



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

EMC-TRF-01 Rev 1.1

Report No.: GZCR230500052402

Page: 1 of 21

FCC ID: 2BBHB-RRH

# TEST REPORT

**Application No.:** GZCR2305000524AT  
**Applicant:** Flexlink Telecom Ltd  
**Address of Applicant:** No. 12, Dinghu 3rd St., Guishan Dist., Taoyuan City 333, Taiwan  
**Manufacturer:** Flexlink Telecom Ltd  
**Address of Manufacturer:** No. 12, Dinghu 3rd St., Guishan Dist., Taoyuan City 333, Taiwan  
**Equipment Under Test (EUT):**  
**EUT Name:** Band 5 4T4R High Power Remote Radio Head  
**Model No.:** RRH-440-05-50  
**Trade Mark:** Parallel Wireless  
**Standard(s) :** 47 CFR Part 2  
47 CFR Part 22  
**Date of Receipt:** 2023-05-20  
**Date of Test:** 2023-06-02 to 2023-06-08  
**Date of Issue:** 2023-06-13

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

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

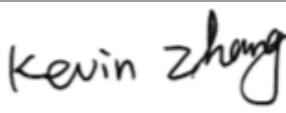
*Ricky Liu*

Ricky Liu  
Manager



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| Revision Record |                  |            |          |
|-----------------|------------------|------------|----------|
| Version         | Chapter          | Date       | Remark   |
| 01              | GZCR230500052402 | 2023-06-13 | Original |
|                 |                  |            |          |
|                 |                  |            |          |
|                 |                  |            |          |

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



## 2 Test Summary

| Item                                    | Standard                        | Method                         | Requirement                | Result |
|-----------------------------------------|---------------------------------|--------------------------------|----------------------------|--------|
| Effective Radiated Power (ERP)          | 47 CFR Part 2<br>47 CFR Part 22 | ANSI C63.26-2015<br>Clause 5.2 | Part 2.1046<br>Part 22.913 | Pass   |
| Peak-to-average ratio (PAR)             | 47 CFR Part 22                  | ANSI C63.26-2015<br>Clause 5.2 | Part 22.913                | Pass   |
| Occupied Bandwidth                      | 47 CFR Part 2                   | ANSI C63.26-2015<br>Clause 5.4 | Part 2.1049                | Pass   |
| Spurious emissions at antenna terminals | 47 CFR Part 22                  | ANSI C63.26-2015<br>Clause 5.7 | Part 22.917                | Pass   |
| Radiated spurious emissions             | 47 CFR Part 22                  | ANSI C63.26-2015<br>Clause 5.5 | Part 22.917                | Pass   |
| Frequency stability                     | 47 CFR Part 2<br>47 CFR Part 22 | ANSI C63.26-2015<br>Clause 5.6 | Part 2.1055<br>Part 22.355 | 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.



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### 3 Contents

|                                                   | Page |
|---------------------------------------------------|------|
| 1 Covers Page.....                                | 1    |
| 2 Test Summary.....                               | 3    |
| 3 Contents .....                                  | 4    |
| 4 General Information .....                       | 6    |
| 4.1 Details of EUT.....                           | 6    |
| 4.2 Test Configuration.....                       | 7    |
| 4.3 Description of Support Units .....            | 10   |
| 4.4 Test Environment.....                         | 10   |
| 4.5 Measurement Uncertainty .....                 | 10   |
| 4.6 Test Location.....                            | 11   |
| 4.7 Test Facility.....                            | 11   |
| 4.8 Deviation from Standards .....                | 11   |
| 4.9 Abnormalities from Standard Conditions .....  | 11   |
| 5 Equipment List.....                             | 12   |
| 6 Radio Spectrum Matter Test Results.....         | 14   |
| 6.1 Effective Radiated Power (ERP) .....          | 14   |
| 6.1.1 E.U.T. Operation .....                      | 14   |
| 6.1.2 Test Setup.....                             | 14   |
| 6.1.3 Measure Data.....                           | 14   |
| 6.2 Peak-to-average ratio (PAR).....              | 15   |
| 6.2.1 E.U.T. Operation .....                      | 15   |
| 6.2.2 Test Setup.....                             | 15   |
| 6.2.3 Measure Data.....                           | 15   |
| 6.3 Occupied Bandwidth .....                      | 16   |
| 6.3.1 E.U.T. Operation .....                      | 16   |
| 6.3.2 Test Setup.....                             | 16   |
| 6.3.3 Measure Data.....                           | 16   |
| 6.4 Spurious emissions at antenna terminals ..... | 17   |
| 6.4.1 E.U.T. Operation .....                      | 17   |
| 6.4.2 Test Setup.....                             | 17   |
| 6.4.3 Measure Data.....                           | 17   |
| 6.5 Radiated Spurious emission .....              | 18   |
| 6.5.1 E.U.T. Operation .....                      | 18   |
| 6.5.2 Test Setup.....                             | 18   |
| 6.5.3 Test procedure .....                        | 19   |
| 6.5.4 Measurement Data.....                       | 19   |
| 6.6 Frequency Stability .....                     | 20   |
| 6.6.1 E.U.T. Operation .....                      | 20   |
| 6.6.2 Test Setup.....                             | 20   |
| 6.6.3 Measure Data.....                           | 20   |



