

TEST REPORT

Application No.: GZCR2409001119AT
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: Public Safety UHF and VHF Dualband Bi-Directional Amplifier
Model No.: RX14V3-A
Trade Mark: Comba
Standard(s) : 47 CFR Part 2
47 CFR Part 20
47 CFR Part 90
Date of Receipt: 2024-09-23
Date of Test: 2024-09-25 to 2024-11-12
Date of Issue: 2024-11-18

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

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



Jerry Chan
Manager



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| Revision Record | | | |
|-----------------|------------------|------------|----------|
| Version | Chapter | Date | Remark |
| 01 | GZCR240900111901 | 2024-11-18 | Original |
| | | | |
| | | | |
| | | | |

| | | | |
|--------------------------|--|-------------------------------|--|
| Authorized for issue by: | | | |
| | | Kevin Zhang | |
| | | Kevin Zhang /Project Engineer | |
| | | Ricky Liu | |
| | | Ricky Liu /Reviewer | |



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2 Test Summary

| Item | Standard | Method | Requirement | Result |
|--|----------------------|--|---|--------|
| Out-of-band rejection | KDB935210 D05 v01r04 | KDB935210 D05 v01r04 clause 4.3 | KDB935210 D05 v01r04 clause 4.3 | Pass |
| Input-versus-output signal comparison | 47 CFR Part 2 | KDB935210 D05 v01r04 clause 4.4 | Part 2.1049 | Pass |
| Input/output output power and amplifier/booster gain | 47 CFR Part 90 | KDB935210 D05 v01r04 clause 4.5 | Part 90.205(d) Part 90.205(h) Part 90.279(a) Part 90.205(i) Part 90.307 Part 90.309 Part 90.219(e)(1) | Pass* |
| Emission Masks | | KDB935210 D05 v01r04 clause 4.4 | Part 90.210 | Pass |
| Noise Figure | | KDB935210 D05 v01r04 clause 4.6 | Part 90.219(e)(2) | Pass |
| Intermodulation emissions | | KDB935210 D05 v01r04 clause 4.7 | Part 90.219(d)(6) | Pass |
| Conducted spurious emissions | | KDB935210 D05 v01r04 clause 4.7 | Part 90.219(e)(3) | Pass |
| Noise | | KDB935210 D05 v01r04 clause 4.7 | Part 90.219(d)(6) | Pass |
| Frequency stability | | 47 CFR Part 2.1055 KDB935210 D05 v01r04 clause 4.8 ANSI C63.26-2015 Clause 5.6 | Part 90.213 | Pass |
| Radiated spurious emissions | | KDB935210 D05 v01r04 clause 4.9 ANSI C63.26-2015 Clause 5.5 | Part 90.219(d)(6) | Pass |

*: According to KDB 935210 D02 Signal Booster Certification v04r03 clause V.J for device support output power higher than 5W ERP limit of Section 90.219(e)(1), the specific station authorizations are required the conditions.

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.



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4 General Information

4.1 Details of EUT

| | | |
|--|---|--|
| Power Supply: | 100-240V AC, 50/60Hz | |
| Test Voltage: | 120V AC | |
| Cable: | Power supply cable (4m, shielded) | |
| Operating Temperature: | -40 to +55 °C | |
| Operating Humidity: | ≤95% | |
| Frequency Range: | VHF | Uplink: 150.05-173.4MHz Downlink: 150.05-173.4MHz |
| | UHF-1 | Uplink: 406.1-420MHz Downlink: 406.1-420MHz |
| | UHF-2 | Uplink: 421-430MHz Downlink: 421-430MHz |
| | UHF-3 | Uplink: 450-512MHz Downlink: 450-512MHz |
| Class Type: | Class A signal booster | |
| Normal Output Power: | VHF | Uplink: 30dBm Downlink: 30dBm |
| | UHF | Uplink: 33dBm Downlink: 36dBm |
| Maximum Gain: | VHF | Uplink: 95dB Downlink: 95dB |
| | UHF | Uplink: 95dB Downlink: 95dB |
| Supported Modulation: | FM, P25 Phase 1, P25 Phase 2, TETRA, DMR | |
| Antenna Type: | External Dedicated Antenna | |
| Permission Antenna Gain: | 0dBi or less (declared by the manufacturer) | |
| Software Version: | RX14_A0AV01.00 | |
| Hardware Version: | RX14V3 | |
| Series No.: | A1 | |
| 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. | | |



