

Report No.: SUCR241200060101

Rev.: 01 Page: 1 of 33

# FCC SAR TEST REPORT

Application No.: SUCR2412000601AT

**Applicant:** ASAP Technology(Jiangxi) Co., Ltd. **Manufacturer:** ASAP Technology(Jiangxi) Co., Ltd.

**Product Name:** 16 mile Walkie Talkie

Model No. (EUT): 100111926
Trade Mark: 0nn., onn

FCC ID: 2APXNLWT006

Standards: FCC 47CFR §2.1093

**Date of Receipt:** 2024-12-30

**Date of Test:** 2025-01-16 to 2025-02-21

Date of Issue: 2025-02-24
Test conclusion: PASS \*

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

Prepared by: Leon Liu/ Project Manager

Approved by: Nick HU/ Technical Manager

Nick Hu

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sqs.com">CN.Doccheck@sqs.com</a>



SUCR241200060101 Report No.:

Rev.: 01 Page: 2 of 33

	Revision Record		
Version	Description	Date	Remark
01	Original	2025-02-24	

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 w.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



Report No.: SUCR241200060101

Rev.: 01 Page: 3 of 33

### **TEST SUMMARY**

Francisco Pand	Maximum Reported SAR(W/kg)	
Frequency Band	Front To Face 25mm	Body 0mm
UHF	0.10	0.35
SAR Limited(W/kg)	1.6	3

Remark:

Model No.: 100111926

Only the model 100111926 was tested, since according to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for all the above models, with only difference on trade mark.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sgs.com">cN.Doccheck@sgs.com</a>



SUCR241200060101 Report No.:

6

Rev.: 01 Page: 4 of 33

#### **CONTENTS**

1	DUT	Antenna Locations	6
2	Gen	eral Information	7
	2.1 2.2 2.3 2.4 2.5 2.6	Details of Client Test Location Test Facility General Description of EUT Test Specification RF exposure limits	7 7 8 8
3	Labo	oratory Environment	11
4	SAR	Measurements System Configuration	12
	4.1 4.2 4.3 4.4 4.5 4.6 4.7	The SAR Measurement System Isotropic E-field Probe EX3DV4 Data Acquisition Electronics (DAE) SAM Twin Phantom ELI Phantom Device Holder for Transmitters Measurement procedure	
5	SAR	measurement variability and uncertainty	22
	5.1 5.2	SAR measurement variability	
6	Desc	cription of Test Position	23
	6.1	Exposure Condition	23
7	SAR	System Verification Procedure	24
	7.1 7.2	Tissue Simulate LiquidSAR System Check	
8	Test	Result	29
	8.1 8.2	Measurement of RF Conducted Power	
9	Equi	ipment list	32
1(	) Calil	bration certificate	33
11	l Pho	tographs	33
A	ppendix	c A: Detailed System Check Results	33
Δı	ppendix	B: Detailed Test Results	33

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 ww.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



Report No.:	SUCR24120006010
-------------	-----------------

Rev.: 01 Page: 5 of 33

Appendix C: Calibration certificate	
Appendix D: Photographs	33

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.

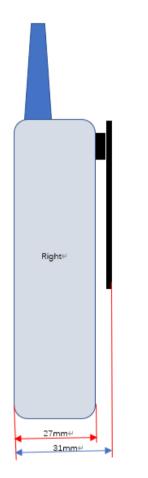
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone:(86-755) 8307 1443, or email: CN.Doccheck@sgs.com

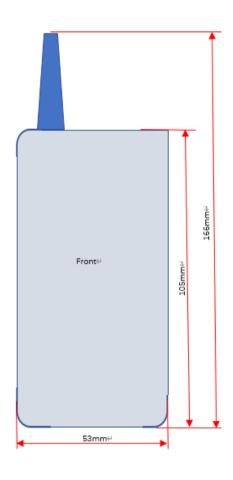


Report No.: SUCR241200060101

Rev.: 01 Page: 6 of 33

#### 1 DUT Antenna Locations





This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sgs.com">cN.Doccheck@sgs.com</a>



