

TEST REPORT

| | |
|---------------------------------|--|
| Application No.: | GZCR2411001398AT |
| Applicant: | Comba Telecom Network Systems Limited |
| Address of Applicant: | Flat/Rm 10, 3/F, Bio-Informatics Ctr, 2 Science Park West Avenue, HK Science Park, Pak Shek Kok, N.T. Hong Kong |
| Manufacturer: | Comba Network Systems Company Limited |
| Address of Manufacturer: | No. 10 Shenzhou Road, Guangzhou Science City, Guangzhou 510663, Guangdong, P.R. China |
| Factory: | Comba Telecom Technology (Guangzhou) Ltd. |
| Address of Factory: | No. 6 Jinbi Road, Economics and Technology Development District, Guangzhou, Guangdong, China |
| Product Name: | Comflex NGc |
| Model No.: | MRU-7851719c-AC, MRU-7851719c-DC ♣ |
| ♣ | Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical. |
| Trade Mark: | Comba |
| Standard(s) : | 47 CFR Part 2 47 CFR Part 20 |
| Date of Receipt: | 2024-11-25 |
| Date of Test: | 2025-02-20 to 2025-03-14 |
| Date of Issue: | 2025-03-21 |
| Test Result: | Pass* |

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



Jerry Chan
Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch
Inspection & Testing Services
EEC 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 <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
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 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com



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

EMC-TRF-01 Rev 1.1

Report No.: GZCR241100139802

Page: 2 of 40

| Revision Record | | | |
|-----------------|------------------|------------|----------|
| Version | Report No. | Date | Remark |
| 01 | GZCR241100139802 | 2025-03-21 | Original |
| | | | |
| | | | |

| | | | |
|--------------------------|--|------------------------------|--|
| Authorized for issue by: | | | |
| | | Kevin Zhang | |
| | | Kevin Zhang/Project Engineer | |
| | | Vico Cui | |
| | | Vico Cui/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

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com

2 Test Summary

| Item (FCC Rule 47 CFR) | Item & Method (KDB 935210 D04 v02r02 Subclause) | Result |
|--|--|--------|
| 20.21(e)(3) Frequency Bands | 7.1.1 Authorized frequency band verification | PASS |
| | 7.1.2 Authorized CMRS provider test | PASS |
| 20.21(e)(9)(i)(D) Power Limits 20.21(e)(9)(i)(B) Bidirectional Capability | 7.2 Maximum power | PASS |
| 20.21(e)(9)(i)(C)(2) Booster Gain Limits 20.21(e)(9)(i)(B) Bidirectional Capability | 7.3 Maximum booster gain computation | PASS |
| 20.21(e)(9)(i)(G) Intermodulation Limits | 7.4 Intermodulation product | PASS |
| 20.21(e)(9)(i)(F) Out of Band Emission Limits | 7.5 Out-of-band emissions | PASS |
| 2.1051 Spurious emissions at antenna terminals | 7.6 Conducted spurious emissions | PASS |
| 20.21(e)(9)(i)(A) Noise Limits 20.21(e)(9)(i)(I) Transmit Power Off Mode | 7.7 Noise | PASS |
| 20.21(e)(9)(i)(J) Uplink Inactivity | 7.8 Uplink inactivity | PASS |
| 20.21(e)(9)(i)(C)(1) Booster Gain Limits 20.21(e)(9)(i)(I) Transmit Power Off Mode | 7.9 Variable booster gain | PASS |
| 2.1049 Occupied bandwidth | 7.10 Occupied bandwidth | PASS |
| 20.21(e)(9)(ii)(A) Anti-Oscillation 20.21(e)(5) Anti-Oscillation | 7.11 Oscillation detection | PASS |
| 2.1053 Field strength of spurious radiation | 7.13 Radiated spurious emissions (below 1GHz) | PASS |
| 2.1053 Field strength of spurious radiation | 7.13 Radiated spurious emissions (above 1GHz) | PASS |
| 20.21(e)(9)(i)(B) Bidirectional Capability 20.21(e)(3) Frequency Band | 7.14 Spectrum block filtering | PASS |



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: (86-20) 82155555, or email: CN.DocCheck@sgs.com

| Item (FCC Rule 47 CFR) | Item & Method (KDB 935210 D04 v02r02 Subclause) | Result |
|---|--|--------|
| 20.21(e)(9)(i)(E) Out of Band Gain Limits | 7.15 Out of band gain | PASS |
| 2.1055 Frequency stability | 7.16 Frequency stability | PASS |
| 20.21(e)(4) Self-monitoring | 1 | PASS |
| 20.21(e)(9)(i)(H) Booster Antenna Kitting | 2 | PASS |
| 20.21(e)(9)(i)(I) Transmit Power Off Mode | 3 | PASS |
| 20.21(e)(9)(ii)(B) Gain Control | 4 | PASS |
| 20.21(e)(9)(ii)(C) Interference Avoidance for Wireless Subsystems | 5 | PASS |

Note:

E.U.T./ EUT means Equipment Under Test

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

The EUT is an Remote Unit (RU) of an in-building distributed antenna solution (DAS) for provider-specific consumer application and must be integrated with the Master Unit (MU) to form DAS in order to function properly. Optical fibers will be used between RU and MU for connecting.

The DAS has 8 server ports and 1 donor port. The server ports are referred to as MT1 thru MT8 and the donor port is referred to as DT in the test report.

¹ There is no specific test for this functionality but it is instead indirectly addressed by the noise and gain limits tests.

² Generic testing requirements are not established; rather technical documentation is used describing all antennas, cables, and/or coupling devices that may be used with a consumer booster and how those meet the requirements.

³ There is no specific test for this functionality but it is instead addressed through a combination of the variable noise, variable gain, and oscillation detection tests.

⁴ Conformance to the requirement to include AGC circuitry is verified in 7.1 and 7.2.

⁵ 20.21(e)(9)(ii)(C) Consumer boosters using unlicensed (part 15) or other frequency bands for wireless transmissions between donor and server subsystems for its internal operations must employ interference avoidance methods to prevent interference transmitted into authorized CMRS spectrum bands. Before testing please submit a proposed test plan in a KDB inquiry for FCC review and acceptance. This device without any unlicensed (part 15) or other frequency bands for wireless transmissions function, PAG is 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 <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

*** Declaration of EUT Family Grouping:****Model No.:** MRU-7851719c-AC, MRU-7851719c-DC

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on power supply module.