4.2 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|--|--------------|-------------------------|------------|
| Notebook | LENOVO | Lenovo Xiaoxinchao 5000 | PF0TNMG8 |
| Mathced load and attenuator 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 |
| TLVL | -30 | AC 102 |
| TLVH | -30 | AC 138 |
| THVL | +50 | AC 102 |
| THVH | +50 | AC 138 |

VN: Normal Voltage, TN: Normal Teperature

VL: Lower Extreme Voltege, VH: Higher Extreme Voltage

TL: Lower Extreme Teperature, TH: Higher Extreme Teperature

4.4 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|-----|--------------------------------|--|
| 1 | RF Output Power | ±0.75dB |
| 2 | Transmitter unwanted emissions | ±0.75dB |
| 3 | Radiated Spurious Emission | ±5.06dB (30MHz-1GHz; 3m); ±4.46dB (30MHz-1GHz; 10m); ±5.08dB (1GHz-6GHz); ±5.14dB (6GHz-18GHz) |
| 4 | Occupied Channel Bandwidth | ± 3% |

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 Signals

| Test Signal | Occupied Bandwidth | Channel Bandwidth |
|---------------------|--------------------|-------------------|
| CW | / | / |
| FM | 4kHz | 6.25kHz |
| DMR | 7.6kHz | 12.5kHz |
| P25 Phase 1 C4FM | 8.1kHz | 12.5kHz |
| P25 Phase 2 H-DQPSK | 9.8kHz | 12.5kHz |
| TETRA | 21kHz | 25kHz |

4.6 Test Channels

| VHF (DL/UL) | | | | | |
|--------------|------------------------|----------|-------------|-------------|----------|
| Test Channel | Centre Frequency (MHz) | | | | |
| | FM | DMR | P25 Phase 1 | P25 Phase 2 | TETRA |
| LCH | 150.0575 | 150.0575 | 150.0575 | 150.0575 | 150.0575 |
| MCH | 161.7225 | 161.7225 | 161.7225 | 161.7225 | 161.7225 |
| HCH | 173.3925 | 173.3925 | 173.3925 | 173.3925 | 173.3925 |

| UHF-1 (DL/UL) | | | | | |
|---------------|------------------------|-----------|-------------|-------------|-----------|
| Test Channel | Centre Frequency (MHz) | | | | |
| | FM | DMR | P25 Phase 1 | P25 Phase 2 | TETRA |
| LCH | 406.10625 | 406.10625 | 406.10625 | 406.10625 | 406.10625 |
| MCH | 413.05000 | 413.05000 | 413.05000 | 413.05000 | 413.05000 |
| HCH | 419.99375 | 419.99375 | 419.99375 | 419.99375 | 419.99375 |

| UHF-2 (DL/UL) | | | | | |
|---------------|------------------------|-----------|-------------|-------------|-----------|
| Test Channel | Centre Frequency (MHz) | | | | |
| | FM | DMR | P25 Phase 1 | P25 Phase 2 | TETRA |
| LCH | 421.00625 | 421.00625 | 421.00625 | 421.00625 | 421.00625 |
| MCH | 425.50000 | 425.50000 | 425.50000 | 425.50000 | 425.50000 |
| HCH | 429.99375 | 429.99375 | 429.99375 | 429.99375 | 429.99375 |



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| UHF-3 (DL/UL) | | | | | |
|---------------|------------------------|-----------|-------------|-------------|-----------|
| Test Channel | Centre Frequency (MHz) | | | | |
| | FM | DMR | P25 Phase 1 | P25 Phase 2 | TETRA |
| LCH | 450.00625 | 450.00625 | 450.00625 | 450.00625 | 450.00625 |
| MCH | 481.00000 | 481.00000 | 481.00000 | 481.00000 | 481.00000 |
| HCH | 511.99375 | 511.99375 | 511.99375 | 511.99375 | 511.99375 |

LCH: Lowest Channel

MCH: Middle Channel

HCH: Highest Channel

DL: Downlink Path

UL: Uplink Path

4.7 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.



