	77.10%	1.111	0.003	0.14	11.07	11.50	1.104	0.004	21.9
Bottom side	DH5	39/2441	77.10%	1.111	0.022	0.09	11.07	11.50	1.104	0.027	21.9



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 41 of 43

8.2.4 Repeated SAR

1) Repeated measurement is not required when the original highest measured SAR is $< 0.80 \text{ W/kg}$ ($< 2.0 \text{ W/kg}$ for 10g); steps

2) through 4) do not apply.20

2) When the original highest measured SAR is $\geq 0.80 \text{ W/kg}$ ($\geq 2.0 \text{ W/kg}$ for 10g), repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is $\geq 1.45 \text{ W/kg}$ ($\geq 3.63 \text{ W/kg}$ for 10g) ($\sim 10\%$ from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is $\geq 1.5 \text{ W/kg}$ ($\geq 3.75 \text{ W/kg}$ for 10g) and the ratio of largest to smallest SAR for the original, first and second repeated

measurements is > 1.20 .

Band	First measure SAR (W/kg)	Second measure SAR (W/kg)	Ratio
WIFI 2.4G	1.17	1.15	1.02
U-NII-1	0.979	0.967	1.01
U-NII-3	0.824	0.819	1.01



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 42 of 43

9 Equipment list

Test Platform		SPEAG DASY5 Professional				
Description		SAR Test System				
Software Reference		DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)				
Hardware Reference						
Equipment		Manufacturer	Model	Serial Number	Calibration Date	Due date of calibration
☒	Twin Phantom	SPEAG	SAM8	1824	NCR	NCR
☒	DAE	SPEAG	DAE4	1484	2024-10-15	2025-10-14
☒	E-Field Probe	SPEAG	EX3DV4	7767	2024-12-31	2025-12-30
☒	Validation Kits	SPEAG	D2450V2	922	2023-08-28	2026-08-27
☒	Validation Kits	SPEAG	D5GHzV2	1174	2023-08-23	2026-08-22
☒	Dielectric parameter probes	SPEAG	DAKS-3.5	1120	2024-08-20	2025-08-19
☒	Vector Network Analyzer and Vector Reflectometer	SPEAG	DAKS_VNA R140	50920	2024-08-19	2025-08-18
☒	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
☒	Signal Generator	R&S	SMB100A	182393	2025-02-05	2026-02-04
☒	Preamplifier	Qiji	YX28980933	202104001	NCR	NCR
☒	USB Average Power Sensor	Keysight	U2002H	MY5639004	2024-09-10	2025-09-09
☒	USB Average Power Sensor	Agilent	U2002H	MY48200110	2024-11-21	2025-11-20
☒	Attenuator	SHX	TS2-3dB	30704	NCR	NCR
☒	Coaxial low pass filter	Mini-Circuits	VLF-2500(+)	NA	NCR	NCR
☒	Coaxial low pass filter	Microlab Fxr	LA-F13	NA	NCR	NCR
☒	DC POWER SUPPLY	SAKO	SK1730SL5A	NA	NCR	NCR
☒	Speed reading thermometer	LKM	DTM3000	NA	2024-09-14	2025-09-13
☒	Humidity and Temperature Indicator	MingGao	MingGao	NA	2024-09-16	2025-09-15

Note: All the equipments are within the valid period when the tests are performed.



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

Report No.: SUCR250500042001

Rev.: 01

Page: 43 of 43

10 Calibration certificate

Please see the Appendix C

11 Photographs

Please see the Appendix D

Appendix A: Detailed System Check Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

Appendix E: Conducted RF Output Power

---END---
