FCC SAR TEST REPORT

Application No.:	ZR/2021/60025
Applicant:	Xiaomi Communications Co., Ltd.
Manufacturer:	Xiaomi Communications Co., Ltd.
Product Name:	Mobile Phone
Model No.(EUT):	M2103K19G / M2103K19PG
Brand Name:	Redmi / POCO
FCC ID:	2AFZZK19G
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2021-02-09
Date of Test:	2021-02-17 to 2021-03-28
Date of Issue:	2021-06-26
Test conclusion:	**PASS ***

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

Authorized Signature:

Derek Yang

Wireless Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

REVISION HISTORY

Report Number	Revision	Description	Issue Date
ZR/2021/6002501	01	Original	2021-06-26

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co.,Ltd.
Shenzhen Branch Testing Center LLC Laboratory.
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)			
	Head	Body-worn	Hotspot	Product specific 10g SAR
GSM850	0.70	0.24	0.27	/
GSM1900	0.60	0.23	0.50	/
WCDMA Band II	0.80	0.66	0.99	1.52
WCDMA Band IV	0.32	**1.06**	**1.06**	1.74
WCDMA Band V	0.91	0.31	0.31	/
LTE Band 2	**0.94**	0.72	1.01	1.34
LTE Band 4	0.35	0.58	0.80	1.97
LTE Band 5	0.87	0.27	0.27	/
LTE Band 7	0.92	0.49	0.49	/
LTE Band 12	0.69	0.34	0.34	/
LTE Band 17	0.71	0.35	0.35	/
LTE Band 38	0.64	0.59	0.59	/
LTE Band 41	0.49	0.57	0.57	/
LTE Band 66	0.32	0.55	0.64	**2.04**
NR Band 7	0.93	0.67	0.67	/
NR Band 38	0.69	0.54	0.54	/
NR Band 41	0.86	0.69	0.69	/
NR Band 66	0.37	0.58	0.77	/
NR Band 77	0.73	0.48	0.91	/
NR Band 78	0.70	0.74	0.95	/
WiFi 2.4G	0.54	0.16	0.16	/
WiFi 5G	0.84	0.86	0.97	1.19
BT	0.05	0.01	0.01	/
SAR Limited(W/kg)	1.6			4.0
Maximum Simultaneous Transmission SAR (W/kg)				
Scenario	Head	Body-worn	Hotspot	Product specific 10g SAR
Sum SAR	1.57	1.58	1.58	2.29
SPLSR	N/A	0.026	0.026	N/A
SPLSR Limited	0.04			0.1

Note:
The Simultaneous transmission SAR is the same test position of the WWAN antenna + WiFi/BT antenna.

Reviewed by

Jackson Li

Jackson Li

Prepared by

Roman Pan

Roman Pan

SGS-CSTC Standards Technical Services Co.,Ltd.
Shenzhen Branch Testing Center LLC Laboratory

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

CONTENTS

1 GENERAL INFORMATION 7
1.1 DETAILS OF CLIENT 7
1.2 TEST LOCATION 7
1.3 TEST FACILITY 8
1.4 GENERAL DESCRIPTION OF EUT 9
1.4.1 DUT Antenna Locations(Back View) 11
1.4.2 LTE CA additional specification 12
1.4.3 Power reduction specification 13
1.5 TEST SPECIFICATION 15
1.6 RF EXPOSURE LIMITS 16
2 LABORATORY ENVIRONMENT 17
3 SAR MEASUREMENTS SYSTEM CONFIGURATION 18
3.1 THE SAR MEASUREMENT SYSTEM 18
3.2 ISOTROPIC E-FIELD PROBE EX3DV4 19
3.3 DATA ACQUISITION ELECTRONICS (DAE) 20
3.4 SAM TWIN PHANTOM 20
3.5 ELI PHANTOM 21
3.6 DEVICE HOLDER FOR TRANSMITTERS 22
3.7 MEASUREMENT PROCEDURE 23
3.7.1 Scanning procedure 23
3.7.2 Data Storage 25
3.7.3 Data Evaluation by SEMCAD 25
4 SAR MEASUREMENT VARIABILITY AND UNCERTAINTY 27
4.1 SAR MEASUREMENT VARIABILITY 27
4.2 SAR MEASUREMENT UNCERTAINTY 27
5 DESCRIPTION OF TEST POSITION 28
5.1 HEAD EXPOSURE CONDITION 28
5.1.1 SAM Phantom Shape 28
5.1.2 EUT constructions 29
5.1.3 Definition of the “cheek” position 29
5.1.4 Definition of the “tilted” position 30
5.2 BODY EXPOSURE CONDITION 31
5.2.1 Body-worn accessory exposure conditions 31
5.2.2 Wireless Router exposure conditions 32
5.3 EXTREMITY EXPOSURE CONDITIONS 32
5.1 PROXIMITY SENSOR TRIGGERING TEST 36
6 SAR SYSTEM VERIFICATION PROCEDURE 41
6.1 TISSUE SIMULATE LIQUID 41
6.1.1 Recipes for Tissue Simulate Liquid 41
6.1.2 Measurement for Tissue Simulate Liquid 42
6.2 SAR SYSTEM CHECK 43

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

6.2.1 Justification for Extended SAR Dipole Calibrations 44
6.2.2 Summary System Check Result(s) 45
6.2.3 Detailed System Check Results 45

7 TEST CONFIGURATION 46

7.1 3G SAR TEST REDUCTION PROCEDURE 46
7.2 OPERATION CONFIGURATIONS 46
7.2.1 GSM Test Configuration 46
7.2.2 WCDMA Test Configuration 47
7.2.3 WiFi Test Configuration 53
7.2.4 LTE Test Configuration 60
7.2.5 NR Band Test Configuration 63

8 TEST RESULT 66

8.1 MEASUREMENT OF RF CONDUCTED POWER 66
8.1.1 Conducted Power of GSM 66
8.1.2 Conducted Power of WCDMA 66
8.1.3 Conducted Power of LTE 66
8.1.4 Conducted Power of Uplink & Downlink LTE CA 67
8.1.5 Conducted Power of WIFI 69
8.1.6 Conducted Power of BT 70
8.2 STAND-ALONE SAR TEST EVALUATION 71
8.3 MEASUREMENT OF SAR DATA 72
8.3.1 SAR Result of GSM850 73
8.3.2 SAR Result of GSM1900 74
8.3.3 SAR Result of WCDMA Band II 75
8.3.4 SAR Result of WCDMA Band IV 77
8.3.5 SAR Result of WCDMA Band V 79
8.3.6 SAR Result of LTE Band 2 81
8.3.7 SAR Result of LTE Band 4 84
8.3.8 SAR Result of LTE Band 5 87
8.3.9 SAR Result of LTE Band 7 89
8.3.10 SAR Result of LTE Band 12 92
8.3.11 SAR Result of LTE Band 17 94
8.3.12 SAR Result of LTE Band 38 96
8.3.13 SAR Result of LTE Band 41 98
8.3.14 SAR Result of LTE Band 66 100
8.3.15 SAR Result of 5G NR n7 102
8.3.16 SAR Result of 5G NR n38 104
8.3.17 SAR Result of 5G NR n41 106
8.3.1 SAR Result of 5G NR n66 108
8.3.2 SAR Result of 5G NR n77 111
8.3.1 SAR Result of 5G NR n78 113
8.3.2 SAR Result of WIFI 2.4G 114
8.3.3 SAR Result of WIFI 5G 115
8.3.4 SAR Result of BT 117
8.4 MULTIPLE TRANSMITTER EVALUATION 118
8.4.1 Simultaneous SAR SAR test evaluation 118
8.4.2 Simultaneous Transmission SAR Summation Scenario 119
8.4.3 SPLSR Evaluation Analysis 122

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

9 EQUIPMENT LIST 124
10 CALIBRATION CERTIFICATE 125
11 PHOTOGRAPHS 125
APPENDIX A: DETAILED SYSTEM CHECK RESULTS 125
APPENDIX B: DETAILED TEST RESULTS 125
APPENDIX C: CALIBRATION CERTIFICATE 125
APPENDIX D: PHOTOGRAPHS 125
APPENDIX E: CONDUCTED RF OUTPUT POWER TABLE 125

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

1 General Information

1.1 Details of Client

Applicant:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Manufacturer:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.2 Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
Post code:	518057
Telephone:	+86 (0) 755 2601 2053
Fax:	+86 (0) 755 2671 0594
E-mail:	ee.shenzhen@sgs.com

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

1.3 Test Facility

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

• CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• 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

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• FCC –Designation Number: CN1178

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

Designation Number: CN1178. Test Firm Registration Number: 406779.

• Industry Canada (IC)

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.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

1.4 General Description of EUT

Device Type :	portable device		
Exposure Category:	uncontrolled environment / general population		
Product Name:	Mobile Phone		
Model No.(EUT):	M2103K19G / M2103K19PG		
FCC ID:	2AFZZK19G		
Brand name:	Redmi / POCO		
Product Phase:	Identical Prototype		
IMEI:	860441050052450/860441050047575/860441050047153		
Hardware Version:	P2		
Software Version:	MIUI 12		
Antenna Type:	PIFA Antenna		
Device Operating Configurations :			
Modulation Mode:	**GSM:** GMSK, 8PSK; **WCDMA:** QPSK; **LTE:** QPSK,16QAM,64QAM, 256QAM **5G NR:** DFT-s-OFDM (PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM), CP-OFDM (QPSK, 16QAM, 64QAM, 256QAM) **WIFI:** DSSS, OFDM, OFDMA; **BT:** GFSK, π/4DQPSK,8DPSK		
Device Class:	B		
GPRS Multi-slots Class:	33	EGPRS Multi-slots Class:	33
HSDPA UE Category:	24	HSUPA UE Category	7
DC-HSDPA UE Category:	24		
Power Class	4,tested with power level 5(GSM850)		
	1,tested with power level 0(GSM1900)		
	3, tested with power control “all 1”(WCDMA Band)		
	3, tested with power control Max Power(LTE Band)		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	GSM850	824~849	869~894
	GSM1900	1850~1910	1930~1990
	WCDMA Band II	1850~1910	1930~1990
	WCDMA Band IV	1710~1755	2110~2155
	WCDMA Band V	824~849	869~894
	LTE Band 2	1850 ~1910	1930 ~1990
	LTE Band 4	1710~1755	2110~2155
	LTE Band 5	824~849	869-894
	LTE Band 7	2500~2570	2620~2690
	LTE Band 12	699~716	729~746
	LTE Band 17	704~716	734~746
	LTE Band 38	2570~2620	2570~2620
	LTE Band 41	2496~2690	2496~2690
	LTE Band 66	1710~1780	2110~2200
	NR Band n7	2500~2570	2620~2690
	NR Band n38	2570~2620	2570~2620
	NR Band n41	2496~2690	2496~2690
	NR Band n66	1710~1780	2110~2200

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

	NR Band n77	3700~3980	3700~3980
	NR Band n78	3700~3800	3700~3800
	Bluetooth	2400~2483.5	2400~2483.5
	Wi-Fi 2.4G	2402~2462	2402~2462
	Wi-Fi 5G	5150~5250	5150~5250
		5250~5350	5250~5350
		5470~5725	5470~5725
		5725~5850	5725~5850

Note: The differences between M2103K19G（K19）and M2103K19PG （K19P）are as below:

Model name	Brand Name	rear cover
M2103K19G	Redmi	The material is the same, drawing is different, laser engraving is different
M2103K19PG	POCO	

Except listings above, the others are all the same as previous version.
Based on the above differences, the main test only performs M2103K19G

Remark:
According to the declaration letter from manufacturer, in this report, only add the conducted Power for 5G NR N38 10/15M and all the SAR test data were copied from the original report (Report No.: AR/2021/1000808).

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

1.4.1 DUT Antenna Locations(Back View)

Refer to Appendix D Photographs

Note:

1) The test device is a smart phone. The overall diagonal dimension of this device is 173 mm. Per KDB 648474 D04, because the diagonal distance of this device is ≥160mm, so it is a phablet.

According to the distance between 5G NR/LTE/WCDMA/GSM&WIFI&BT antennas and the sides of the EUT we can draw the conclusion that:

EUT Sides for SAR Testing							
Mode	Exposure Condition	Front	Back	Left	Right	Top	Bottom
Ant1	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	Yes	No	Yes
Ant2	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	No	Yes	No
Ant4	Hotspot/Product specific 10g SAR	Yes	Yes	Yes	Yes	Yes	No
Ant7	Hotspot/Product specific 10g SAR	Yes	Yes	No	Yes	Yes	No

Table 1： EUT Sides for SAR Testing

Note:

1) When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

1.4.2 LTE CA additional specification

The device supports downlink and intra-band contiguous uplink LTE Carrier Aggregation (CA). When carrier aggregation applies, implementation and measurement details for the following are necessary.

a) Intra-band carrier aggregation requirements for uplink.

b) Intra-band and inter-band carrier aggregation requirements for downlink.

The possible downlink and uplink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.101 V15.4.0. The conducted power measurement results of downlink and uplink LTE CA are provided in Section 8 of this report per 3GPP TS 36.521-1 V14.4.0. The downlink LTE CA SAR test is not required since the maximum output power for downlink LTE CA was not more than 0.25dB higher than the maximum output power for without downlink LTE CA.

SAR test procedure for intra-band contiguous UL LTE CA is as below:

1)Maximum output power is measured for each UL CA configuration for the required test channels described in KDB 941225 D05

－UL PCC configuration is determined by the required test channel

－SCC and subsequent CCs are added alternatively to either side of the PCC or within the transmission band for channels at the ends of a frequency band.

2)SAR for UL CA is required in each exposure condition and frequency band combination

3)For this device , as the maximum output for Intra-band uplink LTE CA is ≤ standalone LTE mode (without CA),

- PCC is configured according to the highest standalone SAR configuration tested.

- SCC and subsequent CCs are configured according to procedures used for power measurement and parameters (BW, RB etc.) similar to that used for the PCC

4)When the reported SAR for UL CA configuration, described above, is > 1.2 W/kg, UL CA SAR is also required for all required test channels (PCC based)

5)UL CA SAR is also required for standalone SAR configurations > 1.2 W/kg when they are scaled to the UL CA power level.

Intra-band contiguous CA operating bands：

E-UTRA CA Band	E-UTRA Band	Uplink (UL) operating band BS receive / UE transmit F_{UL_low} – F_{UL_high}			Downlink (DL) operating band BS transmit / UE receive F_{DL_low} – F_{DL_high}			Duplex Mode
CA_7	7	2500 MHz	–	2570 MHz	2620 MHz	–	2690 MHz	FDD
CA_38	38	2570 MHz	–	2620 MHz	2570 MHz	–	2620 MHz	TDD

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

1.4.3 Power reduction specification

This device uses a single fixed level of power reduction through static table look-up for SAR compliance and it is triggered by a single event or operation

1) A fixed level power reduction is applied for some frequency bands when hotspot mode becomes active. When the hotspot is disabled, the power value will be recovered.

2) A fixed level power reduction is applied for some frequency bands when simultaneously transmitting with the other antennas in certain simultaneous transmission conditions. The standalone SAR compliance still uses the standalone SAR results tested at the maximum output power level without any power reduction

3) A fixed level power reduction is applied for some frequency bands when handset operate "held to the ear" condition, the power reduction triggered by audio receiver detection. The audio receiver detection is used to determine head or body scenario.

4) The proximity sensor is used to indicate when the device is held close to a user's body exposure condition. It utilizes the proximity sensor to reduce the output power in specific wireless and operating modes of main antenna to ensure SAR compliance(Refer to section 5.4 for detailed proximity Sensor information and validation data per KDB 616217).

The following tables summarize the key power reduction information. The detailed full power which is the Max. power the state can use and reduced tune-up specifications and conducted power measurement results are provided in Section 8 of this report.

Ant1 Power Level(dBm)																
Power Reduction Scenario	GSM850	GSM1900	WCDMA B2	WCDMA B4	WCDMA B5	LTE B2	LTE B4	LTE B5	LTE B7	LTE B66	LTE B38	LTE B41	n7	n38	n41	n66
Receiver off	33.0	25.5	23.5	24.5	24.5	23.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Receiver on	33.5	30.5	23.5	24.5	24.5	24.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Sensor off	33.0	25.5	23.5	24.5	24.5	24.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Sensor on	33.0	25.5	20.5	19.5	22.0	20.0	20.5	23.5	20.5	21.0	23.0	22.5	20.5	22.0	21.0	21.0

Ant2 Power Level(dBm)			
Power Reduction Scenario	LTE B7(EN-DC)	n77	n78
Receiver off	24.0	18.5	21.5
Receiver on	20.0	17.0	18.5
Sensor off	24.0	27.0	27.0
Sensor on	19.5	16.5	16.5

Ant4 Power Level(dBm)												
Power Reduction Scenario	WCDMA B2	WCDMA B4	WCDMA B5	LTE B2	LTE B4	LTE B5	LTE B7	LTE B12	LTE B17	n7	n38	n41
Receiver off	22.5	24.0	24.5	22.5	24.5	25.0	24.0	25.0	25.0	24.0	23.5	23.0
Receiver on	22.5	24.0	23.0	22.5	24.5	23.0	24.0	24.5	24.5	24.0	23.5	23.0
Sensor off	22.5	24.0	24.5	22.5	24.5	25.0	24.0	25.0	25.0	24.0	23.5	23.0
Sensor on	21.0	23.5	23.0	21.0	24.0	23.0	22.0	24.5	24.5	20.5	22.5	22.5

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

WIFI 5G Power Level(dBm)			
Mode	Power Reduction Scenario	Receiver off	Receiver on
WIFI 5G 802.11a	U-NII-1	18.0	16.0
	U-NII-2A	18.0	16.0
	U-NII-2C	15.0	14.0
	U-NII-3	18.0	14.0
WIFI 5G 802.11n 20M	U-NII-1	17.0	16.0
	U-NII-2A	17.0	16.0
	U-NII-2C	15.0	14.0
	U-NII-3	17.0	14.0
WIFI 5G 802.11n 40M	U-NII-1	16.0	16.0
	U-NII-2A	17.0	16.0
	U-NII-2C	15.0	14.0
	U-NII-3	17.0	14.0
WIFI 5G 802.11ac 20M	U-NII-1	17.0	16.0
	U-NII-2A	17.0	16.0
	U-NII-2C	15.0	14.0
	U-NII-3	17.0	14.0
WIFI 5G 802.11ac 40M	U-NII-1	16.0	16.0
	U-NII-2A	17.0	16.0
	U-NII-2C	15.0	14.0
	U-NII-3	17.0	14.0
WIFI 5G 802.11ac 80M	U-NII-1	17.0	16.0
	U-NII-2A	17.0	16.0
	U-NII-2C	15.0	14.0
	U-NII-3	17.0	14.0

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

1.5 Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI/IEEE C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 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 941225 D06	Hotspot Mode SAR v02r01
KDB 248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02r02
KDB 648474 D04	Handset SAR v01r03
KDB 447498 D01	General RF Exposure Guidance v06
KDB 865664 D01	SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02	RF Exposure Reporting v01r02
KDB 690783 D01	SAR Listings on Grants v01r03
KDB 616217 D04	SAR for laptop and tablets v01r02

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

1.6 RF exposure limits

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

Notes:

* The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time

** The Spatial Average value of the SAR averaged over the whole body.

*** The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation.)

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

2 Laboratory Environment

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 and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

Table 2： The Ambient Conditions

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

3 SAR Measurements System Configuration

3.1 The SAR Measurement System

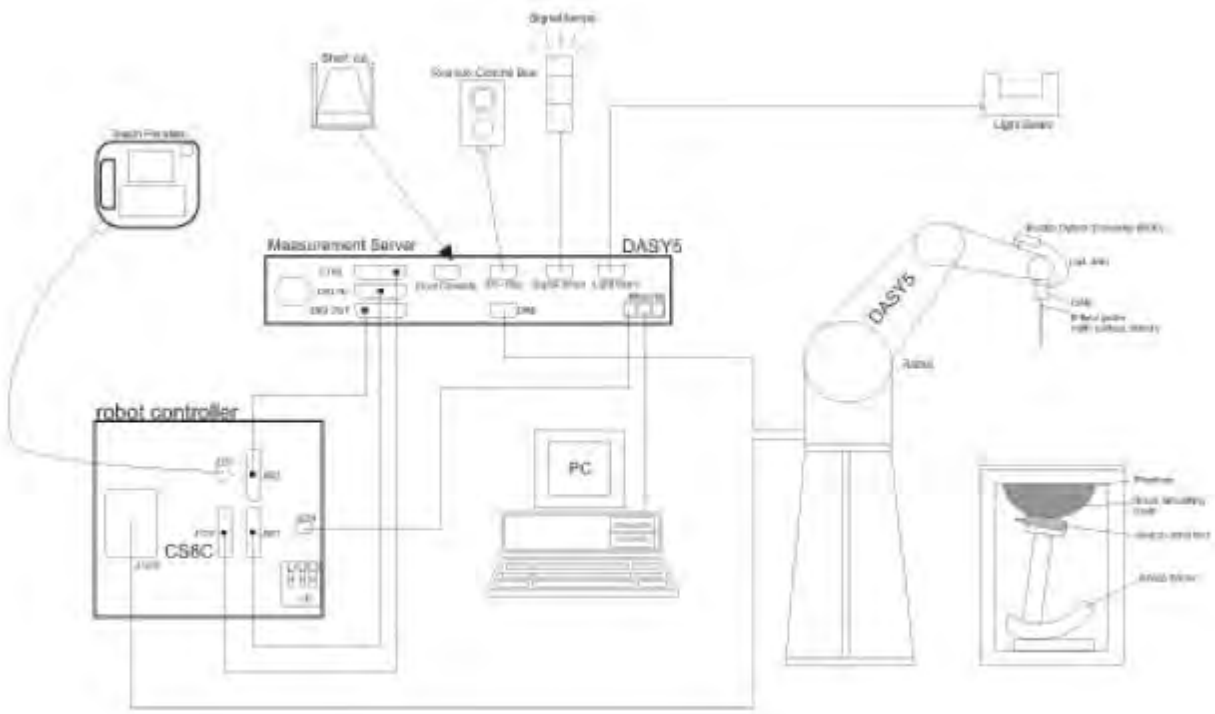
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY5 professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the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

The DASY5 system for performing compliance tests consists of the following items:
A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software .An arm extension for accommodation the data acquisition electronics (DAE).