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4.8 Test Facility

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

● ACMA

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

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

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

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

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

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

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

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

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

● CBTL (Lab Code: TL129)

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

4.9 Deviation from Standards

None

4.10 Abnormalities from Standard Conditions

None



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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 |
| MI CABLE | SGS-EMC | 0.8M | EMC2137 | 2023-11-02 | 2025-11-01 |
| MI CABLE | SGS-EMC | 0.8M | EMC2136 | 2023-11-02 | 2025-11-01 |
| EXA Signal Analyzer (10Hz-44GHz) | Keysight | N9010A | EMC2138 | 2024-08-19 | 2025-08-18 |
| MXA Signal Analyzer (10Hz-50GHz) | KEYSIGHT | N9020B | SEM004-24 | 2024-03-16 | 2025-03-15 |
| 4X4 Power Sensor Unit | TST | TSPS2023R | EMC2257 | 2024-08-19 | 2025-08-18 |
| ESG vector signal generator (250kHz-6GHz) | Agilent Technologies | E4438C | SEM006-03 | 2024-02-19 | 2025-02-18 |

| Radiated test equipment | | | | | |
|---|--------------------------------|---------------|--------------|------------|--------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| 1GHz-26.5 GHz Pre- Amplifier | Agilent | 8449B | EMC0521 | 2023-11-10 | 2024-11-09 |
| 1GHz-26.5 GHz Pre- Amplifier | Agilent | 8449B | EMC0521 | 2024-10-14 | 2025-10-13 |
| Microwave Broadband Preamplifier (18-40GHz) | SCHWARZBECK | BBV 9721 | EMC2172 | 2024-08-19 | 2025-08-18 |
| EMI Test Receiver (10Hz-26.5GHz) | Rohde & Schwarz | ESIB26 | EMC0522 | 2023-12-15 | 2024-12-14 |
| EXA Signal Analyzer (10Hz-44GHz) | Keysight | N9010A | EMC2138 | 2024-08-19 | 2025-08-18 |
| Chamber cable (Above 1GHz) | Scoflex | KMKM-8.0m | EMC0545 | 2024-08-19 | 2026-08-18 |
| Chamber Cable (Below 1GHz) | Scoflex | KMKM-8.0m | EMC0546 | 2024-08-19 | 2026-08-18 |
| Trilog Broadband Antenna (25MHz-1GHz) | SCHWARZBECK | VULB 9160 | EMC2025 | 2022-09-07 | 2025-09-06 |
| Horn Antenna (1GHz- 18GHz) | SCHWARZBECK MESS-ELEKTRONIK | BBHA 9120D | EMC2026 | 2022-09-21 | 2025-09-20 |
| Horn Antenna 1-18GHz | SCHWARZBECK MESS-ELEKTRONIK | BBHA 9120D | EMC2251 | 2022-02-02 | 2025-08-01 |
| Horn Antenna (14- 40GHz) | SCHWARZBECK | BBHA 9170 | EMC2041 | 2023-06-18 | 2026-06-17 |
| Broad-Band Horn Antenna (15-40GHz) | Schwarzbeck | BBHA 9170 | SEM003-15 | 2024-07-09 | 2026-07-08 |
| 966 Anechoic Chamber | C.R.T | 9m x 6m x 6m | EMC2142 | 2023-12-23 | 2026-12-22 |
| Test Software E3 | Audix | Ver.6.120110a | GZE100-61 | N/A | N/A |



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6 Radio Spectrum Matter Test Results

