



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

EMC-TRF-01 Rev 1.1

Report No.: GZCR231100125502

Page: 1 of 42

FCC ID: OJFDHRU-G2-85

TEST REPORT

Application No.: GZCR2311001255AT
Applicant: Corning Optical Communications LLC
Address of Applicant: 840 N McCarthy Blvd Milpitas, CA 95035
Manufacturer: Comba Network Systems Company Limited
Address of Manufacturer: No.10 Shenzhou Road, Guangzhou Science City, Guangzhou 510663, Guangdong, P.R.China
Equipment Under Test (EUT):
EUT Name: HRU Digital High Power Amplifier Module supporting 800/850
Model No.: dHRU-G2-85
Trade Mark: Corning
Standard(s) : 47 CFR Part 2
47 CFR Part 20
47 CFR Part 22
47 CFR Part 90
Date of Receipt: 2021-03-09 for original report GZCR210300001402
2023-11-29 for report GZCR231100125502
Date of Test: 2021-03-11 to 2021-04-03 for original report GZCR210300001402
2023-12-4 to 2023-12-10 for report GZCR231100125502
Date of Issue: 2021-04-09 for original report GZCR210300001402
2023-12-20 for report GZCR231100125502

Test Result:	Pass*
---------------------	--------------

* In the configuration tested, the EUT complied with the standards specified above.

Ricky Liu

Ricky Liu
Manager



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

Revision Record			
Version	Report No.	Date	Remark
01	GZCR231100125502	2023-12-20	Original

Authorized for issue by:				
		Kevin Zhang		
		Kevin Zhang /Project Engineer		
		Jerry Chen		
		Jerry Chan /Reviewer		



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction 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

2 Test Summary

2.1 ESMR (only for downlink: 862-869MHz)

Item	Requirement	Method	Result
Out-of-band rejection	KDB935210 D05 v01r04 clause 3.3	KDB935210 D05 v01r04 clause 3.3	PASS
Input-versus-output signal comparison	47 CFR Part 2.1049	KDB935210 D05 v01r04 clause 3.4	PASS
Mean output power and amplifier/booster gain	47 CFR Part 90.635	KDB935210 D05 v01r04 clause 3.5	PASS
Out-of-band/out-of-block (including intermodulation) emissions and spurious esmissions	47 CFR Part 90.691	KDB935210 D05 v01r04 clause 3.6	PASS
Frequency stability	47 CFR Part 90.213	47 CFR Part 2.1055 KDB935210 D05 v01r04 clause 3.7 ANSI C63.26-2015 Clause 5.6	PASS
Radiated spurious emissions	47 CFR Part 90.691	KDB935210 D05 v01r04 clause 3.8 ANSI C63.26-2015 Clause 5.5	PASS

2.2 Cellular (only for downlink: 869-894MHz)

Item	Requirement	Method	Result
Out-of-band rejection	KDB935210 D05 v01r04 clause 3.3	KDB935210 D05 v01r04 clause 3.3	PASS
Input-versus-output signal comparison	47 CFR Part 2.1049	KDB935210 D05 v01r04 clause 3.4	PASS
Mean output power and amplifier/booster gain	47 CFR Part 22.913	KDB935210 D05 v01r04 clause 3.5	PASS
Out-of-band/out-of-block (including intermodulation) emissions and spurious emissions	47 CFR Part 22.917	KDB935210 D05 v01r04 clause 3.6	PASS
Frequency stability	47 CFR Part 22.355	47 CFR Part 2.1055 KDB935210 D05 v01r04 clause 3.7 ANSI C63.26-2015 Clause 5.6	PASS
Radiated spurious emissions	47 CFR Part 22.917	KDB935210 D05 v01r04 clause 3.8 ANSI C63.26-2015 Clause 5.5	PASS

Remark:

According to the declaration from the applicant, the model **dHRU-G2-85** in this report **GZCR231100125502** and model **dHRU-dHPAM-85** in report **GZCR210300001402 (FCC ID: OJFDHRU-DHPAM-85)** are identical in the electrical circuit design, layout, components used and internal wiring were identical, with only difference on the Model No..

All test data in this report was copied from report **GZCR210300001402**.

Furthermore, tests using 100 MHz AWGN signal for 5GNR were supplemented in this report.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

3 Contents

1	Covers Page	1
2	Test Summary	3
2.1	ESMR (only for downlink: 862-869MHz)	3
2.2	Cellular (only for downlink: 869-894MHz)	4
3	Contents	5
4	General Information	7
4.1	Details of E.U.T.	7
4.2	Description of Support Units	8
4.3	Test Environment	9
4.4	Test Configuration	10
4.5	Measurement Uncertainty	11
4.6	Test Location	12
4.7	Test Facility	12
4.8	Deviation from Standards	12
4.9	Abnormalities from Standard Conditions	12
5	Equipment List	13
6	Radio Spectrum Matter Test Result for ESMR	16
6.1	Out-of-band rejection	16
6.1.1	E.U.T. Operation	16
6.1.2	Test Setup	16
6.1.3	Measure Data	17
6.2	Input-versus-output signal comparison	18
6.2.1	E.U.T. Operation	18
6.2.2	Test Setup	18
6.2.3	Measure Data	19
6.3	Mean output power and amplifier/booster gain	20
6.3.1	E.U.T. Operation	20
6.3.2	Test Setup	20
6.3.3	Measure Data	21
6.4	Out-of-band/out-of-block (including intermodulation) emissions and spurious	22
6.4.1	E.U.T. Operation	22
6.4.2	Test Setup	23
6.4.3	Measurement Record	23
6.5	Frequency stability	24
6.5.1	E.U.T. Operation	24
6.5.2	Test Setup	24
6.5.3	Measure Data	25
6.6	Radiated spurious emission	26
6.6.1	E.U.T. Operation	26
6.6.2	Test Setup	27
6.6.3	Test procedure	28



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's Instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

6.6.4	Measure Data	28
7	Radio Spectrum Matter Test Result for Cellular.....	29
7.1	Out-of-band rejection	29
7.1.1	E.U.T. Operation	29
7.1.2	Test Setup.....	29
7.1.3	Measure Data	30
7.2	Input-versus-output signal comparison	31
7.2.1	E.U.T. Operation	31
7.2.2	Test Setup.....	31
7.2.3	Measure Data	32
7.3	Mean output power and amplifier/booster gain	33
7.3.1	E.U.T. Operation	33
7.3.2	Test Setup.....	33
7.3.3	Measure Data	34
7.4	Out-of-band/out-of-block (including intermodulation) emissions and spurious	35
7.4.1	E.U.T. Operation	35
7.4.2	Test Setup.....	35
7.4.3	Measure Data	36
7.5	Frequency stability	37
7.5.1	E.U.T. Operation	37
7.5.2	Test Setup.....	37
7.5.3	Measure Data	38
7.6	Radiated spurious emission.....	39
7.6.1	E.U.T. Operation	39
7.6.2	Test Setup.....	40
7.6.3	Test procedure.....	41
7.6.4	Measurement Record.....	41
8	Test Setup Photographs	42
9	EUT Constructional Details (EUT Photos)	42



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

4 General Information

4.1 Details of E.U.T.

Power Supply: AC 100-240V, 50/60Hz

Test Voltage: AC 110V, 60Hz

Cable: AC mains (unshielded, 1.5m)