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EMC-TRF-01 Rev 1.1

Report No.: GZCR230500052402

Page: 5 of 21

|   |                                               |    |
|---|-----------------------------------------------|----|
| 7 | Test Setup Photographs .....                  | 21 |
| 8 | EUT Constructional Details (EUT Photos) ..... | 21 |



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## 4 General Information

### 4.1 Details of EUT

|                              |                                                                                                                                                   |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply:                | DC -57.6V~ -36.0V                                                                                                                                 |
| Test Voltage:                | DC -48V                                                                                                                                           |
| Operating Temperature:       | -40 to +55 °C                                                                                                                                     |
| Operating Humidity:          | ≤95%                                                                                                                                              |
| Frequency Range:             | 869-894MHz                                                                                                                                        |
| Radio System Type:           | Single Radio Access Technology (Single-RAT): LTE<br>Multi-Standard Radio (MSR): GSM & LTE                                                         |
| Capacity:                    | 1 LTE carrier (5MHz, 10MHz, 15MHz, 20MHz)                                                                                                         |
| (per antenna port)           | 2 LTE carriers (5MHz+5MHz, 5MHz+10MHz, 10MHz+10MHz)<br>1 GSM carrier+1 LTE carrier (5MHz, 10MHz)<br>2 GSM carriers+1 LTE carrier (5MHz, 10MHz)    |
| Modulation Type:             | GSM: GMSK, 8PSK<br>LTE: QPSK/ 64QAM/256QAM                                                                                                        |
| MIMO:                        | 4T4R                                                                                                                                              |
| Normal Output Power:         | 46dBm                                                                                                                                             |
| (per antenna port)           |                                                                                                                                                   |
| Interface:                   | TX & RX Port 4× 4.3-10-Female, ANT1~ ANT4<br>GPS Port 1× N-Female<br>Power Port 1× 2-pin socket<br>Optical Port 2× SFP+<br>Debug Port 1× Mini-USB |
| Antenna Type:                | External Dedicated Antenna                                                                                                                        |
| Permission Antenna Gain:     | 5dBi or less                                                                                                                                      |
| (declared from manufacturer) |                                                                                                                                                   |