SUCR241200060101 Report No.:

Rev.: 01 7 of 33 Page:

#### 2 General Information

#### 2.1 Details of Client

Applicant:	ASAP Technology(Jiangxi) Co., Ltd.	
Address:	Ji'an Industrial Park, Ji'an, 343100, Jiangxi, China	
Manufacturer:	ASAP Technology(Jiangxi) Co., Ltd.	
Address:	Ji'an Industrial Park, Ji'an, 343100, Jiangxi, China	

#### 2.2 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:	Alan Zhang

## 2.3 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: 717327

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 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

Wireless Laboratory

Report Template No./Rev: SUWI-TRF-RF/v01

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. South of No. 6 Plant, No. 1, RunSheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000

www.sgsgroup.com.cn



SUCR241200060101 Report No.:

Rev.: 01 Page: 8 of 33

## 2.4 General Description of EUT

Product Name:	16 mile Walkie Talkie	
Model No.(EUT):	100111926	
Trade Mark:	onn., onn	
FCC ID:	2APXNLWT006	
Product Phase:	production unit	
Device Type:	portable device	
Exposure Category:	uncontrolled environment / general population	
Hardware Version:	A	
Software Version:	A	
Antenna Type:	Spring Antenna	
Device Operating Configurations:		
Modulation Mode:	FM	
Frequency Bands:	462.5500MHz to 462.7250MHz, 467.5625MHz to 467.7125MHz	
RF Cable:	□ Provided by the aplicant □ Provided by the laboratory	
Battery Information:	4.5V DC(1.5V x3 "AA" Size Batteries)	
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.		

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 w.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

Wireless Laboratory

Report Template No./Rev: SUWI-TRF-RF/v01

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. South of No. 6 Plant, No. 1, RunSheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000



SUCR241200060101 Report No.:

Rev.: 01 Page: 9 of 33

### 2.5 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	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 447498 D01	General RF Exposure Guidance v06
KDB 865664 D01	SAR Measurement 100 MHz to 6 GHz v01r04

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 w.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



Report No.: SUCR241200060101

Rev.: 01 Page: 10 of 33

### 2.6 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:

**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.)

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sgs.com">CN.Doccheck@sgs.com</a>

<sup>\*</sup> 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

<sup>\*\*</sup> The Spatial Average value of the SAR averaged over the whole body.

<sup>\*\*\*</sup> 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.



SUCR241200060101 Report No.:

Rev.: 01 Page: 11 of 33

#### **Laboratory Environment** 3

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

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 w.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

Wireless Laboratory

Report Template No./Rev: SUWI-TRF-RF/v01

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. South of No. 6 Plant, No. 1, RunSheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000

t (86-512) 6229 2980 www.sgsgroup.com.cn



Report No.: SUCR241200060101

Rev.: 01 Page: 12 of 33

## 4 SAR Measurements System Configuration

## 4.1 The SAR Measurement System

This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY5 professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR=  $\sigma$  (|Ei|2)/  $\rho$  where  $\sigma$  and  $\rho$  are the conductivity and mass density of the tissue-Simulate.

The DASY5 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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:CN.Doccheck@sgs.com">CN.Doccheck@sgs.com</a>

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

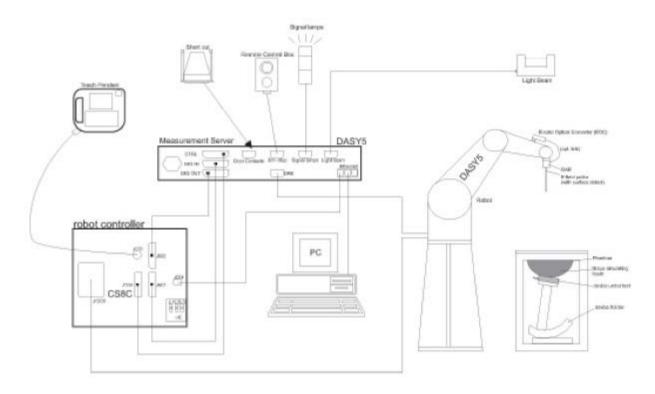
Report Template No./Rev: SUWI-TRF-RF/v01

