

# TEST REPORT

**Application No.:** GZCR2503000272AT  
**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  
**Product Name:** Comflex NG  
**Model No.:** Comflex NG MU  
**Trade Mark:** Comba  
**Standard(s) :** 47 CFR Part 2  
47 CFR Part 20  
47 CFR Part 90  
**Date of Receipt:** 2025-03-03  
**Date of Test:** 2025-04-29 to 2025-05-19  
**Date of Issue:** 2025-07-16

|                     |              |
|---------------------|--------------|
| <b>Test Result:</b> | <b>Pass*</b> |
|---------------------|--------------|

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




Jerry Chan  
Manager



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| Revision Record |                  |            |          |
|-----------------|------------------|------------|----------|
| Version         | Report No.       | Date       | Remark   |
| 01              | GZCR250300027204 | 2025-07-16 | Original |
|                 |                  |            |          |
|                 |                  |            |          |

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



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## 2 Test Summary

| Item   | Standard                | Method   | Requirement                            | Result |
|--|-------------------------|--|--|--------|
| Out-of-band rejection                            | KDB935210 D05<br>v01r04 | KDB935210 D05<br>v01r04 clause 4.3   | KDB935210 D05<br>v01r04 clause 4.3     | Pass   |
| Input-versus-output signal<br>comparison         | 47 CFR Part 2           | ANSI C63.26-2015<br>Clause 5.4   | Part 2.1049                            | Pass   |
| Emission Mask                                    | 47 CFR Part 90          | KDB935210 D05<br>v01r04 clause 4.4   | Part 90.210(b)                         | Pass   |
| Input/output power and<br>amplifier/booster gain |                         | KDB935210 D05<br>v01r04 clause 4.5   | Part 90.542<br>Part 90.219(e)(1)       | Pass   |
| Noise figure                                     |                         | KDB935210 D05<br>v01r04 clause 4.6   | Part 90.219(e)(2)                      | Pass   |
| Intermodulation emissions                        |                         | KDB935210 D05<br>v01r04 clause 4.7   | Part 90.219(d)(6)<br>Part 90.219(e)(3) | Pass   |
| Conducted spurious<br>emissions                  |                         | KDB935210 D05<br>v01r04 clause 4.7   | Part 90.219(e)(3)<br>Part 90.543(e)    | Pass   |
| Noise  |                         | KDB935210 D05<br>v01r04 clause 4.7   | Part 90.219(d)(6)                      | Pass   |
| Frequency stability                              |                         | 47 CFR Part 2.1055<br>KDB935210 D05<br>v01r04 clause 4.8<br>ANSI C63.26-2015<br>Clause 5.6 | Part 90.213                            | Pass   |
| Radiated spurious<br>emissions (below 1GHz)      |                         | KDB935210 D05<br>v01r04 clause 4.9<br>ANSI C63.26-2015<br>Clause 5.5                       | Part 90.219(e)(3)<br>Part 90.543(f)    | Pass   |
| Radiated spurious<br>emissions (above 1GHz)      |                         | KDB935210 D05<br>v01r04 clause 4.9<br>ANSI C63.26-2015<br>Clause 5.5                       | Part 90.219(e)(3)<br>Part 90.543(f)    | Pass   |

The EUT is a host unit of DAS which can be capable of multi-band operation (details refer to clause 4.1 of this report). It receives handset uplink via fiber-optic or coaxial cable from remote unit, transmits via antenna or coaxial cable to base station, and returns base station downlink via fiber-optic or coaxial cable to remote unit. POI Cards installed in MU chassis can only connect directly to a base station via coaxial cable, and BDA Card installed in MU chassis can only connect to a base station via antenna.

