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# FCC Test Report

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Report No.: AGC02415221001FE10

**FCC ID** : U7G-FLEX-R

**APPLICATION PURPOSE** : Original Equipment

**PRODUCT DESIGNATION** : SFR digital mobile radio,SFR repeater

**BRAND NAME** : Blackbox

**MODEL NAME** : Flex-repeater

**APPLICANT** : Klein Electronics, Inc.

**DATE OF ISSUE** : Dec. 13, 2022

**STANDARD(S)** : FCC Part 90 Rules

**REPORT VERSION** : V 1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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**REPORT REVISE RECORD**

| Report Version | Revise Time | Issued Date   | Valid Version | Notes           |
|----------------|-------------|---------------|---------------|-----------------|
| V1.0           | /           | Dec. 13, 2022 | Valid         | Initial Release |

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## TABLE OF CONTENTS

|                                              |           |
|----------------------------------------------|-----------|
| <b>1. GENERAL INFORMATION .....</b>          | <b>5</b>  |
| <b>2. PRODUCT INFORMATION .....</b>          | <b>6</b>  |
| 2.1 PRODUCT TECHNICAL DESCRIPTION .....      | 6         |
| 2.2 TEST FREQUENCY LIST .....                | 7         |
| 2.3 RELATED SUBMITTAL(S) / GRANT (S) .....   | 8         |
| 2.4 TEST METHODOLOGY .....                   | 8         |
| 2.5 CALCULATION OF EMISSION INDICATORS ..... | 8         |
| 2.6 SPECIAL ACCESSORIES .....                | 8         |
| 2.7 EQUIPMENT MODIFICATIONS .....            | 9         |
| <b>3. TEST ENVIRONMENT .....</b>             | <b>10</b> |
| 3.1 ADDRESS OF THE TEST LABORATORY .....     | 10        |
| 3.2 TEST FACILITY .....                      | 10        |
| 3.3 ENVIRONMENTAL CONDITIONS .....           | 10        |
| 3.4 MEASUREMENT UNCERTAINTY .....            | 11        |
| 3.5 LIST OF EQUIPMENTS USED .....            | 12        |
| <b>4.SYSTEM TEST CONFIGURATION .....</b>     | <b>13</b> |
| 4.1 EUT CONFIGURATION .....                  | 13        |
| 4.2 EUT EXERCISE .....                       | 13        |
| 4.3 CONFIGURATION OF TESTED SYSTEM .....     | 13        |
| 4.4 EQUIPMENT USED IN TESTED SYSTEM .....    | 13        |
| 4.5 SUMMARY OF TEST RESULTS .....            | 14        |
| <b>5.DESRIPTION OF TEST MODES .....</b>      | <b>15</b> |
| <b>6.FREQUENCY TOLERANCE .....</b>           | <b>16</b> |
| 6.1 PROVISIONS APPLICABLE .....              | 16        |
| 6.2 MEASUREMENT PROCEDURE .....              | 16        |
| 6.3 MEASUREMENT SETUP .....                  | 16        |
| 6.4 MEASUREMENT RESULTS .....                | 17        |
| <b>7. EMISSION BANDWIDTH .....</b>           | <b>17</b> |
| 7.1 PROVISIONS APPLICABLE .....              | 19        |
| 7.2 MEASUREMENT PROCEDURE .....              | 19        |
| 7.3 MEASUREMENT SETUP .....                  | 19        |
| 7.4 MEASUREMENT RESULTS .....                | 20        |
| <b>8. SPURIOUS RADIATED EMISSION .....</b>   | <b>24</b> |
| 8.1 PROVISIONS APPLICABLE .....              | 24        |
| 8.2 MEASUREMENT PROCEDURE .....              | 24        |