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

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

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



F-1. SAR Measurement System Configuration

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 7.
- DASY5 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand, right-hand and Body Worn usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validating the proper functioning of the system.

3.2 Isotropic E-field Probe EX3DV4

	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
Compatibility	DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

3.3 Data Acquisition Electronics (DAE)

Model	DAE	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY4/5 embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.	
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV,400mV)	
Input Offset Voltage	< 5µV (with auto zero)	
Input Bias Current	< 50 f A	
Dimensions	60 x 60 x 68 mm	

3.4 SAM Twin Phantom

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

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.

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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

3.5 ELI Phantom

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

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.

ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4, but has reinforced top structure.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

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 ε=3 and loss tangent δ=0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Member of the SGS Group (SGS SA)

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 straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The volume was integrated with the trapezoidal algorithm. One thousand points were interpolated to calculate the average. All neighbouring volumes were evaluated until no neighboring volume with a higher average value was found.

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std. 1528-2013.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Step 4: Power reference measurement (drift)

The Power Drift Measurement job measures the field at the same location as the most recent power reference measurement job within the same procedure, and with the same settings. The indicated drift is mainly the variation of the DUT's output power and should vary max. ± 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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

3.7.2 Data Storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DAE4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated. The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

3.7.3 Data Evaluation by SEMCAD

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

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

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

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

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

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

With Vi = compensated signal of channel i (i = x, y, z)
Ui = input signal of channel i (i = x, y, z)
cf = crest factor of exciting field (DASY parameter)
dcp i = diode compression point (DASY parameter)

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

E-field probes:

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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

H-field probes:

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

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

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

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

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

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

with SAR = local specific absorption rate in mW/g
Etot = total field strength in V/m
σ= conductivity in [mho/m] or [Siemens/m]
ε= equivalent tissue density in g/cm3

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

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

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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

4 SAR measurement variability and uncertainty

4.1 SAR measurement variability

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

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ⩾ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ⩾ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ⩾1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

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

4.2 SAR measurement uncertainty

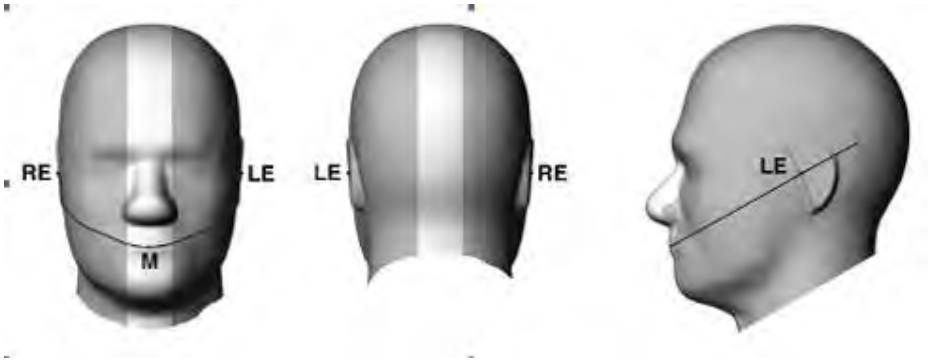
Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6)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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

5 Description of Test Position

5.1 Head Exposure Condition

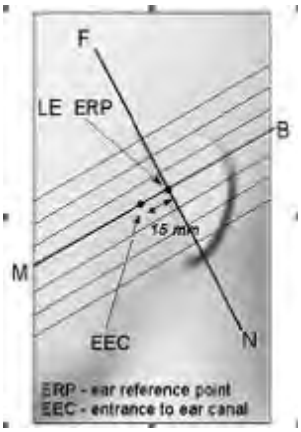
5.1.1 SAM Phantom Shape



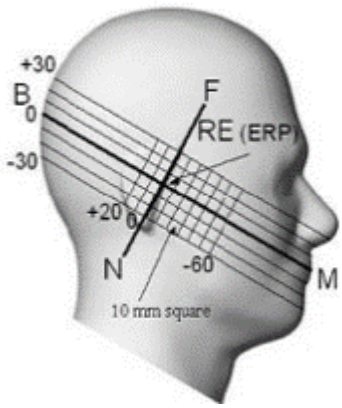
F-3. Front, back, and side views of SAM (model for the phantom shell). Full-head model is for illustration purposes only-procedures in this recommended practice are intended primarily for the phantom setup.

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

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



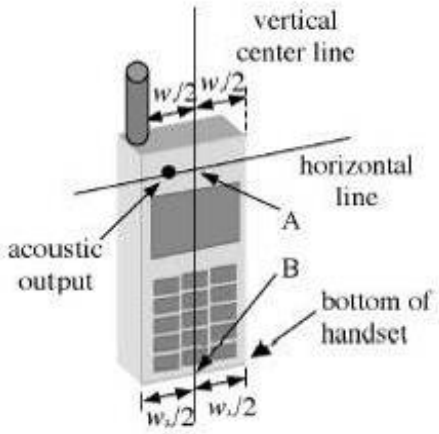
F-5. Close-up side view of phantom, showing the ear region, N-F and B-M lines, and seven cross-sectional plane locations



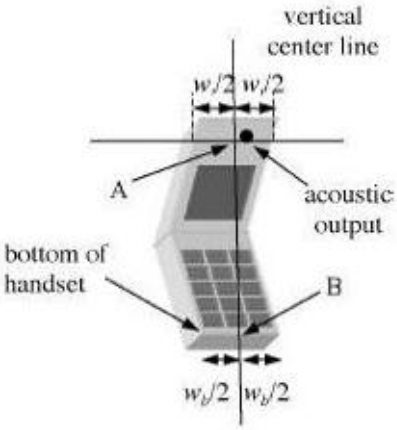
F-6. Side view of the phantom showing relevant markings and seven cross-sectional plane locations

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

5.1.2 EUT constructions



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



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

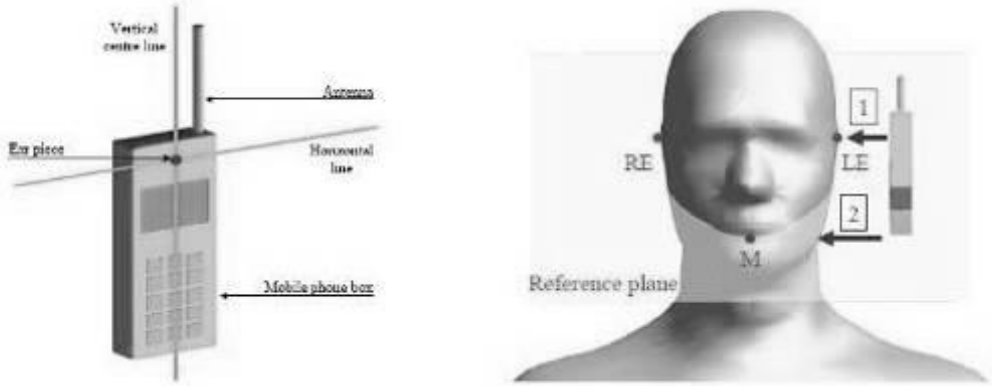
5.1.3 Definition of the “cheek” position

a) Position the device with the vertical centre line of the body of the device and the horizontal line crossing the centre of the ear piece in a plane parallel to the sagittal plane of the phantom ("initial position"). While maintaining the device in this plane, align the vertical centre line with the reference plane containing the three ear and mouth reference points (M, RE and LE) and align the centre of the ear piece with the line RE-LE.
b) Translate the mobile phone box towards the phantom with the ear piece aligned with the line LE-RE until telephone touches the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the box until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.

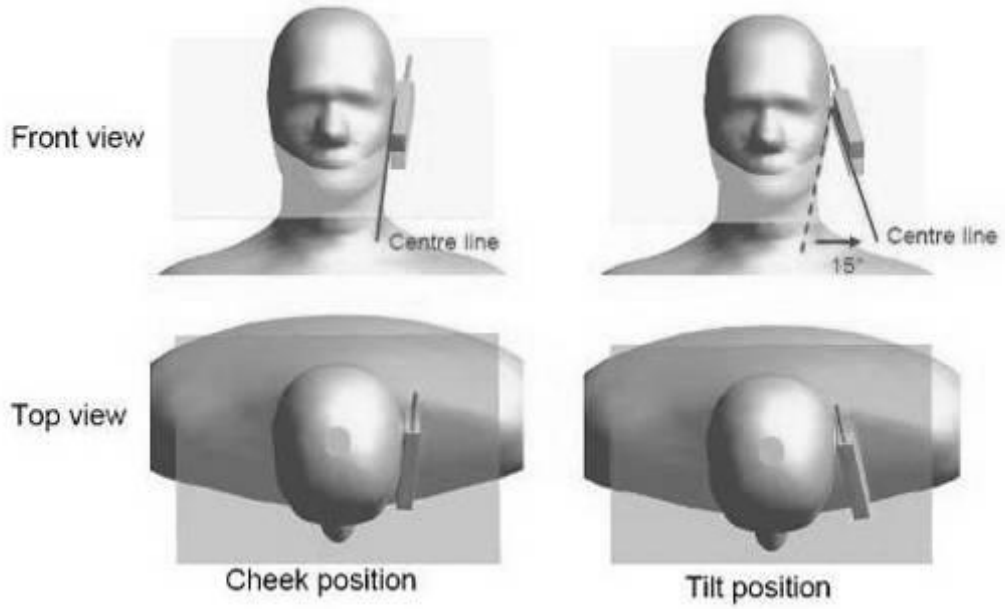
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

5.1.4 Definition of the "tilted" position

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



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



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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

5.2 Body Exposure Condition

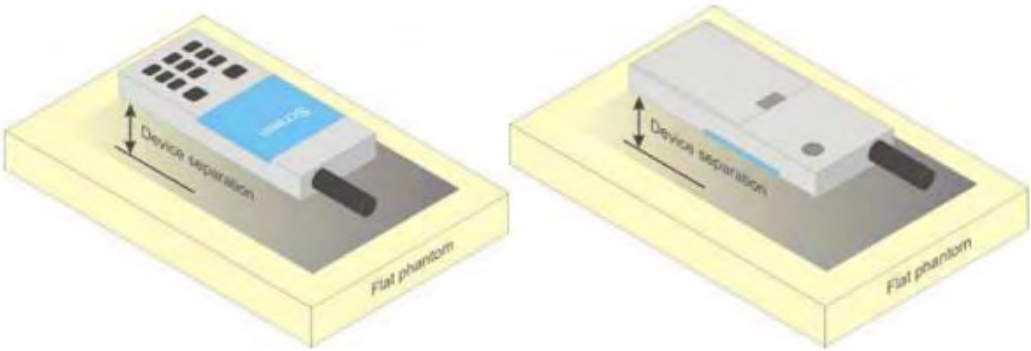
5.2.1 Body-worn accessory exposure conditions

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

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. Per FCC KDB Publication 648474 D04, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

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

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



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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

5.2.2 Wireless Router exposure conditions

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

5.3 Extremity exposure conditions

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

Due to the SAR result, only the following frequency bands need to test with 0mm for the Product Specific 10-g SAR, the others are not required.

WB2(Ant1)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Product Specific 10-g SAR SAR Exclusion
Hotspot Test data(Separate 10mm) Sensor on										
Front side	RMC	9400/1880	1:1	0.262	-0.13	19.73	23.50	2.382	0.624	No
Back side	RMC	9400/1880	1:1	0.404	0.10	19.73	23.50	2.382	0.962	No
Bottom side	RMC	9400/1880	1:1	0.789	-0.08	19.73	23.50	2.382	1.880	Yes
Bottom side	RMC	9262/1852.4	1:1	0.810	0.02	19.71	23.50	2.393	1.939	Yes
Bottom side	RMC	9538/1907.6	1:1	0.758	-0.11	19.68	23.50	2.410	1.827	Yes
Hotspot Test data Sensor off										
Front side-15mm	RMC	9400/1880	1:1	0.277	-0.16	22.67	23.50	1.211	0.335	No
Back side-15mm	RMC	9400/1880	1:1	0.544	-0.15	22.67	23.50	1.211	0.659	No
Left side-10mm	RMC	9400/1880	1:1	0.059	0.03	22.67	23.50	1.211	0.071	No
Right side-10mm	RMC	9400/1880	1:1	0.121	0.18	22.67	23.50	1.211	0.146	No
Bottom side - 15mm	RMC	9400/1880	1:1	0.810	-0.06	22.67	23.50	1.211	0.981	No
Bottom side - 15mm	RMC	9262/1852.4	1:1	0.884	-0.06	22.99	23.50	1.125	0.994	No
Bottom side - 15mm	RMC	9538/1907.6	1:1	0.765	0.11	22.55	23.50	1.245	0.952	No

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

WB4(Ant1)

Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Product Specific 10-g SAR SAR Exclusion
Hotspot Test data(Separate 10mm) Sensor on										
Front side	RMC	1412/1732.4	1:1	0.271	-0.04	18.08	24.50	4.385	1.188	No
Back side	RMC	1412/1732.4	1:1	0.762	0.05	18.08	24.50	4.385	3.342	Yes
Bottom side	RMC	1412/1732.4	1:1	0.405	0.13	18.08	24.50	4.385	1.776	Yes
Hotspot Test data 15 mm Sensor off										
Front side-15mm	RMC	1412/1732.4	1:1	0.283	0.08	23.44	24.50	1.276	0.361	No
Back side-15mm	RMC	1412/1732.4	1:1	0.423	-0.17	23.44	24.50	1.276	0.540	No
Left side-10mm	RMC	1412/1732.4	1:1	0.051	-0.02	23.44	24.50	1.276	0.065	No
Right side-10mm	RMC	1412/1732.4	1:1	0.105	0.00	23.44	24.50	1.276	0.134	No
Bottom side - 15mm	RMC	1412/1732.4	1:1	0.646	0.13	23.44	24.50	1.276	0.825	No
Bottom side - 15mm	RMC	1312/1712.4	1:1	0.574	0.13	23.42	24.50	1.282	0.736	No
Bottom side - 15mm	RMC	1513/1752.6	1:1	0.697	-0.01	23.55	24.50	1.245	0.867	No

LTEB2(Ant1)

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Product Specific 10-g SAR SAR Exclusion
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_0	18700/1860	1:1	0.258	0.06	19.21	23.50	2.685	0.693	No
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.428	0.15	19.21	23.50	2.685	1.149	No
Bottom side	20	QPSK 1RB_0	18700/1860	1:1	0.700	-0.19	19.21	23.50	2.685	1.880	Yes
Bottom side	20	QPSK 1RB_0	18900/1880	1:1	0.686	-0.08	19.14	23.50	2.729	1.872	Yes
Bottom side	20	QPSK 1RB_0	19100/1900	1:1	0.673	-0.17	19.15	23.50	2.723	1.832	Yes
Hotspot Test data(Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_50	18700/1860	1:1	0.252	-0.14	19.30	23.50	2.630	0.663	No
Back side	20	QPSK 50RB_50	18700/1860	1:1	0.412	0.07	19.30	23.50	2.630	1.084	No
Bottom side	20	QPSK 50RB_50	18700/1860	1:1	0.685	-0.09	19.30	23.50	2.630	1.802	Yes
Bottom side	20	QPSK 50RB_50	18900/1880	1:1	0.704	0.14	19.20	23.50	2.692	1.895	Yes
Bottom side	20	QPSK 50RB_50	19100/1900	1:1	0.695	-0.12	19.29	23.50	2.636	1.832	Yes
Hotspot Test data(Separate 10mm 100%RB) Sensor on											
Bottom side	20	QPSK 100RB_0	18700/1860	1:1	0.650	-0.18	19.19	23.50	2.698	1.754	Yes
Hotspot Test data 1RB Sensor off											
Front side-15mm	20	QPSK 1RB_0	18700/1860	1:1	0.296	0.12	22.32	23.50	1.312	0.388	No
Back side-15mm	20	QPSK 1RB_0	18700/1860	1:1	0.480	-0.05	22.32	23.50	1.312	0.630	No
Left side-10mm	20	QPSK 1RB_0	18700/1860	1:1	0.071	0.08	22.32	23.50	1.312	0.093	No
Right side-10mm	20	QPSK 1RB_0	18700/1860	1:1	0.139	0.00	22.32	23.50	1.312	0.182	No
Bottom side - 15mm	20	QPSK 1RB_0	18700/1860	1:1	0.773	0.050	22.32	23.50	1.312	1.014	No
Bottom side - 15mm	20	QPSK 1RB_0	18900/1880	1:1	0.812	0.07	23.31	23.50	1.045	0.848	No
Bottom side - 15mm	20	QPSK 1RB_0	19100/1900	1:1	0.813	0.11	23.31	23.50	1.045	0.849	No
Hotspot Test data 50%RB Sensor off											
Front side-15mm	20	QPSK 50RB_50	18700/1860	1:1	0.284	0.19	22.51	23.50	1.256	0.357	No
Back side-15mm	20	QPSK 50RB_50	18700/1860	1:1	0.459	-0.19	22.51	23.50	1.256	0.577	No

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Left side-10mm	20	QPSK 50RB_50	18700/1860	1:1	0.065	-0.04	22.51	23.50	1.256	0.082	No
Right side-10mm	20	QPSK 50RB_50	18700/1860	1:1	0.144	0.04	22.51	23.50	1.256	0.181	No
Bottom side - 15mm	20	QPSK 50RB_50	18700/1860	1:1	0.750	-0.04	22.51	23.50	1.256	0.942	No
Bottom side - 15mm	20	QPSK 50RB_50	18900/1880	1:1	0.727	-0.05	22.14	23.50	1.368	0.994	No
Bottom side - 15mm	20	QPSK 50RB_50	19100/1900	1:1	0.743	-0.11	22.31	23.50	1.315	0.977	No
Hotspot Test data 100%RB Sensor off											
Back side-15mm	20	QPSK 100RB_0	18700/1860	1:1	0.506	-0.01	22.24	23.50	1.337	0.676	No
Bottom side - 15mm	20	QPSK 100RB_0	18700/1860	1:1	0.741	0.02	22.24	23.50	1.337	0.990	No
Bottom side - 15mm	20	QPSK 100RB_0	18900/1880	1:1	0.747	0.18	22.52	23.50	1.253	0.936	No
Bottom side - 15mm	20	QPSK 100RB_0	19100/1900	1:1	0.738	0.14	22.62	23.50	1.225	0.904	No

LTEB4(Ant1)

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Product Specific 10-g SAR SAR Exclusion
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_0	20175/1732.5	1:1	0.210	-0.04	19.29	25.00	3.724	0.782	No
Back side	20	QPSK 1RB_0	20175/1732.5	1:1	0.329	-0.08	19.29	25.00	3.724	1.225	Yes
Bottom side	20	QPSK 1RB_0	20175/1732.5	1:1	0.511	0.03	19.29	25.00	3.724	1.903	Yes
Hotspot Test data(Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_0	20175/1732.5	1:1	0.206	-0.12	19.35	24.00	2.917	0.601	No
Back side	20	QPSK 50RB_0	20175/1732.5	1:1	0.324	-0.08	19.35	24.00	2.917	0.945	No
Bottom side	20	QPSK 50RB_0	20175/1732.5	1:1	0.503	0.17	19.35	24.00	2.917	1.467	Yes
Hotspot Test data 1RB Sensor off											
Front side-15mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.410	0.05	24.49	25.00	1.125	0.461	No
Back side-15mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.643	-0.01	24.49	25.00	1.125	0.723	No
Left side-10mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.053	0.16	24.49	25.00	1.125	0.060	No
Right side-10mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.110	-0.01	24.49	25.00	1.125	0.124	No
Bottom side - 15mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.713	-0.11	24.49	25.00	1.125	0.802	No
Bottom side - 15mm	20	QPSK 1RB_50	20300/1745	1:1	0.712	-0.05	24.28	25.00	1.180	0.840	No
Bottom side - 15mm	20	QPSK 1RB_50	20050/1720	1:1	0.671	-0.08	24.14	25.00	1.219	0.818	No
Hotspot Test data 50%RB Sensor off											
Front side-15mm	20	QPSK 50RB_25	20175/1732.5	1:1	0.317	0.01	23.26	24.00	1.213	0.385	No
Back side-15mm	20	QPSK 50RB_25	20175/1732.5	1:1	0.494	0.09	23.26	24.00	1.213	0.599	No
Left side-10mm	20	QPSK 50RB_25	20175/1732.5	1:1	0.046	0.09	23.26	24.00	1.213	0.056	No
Right side-10mm	20	QPSK 50RB_25	20175/1732.5	1:1	0.090	0.12	23.26	24.00	1.213	0.109	No
Bottom side - 15mm	20	QPSK 50RB_25	20175/1732.5	1:1	0.551	-0.13	23.26	24.00	1.213	0.669	No

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

LTEB66(Ant1)

Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Product Specific 10-g SAR SAR Exclusion
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_0	132322/1745	1:1	0.257	-0.06	20.61	25.00	2.748	0.706	No
Back side	20	QPSK 1RB_0	132322/1745	1:1	0.414	0.15	20.61	25.00	2.748	1.138	No
Bottom side	20	QPSK 1RB_0	132322/1745	1:1	0.527	-0.11	20.61	25.00	2.748	1.448	Yes
Hotspot Test data(Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_25	132322/1745	1:1	0.269	-0.13	20.63	24.00	2.173	0.584	No
Back side	20	QPSK 50RB_25	132322/1745	1:1	0.430	-0.07	20.63	24.00	2.173	0.934	No
Bottom side	20	QPSK 50RB_25	132322/1745	1:1	0.543	0.07	20.63	24.00	2.173	1.180	No
Hotspot Test data 1RB Sensor off											
Front side-15mm	20	QPSK 1RB_0	132322/1745	1:1	0.362	0.09	24.36	25.00	1.159	0.419	No
Back side-15mm	20	QPSK 1RB_0	132322/1745	1:1	0.473	0.10	24.36	25.00	1.159	0.548	No
Left side-10mm	20	QPSK 1RB_0	132322/1745	1:1	0.066	-0.10	24.36	25.00	1.159	0.076	No
Right side-10mm	20	QPSK 1RB_0	132322/1745	1:1	0.131	-0.06	24.36	25.00	1.159	0.152	No
Bottom side - 15mm	20	QPSK 1RB_0	132572/1770	1:1	0.550	-0.15	24.36	25.00	1.159	**0.637**	No
Hotspot Test data 50%RB Sensor off											
Front side-15mm	20	QPSK 50RB_25	132072/1720	1:1	0.380	-0.06	23.46	24.00	1.132	0.430	No
Back side-15mm	20	QPSK 50RB_25	132072/1720	1:1	0.463	0.08	23.46	24.00	1.132	0.524	No
Left side-10mm	20	QPSK 50RB_25	132322/1745	1:1	0.055	0.19	23.46	24.00	1.132	0.062	No
Right side-10mm	20	QPSK 50RB_25	132322/1745	1:1	0.109	-0.03	23.46	24.00	1.132	0.123	No
Bottom side - 15mm	20	QPSK 50RB_25	132322/1745	1:1	0.530	-0.18	23.46	24.00	1.132	0.600	No

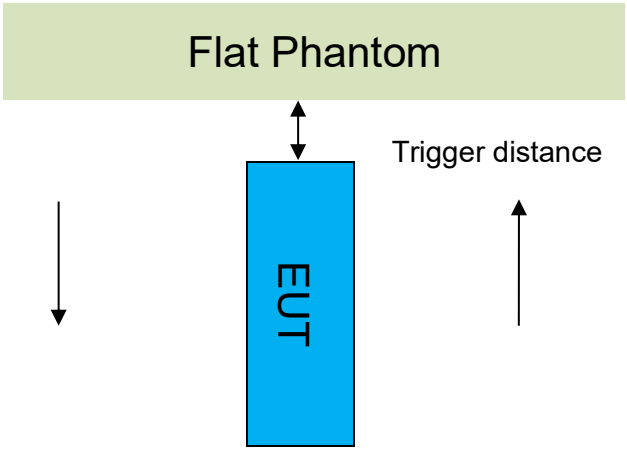
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

5.1 Proximity Sensor Triggering Test

Proximity sensor triggering distances:

The Proximity sensor triggering was applied to WWAN antenna. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed.