Therefore, only model MRU-7851719c-AC was test for all above items and only mode MRU-7851719c-DC was test for Radiated spurious emissions 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

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com

3 Contents

| | Page |
|--|------|
| 1 Covers Page | 1 |
| 2 Test Summary | 3 |
| 3 Contents | 6 |
| 4 General Information..... | 8 |
| 4.1 Details of EUT | 8 |
| 4.2 Description of Support Units..... | 9 |
| 4.3 Test Environment | 9 |
| 4.4 Measurement Uncertainty | 10 |
| 4.5 Test Location..... | 10 |
| 4.6 Test Facility | 11 |
| 4.7 Deviation from Standards | 11 |
| 4.8 Abnormalities from Standard Conditions | 11 |
| 5 Equipment List..... | 12 |
| 6 Radio Spectrum Matter Test Results | 14 |
| 6.1 Authorized frequency band verification | 14 |
| 6.1.1 E.U.T. Operation | 14 |
| 6.1.2 Test Setup..... | 14 |
| 6.1.3 Measurement Record..... | 14 |
| 6.2 Authorized CMRS provider test | 15 |
| 6.2.1 E.U.T. Operation | 15 |
| 6.2.2 Test Setup..... | 15 |
| 6.2.3 Measurement Record..... | 15 |
| 6.3 Maximum power | 16 |
| 6.3.1 E.U.T. Operation | 16 |
| 6.3.2 Test Setup..... | 16 |
| 6.3.3 Measurement Record..... | 16 |
| 6.4 Maximum booster gain computation | 17 |
| 6.4.1 E.U.T. Operation | 17 |
| 6.4.2 Test Setup..... | 17 |
| 6.4.3 Measurement Record..... | 17 |
| 6.5 Intermodulation product | 18 |
| 6.5.1 E.U.T. Operation | 18 |
| 6.5.2 Test Setup..... | 18 |
| 6.5.3 Measurement Record..... | 18 |
| 6.6 Out-of-band emissions | 19 |
| 6.6.1 E.U.T. Operation | 20 |
| 6.6.2 Test Setup..... | 20 |
| 6.6.3 Measurement Record..... | 20 |
| 6.7 Conducted spurious emissions..... | 21 |
| 6.7.1 E.U.T. Operation | 22 |
| 6.7.2 Test Setup..... | 22 |



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

| | | |
|-------------|--|----|
| 6.7.3 | Measurement Record..... | 22 |
| 6.8 | Noise..... | 23 |
| 6.8.1 | E.U.T. Operation..... | 23 |
| 6.8.2 | Test Setup..... | 24 |
| 6.8.3 | Measurement Record..... | 24 |
| 6.9 | Uplink inactivity | 25 |
| 6.9.1 | E.U.T. Operation..... | 25 |
| 6.9.2 | Test Setup..... | 25 |
| 6.9.3 | Measurement Record..... | 25 |
| 6.10 | Variable booster gain | 26 |
| 6.10.1 | E.U.T. Operation..... | 26 |
| 6.10.2 | Test Setup..... | 26 |
| 6.10.3 | Measurement Record..... | 26 |
| 6.11 | Occupied bandwidth | 27 |
| 6.11.1 | E.U.T. Operation..... | 27 |
| 6.11.2 | Test Setup..... | 27 |
| 6.11.3 | Measurement Record..... | 27 |
| 6.12 | Oscillation detection..... | 28 |
| 6.12.1 | E.U.T. Operation..... | 28 |
| 6.12.2 | Test Setup..... | 28 |
| 6.12.3 | Measurement Record..... | 29 |
| 6.13 | Radiated Spurious emission (below 1GHz)..... | 30 |
| 6.13.1 | E.U.T. Operation..... | 31 |
| 6.13.2 | Test Setup..... | 31 |
| 6.13.3 | Test procedure | 32 |
| 6.13.4 | Measurement Record..... | 32 |
| 6.14 | Radiated Spurious emission (above 1GHz)..... | 33 |
| 6.14.1 | E.U.T. Operation..... | 34 |
| 6.14.2 | Test Setup..... | 34 |
| 6.14.3 | Test procedure | 35 |
| 6.14.4 | Measurement Record..... | 35 |
| 6.15 | Spectrum block filtering | 36 |
| 6.15.1 | E.U.T. Operation..... | 36 |
| 6.15.2 | Test Setup..... | 36 |
| 6.15.3 | Measurement Record..... | 36 |
| 6.16 | Out of band gain | 37 |
| 6.16.1 | E.U.T. Operation..... | 37 |
| 6.16.2 | Test Setup..... | 37 |
| 6.16.3 | Measurement Record..... | 37 |
| 6.17 | Frequency Stability | 38 |
| 6.17.1 | E.U.T. Operation..... | 38 |
| 6.17.2 | Test Setup..... | 38 |
| 6.17.3 | Measurement Record..... | 38 |
| 7 | Test Setup Photographs | 39 |
| 8 | EUT Constructional Details (EUT Photos) | 40 |



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 EUT

| | | |
|--|--|--|
| Power Supply: | AC 100-240V, 50/60Hz for MRU-7851719c-AC DC 48V for MRU-7851719c-DC | |
| Test Voltage: | AC 120V for MRU-7851719c-AC DC 48V for MRU-7851719c-DC | |
| Cable: | AC mains (4m, unshielded) for MRU-7851719c-AC | |
| Operating Temperature: | -20 to +55 °C | |
| Operating Humidity: | ≤85% | |
| Frequency Range: | Lower 700MHz: | Uplink: 698-716MHz Downlink: 728-746MHz |
| | Upper 700MHz: | Uplink: 777-787MHz Downlink: 746-756MHz |
| | Cellular: | Uplink: 824-849MHz Downlink: 869-894MHz |
| | AWS-1: | Uplink: 1710-1755MHz Downlink: 2110-2155MHz |
| | Broadband PCS: | Uplink: 1850-1915MHz Downlink: 1930-1995MHz |
| Interface: | Antenna Port: | 8 (NEX10-F) |
| | Optical Port | 1 (SC-APC) |
| | Debug Port | 1 (RJ45) |
| Radio System Type: | WCDMA, LTE | |
| Minimum Bandwidth: | 5MHz | |
| Normal Output Power: | Uplink | 19dBm (conduced) |
| | Downlink | 10dBm/5MHz (EIRP/ERP, per antenna port) |
| Normal System Gain: | Uplink | 65dB |
| | Downlink | 70dB (per antenna port) |
| Antenna Type: | External dedicated antenna | |
| Antenna Gain: | 9dBi declared by the manufacturer | |
| Cable Loss: | -9dB declared by the manufacturer | |
| Software Version: | MRU5667M07R00.02.05 | |
| Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information. | | |



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

4.2 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|---|--------------------------------------|-------------------------|------------|
| Notebook | LENOVO | Lenovo Xiaoxinchao 5000 | PF0TNMG8 |
| Comflex NGc | Comba Network System Company Limited | Comflex NGc MU | / |
| Mathced, attenuator, splitter, coupler and combiner supplied by the client. | / | / | / |

4.3 Test Environment

| Environment Parameter | Selected Values During Test | |
|-----------------------|-----------------------------|----------------|
| Ralative Humidity | Ambient | |
| Value | Temperature (°C) | Voltage (V) |
| TNVN | Asmbient | AC 120 V 60 Hz |
| TLVL | -30 | AC 102 V 60 Hz |
| TLVH | -30 | AC 138 V 60 Hz |
| THVL | +50 | AC 102 V 60 Hz |
| THVH | +50 | AC 138 V 60 Hz |

VN: Normal Voltage, TN: Normal Teperature

VL: Lower Extreme Voltege, VH: Higher Extreme Voltage

TL: Lower Extreme Teperature, TH: Higher Extreme Teperature



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 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|-----|--|---|
| 1 | RF Output Power | ±0.75dB |
| 2 | Transmitter unwanted emissions | ±0.75dB |
| 3 | Radiated Spurious Emissions Below 1GHz | ±3.08dB (9kHz to 150kHz);±3.19dB(150kHz to 30MHz);±5.14dB (30MHz-1GHz) (3m); ±4.90dB (30MHz-1GHz) (10m) |
| 4 | Radiated Spurious Emissions Above 1GHz | ±4.82dB |
| 5 | Occupied Channel Bandwidth | ± 0.274% |

Remark:

The U_{lab} (lab Uncertainty) is less than U_{cispr} (CISPR Uncertainty) or U_{etsi} (ETSI Uncertainty).