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|                                                    |           |
|----------------------------------------------------|-----------|
| 8.3 MEASUREMENT SETUP .....                        | 25        |
| 8.4 MEASUREMENT RESULTS.....                       | 25        |
| 8.5 EMISSION MASK PLOT .....                       | 41        |
| <b>9.MODULATION CHARACTERISTICS .....</b>          | <b>42</b> |
| 9.1 PROVISIONS APPLICABLE.....                     | 45        |
| 9.2 MEASUREMENT METHOD .....                       | 45        |
| 9.3 MEASUREMENT SETUP .....                        | 45        |
| 9.4 MEASUREMENT RESULTS.....                       | 46        |
| <b>10. MAXIMUM TRANSMITTER POWER .....</b>         | <b>50</b> |
| 10.1 PROVISIONS APPLICABLE.....                    | 50        |
| 10.2 MEASUREMENT METHOD .....                      | 50        |
| 10.3 MEASUREMENT METHOD .....                      | 50        |
| 10.4 MEASUREMENT RESULTS .....                     | 50        |
| <b>11. SPURIOUS EMISSION ON ANTENNA PORT .....</b> | <b>55</b> |
| 11.1 PROVISIONS APPLICABLE .....                   | 55        |
| 11.2 MEASUREMENT METHOD.....                       | 55        |
| 11.3 MEASUREMENT SETUP .....                       | 55        |
| 11.4 MEASUREMENT RESULTS.....                      | 56        |
| <b>12.TRANSMITTER FREQUENCY BEHAVIOR.....</b>      | <b>62</b> |
| 12.1 PROVISIONS APPLICABLE.....                    | 62        |
| 12.2 MEASUREMENT SETUP .....                       | 62        |
| 12.3 MEASUREMENT METHOD .....                      | 63        |
| 12.4 MEASUREMENT RESULTS.....                      | 65        |
| <b>13. AUDIO LOW PASS FILTER RESPONSE .....</b>    | <b>67</b> |
| 13.1 PROVISIONS APPLICABLE.....                    | 67        |
| 13.2 MEASUREMENT METHOD .....                      | 68        |
| 13.3 MEASUREMENT SETUP .....                       | 68        |
| 13.4 MEASUREMENT RESULTS.....                      | 69        |
| <b>APPENDIX I: PHOTOGRAPHS OF TEST SETUP .....</b> | <b>71</b> |
| <b>APPENDIX II: PHOTOGRAPHS OF TEST EUT .....</b>  | <b>71</b> |

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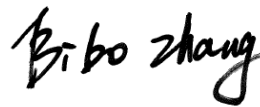
## 1. GENERAL INFORMATION

|                              |                                                       |
|------------------------------|-------------------------------------------------------|
| Applicant                    | Klein Electronics, Inc.                               |
| Address                      | 349 N. Vinewood St, Escondido, CA 92029 United States |
| Manufacturer                 | Klein Electronics, Inc.                               |
| Address                      | 349 N. Vinewood St, Escondido, CA 92029 United States |
| Factory                      | Klein Electronics, Inc.                               |
| Address                      | 349 N. Vinewood St, Escondido, CA 92029 United States |
| Product Designation          | SFR digital mobile radio,SFR repeater                 |
| Brand Name                   | Blackbox                                              |
| Test Model                   | Flex-repeater                                         |
| Deviation from Standard      | None                                                  |
| Date of receipt of test item | Oct. 19, 2022                                         |
| Date of Test                 | Oct. 19, 2022~Dec. 13, 2022                           |
| Test Result                  | Pass                                                  |

### WE HEREBY CERTIFY THAT:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI/TIA-603-E-2016. The sample tested as described in this report is in compliance with the FCC Rules Part 90. The test results of this report relate only to the tested sample identified in this report.