Proximity Sensor Triggering Distance(mm)			
Antenna	Ant1	Ant2	Ant4
Band	WB2/4/5, LTE B2/4/5/7/66/38/41, n7/38/41/66	LTE B7(EN-DC), n77/78	WB2/4/5, LTE B2/4/5/7/12/17, n7/38/41
Position	Front/Back/Bottom	Top	Front/Back/Top
Minimum	16	16	16
Required SAR Test	15	15	15

Note:

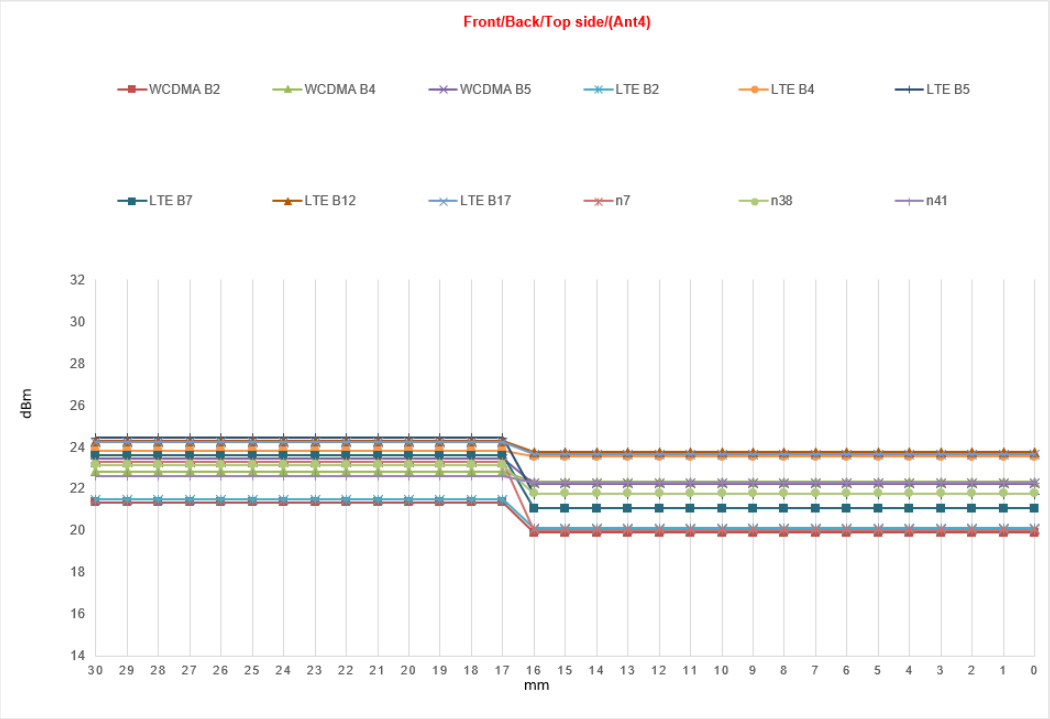
SAR tests with proximity sensor power reduction are only required for the sides of frequency bands in the table above. For the other sides or other frequency bands of the device, SAR is still tested at the maximum power level with sensor off.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

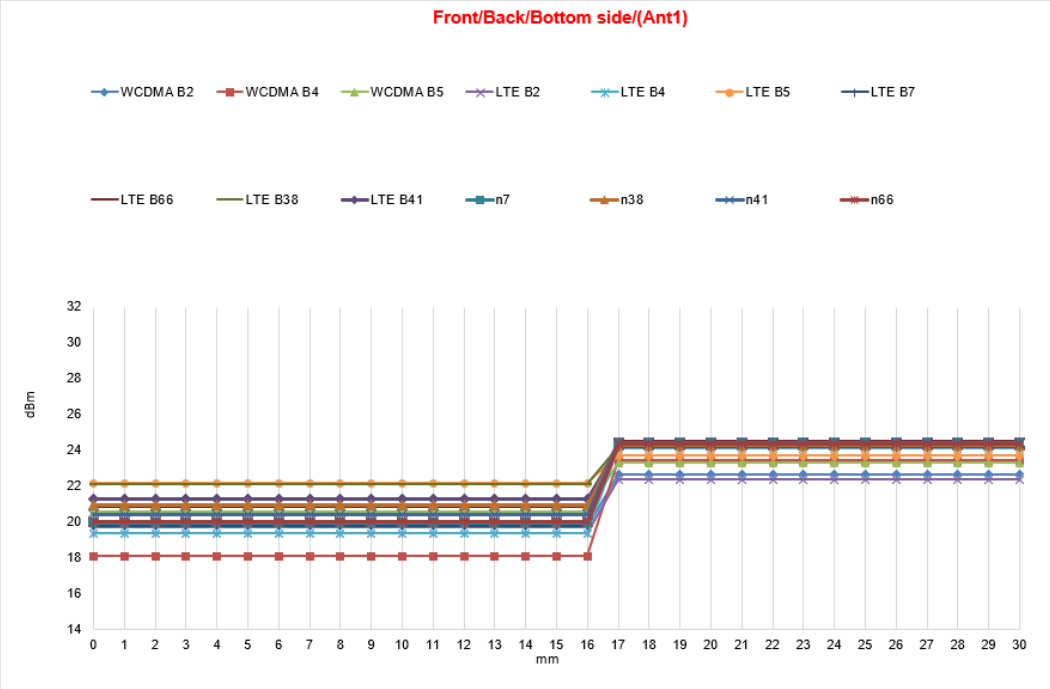
- DUT Moving Toward(Trigger)the Phantom

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

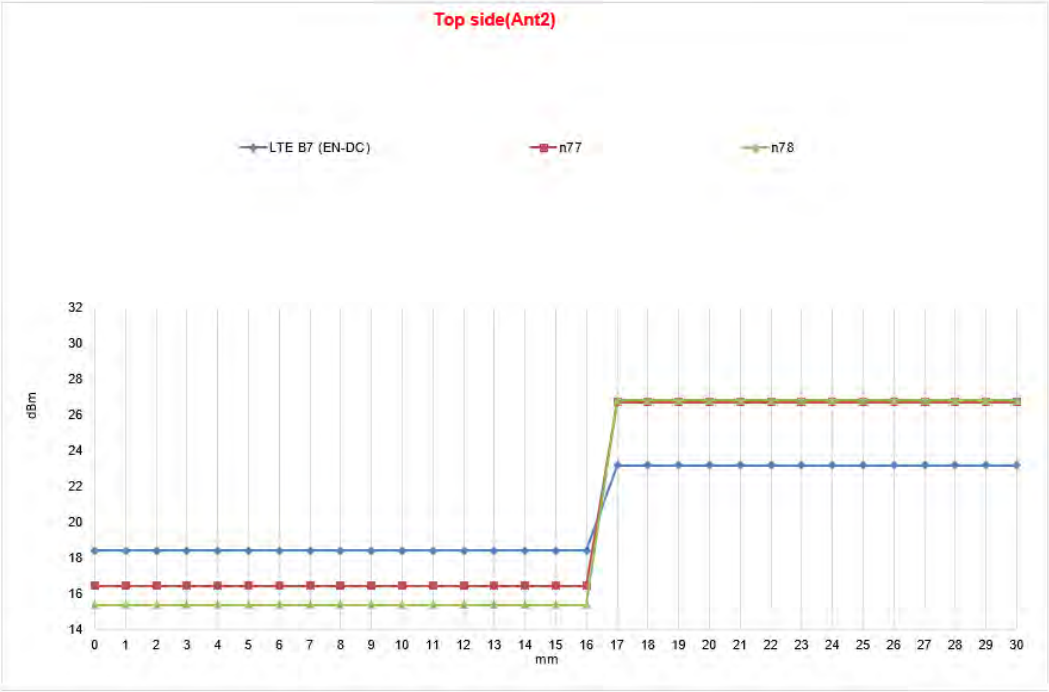
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

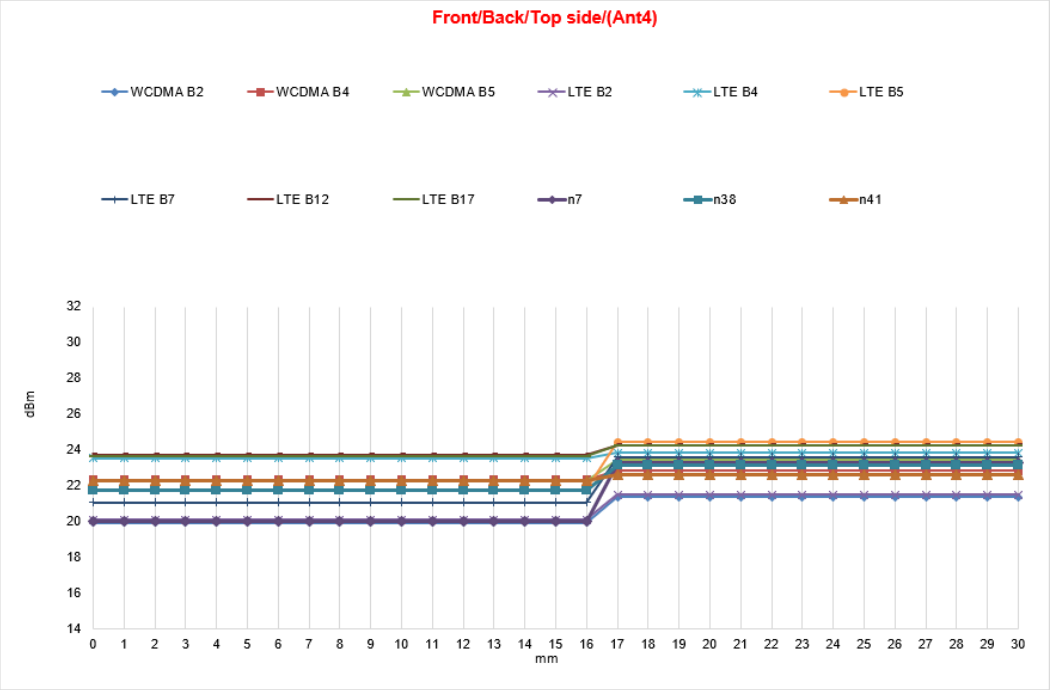


- DUT Moving Away(Release) from the Phantom



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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)





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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch Member EMC Laboratory
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

Proximity sensor coverage

If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.

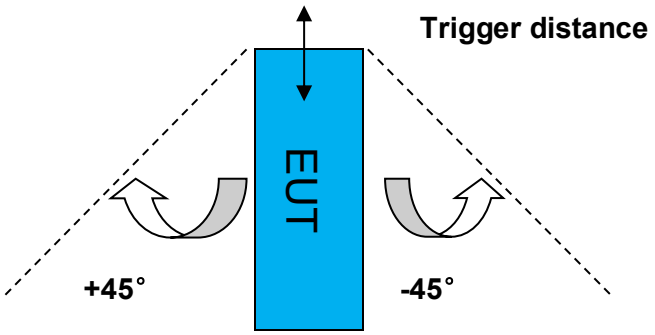
The proximity sensor and main antenna use same metallic electrode, so there is no spatial offset.

Device tilt angle influences to proximity sensor triggering

The influence of device tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom.

Rotating the tablet around the edge next to the phantom in ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.

Flat Phantom



Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering for Top Side														
Band (MHz)	Minimum trigger distance Per KDB616217§6.2	Minimum trigger distance at which power reduction was maintained over ±45°	Power Reduction Status										
			-45°	-35°	-25°	-15°	-5°	0°	5°	15°	25°	35°	45°
Ant1	Bottom side:16mm	Bottom side:16mm	on	on	on	on	on	on	on	on	on	on	on
Ant2	Top side:16mm	Top side:16mm	on	on	on	on	on	on	on	on	on	on	on
Ant4	Top side:16mm	Top side:16mm											

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

6 SAR System Verification Procedure

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 (% by weight)	Frequency (MHz)				
	450	700-900	1750-2000	2300-2500	2500-2700
Water	38.56	40.30	55.24	55.00	54.92
Salt (NaCl)	3.95	1.38	0.31	0.2	0.23
Sucrose	56.32	57.90	0	0	0
HEC	0.98	0.24	0	0	0
Bactericide	0.19	0.18	0	0	0
Tween	0	0	44.45	44.80	44.85
Salt: 99+% Pure Sodium Chloride Water: De-ionized, 16 MΩ+ resistivity Tween: Polyoxyethylene (20) sorbitan monolaurate			Sucrose: 98+% Pure Sucrose HEC: Hydroxyethyl Cellulose		
HSL5GHz is composed of the following ingredients： Water：50-65% Mineral oil：10-30% Emulsifiers：8-25% Sodium salt：0-1.5%					

Table 3： Recipe of Tissue Simulate Liquid

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

6.1.2 Measurement for Tissue Simulate Liquid

The dielectric properties for this Tissue Simulate Liquids were measured by using the Agilent Model 85070E Dielectric Probe in conjunction with Agilent E5071C Network Analyzer (300 KHz-8500 MHz). The Conductivity (σ) and Permittivity (ρ) are listed in bellow table. For the SAR measurement given in this report. The temperature variation of the Tissue Simulate Liquids was 22±2°C.

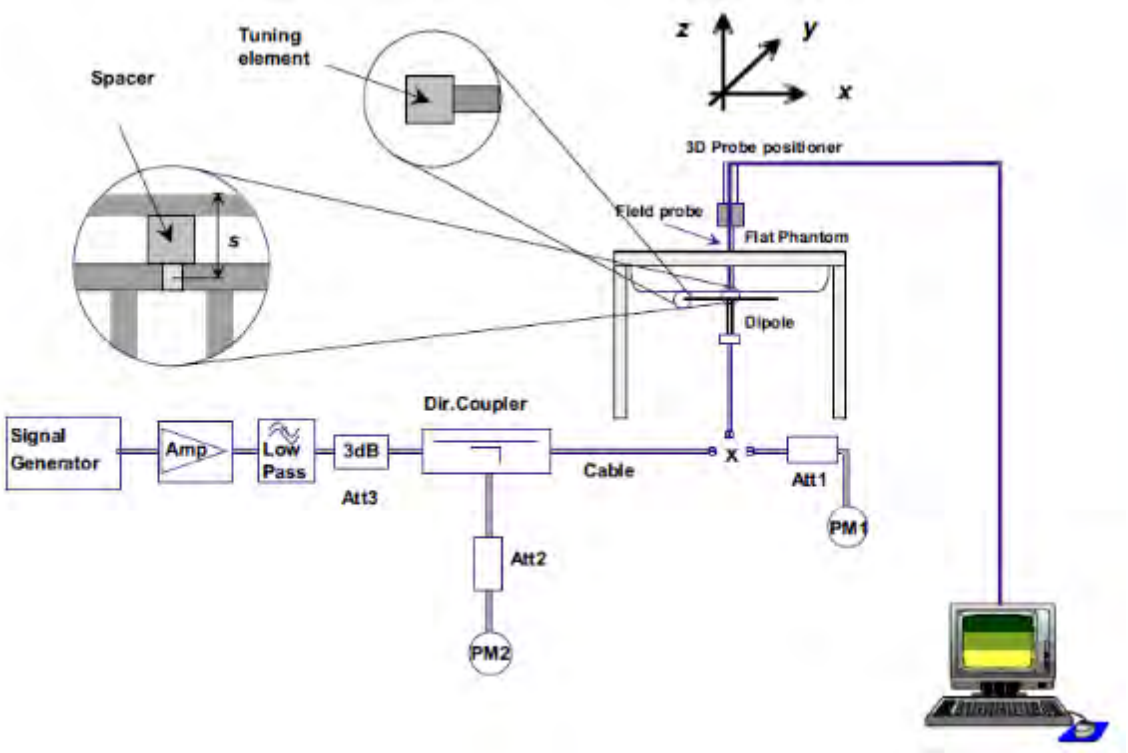
Tissue Type	Measured Frequency (MHz)	Target Tissue (±5%)		Measured Tissue		Liquid Temp.(℃)	Measured Date
		ε_r	σ(S/m)	ε_r	σ(S/m)		
750 Head	750	41.9 (39.81~44)	0.89 (0.85~0.94)	41.476	0.887	22.1	2021/3/17
750 Head	750	41.9 (39.81~44)	0.89 (0.85~0.94)	42.495	0.884	22.1	2021/3/18
835 Head	835	41.5 (39.43~43.58)	0.90 (0.86~0.95)	41.753	0.938	22.1	2021/3/20
835 Head	835	41.5 (39.43~43.58)	0.90 (0.86~0.95)	41.881	0.938	22.1	2021/3/6
1750 Head	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	39.159	1.332	22.2	2021/2/19
1750 Head	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	40.271	1.309	22.2	2021/2/24
1750 Head	1750	40.1 (38.10~42.11)	1.37 (1.30~1.44)	38.834	1.329	22.4	2021/2/27
1900 Head	1900	40.0 (38.00~42.00)	1.40 (1.33~1.47)	40.571	1.407	22.3	2021/2/17
1900 Head	1900	40.0 (38.00~42.00)	1.40 (1.33~1.47)	40.173	1.376	22.1	2021/2/21
2450 Head	2450	39.2 (37.24~41.16)	1.8 (1.71~1.89)	40.179	1.803	21.8	2021/3/16
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	38.475	1.909	21.9	2021/3/5
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	39.388	2.000	21.9	2021/3/10
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	38.835	1.934	21.9	2021/3/14
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	39.952	1.968	21.9	2021/3/19
2600 Head	2600	39.0 (37.05~40.95)	1.96 (1.86~2.06)	40.535	1.983	21.9	2021/3/21
3700 Head	3700	37.7 (35.82~39.59)	3.12 (2.96~3.28)	37.205	3.070	21.9	2021/3/27
3900 Head	3900	37.5 (35.63~39.38)	3.32 (3.15~3.49)	36.495	3.283	22.1	2021/3/28
5250Head	5250	35.9 (34.11~37.70)	4.71 (4.47~4.95)	36.011	4.767	22.2	2021/3/25
5600 Head	5600	35.5 (33.73~37.28)	5.07 (4.82~5.32)	35.059	5.157	22.2	2021/3/2
5750 Head	5750	35.4 (33.63~37.17)	5.22 (4.96~5.48)	34.695	5.329	22.2	2021/3/2

Table 4： Measurement result of Tissue electric parameters

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

6.2.1 Justification for Extended SAR Dipole Calibrations

1) Referring to KDB865664 D01 requirements for dipole calibration, instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.
a) There is no physical damage on the dipole;
b) System check with specific dipole is within 10% of calibrated value;
c) Return-loss is within 10% of calibrated measurement;
d) Impedance is within 5Ω from the previous measurement.