**Only test for FirstNet band uplink in this report.**

### 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:            | AC 100-240V, 50-60Hz       |   |
| Test Voltage:            | AC 120V 60Hz               |   |
| Cable:                   | AC mains (4m, unshielded)  |   |
| Operating Temperature:   | -20 to +55 °C              |   |
| Operating Humidity:      | ≤95%                       |   |
| Frequency Range:         | Lower 700MHz               | Uplink: 698-716MHz<br>Downlink: 728-746MHz  |
|                          | Upper 700MHz               | Uplink: 777-787MHz<br>Downlink: 746-756MHz  |
|                          | FirstNet                   | Uplink: 788-798MHz<br>Downlink: 758-768MHz  |
|                          | Cellular                   | Uplink: 824-849MHz<br>Downlink: 869-894MHz  |
|                          | Broadband PCS              | Uplink: 1850-1915MHz<br>Downlink: 1930-1995MHz  |
|                          | AWS                        | Uplink: 1710-1780MHz<br>Downlink: 2110-2180MHz  |
|                          | BRS/EBS                    | Uplink: 2496-2690MHz<br>Downlink: 2496-2690MHz  |
|                          | 3.45GHz Service band       | Uplink: 3450-3550MHz<br>Downlink: 3450-3550MHz  |
|                          | 3.7GHz Service band        | Uplink: 3700-3980MHz<br>Downlink: 3700-3980MHz  |
| Support Technology:      | LTE                        |   |
|                          | 5G NR                      |   |
| Interface:               | Antenna Port               | 5 (4.3-10 Female)*  |
|                          | Optical Port               | 4 (SC-APC)  |
|                          | OMT Port                   | 1 (RJ-45)   |
|                          | *                          | The other 4.3-10 Female ports belong to the POI card, which connects directly to a base station via coaxial cable but cannot connect to antenna and/or amplifier. |
| Antenna Type:            | External Dedicated Antenna |   |
| Permission Antenna Gain: | 14dBi or less              |   |



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|  |                      |       |
|--|----------------------|-------|
| Normal Output Power:<br>(per antenna port,<br>uplink, BDA card)  | Lower 700MHz         | 19dBm |
|  | Upper 700MHz         | 19dBm |
|  | FirstNet             | 19dBm |
|  | Cellular             | 19dBm |
|  | Broadband PCS        | 19dBm |
|  | AWS                  | 19dBm |
|  | BRS/EBS              | 22dBm |
|  | 3.45GHz Service band | 22dBm |
|  | 3.7GHz Service band  | 22dBm |
| Normal System Gain:<br>(per antenna port,<br>uplink, BDA card)   | Lower 700MHz         | 80dB  |
|  | Upper 700MHz         | 80dB  |
|  | FirstNet             | 80dB  |
|  | Cellular             | 80dB  |
|  | Broadband PCS        | 80dB  |
|  | AWS                  | 80dB  |
|  | BRS/EBS              | 80dB  |
|  | 3.45GHz Service band | 80dB  |
|  | 3.7GHz Service band  | 80dB  |
| Software Version:  | ChassisOAMV0100.01   |       |
| 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   |
| Comflex NG   | Comba        | ARU-6B-Internal         | /          |
| Comflex NG   | Comba        | ARU-HUB-AC              | /          |
| Matched load and attenuator supplied by the client | /            | /                       | /          |



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## 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     | ± 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.



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### 4.5 Test Signals and Test Channels

| UL 788-798MHz |                      |             |                      |
|---------------|----------------------|-------------|----------------------|
| Test Channel  | Test Frequency (MHz) | Test Signal | Stimulus Condition   |
| LCH           | 790.5                | 4.1MHz AWGN | a single test signal |
| MCH           | 793                  |             |                      |
| HCH           | 795.5                |             |                      |
| LCH           | 838                  | 100MHz AWGN | a single test signal |
| MCH           | 793                  |             |                      |
| HCH           | 748                  |             |                      |

