

SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 1 of 65

FCC SAR TEST REPORT

Application No.: SZCR2506002399AT

Applicant: Cosmo Technologies, Inc.

Address of Applicant: 1312 17th St #450 Denver, Colorado, 80202 United States

Manufacturer: Shenzhen Qinmi Smart Technology Co., Ltd.

Address of Manufacturer: 3rd floor, Building 09, Tongfuyu Industrial Park, Lezhujiao Village, Xixiang,

Baoan, Shenzhen

EUT Description: COSMO JrTrack Kids Smartwatch

Model No.: JRTV5 Trade Mark: **JrTrack**

FCC ID: 2A3RL-JRTRACK05 Standards: FCC 47CFR §2.1093

Date of Receipt: 2025-06-15

Date of Test: 2025-06-16 to 2025-06-21

Date of Issue: 2025-06-26

Test Result: PASS *

Kenv Xu **EMC Laboratory Manager**

Keny. Ku



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. 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 soile 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@ass.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Sherzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057

t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

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



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 2 of 65

	Revision Record			
Version	Chapter	Date	Modifier	Remark
01		2025-06-26		Original

Authorized for issue by:		
	Calvin Weng	
	Calvin Weng/Project Engineer	-
	Roman Pan	
	Roman Pan/Reviewer	-



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. 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 form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without proven it in the proval 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@ags.com"

or email: CN_Doccheck@sgs.com
Wo.1Wortshop, M-10, Middle Section, Science & Technology Part, Nanohan District, Shienzhen, Guangdong, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 3 of 65

TEST SUMMARY

	I E 3 I 3 U WI WIAR I		
Frequency Band	Maximum Reported SAR(W/kg)		
requeriey Barra	Next to mouth	Extremity	
GSM850	0.20	0.37	
GSM1900	0.51	1.12	
WCDMA Band II	0.60	0.63	
WCDMA Band IV	0.30	0.49	
WCDMA Band V	<0.10	0.15	
LTE Band 2	0.33	0.84	
LTE Band 4	0.29	0.63	
LTE Band 5	<0.10	0.16	
LTE Band 7	0.54	2.44	
LTE Band 12	0.18	0.33	
LTE Band 13	0.11	0.19	
LTE Band 17	<0.10	0.27	
LTE Band 66	0.19	0.42	
WI-FI (2.4GHz)	0.33	0.79	
BT	0.19	0.39	
SAR Limited(W/kg)	1.6	4.0	
Maximum Simultaneous Transmission SAR (W/kg)			
Scenario	Next to mouth	Extremity	
Sum SAR	0.92	3.23	
SPLSR	1	1	
SPLSR Limited	0.04	0.1	





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 4 of 65

Contents

TE	EST SUMMARY	3
1	General Information	6
	1.1 General Description of EUT	<i>.</i>
	1.1.1 DUT Antenna Locations (Back View)	8
	1.2 Test Specification	
	1.3 RF exposure limits	10
	1.4 Test Location	
	1.5 Test Facility	
2		
3	, ,	
	3.1 The SAR Measurement System3.2 Isotropic E-field Proble EX3DV4	
	3.3 Data Acquisition Electronics (DAE)	
	3.4 SAM Twin Phantom	
	3.5 ELI Phantom	
	3.6 Device Holder for Transmitters	
	3.7 Measurement Procedure	
	3.7.1 Scanning procedure	19
	3.7.2 Data storage	21
	3.7.3 Data Evaluation by SEMCAD	21
4		
	4.1 SAR measurement variability	
_	4.2 SAR measurement uncertainty	
5	• • • • • • • • • • • • • • • • • • •	
6	5.1 Wrist watch and Wrist-Worn Transmitters	
6	SAR System Verificaion Procedure 6.1 Tissue Simulate Liquid	
	6.1.1 Recipes for Tissue Simulate Liquid	
	6.1.2 Measurement for Tissue Simulate Liquid.	
	6.2 SAR System Check	
	6.2.1 Justification for Extended SAR Dipole Cal	
	6.2.2 Summary System Check Result(s)	
	6.2.3 Detailed System Check Results	
7		
-	7.1 3G SAR Test Reduction Procedure	30
	7.2 Operation Configurations	
	7.2.1 GSM Test Configuration	30



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. 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 form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without proven it in the proval 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@ags.com"

or email: CN.Doccheck@sgs.com

No.1 Workshop, N-1D, Middle Sedon, Seenea & Rednology Park, Manshan District, Sheruben, Guangdong, Chine 518057

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057

t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn

t (86-755) 26710594 j www.sgsgroup.com.cn

t (86-755) 26710594 j www.sgsgroup.com.cn



SZSAR-TRF-01 Rev. A/0 May15,2023

Page: 5 of 65

7.2.2 WCDMA Test Configuration	30
7.2.3 WIFI Test Configuration	35
7.2.4 LTE Test Configuration	40
8 Test Result	43
8.1 Measurement of RF Conducted Power	43
8.2 Measurement of SAR Data	45
8.2.1 SAR Result of GSM850	
8.2.2 SAR Result of GSM1900	
8.2.3 SAR Result of WCDMA Band II	48
8.2.4 SAR Result of WCDMA Band IV	49
8.2.5 SAR Result of WCDMA Band V	50
8.2.6 SAR Result of LTE Band 2	51
8.2.7 SAR Result of LTE Band 4	52
8.2.8 SAR Result of LTE Band 5	53
8.2.9 SAR Result of LTE Band 7	54
8.2.10 SAR Result of LTE Band 12	55
8.2.11 SAR Result of LTE Band 13	56
8.2.12 SAR Result of LTE Band 17	57
8.2.13 SAR Result of LTE Band 66	58
8.2.14 SAR Result of WIFI 2.4G	59
8.2.15 SAR Result of BT	
8.3 Multiple Transmitter Evaluation	
8.3.1 Simultaneous SAR test evaluation	
8.3.2 Simultaneous Transmission SAR Summation	
9 Equipment list 10 Calibration certificate	
11 PhotographsAppendix A: Detailed System Check Results	
Appendix B: Detailed System Check Results Appendix B: Detailed Test Results	
Appendix C: Calibration certificate	
Appendix D: Photographs	65
Appendix E: Conducted RF Output Power	65





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

6 of 65 Page:

General Information 1

1.1 General Description of EUT

Product Name:	COSMO JrTrack Kids Smartwatch		
Model No.:	JRTV5		
Trade Mark:	JrTrack		
Product Phase:	production unit		
Device Type:	portable device		
Exposure Category:	uncontrolled environme	ent / general population	
SN:	QW128M12505120183	36	
Hardware Version:	QW128-MB-V1.0		
Software Version:	S133WUS_QW128_V	3.1_B680_LH_SMT_V020	25052220
Antenna Type:	Internal antenna		
Device Operating Configurations:			
	GSM:GMSK,8PSK; W	CDMA:QPSK	
Modulation Mode:	LTE:QPSK,16QAM		
	WIFI:DSSS,OFDM; BT:GFSK, π/4DQPSK,8DPSK		
Device Class:	В		T
GPRS Multi-slots Class:	12	EGPRS Multi-slots Class:	12
HSDPA UE Category:	14	HSUPA UE Category:	6
	4, tested with power level 5(GSM850)		
Power Class:	1, tested with power level 0(GSM1900)		
1 Ower Olass.	3, tested with power control "all 1"(WCDMA Band)		
	3, tested with power control "max power"(LTE Band)		
Frequency Bands:	Band Tx(MHz)		z)
	GSM850	824~84	49
	GSM1900	1850~1910	
	WCDMA Band II	1850~1910	
	WCDMA Band IV	1710~1755	
	WCDMA Band V	824~849	
	LTE Band 2	1850 ~1910	
	LTE Band 4 1710~1755		
	LTE Band 5	824~84	49





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

7 of 65 Page:

	LTE Band 7	2500~2570	
	LTE Band 12	699~716	
	LTE Band 13	777~787	
	LTE Band 17	704-716	
	LTE Band 66	1710~1780	
	WIFI 2.4G	2412~2462	
	BT	2402~2480	
RF Cable:	⊠Provided by applicant □Provided by the laboratory		
	Model:	602831	
	Normal Voltage:	DC3.8V	
Battery Information:	Rated capacity:	680mAh	
	Battery Type:	Rechargeable Li-ion Battery	
	Manufacturer:	Shenzhen Ruiyixin Energy Co., Ltd.	

Note:

*Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.

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.





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 8 of 65

1.1.1 DUT Antenna Locations (Back View)

The DUT Antenna Locations can be referred to Appendix D





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

9 of 65 Page:

1.2 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 941225 D01	3G SAR Measurement Procedures v03r01
KDB 941225 D05	SAR for LTE Devices v02r05
KDB 941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB 248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02r02
KDB 447498 D01	Interim 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





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 10 of 65

1.3 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

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.)



中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057

t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

^{*} 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.



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 11 of 65

1.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China, 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

1.5 Test Facility

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

• A2LA (Certificate No. 3816.01)

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

VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC -Designation Number: CN1336

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

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

• Innovation, Science and Economic Development Canada

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

CAB identifier: CN0006.

IC#: 4620C.



Member of the SGS Group (SGS SA)



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

12 of 65 Page:

Laboratory Environment 2

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low ar	nd in compliance with requirement of standards.
Reflection of surrounding objects is minimized and in compliance with requirement of standards.	





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 13 of 65

3 **SAR Measurements System Configuration**

3.1 The SAR Measurement System

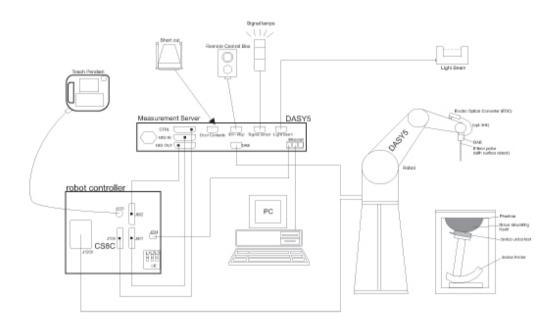
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

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, ADconversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

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



F-1. SAR Measurement System Configuration

The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://iwww.sgs.com/en/Terms-and-Conditions. 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 sindings at the time of its intervention only and within the limits of Client's fany. 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) 83071443, or email: CN.Doccheck@gs.com"

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Sherzhen, Guangdong, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn

t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 14 of 65

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





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 15 of 65

Isotropic E-field Proble EX3DV4 3.2

	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





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 16 of 65

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	pprox 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. 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.





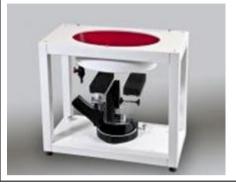
SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 17 of 65

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	pprox 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 IEEE 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 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.





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 18 of 65

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 $\varepsilon=3$ 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.





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 19 of 65

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≤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 straightforward 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.





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

20 of 65 Page:

			≤ 3 GHz	> 3 GHz
Maximum distance from			5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle surface normal at the n			30° ± 1°	20° ± 1°
			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
Maximum area scan sp	atial resol	ution: Δx_{Area} , Δy_{Area}	When the x or y dimension o measurement plane orientation the measurement resolution r x or y dimension of the test d measurement point on the test	on, is smaller than the above, must be ≤ the corresponding levice with at least one
Maximum zoom scan s	patial reso	lution: Δx _{Zoom} , Δy _{Zoom}	\leq 2 GHz: \leq 8 mm 2 – 3 GHz: \leq 5 mm [*]	$3 - 4 \text{ GHz: } \le 5 \text{ mm}^*$ $4 - 6 \text{ GHz: } \le 4 \text{ mm}^*$
	uniform	grid: ∆z _{Z∞m} (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	Δz _{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
	grid	Δz _{Zoom} (n>1): between subsequent points	≤ 1.5·Δz	Z _{Coom} (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. ± 5 %.





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 21 of 65

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

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

- Crest factor cf

Media parameters: - Conductivity $\boldsymbol{\epsilon}$

- Density p

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: E-field probes:





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 22 of 65

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

H-field probes:

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

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

Normi = sensor sensitivity of channel I

[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):

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

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

The primary field data are used to calculate the derived field units.
 $SAR = (Etot^2 \cdot \sigma) / (\varepsilon \cdot 1000)$

SAR = local specific absorption rate in mW/g

Etot = total field strength in V/m

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

ε= equivalent tissue density in g/cm3

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

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

with Ppwe = equivalent power density of a plane wave in mW/cm2

Etot = total electric field strength in V/m

Htot = total magnetic field strength in A/m



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service print available on request or accessible at https://www.sgs.com/ser/Terms-and-Conditions, Attention is drawn to the limitation indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained her



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

23 of 65 Page:

4 SAR measurement variability and uncertainty

4.1 SAR measurement variability

Per KDB 865664 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 tissueequivalent 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 (~ 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 KDB 865664 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.



中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 24 of 65

Desciption of Test Position 5

5.1 Wrist watch and Wrist-Worn Transmitters

Transmitters that are built-in within a wrist watch, or similar wrist-worn devices, typically operate in "speakerphone mode" for voice communication, with the device worn on the wrist and positioned next to the mouth. Operations next to the mouth requires 1-g SAR measurement, while the wrist-worn condition requires 10-g extremity SAR measurement.

SAR test exemptions for 10-g extremity with the wrist and 1-g with face exposure condition may be applied. When SAR evaluation is required, next-to-mouth use is evaluated with the front of the device positioned at 10 mm from a flat phantom filled with head tissue-equivalent medium. The wrist bands shall be strapped together to represent normal use conditions.

SAR for wrist exposure is evaluated with the back of the device positioned in direct contact against a flat phantom filled with body tissue-equivalent medium. The wrist bands shall be unstrapped and touching the phantom. The space introduced between the transmitter and the flat phantom must be representative of actual use conditions.