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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

6.2.2 Summary System Check Result(s)

Validation Kit		Measured SAR 250mW	Measured SAR 250mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W) (±10%)	Target SAR (normalized to 1W) (±10%)	Liquid Temp. (℃)	Measured Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)		
D750V3	Head	2.17	1.42	8.68	5.68	8.39(7.55~9.23)	5.63(5.07~6.19)	22.1	2021/3/17
D750V3	Head	2.14	1.37	8.56	5.48	8.39 (7.55~9.23)	5.63 (5.07~6.19)	22.1	2021/3/18
D835V2	Head	2.41	1.62	9.64	6.48	9.64 (8.68~10.60)	6.29 (5.66~6.92)	22.1	2021/3/20
D835V2	Head	2.5	1.63	10	6.52	9.64 (8.68~10.60)	6.29 (5.66~6.92)	22.1	2021/3/6
D1750V2	Head	9.36	5	37.44	20	36.3 (32.67~39.93)	19.2 (17.28~21.12)	22.2	2021/2/19
D1750V2	Head	8.47	4.55	33.88	18.2	36.3 (32.67~39.93)	19.2 (17.28~21.12)	22.2	2021/2/24
D1750V2	Head	9.24	4.91	36.96	19.64	36.3 (32.67~39.93)	19.2 (17.28~21.12)	22.4	2021/2/27
D1900V2	Head	9.96	5.24	39.84	20.96	39.3 (35.37~43.23)	20.2 (18.18~22.22)	22.3	2021/2/17
D1900V2	Head	9.6	4.99	38.4	19.96	39.3 (35.37~43.23)	20.2 (18.18~22.22)	22.1	2021/2/21
D2450V2	Head	12.60	5.82	50.40	23.28	51.9 (46.71~57.09)	23.8 (21.42~26.18)	21.8	2021/3/16
D2600V2	Head	13.50	6.04	54.00	24.16	56.8 (51.12~62.48)	24.9 (22.41~27.39)	21.9	2021/3/5
D2600V2	Head	14.20	6.35	56.80	25.40	56.8 (51.12~62.48)	24.9 (22.41~27.39)	21.9	2021/3/10
D2600V2	Head	13.70	6.15	54.80	24.60	56.8 (51.12~62.48)	24.9 (22.41~27.39)	21.9	2021/3/14
D2600V2	Head	13.90	6.24	55.60	24.96	56.8 (51.12~62.48)	24.9 (22.41~27.39)	21.9	2021/3/19
D2600V2	Head	14.00	6.30	56.00	25.20	56.8 (51.12~62.48)	24.9 (22.41~27.39)	21.9	2021/3/21
Validation Kit		Measured SAR 100mW	Measured SAR 100mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W) (±10%)	Target SAR (normalized to 1W) (±10%)	Liquid Temp. (℃)	Measured Date
		1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)		
D3700V2	Head(3.7 GHz)	6.34	2.31	63.40	23.10	67.8 (61.02~74.58)	24.7 (22.23~27.17)	21.9	2021/3/27
D3900V2	Head(3.9 GHz)	7.02	2.52	70.20	25.20	71.1 (63.99~78.21)	24.6 (22.14~27.06)	22.3	2021/3/28
D5GHzV2	Head(5.25 GHz)	8.04	2.32	80.4	23.2	75.2 (67.68~82.72)	21.5 (19.35~23.65)	22.2	2021/3/25
	Head(5.6 GHz)	7.89	2.25	78.9	22.5	80 (72~88)	22.7 (20.43~24.97)	22.2	2021/3/2
	Head(5.75 GHz)	7.91	2.25	79.1	22.5	78.7 (70.83~86.57)	22.3 (20.07~24.53)	22.2	2021/3/2

Table 5： SAR System Check Result

6.2.3 Detailed System Check Results

Please see the Appendix A

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

7 Test Configuration

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 CMW500 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 33 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 33 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, including tune-up tolerance. 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 and tolerance, 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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

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.

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 / DC-HSDPA

According to KDB 941225 D01v03, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA

a) HSDPA

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.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

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: △ACK, △NACK and △CQI= 8 Ahs = βhs/βc=30/15 βhs=30/15*βc
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, △ACK and △NACK= 8 (Ahs=30/15) with βhs=30/15*βc,and △CQI=
7 (Ahs=24/15) with βhs=24/15*βc.
Note3: CM=1 forβc/βd =12/15, βhs/βc=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.

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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	MaximumH S-DSCH Transport BlockBits/HS-DSCH TTI	Total Soft 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 7： HSDPA UE category

b) <u>HSUPA</u>

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	β_{ec}	β_{ed}	β_{ec} (SF)	β_{ed} (code)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}:47/15 β_{ed2}:47/15	4	2	2.0	1.0	15	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)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

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 $\beta_d = 15/15$

Note 4 : For subtest 5 the β_c/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 $\beta_d = 15/15$

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: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Table 8： Subtests for UMTS Release 6 HSUPA

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI(ms)	Minimum Speading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	10	2SF2&2SF4	11484	5.76
	4	4	2		20000	2.00
7 (No DPDCH)	4	8	2	2SF2&2SF4	22996	?
	4	4	10		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 9： HSUPA UE category

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

c) DC-HSDPA

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a Second serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.
The following tests were completed according to procedures in section 7.3.13 of 3GPP TS 34.108 v9.5.0.
A summary of these settings are illustrated below:
Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13.
The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.
The measurements were performed with a Fixed Reference Channel (FRC) H-Set 12 with QPSK.

Parameter	Value
Nominal average inf. bit rate	60 kbit/s
Inter-TTI Distance	1 TTI's
Number of HARQ Processes	6 Processes
Information Bit Payload	120 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	960 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	3200 SMLs
Coding Rate	0.15
Number of Physical Channel Codes	1

Table 10： settings of required H-Set 12 QPSK acc. to 3GPP 34.121

Note:
1. The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table above.
2. Maximum number of transmission is limited to 1,i.e.,retransmission is not allowed. The redundancy and constellation version 0 shall be used.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

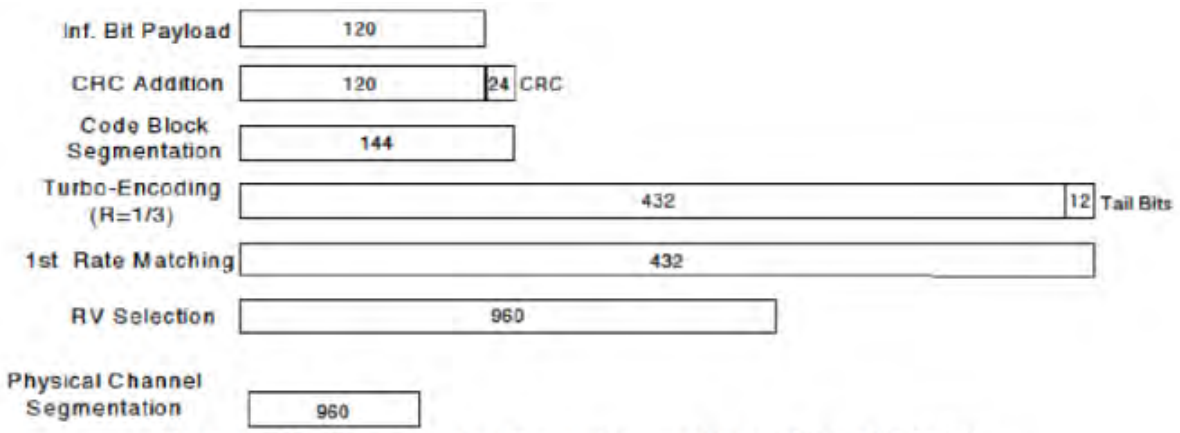


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 5 procedures. A summary of subtest settings are illustrated below:

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	CM(dB)(2)	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

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note 2: 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.

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15

Up commands are set continuously to set the UE to Max power.

Note:

1. The Dual Carriers transmission only applies to HSDPA physical channels
2. The Dual Carriers belong to the same Node and are on adjacent carriers.
3. The Dual Carriers do not support MIMO to serve UEs configured for dual cell operation
4. The Dual Carriers operate in the same frequency band.
5. The device doesn't support the modulation of 16QAM in uplink but 64QAM in downlink for DC-HSDPA mode.
6. The device doesn't support carrier aggregation for it just can operate in Release 8.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co.,Ltd.
Shenzhen Branch Testing Center LLC Laboratory
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

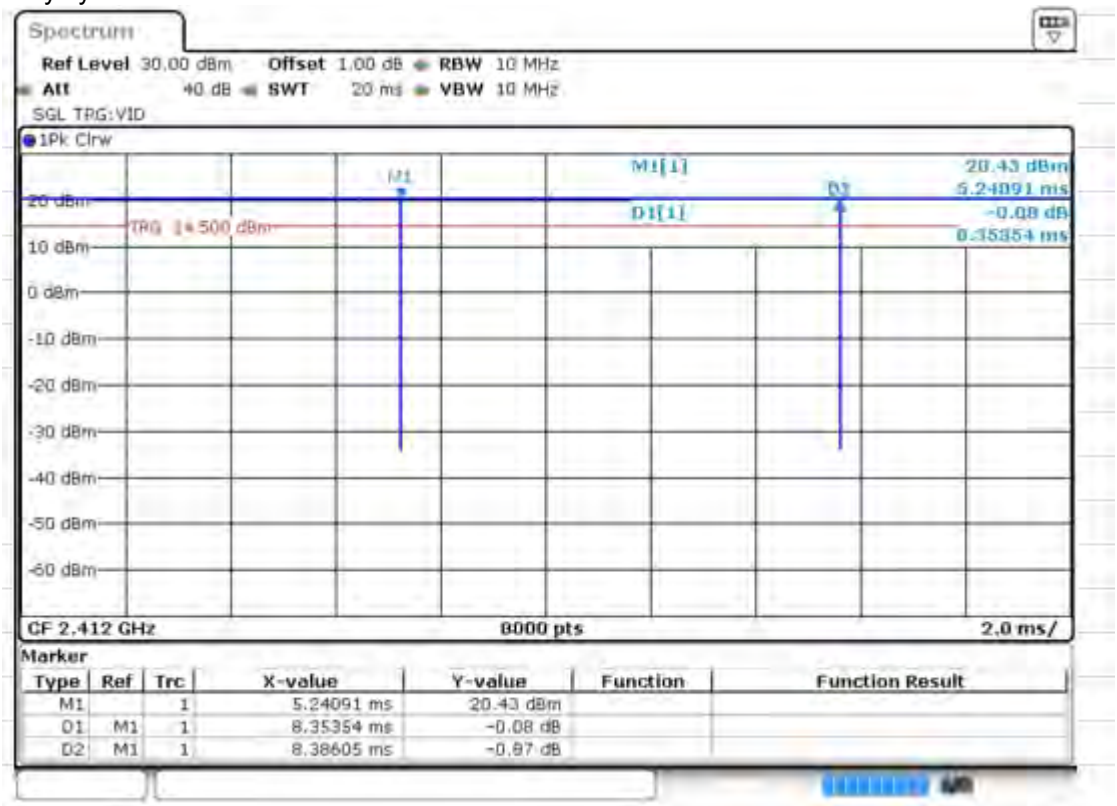
7.2.3 WiFi Test Configuration

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

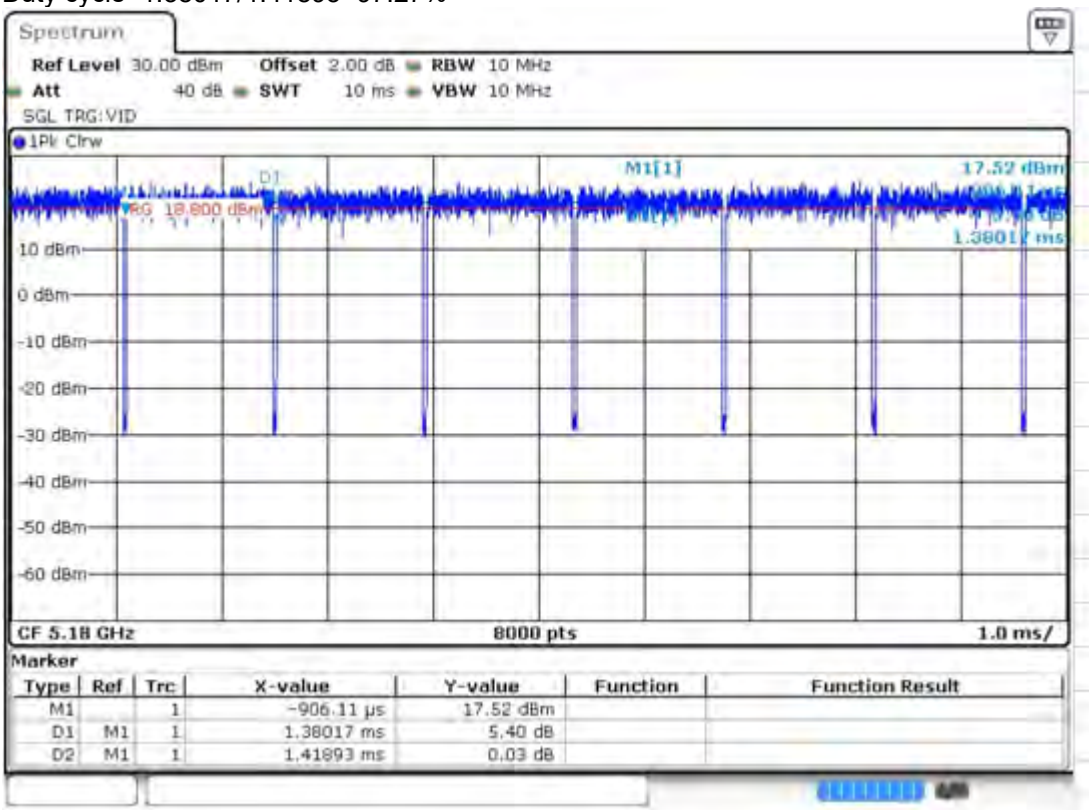
1) Wi-Fi 2.4GHz 802.11b:

Duty cycle=8.35354/8.38605=99.61%



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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

2) Wi-Fi 5GHz 802.11a:
Duty cycle=1.38017/1.41893=97.27%



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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

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.

7.2.3.3 Initial Test Configuration Procedures

An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. For configurations with the same specified or measured maximum output power, additional transmission mode and test channel selection procedures are required. SAR test reduction for subsequent highest output test channels is determined according to *reported* SAR of the initial test configuration.
For next to the ear, hotspot mode and UMC mini-tablet exposure configurations where multiple test positions are required, the initial test position procedure is applied to minimize the number of test positions required for SAR measurement using the initial test configuration transmission mode. For fixed exposure conditions that do not have multiple SAR test positions, SAR is measured in the transmission mode determined by the initial test configuration.
When the *reported* SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until *reported* SAR is ≤ 1.2 W/kg or all required channels are tested.

7.2.3.4 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.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

2）. When the highest *reported* SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

3）. The number of channels in the initial test configuration and subsequent test configuration can be different due to differences in channel bandwidth. When SAR measurement is required for a subsequent test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel. This step requires additional power measurement to identify the highest maximum output power channel in the subsequent test configuration to determine SAR test reduction.

a) SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.

b) SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the *reported* SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested. i) For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration.

4）. SAR measurements for the remaining highest specified maximum output power OFDM transmission mode configurations that have not been tested in the initial test configuration (highest maximum output) or subsequent test configuration(s) (subsequent next highest maximum output power) is determined by recursively applying the subsequent test configuration procedures in this section to the remaining configurations according to the following:

a) replace “subsequent test configuration” with “next subsequent test configuration” (i.e., subsequent next highest specified maximum output power configuration)

b) replace “initial test configuration” with “all tested higher output power configurations”

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

7.2.3.5 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.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

7.2.3.6 5 GHz WiFi SAR Procedures

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

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

- **U-NII-2C and U-NII-3 Bands**
  The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. when Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

- **OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements**
  The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined according to the following steps applied sequentially.
  1) The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
  2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
  3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.
  4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n. After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.
     a) The channel closest to mid-band frequency is selected for SAR measurement.
     b) For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

- **SAR Test Requirements for OFDM configurations**

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

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

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 Anritsu MT8821C 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.

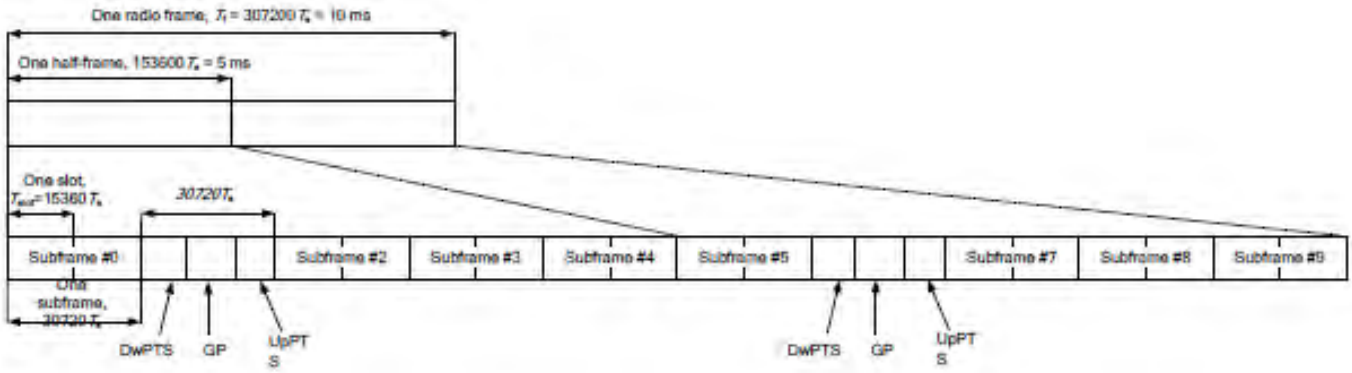
TDD LTE test consideration

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:



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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	6592.Ts	2192.Ts	2560.Ts	7680.Ts	2192.Ts	2560.Ts
1	19760.Ts			20480.Ts		
2	21952.Ts			23040.Ts		
3	24144.Ts			25600.Ts		
4	26336.Ts			7680.Ts	4384.Ts	5120.Ts
5	6592.Ts	4384.Ts	5120.Ts	20480.Ts		
6	19760.Ts			23040.Ts		
7	21952.Ts			25600.Ts		
8	24144.Ts			-	-	-
9	13168.Ts			-	-	-

Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
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	U	U	D	S	U	U	D

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

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
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	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	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	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

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.

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

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 > ½ 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.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Laboratory
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

7.2.5 NR Band Test Configuration

1. NR Band n7/n38/n41/n66/n77/n78 support SA mode and n66 support NSA mode. LTE+NR Band n66 operations are possible only with LTE under EN-DC mode and the operations are possible as following table:

EN-DC	
LTE B7 (Ant2)	n66(Ant1)

2. The general information supported by the NR band is as following table:

Band			n7	n38	n41	n66	n77	n78
Modulation	DFT-s-OFDM	PI/2 BPSK	Yes	Yes	Yes	Yes	Yes	Yes
		QPSK	Yes	Yes	Yes	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes	Yes	Yes	Yes
	CP-OFDM	QPSK	Yes	Yes	Yes	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes	Yes	Yes	Yes
Duty Cycle			100%	100%	100%	100%	100%	100%

Band	SCS	Bandwidth												
		5Mhz	10Mhz	15Mhz	20Mhz	25Mhz	30Mhz	40Mhz	50Mhz	60Mhz	70Mhz	80Mhz	90Mhz	100Mhz
n7	15KHZ	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n38	15KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n41	15KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	Yes	Yes	Yes	N/A	N/A	Yes	Yes	Yes	N/A	Yes	Yes	Yes
n66	15KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	N/A	N/A	Yes	N/A	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes
n77	15KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	Yes	Yes	Yes	N/A	N/A	Yes	Yes	Yes	N/A	Yes	Yes	Yes
n78	15KHZ	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30KHZ	N/A	Yes	Yes	Yes	N/A	N/A	Yes	Yes	Yes	N/A	Yes	Yes	Yes

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 3GPP 38.101 maximum power reduction for power class 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
   b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 3, for PI/2 BPSK/16QAM/64QMA/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the PI/2 BPSK/16QAM/64QMA/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
   c. SAR testing start with the largest SCS and 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.
   d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
   e. 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 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.
   f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK/16QAM/64QAM/256QAM SAR testing are not required.
   g. Smaller SCS/bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this 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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

4. 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 TS 38.101-1 Section 6.2.2 under Table 6.2.2 -1.

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	PI/2 BPSK	≤ 3.5[1]	≤ 1.2[1]	≤ 0.2[1]
		≤ 0.5[2]	≤ 0.5[2]	0[2]
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM	≤ 2.5		
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability powerBoosting-pi2BPSK and if the IE powerBoostPi2BPSK is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26dBm.
NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE powerBoostPi2BPSK is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

5. For FDD NR Band operation does not have the fixed UL/DL frame structure, but during the transmitting/ receiving it can be operated in the slot structure of 100% UL duty cycle, we are proposing the conservative way to evaluate SAR at 100% duty cycle. For the purpose of test NR Band standalone SAR, and also test SAR level at 100% TX duty cycle.
6. For 5G NR Sub6GHz SISO Mode, SAR Test plan as below:
1) For 5G NR NSA mode with the same UL EN_DC combination but different DL EN_DC combinations, eg: EN-DC configuration: UL DC_7A_n5 (UL two bands) with DL DC_7C_n5 (DL two bands)
a) The UL EN-DC configuration, including the Tx antenna configuration, RF path, the channel bandwidth and other operating parameters are the same.
b) The maximum output power, including tolerance, for the UL EN-DC configuration with DL two or more bands must be ≤ the same UL EN-DC configuration with DL two bands only to qualify for the SAR test exclusion.
7. For EN-DC SAR, as the existing SAR test system cannot test the multiple different frequency bands simultaneous Transmission SAR at the same time, we suggest that the conservative “max + max” multi-Tx and SAR scaling method can be used to evaluate the inter-band Uplink EN-DC SAR from standalone SAR test results of each LTE and NR EN-DC component band and the conservative “max + max” multi-Tx method to combine the scaled SAR value from each EN-DC component band as the inter-band Uplink EN-DC SAR. All Simultaneous Transmission Scenarios will be evaluated independently in the final SAR report.
8. When the reported SAR for and EN DC configuration is greater than 1.2 W/kg, EN DC SAR is also required for other NR based test channels.
9. EN DC SAR is also required for standalone NR configurations greater than 1.2 W/kg when scaled to the EN DC power level.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

8 Test Result

8.1 Measurement of RF conducted Power

Note: The detailed conducted power table can refer to Appendix E.

8.1.1 Conducted Power of GSM

Note:
1）. CMW500 measures GSM peak and average output power for active timeslots. 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

8.1.2 Conducted Power of WCDMA

Note:
1) 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.

8.1.3 Conducted Power of LTE

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

8.1.4 Conducted Power of Uplink & Downlink LTE CA

The following conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR test exclusion. 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.
Power test equipment: Anritsu Radio Communication Analyzer MT8821C were used.