LCH: Lowest Channel

MCH: Middle Channel

HCH: Highest Channel

DL: Downlink Path

UL: Uplink Path

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

## 4.7 Test Facility

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

### ● ACMA

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

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

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

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

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

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

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

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

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

### ● CBTL (Lab Code: TL129)

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

## 4.8 Deviation from Standards

None

## 4.9 Abnormalities from Standard Conditions

None



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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   |
| EXA Signal Analyzer<br>(10Hz-44GHz)          | Keysight             | N9010A    | EMC2138      | 2024-08-19 | 2025-08-18   |
| MXA Signal Analyzer<br>(10Hz-50GHz)          | KEYSIGHT             | N9020B    | SEM004-24    | 2025-03-11 | 2026-03-10   |
| 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<br>(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 |
|---------------------------------------|-----------------------------|---------------|---------------|------------|--------------|
| 10m Semi-Anechoic Chamber             | ETS                         | N/A           | EMC0530       | 2022-10-16 | 2025-10-15   |
| Amplifier (9kHz-1.3GHz)               | HP                          | 8447F         | EMC2065       | 2024-12-04 | 2025-12-03   |
| EMI Test Receiver<br>(9kHz-7GHz)      | Rohde & Schwarz             | ESR7          | EMC2220       | 2024-12-04 | 2025-12-03   |
| Test Software E3                      | Audix                       | Ver.6.120110a | GZE100-61     | N/A        | N/A          |
| Trilog Broadband Antenna (25MHz-2GHz) | Schwarzbeck Mess-Elektronik | VULB 9168     | EMC2174       | 2025-04-21 | 2027-04-20   |
| Coaxial Cable                         | Mirco-COAX UTIFLEX ve       | LA2-C125-8000 | EMC2239       | 2024-12-04 | 2026-12-03   |
| Trilog Broadband Antenna (25MHz-1GHz) | SCHWARZBECK                 | VULB 9160     | EMC2025       | 2022-09-07 | 2025-09-06   |
| Active Loop Antenna-RED               | ETS-Lindgren                | 6502          | EMC2190       | 2024-04-08 | 2026-04-07   |



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| 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                        | KMKM-8.0m     | EMC0545       | 2024-08-19 | 2026-08-18   |
| Horn Antenna (1GHz-18GHz)                   | SCHWARZBECK<br>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   |



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## 6 Radio Spectrum Matter Test Results

### 6.1 Out-of-band rejection

Test Requirement: KDB 935210 D05 clause 4.3

Test Method: KDB 935210 D05 clause 4.3

Limit: Within the passband

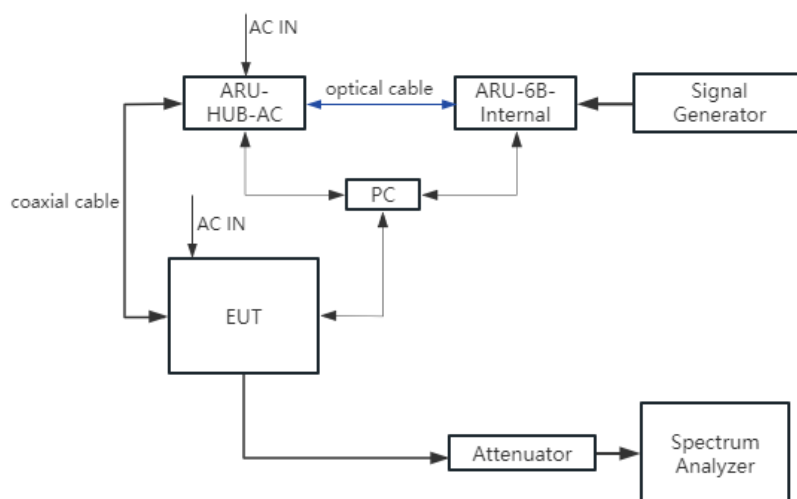
#### 6.1.1 E.U.T. Operation

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 GZCR250300027204.