Operating Temperature: -40 to +55 °C

Operating Humidity: 5 to 95 %

Frequency Range: ESMR Uplink: 817MHz to 824MHz
Downlink: 862MHz to 869MHz
Cellular Uplink: 824MHz to 849MHz
Downlink: 869MHz to 894MHz

Radio System Type: ☐ GSM
☒ WCDMA
☒ LTE
☒ 5G NR

Interface: RF Port: 2 (4.3-10-Female, ANT1~ANT2)
Optical Port: 1 (SFP+)

Supported Channel Bandwidth: GSM ☐ 200 kHz
WCDMA ☒ 5MHz
LTE ☐ 1.4 MHz ☐ 3 MHz ☒ 5 MHz
☒ 10 MHz ☒ 15 MHz ☒ 20 MHz
5G NR ☒ 5 MHz ☒ 10 MHz ☒ 15 MHz
☒ 20 MHz

Band	Technology	Supported Bandwidth
ESMR	3G	5MHz
	4G/5G	5MHz
Cellular	3G	5MHz
	4G/5G	5/10/15/20MHz



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

EUT MIMO property: 2X2 MIMO

System Gain: Max. 43dB (Downlink)

Antenna Type: External Dedicated Antenna

Permission Antenna Gain: 10dBi or less

Software Version: V01.00.00.04

Note:

1. The EUT is a remote unit of a fiber DAS. The fiber DAS are typically comprised of three components (host unit, fiber-optic expansion unit and remote unit), which will be interconnected via fiber-optic.

The host unit connects directly to a base station via coaxial cable but cannot connect to antenna for receiving downlink and transmitting uplink, the EUT connects to antenna for transmitting downlink and receiving uplink. Therefore, only performed the test for downlink.

2. In additional, the host unit and fiber-optic expansion unit will be used as support unit for test in the report.
3. ANT1 and ANT2 are MIMO port, and the internal circuit design is identical, the intend output power for antenna ports are identical. Therefore only perform test at antenna port 1 and record the data in this report.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Notebook	IBM	T30	S/N78-3VMLX 06/01
IHU/HEU supplied by the applicant	Corning	/	/
DRU supplied by the applicant	Corning	/	/
ODU supplied by the applicant	Corning	dHRU-dHPOM	/
RIU supplied by the manufacturer	Corning	/	/
DCU supplied by the manufacturer	Corning	/	/
DEU supplied by the manufacturer	Corning	/	/



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

4.3 Test Environment

Environment Parameter	Selected Values During Test	
Relative Humidity	Ambient	
Value	Temperature (°C)	Voltage (V)
TNVN	+20	AC 110V
TLVL	-40	AC 93.5V
TLVH	-40	AC 126.5V
THVL	+50	AC 93.5V
THVH	+50	AC 126.5V

VN: Normal Voltage

TN: Normal Temperature

VL: Lower Extreme Voltage

HL: Higher Extreme Voltage

TL: Lower Extreme Temperature

TH: Higher Extreme Temperature



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

4.4 Test Configuration

ESMR (only for downlink: 862-869MHz)

RF Ch.	Test Conf.	Test Freq. (MHz)	Test Signal	Remark
B	DL_1S_B_AWGN	864.5	AWGN (99% OBW of 4.1MHz)	a single test signal
M	DL_1S_M_AWGN	865.5		
T	DL_1S_T_AWGN	866.5		
B	DL_2S_B_AWGN	864.5, 869.5		two adjacent test signals
T	DL_2S_T_AWGN	861.5, 866.5		
B	DL_1S_B_GSM	862.4	GSM-TDMA	a single test signal
M	DL_1S_M_GSM	865.5		
T	DL_1S_T_GSM	868.6		
B	DL_2S_B_GSM	862.4, 862.8		two adjacent test signals
T	DL_2S_T_GSM	868.2, 868.6		
B	DL_1S_B_AWGN	912	100MHz AWGN	a single test signal
M	DL_1S_M_AWGN	865.5		
T	DL_1S_T_AWGN	819		
B	DL_2S_B_AWGN	912, 1012		two adjacent test signals
T	DL_2S_T_AWGN	719, 819		



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

Cellular (only for downlink: 869-894MHz)

RF Ch.	Test Conf.	Test Freq. (MHz)	Test Signal	Remark
B	DL_1S_B_AWGN	871.5	AWGN (99% OBW of 4.1MHz)	a single test signal
M	DL_1S_M_AWGN	881.5		
T	DL_1S_T_AWGN	891.5		
B	DL_2S_B_AWGN	871.5, 876.5		two adjacent test signals
T	DL_2S_T_AWGN	886.5, 891.5		
B	DL_1S_B_GSM	869.4	GSM-TDMA	a single test signal
M	DL_1S_M_GSM	881.5		
T	DL_1S_T_GSM	893.6		
B	DL_2S_B_GSM	869.4, 869.8		two adjacent test signals
T	DL_2S_T_GSM	893.2, 893.6		
B	DL_1S_B_AWGN	919	100MHz AWGN	a single test signal
M	DL_1S_M_AWGN	881.5		
T	DL_1S_T_AWGN	844		
B	DL_2S_B_AWGN	919, 1019		two adjacent test signals
T	DL_2S_T_AWGN	744, 844		

4.5 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 5.5 \times 10^{-8}$
2	RF Conducted power	$\pm 0.68\text{dB}$
3	Conducted Spurious Emissions	$\pm 1.04\text{dB}$
4	RF Radiated Power	$\pm 4.5\text{dB}$ (below 1GHz)
		$\pm 4.8\text{dB}$ (above 1GHz)
5	Radiated Spurious Emission Test	$\pm 4.5\text{dB}$ (30MHz-1GHz)
		$\pm 4.8\text{dB}$ (1GHz-18GHz)
6	Temperature	$\pm 0.4^{\circ}\text{C}$
7	Humidity	$\pm 1.3\%$
8	Supply Voltages	$\pm 1.5\%$
9	Time	$\pm 3\%$



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 <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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. 198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663 t (86-20) 82155555 www.sgsgroup.com.cn
中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 sgs.china@sgs.com

4.6 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

4.7 Test Facility

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

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 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.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.8 Deviation from Standards

None

4.9 Abnormalities from Standard Conditions

None



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

5 Equipment List

For original test

Conducted Test					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
MXA Signal Analyzer	AgilentTechnologies	N9020A	SEM004-10	2021-03-02	2022-03-01
ESG Vector Signal Generator	Keysight	E4438C	SEM006-03	2021-03-12	2022-03-11
Signal Generator	Rohde & Schwarz	SMB100A	EMC2093	2021-01-09	2022-01-08
MXG Vector Signal Generator (9kHz-6GHz)	Keysight	N5182B	EMC2216	2020-11-04	2021-11-03
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2019-11-02	2021-11-01
Temperature Chamber	GZ GongWen Co.Ltd.	GDJW-100	EMC0039	2020-07-01	2021-06-30
High-low temperature control box	GZ GongWen Co.Ltd	GDJW-100	EMC0039	2020-06-29	2021-06-28
Radiated Test					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Chamber cable	HangTianXing	N/A	EMC0542	2019-06-28	2021-06-27
Horn Antenna 1GHz-18GHz	Rohde & Schwarz	HF906	EMC0518	2018-09-02	2021-09-01
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2021-01-08	2022-01-07
Amplifier	HP	8447F	EMC2065	2020-05-26	2021-05-25
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-19	2023-12-18
MXE EMI Receiver	Keysight	N9038A	EMC2139	2020-11-13	2021-11-12
EXA Signal Analyzer	Keysight	N9010A	EMC2138	2020-11-13	2021-11-12
Trilog Broadband Antenna 30MHz-1GHz	SCHWARZBECKME SS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/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 <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