Emission decision rule:

- Compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit, marked as Pass in the report.
- Non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit, marked as Fail in the report.

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou,
Guangdong, China 510663

Tel: +86 20 82155555

No tests were sub-contracted.



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

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch, Testing Center, EEC Laboratory.

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com

4.6 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, IEC60068-2-27 and Rules of procedure IEC60068-2-27, and the relevant IEC60068-2-27 CB-Scheme Operational documents.

4.7 Deviation from Standards

None

4.8 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

| Conducted test equipment | | | | | |
|---|----------------------|-----------|--------------|------------|--------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| Temperature Chamber | GZ GongWen Co.Ltd. | GDJW-100 | EMC0039 | 2024-06-17 | 2025-06-16 |
| EXA Signal Analyzer (10Hz-44GHz) | Keysight | N9010A | EMC2138 | 2024-08-19 | 2025-08-18 |
| MXA Signal Analyzer (10Hz-50GHz) | KEYSIGHT | N9020B | SEM004-24 | 2024-03-16 | 2025-03-15 |
| Spectrum Analyzer(9kHz-30GHz) | Rohde & Schwarz | FSP30 | SEM004-06 | 2024-09-21 | 2025-09-20 |
| 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 |
| 4X4 Power Sensor Unit | TST | TSPS2023R | EMC2257 | 2024-08-19 | 2025-08-18 |
| EXA Signal Analyzer | Agilent Technologies | N9010A | EMC2222 | 2024-12-03 | 2025-12-02 |
| ESG vector signal generator (250kHz-6GHz) | Agilent Technologies | E4438C | SEM006-03 | 2024-12-03 | 2025-12-02 |
| Test Software | TST | V2.0 | GZE100-82 | N/A | N/A |

| Radiated Spurious Emissions Below 1GHz | | | | | |
|--|-----------------------------|---------------|---------------|------------|--------------|
| Equipment | Manufacturer | Model No. | Inventory No. | Cal Date | Cal Due Date |
| 966 Anechoic Chamber | Shenzhen C.R.T | CRTSGSSAC966 | EMC2230 | 2022-04-12 | 2025-04-11 |
| EMI Test Receiver(1Hz-8GHz) | Rohde & Schwarz | ESW8 | EMC2229 | 2024-12-03 | 2025-12-02 |
| Amplifier(9k-1000MHz) | SONOMA | 310 | EMC2237 | 2024-12-03 | 2025-12-02 |
| Trilog Broadband Antenna (25MHz-2GHz) | Schwarzbeck Mess-Elektronik | VULB 9168 | EMC2238 | 2022-04-20 | 2025-04-19 |
| Coaxial Cable | Mirco-COAX UTIFLEX ve | LA2-C125-8000 | EMC2239 | 2024-12-04 | 2026-12-03 |
| Test Software E3 | Audix | Ver.6.191211 | GZE100-81 | N/A | N/A |
| Active Loop Antenna-RED | ETS-Lindgren | 6502 | EMC2190 | 2024-04-08 | 2026-04-07 |

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



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn
邮编: 510663 t (86-20) 82155555 sgs.china@sgs.com

Radiated Spurious Emissions Above 1GHz

| Equipment | Manufacturer | Model No. | Inventory No. | Cal Date | Cal Due Date |
|---|-----------------------------|---------------|---------------|------------|--------------|
| 1GHz-26.5 GHz Pre-Amplifier | Agilent | 8449B | EMC0521 | 2024-10-14 | 2025-10-13 |
| Chamber cable (Above 1GHz) | Scoflex | KMKG-8.0m | EMC0545 | 2024-08-19 | 2026-08-18 |
| Horn Antenna (1GHz-18GHz) | SCHWARZBECK MESS-ELEKTRONIK | BBHA 9120D | EMC2026 | 2022-09-23 | 2025-09-22 |
| Horn Antenna (14-40GHz) | SCHWARZBECK | BBHA 9170 | EMC2041 | 2023-06-18 | 2026-06-17 |
| EXA Signal Analyzer (10Hz-44GHz) | Keysight | N9010A | EMC2138 | 2024-08-19 | 2025-08-18 |
| 966 Anechoic Chamber | C.R.T | 9m x 6m x 6m | EMC2142 | 2023-12-20 | 2026-12-19 |
| Microwave Broadband Preamplifier (18-40GHz) | SCHWARZBECK | BBV 9721 | EMC2172 | 2024-08-19 | 2025-08-18 |
| Test Software E3 | Audix | Ver.6.120110a | GZE100-61 | N/A | N/A |

General used equipment

| Equipment | Manufacturer | Model No. | Inventory No. | Cal Date | Cal Due Date |
|-----------|--------------|-----------|---------------|------------|--------------|
| DMM | Fluke | 73 | EMC0006 | 2024-06-13 | 2025-06-12 |

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.Dcccheck@sgs.com



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch, Testing Center, EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663

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 www.sgsgroup.com.cn

t (86-20) 82155555 sgs.china@sgs.com

6 Radio Spectrum Matter Test Results

6.1 Authorized frequency band verification

Test Requirement: 47 CFR Part 20.21(e)(3), KDB 935210 D04 clause 7.1.1

Test Method: KDB 935210 D04 clause 7.1.1

Limit: *20.21(e)(3) Frequency Bands:*

Consumer Signal Boosters must be designed and manufactured such that they only operate on the frequencies used for the provision of subscriber-based services under parts 22 (Cellular), 24 (Broadband PCS), 27 (AWS-1, 700 MHz Lower A-E Blocks, and 700 MHz Upper C Block), and 90 (Specialized Mobile Radio).

KDB 935210 D04 clause 7.1.1:

This test is intended to confirm that the signal booster only operates on the CMRS frequency bands authorized for use by the NPS. In addition, this test will identify the frequency at which the maximum gain is realized with each CMRS operational band, which then serves as a basis for subsequent tests.