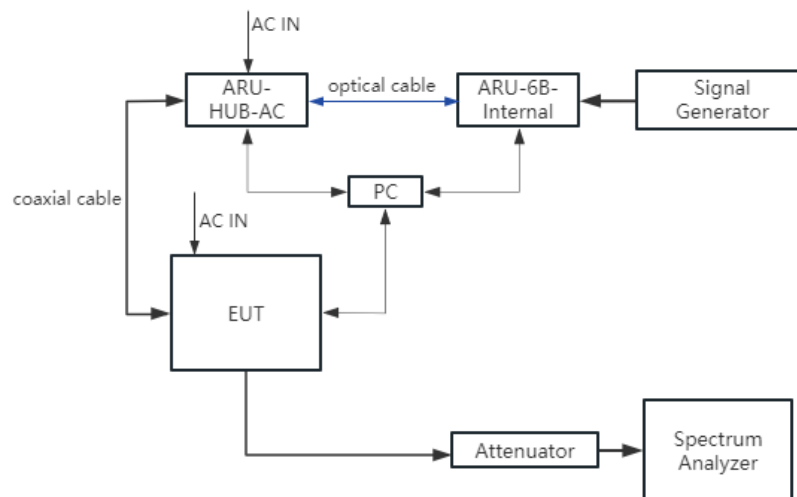
### 6.2 Input versus output comparison

Test Requirement: 47 CFR Part 2.1049  
 Test Method: KDB 935210 D05 clause 4.4  
 Limit: The spectral plots of the output signal and the input signal are similar (in passband and rolloff characteristic features and relative spectral locations).

#### 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 GZCR250300027204.



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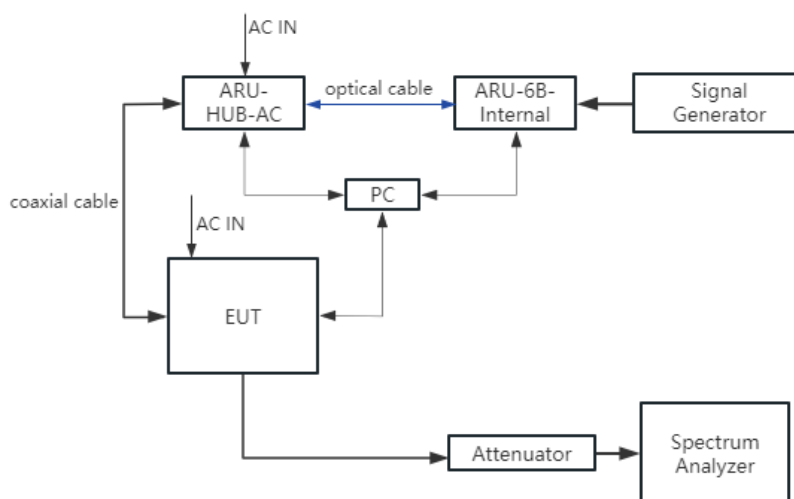
### 6.3 Emission Mask

|                   |  |
|-------------------|--|
| Test Requirement: | 47 CFR Part 90.210(b)  |
| Test Method:      | KDB 935210 D05 clause 4.4  |
| Limit:            | Emission Mask B. 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: <ul style="list-style-type: none"> <li>(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.</li> <li>(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.</li> <li>(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.</li> </ul> |
| Remark:           | The EUT is equipped with an audio low-pass filter according to the declaration from the manufacturer.  |

#### 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 GZCR250300027204.



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### 6.4 Input/output power and amplifier/booster gain

Test Requirement: 47 CFR Part 90.542,90.219 (e)(1).

Test Method: KDB 935210 D05 clause 4.5

Limit: Fixed and base stations transmitting a signal in the 758–768 MHz band with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP accordance with Table 3 of this section..