For supplement test

Conducted test equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Temperature Chamber	GZ GongWen Co.Ltd.	GDJW-100	EMC0039	2023-06-29	2024-06-28
MI CABLE	SGS-EMC	0.8M	EMC2137	2023-11-02	2025-11-01
MI CABLE	SGS-EMC	0.8M	EMC2136	2023-11-02	2025-11-01
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2023-08-23	2024-08-22
MXA Signal Analyzer (10Hz-50GHz)	KEYSIGHT	N9020B	SEM004-24	2023-03-20	2024-03-19
4X4 Power Sensor Unit	TST	TSPS2023R	EMC2257	2023-08-23	2024-08-22
Test Software	TST	V2.0	GZE100-78	N/A	N/A
ESG vector signal generator (250kHz-6GHz)	Agilent Technologies	E4438C	SEM006-03	2023-02-20	2024-02-19

Radiated test equipment (30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2022-10-16	2025-10-15
Coaxial cable	Mirco-COAX UTIFLEX	311A	EMC0540	2023-06-14	2025-06-13
Amplifier (9kHz-1.3GHz)	HP	8447F	EMC2065	2023-06-14	2024-06-13
EMI Test Receiver (1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2023-05-19	2024-05-18
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Trilog Broadband Antenna (25MHz-1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	EMC2174	2022-06-19	2025-06-18
TRILOG Broadband Antenna (25M-2GHz)	SCHWARZBECK	VULB 9168	SEM003-18	2022-03-03	2025-03-02
EMI Test Receiver (1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2023-05-19	2024-05-18



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

Radiated test equipment (above 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2022-12-16	2023-12-15
Microwave Broadband Preamplifier (18-40GHz)	SCHWARZBECK	BBV 9721	EMC2172	2023-08-21	2024-08-20
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2022-12-16	2023-12-15
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2023-08-23	2024-08-22
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2022-08-24	2024-08-23
Chamber Cable (Below 1GHz)	Scoflex	KMKM-8.0m	EMC0546	2022-08-24	2024-08-23
Trilog Broadband Antenna (25MHz-1GHz)	SCHWARZBECK	VULB 9160	EMC2025	2022-09-07	2025-09-06
Horn Antenna (1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-21	2025-09-20
Horn Antenna 1-18GHz	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2251	2022-02-02	2025-08-01
Horn Antenna (14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2023-06-18	2026-06-17
Broad-Band Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2021-7-11	2024-7-10
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/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 <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

6 Radio Spectrum Matter Test Result for ESMR

6.1 Out-of-band rejection

Test Requirement: KDB 935210 D05 clause 3.3

Test Method: KDB 935210 D05 clause 3.3

Limit: Within the passband

6.1.1 E.U.T. Operation

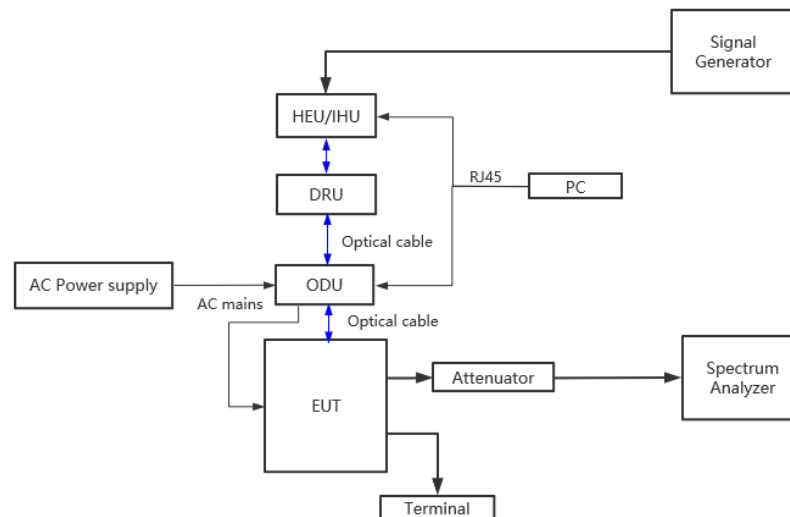
Operating Environment:

Temperature: 24.6 °C Humidity: 59 % RH Atmospheric Pressure: 1020 mbar

Test Mode: Set the EUT to maximum output power and maximum gain.

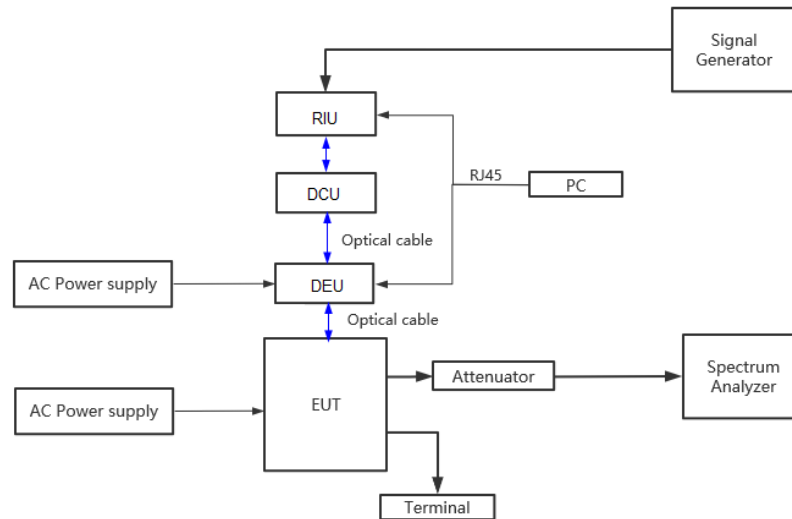
EUT Configuration: Refer to clause 4.4 in this report.

6.1.2 Test Setup



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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



6.1.3 Measure Data

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

6.2 Input-versus-output signal comparison

Test Requirement: 47 CFR Part 2.1049
 Test Method: KDB 935210 D05 clause 3.4
 Limit: Compare the input signal to the output signal to affirm that they are similar

6.2.1 E.U.T. Operation

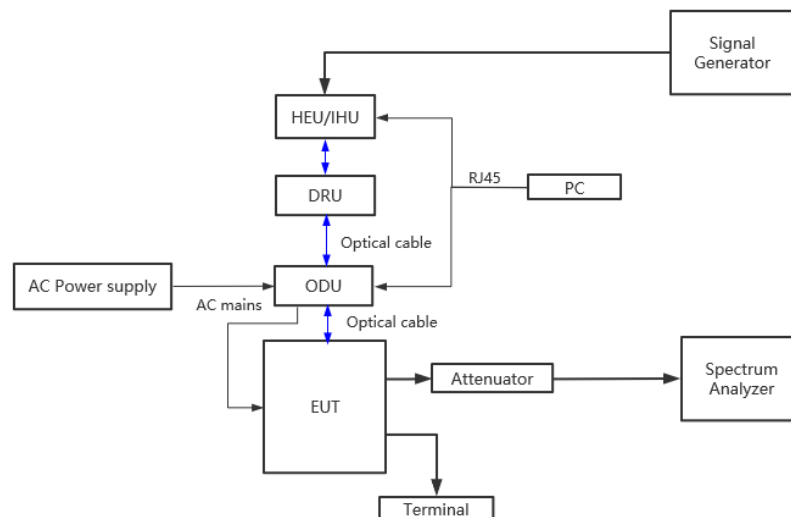
Operating Environment:

Temperature: 24.6 °C Humidity: 59 % RH Atmospheric Pressure: 1020 mbar

Test Mode: Set the EUT to maximum output power and maximum gain.