6.1 Out-of-band rejection

Test Requirement: KDB935210 D05 v01r04 clause 4.3

Test Method: KDB935210 D05 v01r04 clause 4.3

Limit: Within the passband

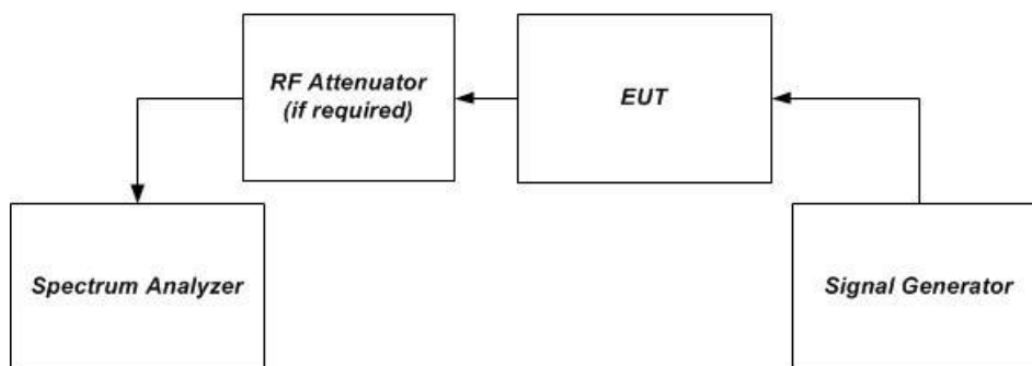
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1010 mbar

EUT Operation: Drive the EUT to the maximum output power at maximum gain.

6.1.2 Test Setup



6.1.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR240900111901.



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6.2 Input-versus-output signal comparison

Test Requirement: Part 2.1049

Test Method: KDB935210 D05 v01r04 clause 4.4

Limit: There is no change in the occupied bandwidth of the retransmitted signals

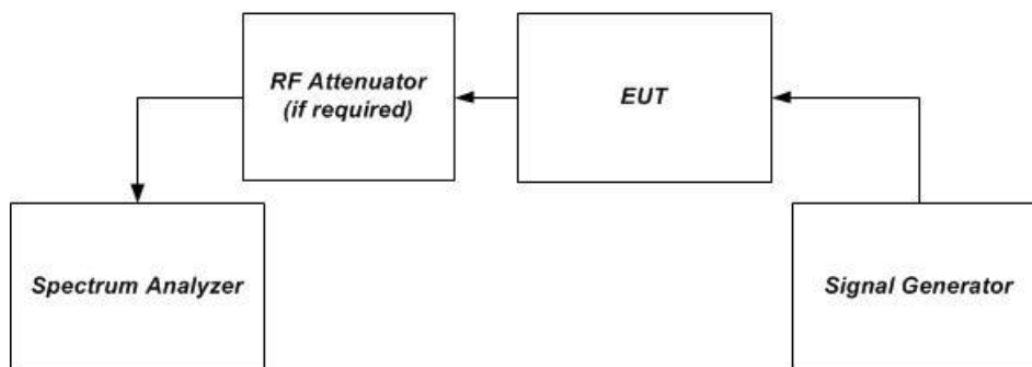
6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1010 mbar

EUT Operation: Drive the EUT to the maximum output power at maximum gain.

6.2.2 Test Setup



6.2.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR240900111901.



6.3 Input/output power and amplifier/booster gain

Test Requirement: Part 90.205(d), 90.205(h), 90.279(a), 90.307, 90.309, 90.219(e)(1)

Test Method: KDB935210 D05 v01r04 clause 4.5

Limit:

1. The ERP limit is 5W specified in 90.219(e)(1).
2. The ERP limit is 500W for 150-174MHz specified in 90.205(d).
3. The ERP limit is 250W for 421-430MHz specified in 90.279(a)
4. The ERP limit is 500W for 450-470MHz specified in 90.205(h)
5. The ERP limit is 1000W for 470-512MHz specified in 90.205(i) & 90.307, 90.309