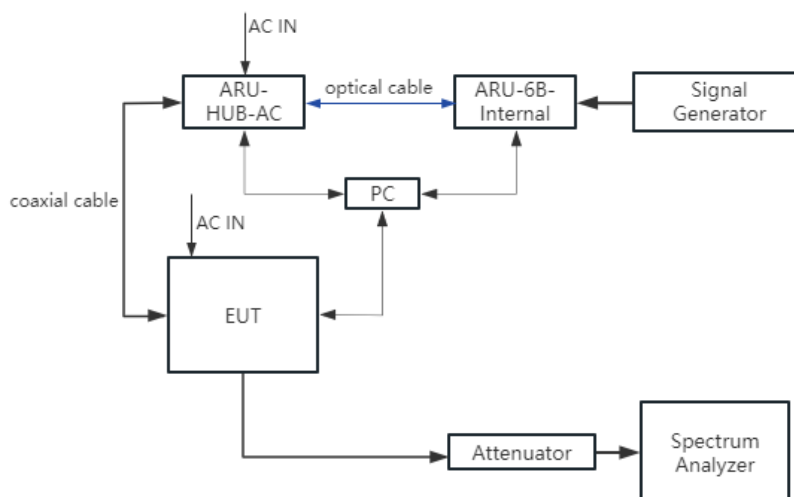
#### 6.4.1 E.U.T. Operation

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 GZCR250300027204.



### 6.5 Noise figure

Test Requirement: 47 CFR Part 90.219(e)(2)  
 Test Method: KDB 935210 D05 clause 4.6  
 Limit: The noise figure of a signal booster must not exceed 9 dB in either direction.

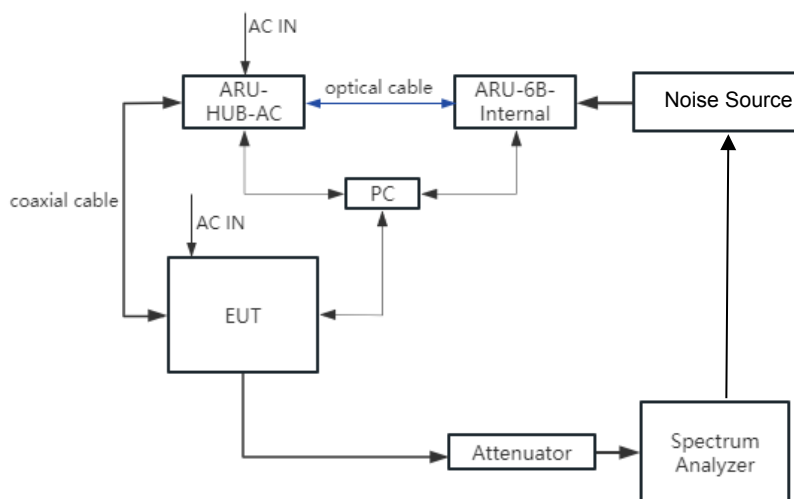
#### 6.5.1 E.U.T. Operation

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 GZCR250300027204.

### 6.6 Intermodulation emissions

Test Requirement: 47 CFR Part 90.219(d)(6);

Test Method: KDB 935210 D05 clause 4.7

Limit: 90.219(d)(6):  
Good engineering practice must be used in regard to the radiation of intermodulation products and noise, such that interference to licensed communications systems is avoided. In the event of harmful interference caused by any given deployment, the FCC may require additional attenuation or filtering of the emissions and/or noise from signal boosters or signal booster systems, as necessary to eliminate the interference.  
(i) In general, the ERP of intermodulation products should not exceed -30 dBm in 10 kHz measurement bandwidth.