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## 4.2 Test Configuration

| EUT Conf. | LTE carrier BW (MHz) | Modulation | Test Frequency (MHz) |             |             | Conf. code |
|-----------|----------------------|------------|----------------------|-------------|-------------|------------|
|           |                      |            | Bottom               | Middle      | Top         |            |
| 1 LTE     | 5                    | QPSK       | 871.5                | 881.5       | 891.5       | TC00       |
|           | 5                    | 64QAM      | 871.5                | 881.5       | 891.5       | TC01       |
|           | 5                    | 256QAM     | 871.5                | 881.5       | 891.5       | TC02       |
|           | 10                   | QPSK       | 874                  | 881.5       | 889         | TC03       |
|           | 10                   | 64QAM      | 874                  | 881.5       | 889         | TC04       |
|           | 10                   | 256QAM     | 874                  | 881.5       | 889         | TC05       |
|           | 15                   | QPSK       | 876.5                | 881.5       | 886.5       | TC06       |
|           | 15                   | 64QAM      | 876.5                | 881.5       | 886.5       | TC07       |
|           | 15                   | 256QAM     | 876.5                | 881.5       | 886.5       | TC08       |
|           | 20                   | QPSK       | 879                  | 881.5       | 884         | TC09       |
|           | 20                   | 64QAM      | 879                  | 881.5       | 884         | TC10       |
|           | 20                   | 256QAM     | 879                  | 881.5       | 884         | TC11       |
| 2 LTE     | 5+5                  | QPSK       | 871.5+876.5          | 879+884     | 886.5+891.5 | TC12       |
|           | 5+5                  | 64QAM      | 871.5+876.5          | 879+884     | 886.5+891.5 | TC13       |
|           | 5+5                  | 256QAM     | 871.5+876.5          | 879+884     | 886.5+891.5 | TC14       |
|           | 5+5                  | QPSK       | 871.5+891.5          |             |             | TC15       |
|           | 5+5                  | 64QAM      | 871.5+891.5          |             |             | TC16       |
|           | 5+5                  | 256QAM     | 871.5+891.5          |             |             | TC17       |
|           | 5+10                 | QPSK       | 871.5+879            | 879+886.5   | 881.5+889   | TC18       |
|           | 5+10                 | 64QAM      | 871.5+879            | 879+886.5   | 881.5+889   | TC19       |
|           | 5+10                 | 256QAM     | 871.5+879            | 879+886.5   | 881.5+889   | TC20       |
|           | 5+10                 | QPSK       | 871.5+889            |             |             | TC21       |
|           | 5+10                 | 64QAM      | 871.5+889            |             |             | TC22       |
|           | 5+10                 | 256QAM     | 871.5+889            |             |             | TC23       |
|           | 10+10                | QPSK       | 874+884              | 876.5+886.5 | 879+889     | TC24       |
|           | 10+10                | 64QAM      | 874+884              | 876.5+886.5 | 879+889     | TC25       |
|           | 10+10                | 256QAM     | 874+884              | 876.5+886.5 | 879+889     | TC26       |



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| EUT Conf.       | LTE carrier BW (MHz) | Modulation  | Test Frequency (MHz) |        |     | Conf. code |
|-----------------|----------------------|-------------|----------------------|--------|-----|------------|
|                 |                      |             | Bottom               | Middle | Top |            |
| 2 LTE           | 10+10                | QPSK        | 874+889              |        |     | TC27       |
|                 | 10+10                | 64QAM       | 874+889              |        |     | TC28       |
|                 | 10+10                | 256QAM      | 874+889              |        |     | TC29       |
| 1 GSM+<br>1 LTE | 5                    | GMSK+QPSK   | 874+891.5            |        |     | TC30       |
|                 | 5                    | 8PSK+QPSK   | 874+891.5            |        |     | TC31       |
|                 | 5                    | GMSK+64QAM  | 874+891.5            |        |     | TC32       |
|                 | 5                    | 8PSK+64QAM  | 874+891.5            |        |     | TC33       |
|                 | 5                    | GMSK+256QAM | 874+891.5            |        |     | TC34       |
|                 | 5                    | 8PSK+256QAM | 874+891.5            |        |     | TC35       |
|                 | 5                    | QPSK+GMSK   | 871.5+889            |        |     | TC36       |
|                 | 5                    | QPSK+8PSK   | 871.5+889            |        |     | TC37       |
|                 | 5                    | 64QAM+GMSK  | 871.5+889            |        |     | TC38       |
|                 | 5                    | 64QAM+8PSK  | 871.5+889            |        |     | TC39       |
|                 | 5                    | 256QAM+GMSK | 871.5+889            |        |     | TC40       |
|                 | 5                    | 256QAM+8PSK | 871.5+889            |        |     | TC41       |
|                 | 10                   | GMSK+QPSK   | 874+889              |        |     | TC42       |
|                 | 10                   | 8PSK+QPSK   | 874+889              |        |     | TC43       |
|                 | 10                   | GMSK+64QAM  | 874+889              |        |     | TC44       |
|                 | 10                   | 8PSK+64QAM  | 874+889              |        |     | TC45       |
|                 | 10                   | GMSK+256QAM | 874+889              |        |     | TC46       |
|                 | 10                   | 8PSK+256QAM | 874+889              |        |     | TC47       |
|                 | 10                   | QPSK+GMSK   | 874+889              |        |     | TC48       |
|                 | 10                   | QPSK+8PSK   | 874+889              |        |     | TC49       |
|                 | 10                   | 64QAM+GMSK  | 874+889              |        |     | TC50       |
|                 | 10                   | 64QAM+8PSK  | 874+889              |        |     | TC51       |
|                 | 10                   | 256QAM+GMSK | 874+889              |        |     | TC52       |
|                 | 10                   | 256QAM+8PSK | 874+889              |        |     | TC53       |