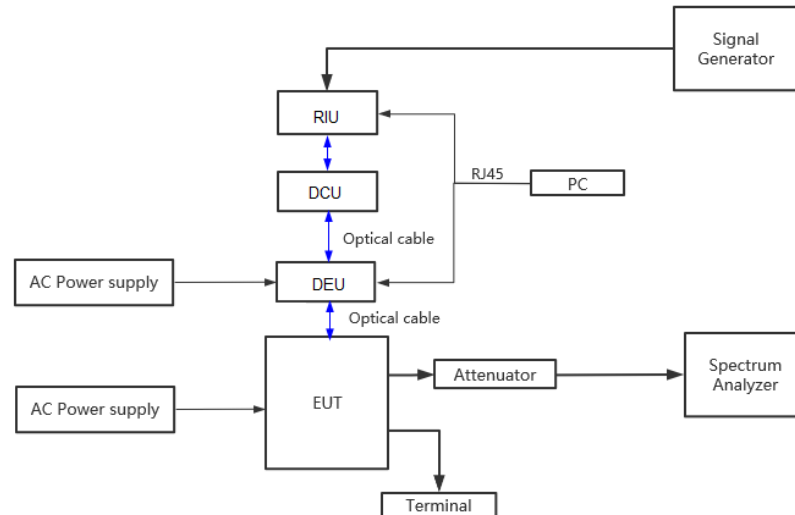
EUT Configuration: Refer to clause 4.4 in this report.

6.2.2 Test Setup



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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



6.2.3 Measure Data

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

6.3 Mean output power and amplifier/booster gain

Test Requirement: 47 CFR Part 90.635

Test Method: KDB 935210 D05 clause 3.5

Limit: The effective radiated power and antenna height for base stations may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from the Table. These are maximum values, and applicants will be required to justify power levels and antenna heights requested.

6.3.1 E.U.T. Operation

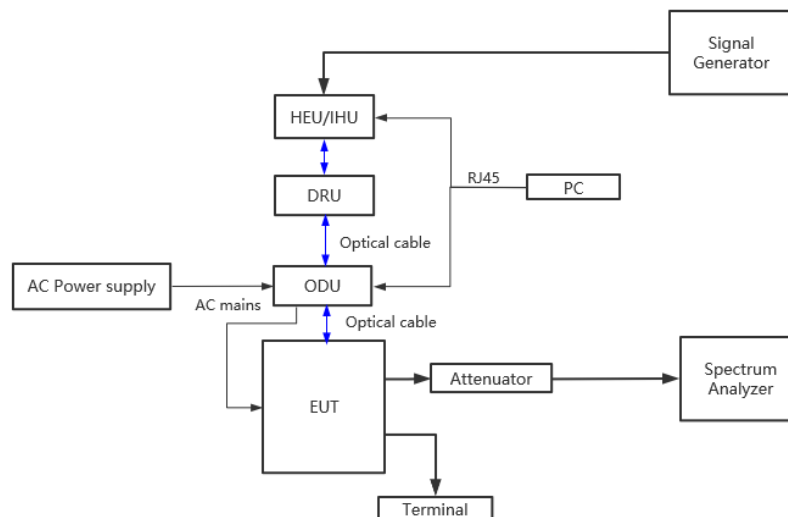
Operating Environment:

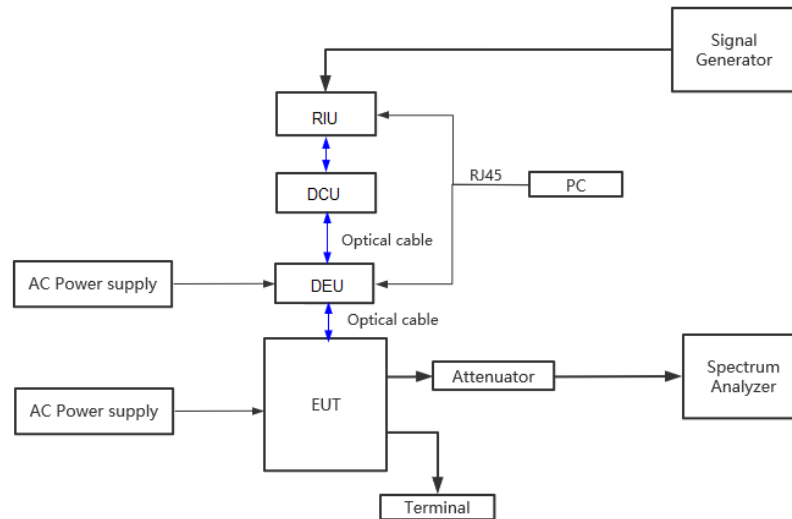
Temperature: 24.6 °C Humidity: 59 % RH Atmospheric Pressure: 1020 mbar

Test Mode: Set the EUT to maximum output power and maximum gain.

EUT Configuration: Refer to clause 4.4 in this report.

6.3.2 Test Setup





6.3.3 Measure Data

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

6.4 Out-of-band/out-of-block (including intermodulation) emissions and spurious

Test Requirement: 47 CFR Part 90.691

Test Method: KDB 935210 D05 clause 3.6

Limit: Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(reduce 3.01dB when on 2×2 MIMO mode)

6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C Humidity: 59 % RH Atmospheric Pressure: 1020 mbar

Test Mode: Set the EUT to maximum output power and maximum gain.