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.1.2 Test Setup

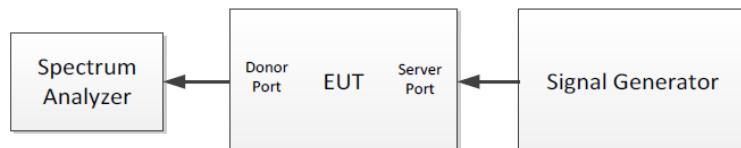


Figure 2 – Uplink test configuration in EUT test mode

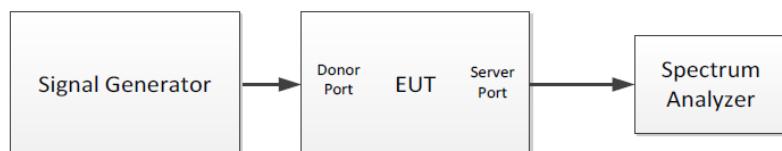


Figure 3 – Downlink test configuration in EUT test mode

6.1.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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 Authorized CMRS provider test

Test Requirement: 47 CFR Part 20.21(e)(3), KDB 935210 D04 clause 7.1.2

Test Method: KDB 935210 D04 clause 7.1.2

Limit: *20.21(e)(3) Frequency Bands:*

Consumer Signal Boosters must be designed and manufactured such that they only operate on the frequencies used for the provision of subscriber-based services under parts 22 (Cellular), 24 (Broadband PCS), 27 (AWS-1, 700 MHz Lower A-E Blocks, and 700 MHz Upper C Block), and 90 (Specialized Mobile Radio).

KDB 935210 D04 clause 7.1.2:

This test shall be used to ensure the booster restricts its operation only to the spectrum assigned to the CMRS provider supporting the equipment certification request.

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.2.2 Test Setup

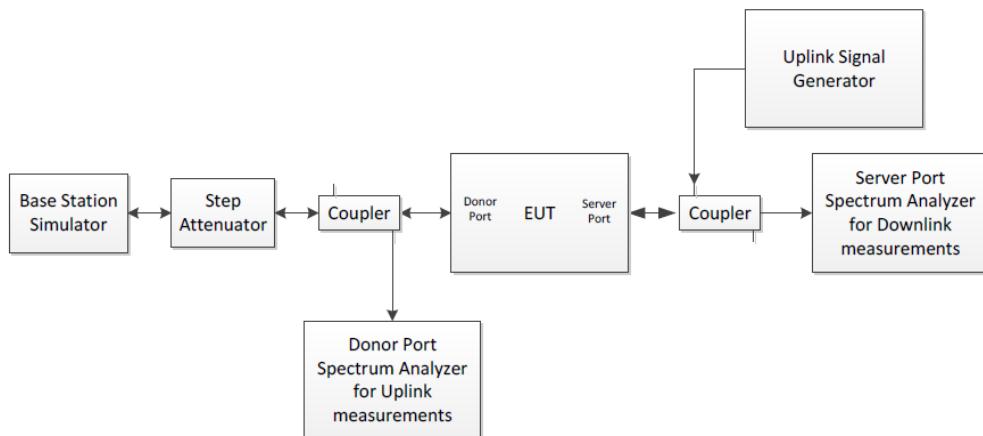


Figure 1 – Test configuration in EUT normal operational mode

6.2.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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 Maximum power

Test Requirement: 47 CFR Part 20.21(e)(9)(i)(D), 20.21(e)(9)(i)(B)

Test Method: KDB 935210 D04 clause 7.2

Limit: *20.21(e)(9)(i)(D) Power Limits:*

A booster's uplink power must not exceed 1 watt composite conducted power and equivalent isotropic radiated power (EIRP) for each band of operation. Downlink power shall not exceed 0.05 watt (17 dBm) composite and 10 dBm per channel conducted and EIRP for each band of operation.

Compliance with power limits will use instrumentation calibrated in terms of RMS equivalent voltage.

20.21(e)(9)(i)(B) Bidirectional Capability:

Consumer Boosters must be able to provide equivalent uplink and downlink gain and conducted uplink power output that is at least 0.05 watts.

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.3.2 Test Setup

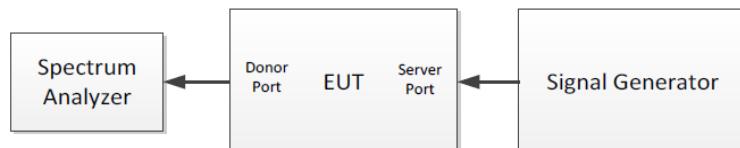


Figure 2 – Uplink test configuration in EUT test mode



Figure 3 – Downlink test configuration in EUT test mode

6.3.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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.Dcccheck@sgs.com

6.4 Maximum booster gain computation

Test Requirement: 47 CFR Part 20.21(e)(9)(i)(C)(2), 20.21(e)(9)(i)(B)

Test Method: KDB 935210 D04 clause 7.3

Limit: *20.21(e)(9)(i)(C)(2) Booster Gain Limits:*

The uplink and downlink maximum gain of a Consumer Booster referenced to its input and output ports shall not exceed the following limits:

- (i) Fixed Booster maximum gain shall not exceed $19.5 \text{ dB} + 20 \log_{10} (\text{Frequency})$, or 100 dB for systems having automatic gain adjustment based on isolation measurements between booster donor and server antennas.
- (ii) Where, Frequency is the uplink mid-band frequency of the supported spectrum bands in MHz.

20.21(e)(9)(i)(B) Bidirectional Capability:

Consumer Boosters must be able to provide equivalent uplink and downlink gain and conducted uplink power output that is at least 0.05 watts.

6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.4.2 Test Setup



Figure 2 – Uplink test configuration in EUT test mode

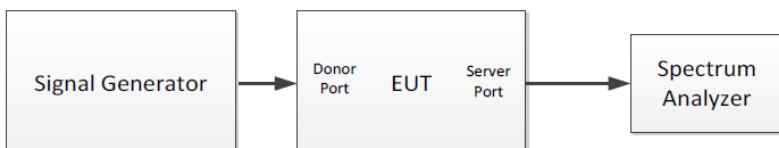


Figure 3 – Downlink test configuration in EUT test mode

6.4.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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: (86-20) 82155555, or email: CN.DocCheck@sgs.com

6.5 Intermodulation product

Test Requirement: 47 CFR Part 20.21(e)(9)(i)(G)

Test Method: KDB 935210 D04 clause 7.4

Limit: *20.21(e)(9)(i)(G) Intermodulation Limits:*

The transmitted intermodulation products of a consumer booster at its uplink and downlink ports shall not exceed the power level of -19 dBm for the supported bands of operation. Compliance with intermodulation limits will use boosters operating at maximum gain and maximum rated output power, with two continuous wave (CW) input signals spaced 600 kHz apart and centered in the pass band of the booster, and with a 3 kHz measurement bandwidth.