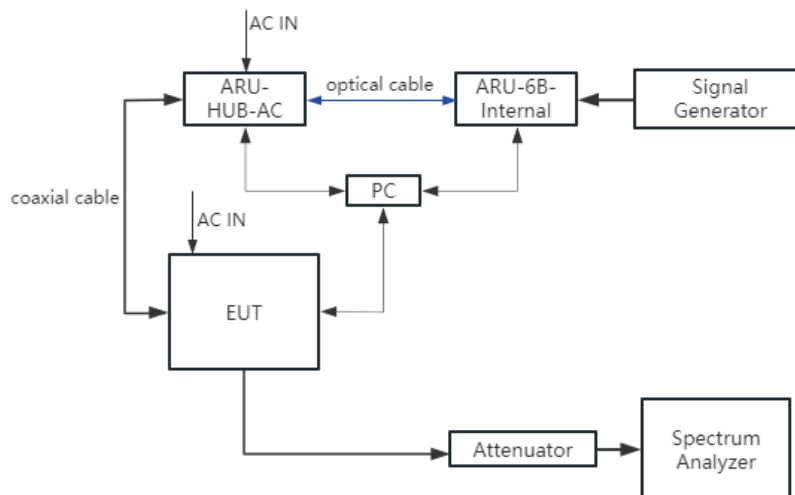
#### 6.6.1 E.U.T. Operation

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 GZCR250300027204.



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### 6.7 Conducted Spurious emissions

Test Requirement: 47 CFR Part 90.219(e)(3), 90.543(e)  
 Test Method: KDB 935210 D05 clause 4.7  
 Limit: Spurious emissions from a signal booster must not exceed -13 dBm within any 100 kHz measurement bandwidth.

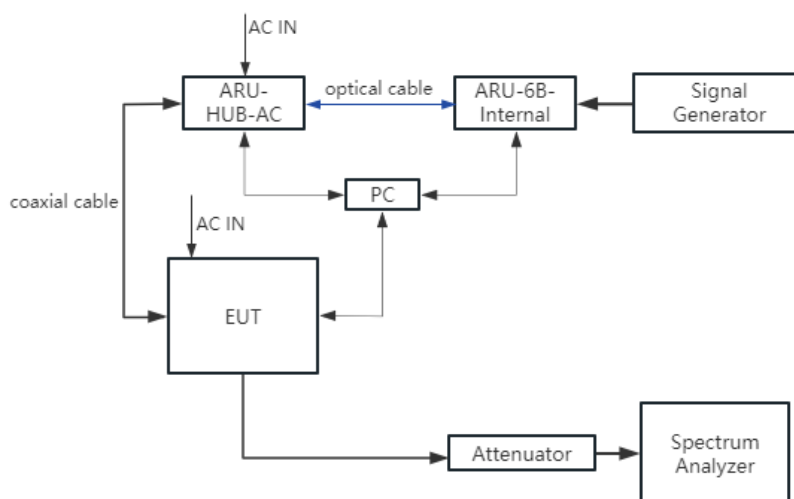
For operations in the 758–768 MHz and the 788–798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than  $76 + 10 \log (P)$  dB in a 6.25 kHz band segment, for base and fixed stations.
- (2) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than  $65 + 10 \log (P)$  dB in a 6.25 kHz band segment, for mobile and portable stations.
- (3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least  $43 + 10 \log (P)$  dB.

#### 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 GZCR250300027204.



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### 6.8 Noise

Test Requirement: 47 CFR Part 90.219(d)(6)

Test Method: KDB 935210 D05 clause 4.7

Limit: Good engineering practice must be used in regard to the radiation of intermodulation products and noise, such that interference to licensed communications systems is avoided. In the event of harmful interference caused by any given deployment, the FCC may require additional attenuation or filtering of the emissions and/or noise from signal boosters or signal booster systems, as necessary to eliminate the interference.

(ii) In general, the ERP of noise within the passband should not exceed -43 dBm in 10 kHz measurement bandwidth.

(iii) In general, the ERP of noise on spectrum more than 1 MHz outside of the passband should not exceed -70 dBm in a 10 kHz measurement bandwidth.