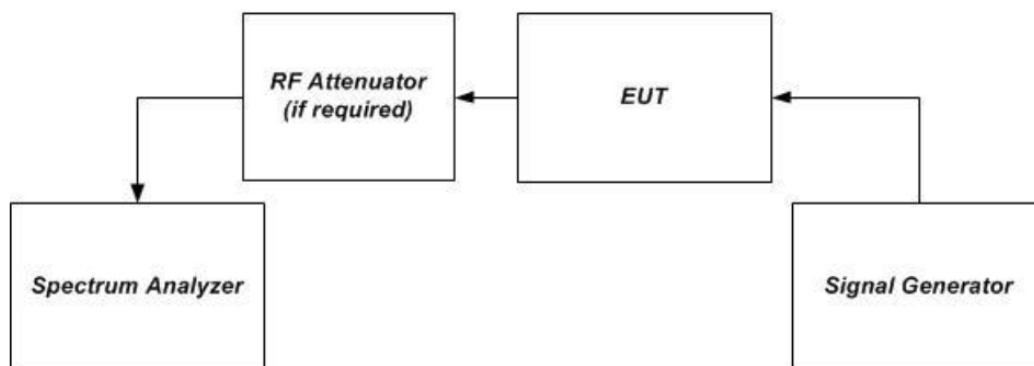
6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1010 mbar

EUT Operation: Drive the EUT to the maximum output power at maximum gain.

6.3.2 Test Setup



6.3.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR240900111901.



6.4 Emission Masks

Test Requirement: Part 90.210

Test Method: KDB935210 D05 v01r04 clause 4.4

Limit:

Mask B for TETRA

For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

- 1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.
- 2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.
- 3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P)$ dB.

Mask D for DMR, P25 Phase 1, P25 Phase 2

For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

- 1) On any frequency from the center of the authorized bandwidth f_0 to 5.625 kHz removed from f_0 : Zero dB.
- 2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least $7.27(f_d - 2.88 \text{ kHz})$ dB.
- 3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz: At least $50 + 10 \log (P)$ dB or 70 dB, whichever is the lesser attenuation.
- 4) The reference level for showing compliance with the emission mask shall be established using a resolution bandwidth sufficiently wide (usually two or three times the channel bandwidth) to capture the true peak emission of the equipment under test. In order to show compliance with the emission mask up to and including 50 kHz removed from the edge of the authorized bandwidth, adjust the resolution bandwidth to 100 Hz with the measuring instrument in a peak hold mode. A sufficient number of sweeps must be measured to insure that the emission profile is developed. If video filtering is used, its bandwidth must not be less than the instrument resolution bandwidth. For emissions beyond 50 kHz from the edge of the authorized bandwidth, see paragraph (o) of this section. If it can be shown that use of the above instrumentation settings do not accurately represent the true interference potential of the equipment under test, an alternate procedure may be used provided prior Commission approval is obtained.

Mask E for FM

For transmitters designed to operate with a 6.25 kHz or less bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:



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- 1) On any frequency from the center of the authorized bandwidth f_0 to 3.0 kHz removed from f_0 : Zero dB.
- 2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 3.0 kHz but no more than 4.6 kHz: At least $30 + 16.67(f_d - 3 \text{ kHz})$ or $55 + 10 \log(P)$ or 65 dB, whichever is the lesser attenuation.
- 3) On any frequency removed from the center of the authorized bandwidth by more than 4.6 kHz: At least $55 + 10 \log(P)$ or 65 dB, whichever is the lesser attenuation.
- 4) The reference level for showing compliance with the emission mask shall be established using a resolution bandwidth sufficiently wide (usually two or three times the channel bandwidth) to capture the true peak emission of the equipment under test. In order to show compliance with the emission mask up to and including 50 kHz removed from the edge of the authorized bandwidth, adjust the resolution bandwidth to 100 Hz with the measuring instrument in a peak hold mode. A sufficient number of sweeps must be measured to insure that the emission profile is developed. If video filtering is used, its bandwidth must not be less than the instrument resolution bandwidth. For emissions beyond 50 kHz from the edge of the authorized bandwidth, see paragraph (o) of this section. If it can be shown that use of the above instrumentation settings do not accurately represent the true interference potential of the equipment under test, an alternate procedure may be used provided prior Commission approval is obtained.

Remark: The EUT is equipped with an audio low-pass filter declared by the manufacturer.