6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.5.2 Test Setup

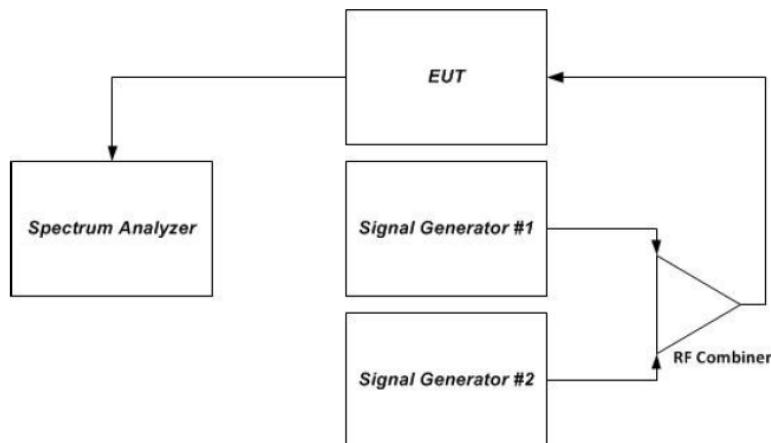


Figure 5 – Intermodulation product instrumentation test setup

6.5.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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 Out-of-band emissions

Test Requirement: 47 CFR Part 20.21(e)(9)(i)(F)

Test Method: KDB 935210 D04 clause 7.5

Limit:

20.21(e)(9)(i)(F) Out of Band Emission Limits:

Booster out of band emissions (OOBE) shall meet the FCC's mobile emission limits for the supported bands of operation. Compliance to OOBE limits will utilize high peak-to-average CMRS signal types.

22.917

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.

24.238

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.

27.53(c)

For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

27.53(g)

For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB.

27.53(h)

the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log(P)$ dB.



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: (86-20) 82155555, or email: CN.DocCheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com

6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.6.2 Test Setup



Figure 2 – Uplink test configuration in EUT test mode



Figure 3 – Downlink test configuration in EUT test mode

6.6.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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

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.

SGS-CSI Standards Technical Services Co.,Ltd
Guangzhou Branch Technical Service - FCL laboratory

Attention: To check the authenticity of testing/inspection report & certificate, please or email: CN.Doccheck@sgs.com
No.198, Kezhi Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新区科学城科智路198号 邮编:510663

Call us at telephone: (86-755) 8307 1443,
or (86-20) 82155555 www.sgsgroup.com.cn
(86-20) 82155555 sgs_china@sgs.com

6.7 Conducted spurious emissions

Test Requirement: 47 CFR Part 2.1051, 20.21(e)(9)(i)(F)

Test Method: KDB 935210 D04 clause 7.6

Limit:

20.21(e)(9)(i)(F) Out of Band Emission Limits:

Booster out of band emissions (OOBE) shall meet the FCC's mobile emission limits for the supported bands of operation. Compliance to OOBE limits will utilize high peak-to-average CMRS signal types.

22.917

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.

24.238

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.

27.53(c)

For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

27.53(g)

For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB.

27.53(h)

the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log 10 (P)$ dB.



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

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663

中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn

邮编: 510663 sgs.china@sgs.com

t (86-20) 82155555

6.7.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.7.2 Test Setup

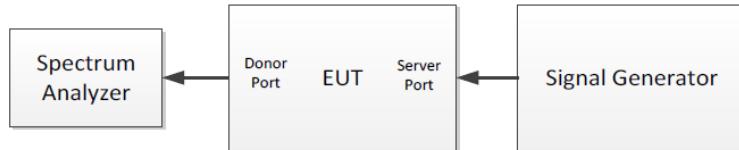


Figure 2 – Uplink test configuration in EUT test mode



Figure 3 – Downlink test configuration in EUT test mode

6.7.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com

6.8 Noise

Test Requirement: 47 CFR Part 20.21(e)(9)(i)(A), 20.21(e)(9)(i)(I)

Test Method: KDB 935210 D04 clause 7.7

Limit: *20.21(e)(9)(i)(A) Noise Limits:*

The transmitted noise power in dBm/MHz of frequency selective consumer boosters outside the licensee's spectrum blocks at their uplink and downlink ports shall not exceed the following limits:

(1) -103 dBm/MHz-RSSI

(i) Where RSSI is the downlink composite signal power received in dBm for frequencies in the band of operation outside the licensee's spectrum block as measured after spectrum block filtering is applied and is referenced to the booster's donor port for each band of operation. RSSI is expressed in negative dB units relative to 1 mW.

(ii) Boosters with MSCL less than 40 dB, shall reduce the Noise output in (A) by 40dB-MSCL, where MSCL is the minimum coupling loss in dB between the wireless device and booster's server port. MSCL must be calculated or measured for each band of operation and provided in compliance test reports.

(2)

(i) Fixed booster maximum downlink noise power shall not exceed -102.5 dBm/MHz + 20 Log10 (Frequency), where Frequency is the uplink mid-band frequency of the supported spectrum bands in MHz.

(iii) Compliance with Noise limits will use instrumentation calibrated in terms of RMS equivalent voltage, and with booster input ports terminated or without input signals applied within the band of measurement.

20.21(e)(9)(i)(I) Transmit Power Off Mode:

When the consumer booster cannot otherwise meet the noise and gain limits defined herein it must operate in "Transmit Power OFF Mode." In this mode of operation, the uplink and downlink noise power shall not exceed -70 dBm/MHz and uplink gain shall not exceed the lesser of 23 dB or MSCL.

6.8.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain.



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

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com

6.8.2 Test Setup



Figure 6 – Maximum downlink noise limit test configuration

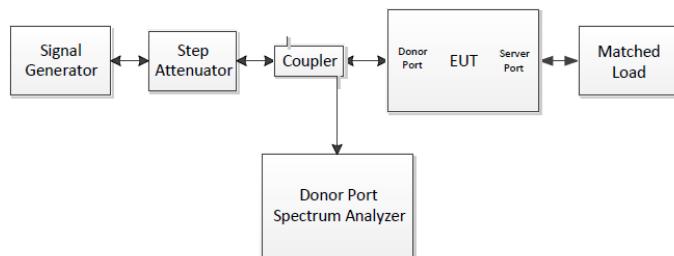


Figure 7 – Uplink RSSI-dependent noise limit test configuration

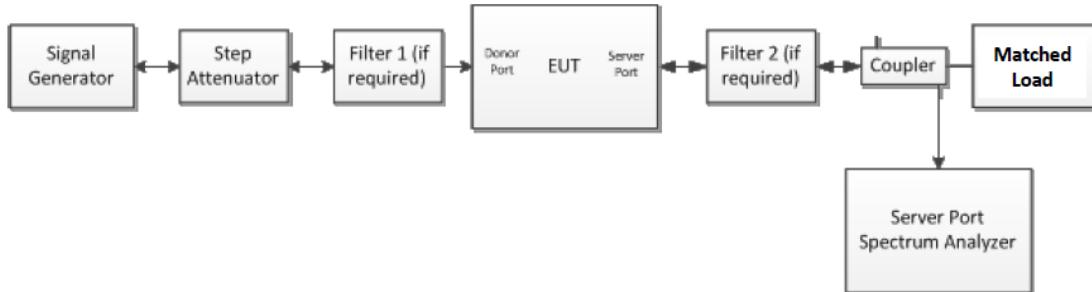


Figure 8 – Downlink RSSI-dependent noise limit test configuration

6.8.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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

6.9 Uplink inactivity

Test Requirement: 47 CFR Part 20.21(e)(9)(i)(J)

Test Method: KDB 935210 D04 clause 7.8

Limit: 20.21(e)(9)(i)(C)(2) *Uplink inactivity:*

When a consumer booster is not serving an active device connection after 5 seconds the uplink noise power shall not exceed -70 dBm/MHz.