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

25 of 65 Page:

SAR System Verificaion Procedure 6

6.1 **Tissue Simulate Liquid**

6.1.1 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	700-1000	1700-2000	2300-2500	2500-2700					
Water	38.56	40.30	55.24	55.00	54.92					
Salt (NaCl)	3.95	1.38	0.31	0.2	0.23					
Sucrose	56.32	57.90	0	0	0					
HEC	0.98	0.24	0	0	0					
Bactericide	0.19	0.18	0	0	0					
Tween	0	0	44.45	44.80	44.85					

Salt: 99+% Pure Sodium Chloride Sucrose: 98+% Pure Sucrose Water: De-ionized, 16 MΩ+ resistivity HEC: Hydroxyethyl Cellulose

Tween: Polyoxyethylene (20) sorbitan monolaurate

HSL5GHz is composed of the following ingredients: (Manufactured by SPEAG)

Water: 50-65% Mineral oil: 10-30% Emulsifiers: 8-25% Sodium salt: 0-1.5%

Table 1: Recipe of Tissue Simulate Liquid





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

26 of 65 Page:

6.1.2 Measurement for Tissue Simulate Liquid

The Conductivity (σ) and Permittivity (ϵr) are listed in Table 2. For the SAR measurement given in this report.

The temperature variation of the Tissue Simulate Liquids was 22+2°C

Type	Measured Frequency	Measured Tissue		Target Tis	ssue (±5%)	Devia (Within		Liquid Temp.	Test
	(MHz)	ε _r	σ(S/m)	ε _r	σ(S/m)	٤r	σ(S/m)	(℃)	Date
750 Head	750	40.309	0.896	41.90	0.89	-3.80%	0.72%	22.1	2025/6/17
835 Head	835	40.082	0.925	41.50	0.90	-3.42%	2.78%	21.9	2025/6/18
750 Head	750	40.509	0.905	41.90	0.89	-3.32%	1.66%	22.3	2025/6/16
835 Head	835	40.212	0.931	41.50	0.90	-3.10%	3.44%	21.9	2025/6/17
1750 Head	1750	40.909	1.358	40.10	1.37	2.02%	-0.87%	22.4	2025/6/18
1950 Head	1950	40.256	1.438	40.00	1.40	0.64%	2.73%	21.0	2025/6/19
2450 Head	2450	38.557	1.806	39.20	1.80	-1.64%	0.35%	22.9	2025/6/20
2450 Head	2450	38.417	1.787	39.20	1.80	-2.00%	-0.71%	21.8	2025/6/19
2600 Head	2600	38.238	1.879	39.00	1.96	-1.95%	-4.13%	22.0	2025/6/20
2600 Head	2600	38.418	1.905	39.00	1.96	-1.49%	-2.80%	22.8	2025/6/21

Table 2: Measurement result of Tissue electric parameters





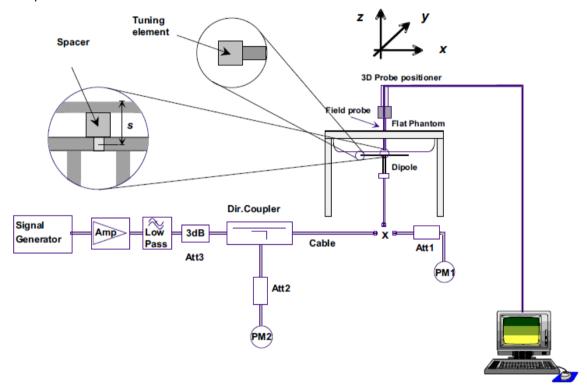
SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 27 of 65

6.2 SAR System Check

The microwave circuit arrangement for system Check is sketched in F-12. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the following table (A power level of 250mW (below 3GHz) or 100mW (3-6GHz) was input to the dipole antenna). During the tests, the ambient temperature of the laboratory was in the range 22±2°C, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15±0.5 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



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





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 28 of 65

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.





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

29 of 65 Page:

6.2.2 Summary System Check Result(s)

Validation Kit	Measured SAR 250mW	Measured SAR 250mW	SAR	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W)	Target SAR (normalized to 1W)	Deviation (Within ±10%)		Liquid Temp. (°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)	•		
D750V3_Head	2.19	1.40	8.76	5.60	8.24	5.33	6.31%	5.07%	22.3	2025/6/16
D750V3_Head	1.97	1.36	7.88	5.44	8.24	5.33	-4.37%	2.06%	22.1	2025/6/17
D835V2_Head	2.38	1.61	9.52	6.44	9.53	6.29	-0.10%	2.38%	21.9	2025/6/18
D835V2_Head	2.53	1.65	10.12	6.60	9.53	6.29	6.19%	4.93%	21.9	2025/6/17
D1750V2_Head	9.11	5.05	36.44	20.20	36.70	19.60	-0.71%	3.06%	22.4	2025/6/18
D1950V3_Head	10.30	5.52	41.20	22.08	40.50	20.80	1.73%	6.15%	21.0	2025/6/19
D2450V2_Head	13.50	6.28	54.00	25.12	52.20	24.30	3.45%	3.37%	22.9	2025/6/20
D2450V2_Head	12.10	5.86	48.40	23.44	52.20	24.30	-7.28%	-3.54%	21.8	2025/6/19
D2600V2_Head	14.60	6.71	58.40	26.84	55.90	25.30	4.47%	6.09%	22.0	2025/6/20
D2600V2_Head	13.80	6.59	55.20	26.36	55.90	25.30	-1.25%	4.19%	22.8	2025/6/21

Table 3: SAR System Check Result

6.2.3 Detailed System Check Results

Please see the Appendix A





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 30 of 65

Test Configuration 7

7.1 3G SAR Test Reduction Procedure

According to KDB 941225D01, in the following procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg. SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as "otherwise" in the applicable procedures; SAR measurement is required for the secondary mode.

7.2 **Operation Configurations**

7.2.1 **GSM Test Configuration**

SAR tests for GSM 850 and GSM 1900, a communication link is set up with a base station by air link. Using Radio Communication Analyzer, the power lever is set to "5" and "0" in SAR of GSM 850 and GSM 1900. The tests in the band of GSM 850 and GSM 1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5.

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power, the higher number time-slot configuration should be tested.

When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

7.2.2 WCDMA Test Configuration

1) . Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all "1's" for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) are required in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified.





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 31 of 65

2) . Head SAR

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

3) . Body SAR

SAR for body configurations is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreaing code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the handset, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

4) . HSDPA / HSUPA

RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power for production units in HSDPA / HSUPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest measured SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power of HSDPA / HSUPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.5 W/kg, SAR measurement is not required for HSDPA / HSUPA.

HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) are set according to values indicated in the following table. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-test	βc	Bd	βd(SF)	βc/βd	βhs	CM(dB)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note1: \triangle ACK, \triangle NACK and \triangle CQI= 8 Ahs = β hs/ β c=30/15 β hs=30/15* β c

Note2:For the HS-DPCCH power mask requirement test in clause 5.2C,5.7A,and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1.A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, \triangle ACK and \triangle NACK= 8 (Ahs=30/15) with β hs=30/15* β c,and \triangle CQI= 7 (Ahs=24/15) with β hs= $24/15*\beta$ c.

Note3: CM=1 for β c/ β d =12/15, β hs/ β c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 32 of 65

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.

Parameter	Value
Nominal average inf. bit rate	534 kbit/s
Inter-TTI Distance	3 TTI"s
Number of HARQ Processes	2 Processes
Information Bit Payload	3202 Bits
MAC-d PDU size	336 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	4800 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	9600 SMLs
Coding Rate	0.67
Number of Physical Channel Codes	5

Table 4: settings of required H-Set 1 QPSK acc. to 3GPP 34.121

HS-DSCH Category	MaximumHS- DSCH Codes Received	Minimum Inter-TTI Interval	MaximumHS-DSCH TransportBlockBits/HS- DSCH TTI	TotalSoft Channel Bits
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600
16	15	1	27952	345600

Table 5: HSDPA UE category

b) HSUPA

Due to inner loop power control requirements in HSUPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSUPA should be configured according to the values indicated below as well as other applicable procedures described in the WCDMA Handset and Release 5 HSUPA Data Device sections of 3G device.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. 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 sindings at the time of its intervention only and within the limits of Client's fany. 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: CND.Doccheck@gs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Hanshan District, Sherzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn

t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 33 of 65

Sub -test₽	βee	βd₽	β _d (SF)	β₀∕β⋴⋼	β _{hs} (1	β _{ec+} 2	β _{ed} ₽	βe e ^μ (SF)+³	βed+ ¹ (code)+ ¹	CM(2)+1 (dB)+2	MP R↓ (dB)↓	AG(4)+/ Inde x+/	E- TFC I
1₽	11/15(3)¢2	15/15 ⁽³⁾	64₽	11/15(3)43	22/15₽	209/22 5 ₊₂	1039/225₽	4 0	1₽	1.04	0.0	20₽	75₽
20	6/15₽	15/15₽	64₽	6/15₽	12/15⇔	12/15₽	94/75₽	4₽	1₽	3.0₽	2.0₽	12	67₽
3₽	15/150	9/15₽	64₽	15/9₽	30/15₽	30/15₽	β _{ed1} :47/1 5 ₄ β _{ed2:} 47/1 5 ₄	4€	2₽	2.0∉	1.0₽	150	92₽
4₽	2/15₽	15/15₽	64₽	2/15₽	4/15₽	2/15₽	56/75₽	4₽	1₽	3.0₽	2.0₽	17₽	71₽
5₽	15/15(4)47	15/15 ⁽⁴⁾	64₽	15/15(4)43	30/15₽	24/15₽	134/15₽	4€	1€	1.0∉	0.0₽	21	81₽

Note 1: \triangle ACK, \triangle NACK and \triangle CQI = 8 $A_{\rm hs} = \beta_{\rm hs}/\beta_{\rm e} = 30/15$ $\beta_{hs} = 30/15 * \beta_{e+1}$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference-

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1,TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$ μ

Note 4: For subtest 5 the β_e/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$ μ

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g₽

Note 6: βed can not be set directly; it is set by Absolute Grant Value.

Table 6: Subtests for UMTS Release 6 HSUPA

					Maximum		
UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI(ms)	Minimum Speading Factor	E-DCH Transport Block Bits	Max Rate (Mbps)	
1	1	4	10	4	7110	0.7296	
2	2	8	2	4	2798	1 4500	
2	2	4	10 4		14484	1.4592	
3	2	4	10	4	14484	1.4592	
4	2	8	2	2	5772	2.9185	
4	2	4	10	2	20000	2.00	
5	2	4	10	2	20000	2.00	
6	4	8	10	2SF2&2SF	11484	5.76	
(No DPDCH)	4	4	2	4	20000	2.00	
7	4	8	2	2SF2&2SF	22996	?	
(No DPDCH)	4	4	10	4	20000	?	

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4.UE categories 1 to 6 support QPSK only. UE category 7 supports QPSK and 16QAM.(TS25.306-7.3.0).

Table 7: HSUPA UE category





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 34 of 65

d) HSPA+

SAR is required for Rel. 7 HSPA+ when SAR is required for Rel. 6 HSPA; otherwise, the 3G SAR test reduction procedure is applied to (uplink) HSPA+ with 12.2 kbps RMC as the primary mode. Power is measured for HSPA+ that supports uplink 16 QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.

. Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM-

	Sub- test∂	PC	βd∉	β _{HS} . (Note1).	β _{ec} ₊/	β _{ed} ↓ (2xSF2) ↓ (Note 4) ₁		CM-/ (dB)-/ (Note 2)-:	MPR√ (dB)√ (Note 2)√	Index⊎	(Note 5)	E-TFCI (boost)₽	
ŀ	1.₽	1₽	0↔	30/15₽	30/15	•	βed3: 24/15 βed4: 24/15	3.5₽	2.5₽	(Note 4)₽ 14₽	105₽	105₽	÷

Note 1: Δ ACK, Δ NACK and Δ CQI = 30/15 with β_{bc} = 30/15 * β_{c} .

Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).

Note 3: DPDCH is not configured, therefore the β_0 is set to 1 and $\beta_d = 0$ by default.

Note 4: βed can not be set directly; it is set by Absolute Grant Value. ₽

Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

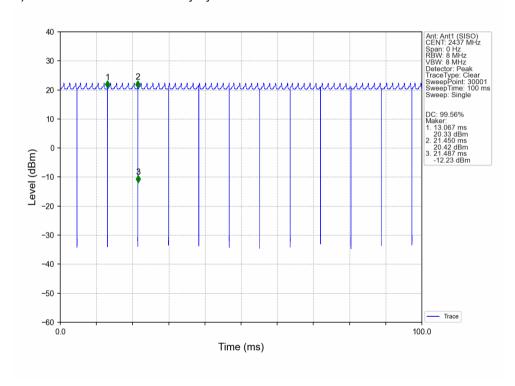
Page: 35 of 65

7.2.3 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.

7.2.3.1 Duty cycle

1) Wi-Fi 2.4GHz 802.11b:Duty cycle=99.56%





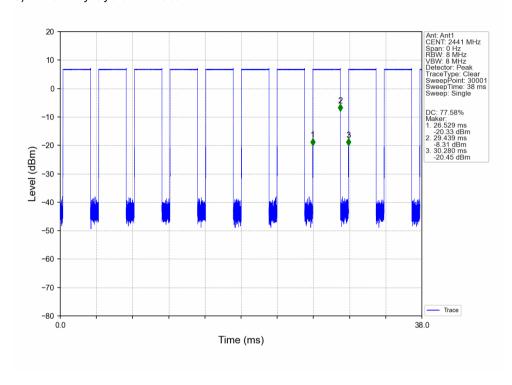


SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 36 of 65

5) DH5 Duty Cycle=77.58%







SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 37 of 65

7.2.3.2 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.