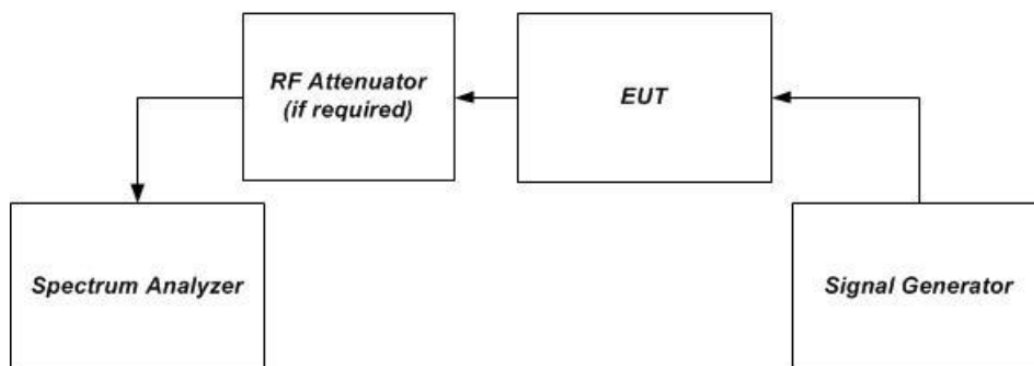
6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1010 mbar

EUT Operation: Drive the EUT to the maximum output power at maximum gain.

6.4.2 Test Setup



6.4.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR240900111901.



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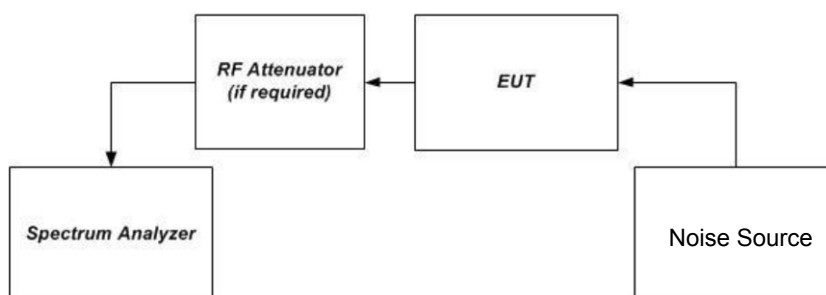
6.5 Noise Figure

Test Requirement: Part 90.219(e)(2)
 Test Method: KDB935210 D05 v01r04 clause 4.6
 Limit: The noise figure of a signal shall not exceed 9dB in either direction.

6.5.1 E.U.T. Operation

Operating Environment:
 Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1010 mbar
 EUT Operation: Drive the EUT to the maximum output power at maximum gain.

6.5.2 Test Setup



6.5.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR240900111901.



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6.6 Intermodulation

Test Requirement: Part 90.219(d)(6)
 Test Method: KDB935210 D05 v01r04 clause 4.7
 Limit: The ERP of intermodulation products should not exceed -30dBm in a 10kHz measurement bandwidth.

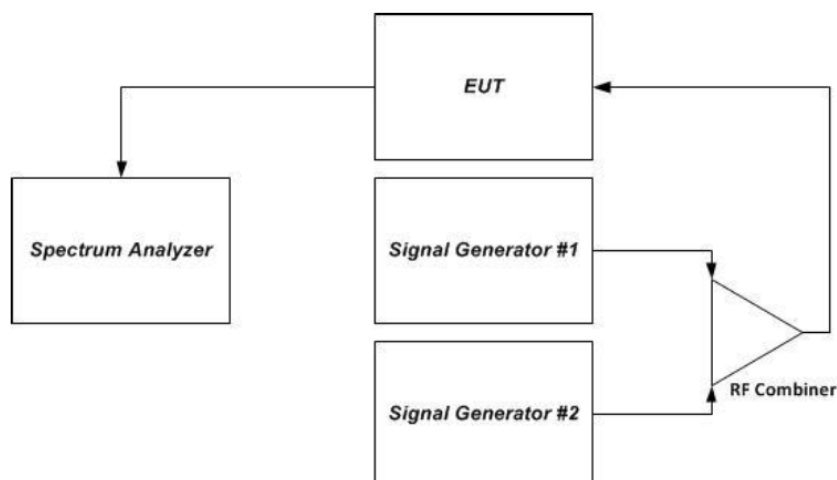
6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1010 mbar

EUT Operation: Drive the EUT to the maximum output power at maximum gain.