Prepared By



Bibo Zhang  
(Project Engineer)

Dec. 13, 2022

Reviewed By



Calvin Liu  
(Reviewer)

Dec. 13, 2022

Approved By



Max Zhang  
Authorized Officer

Dec. 13, 2022

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## 2. PRODUCT INFORMATION

### 2.1 PRODUCT TECHNICAL DESCRIPTION

|                           |                                                                                    |                                                                                                                            |
|---------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Hardware Version          | C7MESH86UV-BS-1.0                                                                  |                                                                                                                            |
| Software Version          | V22.9.21                                                                           |                                                                                                                            |
| Power Supply              | DC 7.4V 3000mAh by battery                                                         |                                                                                                                            |
| Adapter Information       | Input: AC 100-240V 50/60Hz, 2.6A<br>Output: DC 12V 10A                             |                                                                                                                            |
| Communication Type        | Voice / Data(Voice /Tone only)                                                     |                                                                                                                            |
| Operation Frequency Range | From 136MHz to 174MHz--VHF<br>From 400MHz to 480MHz--UHF                           |                                                                                                                            |
| Modulation Type           | Analog Voice:                                                                      | FM                                                                                                                         |
|                           | Digital Voice/Digital Data:                                                        | 4FSK                                                                                                                       |
| Digital Type              | DMR                                                                                |                                                                                                                            |
| Channel Separation        | Analog Voice:                                                                      | 12.5 kHz                                                                                                                   |
|                           | Digital Voice/Digital Data:                                                        | 12.5 kHz                                                                                                                   |
| Support Data Rate         | 9600bps                                                                            |                                                                                                                            |
| Emission Designator       | Analog Voice:                                                                      | 11K0F3E                                                                                                                    |
|                           | Digital Voice/Digital Data:                                                        | <input checked="" type="checkbox"/> VHF:7K86F1D-10W-12.5kHz                                                                |
|                           |                                                                                    | <input checked="" type="checkbox"/> VHF:7K86F1W-10W-12.5kHz                                                                |
|                           |                                                                                    | <input checked="" type="checkbox"/> UHF:7K90F1D-10W-12.5kHz<br><input checked="" type="checkbox"/> UHF:7K90F1W-10W-12.5kHz |
| Rated Output Power        | 10W(It was fixed by the manufacturer, any individual can't arbitrarily change it.) |                                                                                                                            |
| Maximum Transmitter Power | VHF: 39.10dBm(10W-12.5kHz)-Analog    VHF: 39.12dBm(10W-12.5kHz)- Digital           |                                                                                                                            |
|                           | UHF: 39.05dBm(10W-12.5kHz)- Analog    UHF: 39.65dBm(10W-12.5kHz) -Digital          |                                                                                                                            |
| Antenna Designation       | Detachable Antenna                                                                 |                                                                                                                            |
| Antenna Gain              | 1.5dBi                                                                             |                                                                                                                            |

#### Note:

1. The product has the same digital working characters when operating in both two digitized voice/data mode. So only one set of test results for digital modulation modes are provided in this test report.
2. This equipment is capable of supporting a minimum data rate of 4800 bits per second per 6.25 kHz of channel bandwidth. DMR interphone's bandwidth is 12.5 kHz, and it has a double time slot, one is the speech time slot, one is the data time slot, just language sequence is satisfied with 4800 bps/6.25 kHz BW.
3. The actual working frequency band of the device is UHF: 400-480MHz. According to the frequency division requirements of KDB634817 and the federal frequency allocation requirements, the working frequency band that the device needs to meet is UHF: 406.1-480MHz

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## 2.2 TEST FREQUENCY LIST

| Operation mode  | Channel Separation | Operation Frequency Range | Test channel | Test Frequency |
|-----------------|--------------------|---------------------------|--------------|----------------|
| Analog/ Digital | 12.5 kHz           | 400-480MHz                | Bottom       | 406.125 MHz    |
|                 | 12.5 kHz           | 400-480MHz                | Middle       | 453.2125 MHz   |
|                 | 12.5 kHz           | 400-480MHz                | Middle       | 458.2125 MHz   |
|                 | 12.5 kHz           | 400-480MHz                | Top          | 479.975 MHz    |
| Analog/ Digital | 12.5 kHz           | 136-174MHz                | Bottom       | 136.025 MHz    |
|                 | 12.5 kHz           | 136-174MHz                | Middle       | 155.025 MHz    |
|                 | 12.5 kHz           | 136-174MHz                | Top          | 173.975 MHz    |

### Note:

In section KDB 634817 D01 Sections II) (f) (1) and (2):

Test at least one frequency in each band for each rule part applied under and ensure the device is capable of operating on the frequency under each rule part. This requirement may result in testing on multiple frequencies. Testing on one frequency may be acceptable if multiple listed bands for a rule part with a continuous frequency range are split to remove a conflict with other rules and the technical requirements in the split bands are the same. Additional requirements for RF exposure may apply.