8.1.4.1 Conducted Power of uplink LTE CA

Note:
1) This device supports uplink carrier aggregation for LTE CA_7C, CA_38C with a maximum of two 20MHz component carriers.
2) 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.
3) 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.
4) Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

8.1.4.2 Conducted Power of Downlink LTE CA

In this section, the following 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.
Power test equipment: Anritsu Radio Communication Analyzer MT8821C

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 below, so the downlink only carrier aggregation conditions for this device can be excluded from SAR testing

In applying the existing power measurement procedures for DL CA SAR test exclusion, the configurations that require power measurements are highlighted in the table as below:

1 Band / 2CC	2 Band / 2CC
CA_38C	CA_5A-7A
CA_2C	CA_2A-5A
CA_7C	CA_2A-7A
CA_7A-7A	CA_4A-5A
	CA_4A-7A
	CA_2A-4A

Note:
The downlink LTE CA SAR test is not required since the maximum output power for downlink LTE CA was not more than 0.25dB higher than the maximum output power for without downlink LTE CA.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

8.1.5 Conducted Power of WIFI

Note:
a) Power must be measured at each transmit antenna port according to the DSSS and OFDM transmission configurations in each standalone and aggregated frequency band.
b) Power measurement is required for the transmission mode configuration with the highest maximum output power specified for production units.
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 power.
c) 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.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

8.1.6 Conducted Power of BT

BT DH5 Duty Cycle=2.8649/3.7565=76.27%

Note:
1)The conducted power of BT is measured with RMS detector.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

8.2 Stand-alone SAR test evaluation

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and Product specific 10g SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.

Freq. Band	Frequency (GHz)	Position	Average Power		Test Separation (mm)	Calculate Value	Exclusion Threshold	Exclusion (Y/N)
			dBm	mW				
Wi-Fi 2.4G	2.472	Head	19	79.43	5	25.018	3	N
		Body-worn	19	79.43	15	8.339	3	N
		Hotspot	19	79.43	10	12.509	3	N
Wi-Fi 5G	5.850	Head	16	39.81	5	19.258	3	N
		Body-worn	18	63.10	15	10.174	3	N
		Hotspot	18	63.10	10	15.261	3	N
Bluetooth	2.48	Head	10	10.00	5	3.150	3	N
		Body-worn	10	10.00	15	1.050	3	Y
		Hotspot	10	10.00	10	1.575	3	Y

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

8.3 Measurement of SAR Data

Note:

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

2) Per KDB447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

- ≤ 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:

1) 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.

WiFi 5G:

1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. As the highest reported SAR for a test configuration is ⩽ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration.
2) For Wi-Fi 5G, U-NII-2A (5250-5350 MHz) and U-NII-2C (5470-5725 MHz) bands does not support hotspot function.
3) 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.

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

8.3.1 SAR Result of GSM850

GSM 850 SAR Test Record										
Ant1 Test Record										
Test position	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	GSM	190/836.6	1:8.3	0.100	0.07	32.95	33.50	1.135	**0.114**	22.1
Left tilted	GSM	190/836.6	1:8.3	0.050	0.05	32.95	33.50	1.135	0.057	22.1
Right cheek	GSM	190/836.6	1:8.3	0.077	0.06	32.95	33.50	1.135	0.087	22.1
Right tilted	GSM	190/836.6	1:8.3	0.030	0.10	32.95	33.50	1.135	0.034	22.1
Body worn Test data(Separate 10mm)										
Front side	GSM	190/836.6	1:8.3	0.076	0.15	32.59	33.00	1.099	0.084	22.1
Back side	GSM	190/836.6	1:8.3	0.091	0.01	32.59	33.00	1.099	**0.100**	22.1
Hotspot Test data(Separate 10mm)										
Front side	GPRS 4TS	190/836.6	1:2.075	0.061	0.10	27.15	29.00	1.531	0.093	22.1
Back side	GPRS 4TS	190/836.6	1:2.075	0.082	0.03	27.15	29.00	1.531	**0.126**	22.1
Bottom side	GPRS 4TS	190/836.6	1:2.075	0.079	0.04	27.15	29.00	1.531	0.121	22.1
Left side	GPRS 4TS	190/836.6	1:2.075	0.071	-0.12	27.15	29.00	1.531	0.109	22.1
Right side	GPRS 4TS	190/836.6	1:2.075	0.061	0.09	27.15	29.00	1.531	0.093	22.1
Ant4 Test Record										
Test position	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	GSM	190/836.6	1:8.3	0.572	0.12	32.68	33.00	1.076	0.616	22.1
Left tilted	GSM	190/836.6	1:8.3	0.519	0.15	32.68	33.00	1.076	0.559	22.1
Right cheek	GSM	190/836.6	1:8.3	0.630	0.13	32.68	33.00	1.076	0.678	22.1
Right tilted	GSM	251/848.8	1:8.3	0.654	0.06	32.68	33.00	1.076	**0.704**	22.1
Body worn Test data(Separate 10mm)										
Front side	GSM	190/836.6	1:8.3	0.132	0.04	32.68	33.00	1.076	0.142	22.1
Back side	GSM	190/836.6	1:8.3	0.221	-0.04	32.68	33.00	1.076	**0.238**	22.1
Hotspot Test data(Separate 10mm)										
Front side	GPRS 4TS	190/836.6	1:2.075	0.158	0.04	27.47	29.00	1.422	0.225	22.1
Back side	GPRS 4TS	190/836.6	1:2.075	0.189	-0.15	27.47	29.00	1.422	**0.269**	22.1
Top side	GPRS 4TS	190/836.6	1:2.075	0.181	0.02	27.47	29.00	1.422	0.257	22.1
Left side	GPRS 4TS	190/836.6	1:2.075	0.166	0.02	27.47	29.00	1.422	0.236	22.1
Right side	GPRS 4TS	190/836.6	1:2.075	0.102	0.05	27.47	29.00	1.422	0.145	22.1
Ant1 Test Record										
Head Test data at the worst case with Battery2#										
Left cheek	GSM	190/836.6	1:8.3	0.098	0.03	32.95	33.50	1.135	0.111	22.1
Body worn Test data at the worst case with Battery2#										
Back side	GSM	190/836.6	1:8.3	0.088	0.05	32.59	33.00	1.099	0.097	22.1
Hotspot Test data at the worst case with Battery2#										
Back side	GPRS 4TS	190/836.6	1:2.075	0.080	-0.04	27.15	29.00	1.531	0.122	22.1
Ant4 Test Record										
Head Test data at the worst case with Battery2#										
Right tilted	GSM	251/848.8	1:8.3	0.643	0.03	32.68	33.00	1.076	0.692	22.1
Body worn Test data at the worst case with Battery2#										
Back side	GSM	190/836.6	1:8.3	0.216	0.06	32.68	33.00	1.076	0.233	22.1
Hotspot Test data at the worst case with Battery2#										
Back side	GPRS 4TS	190/836.6	1:2.075	0.181	-0.15	27.47	29.00	1.422	0.257	22.1

Table 11： SAR of GSM850 for Head and Body (Original report: AR/2021/1000808).

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

8.3.2 SAR Result of GSM1900

GSM 1900 SAR Test Record										
Ant1 Test Record										
Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data										
Left cheek	GSM	661/1880	1:8.3	0.012	0.09	29.62	30.50	1.225	0.015	22.3
Left tilted	GSM	661/1880	1:8.3	0.003	-0.09	29.62	30.50	1.225	0.004	22.3
Right cheek	GSM	661/1880	1:8.3	0.056	-0.06	29.62	30.50	1.225	**0.068**	22.3
Right tilted	GSM	661/1880	1:8.3	0.005	-0.17	29.62	30.50	1.225	0.006	22.3
Body worn Test data(Separate 10mm)										
Front side	GSM	661/1880	1:8.3	0.104	-0.09	25.04	25.50	1.112	0.116	22.1
Back side	GSM	661/1880	1:8.3	0.181	-0.04	25.04	25.50	1.112	**0.201**	22.1
Hotspot Test data(Separate 10mm)										
Front side	GPRS 4TS	661/1880	1:2.075	0.113	-0.16	19.76	21.50	1.493	0.169	22.1
Back side	GPRS 4TS	661/1880	1:2.075	0.189	-0.15	19.76	21.50	1.493	0.282	22.1
Bottom side	GPRS 4TS	661/1880	1:2.075	0.334	-0.03	19.76	21.50	1.493	**0.499**	22.1
Left side	GPRS 4TS	661/1880	1:2.075	0.019	0.14	19.76	21.50	1.493	0.028	22.3
Right side	GPRS 4TS	661/1880	1:2.075	0.016	0.15	19.76	21.50	1.493	0.024	22.3
Ant4 Test Record										
Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data										
Left cheek	GSM	661/1880	1:8.3	0.244	-0.17	29.67	30.50	1.211	0.295	22.3
Left tilted	GSM	661/1880	1:8.3	0.302	0.01	29.67	30.50	1.211	0.366	22.3
Right cheek	GSM	661/1880	1:8.3	0.376	0.07	29.67	30.50	1.211	0.455	22.3
Right tilted	GSM	661/1880	1:8.3	0.497	-0.04	29.67	30.50	1.211	**0.602**	22.3
Body worn Test data(Separate 10mm)										
Front side	GSM	661/1880	1:8.3	0.083	-0.07	29.67	30.50	1.211	0.100	22.3
Back side	GSM	661/1880	1:8.3	0.189	-0.08	29.67	30.50	1.211	**0.229**	22.3
Hotspot Test data(Separate 10mm)										
Front side	GPRS 4TS	661/1880	1:2.075	0.130	-0.01	25.18	26.50	1.355	0.176	22.3
Back side	GPRS 4TS	661/1880	1:2.075	0.237	0.05	25.18	26.50	1.355	0.321	22.3
Top side	GPRS 4TS	661/1880	1:2.075	0.277	-0.08	25.18	26.50	1.355	**0.375**	22.3
Left side	GPRS 4TS	661/1880	1:2.075	0.026	0.12	25.18	26.50	1.355	0.035	22.1
Right side	GPRS 4TS	661/1880	1:2.075	0.022	0.11	25.18	26.50	1.355	0.030	22.1
Ant1 Test Record										
Head Test data at the worst case with Battery2#										
Right cheek	GSM	661/1880	1:8.3	0.051	0.08	29.62	30.50	1.225	0.062	22.3
Body worn Test data at the worst case with Battery2#										
Back side	GSM	661/1880	1:8.3	0.177	0.10	25.04	25.50	1.112	0.197	22.1
Hotspot Test data at the worst case with Battery2#										
Bottom side	GPRS 4TS	661/1880	1:2.075	0.322	-0.05	19.76	21.50	1.493	0.481	22.1
Ant4 Test Record										
Head Test data at the worst case with Battery2#										
Right tilted	GSM	661/1880	1:8.3	0.475	0.04	29.67	30.50	1.211	0.575	22.3
Body worn Test data at the worst case with Battery2#										
Back side	GSM	661/1880	1:8.3	0.180	0.09	29.67	30.50	1.211	0.218	22.3
Hotspot Test data at the worst case with Battery2#										
Top side	GPRS 4TS	661/1880	1:2.075	0.265	0.06	25.18	26.50	1.355	0.359	22.3

Table 12: SAR of GSM1900 for Head and Body (Original report: AR/2021/1000808).

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

8.3.3 SAR Result of WCDMA Band II

WCDMA Band II SAR Test Record										
Ant1 Test Record										
Test position	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	RMC	9400/1880	1:1	0.050	0.13	22.67	23.50	1.211	0.061	22.3
Left tilted	RMC	9400/1880	1:1	0.045	0.03	22.67	23.50	1.211	0.054	22.3
Right cheek	RMC	9400/1880	1:1	0.100	0.03	22.67	23.50	1.211	**0.121**	22.3
Right tilted	RMC	9400/1880	1:1	0.053	0.08	22.67	23.50	1.211	0.064	22.3
Body worn Test data(Separate 10mm) Sensor on										
Front side	RMC	9400/1880	1:1	0.262	-0.03	19.73	20.50	1.194	0.313	22.3
Back side	RMC	9400/1880	1:1	0.404	0.16	19.73	20.50	1.194	0.482	22.3
Body worn Test data(Separate 15mm) Sensor off										
Front side	RMC	9400/1880	1:1	0.277	0.08	22.67	23.50	1.211	0.335	22.3
Back side	RMC	9400/1880	1:1	0.544	-0.15	22.67	23.50	1.211	**0.659**	22.3
Hotspot Test data(Separate 10mm) Sensor on										
Front side	RMC	9400/1880	1:1	0.262	-0.13	19.73	20.50	1.194	0.313	22.3
Back side	RMC	9400/1880	1:1	0.404	0.10	19.73	20.50	1.194	0.482	22.3
Bottom side	RMC	9400/1880	1:1	0.789	-0.08	19.73	20.50	1.194	0.942	22.3
Bottom side	RMC	9262/1852.4	1:1	0.810	0.02	19.71	20.50	1.199	0.972	22.3
Bottom side	RMC	9538/1907.6	1:1	0.758	-0.11	19.68	20.50	1.208	0.916	22.3
Hotspot Test data Sensor off										
Front side-15mm	RMC	9400/1880	1:1	0.277	-0.16	22.67	23.50	1.211	0.335	22.3
Back side-15mm	RMC	9400/1880	1:1	0.544	-0.15	22.67	23.50	1.211	0.659	22.3
Left side-10mm	RMC	9400/1880	1:1	0.059	0.03	22.67	23.50	1.211	0.071	22.3
Right side-10mm	RMC	9400/1880	1:1	0.121	0.18	22.67	23.50	1.211	0.146	22.3
Bottom side -15mm	RMC	9400/1880	1:1	0.810	-0.06	22.67	23.50	1.211	0.981	22.3
Bottom side -15mm	RMC	9262/1852.4	1:1	0.884	-0.06	22.99	23.50	1.125	**0.994**	22.3
Bottom side -15mm	RMC	9538/1907.6	1:1	0.765	0.11	22.55	23.50	1.245	0.952	22.3
Test position	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 10-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Limbs Test data(Separate 0mm) Sensor on										
Front side	RMC	9400/1880	1:1	0.831	0.16	19.73	20.50	1.194	0.992	22.3
Back side	RMC	9400/1880	1:1	1.270	-0.03	19.73	20.50	1.194	**1.516**	22.3
Bottom side	RMC	9400/1880	1:1	0.978	-0.07	19.73	20.50	1.194	1.168	22.3
Limbs Test data Sensor off										
Front side-15mm	RMC	9400/1880	1:1	0.158	-0.11	22.67	23.50	1.211	0.191	22.3
Back side-15mm	RMC	9400/1880	1:1	0.248	0.17	22.67	23.50	1.211	0.300	22.3
Left side-0mm	RMC	9400/1880	1:1	0.133	0.05	22.67	23.50	1.211	0.161	22.3
Right side-0mm	RMC	9400/1880	1:1	0.382	0.16	22.67	23.50	1.211	0.462	22.3
Bottom side -15mm	RMC	9400/1880	1:1	0.451	-0.08	22.67	23.50	1.211	0.546	22.3
Ant4 Test Record										
Test position	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data										
Left cheek	RMC	9400/1880	1:1	0.346	-0.04	21.36	22.50	1.300	0.450	22.3
Left tilted	RMC	9400/1880	1:1	0.435	0.15	21.36	22.50	1.300	0.566	22.3
Right cheek	RMC	9400/1880	1:1	0.520	0.14	21.36	22.50	1.300	0.676	22.3
Right tilted	RMC	9400/1880	1:1	0.613	-0.04	21.36	22.50	1.300	**0.797**	22.3
Body worn Test data(Separate 10mm) Sensor on										
Front side	RMC	9400/1880	1:1	0.079	-0.18	19.92	21.00	1.282	0.101	22.3
Front side	RMC	9400/1880	1:1	0.197	-0.02	19.92	21.00	1.282	**0.253**	22.3
Body worn Test data(Separate 15mm) Sensor off										
Front side	RMC	9400/1880	1:1	0.054	-0.01	21.36	22.50	1.300	0.070	22.3
Back side	RMC	9400/1880	1:1	0.118	0.10	21.36	22.50	1.300	0.153	22.3
Hotspot Test data(Separate 10mm) Sensor on										
Front side	RMC	9400/1880	1:1	0.079	0.08	19.92	21.00	1.282	0.101	22.3
Back side	RMC	9400/1880	1:1	0.197	-0.01	19.92	21.00	1.282	0.253	22.3
Top side	RMC	9400/1880	1:1	0.199	-0.06	19.92	21.00	1.282	**0.255**	22.3

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Hotspot Test data Sensor off										
Front side-15mm	RMC	9400/1880	1:1	0.054	0.06	21.36	22.50	1.300	0.070	22.3
Back side-15mm	RMC	9400/1880	1:1	0.118	0.18	21.36	22.50	1.300	0.153	22.3
Left side-10mm	RMC	9400/1880	1:1	0.023	-0.18	21.36	22.50	1.300	0.030	22.3
Right side-10mm	RMC	9400/1880	1:1	0.016	-0.02	21.36	22.50	1.300	0.021	22.3
Top side-15mm	RMC	9400/1880	1:1	0.142	-0.15	21.36	22.50	1.300	0.185	22.3
Ant1 Test Record										
Head Test data at the worst case with Battery2#										
Right cheek	RMC	9400/1880	1:1	0.096	0.04	22.67	23.50	1.211	0.116	22.3
Body worn Test data at the worst case with Battery2#										
Back side	RMC	9400/1880	1:1	0.535	-0.14	22.67	23.50	1.211	0.648	22.3
Hotspot Test data at the worst case with Battery2#										
Bottom side -15mm	RMC	9262/1852.4	1:1	0.865	-0.03	22.99	23.50	1.125	0.973	22.3
Ant4 Test Record										
Head Test data at the worst case with Battery2#										
Right tilted	RMC	9400/1880	1:1	0.601	-0.07	21.36	22.50	1.300	0.781	22.3
Body worn Test data at the worst case with Battery2#										
Front side	RMC	9400/1880	1:1	0.182	-0.03	19.92	21.00	1.282	0.233	22.3
Hotspot Test data at the worst case with Battery2#										
Top side	RMC	9400/1880	1:1	0.190	-0.10	19.92	21.00	1.282	0.244	22.3

Table 13： SAR of WCDMA Band II for Head and Body (Original report: AR/2021/1000808).

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

8.3.4 SAR Result of WCDMA Band IV

WCDMA Band IV SAR Test Record										
Ant1 Test Record										
Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data										
Left cheek	RMC	1412/1732.4	1:1	0.084	0.01	23.44	24.50	1.276	**0.107**	22.2
Left tilted	RMC	1412/1732.4	1:1	0.065	-0.14	23.44	24.50	1.276	0.083	22.2
Right cheek	RMC	1412/1732.4	1:1	0.073	0.08	23.44	24.50	1.276	0.093	22.2
Right tilted	RMC	1412/1732.4	1:1	0.068	-0.08	23.44	24.50	1.276	0.087	22.2
Body worn Test data(Separate 10mm) Sensor on										
Front side	RMC	1412/1732.4	1:1	0.271	0.11	18.08	19.50	1.387	0.376	22.3
Back side	RMC	1412/1732.4	1:1	0.762	0.05	18.08	19.50	1.387	**1.057**	22.3
Back side	RMC	1312/1712.4	1:1	0.689	0.05	18.10	19.50	1.380	0.951	22.3
Back side	RMC	1513/1752.6	1:1	0.745	0.05	18.14	19.50	1.368	1.019	22.3
Body worn Test data(Separate 15mm) Sensor off										
Front side	RMC	1412/1732.4	1:1	0.283	0.12	23.44	24.50	1.276	0.361	22.3
Back side	RMC	1412/1732.4	1:1	0.423	0.12	23.44	24.50	1.276	0.540	22.3
Hotspot Test data(Separate 10mm) Sensor on										
Front side	RMC	1412/1732.4	1:1	0.271	-0.04	18.08	19.50	1.387	0.376	22.3
Back side	RMC	1412/1732.4	1:1	0.762	0.05	18.08	19.50	1.387	**1.057**	22.3
Back side	RMC	1312/1712.4	1:1	0.689	0.05	18.10	19.50	1.380	0.951	22.3
Back side	RMC	1513/1752.6	1:1	0.745	0.05	18.14	19.50	1.368	1.019	22.3
Bottom side	RMC	1412/1732.4	1:1	0.405	0.13	18.08	19.50	1.387	0.562	22.3
Hotspot Test data 15 mm Sensor off										
Front side-15mm	RMC	1412/1732.4	1:1	0.283	0.08	23.44	24.50	1.276	0.361	22.3
Back side-15mm	RMC	1412/1732.4	1:1	0.423	-0.17	23.44	24.50	1.276	0.540	22.3
Left side-10mm	RMC	1412/1732.4	1:1	0.051	-0.02	23.44	24.50	1.276	0.065	22.3
Right side-10mm	RMC	1412/1732.4	1:1	0.105	0.00	23.44	24.50	1.276	0.134	22.3
Bottom side -15mm	RMC	1412/1732.4	1:1	0.646	0.13	23.44	24.50	1.276	0.825	22.3
Bottom side -15mm	RMC	1312/1712.4	1:1	0.574	0.13	23.42	24.50	1.282	0.736	22.3
Bottom side -15mm	RMC	1513/1752.6	1:1	0.697	-0.01	23.55	24.50	1.245	0.867	22.3
Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Limbs Test data(Separate 0mm 1RB) Sensor on										
Front side	RMC	1412/1732.4	1:1	0.538	0.07	18.09	19.50	1.384	0.744	22.3
Back side	RMC	1412/1732.4	1:1	0.813	0.08	18.09	19.50	1.384	1.125	22.3
Bottom side	RMC	1412/1732.4	1:1	1.260	-0.01	18.09	19.50	1.384	**1.743**	22.3
Limbs Test data Sensor off										
Front side-15mm	RMC	1412/1732.4	1:1	0.160	0.07	23.44	24.50	1.276	0.204	22.3
Back side-15mm	RMC	1412/1732.4	1:1	0.237	0.05	23.44	24.50	1.276	0.303	22.3
Left side-0mm	RMC	1412/1732.4	1:1	0.096	0.12	23.44	24.50	1.276	0.123	22.3
Right side-0mm	RMC	1412/1732.4	1:1	0.235	0.03	23.44	24.50	1.276	0.300	22.3
Bottom side -15mm	RMC	1412/1732.4	1:1	0.350	0.13	23.44	24.50	1.276	0.447	22.3
Ant4 Test Record										
Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data										
Left cheek	RMC	1412/1732.4	1:1	0.151	-0.07	22.84	24.00	1.306	0.197	22.2
Left tilted	RMC	1412/1732.4	1:1	0.182	-0.07	22.84	24.00	1.306	0.238	22.2

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Right cheek	RMC	1412/1732.4	1:1	0.219	-0.05	22.84	24.00	1.306	0.286	22.2
Right tilted	RMC	1412/1732.4	1:1	0.243	-0.07	22.84	24.00	1.306	**0.317**	22.2
Body worn Test data(Separate 10mm) Sensor on										
Front side	RMC	1412/1732.4	1:1	0.042	0.16	22.33	23.50	1.309	0.055	22.3
Back side	RMC	1412/1732.4	1:1	0.078	-0.18	22.33	23.50	1.309	**0.102**	22.3
Body worn Test data(Separate 15mm) Sensor off										
Front side	RMC	1412/1732.4	1:1	0.048	-0.13	22.84	24.00	1.306	0.063	22.3
Back side	RMC	1412/1732.4	1:1	0.051	0.08	22.84	24.00	1.306	0.067	22.3
Hotspot Test data(Separate 10mm) Sensor on										
Front side	RMC	1412/1732.4	1:1	0.042	-0.09	22.33	23.50	1.309	0.055	22.3
Back side	RMC	1412/1732.4	1:1	0.078	-0.18	22.33	23.50	1.309	0.102	22.3
Top side	RMC	1412/1732.4	1:1	0.100	-0.13	22.33	23.50	1.309	**0.131**	22.3
Hotspot Test data Sensor off										
Front side-15mm	RMC	1412/1732.4	1:1	0.048	-0.02	22.84	24.00	1.306	0.063	22.3
Back side-15mm	RMC	1412/1732.4	1:1	0.051	0.10	22.84	24.00	1.306	0.067	22.3
Left side-10mm	RMC	1412/1732.4	1:1	0.022	0.00	22.84	24.00	1.306	0.029	22.3
Right side-10mm	RMC	1412/1732.4	1:1	0.013	0.18	22.84	24.00	1.306	0.017	22.3
Top side-15mm	RMC	1412/1732.4	1:1	0.053	0.19	22.84	24.00	1.306	0.069	22.3
Ant1 Test Record										
Head Test data at the worst case with Battery2#										
Left cheek	RMC	1412/1732.4	1:1	0.076	0.06	23.44	24.50	1.276	0.097	22.2
Body worn Test data at the worst case with Battery2#										
Back side	RMC	1412/1732.4	1:1	0.744	0.08	18.08	19.50	1.387	1.032	22.3
Hotspot Test data at the worst case with Battery2#										
Back side	RMC	1412/1732.4	1:1	0.744	0.08	18.08	19.50	1.387	1.032	22.3
Ant4 Test Record										
Head Test data at the worst case with Battery2#										
Right tilted	RMC	1412/1732.4	1:1	0.231	0.04	22.84	24.00	1.306	0.302	22.2
Body worn Test data at the worst case with Battery2#										
Back side	RMC	1412/1732.4	1:1	0.072	-0.07	22.33	23.50	1.309	0.094	22.3
Hotspot Test data at the worst case with Battery2#										
Top side	RMC	1412/1732.4	1:1	0.095	0.17	22.33	23.50	1.309	0.124	22.3

Table 14：SAR of WCDMA Band IV for Head and Body (Original report: AR/2021/1000808).