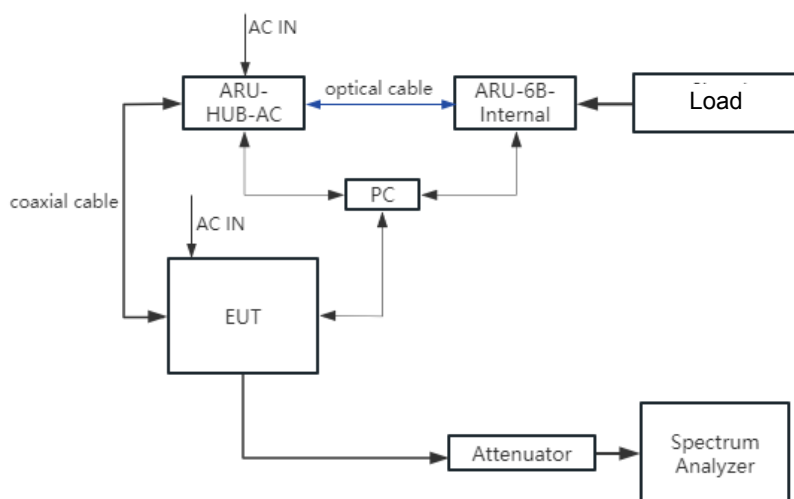
#### 6.8.1 E.U.T. Operation

Operating Environment:

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

EUT Operation: Set the EUT to the maximum gain.

#### 6.8.2 Test Setup



#### 6.8.3 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR250300027204.



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### 6.9 Frequency Stability

Test Requirement: 47 CFR Part 90.213

Test Method: 47 CFR Part 2.1055  
KDB 935210 D05 clause 4.8  
ANSI C63.26-2015 clause 5.6

Limit: The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

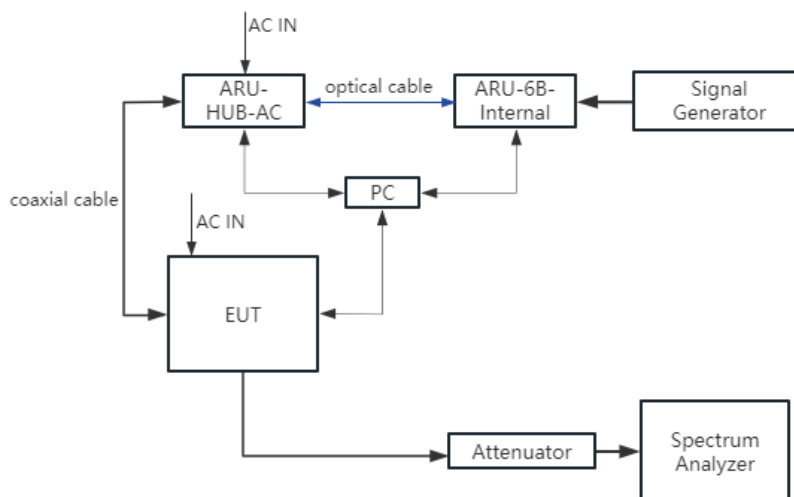
#### 6.9.1 E.U.T. Operation

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 GZCR250300027204.

### 6.10 Radiated Spurious emission (below 1GHz)

Test Requirement: 47 CFR Part 90.219(e)(3), 90.543(e).90.543(f)

Test Method: KDB 935210 D05 clause 4.9  
ANSI C63.26-2015 clause 5.5

Test Distance: 10 m

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

For operations in the 758–768 MHz and the 788–798 MHz bands, 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 all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than  $76 + 10 \log (P)$  dB in a 6.25 kHz band segment, for base and fixed stations.
- (2) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than  $65 + 10 \log (P)$  dB in a 6.25 kHz band segment, for mobile and portable stations.
- (3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least  $43 + 10 \log (P)$  dB.

90.543(f): For operations in the 758–775 MHz and 788–805 MHz bands, all emissions including harmonics 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.