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## 2.3 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for FCC ID: **U7G-FLEX-R**, filing to comply with Part 2, Part 90 of the Federal Communication Commission rules.

## 2.4 TEST METHODOLOGY

The tests were performed according to following standards:

| No. | Identity           | Document Title                                                                                    |
|-----|--------------------|---------------------------------------------------------------------------------------------------|
| 1   | FCC 47 CFR Part 90 | Private Land Mobile Radio Services                                                                |
| 2   | FCC 47 CFR Part 2  | Frequency allocations and radio treaty matters; general rules and regulations                     |
| 3   | ANSI/TIA-603-E     | Land Mobile FM or PM Communications Equipment Measurement and Performance Standards               |
| 4   | ANSI C63.26-2015   | American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services |
| 5   | KDB 971168 D01     | KDB 971168 D01 Power Meas License Digital Systems v03r01                                          |
| 6   | KDB 579009 D03     | KDB 579009 D03 Applications Part 90 Refarming Bands v01                                           |
| 7   | KDB 634817 D01     | KDB 634817 D01 Freq Range Listing for Grants v04r01                                               |

## 2.5 CALCULATION OF EMISSION INDICATORS

FCC Rules and Regulations Part 2.202: Necessary Bandwidth and Emission Bandwidth

### For FM Mode (Channel Spacing: 12.5kHz)

Emission Designator 11K0F3E

In this case, the maximum modulating frequency is 3.0 kHz with a 2.5 kHz deviation.

$$BW = 2(M+D) = 2*(3.0 \text{ kHz} + 2.5 \text{ kHz}) = 11 \text{ kHz} = 11K0$$

F3E portion of the designator represents an FM voice transmission.

Therefore, the entire designator for 12.5 kHz channel spacing FM mode is 11K0F3E.

### For FM Mode (Channel Spacing: 25kHz)

Emission Designator 16K0F3E

In this case, the maximum modulating frequency is 3.0 kHz with a 5.0 kHz deviation.

$$BW = 2(M+D) = 2*(3.0 \text{ kHz} + 5.0 \text{ kHz}) = 16 \text{ kHz} = 16K0$$

F3E portion of the designator represents an FM voice transmission.

Therefore, the entire designator for 25 kHz channel spacing FM mode is 16K0F3E.

### For Digital Mode (Channel Spacing: 12.5 kHz)

Emission Designator 7K60F1D and 7K60F1W

The 99% energy rule was used for digital mode. It basically states that 99% of the modulation energy falls within X kHz, in this case, 7.60 kHz.

F1D and F1W portion of the designator indicates digital information.

Therefore, the entire designator for 12.5 kHz channel spacing digital mode is 7K60F1D and 7K60F1W.

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## 2.6 SPECIAL ACCESSORIES

Not available for this EUT intended for grant.

## 2.7 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

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### 3. TEST ENVIRONMENT

#### 3.1 ADDRESS OF THE TEST LABORATORY

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

#### 3.2 TEST FACILITY

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

##### **CNAS-Lab Code: L5488**

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

##### **A2LA-Lab Cert. No.: 5054.02**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

##### **FCC-Registration No.: 975832**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

##### **IC-Registration No.: 24842**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.

### 3.3 ENVIRONMENTAL CONDITIONS

|                         | NORMAL CONDITIONS | EXTREME CONDITIONS       |
|-------------------------|-------------------|--------------------------|
| Temperature range (°C)  | 15 - 35           | -20 - 50                 |
| Relative humidity range | 20 % - 75 %       | 20 % - 75 %              |
| Pressure range (kPa)    | 86 - 106          | 86 - 106                 |
| Power supply            | DC 7.4V           | LV:DC 6.29V/HV: DC 8.51V |

Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer.