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

8.3.5 SAR Result of WCDMA Band V

WCDMA Band V SAR Test Record										
Ant1 Test Record										
Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data										
Left cheek	RMC	4182/836.4	1:1	0.165	0.03	23.30	24.50	1.318	**0.218**	22.1
Left tilted	RMC	4182/836.4	1:1	0.077	0.01	23.30	24.50	1.318	0.102	22.1
Right cheek	RMC	4182/836.4	1:1	0.119	0.08	23.30	24.50	1.318	0.157	22.1
Right tilted	RMC	4182/836.4	1:1	0.066	0.03	23.30	24.50	1.318	0.087	22.1
Body worn Test data(Separate 10mm) Sensor on										
Front side	RMC	4182/836.4	1:1	0.129	0.02	20.56	22.00	1.393	0.180	22.1
Back side	RMC	4182/836.4	1:1	0.179	0.01	20.56	22.00	1.393	**0.249**	22.1
Body worn Test data(Separate 15mm) Sensor off										
Front side	RMC	4182/836.4	1:1	0.112	0.05	23.30	24.50	1.318	0.148	22.1
Back side	RMC	4182/836.4	1:1	0.134	0.10	23.30	24.50	1.318	0.177	22.1
Hotspot Test data(Separate 10mm) Sensor on										
Front side	RMC	4182/836.4	1:1	0.129	0.02	20.56	22.00	1.393	0.180	22.1
Back side	RMC	4182/836.4	1:1	0.179	0.01	20.56	22.00	1.393	**0.249**	22.1
Bottom side	RMC	4182/836.4	1:1	0.093	0.16	20.56	22.00	1.393	0.130	22.1
Hotspot Test data 15 mm Sensor off										
Front side-15mm	RMC	4182/836.4	1:1	0.112	0.05	23.30	24.50	1.318	0.148	22.1
Back side-15mm	RMC	4182/836.4	1:1	0.134	0.10	23.30	24.50	1.318	0.177	22.1
Left side-10mm	RMC	4182/836.4	1:1	0.079	-0.18	23.30	24.50	1.318	0.104	22.1
Right side-10mm	RMC	4182/836.4	1:1	0.054	0.09	23.30	24.50	1.318	0.071	22.1
Bottom side -15mm	RMC	4182/836.4	1:1	0.091	-0.13	23.30	24.50	1.318	0.120	22.1
Ant4 Test Record										
Test position	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data										
Left cheek	RMC	4182/836.4	1:1	0.379	0.19	22.26	23.00	1.186	0.449	22.1
Left tilted	RMC	4182/836.4	1:1	0.345	0.08	22.26	23.00	1.186	0.409	22.1
Right cheek	RMC	4182/836.4	1:1	0.769	0.10	22.26	23.00	1.186	**0.912**	22.1
Right tilted	RMC	4182/836.4	1:1	0.502	0.06	22.26	23.00	1.186	0.595	22.1
Right cheek	RMC	4132/826.4	1:1	0.712	0.12	22.24	23.00	1.191	0.848	22.1
Right cheek	RMC	4233/846.6	1:1	0.735	0.09	22.24	23.00	1.191	0.876	22.1
Body worn Test data(Separate 10mm) Sensor on										

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Front side	RMC	4182/836.4	1:1	0.087	-0.09	22.26	23.00	1.186	0.103	22.3
Back side	RMC	4182/836.4	1:1	0.100	0.04	22.26	23.00	1.186	0.119	22.3
Body worn Test data(Separate 15mm) Sensor off										
Front side	RMC	4182/836.4	1:1	0.133	0.09	23.44	24.50	1.276	0.170	22.3
Back side	RMC	4182/836.4	1:1	0.244	-0.07	23.44	24.50	1.276	**0.311**	22.3
Hotspot Test data(Separate 10mm) Sensor on										
Front side	RMC	4182/836.4	1:1	0.087	0.13	22.26	23.00	1.186	0.103	22.3
Back side	RMC	4182/836.4	1:1	0.100	-0.12	22.26	23.00	1.186	0.119	22.3
Top side	RMC	4182/836.4	1:1	0.114	0.11	22.26	23.00	1.186	0.135	22.3
Hotspot Test data Sensor off										
Front side-15mm	RMC	4182/836.4	1:1	0.133	-0.19	23.44	24.50	1.276	0.170	22.3
Back side-15mm	RMC	4182/836.4	1:1	0.244	-0.07	23.44	24.50	1.276	**0.311**	22.3
Left side-10mm	RMC	4182/836.4	1:1	0.097	-0.14	23.44	24.50	1.276	0.124	22.3
Right side-10mm	RMC	4182/836.4	1:1	0.061	-0.04	23.44	24.50	1.276	0.078	22.3
Top side-15mm	RMC	4182/836.4	1:1	0.074	0.04	23.44	24.50	1.276	0.094	22.3
Ant1 Test Record										
Head Test data at the worst case with Battery2#										
Left cheek	RMC	4182/836.4	1:1	0.161	0.04	23.30	24.50	1.318	0.212	22.1
Body worn Test data at the worst case with Battery2#										
Back side	RMC	4182/836.4	1:1	0.166	-0.10	20.56	22.00	1.393	0.231	22.1
Hotspot Test data at the worst case with Battery2#										
Back side	RMC	4182/836.4	1:1	0.166	-0.10	20.56	22.00	1.393	0.231	22.1
Ant4 Test Record										
Head Test data at the worst case with Battery2#										
Right cheek	RMC	4182/836.4	1:1	0.759	0.14	22.26	23.00	1.186	0.900	22.1
Body worn Test data at the worst case with Battery2#										
Back side	RMC	4182/836.4	1:1	0.241	0.06	23.44	24.50	1.276	0.308	22.3
Hotspot Test data at the worst case with Battery2#										
Back side	RMC	4182/836.4	1:1	0.241	0.06	23.44	24.50	1.276	0.308	22.3

Table 15：SAR of WCDMA Band V for Head and Body (Original report: AR/2021/1000808).

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

8.3.6 SAR Result of LTE Band 2

LTE Band 2 SAR Test Record											
Ant1 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	18700/1860	1:1	0.071	-0.17	23.24	24.50	1.337	0.095	22.3
Left tilted	20	QPSK 1RB_0	18700/1860	1:1	0.058	0.19	23.24	24.50	1.337	0.078	22.3
Right cheek	20	QPSK 1RB_0	18700/1860	1:1	0.075	-0.03	23.24	24.50	1.337	0.100	22.3
Right tilted	20	QPSK 1RB_0	18700/1860	1:1	0.060	-0.10	23.24	24.50	1.337	0.080	22.3
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_50	18700/1860	1:1	0.060	-0.11	22.71	23.50	1.199	0.072	22.3
Left tilted	20	QPSK 50RB_50	18700/1860	1:1	0.049	0.13	22.71	23.50	1.199	0.059	22.3
Right cheek	20	QPSK 50RB_50	18700/1860	1:1	0.088	-0.01	22.71	23.50	1.199	**0.106**	22.3
Right tilted	20	QPSK 50RB_50	18700/1860	1:1	0.057	0.04	22.71	23.50	1.199	0.068	22.3
Body worn Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_0	18700/1860	1:1	0.258	-0.19	19.21	20.00	1.199	0.309	22.3
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.428	-0.19	19.21	20.00	1.199	0.513	22.3
Body worn Test data (Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_50	18700/1860	1:1	0.252	-0.17	19.30	20.00	1.175	0.296	22.3
Back side	20	QPSK 50RB_50	18700/1860	1:1	0.412	0.10	19.30	20.00	1.175	0.484	22.3
Body worn Test data(Separate 15mm 1RB) Sensor off											
Front side	20	QPSK 1RB_0	18700/1860	1:1	0.374	-0.01	22.32	23.50	1.312	0.491	22.3
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.548	0.060	22.32	23.50	1.312	**0.719**	22.3
Body worn Test data (Separate 15mm 50%RB) Sensor off											
Front side	20	QPSK 50RB_50	18700/1860	1:1	0.325	-0.04	22.51	23.50	1.256	0.408	22.3
Back side	20	QPSK 50RB_50	18700/1860	1:1	0.514	0.15	22.51	23.50	1.256	0.646	22.3
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_0	18700/1860	1:1	0.258	0.06	19.21	20.00	1.199	0.309	22.3
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.428	0.15	19.21	20.00	1.199	0.513	22.3
Bottom side	20	QPSK 1RB_0	18700/1860	1:1	0.700	-0.19	19.21	20.00	1.199	0.840	22.3
Bottom side	20	QPSK 1RB_0	18900/1880	1:1	0.686	-0.08	19.14	20.00	1.219	0.836	22.3
Bottom side	20	QPSK 1RB_0	19100/1900	1:1	0.673	-0.17	19.15	20.00	1.216	0.818	22.3
Hotspot Test data(Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_50	18700/1860	1:1	0.252	-0.14	19.30	20.00	1.175	0.296	22.3
Back side	20	QPSK 50RB_50	18700/1860	1:1	0.412	0.07	19.30	20.00	1.175	0.484	22.3
Bottom side	20	QPSK 50RB_50	18700/1860	1:1	0.685	-0.09	19.30	20.00	1.175	0.805	22.3
Bottom side	20	QPSK 50RB_50	18900/1880	1:1	0.704	0.14	19.20	20.00	1.202	0.846	22.3
Bottom side	20	QPSK 50RB_50	19100/1900	1:1	0.695	-0.12	19.29	20.00	1.178	0.818	22.3
Hotspot Test data(Separate 10mm 100%RB) Sensor on											
Bottom side	20	QPSK 100RB_0	18700/1860	1:1	0.650	-0.18	19.19	20.00	1.205	0.783	22.3
Hotspot Test data 1RB Sensor off											
Front side-15mm	20	QPSK 1RB_0	18700/1860	1:1	0.296	0.12	22.32	23.50	1.312	0.388	22.3
Back side-15mm	20	QPSK 1RB_0	18700/1860	1:1	0.480	-0.05	22.32	23.50	1.312	0.630	22.3
Left side-10mm	20	QPSK 1RB_0	18700/1860	1:1	0.071	0.08	22.32	23.50	1.312	0.093	22.3
Right side-10mm	20	QPSK 1RB_0	18700/1860	1:1	0.139	0.00	22.32	23.50	1.312	0.182	22.3
Bottom side -15mm	20	QPSK 1RB_0	18700/1860	1:1	0.773	0.050	22.32	23.50	1.312	**1.014**	22.3
Bottom side -15mm	20	QPSK 1RB_0	18900/1880	1:1	0.812	0.07	23.31	23.50	1.045	0.848	22.3
Bottom side -15mm	20	QPSK 1RB_0	19100/1900	1:1	0.813	0.11	23.31	23.50	1.045	0.849	22.3
Hotspot Test data 50%RB Sensor off											
Front side-15mm	20	QPSK 50RB_50	18700/1860	1:1	0.284	0.19	22.51	23.50	1.256	0.357	22.3
Back side-15mm	20	QPSK 50RB_50	18700/1860	1:1	0.459	-0.19	22.51	23.50	1.256	0.577	22.3
Left side-10mm	20	QPSK 50RB_50	18700/1860	1:1	0.065	-0.04	22.51	23.50	1.256	0.082	22.3
Right side-10mm	20	QPSK 50RB_50	18700/1860	1:1	0.144	0.04	22.51	23.50	1.256	0.181	22.3
Bottom side -15mm	20	QPSK 50RB_50	18700/1860	1:1	0.750	-0.04	22.51	23.50	1.256	0.942	22.3
Bottom side -15mm	20	QPSK 50RB_50	18900/1880	1:1	0.727	-0.05	22.14	23.50	1.368	0.994	22.3
Bottom side -15mm	20	QPSK 50RB_50	19100/1900	1:1	0.743	-0.11	22.31	23.50	1.315	0.977	22.3
Hotspot Test data 100%RB Sensor off											
Back side-15mm	20	QPSK 100RB_0	19100/1900	1:1	0.506	-0.01	22.62	23.50	1.225	0.620	22.3
Bottom side -15mm	20	QPSK 100RB_0	19100/1900	1:1	0.738	0.14	22.62	23.50	1.225	0.904	22.3
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Limbs Test data(Separate 0mm 1RB) Sensor on											
Front side	20	QPSK 1RB_0	18700/1860	1:1	0.788	0.13	19.21	20.00	1.199	0.945	22.3

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Back side	20	QPSK 1RB_0	18700/1860	1:1	1.120	0.06	19.21	20.00	1.199	**1.343**	22.3
Bottom side	20	QPSK 1RB_0	18700/1860	1:1	0.929	-0.08	19.21	20.00	1.199	1.114	22.3
Limbs Test data(Separate 0mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_50	18700/1860	1:1	0.789	0.04	19.30	20.00	1.175	0.927	22.3
Back side	20	QPSK 50RB_50	18700/1860	1:1	1.130	0.10	19.30	20.00	1.175	1.328	22.3
Bottom side	20	QPSK 50RB_50	18700/1860	1:1	0.938	0.04	19.30	20.00	1.175	1.102	22.3
Limbs Test data 1RB Sensor off											
Front side-15mm	20	QPSK 1RB_0	18700/1860	1:1	0.215	-0.04	22.32	23.50	1.312	0.282	22.3
Back side-15mm	20	QPSK 1RB_0	18700/1860	1:1	0.340	-0.08	22.32	23.50	1.312	0.446	22.3
Left side-0mm	20	QPSK 1RB_0	18700/1860	1:1	0.166	-0.19	22.32	23.50	1.312	0.218	22.3
Right side-0mm	20	QPSK 1RB_0	18700/1860	1:1	0.486	-0.10	22.32	23.50	1.312	0.638	22.3
Bottom side -15mm	20	QPSK 1RB_0	18700/1860	1:1	0.562	-0.10	22.32	23.50	1.312	0.737	22.3
Limbs Test data 50%RB Sensor off											
Front side-15mm	20	QPSK 50RB_50	18700/1860	1:1	0.184	0.17	22.51	23.50	1.256	0.231	22.3
Back side-15mm	20	QPSK 50RB_50	18700/1860	1:1	0.294	0.16	22.51	23.50	1.256	0.369	22.3
Left side-0mm	20	QPSK 50RB_50	18700/1860	1:1	0.146	0.00	22.51	23.50	1.256	0.183	22.3
Right side-0mm	20	QPSK 50RB_50	18700/1860	1:1	0.443	-0.08	22.51	23.50	1.256	0.556	22.3
Bottom side -15mm	20	QPSK 50RB_50	18700/1860	1:1	0.501	0.10	22.51	23.50	1.256	0.629	22.3
Ant4 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	18900/1880	1:1	0.319	-0.03	21.44	22.50	1.276	0.407	22.3
Left tilted	20	QPSK 1RB_50	18900/1880	1:1	0.411	-0.19	21.44	22.50	1.276	0.525	22.3
Right cheek	20	QPSK 1RB_50	18900/1880	1:1	0.381	-0.05	21.44	22.50	1.276	0.486	22.3
Right tilted	20	QPSK 1RB_50	18900/1880	1:1	0.493	0.01	21.44	22.50	1.276	0.629	22.3
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_50	19100/1900	1:1	0.403	0.12	21.43	22.50	1.279	0.516	22.3
Left tilted	20	QPSK 50RB_50	19100/1900	1:1	0.572	-0.07	21.43	22.50	1.279	0.732	22.3
Right cheek	20	QPSK 50RB_50	19100/1900	1:1	0.493	0.13	21.43	22.50	1.279	0.631	22.3
Right tilted	20	QPSK 50RB_50	19100/1900	1:1	0.738	-0.07	21.43	22.50	1.279	**0.944**	22.3
Right tilted	20	QPSK 50RB_50	18900/1880	1:1	0.715	0.02	21.41	22.50	1.285	0.919	22.3
Right tilted	20	QPSK 50RB_50	18700/1860	1:1	0.699	0.08	21.40	22.50	1.288	0.900	22.3
Head Test data(100%RB)											
Right tilted	20	QPSK 50RB_50	18700/1860	1:1	0.712	0.03	21.27	22.50	1.327	0.945	22.3
Body worn Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_0	18700/1860	1:1	0.062	-0.14	20.03	21.00	1.250	0.078	22.3
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.157	-0.04	20.03	21.00	1.250	0.196	22.3
Body worn Test data (Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_50	18700/1860	1:1	0.070	-0.12	20.02	21.00	1.253	0.088	22.3
Back side	20	QPSK 50RB_50	18700/1860	1:1	0.157	-0.040	20.02	21.00	1.253	**0.197**	22.3
Body worn Test data(Separate 15mm 1RB) Sensor off											
Front side	20	QPSK 1RB_50	18900/1880	1:1	0.048	-0.07	21.44	22.50	1.276	0.061	22.3
Back side	20	QPSK 1RB_50	18900/1880	1:1	0.107	0.13	21.44	22.50	1.276	0.137	22.3
Body worn Test data (Separate 15mm 50%RB) Sensor off											
Front side	20	QPSK 50RB_50	19100/1900	1:1	0.050	0.12	21.43	22.50	1.279	0.064	22.3
Back side	20	QPSK 50RB_50	19100/1900	1:1	0.112	0.19	21.43	22.50	1.279	0.143	22.3
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_0	18700/1860	1:1	0.062	0.14	20.03	21.00	1.250	0.078	22.3
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.157	-0.03	20.03	21.00	1.250	0.196	22.3
Top side	20	QPSK 1RB_0	18700/1860	1:1	0.154	-0.16	20.03	21.00	1.250	0.193	22.3
Hotspot Test data(Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_50	18700/1860	1:1	0.070	-0.13	20.02	21.00	1.253	0.088	22.3
Back side	20	QPSK 50RB_50	18700/1860	1:1	0.176	0.13	20.02	21.00	1.253	0.221	22.3
Top side	20	QPSK 50RB_50	18700/1860	1:1	0.183	-0.080	20.02	21.00	1.253	**0.229**	22.3
Hotspot Test data 1RB Sensor off											
Front side-15mm	20	QPSK 1RB_50	18900/1880	1:1	0.048	0.19	21.44	22.50	1.276	0.061	22.3
Back side-15mm	20	QPSK 1RB_50	18900/1880	1:1	0.107	0.07	21.44	22.50	1.276	0.137	22.3
Left side-10mm	20	QPSK 1RB_50	18900/1880	1:1	0.045	-0.13	21.44	22.50	1.276	0.057	22.3
Right side-10mm	20	QPSK 1RB_50	18900/1880	1:1	0.013	-0.15	21.44	22.50	1.276	0.017	22.3
Top side -15mm	20	QPSK 1RB_50	18900/1880	1:1	0.125	-0.11	21.44	22.50	1.276	0.160	22.3
Hotspot Test data 50%RB Sensor off											
Front side-15mm	20	QPSK 50RB_50	19100/1900	1:1	0.050	0.09	21.43	22.50	1.279	0.064	22.3
Back side-15mm	20	QPSK 50RB_50	19100/1900	1:1	0.112	0.06	21.43	22.50	1.279	0.143	22.3
Left side-10mm	20	QPSK 50RB_50	19100/1900	1:1	0.041	-0.15	21.43	22.50	1.279	0.052	22.3
Right side-10mm	20	QPSK 50RB_50	19100/1900	1:1	0.012	0.04	21.43	22.50	1.279	0.015	22.3
Top side -15mm	20	QPSK 50RB_50	19100/1900	1:1	0.130	0.19	21.43	22.50	1.279	0.166	22.3

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Ant1 Test Record											
Head Test data at the worst case with Battery2#											
Right cheek	20	QPSK 50RB_50	18700/1860	1:1	0.085	-0.17	22.71	23.50	1.199	0.102	22.3
Body worn Test data at the worst case with Battery2#											
Back side	20	QPSK 1RB_0	18700/1860	1:1	0.536	0.05	22.32	23.50	1.312	0.703	22.3
Hotspot Test data at the worst case with Battery2#											
Bottom side -15mm	20	QPSK 1RB_0	18700/1860	1:1	0.768	0.12	22.32	23.50	1.312	1.008	22.3
Limbs Test data at the worst case with Battery2#											
Back side	20	QPSK 1RB_0	18700/1860	1:1	1.110	-0.07	19.21	20.00	1.199	1.331	22.3
Ant4 Test Record											
Head Test data at the worst case with Battery2#											
Right tilted	20	QPSK 50RB_50	19100/1900	1:1	0.725	-0.08	21.43	22.50	1.279	0.928	22.3
Body worn Test data at the worst case with Battery2#											
Back side	20	QPSK 50RB_50	18700/1860	1:1	0.151	0.10	20.02	21.00	1.253	0.189	22.3
Hotspot Test data at the worst case with Battery2#											
Top side	20	QPSK 50RB_50	18700/1860	1:1	0.178	0.01	20.02	21.00	1.253	0.223	22.3

Table 16：SAR of LTE Band 2 for Head and Body (Original report: AR/2021/1000808).