South of No. 6 Plant, No. 1, RunSheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 t (86-512) 6229 2980 www.sgsgroup.com.cn



Report No.: SUCR241200060101

Rev.: 01 Page: 13 of 33



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.
- DASY5 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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:CN.Doccheck@sgs.com">CN.Doccheck@sgs.com</a>



SUCR241200060101 Report No.:

Rev.: 01 Page: 14 of 33

## 4.2 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 <u>calibration service</u> 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 $\mu$ W/g to > 100 mW/g Linearity: $\pm$ 0.2 dB (noise: typically < 1 $\mu$ W/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

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 w.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

Wireless Laboratory

Report Template No./Rev: SUWI-TRF-RF/v01

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. South of No. 6 Plant, No. 1, RunSheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000

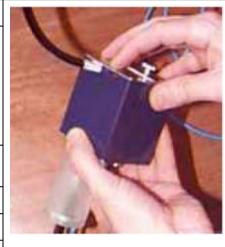


SUCR241200060101 Report No.:

Rev.: 01 Page: 15 of 33

### 4.3 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



### 4.4 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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at w.sgs.com/en/Terms-and-Conditions and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at v.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



Report No.: SUCR241200060101

Rev.: 01 Page: 16 of 33

#### 4.5 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



The ELI phantom is used for compliance testing of handheld and body-mounted wireless devices in the frequency range of 4 MHz to 10 GHz. ELI is fully compatible with the IEC/IEEE 62209-1528 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all of SPEAG's dosimetric probes and dipoles.

ELI V5.0 and higher has the same shell geometry and is manufactured from the same material as ELI V4.0 but has a reinforced top structure.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:CN.Doccheck@sgs.com">CN.Doccheck@sgs.com</a>



Report No.: SUCR241200060101

Rev.: 01

Page: 17 of 33

#### 4.6 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  $\varepsilon$ =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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:CN.Doccheck@sgs.com">CN.Doccheck@sgs.com</a>



Report No.: SUCR241200060101

Rev.: 01 Page: 18 of 33

### 4.7 Measurement procedure

#### 4.7.1 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≤2GHz), 30mm\*30mm\*30mm (f for 2-3GHz) and 24mm\*24mm\*22mm (f for 5-6GHz) was assessed by measuring 5x5x7 points (f≤2GHz), 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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sgs.com">cN.Doccheck@sgs.com</a>



Report No.: SUCR241200060101

Rev.: 01 Page: 19 of 33

			≤ 3 GHz	> 3 GHz			
Maximum distance from			5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5 \text{ mm}$			
Maximum probe angle surface normal at the n			30° ± 1°	20° ± 1°			
			$\leq$ 2 GHz: $\leq$ 15 mm 3 - 4 GHz: $\leq$ 12 mm 2 - 3 GHz: $\leq$ 12 mm 4 - 6 GHz: $\leq$ 10 m				
Maximum area scan sp	atial resolı	ation: ∆x <sub>Area</sub> , ∆y <sub>Area</sub>	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.				
Maximum zoom scan s	patial reso	lution: Δx <sub>Zoom</sub> , Δy <sub>Zoom</sub>	≤ 2 GHz: ≤ 8 mm 2 - 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*			
	uniform	grid: ∆z <sub>Z∞m</sub> (n)	≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm			
Maximum zoom scan spatial resolution, normal to phantom surface	graded	graded	graded	graded	Δz <sub>Zoom</sub> (1): between 1 <sup>st</sup> two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
grid $\Delta z_{Zoom}(n>1)$ : between subseque points			≤ 1.5·Δz	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.  $\pm 5$  %

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sqs.com">CN.Doccheck@sqs.com</a>



Report No.: SUCR241200060101

Rev.: 01 Page: 20 of 33

#### 4.7.2 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 reevaluated. 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.