6.6.2 Test Setup



6.6.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR240900111901.



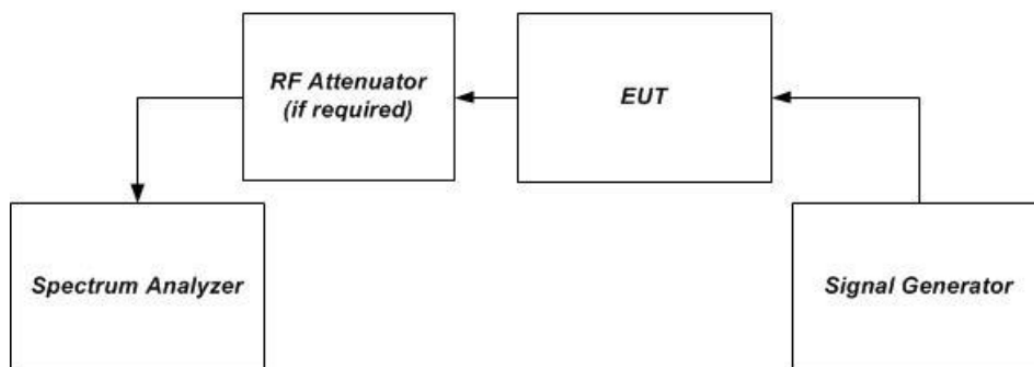
6.7 Conducted Spurious emissions

Test Requirement: Part 90.219(e)(3)
 Test Method: KDB935210 D05 v01r04 clause 4.7
 Limit: Spurious emissions from a signal booster must not exceed -13 dBm within any 100 kHz measurement bandwidth.

6.7.1 E.U.T. Operation

Operating Environment:
 Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1010 mbar
 EUT Operation: Drive the EUT to the maximum output power at maximum gain.

6.7.2 Test Setup



6.7.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR240900111901.



6.8 Noise

Test Requirement: Part 90.219(d)(6)

Test Method: KDB935210 D05 v01r04 clause 4.7

Limit:

1. The ERP of noise within the passband should not exceed -43dBm in a 10kHz measurement bandwidth.
2. The ERP of noise in spectrum more than 1MHz outside of the passband should not exceed -70dBm in a 10kHz measurement bandwidth.

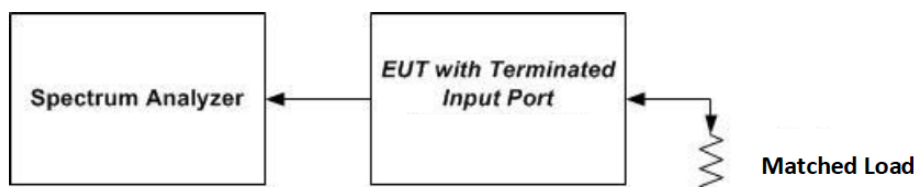
6.8.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1010 mbar

EUT Operation: Set the EUT at maximum gain.

6.8.2 Test Setup



6.8.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR240900111901.



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6.9 Frequency Stability

Test Requirement: Part 90.213

Test Method: Part 2.1055
KDB935210 D05 v01r04 clause 4.8
ANSI C63.26-2015 Clause 5.6

Limit: Paging transmitters operating on paging-only frequencies must operate with frequency stability of 5 ppm in the 150-174 MHz band and 2.5 ppm in the 421-512 MHz band. 【For EUT 5ppm for VHF band; 2.5ppm for UHF band 】