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

8.3.7 SAR Result of LTE Band 4

LTE Band 4 SAR Test Record											
Ant1 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_0	20175/1732.5	1:1	0.073	-0.02	24.29	25.00	1.178	0.086	22.2
Left tilted	20	QPSK 1RB_0	20175/1732.5	1:1	0.052	0.15	24.29	25.00	1.178	0.061	22.2
Right cheek	20	QPSK 1RB_0	20175/1732.5	1:1	0.109	0.04	24.29	25.00	1.178	**0.128**	22.2
Right tilted	20	QPSK 1RB_0	20175/1732.5	1:1	0.060	0.06	24.29	25.00	1.178	0.071	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	20300/1745	1:1	0.059	0.07	23.26	24.00	1.186	0.070	22.2
Left tilted	20	QPSK 50RB_25	20300/1745	1:1	0.026	0.17	23.26	24.00	1.186	0.031	22.2
Right cheek	20	QPSK 50RB_25	20300/1745	1:1	0.064	0.02	23.26	24.00	1.186	0.076	22.2
Right tilted	20	QPSK 50RB_25	20300/1745	1:1	0.046	-0.15	23.26	24.00	1.186	0.055	22.2
Body worn Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_0	20175/1732.5	1:1	0.210	0.18	19.29	20.50	1.321	0.277	22.3
Back side	20	QPSK 1RB_0	20175/1732.5	1:1	0.329	0.12	19.29	20.50	1.321	0.435	22.3
Body worn Test data (Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_0	20175/1732.5	1:1	0.206	-0.12	19.35	20.50	1.303	0.268	22.3
Back side	20	QPSK 50RB_0	20175/1732.5	1:1	0.324	-0.06	19.35	20.50	1.303	0.422	22.3
Body worn Test data(Separate 15mm 1RB) Sensor off											
Front side	20	QPSK 1RB_50	20175/1732.5	1:1	0.410	0.09	24.49	25.00	1.125	0.461	22.3
Back side	20	QPSK 1RB_50	20175/1732.5	1:1	0.492	0.050	24.49	25.00	1.125	0.553	22.3
Body worn Test data (Separate 15mm 50%RB) Sensor off											
Front side	20	QPSK 50RB_25	20300/1745	1:1	0.317	0.15	23.26	24.00	1.186	0.376	22.3
Back side	20	QPSK 50RB_25	20300/1745	1:1	0.492	-0.15	23.26	24.00	1.186	**0.583**	22.3
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_0	20175/1732.5	1:1	0.210	-0.04	19.29	20.50	1.321	0.277	22.3
Back side	20	QPSK 1RB_0	20175/1732.5	1:1	0.329	-0.08	19.29	20.50	1.321	0.435	22.3
Bottom side	20	QPSK 1RB_0	20175/1732.5	1:1	0.511	0.03	19.29	20.50	1.321	0.675	22.3
Hotspot Test data(Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_0	20175/1732.5	1:1	0.206	-0.12	19.35	20.50	1.303	0.268	22.3
Back side	20	QPSK 50RB_0	20175/1732.5	1:1	0.324	-0.08	19.35	20.50	1.303	0.422	22.3
Bottom side	20	QPSK 50RB_0	20175/1732.5	1:1	0.503	0.17	19.35	20.50	1.303	0.655	22.3
Hotspot Test data 1RB Sensor off											
Front side-15mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.410	0.09	24.49	25.00	1.125	0.461	22.3
Back side-15mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.492	0.050	24.49	25.00	1.125	0.553	22.3
Left side-10mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.053	0.16	24.49	25.00	1.125	0.060	22.3
Right side-10mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.110	-0.01	24.49	25.00	1.125	0.124	22.3
Bottom side - 15mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.713	-0.11	24.49	25.00	1.125	**0.802**	22.3
Bottom side - 15mm	20	QPSK 1RB_50	20300/1745	1:1	0.675	-0.05	24.28	25.00	1.180	0.797	22.3
Bottom side - 15mm	20	QPSK 1RB_50	20050/1720	1:1	0.655	-0.08	24.14	25.00	1.219	0.798	22.3
Hotspot Test data 50%RB Sensor off											
Front side-15mm	20	QPSK 50RB_25	20300/1745	1:1	0.317	0.15	23.26	24.00	1.186	0.376	22.3
Back side-15mm	20	QPSK 50RB_25	20300/1745	1:1	0.492	-0.15	23.26	24.00	1.186	0.583	22.3
Left side-10mm	20	QPSK 50RB_25	20300/1745	1:1	0.046	0.09	23.26	24.00	1.186	0.055	22.3
Right side-10mm	20	QPSK 50RB_25	20300/1745	1:1	0.090	0.12	23.26	24.00	1.186	0.107	22.3
Bottom side - 15mm	20	QPSK 50RB_25	20300/1745	1:1	0.551	-0.13	23.26	24.00	1.186	0.653	22.3
Hotspot Test data 100%RB Sensor off											
Bottom side - 15mm	20	QPSK 100RB_0	20175/1732.5	1:1	0.431	0.06	23.26	24.00	1.230	0.511	22.3
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 10-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Limbs Test data(Separate 0mm 1RB) Sensor on											
Front side	20	QPSK 1RB_0	20175/1732.5	1:1	0.665	0.12	19.45	20.50	1.274	0.847	22.3
Back side	20	QPSK 1RB_0	20175/1732.5	1:1	1.050	0.15	19.45	20.50	1.274	1.337	22.3

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Bottom side	20	QPSK 1RB_0	20175/1732.5	1:1	1.550	-0.03	19.45	20.50	1.274	**1.974**	22.3
Limbs Test data(Separate 0mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_0	20175/1732.5	1:1	0.657	0.13	19.35	20.50	1.303	0.856	22.3
Back side	20	QPSK 50RB_0	20175/1732.5	1:1	1.020	-0.09	19.35	20.50	1.303	1.329	22.3
Bottom side	20	QPSK 50RB_0	20175/1732.5	1:1	1.490	-0.04	19.35	20.50	1.303	1.942	22.3
Limbs Test data 1RB Sensor off											
Front side-15mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.174	-0.19	24.49	25.00	1.125	0.196	22.3
Back side-15mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.275	0.17	24.49	25.00	1.125	0.309	22.3
Left side-0mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.115	0.04	24.49	25.00	1.125	0.129	22.3
Right side-0mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.238	0.00	24.49	25.00	1.125	0.268	22.3
Bottom side - 15mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.386	-0.11	24.49	25.00	1.125	0.434	22.3
Limbs Test data 50%RB Sensor off											
Front side-15mm	20	QPSK 50RB_25	20300/1745	1:1	0.140	-0.17	23.26	24.00	1.186	0.166	22.3
Back side-15mm	20	QPSK 50RB_25	20300/1745	1:1	0.218	0.14	23.26	24.00	1.186	0.258	22.3
Left side-0mm	20	QPSK 50RB_25	20300/1745	1:1	0.079	-0.18	23.26	24.00	1.186	0.094	22.3
Right side-0mm	20	QPSK 50RB_25	20300/1745	1:1	0.211	0.14	23.26	24.00	1.186	0.250	22.3
Bottom side - 15mm	20	QPSK 50RB_25	20300/1745	1:1	0.310	-0.17	23.26	24.00	1.186	0.368	22.3
ant4											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	20300/1745	1:1	0.175	0.05	23.84	24.50	1.164	0.204	22.2
Left tilted	20	QPSK 1RB_50	20300/1745	1:1	0.224	0.13	23.84	24.50	1.164	0.261	22.2
Right cheek	20	QPSK 1RB_50	20300/1745	1:1	0.200	-0.05	23.84	24.50	1.164	0.233	22.2
Right tilted	20	QPSK 1RB_50	20300/1745	1:1	0.303	-0.04	23.84	24.50	1.164	0.353	22.2
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	20300/1745	1:1	0.148	-0.14	23.30	24.00	1.175	0.174	22.2
Left tilted	20	QPSK 50RB_25	20300/1745	1:1	0.211	0.12	23.30	24.00	1.175	0.248	22.2
Right cheek	20	QPSK 50RB_25	20300/1745	1:1	0.179	-0.10	23.30	24.00	1.175	0.210	22.2
Right tilted	20	QPSK 50RB_25	20300/1745	1:1	0.230	-0.14	23.30	24.00	1.175	**0.270**	22.2
Body worn Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_50	20050/1720	1:1	0.050	-0.18	23.57	24.00	1.104	0.055	22.3
Back side	20	QPSK 1RB_50	20050/1720	1:1	0.094	0.05	23.57	24.00	1.104	0.104	22.3
Body worn Test data (Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_25	20300/1745	1:1	0.049	0.19	23.01	24.00	1.256	0.062	22.3
Back side	20	QPSK 50RB_25	20300/1745	1:1	0.111	0.02	23.01	24.00	1.256	**0.139**	22.3
Body worn Test data(Separate 15mm 1RB) Sensor off											
Front side	20	QPSK 1RB_50	20300/1745	1:1	0.011	0.19	23.84	24.50	1.164	0.013	22.3
Back side	20	QPSK 1RB_50	20300/1745	1:1	0.050	0.10	23.84	24.50	1.164	0.058	22.3
Body worn Test data (Separate 15mm 50%RB) Sensor off											
Front side	20	QPSK 50RB_25	20300/1745	1:1	0.010	0.11	23.30	24.00	1.175	0.012	22.3
Back side	20	QPSK 50RB_25	20300/1745	1:1	0.042	-0.19	23.30	24.00	1.175	0.049	22.3
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_50	20050/1720	1:1	0.050	0.05	23.57	24.00	1.104	0.055	22.3
Back side	20	QPSK 1RB_50	20050/1720	1:1	0.094	0.00	23.57	24.00	1.104	0.104	22.3
Top side	20	QPSK 1RB_50	20050/1720	1:1	0.109	0.14	23.57	24.00	1.104	0.120	22.3
Hotspot Test data(Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_25	20300/1745	1:1	0.049	0.00	23.01	24.00	1.256	0.062	22.3
Back side	20	QPSK 50RB_25	20300/1745	1:1	0.093	-0.06	23.01	24.00	1.256	0.117	22.3
Top side	20	QPSK 50RB_25	20300/1745	1:1	0.134	-0.04	23.01	24.00	1.256	**0.168**	22.3
Hotspot Test data 1RB Sensor off											
Front side-15mm	20	QPSK 1RB_50	20300/1745	1:1	0.011	0.11	23.84	24.50	1.164	0.013	22.3
Back side-15mm	20	QPSK 1RB_50	20300/1745	1:1	0.050	0.04	23.84	24.50	1.164	0.058	22.3
Left side-10mm	20	QPSK 1RB_50	20300/1745	1:1	0.052	0.05	23.84	24.50	1.164	0.061	22.3
Right side-10mm	20	QPSK 1RB_50	20300/1745	1:1	0.021	-0.12	23.84	24.50	1.164	0.024	22.3
Top side -15mm	20	QPSK 1RB_50	20300/1745	1:1	0.050	-0.14	23.84	24.50	1.164	0.058	22.3
Hotspot Test data 50%RB Sensor off											
Front side-15mm	20	QPSK 50RB_25	20300/1745	1:1	0.010	-0.06	23.30	24.00	1.175	0.012	22.3
Back side-15mm	20	QPSK 50RB_25	20300/1745	1:1	0.042	0.11	23.30	24.00	1.175	0.049	22.3
Left side-10mm	20	QPSK 50RB_25	20300/1745	1:1	0.048	0.07	23.30	24.00	1.175	0.056	22.3
Right side-10mm	20	QPSK 50RB_25	20300/1745	1:1	0.018	-0.18	23.30	24.00	1.175	0.021	22.3

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Top side -15mm	20	QPSK 50RB_25	20300/1745	1:1	0.050	-0.13	23.30	24.00	1.175	0.059	22.3
Ant1 Test Record											
Head Test data at the worst case with Battery2#											
Right cheek	20	QPSK 1RB_0	20175/1732.5	1:1	0.101	-0.09	24.29	25.00	1.178	0.119	22.2
Body worn Test data at the worst case with Battery2#											
Back side	20	QPSK 50RB_25	20300/1745	1:1	0.484	0.14	23.26	24.00	1.186	0.574	22.3
Hotspot Test data at the worst case with Battery2#											
Bottom side - 15mm	20	QPSK 1RB_50	20175/1732.5	1:1	0.702	0.09	24.49	25.00	1.125	0.789	22.3
Limbs Test data at the worst case with Battery2#											
Bottom side	20	QPSK 1RB_0	20175/1732.5	1:1	1.500	-0.05	19.29	20.50	1.321	1.982	22.3
Ant4 Test Record											
Head Test data at the worst case with Battery2#											
Right tilted	20	QPSK 50RB_25	20300/1745	1:1	0.228	-0.07	23.30	24.00	1.175	0.268	22.2
Body worn Test data at the worst case with Battery2#											
Back side	20	QPSK 50RB_25	20300/1745	1:1	0.106	0.01	23.01	24.00	1.256	0.133	22.3
Hotspot Test data at the worst case with Battery2#											
Top side	20	QPSK 50RB_25	20300/1745	1:1	0.130	-0.10	23.01	24.00	1.256	0.163	22.3

Table 17：SAR of LTE Band 4 for Head and Body (Original report: AR/2021/1000808).

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

8.3.8 SAR Result of LTE Band 5

LTE Band 5 SAR Test Record											
Ant1 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	10	QPSK 1RB_0	20600/844	1:1	0.167	-0.04	23.99	25.00	1.262	**0.211**	22.1
Left tilted	10	QPSK 1RB_0	20600/844	1:1	0.088	0.00	23.99	25.00	1.262	0.111	22.1
Right cheek	10	QPSK 1RB_0	20600/844	1:1	0.131	-0.17	23.99	25.00	1.262	0.165	22.1
Right tilted	10	QPSK 1RB_0	20600/844	1:1	0.065	-0.02	23.99	25.00	1.262	0.082	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25RB_13	20525/836.5	1:1	0.111	0.04	22.95	24.00	1.274	0.141	22.1
Left tilted	10	QPSK 25RB_13	20525/836.5	1:1	0.062	0.00	22.95	24.00	1.274	0.079	22.1
Right cheek	10	QPSK 25RB_13	20525/836.5	1:1	0.090	0.05	22.95	24.00	1.274	0.115	22.1
Right tilted	10	QPSK 25RB_13	20525/836.5	1:1	0.048	-0.14	22.95	24.00	1.274	0.061	22.1
Body worn Test data(Separate 10mm 1RB)Sensor on											
Front side	10	QPSK 1RB_0	20600/844	1:1	0.077	-0.13	22.19	23.50	1.352	0.104	22.1
Back side	10	QPSK 1RB_0	20600/844	1:1	0.091	-0.01	22.19	23.50	1.352	0.123	22.1
Body worn Test data (Separate 10mm 50%RB)Sensor on											
Front side	10	QPSK 25RB_13	20525/836.5	1:1	0.106	-0.03	22.17	23.50	1.358	0.144	22.1
Back side	10	QPSK 25RB_13	20525/836.5	1:1	0.117	0.12	22.17	23.50	1.358	0.159	22.1
Body worn Test data(Separate 15mm 1RB)Sensor off											
Front side	10	QPSK 1RB_0	20600/844	1:1	0.143	0.09	23.99	25.00	1.262	0.180	22.1
Back side	10	QPSK 1RB_0	20600/844	1:1	0.170	0.01	23.99	25.00	1.262	**0.215**	22.1
Body worn Test data (Separate 15mm 50%RB)Sensor off											
Front side	10	QPSK 25RB_13	20525/836.5	1:1	0.106	-0.17	22.95	24.00	1.274	0.135	22.1
Back side	10	QPSK 25RB_13	20525/836.5	1:1	0.117	-0.12	22.95	24.00	1.274	0.149	22.1
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Front side	10	QPSK 1RB_0	20600/844	1:1	0.074	0.10	22.19	23.50	1.352	0.100	22.1
Back side	10	QPSK 1RB_0	20600/844	1:1	0.082	-0.15	22.19	23.50	1.352	0.111	22.1
Left side	10	QPSK 1RB_0	20600/844	1:1	0.052	-0.09	22.19	23.50	1.352	0.070	22.1
Right side	10	QPSK 1RB_0	20600/844	1:1	0.039	-0.16	22.19	23.50	1.352	0.053	22.1
Bottom side	10	QPSK 1RB_0	20600/844	1:1	0.070	0.02	22.19	23.50	1.352	0.095	22.1
Hotspot Test data (Separate 10mm 50%RB) Sensor on											
Front side	10	QPSK 25RB_13	20525/836.5	1:1	0.077	-0.05	22.17	23.50	1.358	0.105	22.1
Back side	10	QPSK 25RB_13	20525/836.5	1:1	0.091	-0.15	22.17	23.50	1.358	0.124	22.1
Left side	10	QPSK 25RB_13	20525/836.5	1:1	0.054	0.17	22.17	23.50	1.358	0.073	22.1
Right side	10	QPSK 25RB_13	20525/836.5	1:1	0.044	-0.07	22.17	23.50	1.358	0.060	22.1
Bottom side	10	QPSK 25RB_13	20525/836.5	1:1	0.077	-0.07	22.17	23.50	1.358	0.105	22.1
Hotspot Test data 1RB Sensor off											
Front side-15mm	10	QPSK 1RB_0	20600/844	1:1	0.143	0.09	23.99	25.00	1.262	0.180	22.1
Back side-15mm	10	QPSK 1RB_0	20600/844	1:1	0.170	0.01	23.99	25.00	1.262	**0.215**	22.1
Left side-10mm	10	QPSK 1RB_0	20600/844	1:1	0.035	0.02	23.99	25.00	1.262	0.044	22.1
Right side-10mm	10	QPSK 1RB_0	20600/844	1:1	0.029	0.14	23.99	25.00	1.262	0.037	22.1
Bottom side - 15mm	10	QPSK 1RB_0	20450/829	1:1	0.003	0.04	23.99	25.00	1.262	0.003	22.1
Hotspot Test data 50%RB Sensor off											
Front side-15mm	10	QPSK 25RB_13	20525/836.5	1:1	0.076	-0.13	22.95	24.00	1.274	0.097	22.1
Back side-15mm	10	QPSK 25RB_13	20525/836.5	1:1	0.087	0.18	22.95	24.00	1.274	0.111	22.1
Left side-10mm	10	QPSK 25RB_13	20525/836.5	1:1	0.027	0.02	22.95	24.00	1.274	0.034	22.1
Right side-10mm	10	QPSK 25RB_13	20525/836.5	1:1	0.018	-0.11	22.95	24.00	1.274	0.023	22.1
Bottom side - 15mm	10	QPSK 25RB_13	20525/836.5	1:1	0.005	0.10	22.95	24.00	1.274	0.006	22.1
Ant4 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	10	QPSK 1RB_0	20525/836.5	1:1	0.389	-0.18	21.95	23.00	1.274	0.495	22.1
Left tilted	10	QPSK 1RB_0	20525/836.5	1:1	0.402	-0.17	21.95	23.00	1.274	0.512	22.1
Right cheek	10	QPSK 1RB_0	20525/836.5	1:1	0.654	-0.12	21.95	23.00	1.274	0.833	22.1
Right tilted	10	QPSK 1RB_0	20525/836.5	1:1	0.628	0.19	21.95	23.00	1.274	0.800	22.1