### 3.4 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95%.

| Test Items                              | Measurement Uncertainty |
|-----------------------------------------|-------------------------|
| Frequency stability                     | $\pm 0.5\%$             |
| Transmitter power conducted             | $\pm 0.8\text{dB}$      |
| Transmitter power Radiated              | $\pm 1.3\text{dB}$      |
| Conducted spurious emission 9kHz-40 GHz | $\pm 2.7\text{dB}$      |
| Conducted Emission                      | $\pm 3.2\text{ dB}$     |
| Radiated Emission below 1GHz            | $\pm 3.9\text{ dB}$     |
| Radiated Emission above 1GHz            | $\pm 4.8\text{ dB}$     |
| Occupied Channel Bandwidth              | $\pm 2\%$               |
| FM deviation                            | $\pm 2\%$               |
| Audio level                             | $\pm 0.98\text{dB}$     |
| Low Pass Filter Response                | $\pm 0.65\text{dB}$     |
| Modulation Limiting                     | 0.42 %                  |
| Transient Frequency Behavior            | 6.8 %                   |

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### 3.5 LIST OF EQUIPMENTS USED

| Equipment                      | Manufacturer   | Model       | S/N          | Cal. Date     | Cal. Due      |
|--------------------------------|----------------|-------------|--------------|---------------|---------------|
| TEST RECEIVER                  | R&S            | ESCI        | 10096        | Mar. 28, 2022 | Mar. 27, 2023 |
| EXA Signal Analyzer            | Aglient        | N9020A      | W1312-60196  | Aug. 16, 2022 | Aug. 15, 2023 |
| EXA Signal Analyzer            | Aglient        | N9020A      | MY52090123   | Aug. 04, 2022 | Aug. 03, 2023 |
| Horn antenna                   | SCHWARZBECK    | BBHA 9170   | #768         | Oct. 31, 2021 | Oct. 30, 2023 |
| preamplifier                   | ChengYi        | EMC184045SE | 980508       | Oct. 29, 2021 | Oct. 28, 2023 |
| Double-Ridged Waveguide Horn   | ETS LINDGREN   | 3117        | 00034609     | Apr. 23, 2021 | Apr. 22, 2023 |
| Broadband Preamplifier         | SCHWARZBECK    | BBV 9718    | 9718-205     | Jun. 05, 2022 | Jun. 04, 2023 |
| HORN ANTENNA                   | EM             | EM-AH-10180 | /            | Feb.24, 2022  | Feb.23, 2023  |
| SIGNAL GENERATOR               | AGILENT        | E4421B      | MY43351603   | Mar. 04, 2022 | Mar. 03, 2023 |
| SIGNAL GENERATOR               | R&S            | SMT03       | A0304261     | Jun. 05, 2022 | Jun. 04, 2023 |
| ANTENNA                        | SCHWARZBECK    | VULB9168    | VULB9168-494 | Jan. 08, 2021 | Jan. 07, 2023 |
| ANTENNA                        | SCHWARZBECK    | VULB9168    | D69250       | Apr. 28, 2021 | Apr. 27, 2023 |
| Active loop antenna (9K-30MHz) | ZHINAN         | ZN30900C    | 18051        | Mar. 12, 2022 | Mar. 11, 2023 |
| Modulation Domain Analyzer     | HP             | 53310A      | 3121A02467   | Jun. 08, 2022 | Jun. 07, 2023 |
| Small environmental tester     | ESPEC          | SH-242      | --           | Aug. 03, 2022 | Aug. 02, 2023 |
| RF Communication Test Set      | HP             | 8920B       | US35010161   | Aug. 03, 2022 | Aug. 02, 2023 |
| Attenuator                     | Weinachel Corp | 58-30-33    | ML030        | Oct. 22, 2022 | Oct. 21, 2023 |
| RF Cable                       | R&S            | 1#          | --           | Each time     | N/A           |
| RF Cable                       | R&S            | 2#          | --           | Each time     | N/A           |
| Fliter-UHF                     | Microwave      | N25155M2    | 498705       | May 07, 2022  | May 06, 2023  |