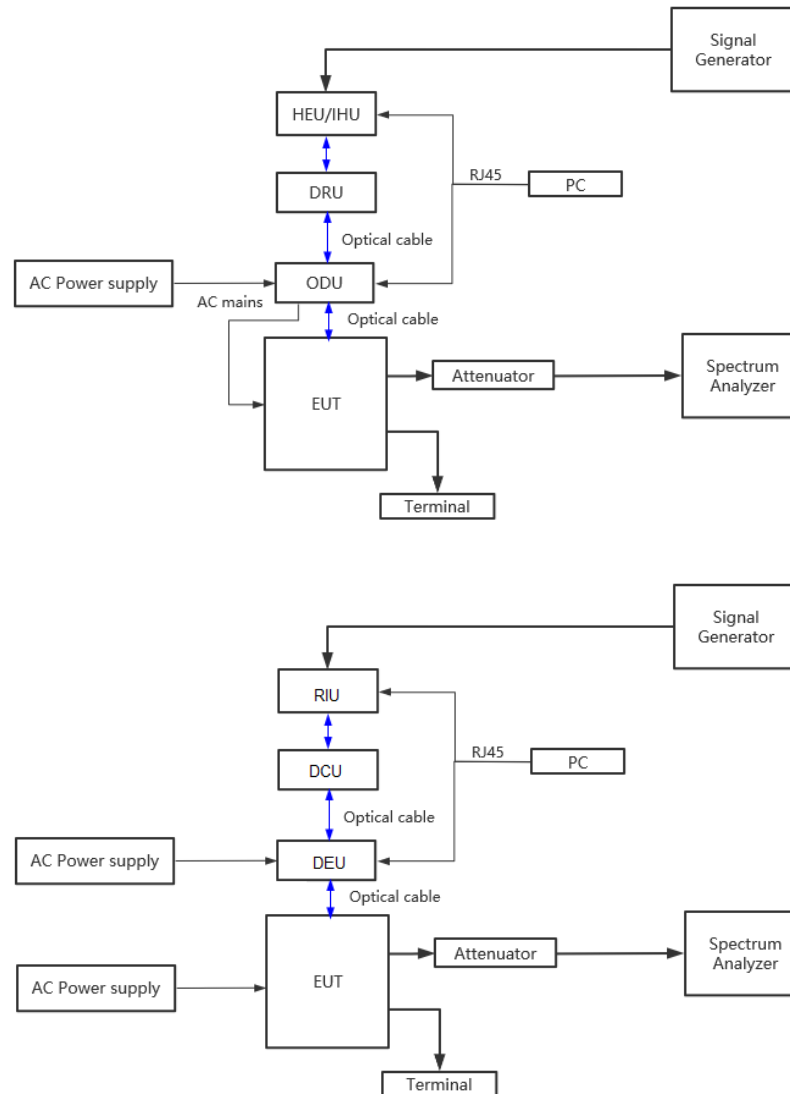
EUT Configuration: Refer to clause 4.4 in this report.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

6.4.2 Test Setup



6.4.3 Measurement Record

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

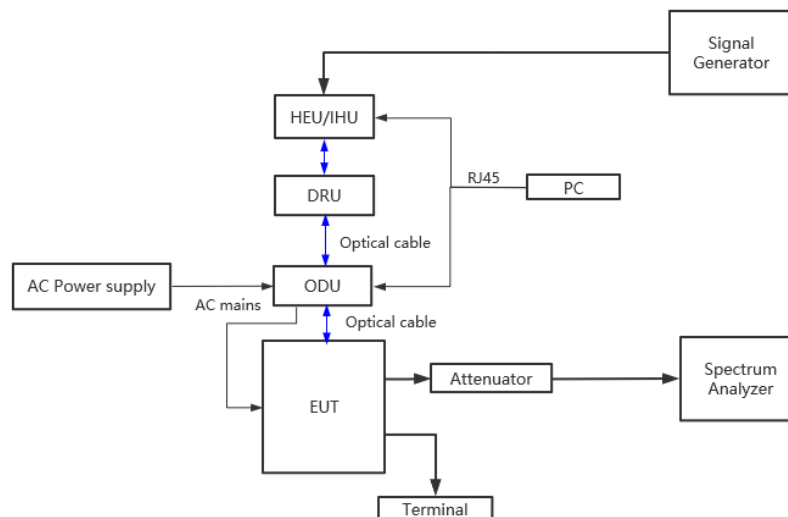
6.5 Frequency stability

Test Requirement: 47 CFR Part 90.213
 Test Method: 47 CFR Part 2.1055
 KDB 935210 D05 clause 3.7
 ANSI C63.26-2015 clause 5.6
 Limit: 1.5 ppm

6.5.1 E.U.T. Operation

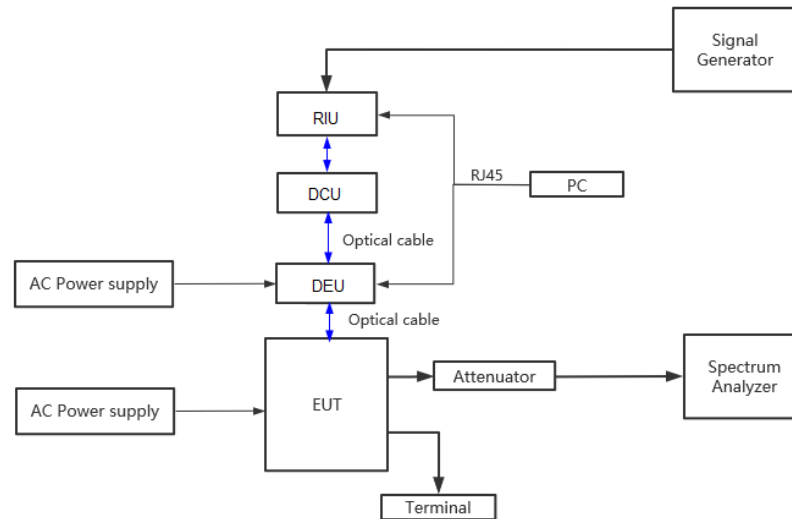
Operating Environment:
 Temperature: 24.6 °C Humidity: 59 % RH Atmospheric Pressure: 1020 mbar
 Test Mode: Set the EUT to maximum output power and maximum gain.
 EUT Configuration: Refer to clause 4.4 in this report.

6.5.2 Test Setup



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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



6.5.3 Measure Data

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

6.6 Radiated spurious emission

Test Requirement: 47 CFR Part 90.691(a)

Test Method: KDB 935210 D05 clause 3.8

ANSI C63.26-2015 clause 5.6

Limit: Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 25.1 °C Humidity: 59 % RH Atmospheric Pressure: 1010 mbar

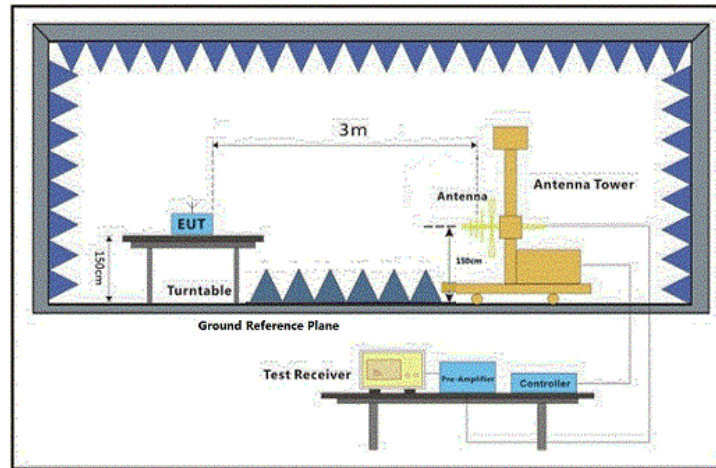
Test Mode: Set the EUT to maximum output power and maximum gain (activate MIMO mode simultaneously).



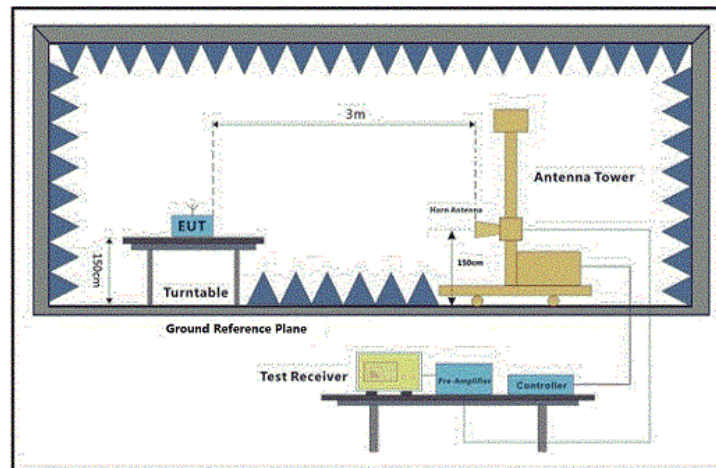
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

6.6.2 Test Setup



30MHz-1GHz



Above 1GHz



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

6.6.3 Test procedure

1. Scan from 30MHz to 12.75GHz, find the maximum radiation frequency to measure.
2. The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP/EIRP emission levels of the EUT.