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Right cheek	10	QPSK 1RB_0	20450/829	1:1	0.667	-0.18	21.88	23.00	1.294	0.863	22.1
Right cheek	10	QPSK 1RB_0	20600/844	1:1	0.669	0.01	21.87	23.00	1.297	**0.868**	22.1
Right tilted	10	QPSK 1RB_0	20450/829	1:1	0.634	0.07	21.88	23.00	1.294	0.821	22.1
Right tilted	10	QPSK 1RB_0	20600/844	1:1	0.661	-0.11	21.87	23.00	1.297	0.857	22.1
Head Test data(50%RB)											
Left cheek	10	QPSK 25RB_0	20600/844	1:1	0.374	0.10	21.77	23.00	1.327	0.496	22.1
Left tilted	10	QPSK 25RB_0	20600/844	1:1	0.344	0.01	21.77	23.00	1.327	0.457	22.1
Right cheek	10	QPSK 25RB_0	20600/844	1:1	0.612	0.15	21.77	23.00	1.327	0.812	22.1
Right cheek	10	QPSK 25RB_25	20450/829	1:1	0.612	0.12	21.70	23.00	1.349	0.826	22.1
Right cheek	10	QPSK 25RB_0	20525/836.5	1:1	0.612	0.14	21.66	23.00	1.361	0.833	22.1
Right tilted	10	QPSK 25RB_0	20600/844	1:1	0.505	0.18	21.77	23.00	1.327	0.670	22.1
Head Test data(100%RB)											
Right cheek	10	QPSK 50RB_0	20600/844	1:1	0.629	0.06	21.72	23.00	1.343	0.845	22.1
Right tilted	10	QPSK 50RB_0	20600/844	1:1	0.521	-0.17	21.72	23.00	1.343	0.700	22.1
Body worn Test data(Separate 10mm 1RB)											
Front side	10	QPSK 1RB_0	20525/836.5	1:1	0.210	-0.02	21.95	23.00	1.274	**0.267**	22.1
Back side	10	QPSK 1RB_0	20525/836.5	1:1	0.149	0.08	21.95	23.00	1.274	0.190	22.1
Body worn Test data (Separate 10mm 50%RB											
Front side	10	QPSK 25RB_0	20600/844	1:1	0.154	-0.09	21.77	23.00	1.327	0.204	22.1
Back side	10	QPSK 25RB_0	20600/844	1:1	0.119	-0.11	21.77	23.00	1.327	0.158	22.1
Body worn Test data(Separate 15mm 1RB) Sensor off											
Front side	10	QPSK 1RB_0	20600/844	1:1	0.128	0.08	24.18	25.00	1.208	0.155	22.3
Back side	10	QPSK 1RB_0	20600/844	1:1	0.171	0.19	24.18	25.00	1.208	0.207	22.3
Body worn Test data (Separate 15mm 50%RB) Sensor off											
Front side	10	QPSK 25RB_0	20600/844	1:1	0.097	-0.08	23.21	24.00	1.199	0.116	22.3
Back side	10	QPSK 25RB_0	20600/844	1:1	0.129	0.06	23.21	24.00	1.199	0.155	22.3
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Front side	10	QPSK 1RB_0	20525/836.5	1:1	0.210	-0.02	21.95	23.00	1.274	**0.267**	22.1
Back side	10	QPSK 1RB_0	20525/836.5	1:1	0.149	0.08	21.95	23.00	1.274	0.190	22.1
Top side	10	QPSK 1RB_0	20525/836.5	1:1	0.152	0.13	21.95	23.00	1.274	0.194	22.3
Hotspot Test data(Separate 10mm 50%RB) Sensor on											
Front side	10	QPSK 25RB_0	20600/844	1:1	0.154	0.15	21.77	23.00	1.327	0.204	22.3
Back side	10	QPSK 25RB_0	20600/844	1:1	0.119	-0.15	21.77	23.00	1.327	0.158	22.3
Top side	10	QPSK 25RB_0	20600/844	1:1	0.134	-0.12	21.77	23.00	1.327	0.178	22.3
Hotspot Test data 1RB Sensor off											
Front side-15mm	10	QPSK 1RB_0	20600/844	1:1	0.098	0.14	24.18	25.00	1.208	0.118	22.1
Back side-15mm	10	QPSK 1RB_0	20600/844	1:1	0.134	0.01	24.18	25.00	1.208	0.162	22.1
Left side-10mm	10	QPSK 1RB_0	20600/844	1:1	0.110	-0.14	24.18	25.00	1.208	0.133	22.1
Right side-10mm	10	QPSK 1RB_0	20600/844	1:1	0.056	0.02	24.18	25.00	1.208	0.068	22.1
Top side-15mm	10	QPSK 1RB_0	20600/844	1:1	0.058	-0.19	24.18	25.00	1.208	0.070	22.1
Hotspot Test data 50%RB Sensor off											
Front side-15mm	10	QPSK 25RB_0	20600/844	1:1	0.067	0.11	23.21	24.00	1.199	0.080	22.1
Back side-15mm	10	QPSK 25RB_0	20600/844	1:1	0.099	0.16	23.21	24.00	1.199	0.119	22.1
Left side-10mm	10	QPSK 25RB_0	20600/844	1:1	0.078	-0.12	23.21	24.00	1.199	0.094	22.1
Right side-10mm	10	QPSK 25RB_0	20600/844	1:1	0.035	0.14	23.21	24.00	1.199	0.042	22.1
Top side-15mm	10	QPSK 25RB_0	20600/844	1:1	0.043	-0.10	23.21	24.00	1.199	0.052	22.1
Ant1 Test Record											
Head Test data at the worst case with Battery2#											
Left cheek	10	QPSK 1RB_0	20600/844	1:1	0.160	0.12	23.99	25.00	1.262	0.202	22.1
Body worn Test data at the worst case with Battery2#											
Back side	10	QPSK 1RB_0	20600/844	1:1	0.162	0.08	23.99	25.00	1.262	0.204	22.1
Hotspot Test data at the worst case with Battery2#											
Back side	10	QPSK 25RB_13	20525/836.5	1:1	0.083	0.03	22.17	23.50	1.358	0.113	22.1
Ant4 Test Record											
Head Test data at the worst case with Battery2#											
Right cheek	10	QPSK 1RB_0	20600/844	1:1	0.660	0.07	21.87	23.00	1.297	0.856	22.1
Body worn Test data at the worst case with Battery2#											
Front side	10	QPSK 1RB_0	20525/836.5	1:1	0.202	0.12	21.95	23.00	1.274	0.257	22.1
Hotspot Test data at the worst case with Battery2#											
Front side	10	QPSK 1RB_0	20525/836.5	1:1	0.191	0.08	21.95	23.00	1.274	0.243	22.3

Table 18：SAR of LTE Band 5 for Head and Body (Original report: AR/2021/1000808).

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

8.3.9 SAR Result of LTE Band 7

Ant1 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	20850/2510	1:1	0.225	-0.17	24.43	25.00	1.140	0.257	22.1
Left tilted	20	QPSK 1RB_50	20850/2510	1:1	0.188	0.00	24.43	25.00	1.140	0.214	22.1
Right cheek	20	QPSK 1RB_50	20850/2510	1:1	0.302	0.05	24.43	25.00	1.140	**0.344**	22.1
Right tilted	20	QPSK 1RB_50	20850/2510	1:1	0.164	-0.13	24.43	25.00	1.140	0.187	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_50	20850/2510	1:1	0.168	-0.04	23.40	24.00	1.148	0.193	22.1
Left tilted	20	QPSK 50RB_50	20850/2510	1:1	0.152	0.13	23.40	24.00	1.148	0.175	22.1
Right cheek	20	QPSK 50RB_50	20850/2510	1:1	0.279	-0.05	23.40	24.00	1.148	0.320	22.1
Right tilted	20	QPSK 50RB_50	20850/2510	1:1	0.133	-0.16	23.40	24.00	1.148	0.153	22.1
Body worn Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_50	20850/2510	1:1	0.177	-0.10	19.90	20.50	1.148	0.203	22.3
Back side	20	QPSK 1RB_50	20850/2510	1:1	0.227	0.04	19.90	20.50	1.148	0.261	22.3
Body worn Test data (Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_50	20850/2510	1:1	0.173	-0.07	19.72	20.50	1.197	0.207	22.3
Back side	20	QPSK 50RB_50	20850/2510	1:1	0.225	-0.13	19.72	20.50	1.197	0.269	22.3
Body worn Test data(Separate 15mm 1RB) Sensor off											
Front side	20	QPSK 1RB_50	20850/2510	1:1	0.260	-0.18	24.43	25.00	1.140	0.296	22.3
Back side	20	QPSK 1RB_50	20850/2510	1:1	0.430	0.16	24.43	25.00	1.140	**0.490**	22.3
Body worn Test data (Separate 15mm 50%RB) Sensor off											
Front side	20	QPSK 50RB_50	20850/2510	1:1	0.208	-0.18	23.40	24.00	1.148	0.239	22.3
Back side	20	QPSK 50RB_50	20850/2510	1:1	0.415	0.06	23.40	24.00	1.148	0.476	22.3
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_50	20850/2510	1:1	0.177	-0.10	19.90	20.50	1.148	0.203	22.3
Back side	20	QPSK 1RB_50	20850/2510	1:1	0.227	0.04	19.90	20.50	1.148	0.261	22.3
Bottom side	20	QPSK 1RB_50	20850/2510	1:1	0.228	-0.03	19.90	20.50	1.148	0.262	22.3
Hotspot Test data(Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_50	20850/2510	1:1	0.173	-0.07	19.72	20.50	1.197	0.207	22.3
Back side	20	QPSK 50RB_50	20850/2510	1:1	0.225	-0.13	19.72	20.50	1.197	0.269	22.3
Bottom side	20	QPSK 50RB_50	20850/2510	1:1	0.220	0.01	19.72	20.50	1.197	0.263	22.3
Hotspot Test data 1RB Sensor off											
Front side-15mm	20	QPSK 1RB_50	20850/2510	1:1	0.260	-0.18	24.43	25.00	1.140	0.296	22.3
Back side-15mm	20	QPSK 1RB_50	20850/2510	1:1	0.430	0.16	24.43	25.00	1.140	**0.490**	22.3
Left side-10mm	20	QPSK 1RB_50	20850/2510	1:1	0.121	-0.02	24.43	25.00	1.140	0.138	22.3
Right side-10mm	20	QPSK 1RB_50	20850/2510	1:1	0.276	0.07	24.43	25.00	1.140	0.315	22.3
Bottom side - 15mm	20	QPSK 1RB_50	20850/2510	1:1	0.327	0.08	24.43	25.00	1.140	0.373	22.3
Hotspot Test data 50%RB Sensor off											
Front side-15mm	20	QPSK 50RB_50	20850/2510	1:1	0.208	-0.18	23.40	24.00	1.148	0.239	22.3
Back side-15mm	20	QPSK 50RB_50	20850/2510	1:1	0.415	0.06	23.40	24.00	1.148	0.476	22.3
Left side-10mm	20	QPSK 50RB_50	20850/2510	1:1	0.097	0.05	23.40	24.00	1.148	0.111	22.3
Right side-10mm	20	QPSK 50RB_50	20850/2510	1:1	0.218	0.00	23.40	24.00	1.148	0.250	22.3
Bottom side - 15mm	20	QPSK 50RB_50	20850/2510	1:1	0.252	-0.04	23.40	24.00	1.148	0.289	22.3
Ant4 Test Record											
Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power Drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scaled factor	Scaled SAR (W/kg)	Liquid Temp
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_99	21350/2560	1:1	0.201	-0.01	23.64	24.00	1.086	0.218	22.1
Left tilted	20	QPSK 1RB_99	21350/2560	1:1	0.303	-0.08	23.64	24.00	1.086	0.329	22.1
Right cheek	20	QPSK 1RB_99	21350/2560	1:1	0.476	0.10	23.64	24.00	1.086	0.517	22.1
Right tilted	20	QPSK 1RB_99	21350/2560	1:1	0.719	-0.10	23.64	24.00	1.086	0.781	22.1
Head Test data(50%RB)											

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Left cheek	20	QPSK 50RB_50	21350/2560	1:1	0.210	-0.16	23.61	24.00	1.094	0.230	22.1
Left tilted	20	QPSK 50RB_50	21350/2560	1:1	0.325	0.08	23.61	24.00	1.094	0.356	22.1
Right cheek	20	QPSK 50RB_50	21350/2560	1:1	0.479	-0.18	23.61	24.00	1.094	0.524	22.1
Right tilted	20	QPSK 50RB_50	21350/2560	1:1	0.841	0.05	23.61	24.00	1.094	**0.920**	22.1
Right tilted	20	QPSK 50RB_50	20850/2510	1:1	0.805	0.05	23.43	24.00	1.140	0.918	22.1
Right tilted	20	QPSK 50RB_0	21100/2535.5	1:1	0.841	0.05	23.42	24.00	1.143	0.961	22.1
Head Test data(100%RB)											
Right tilted	20	QPSK 100RB_0	21350/2560	1:1	0.758	0.05	23.57	24.00	1.104	0.837	22.1
Body worn Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_99	21350/2560	1:1	0.060	0.11	21.13	22.00	1.222	0.073	22.3
Back side	20	QPSK 1RB_99	21350/2560	1:1	0.307	0.16	21.13	22.00	1.222	**0.375**	22.3
Body worn Test data (Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_0	21350/2560	1:1	0.062	-0.05	21.04	22.00	1.247	0.077	22.3
Back side	20	QPSK 50RB_0	21350/2560	1:1	0.226	-0.18	21.04	22.00	1.247	0.282	22.3
Body worn Test data(Separate 15mm 1RB) Sensor off											
Front side	20	QPSK 1RB_99	21350/2560	1:1	0.059	0.11	23.64	24.00	1.086	0.064	22.3
Back side	20	QPSK 1RB_99	21350/2560	1:1	0.158	0.12	23.64	24.00	1.086	0.172	22.3
Body worn Test data (Separate 15mm 50%RB) Sensor off											
Front side	20	QPSK 50RB_50	21350/2560	1:1	0.044	-0.12	23.61	24.00	1.094	0.048	22.3
Back side	20	QPSK 50RB_50	21350/2560	1:1	0.155	-0.04	23.61	24.00	1.094	0.170	22.3
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Front side	20	QPSK 1RB_99	21350/2560	1:1	0.060	0.11	21.13	22.00	1.222	0.073	22.3
Back side	20	QPSK 1RB_99	21350/2560	1:1	0.307	0.16	21.13	22.00	1.222	**0.375**	22.3
Top side	20	QPSK 1RB_99	21350/2560	1:1	0.166	-0.13	21.13	22.00	1.222	0.203	22.3
Hotspot Test data(Separate 10mm 50%RB) Sensor on											
Front side	20	QPSK 50RB_0	21350/2560	1:1	0.062	-0.05	21.04	22.00	1.247	0.077	22.3
Back side	20	QPSK 50RB_0	21350/2560	1:1	0.226	-0.18	21.04	22.00	1.247	0.282	22.3
Top side	20	QPSK 50RB_0	21350/2560	1:1	0.169	0.16	21.04	22.00	1.247	0.211	22.3
Hotspot Test data 1RB Sensor off											
Front side-15mm	20	QPSK 1RB_99	21350/2560	1:1	0.059	0.11	23.64	24.00	1.086	0.064	22.3
Back side-15mm	20	QPSK 1RB_99	21350/2560	1:1	0.158	0.12	23.64	24.00	1.086	0.172	22.3
Left side-10mm	20	QPSK 1RB_99	21350/2560	1:1	0.061	0.04	23.64	24.00	1.086	0.066	22.3
Right side-10mm	20	QPSK 1RB_99	21350/2560	1:1	0.026	0.04	23.64	24.00	1.086	0.028	22.3
Top side -15mm	20	QPSK 1RB_99	21350/2560	1:1	0.138	0.00	23.64	24.00	1.086	0.150	22.3
Hotspot Test data 50%RB Sensor off											
Front side-15mm	20	QPSK 50RB_50	21350/2560	1:1	0.044	-0.12	23.61	24.00	1.094	0.048	22.3
Back side-15mm	20	QPSK 50RB_50	21350/2560	1:1	0.155	-0.04	23.61	24.00	1.094	0.170	22.3
Left side-10mm	20	QPSK 50RB_50	21350/2560	1:1	0.065	-0.15	23.61	24.00	1.094	0.071	22.3
Right side-10mm	20	QPSK 50RB_50	21350/2560	1:1	0.025	-0.15	23.61	24.00	1.094	0.027	22.3
Top side -15mm	20	QPSK 50RB_50	21350/2560	1:1	0.136	-0.01	23.61	24.00	1.094	0.149	22.3
Ant1 Test Record											
Head Test data at the worst case with Battery2#											
Right cheek	20	QPSK 1RB_50	20850/2510	1:1	0.291	0.04	24.43	25.00	1.140	0.332	22.1
Right cheek	20	PCC QPSK 1_50	20850/2510	1:1	0.259	0.03	24.21	25.00	1.199	0.311	22.1
		SCC QPSK 1_0	21048/2529.8								
Body worn Test data at the worst case with Battery2#											
Back side	20	QPSK 1RB_50	20850/2510	1:1	0.422	0.11	24.43	25.00	1.140	0.481	22.3
Back side	20	PCC QPSK 1_50	20850/2510	1:1	0.389	0.09	24.21	25.00	1.199	0.467	22.1
		SCC QPSK 1_0	21048/2529.8								
Hotspot Test data at the worst case with Battery2#											
Back side-15mm	20	QPSK 1RB_50	20850/2510	1:1	0.422	0.11	24.43	25.00	1.140	0.481	22.3
Back side-15mm	20	PCC QPSK 1_50	20850/2510	1:1	0.389	0.09	24.21	25.00	1.199	0.467	22.1
		SCC QPSK 1_0	21048/2529.8								
Ant4 Test Record											
Head Test data at the worst case with Battery2#											
Right tilted	20	QPSK 50RB_50	21350/2560	1:1	0.833	0.01	23.61	24.00	1.094	0.911	22.1
Right tilted	20	PCC QPSK 1RB_99	21350/2560	1:1	0.798	0.12	23.53	24.00	1.114	0.889	22.1
		SCC QPSK 1_0	21048/2529.8								
Body worn Test data at the worst case with Battery2#											
Back side	20	QPSK 1RB_99	21350/2560	1:1	0.301	0.09	21.13	22.00	1.222	0.368	22.3

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Back side	20	PCC QPSK 1RB_99 SCC QPSK 1_0	21350/2560 21048/2529.8	1:1	0.285	0.01	21.02	22.00	1.253	0.357	22.1
Hotspot Test data at the worst case with Battery2#											
Back side	20	QPSK 1RB_99	21350/2560	1:1	0.301	0.09	21.13	22.00	1.222	0.368	22.3
Back side	20	PCC QPSK 1RB_99 SCC QPSK 1_0	21350/2560 21048/2529.8	1:1	0.285	0.01	21.02	22.00	1.253	0.357	22.1
NSA LTE Band 7 SAR Test Record											
Ant2 Test Record											
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**Power Drift (dB)**	**Conducted Power (dBm)**	**Tune up Limit (dBm)**	**Scaled factor**	**Scaled SAR (W/kg)**	**Liquid Temp**
Head Test data(1RB)											
Left cheek	20	QPSK 1RB_50	21350/2560	1:1	0.099	-0.02	18.73	20.00	1.340	0.133	22.1
Left tilted	20	QPSK 1RB_50	21350/2560	1:1	0.104	-0.01	18.73	20.00	1.340	0.139	22.1
Right cheek	20	QPSK 1RB_50	21350/2560	1:1	0.353	0.11	18.73	20.00	1.340	**0.473**	22.1
Right tilted	20	QPSK 1RB_50	21350/2560	1:1	0.058	-0.12	18.73	20.00	1.340	0.078	22.1
Head Test data(50%RB)											
Left cheek	20	QPSK 50RB_25	21350/2560	1:1	0.095	0.06	18.76	20.00	1.330	0.126	22.1
Left tilted	20	QPSK 50RB_25	21350/2560	1:1	0.104	-0.11	18.76	20.00	1.330	0.138	22.1
Right cheek	20	QPSK 50RB_25	21350/2560	1:1	0.146	-0.06	18.76	20.00	1.330	0.194	22.1
Right tilted	20	QPSK 50RB_25	21350/2560	1:1	0.063	-0.10	18.76	20.00	1.330	0.084	22.1
Body worn Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	21100/2535.5	1:1	0.267	-0.13	23.18	24.00	1.208	0.322	22.3
Back side	20	QPSK 1RB_50	21100/2535.5	1:1	0.402	-0.07	23.18	24.00	1.208	**0.486**	22.3
Body worn Test data (Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	20850/2510	1:1	0.205	0.02	22.21	23.00	1.199	0.246	22.3
Back side	20	QPSK 50RB_25	20850/2510	1:1	0.349	-0.07	22.21	23.00	1.199	0.419	22.3
Hotspot Test data(Separate 10mm 1RB)											
Front side	20	QPSK 1RB_50	21100/2535.5	1:1	0.267	-0.13	23.18	24.00	1.208	0.322	22.3
Back side	20	QPSK 1RB_50	21100/2535.5	1:1	0.402	-0.07	23.18	24.00	1.208	**0.486**	22.3
Left side	20	QPSK 1RB_50	21100/2535.5	1:1	0.083	-0.03	23.18	24.00	1.208	0.100	22.3
Hotspot Test data(Separate 10mm 1RB) Sensor on											
Top side	20	QPSK 1RB_99	20850/2510	1:1	0.034	0.10	18.35	19.50	1.303	0.044	22.3
Hotspot Test data(Separate 15mm 1RB) Sensor off											
Top side	20	QPSK 1RB_50	21100/2535.5	1:1	0.088	-0.03	23.18	24.00	1.208	0.106	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Front side	20	QPSK 50RB_25	20850/2510	1:1	0.205	0.02	22.21	23.00	1.199	0.246	22.3
Back side	20	QPSK 50RB_25	20850/2510	1:1	0.349	-0.07	22.21	23.00	1.199	0.419	22.3
Left side	20	QPSK 50RB_25	20850/2510	1:1	0.074	0.01	22.21	23.00	1.199	0.089	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Top side	20	QPSK 50RB_25	20850/2510	1:1	0.025	-0.14	18.25	19.50	1.334	0.033	22.3
Hotspot Test data(Separate 10mm 50%RB)											
Top side	20	QPSK 50RB_25	20850/2510	1:1	0.064	0.02	22.21	23.00	1.199	0.077	22.3
An2 Test Record											
Head Test data at the worst case with Battery2#											
Right cheek	20	QPSK 1RB_50	21350/2560	1:1	0.342	0.19	18.73	20.00	1.340	0.458	22.1
Body worn Test data at the worst case with Battery2#											
Back side	20	QPSK 1RB_50	21100/2535.5	1:1	0.375	0.01	23.18	24.00	1.208	0.453	22.3
Hotspot Test data at the worst case with Battery2#											
Back side	20	QPSK 1RB_50	21100/2535.5	1:1	0.375	0.01	23.18	24.00	1.208	0.453	22.3

Table 19：SAR of LTE Band 7 for Head and Body (Original report: AR/2021/1000808).

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 http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)