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## 4.SYSTEM TEST CONFIGURATION

### 4.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 4.2 EUT EXERCISE

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

### 4.3 CONFIGURATION OF TESTED SYSTEM

Fig. 2-1 Configuration of Tested System



Table 2-1 Equipment Used in Tested System

### 4.4 EQUIPMENT USED IN TESTED SYSTEM

The Following Peripheral Devices And Interface Cables Were Connected During The Measurement:

- ☐ Test Accessories Come From The Laboratory  
☒ Test Accessories Come From The Manufacturer

| Item | Equipment                             | Model No.     | Identifier                                           | Note        |
|------|---------------------------------------|---------------|------------------------------------------------------|-------------|
| 1    | SFR digital mobile radio,SFR repeater | Flex-repeater | FCC ID: U7G-FLEX-R                                   | EUT         |
| 2    | Battery                               | BAT-880       | DC 8.4V 3000mAh                                      | Accessories |
| 3    | Adapter                               | EADP-120GRA   | Input: 100-240V, 50/60Hz, 2.6A<br>Output: DC 12V 10A | Accessories |
| 4    | Hand microphone                       | N/A           | N/A                                                  | Accessories |

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#### 4.5 SUMMARY OF TEST RESULTS

| Item | FCC Rules       | Description Of Test               | Result |
|------|-----------------|-----------------------------------|--------|
| 1    | FCC PART 90     | Antenna Equipment                 | Pass   |
| 2    | §90.205& 2.1046 | Maximum Transmitter Power         | Pass   |
| 3    | §90.207& 2.1047 | Modulation Characteristic         | Pass   |
| 4    | §2.1047         | Audio Low Pass Filter Response    | Pass   |
| 5    | §90.209& 2.1049 | Occupied Bandwidth                | Pass   |
| 6    | §90.210& 2.1049 | Emission Mask                     | Pass   |
| 7    | §90.213& 2.1055 | Frequency Tolerance               | Pass   |
| 8    | §90.214         | Transmitter Frequency Behavior    | Pass   |
| 9    | §90.210& 2.1051 | Spurious Emission on Antenna Port | Pass   |
| 10   | §90.210& 2.1053 | Spurious Radiated Emission        | Pass   |

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## 5.DESCRPTION OF TEST MODES

The EUT (**SFR digital mobile radio,SFR repeater** ) has been tested under normal operating condition. (The top channel, the middle channel and the bottom channel) are chosen for testing at each channel separation.

| NO. | TEST MODE DESCRIPTION | CHANNEL SEPARATION |
|-----|-----------------------|--------------------|
| 1   | TX Bottom channel-UHF | 12.5 kHz           |
| 2   | TX Middle channel-UHF | 12.5 kHz           |
| 3   | TX Middle channel-UHF | 12.5 kHz           |
| 4   | TX Top channel-UHF    | 12.5 kHz           |
| 5   | TX Bottom channel-VHF | 12.5 kHz           |
| 6   | TX Middle channel-VHF | 12.5 kHz           |
| 7   | TX Middle channel-VHF | 12.5 kHz           |

Note:

1. Only the result of the worst case was recorded in the report, if no other cases.
2. The battery is full-charged during the test.
3. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
4. For Conducted Test method, a temporary antenna connector is provided by the manufacture.
5. Manufacturers use computer PC programming software to switch and operate frequency points, refer to the instructions for details

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## 6.FREQUENCY TOLERANCE

### 6.1 PROVISIONS APPLICABLE

- According to FCC §2.1055,§90.213, the frequency stability shall be measured with variation of ambient temperature from  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  centigrade.
- According to FCC Part 2 Section 2.1055(d)(2), for battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacturer.
- According to FCC Part 90 Section 90.213, the frequency tolerance must be maintained within 0.00025% for 12.5 kHz channel separation and 0.0001% for 6.25 kHz channel separation.