### 4.7.3 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:

 $V_i = U_i + U_i^2 \cdot c f / d c p_i$ 

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:

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sqs.com/en/Terms-and-Conditions">http://www.sqs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sqs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sqs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sgs.com">cN.Doccheck@sgs.com</a>

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

Report Template No./Rev: SUWI-TRF-RF/v01

South of No. 6 Plant, No. 1, RunSheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 t (86-512) 6229 2980 www.sgsgroup.com.cn



Report No.: SUCR241200060101

Rev.: 01 21 of 33 Page:

E-field probes:

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

H-field probes:

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

Vi = compensated signal of channel i (i = x, y, z) sensor sensitivity of channel I (i = x, y, z)Normi = sensor sensitivity of channel I

[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 q/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.

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

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

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 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

Wireless Laboratory

Report Template No./Rev: SUWI-TRF-RF/v01

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. South of No. 6 Plant, No. 1, RunSheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000

www.sgsgroup.com.cn



Report No.: SUCR241200060101

Rev.: 01 Page: 22 of 33

## 5 SAR measurement variability and uncertainty

### 5.1 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 remounted 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  $\geq$  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  $\ge 1.45$  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.

## 5.2 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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:CN.Doccheck@sgs.com">CN.Doccheck@sgs.com</a>



Report No.: SUCR241200060101

Rev.: 01 Page: 23 of 33

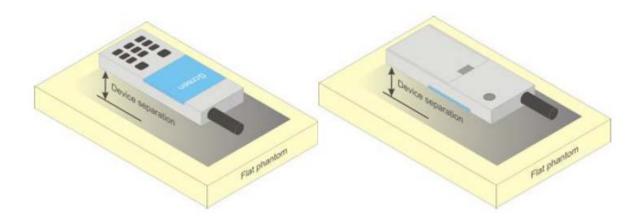
## 6 Description of Test Position

### **6.1 Exposure Condition**

#### 6.1.1 The Handheld push-to-talk

Per FCC KDB 447498 D01, the operating configurations of handheld PTT two-way radios generally require SAR testing for in-front-of the face and body-worn accessory exposure conditions.

For PTT radios operating in the 100 MHz to 1 GHz range, according to general population exposure requirements, SAR test exclusion may be applied for in-front-of the face and body-worn accessory exposure conditions, according to the SAR Test Exclusion Threshold conditions and duty factor compensated maximum conducted output power.57 When a body-worn accessory is not supplied with the PTT radio, a test separation distance ≤ 10 mm, applicable to the device form factor, must be applied to determine body-worn accessory SAR test exclusion.



F-3. The Handheld push-to-talk.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sgs.com">cN.Doccheck@sgs.com</a>



Report No.: SUCR241200060101

Rev.: 01 Page: 24 of 33

## 7 SAR System Verification Procedure

### 7.1 Tissue Simulate Liquid

#### 7.1.1 Recipes for Tissue Simulate Liquid

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

Ingredients	Frequency (MHz)									
(% by weight)	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 Water: De-ionized, 16  $M\Omega^+$  resistivity

laurate

Sucrose: 98+% Pure Sucrose HEC: Hydroxyethyl Cellulose

Tween: Polyoxyethylene (20) sorbitan monolaurate

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sqs.com">CN.Doccheck@sqs.com</a>



Report No.: SUCR241200060101

Rev.: 01 Page: 25 of 33

#### 7.1.2 Measurement for Tissue Simulate Liquid

The Conductivity ( $\sigma$ ) and Permittivity ( $\rho$ ) are listed in bellow table. For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was 22±2°C.