中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057

t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 38 of 65

7.2.3.3 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.
- SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.
- 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:
- replace "subsequent test configuration" (i.e., subsequent next highest specified maximum output power configuration)
- replace "initial test configuration" with "all tested higher output power configurations"





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 39 of 65

7.2.3.4 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.



中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 40 of 65

7.2.4 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The Radio Communication Analyzer was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

TDD LTE test consideration

For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.

LTE TDD Band support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Frame structure type 2:

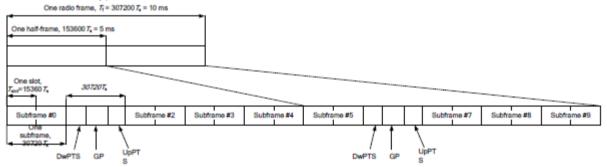


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

1 able 4.2-1. C	onliguration o	i speciai subitati	ie (iengths of Dwr	13/GF/UPF1	ა).	
	Norm	al cyclic prefix in	downlink	Extend	led cyclic prefix i	n downlink
Special	DwPTS	Up	PTS	DwPTS	Up	PTS
subframe		Normal cyclic	Extended		Normal cyclic	Extended
configuration		prefix in	cyclic prefix in		prefix in	cyclic prefix in
		uplink	uplink		uplink	uplink
0	6592.Ts			7680.Ts		
1	19760.Ts			20480.Ts	2192.Ts	2560.Ts
2	21952.Ts	2192.Ts	2560.Ts	23040.Ts	2192.15	2560.18
3	24144.Ts			25600.Ts		
4	26336.Ts			7680.Ts		
5	6592.Ts			20480.Ts	4294 To	5120 To
6	19760.Ts			23040.Ts	4384.Ts	5120.Ts
7	21952.Ts	4384.Ts	5120.Ts	25600.Ts		
8	24144.Ts			-	-	-
9	13168.Ts			-	-	-

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057

Table 4.2-2: Uplink-downlink configurations.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. 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 sindings at the time of its intervention only and within the limits of Client's fany. 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: CND.Doccheck@gs.com

t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 41 of 65

Uplink-downlink	Downlink-to-				St	ubframe	e numb	er			
configuration	Uplink Switch- point periodicity	0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	_	٥	D	S	U	U	J
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	_	٥	D	S	U	U	D

Calculated Duty Cycle=[Extended cyclic prefix in uplink x (Ts) x # of S + # of U]/10ms

			, сс р			ame N						
Uplink-					Subira	allie ivi	umbei					Calculated
Downlink	Downlink-to- Uplink Switch-											Duty
Configur	point Periodicity	0	1	2	3	4	5	6	7	8	9	Cycle (%)
ation												
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5 ms	D	S	U	U	D	D	S	J	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	J	D	D	23.33
3	10 ms	D	S	U	U	J	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	ם	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

A) Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

B) MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

		Channel I	oandwidth/	Transmission	bandwidth		MPR
Modulation	1.4	3	5	10	15	20	(dB)
	MHz	MHz	MHz	MHz	MHz	MHz	(ub)
QPSK	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	0
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	1
16QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	1
16QAM	> 5	> 4	> 8	> 12	> 16	> 18	2
64QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	2
64QAM	> 5	> 4	> 8	> 12	> 16	> 18	3
256QAM				≥1			5



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. 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 sindings at the time of its intervention only and within the limits of Client's fany. 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: CND.Doccheck@gs.com

Member of the SGS Group (SGS SA)



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 42 of 65

C) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

D) Largest channel bandwidth standalone SAR test requirements

1) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

2) QPSK with 50% RB allocation

The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.

3) QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 1) and 2) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

4) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

E) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > 1/2 dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.



中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057

t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 43 of 65

8 Test Result

8.1 Measurement of RF Conducted Power

The detailed conducted power can be referred to Appendix E.

Note:

1) . For SAR the time based average power is relevant. The difference in between depends on the duty cycle of the TDMA signal:

No. of timeslots	1	2	3	4
Duty Cycle	1:8.3	1:4.15	1:2.77	1:2.075
Time based avg. power compared to slotted avg. power	-9.19	-6.18	-4.42	-3.17

2) . 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.

- 3) . When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.
- 4) According to FCC guidance, the output power with uplink CA active was measured for the high / middle / low channel configuration with the highest reported SAR for each exposure condition, the power was measured with wideband signal integration over both component carriers.
- 5) . In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs.
- 6) . Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05.
- 7) . Conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR test exclusion per KDB 941225 D05A.Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive, therefore SAR evaluation with downlink carrier aggregation can be excluded.

The possible downlink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.101 V15.4.0. The detailed conducted power measurement results of downlink LTE CA are provided in the SAR report per 3GPP TS 36.521-1 V14.4.0. According to KDB 941225 D05A, the downlink only carrier aggregation conditions for this device can be excluded from SAR testing.

The conducted power measurement results of downlink LTE CA Conducted Power are as Appendix E

The conducted power measurement results of downlink LTE CA Conducted Power are as Appendix E conducted RF output power, so the downlink only carrier aggregation conditions for this device can be excluded from SAR testing.

8) . For conducted power of WIFI must be measured at each transmit antenna port according to the DSSS and OFDM transmission configurations in each standalone and aggregated frequency band. For each transmission mode configuration, power must be measured for the highest and lowest channels; and at the mid-band channel(s) when there are at least 3 channels. For configurations with multiple mid-band channels, due to an even number of channels, both channels should be measured. Power measurement is required for the transmission mode configuration with the highest maximum output power specified for production units.

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. 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 sindings at the time of its intervention only and within the limits of Client's fany. 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: CND.Doccheck@gs.com

t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

44 of 65 Page:

1) When the same highest maximum output power specification applies to multiple transmission modes, the largest channel bandwidth configuration with the lowest order modulation and lowest data rate is measured.

2) When the same highest maximum output power is specified for multiple largest channel bandwidth configurations with the same lowest order modulation or lowest order modulation and lowest data rate, power measurement is required for all equivalent 802.11 configurations with the same maximum output





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 45 of 65

8.2 Measurement of SAR Data

Note:

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

WiFi 2.4G:

When the highest reported SAR for the initial test configuration 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 test for the other 802.11 modes are not required.

When the highest reported SAR for the initial test configuration 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 test for the other 802.11 modes are not required.