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| EUT Conf.       | LTE carrier BW (MHz) | Modulation  | Test Frequency (MHz) |        |     | Conf. code |
|-----------------|----------------------|-------------|----------------------|--------|-----|------------|
|                 |                      |             | Bottom               | Middle | Top |            |
| 2 GSM+<br>1 LTE | 5                    | GMSK+QPSK   | 869.5+878.5+891.5    |        |     | TC54       |
|                 | 5                    | 8PSK+QPSK   | 869.5+878.5+891.5    |        |     | TC55       |
|                 | 5                    | GMSK+64QAM  | 869.5+878.5+891.5    |        |     | TC56       |
|                 | 5                    | 8PSK+64QAM  | 869.5+878.5+891.5    |        |     | TC57       |
|                 | 5                    | GMSK+256QAM | 869.5+878.5+891.5    |        |     | TC58       |
|                 | 5                    | 8PSK+256QAM | 869.5+878.5+891.5    |        |     | TC59       |
|                 | 5                    | QPSK+GMSK   | 871.5+884.5+893.5    |        |     | TC60       |
|                 | 5                    | QPSK+8PSK   | 871.5+884.5+893.5    |        |     | TC61       |
|                 | 5                    | 64QAM+GMSK  | 871.5+884.5+893.5    |        |     | TC62       |
|                 | 5                    | 64QAM+8PSK  | 871.5+884.5+893.5    |        |     | TC63       |
|                 | 5                    | 256QAM+GMSK | 871.5+884.5+893.5    |        |     | TC64       |
|                 | 5                    | 256QAM+8PSK | 871.5+884.5+893.5    |        |     | TC65       |
|                 | 10                   | GMSK+QPSK   | 869.5+878.5+889      |        |     | TC66       |
|                 | 10                   | 8PSK+QPSK   | 869.5+878.5+889      |        |     | TC67       |
|                 | 10                   | GMSK+64QAM  | 869.5+878.5+889      |        |     | TC68       |
|                 | 10                   | 8PSK+64QAM  | 869.5+878.5+889      |        |     | TC69       |
|                 | 10                   | GMSK+256QAM | 869.5+878.5+889      |        |     | TC70       |
|                 | 10                   | 8PSK+256QAM | 869.5+878.5+889      |        |     | TC71       |
|                 | 10                   | QPSK+GMSK   | 874+884.5+893.5      |        |     | TC72       |
|                 | 10                   | QPSK+8PSK   | 874+884.5+893.5      |        |     | TC73       |
|                 | 10                   | 64QAM+GMSK  | 874+884.5+893.5      |        |     | TC74       |
|                 | 10                   | 64QAM+8PSK  | 874+884.5+893.5      |        |     | TC75       |
|                 | 10                   | 256QAM+GMSK | 874+884.5+893.5      |        |     | TC76       |
|                 | 10                   | 256QAM+8PSK | 874+884.5+893.5      |        |     | TC77       |



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### 4.3 Description of Support Units

| Description                 | Manufacturer       | Model No.               | Serial No.              |
|-----------------------------|--------------------|-------------------------|-------------------------|
| Notebook                    | LENOVO             | Lenovo Xiaoxinchao 5000 | PF0TNMG8                |
| DC Power                    | XANTREX            | XFR 60-20               | N/A                     |
| BBU                         | Supplied by client | E403-6                  | SYS-E403-9D-14CN-FN13TP |
| Matched load and Attenuator | Supplied by client | /                       | /                       |

### 4.4 Test Environment

| Environment Parameter | Selected Values During Test |             |
|-----------------------|-----------------------------|-------------|
| Relative Humidity     | Ambient                     |             |
| Value                 | Temperature (°C)            | Voltage (V) |
| TNVN                  | Asmbient                    | DC 48       |
| TLVL                  | -30                         | DC 40.8     |
| TLVH                  | -30                         | DC 55.2     |
| THVL                  | +50                         | DC 40.8     |
| THVH                  | +50                         | DC 55.2     |

VN: Normal Voltage, TN: Normal Temperature

VL: Lower Extreme Voltage, VH: Higher Extreme Voltage

TL: Lower Extreme Temperature, TH: Higher Extreme Temperature

### 4.5 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%                                                                                           |



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#### 4.6 Test Location

All tests were performed at:

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

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

No tests were sub-contracted.