6.9.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain.

6.9.2 Test Setup

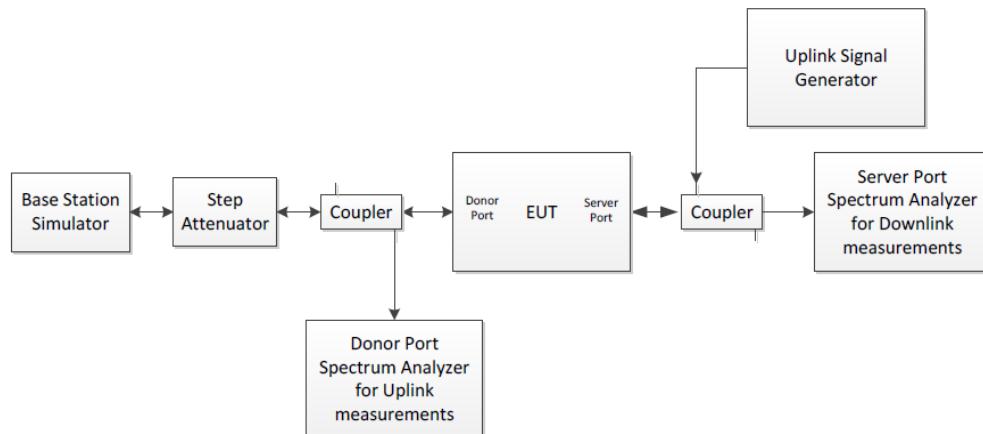


Figure 1 – Test configuration in EUT normal operational mode

6.9.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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

6.10 Variable booster gain

Test Requirement: 47 CFR Part 20.21(e)(9)(i)(C)(1), 20.21(e)(9)(i)(I)

Test Method: KDB 935210 D04 clause 7.9

Limit: *20.21(e)(9)(i)(C)(1) Booster Gain Limits:*

The uplink and downlink gain in dB of a frequency selective consumer booster referenced to its input and output ports shall not exceed BSCL-28 dB-(40 dB-MSCL).

20.21(e)(9)(i)(I) Transmit Power Off Mode:

When the consumer booster cannot otherwise meet the noise and gain limits defined herein it must operate in "Transmit Power OFF Mode." In this mode of operation, the uplink and downlink noise power shall not exceed -70 dBm/MHz and uplink gain shall not exceed the lesser of 23 dB or MSCL.

6.10.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.10.2 Test Setup

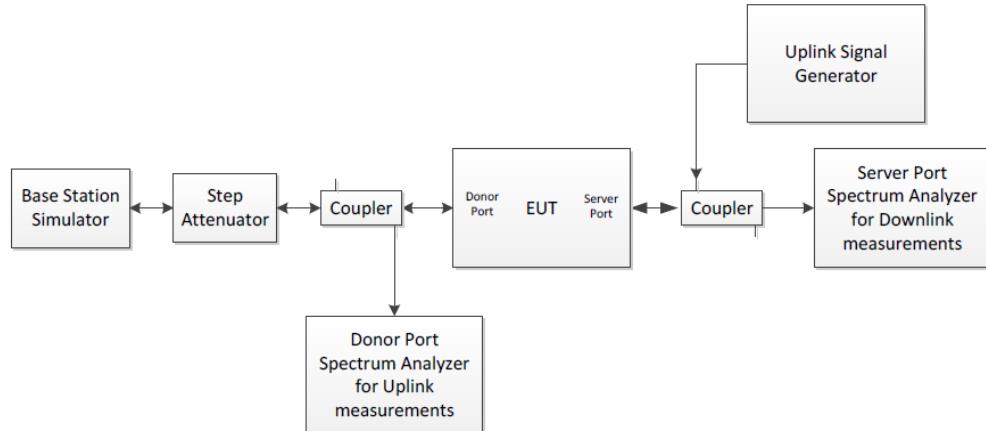


Figure 1 – Test configuration in EUT normal operational mode

6.10.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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: (86-20) 82155555, or email: CN.Doccheck@sgs.com

6.11 Occupied bandwidth

Test Requirement: 47 CFR Part 2.1049

Test Method: KDB 935210 D04 clause 7.10

Limit: Compare the consistency of the output signal relative to the input signal, and to satisfy the requirements of Section 2.1049.

6.11.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.11.2 Test Setup

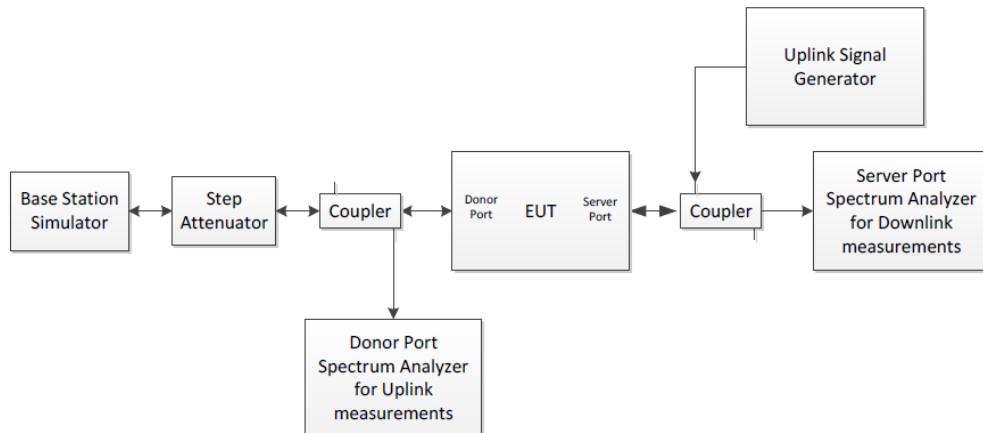


Figure 1 – Test configuration in EUT normal operational mode

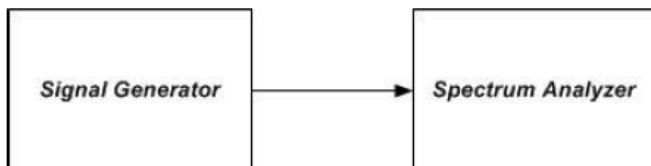


Figure 9 – Test setup for measuring characteristics of test signals used for subsequent EUT occupied bandwidth testing

6.11.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663

中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn

邮编: 510663 sgs.china@sgs.com

6.12 Oscillation detection

Test Requirement: 47 CFR Part 20.21(e)(9)(ii)(A), 20.21(e)(5)

Test Method: KDB 935210 D04 clause 7.11

Limit: *20.21(e)(9)(ii)(A) Anti-Oscillation:*

Consumer boosters must be able to detect and mitigate (i.e., by automatic gain reduction or shut down), any oscillations in uplink and downlink bands.