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 46 of 65

8.2.1 SAR Result of GSM850

	GSM850 SAR Test Record													
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)		Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)			
	Next to mouth Test data (Separate 10mm)													
Front side	Front side GPRS 2TS 190/836.61:4.15 0.162 0.094 -0.10 31.06 32.00 1.242 0.201 22.9													
				GS	SM850 SA	AR Test	Record							
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)			Scaled SAR 10- g (W/kg)	Liquid Temp.(℃)			
				Extrem	ity Test d	lata (Sep	arate 0mm)							
Back side	GPRS 2TS	190/836.6	1:4.15	0.597	0.299	0.04	31.06	32.00	1.242	0.371	22.9			





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 47 of 65

8.2.2 SAR Result of GSM1900

	GSM1900 SAR Test Record														
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)		Scaled factor		Liquid Temp.(℃)				
	Next to mouth Test data (Separate 10mm)														
Front side	GPRS 2TS	661/1880	1:4.15	0.423	0.247	-0.03	28.21	29.00	1.199	0.507	22.9				
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)				
	Extremity Test data (Separate 0mm)														
Back side	GPRS 2TS	661/1880	1:4.15	1.800	0.930	-0.09	28.21	29.00	1.199	1.116	22.9				





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 48 of 65

8.2.3 SAR Result of WCDMA Band II

	WB2 SAR Test Record														
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)				
				Next to	o mouth	Test data	a (Separate 10	Omm)							
Front side	RMC	9400/1880	1:1	0.508	0.297	-0.03	23.29	24.00	1.178	0.598	22.9				
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)				
	Extremity Test data (Separate 0mm)														
Back side	RMC	9400/1880	1:1	1.160	0.538	-0.14	23.29	24.00	1.178	0.634	22.9				





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 49 of 65

8.2.4 SAR Result of WCDMA Band IV

				V	VB4 SAR	Test Rec	ord				
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)		Scaled factor		Liquid Temp.(℃)
			Ν	lext to mo	outh Test	data (Sep	arate 10mm)				
Front side	RMC	1412/1732.4	1:1	0.249	0.153	-0.18	23.16	24.00	1.213	0.302	22.9
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)		Scaled factor		Liquid Temp.(℃)
				Extrem	ity Test da	ata (Sepa	rate 0mm)				
Back side	RMC	1412/1732.4	1:1	0.731	0.404	0.18	23.16	24.00	1.213	0.490	22.9





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 50 of 65

8.2.5 SAR Result of WCDMA Band V

					WB5	SAR Te	st Record				
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
				Next to	mouth ⁻	Test da	ta (Separate 1	10mm)			
Front side	RMC	4182/836.4	1:1	0.035	0.022	-0.01	21.86	22.50	1.159	0.041	22.9
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)
				Extr	emity Te	est data	(Separate 0n	nm)			
Back side	RMC	4182/836.4	1:1	0.246	0.127	-0.02	21.86	22.50	1.159	0.147	22.9





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 51 of 65

8.2.6 SAR Result of LTE Band 2

				Lī	TE Band	2 SAR Te	st Reco	rd				
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)		Scaled factor		Liquid Temp.(℃)
			Ne	ext to m	outh Test	data (Sep	oarate 10	Omm 1RB)				
Front side	20	QPSK 1_50	18900/1880	1:1	0.293	0.154	0.08	23.96	24.50	1.132	0.332	22.9
			Nex	t to mou	uth Test d	ata (Sepa	rate 10n	nm 50%RB)				
Front side	20	QPSK 50_25	18900/1880	1:1	0.217	0.107	-0.11	22.94	23.50	1.138	0.247	22.9
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)
				Extrem	nity Test d	ata (Sepa	rate 0mr	m 1RB)				
Back side	20	QPSK 1_50	18900/1880	1:1	1.480	0.743	-0.07	23.96	24.50	1.132	0.841	22.9
	•		Е	xtremit	y Test dat	a (Separa	ite 0mm	50%RB)				·
Back side	20	QPSK 50_25	18900/1880	1:1	1.264	0.607	0.13	22.94	23.50	1.138	0.691	22.9





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 52 of 65

8.2.7 SAR Result of LTE Band 4

				LT	E Band 4	SAR Te	st Recor	'd				
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	-	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
			Ne	xt to mo	uth Test	data (Sep	arate 10	mm 1RB)				
Front side	20	QPSK 1_50	20175/1732.5	1:1	0.257	0.151	0.05	23.94	24.50	1.138	0.292	22.9
			Nex	t to mout	h Test da	ıta (Sepa	rate 10m	ım 50%RB)				
Front side	20	QPSK 50_25	20175/1732.5	1:1	0.187	0.103	0.01	22.95	23.50	1.135	0.212	22.9
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	•		Scaled SAR 10- g (W/kg)	Liquid Temp.(℃)
				Extremit	y Test da	ita (Sepa	rate 0mn	n 1RB)				
Back side	20	QPSK 1_50	20175/1732.5	1:1	0.947	0.551	0.03	23.94	24.50	1.138	0.627	22.9
			Е	xtremity	Test data	a (Separa	te 0mm	50%RB)				
Back side	20	QPSK 50_25	20175/1732.5	1:1	0.900	0.438	0.12	22.95	23.50	1.135	0.497	22.9





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 53 of 65

8.2.8 SAR Result of LTE Band 5

	LTE Band 5 SAR Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	-		Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
			Ne	xt to mo	uth Test	data (Sep	arate 10	mm 1RB)				
Front side	10	QPSK 1_25	20525/836.5	1:1	0.048	0.027	-0.19	22.28	23.00	1.180	0.056	22.9
			Next	t to mout	h Test da	ıta (Sepa	rate 10m	m 50%RB)				
Front side	10	QPSK 25_13	20525/836.5	1:1	0.041	0.020	0.10	21.26	22.00	1.186	0.049	22.9
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	•		Scaled SAR 10- g (W/kg)	Liquid Temp.(℃)
				Extremit	y Test da	ita (Sepa	rate 0mm	n 1RB)				
Back side	10	QPSK 1_25	20525/836.5	1:1	0.255	0.131	-0.07	22.28	23.00	1.180	0.155	22.9
	•		Е	xtremity	Test data	a (Separa	te 0mm :	50%RB)				
Back side	10	QPSK 25_13	20525/836.5	1:1	0.242	0.110	0.12	21.26	22.00	1.186	0.130	22.9





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 54 of 65

8.2.9 SAR Result of LTE Band 7

LTE Band 7 SAR Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
	Next to mouth Test data (Separate 10mm 1RB)											
Front side	20	QPSK 1_50	21100/2535	1:1	0.445	0.248	-0.04	22.19	23.00	1.205	0.536	22.9
			Nex	t to mou	th Test d	ata (Sepa	arate 10r	mm 50%RB)				
Front side	20	QPSK 50_25	21100/2535	1:1	0.323	0.165	0.09	21.18	22.00	1.208	0.390	22.9
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)		Scaled SAR 10- g (W/kg)	Liquid Temp.(℃)
				Extremi	ty Test d	ata (Sepa	arate 0m	m 1RB)				
Back side	20	QPSK 1_50	21100/2535	1:1	4.550	1.860	-0.06	22.19	23.00	1.205	2.241	22.9
Back side	20	QPSK 1_50	20850/2510	1:1	4.620	1.990	0.04	22.11	23.00	1.227	2.443	22.9
Back side	20	QPSK 1_50	21350/2560	1:1	4.450	1.870	-0.01	22.03	23.00	1.250	2.338	22.9
			E	xtremity	Test dat	a (Separ	ate 0mm	50%RB)				
Back side	20	QPSK 50_25	21100/2535	1:1	4.245	1.598	0.11	21.18	22.00	1.208	1.930	22.9
	Extremity Test data (Separate 0mm 100%RB)											
Back side	20	QPSK 50_25	20850/2510	1:1	4.160	1.430	0.01	21.10	22.00	1.230	1.759	22.9