#### 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      | 2022-07-04 | 2023-07-03   |
| MI CABLE                                        | SGS-EMC                 | 0.8M      | EMC2137      | 2021-11-02 | 2023-11-01   |
| MI CABLE                                        | SGS-EMC                 | 0.8M      | EMC2136      | 2021-11-02 | 2023-11-01   |
| EXA Signal Analyzer<br>(10Hz-44GHz)             | Keysight                | N9010A    | EMC2138      | 2022-09-08 | 2023-09-07   |
| MXA Signal Analyzer<br>(10Hz-50GHz)             | KEYSIGHT                | N9020B    | SEM004-24    | 2023/3/20  | 2024/3/19    |
| 4X4 Power Sensor Unit                           | TST                     | TSPS2023R | EMC2257      | 2022-09-08 | 2023-09-07   |
| Test Software                                   | TST                     | V2.0      | GZE100-78    | N/A        | N/A          |
| ESG vector signal<br>generator<br>(250kHz-6GHz) | Agilent<br>Technologies | E4438C    | SEM006-03    | 2023-02-20 | 2024-02-19   |

| Radiated Emissions (30MHz-1GHz)          |                                |               |              |            |              |
|------------------------------------------|--------------------------------|---------------|--------------|------------|--------------|
| Equipment                                | Manufacturer                   | Model No      | Inventory No | Cal Date   | Cal Due Date |
| 10m Semi-Anechoic<br>Chamber             | ETS                            | N/A           | EMC0530      | 2022-10-16 | 2025-10-15   |
| Chamber cable                            | HangTianXing                   | N/A           | EMC0542      | 2022-08-24 | 2023-08-23   |
| Amplifier (9kHz-1.3GHz)                  | HP                             | 8447F         | EMC2065      | 2023-06-14 | 2024-06-13   |
| EMI Test Receiver (1Hz-<br>8GHz)         | Rohde & Schwarz                | ESW8          | EMC2220      | 2023-05-19 | 2024-05-18   |
| Test Software E3                         | Audix                          | Ver.6.120110a | GZE100-61    | N/A        | N/A          |
| Trilog Broadband<br>Antenna (25MHz-1GHz) | SCHWARZBECK<br>MESS-ELEKTRONIK | VULB 9168     | EMC2174      | 2022-06-19 | 2025-06-18   |
| EMI Test Receiver (1Hz-<br>8GHz)         | Rohde & Schwarz                | ESW8          | EMC2220      | 2023-05-19 | 2024-05-18   |



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| Radiated test equipment (above 1GHz)        |                                |               |              |            |              |
|---------------------------------------------|--------------------------------|---------------|--------------|------------|--------------|
| Equipment                                   | Manufacturer                   | Model No      | Inventory No | Cal Date   | Cal Due Date |
| 1GHz-26.5 GHz Pre-Amplifier                 | Agilent                        | 8449B         | EMC0521      | 2022-12-16 | 2023-12-15   |
| Microwave Broadband Preamplifier (18-40GHz) | SCHWARZBECK                    | BBV 9721      | EMC2172      | 2022-08-24 | 2023-08-23   |
| EMI Test Receiver (10Hz-26.5GHz)            | Rohde & Schwarz                | ESIB26        | EMC0522      | 2022-12-16 | 2023-12-15   |
| EXA Signal Analyzer (10Hz-44GHz)            | Keysight                       | N9010A        | EMC2138      | 2022-09-08 | 2023-09-07   |
| Chamber cable (Above 1GHz)                  | Scoflex                        | KMKM-8.0m     | EMC0545      | 2022-08-24 | 2024-08-23   |
| Chamber Cable (Below 1GHz)                  | Scoflex                        | KMKM-8.0m     | EMC0546      | 2022-08-24 | 2024-08-23   |
| Trilog Broadband Antenna (25MHz-1GHz)       | SCHWARZBECK                    | VULB 9160     | EMC2025      | 2022-09-07 | 2023-09-06   |
| Horn Antenna (1GHz-18GHz)                   | SCHWARZBECK<br>MESS-ELEKTRONIK | BBHA 9120D    | EMC2026      | 2022-09-21 | 2025-09-20   |
| Horn Antenna 1-18GHz                        | SCHWARZBECK<br>MESS-ELEKTRONIK | BBHA 9120D    | EMC2251      | 2022-02-02 | 2025-08-01   |
| Horn Antenna (14-40GHz)                     | SCHWARZBECK                    | BBHA 9170     | EMC2041      | 2020-06-28 | 2023-06-27   |
| Broad-Band Horn Antenna (15-40GHz)          | Schwarzbeck                    | BBHA 9170     | SEM003-15    | 2021-7-11  | 2024-7-10    |
| 966 Anechoic Chamber                        | C.R.T                          | 9m x 6m x 6m  | EMC2142      | 2020-12-20 | 2023-12-19   |
| Test Software E3                            | Audix                          | Ver.6.120110a | GZE100-61    | N/A        | N/A          |