	Measurement for Tissue Simulate Liquid									
	Measured	Target Tissue (±5%)		Measure	d Tissue	Liquid				
Tissue Type	Frequency (MHz)	ε <sub>r</sub>	σ(S/m)	ε <sub>r</sub>	σ(S/m)	Temp. (℃)	Test Date			
450 Head	450	43.50	0.87	42.821	0.891	22.9	2025/2/21			

Table 3: Measurement result of Tissue electric parameters.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sqs.com">CN.Doccheck@sqs.com</a>

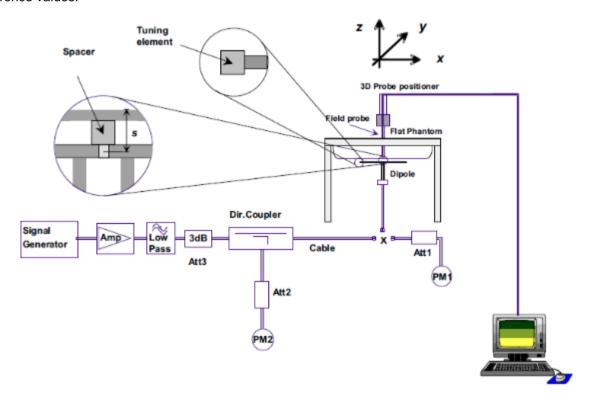


Report No.: SUCR241200060101

Rev.: 01 Page: 26 of 33

### 7.2 SAR System Check

The microwave circuit arrangement for system Check is sketched in F-4. 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-4. the microwave circuit arrangement used for SAR system check.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sgs.com">cN.Doccheck@sgs.com</a>



Report No.: SUCR241200060101

Rev.: 01 Page: 27 of 33

#### 7.2.1 Justification for Extended SAR Dipole Calibrations

- 1) Referring to KDB865664 D01 requirements for dipole calibration, 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 10% of calibrated measurement;
- d) Impedance is within  $5\Omega$  from the previous measurement.
- 2) Network analyzer probe calibration against air, distilled water and a shorting block performed before measuring liquid parameters.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sgs.com">cN.Doccheck@sgs.com</a>



SUCR241200060101 Report No.:

Rev.: 01 Page: 28 of 33

#### 7.2.2 Summary System Check Result(s)

	SAR System Validation Result(s)											
,	Validation Kit		Measured SAR 250mW	Measured SAR 250mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	to 1W) to 1W)		normalized Deviation			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)	(℃)	
	D750V3	Head	1.190	0.786	4.76	3.14	4.63	3.08	2.81%	2.08%	22.9	2025/2/21

Table 4: SAR System Check Result.

#### 7.2.3 Detailed System Check Results

Please see the Appendix A

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 w.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

Wireless Laboratory

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. South of No. 6 Plant, No. 1, RunSheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000

t (86-512) 6229 2980 www.sgsgroup.com.cn



Report No.: SUCR241200060101

Rev.: 01 Page: 29 of 33

#### 8 Test Result

#### 8.1 Measurement of RF Conducted Power

- The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below: Frame-averaged power = 10 x log (Burst-averaged power mW x Slot used / 8
- 2) . When the maximum output power variation across the required test channels is  $> \frac{1}{2}$  dB, instead of the middle channel, the highest output power channel must be used.

#### UHF:

Test Voltage (V Dc)	Test Frequency (MHz)	Output Power(dBm)
	462.550	26.87
4.5	462.7250	26.95
	467.7125	26.96

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sqs.com">CN.Doccheck@sqs.com</a>



Report No.: SUCR241200060101

Rev.: 01 Page: 30 of 33

#### 8.2 Measurement of SAR Data

#### Note:

- 1) 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:
  - ≤ 0.8W/kg for 1-g or 2.0W/kg for 10-g respectively, when the transmission band is ≤ 100MHz.
  - ≤ 0.6 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.
  - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz.
- 3) Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions">http://www.sgs.com/en/Terms-and-Conditions</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document</a>. 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: <a href="mailto:cN.Doccheck@sqs.com">CN.Doccheck@sqs.com</a>