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 55 of 65

8.2.10 SAR Result of LTE Band 12

	LTE Band 12 SAR Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)		Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
			Ne	xt to mo	uth Test o	data (Sep	arate 10	mm 1RB)				
Front side	10	QPSK 1_25	23095/707.5	1:1	0.130	0.078	-0.04	21.72	23.00	1.343	0.175	22.9
			Nex	t to mout	h Test da	ıta (Sepa	rate 10m	m 50%RB)				
Front side	10	QPSK 25_13	23095/707.5	1:1	0.100	0.610	-0.01	21.62	23.00	1.374	0.137	22.9
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)			Scaled SAR 10- g (W/kg)	Liquid Temp.(℃)
				Extremit	y Test da	ita (Sepa	rate 0mm	n 1RB)				
Back side	10	QPSK 1_25	23095/707.5	1:1	0.523	0.249	0.03	21.72	23.00	1.343	0.334	22.9
	•		Е	xtremity	Test data	a (Separa	te 0mm	50%RB)	•			·
Back side	10	QPSK 25_13	23095/707.5	1:1	0.497	0.210	0.08	21.69	23.00	1.352	0.284	22.9





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 56 of 65

8.2.11 SAR Result of LTE Band 13

	LTE Band 13 SAR Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	-	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
			Ne	xt to mo	uth Test o	data (Sep	arate 10	mm 1RB)				
Front side	10	QPSK 1_25	23230/782	1:1	0.090	0.053	0.12	21.97	23.00	1.268	0.114	22.9
			Nex	t to mout	h Test da	ıta (Sepa	rate 10m	ım 50%RB)				
Front side	10	QPSK 25_13	23230/782	1:1	0.070	0.042	0.05	21.12	22.00	1.225	0.086	22.9
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	•		Scaled SAR 10- g (W/kg)	Liquid Temp.(℃)
				Extremit	y Test da	ita (Sepa	rate 0mn	n 1RB)				
Back side	10	QPSK 1_25	23230/782	1:1	0.296	0.151	0.01	21.97	23.00	1.268	0.191	22.9
			Е	xtremity	Test data	a (Separa	te 0mm	50%RB)	•			·
Back side	10	QPSK 25_13	23230/782	1:1	0.209	0.124	0.11	21.12	22.00	1.225	0.152	22.9





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 57 of 65

8.2.12 SAR Result of LTE Band 17

	LTE Band 17 SAR Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)			Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
			Ne	xt to mo	uth Test o	data (Sep	arate 10	mm 1RB)				
Front side	10	QPSK 1_25	23790/710	1:1	0.065	0.042	-0.05	21.86	22.50	1.159	0.075	22.9
			Nex	t to mout	h Test da	ita (Sepa	rate 10m	m 50%RB)				
Front side	10	QPSK 25_13	23790/710	1:1	0.061	0.035	0.12	20.76	21.50	1.186	0.072	22.9
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	•		Scaled SAR 10- g (W/kg)	Liquid Temp.(℃)
	·			Extremit	y Test da	ta (Sepa	rate 0mm	n 1RB)				
Back side	10	QPSK 1_25	23790/710	1:1	0.500	0.236	0.02	21.86	22.50	1.159	0.273	22.9
			E	xtremity	Test data	(Separa	te 0mm	50%RB)				
Back side	10	QPSK 25_13	23790/710	1:1	0.376	0.163	0.11	20.76	21.50	1.186	0.193	22.9





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 58 of 65

8.2.13 SAR Result of LTE Band 66

	LTE Band 66 SAR Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	-		Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
			Ne	xt to mo	uth Test	data (Sep	arate 10	mm 1RB)				
Front side	20	QPSK 1_50	132322/1745	1:1	0.155	0.091	0.18	23.60	24.50	1.230	0.191	22.9
			Nex	t to mout	h Test da	ata (Sepa	rate 10m	ım 50%RB)				
Front side	20	QPSK 50_25	132322/1745	1:1	0.132	0.078	0.05	22.53	23.50	1.250	0.165	22.9
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	•		Scaled SAR 10- g (W/kg)	Liquid Temp.(℃)
				Extremit	y Test da	ita (Sepa	rate 0mn	n 1RB)				
Back side	20	QPSK 1_50	132322/1745	1:1	0.671	0.343	0.09	23.60	24.50	1.230	0.422	22.9
			Е	xtremity	Test data	a (Separa	te 0mm	50%RB)	•			
Back side	20	QPSK 50_25	132322/1745	1:1	0.560	0.302	0.01	22.53	23.50	1.250	0.378	22.9





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 59 of 65

8.2.14 SAR Result of WIFI 2.4G

	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	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)		Scaled factor	Scaled SAR 1- g (W/kg)	Liquid Temp.(℃)	
				Next t	o mouth	n Test d	ata (Sep	arate 10mm)					
Front side	802.11b	6/2437	99.56%	1.004	0.302	0.182	0.03	15.70	16.00	1.072	0.325	22.6	
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	_	Scaled		Liquid Temp.(℃)	
	Extremity Test data (Separate 0mm)												
Back side	802.11b	6/2437	99.56%	1.004	1.410	0.734	0.05	15.70	16.00	1.072	0.790	22.6	





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 60 of 65

8.2.15 SAR Result of BT

	Bluetooth SAR Test Record											
Test position	Test mode	Test ch./Freq.	_	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)		Scaled factor		Liquid Temp.(℃)
				Next to	o mouth	Test da	ta (Sepa	rate 10mm)				
Front side	DH5	39/2441	77.58%	1.289	0.177	0.108	-0.06	5.92	5.00	0.809	0.185	22.6
Test position	Test mode	Test ch./Freq.	Cycle	Duty Cycle Scaled factor		SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	•	Scaled factor		Liquid Temp.(℃)
				Ext	remity T	est data	(Separa	ate 0mm)				
Back side	DH5	39/2441	77.58%	1.289	0.646	0.374	-0.03	5.92	5.00	0.809	0.390	22.6





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

61 of 65 Page:

Multiple Transmitter Evaluation 8.3

8.3.1 Simultaneous SAR test evaluation

No.	Simultaneous Tx Combination	Next to mouth	Extremity
1	WWAN + WLAN 2.4GHz	Yes	Yes
2	WWAN + BT	Yes	Yes





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 62 of 65

8.3.2 Simultaneous Transmission SAR Summation Scenario

Next to mouth:

INCAL TO III	outiii					
		SAR	max (W/kg)			
Test p	oosition	MAX SAR	WiFi 2.4G	ВТ	Summe	ed SAR
		1	2	3	1+2	1+3
GSM 850	Front side	0.201	0.325	0.185	0.526	0.386
GSM 1900	Front side	0.507	0.325	0.185	0.832	0.692
W B2	Front side	0.598	0.325	0.185	0.923	0.783
W B4	Front side	0.302	0.325	0.185	0.627	0.487
W B5	Front side	0.041	0.325	0.185	0.366	0.226
LTE B2	Front side	0.332	0.325	0.185	0.657	0.517
LTE B4	Front side	0.292	0.325	0.185	0.617	0.477
LTE B5	Front side	0.056	0.325	0.185	0.381	0.241
LTE B7	Front side	0.536	0.325	0.185	0.861	0.721
LTE B12	Front side	0.175	0.325	0.185	0.500	0.360
LTE B13	Front side	0.114	0.325	0.185	0.439	0.299
LTE B17	Front side	0.075	0.325	0.185	0.400	0.260
LTE B66	Front side	0.191	0.325	0.185	0.516	0.376

Extremity:

Extremity	•					
		SAR	max (W/kg)			
Test p	oosition	MAX SAR	WiFi 2.4G	ВТ	Summe	ed SAR
		1	2	3	1+2	1+3
GSM 850	Back side	0.371	0.790	0.390	1.161	0.761
GSM 1900	Back side	1.116	0.790	0.390	1.906	1.506
W B2	Back side	0.634	0.790	0.390	1.424	1.024
W B4	Back side	0.627	0.790	0.390	1.417	1.017
W B5	Back side	0.147	0.790	0.390	0.937	0.537
LTE B2	Back side	0.841	0.790	0.390	1.631	1.231
LTE B4	Back side	0.627	0.790	0.390	1.417	1.017
LTE B5	Back side	0.155	0.790	0.390	0.945	0.545
LTE B7	Back side	2.443	0.790	0.390	3.233	2.833
LTE B12	Back side	0.334	0.790	0.390	1.124	0.724
LTE B13	Back side	0.191	0.790	0.390	0.981	0.581
LTE B17	Back side	0.273	0.790	0.390	1.063	0.663
LTE B66	Back side	0.422	0.790	0.390	1.212	0.812





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 63 of 65

Equipment list 9

	Test Platform	SPEAG DASY	Professional			
	Description	SAR Test Syst				
So	ftware Reference	DASY52 52 10) 4(1527): SEMC	AD X 14.6.14(7483)		
	ittiaio i toloronoo	D/10102 02.10	Hardware Re			
					Calibration	Due date of
	Equipment	Manufacturer	Model	Inventory No.	Date	calibration
	Test Phantom	SPEAG	SAM Twin	SZ-WSR-A-020	NCR	NCR
	Test Phantom	SPEAG	SAM Twin	SZ-WSR-A-022	NCR	NCR
	DAE	SPEAG	DAE4	SZ-WSR-M-029	2025/01/20	2026/01/19
	DAE	SPEAG	DAE4	SZ-WSR-M-081	2024/08/15	2025/08/14
$\overline{\boxtimes}$	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-069	2024/07/29	2025/07/28
$\overline{\boxtimes}$	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-082	2024/09/19	2025/09/18
	Validation Kits	SPEAG	D750V3	SZ-WSR-R-011	2024/12/18	2027/12/17
\boxtimes	Validation Kits	SPEAG	D835V2	SZ-WSR-M-033	2022/11/02	2025/11/01
\boxtimes	Validation Kits	SPEAG	D1750V2	SZ-WSR-R-012	2025/05/08	2028/05/07
\boxtimes	Validation Kits	SPEAG	D1950V3	SZ-WSR-M-037	2022/10/31	2025/10/30
	Validation Kits	SPEAG	D2450V2	SZ-WSR-M-039	2022/11/02	2025/11/01
	Validation Kits	SPEAG	D2600V2	SZ-WSR-R-014	2024/06/17	2027/06/16
	Dielectric					
\boxtimes	parameter	SPEAG	DAK-3.5	SZ-WSR-M-093	2024/11/18	2025/11/17
	probes					
	Vector Network					
\boxtimes	Analyzer and	Agilent	E5071C	SZ-WSR-M-067	2024/12/19	2025/12/18
	Vector	7.9		<u></u>		
	Reflectometer					
	Radio Communication	Anritsu	MTOOOOC	C7 WCD M 005	2025/01/08	2026/01/07
		Annisu	MT8820C	SZ-WSR-M-005	2025/01/06	2020/01/07
	Analyzer Radio					
	Communication	Anritsu	MT8820C	SZ-WSR-M-018	2025/05/22	2026/05/21
	Analyzer	Aiiitau	W110020C	32-44314-141-010	2023/03/22	2020/03/21
	Radio					
	Communication	Anritsu	MT8820C	SZ-WSR-M-020	2024/08/19	2025/08/18
	Analyzer	7		<u></u>		
	RF Bi-Directional	A	00005 00004	07.14/05.4.007	NOD	NCD
\boxtimes	Coupler	Agilent	86205-60001	SZ-WSR-A-004	NCR	NCR
	Signal Generator	Agilent	N5171B	SZ-WSR-M-006	2025/01/07	2026/01/06
	Preamplifier	Mini-Circuits	ZHL-42W	SZ-WSR-A-001	NCR	NCR
		Compliance				
\boxtimes	Preamplifier	Directions	AMP28-3W	SZ-WSR-A-002	NCR	NCR
		Systems Inc.				
	Power Meter	Agilent	E4416A	SZ-WSR-M-007	2025/01/07	2026/01/06
	Power Sensor	Agilent	8481H	SZ-WSR-M-008	2025/01/07	2026/01/06
	Power Sensor	R&S	NRP-Z92	SZ-WSR-M-009	2025/01/08	2026/01/07
\boxtimes	Attenuator	SHX	TS2-3dB	SZ-WSR-A-012	NCR	NCR



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. 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 provintien 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: CND.Doccheck@gs.com"

or email: CN.Doccheck@sgs.com
Wo.1Workshop, M-10, Middle Section, Science & Technology Part, Nanohan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

Page: 64 of 65

\boxtimes	Speed reading thermometer	Zhengzhou Boyang Instrument	TP3001	SZ-WSR-M-014	2025/05/19	2026/05/18
\boxtimes	Temperature	MingGao	T809	SZ-WSR-M-015	2025/05/19	2026/05/18
\boxtimes	Temperature	MingGao	T809	SZ-WSR-M-016	2025/05/19	2026/05/18
\boxtimes	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-012	2025/05/16	2026/05/15
\boxtimes	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-011	2025/05/19	2026/05/18

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





SZSAR-TRF-01 Rev. A/0 May15,2023

Report No.: SZCR250600239908

65 of 65 Page:

10 Calibration certificate

Please see the Appendix C

Photographs 11

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 of report ---