Oscillation detection and mitigation must occur automatically within 0.3 seconds in the uplink band and within 1 second in the downlink band. In cases where oscillation is detected, the booster must continue mitigation for at least one minute before restarting. After five such restarts, the booster must not resume operation until manually reset.

20.21(e)(5) Anti-Oscillation:

Consumer Signal Boosters must be able to detect and mitigate any unintended oscillations in uplink and downlink bands (such as may result from insufficient isolation between the antennas).

6.12.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.12.2 Test Setup

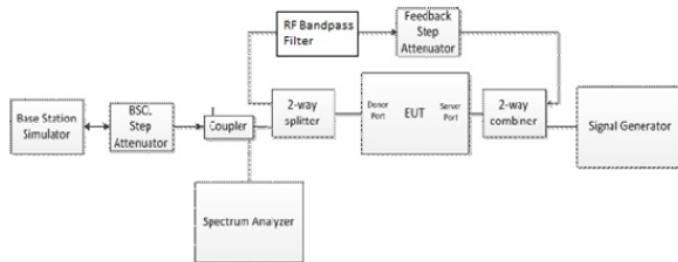


Figure 10 – Uplink oscillation detection test setup

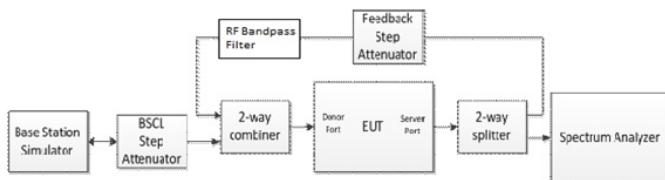


Figure 11 – Downlink oscillation detection test setup

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.

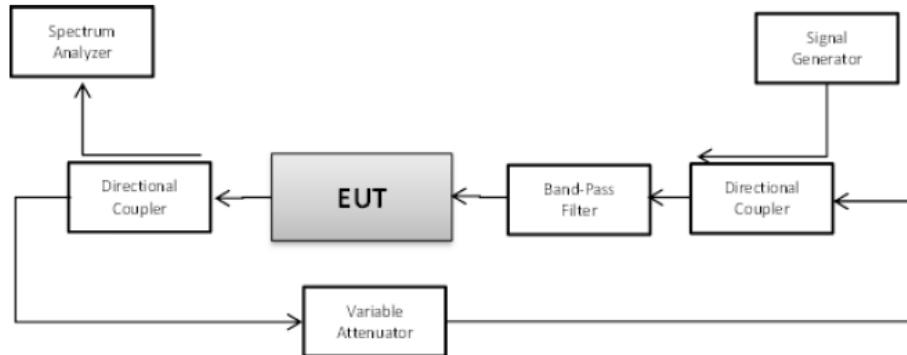
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-20) 82155555, or email: CN.DocCheck@sgs.com



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com

**Figure 12 – Downlink oscillation mitigation test setup**

6.12.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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

6.13 Radiated Spurious emission (below 1GHz)

Test Requirement: 47 CFR Part 2.1053, 20.21(e)(9)(i)(F)

Test Method: KDB 935210 D04 clause 7.13

Limit:

20.21(e)(9)(i)(F) Out of Band Emission Limits:

Booster out of band emissions (OOBE) shall meet the FCC's mobile emission limits for the supported bands of operation. Compliance to OOBE limits will utilize high peak-to-average CMRS signal types.

22.917

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.

24.238

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.

27.53(c)

For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

27.53(f)

For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

27.53(g)

For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB.

27.53(h)

the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log(P)$ dB.



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: (86-20) 82155555, or email: CN.DocCheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn
邮编: 510663 t (86-20) 82155555 sgs.china@sgs.com

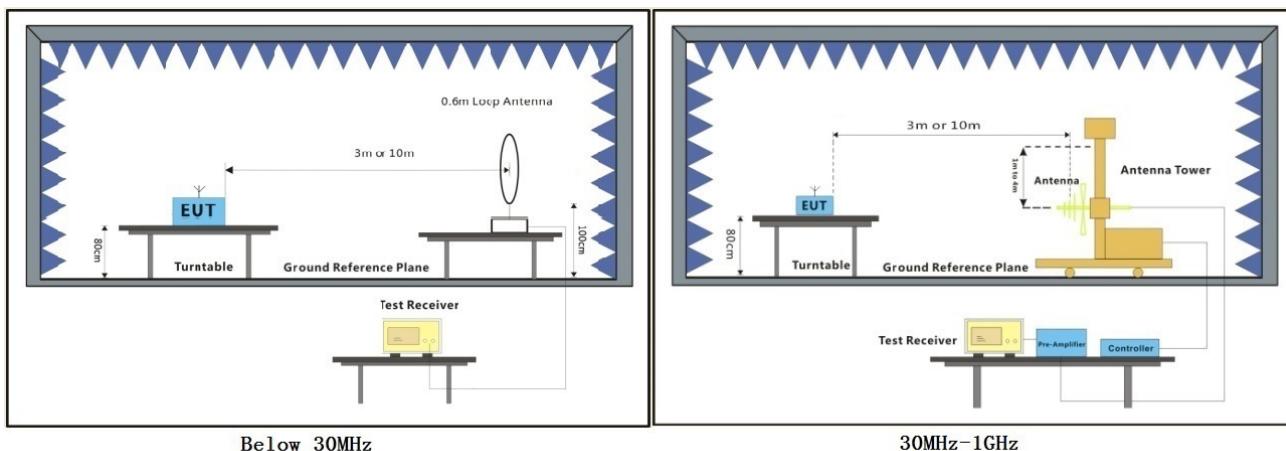
6.13.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C Humidity: 54 % RH Atmospheric Pressure: 1010 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.13.2 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

6.13.3 Test procedure

1. Scan from 9kHz to 1GHz, 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)

6.13.4 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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

6.14 Radiated Spurious emission (above 1GHz)

Test Requirement: 47 CFR Part 2.1053, 20.21(e)(9)(i)(F)

Test Method: KDB 935210 D04 clause 7.13

Limit:

20.21(e)(9)(i)(F) Out of Band Emission Limits:

Booster out of band emissions (OOBE) shall meet the FCC's mobile emission limits for the supported bands of operation. Compliance to OOBE limits will utilize high peak-to-average CMRS signal types.

22.917

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.

24.238

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.

27.53(c)

For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

27.53(f)

For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

27.53(g)

For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB.

27.53(h)

the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log(P)$ dB.