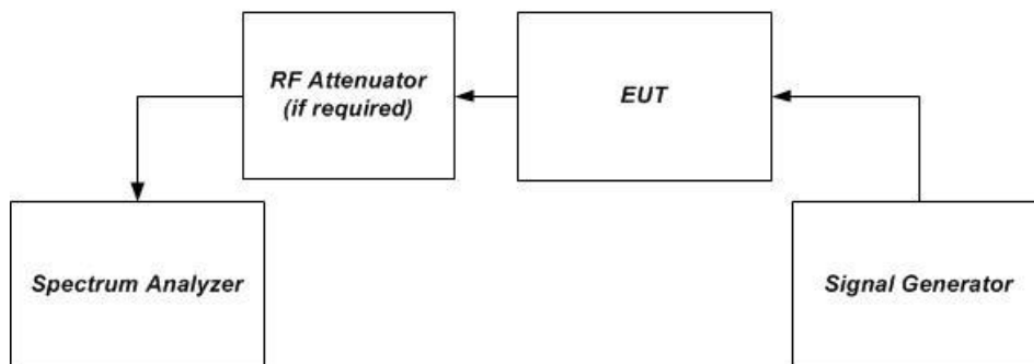
6.9.1 E.U.T. Operation

Operating Environment:

Temperature: 22~26 °C Humidity: 45~60 % RH Atmospheric Pressure: 1010 mbar

EUT Operation: Drive the EUT to the maximum output power at maximum gain.

6.9.2 Test Setup



6.9.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR240900111901.



6.10 Radiated Spurious emissions

Test Requirement: Part 90.219(e)(3)

Test Method: KDB935210 D05 v01r04 clause 4.9
ANSI C63.26-2015 Clause 5.5

Limit: Spurious emissions from a signal booster must not exceed -13 dBm within any 100 kHz measurement bandwidth.

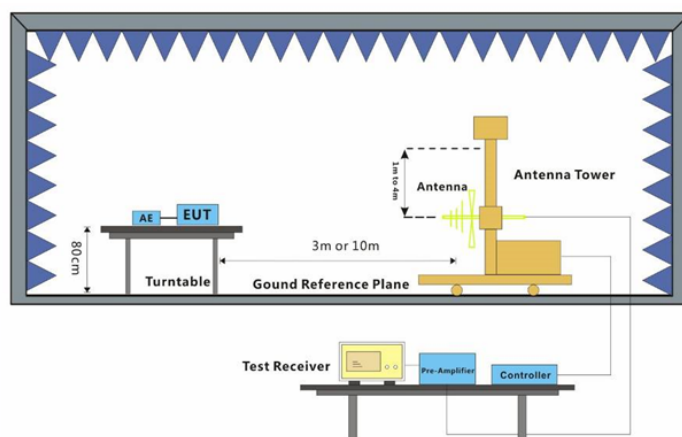
6.10.1 E.U.T. Operation

Operating Environment:

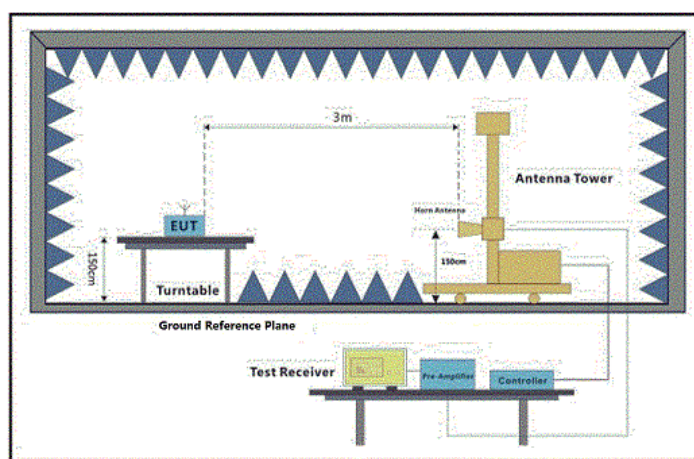
Temperature: 24.4 °C Humidity: 63 % RH Atmospheric Pressure: 1020 mbar

EUT Operation: Drive the EUT to the maximum output power at maximum gain.

6.10.2 Test Setup



30MHz-1GHz



Above 1GHz



6.10.3 Test procedure

1. Scan from 30MHz 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.

Below 1GHz test procedure as below:

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

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

Above 1GHz test procedure as below:

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

6.10.4 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR240900111901.



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7 Test Setup Photographs

Refer to Appendix - Test Setup Photos for GZCR2409001119AT.

8 EUT Constructional Details (EUT Photos)

Refer to Appendix - External and Internal Photos for G ZCR2409001119AT.

- End of the Report -



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