Below 1GHz test procedure as below:

- 1) The EUT was powered on and placed on a table in the chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test.
- 2) Rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
- 3) Steps 1) and 2) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
- 4) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.
- 5) A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 2) is obtained for this set of conditions.
- 6) The output power into the substitution antenna was then measured.
- 7) Steps 5) and 6)were repeated with both antennas vertically polarized.
- 8) Calculate power in dBm by the following formula:

Level (dBm) = Read Level (dBm) + Correction Factor (dB)

Above 1GHz test procedure as below:

- 1) Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber.
 - 2) Calculate power in dBm by the following formula:
- Level (dBm) = Read Level (dBm) + Correction Factor (dB)

6.6.4 Measure Data

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

7 Radio Spectrum Matter Test Result for Cellular

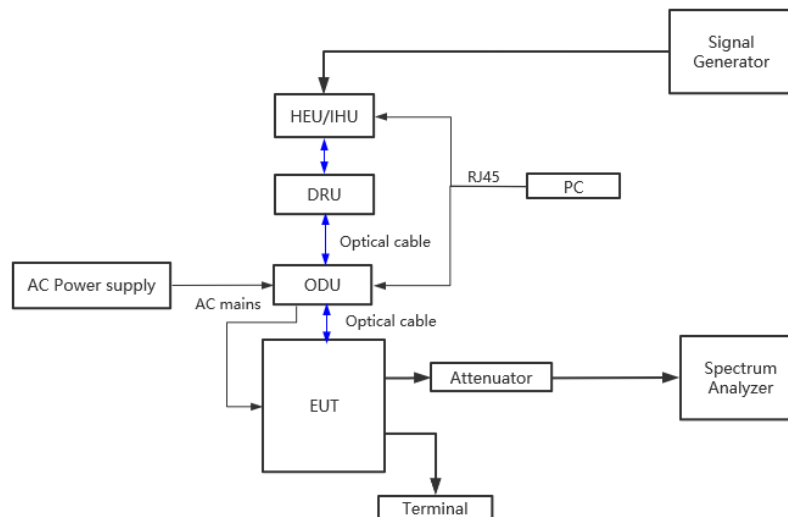
7.1 Out-of-band rejection

Test Requirement: KDB 935210 D05 clause 3.3
 Test Method: KDB 935210 D05 clause 3.3
 Limit: Within the passband

7.1.1 E.U.T. Operation

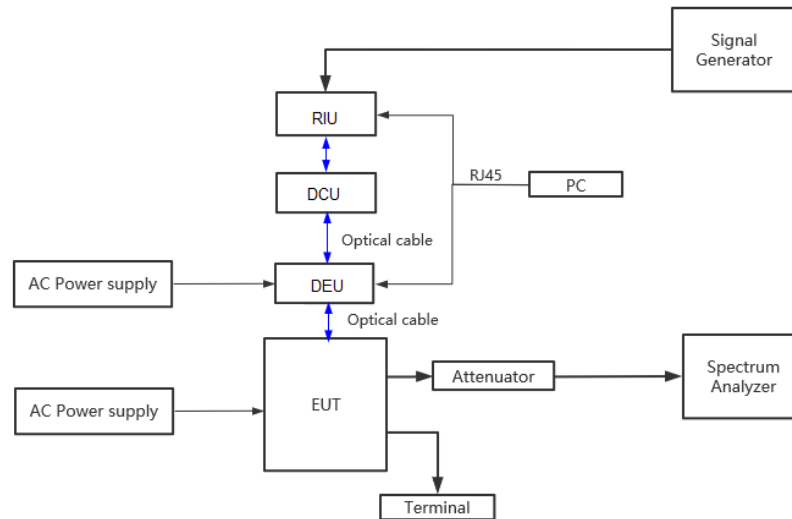
Operating Environment:
 Temperature: 24.6 °C Humidity: 59 % RH Atmospheric Pressure: 1020 mbar
 Test Mode: Set the EUT to maximum output power and maximum gain.
 EUT Configuration: Refer to clause 4.4 in this report.

7.1.2 Test Setup



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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



7.1.3 Measure Data

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

7.2 Input-versus-output signal comparison

Test Requirement: 47 CFR Part 2.1049
 Test Method: KDB 935210 D05 clause 3.4
 Limit: Compare the input signal to the output signal to affirm that they are similar

7.2.1 E.U.T. Operation

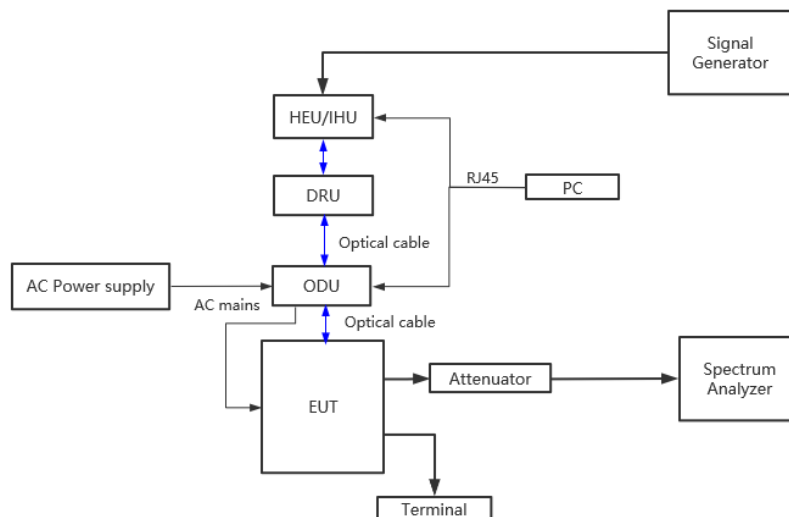
Operating Environment:

Temperature: 24.6 °C Humidity: 59 % RH Atmospheric Pressure: 1020 mbar

Test Mode: Set the EUT to maximum output power and maximum gain.

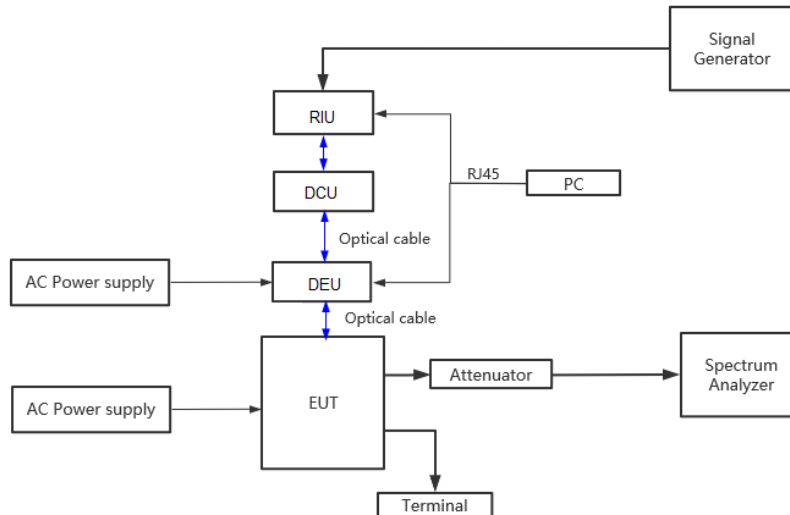
EUT Configuration: Refer to clause 4.4 in this report.