SUCR241200060101 Report No.:

Rev.: 01

Page: 31 of 33

#### 8.2.1 SAR Result of UFH

					UHF SA	R Test Re	ecord				
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.(℃)
				Fı	ront To Fa	ce(Separa	te 25mm)				
Front To Face	FM	15/462.55	100.00%	1.000	0.099	0.02	26.87	26.98	1.026	0.102	22.9
Front To Face	FM	22/462.725	100.00%	1.000	0.102	0.05	26.95	26.98	1.007	0.103	22.9
Front To Face	FM	14/467.7125	100.00%	1.000	0.108	-0.06	26.96	26.98	1.005	0.108	22.9
				В	ody Test d	lata(Separ	ate 0mm)				
Back side with Belt clip	FM	15/462.55	100.00%	1.000	0.343	-0.01	26.87	26.98	1.026	0.352	22.9
Back side with Belt clip	FM	22/462.725	100.00%	1.000	0.35	0.02	26.95	26.98	1.007	0.352	22.9
Back side with Belt clip	FM	14/467.7125	100.00%	1.000	0.351	-0.07	26.96	26.98	1.005	0.353	22.9

Table 5: SAR of UHF for Body.

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 w.sqs.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



SUCR241200060101 Report No.:

Rev.: 01 Page: 32 of 33

**Equipment list** 9

	Equipment								
	Test Platform	SPEAG DASY5	Professional						
	Description	SAR Test System (Frequency range 4MHz-7.25GHz)							
	Software Reference	DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)							
			Hardware Referer	nce					
	Equipment	Manufacturer Model		Serial Number	Calibration Date	Due date of calibration			
$\boxtimes$	Twin Phantom	SPEAG	SAM 7	1702	NCR	NCR			
$\boxtimes$	DAE	SPEAG	DAE4	1245	2024-06-05	2025-06-04			
$\boxtimes$	E-Field Probe	SPEAG	EX3DV4	3801	2024-06-20	2025-06-19			
$\boxtimes$	Validation Kits	SPEAG	D450V3	1103	2024-06-03	2025-06-02			
$\boxtimes$	Universal Radio Communication Tester	R&S	CMW500	111637	2024-09-12	2025-09-11			
$\boxtimes$	DAKS-3.5 probes	SPEAG	DAKS-3.5	1122	NA	NA			
$\boxtimes$	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR			
$\boxtimes$	Signal Generator	R&S	SMB100A	182393	2025-02-05	2026-02-04			
$\boxtimes$	Preamplifier	Qiji	YX28980933	202104001	NCR	NCR			
	Power Sensor	Keysight	U2002H	121251	2024-09-12	2025-09-11			
$\boxtimes$	Attenuator	SHX	TS2-3dB	30704	NCR	NCR			
$\boxtimes$	Coaxial low pass filter	Mini-Circuits	VLF-2500(+)	NA	NCR	NCR			
$\boxtimes$	Coaxial low pass filter	Microlab Fxr	LA-F13	NA	NCR	NCR			
$\boxtimes$	DC POWER SUPPLY	SAKO	SK1730SL5A	NA	NCR	NCR			
	Speed reading thermometer	LKM	DTM3000	NA	2024-09-13	2025-09-12			
$\boxtimes$	Humidity and Temperature Indicator	MingGao	MingGao	NA	2024-09-14	2025-09-13			

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

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 w.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

Wireless Laboratory

Report Template No./Rev: SUWI-TRF-RF/v01

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. South of No. 6 Plant, No. 1, RunSheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000

t (86-512) 6229 2980 www.sgsgroup.com.cn



SUCR241200060101 Report No.:

Rev.: 01 Page: 33 of 33

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** 

---END---

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 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