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## 6 Radio Spectrum Matter Test Results

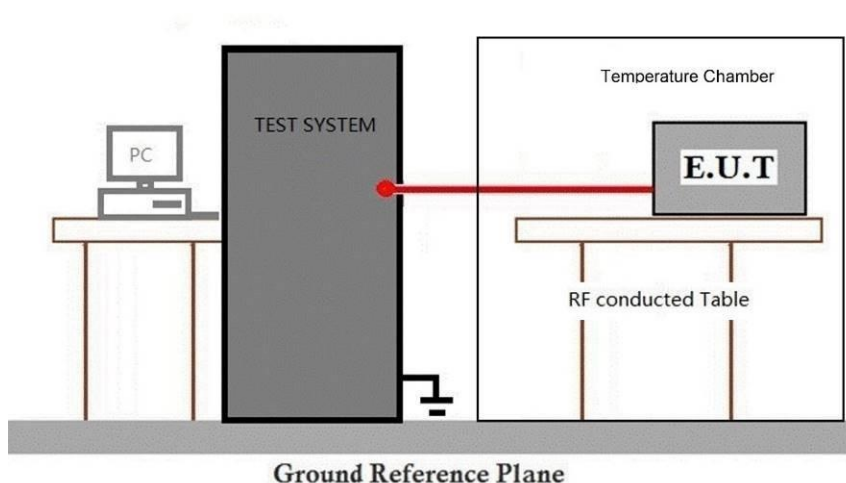
### 6.1 Effective Radiated Power (ERP)

Test Requirement: 47 CFR Part 2.1046, Part 22.913  
 Test Method: ANSI C63.26-2015 clause 5.2  
 Limit: The ERP of base stations and repeaters must not exceed 500 watts per emission.

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

Operating Environment:  
 Temperature: 22.7 °C Humidity: 68 % RH Atmospheric Pressure: 1015 mbar

#### 6.1.2 Test Setup



#### 6.1.3 Measure Data

Please refer to Appendix - Test Data and Result for report GZCR230500052402.



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 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

### 6.2 Peak-to-average ratio (PAR)

Test Requirement: 47 CFR Part 22.913

Test Method: ANSI C63.26-2015 clause 5.2

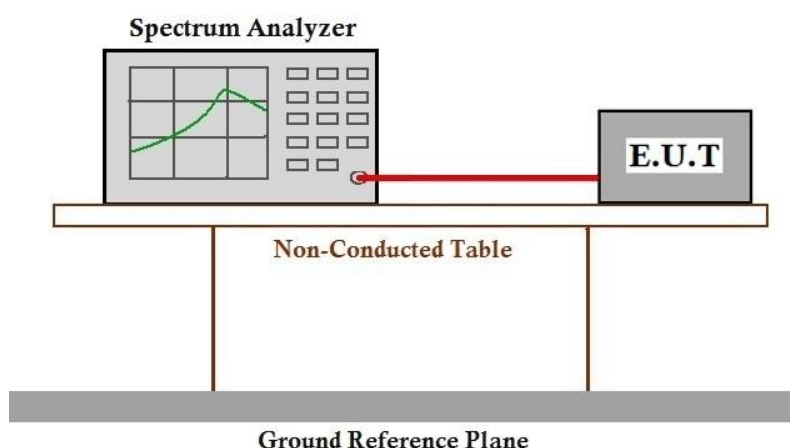
Limit: The peak-to-average ratio (PAR) of the transmission must not exceed 13 dB.