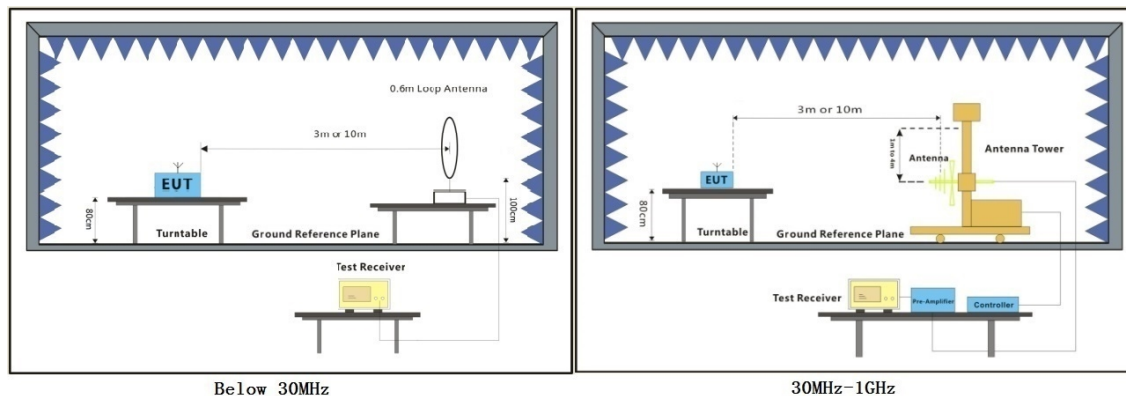
#### 6.10.1 E.U.T. Operation

Operating Environment:

Temperature: 24.2 °C Humidity: 52 % RH Atmospheric Pressure: 1010 mbar

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

#### 6.10.2 Test Setup



Below 1GHz



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### 6.10.3 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.
  - 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:  

$$\text{Level (dBm)} = \text{Read Level (dBm)} + \text{Correction Factor (dB)}$$

### 6.10.4 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR250300027204.



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### 6.11 Radiated Spurious emission (above 1GHz)

- Test Requirement: 47 CFR Part 90.219(e)(3), 90.543(e).90.543(f)
- Test Method: KDB 935210 D05 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.
- For operations in the 758–768 MHz and the 788–798 MHz bands, 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:
- (4) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than  $76 + 10 \log (P)$  dB in a 6.25 kHz band segment, for base and fixed stations.
  - (5) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than  $65 + 10 \log (P)$  dB in a 6.25 kHz band segment, for mobile and portable stations.
  - (6) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least  $43 + 10 \log (P)$  dB.
- 90.543(f): For operations in the 758–775 MHz and 788–805 MHz bands, all emissions including harmonics 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.

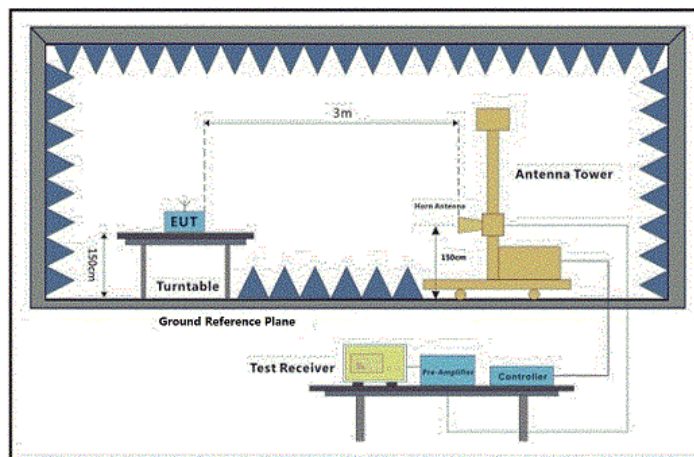
#### 6.11.1 E.U.T. Operation

Operating Environment:

Temperature: 24.2 °C Humidity: 52 % RH Atmospheric Pressure: 1010 mbar

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

#### 6.11.2 Test Setup



Above 1GHz



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### 6.11.3 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:  

$$\text{Level (dBm)} = \text{Read Level (dBm)} + \text{Correction Factor (dB)}$$

### 6.11.4 Measurement Record

Please refer to Appendix - Test Data and Result for report GZCR250300027204.



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## 7 Test Setup Photographs

Refer to Appendix - Test Setup Photos for GZCR250300027204.

## 8 EUT Constructional Details (EUT Photos)

Refer to Appendix -External and Internal Photos for GZCR2503000272AT.

**- End of the Report -**



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