7.2.2 Test Setup



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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



7.2.3 Measure Data

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

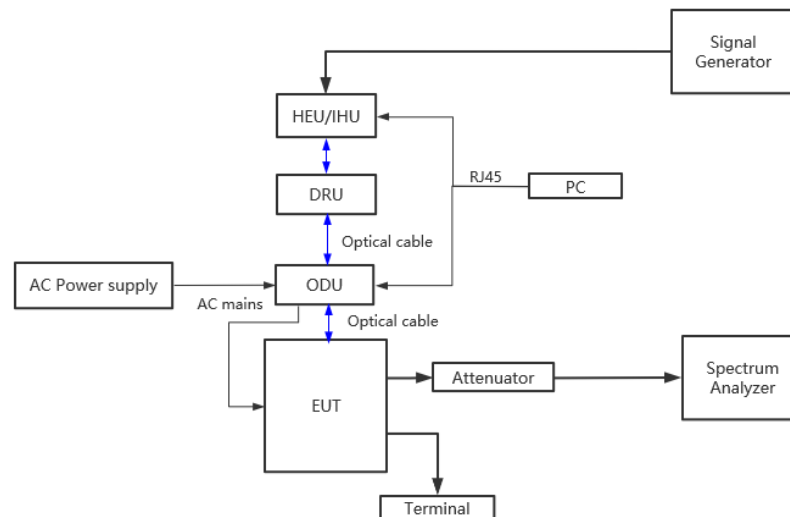
7.3 Mean output power and amplifier/booster gain

Test Requirement: 47 CFR Part 22.913
 Test Method: KDB 935210 D05 clause 3.5
 Limit: The ERP of transmitters in the Cellular Radiotelephone Service must not exceed 500 watts per emission

7.3.1 E.U.T. Operation

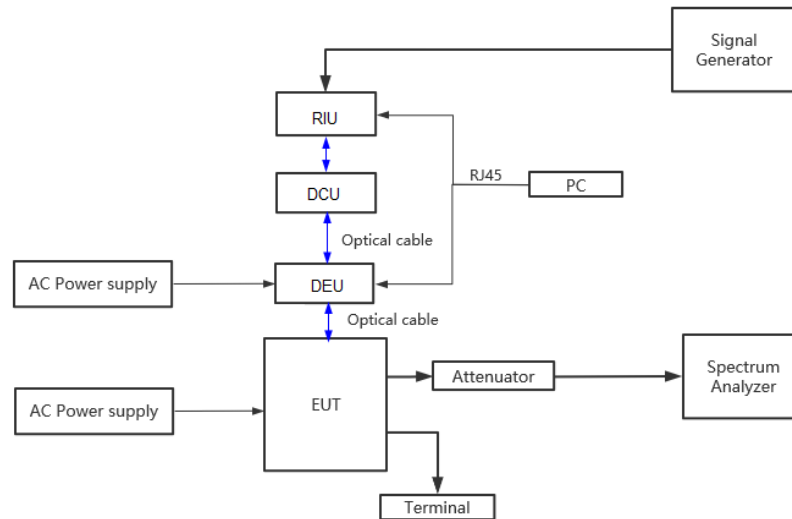
Operating Environment:
 Temperature: 24.6 °C Humidity: 59 % RH Atmospheric Pressure: 1020 mbar
 Test Mode: Set the EUT to maximum output power and maximum gain.
 EUT Configuration: Refer to clause 4.4 in this report.

7.3.2 Test Setup



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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



7.3.3 Measure Data

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

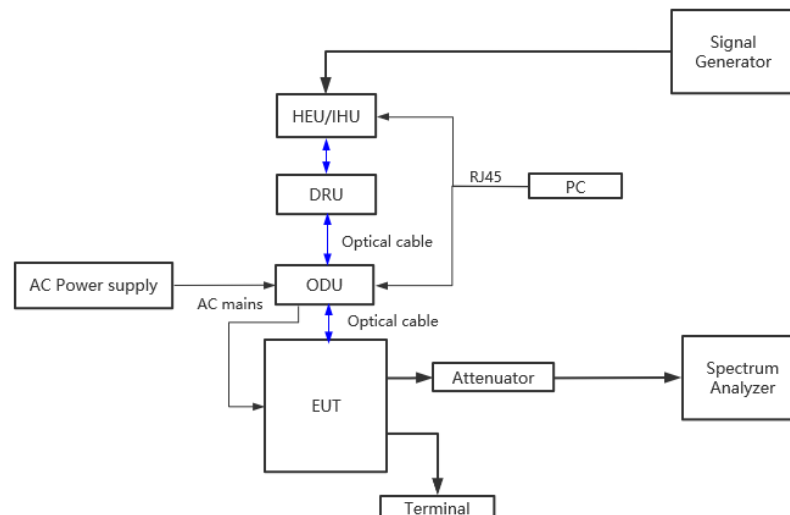
7.4 Out-of-band/out-of-block (including intermodulation) emissions and spurious

Test Requirement: 47 CFR Part 27.53(g)
 Test Method: KDB 935210 D05 clause 3.6
 Limit: The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.
 (reduce 3.01dB when on 2×2 MIMO mode)

7.4.1 E.U.T. Operation

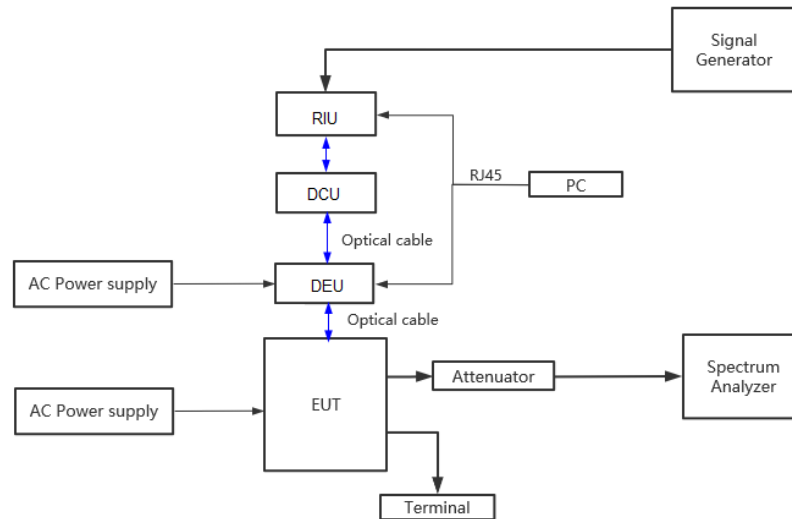
Operating Environment:
 Temperature: 24.6 °C Humidity: 59 % RH Atmospheric Pressure: 1020 mbar
 Test Mode: Set the EUT to maximum output power and maximum gain.
 EUT Configuration: Refer to clause 4.4 in this report.