#### 6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22.7 °C Humidity: 68 % RH Atmospheric Pressure: 1015 mbar

#### 6.2.2 Test Setup



#### 6.2.3 Measure Data

Please refer to Appendix - Test Data and Result for report GZCR230500052402.



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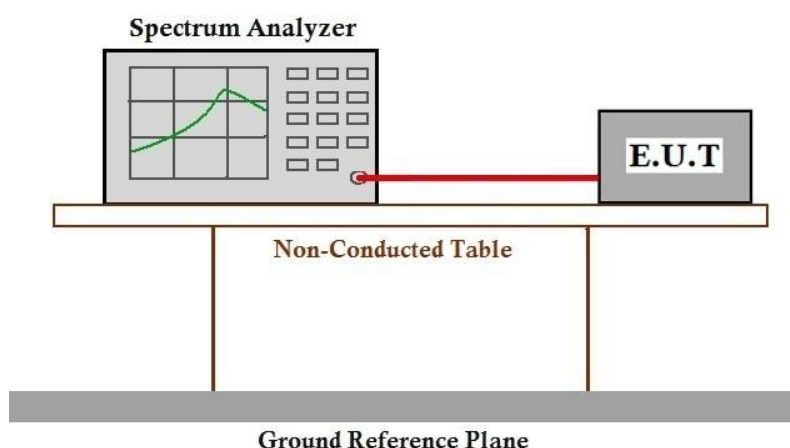
### 6.3 Occupied Bandwidth

Test Requirement: 47 CFR Part 2.1049  
 Test Method: ANSI C63.26-2015 clause 5.4  
 Limit: No limit

#### 6.3.1 E.U.T. Operation

Operating Environment:  
 Temperature: 22.7 °C Humidity: 68 % RH Atmospheric Pressure: 1015 mbar

#### 6.3.2 Test Setup



#### 6.3.3 Measure Data

Please refer to Appendix - Test Data and Result for report GZCR230500052402.



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### 6.4 Spurious emissions at antenna terminals

Test Requirement: 47 CFR Part 22.917

Test Method: ANSI C63.26-2015 clause 5.7

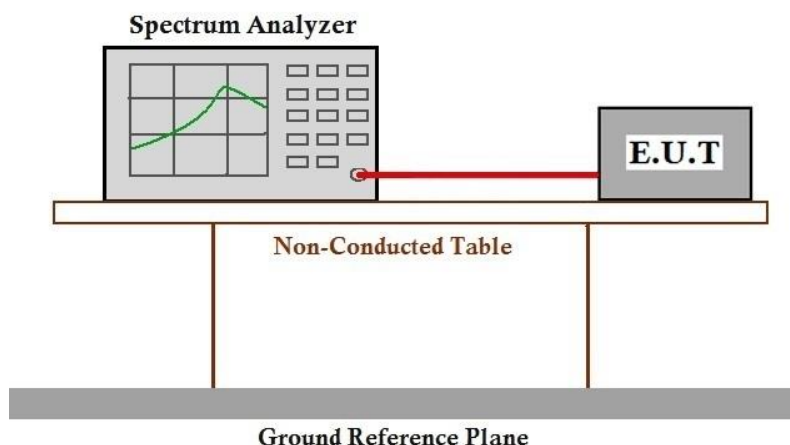
Limit: The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

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

Operating Environment:

Temperature: 22.7 °C Humidity: 68 % RH Atmospheric Pressure: 1015 mbar

#### 6.4.2 Test Setup



#### 6.4.3 Measure Data

Please refer to Appendix - Test Data and Result for report GZCR230500052402.