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: (86-20) 82155555, or email: CN.DocCheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

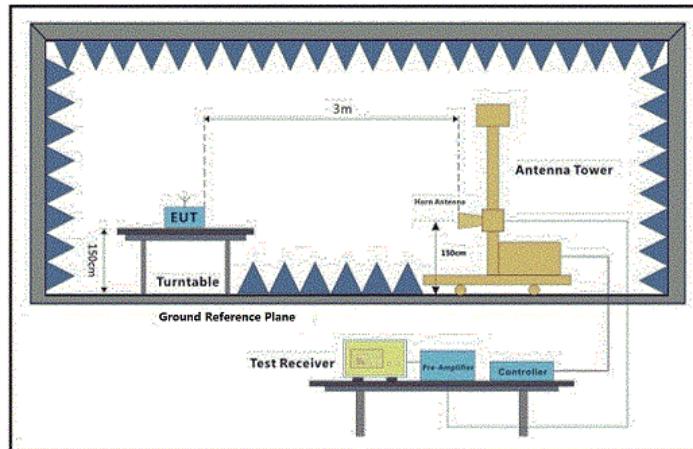
t (86-20) 82155555 www.sgsgroup.com.cn
邮编: 510663 t (86-20) 82155555 sgs.china@sgs.com

6.14.1 E.U.T. Operation

Operating Environment:

Temperature: 24.6 °C Humidity: 54 % RH Atmospheric Pressure: 1010 mbar

EUT Operation: Set the EUT to maximum gain and drive to maximum output power.

6.14.2 Test Setup

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

6.14.3 Test procedure

1. Scan from 1GHz to 40GHz, 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.
- 1) The EUT was powered on and placed on a table in the fully Anechoic 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)

6.14.4 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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

6.15 Spectrum block filtering

Test Requirement: 47 CFR Part 20.21(e)(9)(i)(C)(2), 20.21(e)(9)(i)(B)

Test Method: KDB 935210 D04 clause 7.14

Limit: *20.21(e)(9)(i)(B) Bidirectional Capability:*

Consumer Boosters must be able to provide equivalent uplink and downlink gain and conducted uplink power output that is at least 0.05 watts.

20.21(e)(3) Frequency Bands:

Consumer Signal Boosters must be designed and manufactured such that they only operate on the frequencies used for the provision of subscriber-based services under parts 22 (Cellular), 24 (Broadband PCS), 27 (AWS-1, 700 MHz Lower A-E Blocks, and 700 MHz Upper C Block), and 90 (Specialized Mobile Radio).

6.15.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum output power and maximum gain.

6.15.2 Test Setup

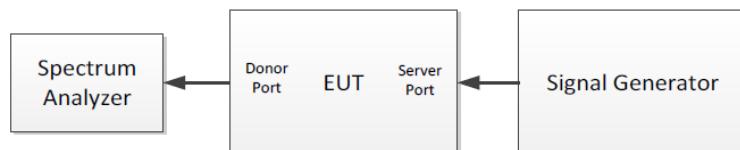


Figure 2 – Uplink test configuration in EUT test mode

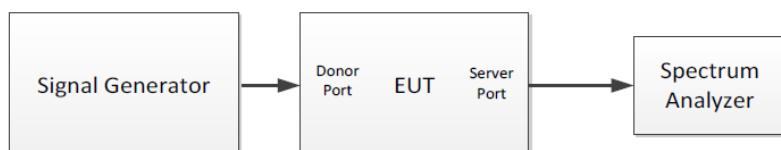


Figure 3 – Downlink test configuration in EUT test mode

6.15.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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

6.16 Out of band gain

Test Requirement: 47 CFR Part 20.21(e)(9)(i)(E)

Test Method: KDB 935210 D04 clause 7.15

Limit: *20.21(e)(9)(i)(E) Out of Band Gain Limits:*

(1) A frequency selective booster shall have the following minimum attenuation referenced to the gain in the center of the pass band of the booster:

- (i) -20 dB at the band edge, where band edge is the end of the licensee's allocated spectrum,
- (ii) -30 dB at 1 MHz offset from band edge,
- (iii) -40 dB at 5 MHz offset from band edge.

(2) A frequency selective booster having maximum gain greater than 80 dB (referenced to the center of the pass band) shall limit the out of band gain to 60 dB at 0.2 MHz offset from the band edge, and 45 dB at 1 MHz offset from the band edge, where band edge is the end of the licensee's allocated spectrum.

6.16.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum output power and maximum gain.

6.16.2 Test Setup



Figure 2 – Uplink test configuration in EUT test mode



Figure 3 – Downlink test configuration in EUT test mode

6.16.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR241100139802.



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

6.17 Frequency Stability

Test Requirement: 47 CFR Part 2.1055

Test Method: 47 CFR Part 2.1055
KDB 935210 D04 clause 7.16

Limit: 22.335 *Frequency tolerance*:

The carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in below table:

| Frequency range (MHz) | Base, fixed (ppm) |
|-----------------------|-------------------|
| 25 to 50 | 20.0 |
| 50 to 450 | 5.0 |
| 450 to 512 | 2.5 |
| 821 to 896 | 1.5 |
| 928 to 929 | 5.0 |
| 929 to 960 | 1.5 |
| 2110 to 2220 | 10.0 |

24.235 & 27.54 *Frequency stability*:

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

6.17.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1015 mbar

EUT Operation: Set the EUT to maximum output power and maximum gain.

6.17.2 Test Setup

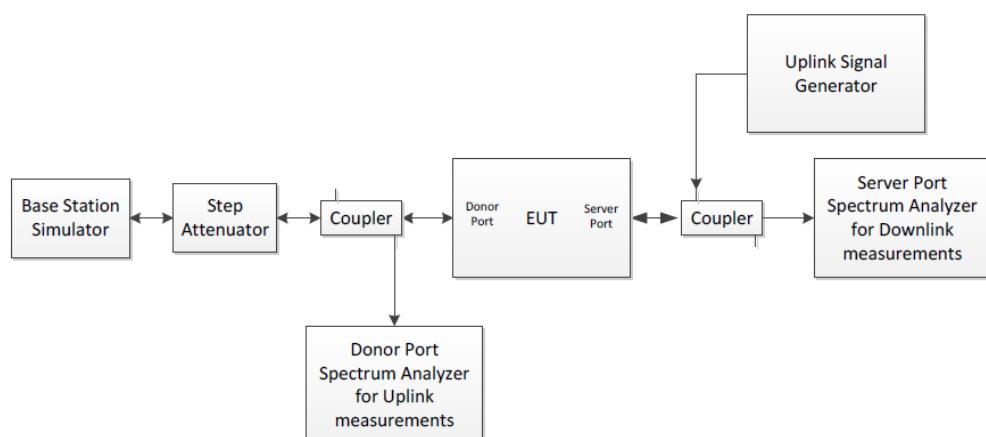


Figure 1 – Test configuration in EUT normal operational mode

6.17.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR230300022302.



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 Test Setup Photographs

Refer to Appendix - Test Setup Photos for GZCR241100139802.



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

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号

t (86-20) 82155555 www.sgsgroup.com.cn
邮编: 510663 t (86-20) 82155555 sgs.china@sgs.com

8 EUT Constructional Details (EUT Photos)

Refer to Appendix - External and Internal Photos for GZCR2411001398AT.

- End of the 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

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch, Testing Center, EEC Laboratory
No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
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 www.sgsgroup.com.cn
t (86-20) 82155555 sgs.china@sgs.com