7.4.2 Test Setup



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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



7.4.3 Measure Data

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

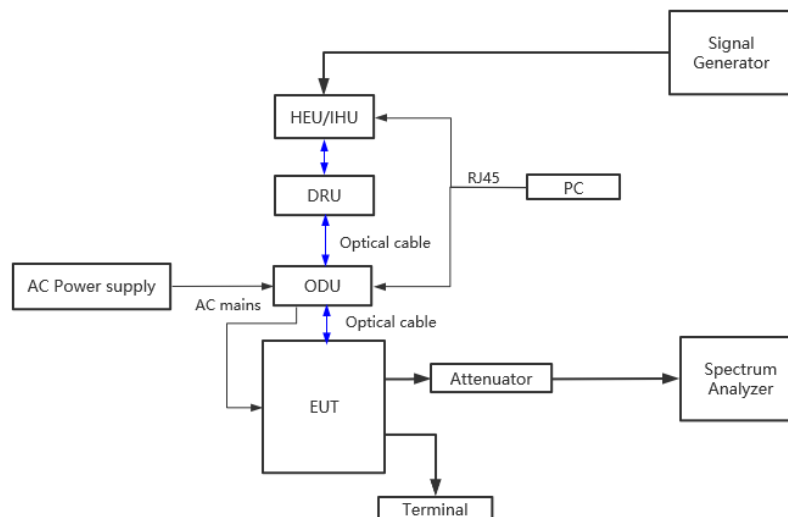
7.5 Frequency stability

Test Requirement: 47 CFR Part 22.355
 Test Method: 47 CFR Part 2.1055
 KDB 935210 D05 clause 3.7
 ANSI C63.26-2015 clause 5.6
 Limit: 1.5 ppm

7.5.1 E.U.T. Operation

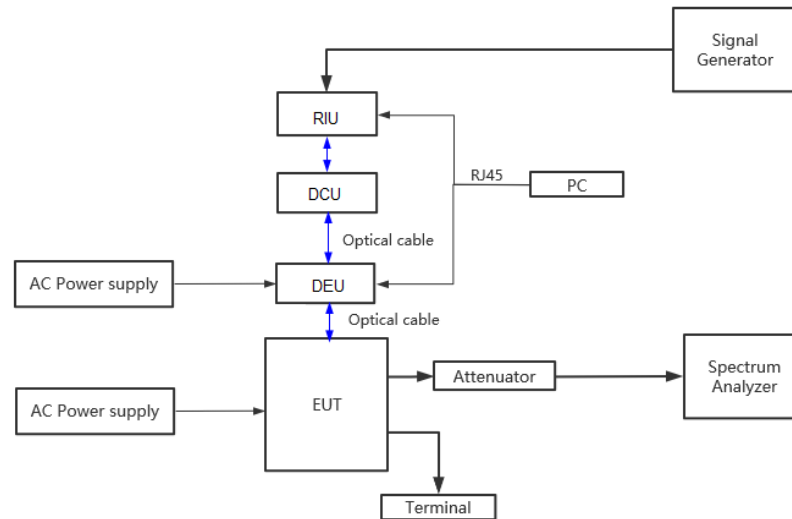
Operating Environment:
 Temperature: 24.6 °C Humidity: 59 % RH Atmospheric Pressure: 1020 mbar
 Test Mode: Set the EUT to maximum output power and maximum gain.
 EUT Configuration: Refer to clause 4.4 in this report.

7.5.2 Test Setup



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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



7.5.3 Measure Data

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

7.6 Radiated spurious emission

Test Requirement: 47 CFR Part 22.917

Test Method: KDB 935210 D05 clause 3.8

ANSI C63.26-2015 clause 5.6

Limit: The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 25.1 °C Humidity: 59 % RH Atmospheric Pressure: 1010 mbar

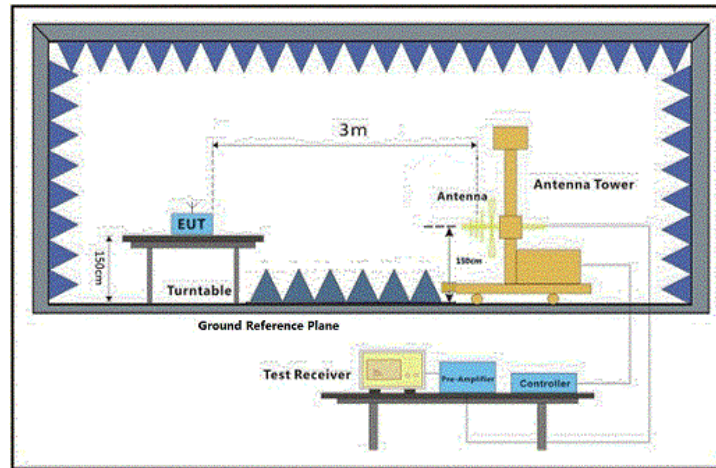
Test Mode: Set the EUT to maximum output power and maximum gain (activate MIMO mode simultaneously).



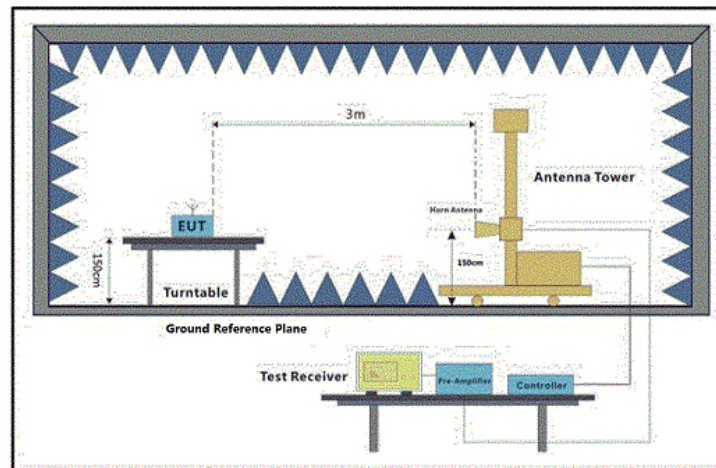
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

7.6.2 Test Setup



30MHz-1GHz



Above 1GHz



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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

7.6.3 Test procedure

1. Scan from 30MHz to 12.75GHz, find the maximum radiation frequency to measure.
2. The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP/EIRP emission levels of the EUT.

Below 1GHz test procedure as below:

- 1) The EUT was powered on and placed on a table in the chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test.
- 2) Rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
- 3) Steps 1) and 2) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
- 4) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.
- 5) A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 2) is obtained for this set of conditions.
- 6) The output power into the substitution antenna was then measured.
- 7) Steps 5) and 6)were repeated with both antennas vertically polarized.
- 8) Calculate power in dBm by the following formula:
Level (dBm) = Read Level (dBm) + Correction Factor (dB)

7.6.4 Measurement Record

Please refer to Appendix-Test Data and Result for report GZCR231100125502



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without 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 Test Setup Photographs

Refer to Appendix - Test Setup Photos for GZCR2311001255AT.

9 EUT Constructional Details (EUT Photos)

Please refer to Appendix A – EUT Construction Details of GZCR2311001255AT for detail.

--Report End--