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### 6.5 Radiated Spurious emission

Test Requirement: 47 CFR Part 22.917

Test Method: ANSI C63.26-2015 clause 5.6

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

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

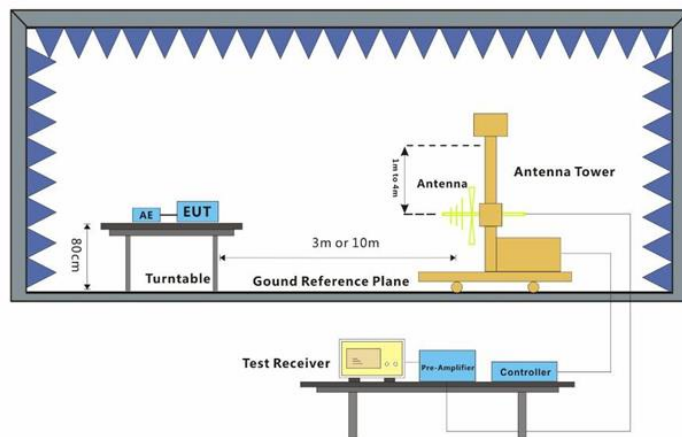
Operating Environment:

Temperature: 25.6 °C

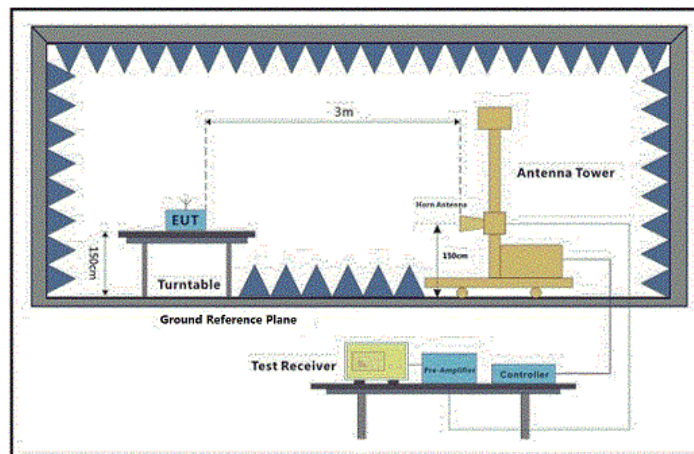
Humidity: 60 % RH

Atmospheric Pressure: 1010 mbar

#### 6.5.2 Test Setup



30MHz-1GHz



Above 1GHz



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**6.5.3 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)

**6.5.4 Measurement Data**

Please refer to Appendix - Test Data and Result for report GZCR230500052402.



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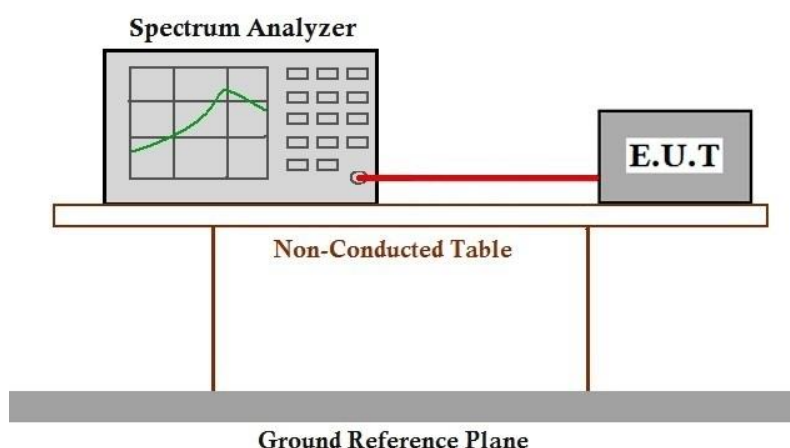
### 6.6 Frequency Stability

Test Requirement: 47 CFR Part 2.1055, Part 22.355  
 Test Method: ANSI C63.26-2015 clause 5.6  
 Limit: Fundamental emission must be maintained within the tolerance 1.5ppm.

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

Operating Environment:  
 Temperature: 22.7 °C Humidity: 68 % RH Atmospheric Pressure: 1015 mbar

#### 6.6.2 Test Setup



#### 6.6.3 Measure Data

Please refer to Appendix - Test Data and Result for report GZCR230500052402.



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## 7 Test Setup Photographs

Refer to Appendix - Test Setup Photos for GZCR2305000524AT.

## 8 EUT Constructional Details (EUT Photos)

Refer to Appendix - External and Internal Photos for GZCR2305000524AT.

- End of the Report -



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