### 6.2 MEASUREMENT PROCEDURE

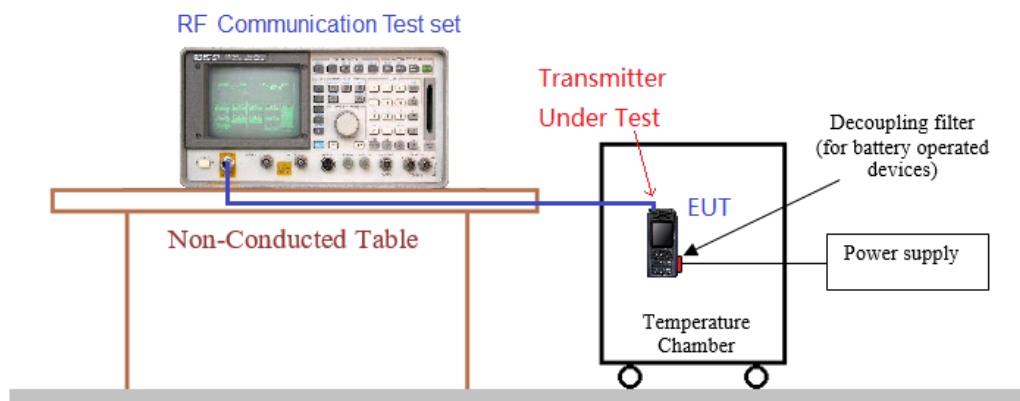
#### 6.2.1 Frequency stability versus environmental temperature

- Setup the configuration per figure 1 for frequencies measurement inside an environment chamber, Install new battery in the EUT.
- Turn on EUT and set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1kHz and Video Resolution Bandwidth to 1kHz and Frequency Span to 50kHz. Record this frequency as reference frequency.
- Set the temperature of chamber to  $50^{\circ}\text{C}$ . Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.
- Repeat step 2 with a  $10^{\circ}\text{C}$  decreased per stage until the lowest temperature  $-30^{\circ}\text{C}$  is measured, record all measured frequencies on each temperature step.

#### 6.2.2 Frequency stability versus input voltage

- Setup the configuration per figure 1 for frequencies measured at temperature if it is within  $15^{\circ}\text{C}$  to  $25^{\circ}\text{C}$ . Otherwise, an environment chamber set for a temperature of  $20^{\circ}\text{C}$  shall be used. The EUT shall be powered by DC 7.4V.
- Set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1 kHz and Video Resolution Bandwidth to 1kHz. Record this frequency as reference frequency.
- Supply the EUT primary voltage at the operating end point which is specified by manufacturer and record the frequency.

### 6.3 MEASUREMENT SETUP



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#### 6.4 MEASUREMENT RESULTS

| 12.5 kHz Channel Separation, Analog modulation, Assigned Frequency For VHF-10W |           |                       |          |         |             |        |
|--------------------------------------------------------------------------------|-----------|-----------------------|----------|---------|-------------|--------|
| Test conditions                                                                |           | Frequency error (ppm) |          |         | Limit (ppm) | Result |
| Voltage (V)                                                                    | Temp (°C) | Test Frequency (MHz)  |          |         |             |        |
|                                                                                |           | 136.025               | 155.7525 | 173.975 |             |        |
| 7.40                                                                           | -30       | 0.805                 | 0.653    | 0.826   | 2.5         | Pass   |
|                                                                                | -20       | 0.526                 | 1.089    | 0.961   |             |        |
|                                                                                | -10       | 0.726                 | 0.779    | 1.020   |             |        |
|                                                                                | 0         | 0.806                 | 0.609    | 0.776   |             |        |
|                                                                                | 10        | 0.907                 | 0.966    | 0.749   |             |        |
|                                                                                | 20        | 0.758                 | 0.690    | 0.505   |             |        |
|                                                                                | 30        | 0.715                 | 0.872    | 0.705   |             |        |
|                                                                                | 40        | 1.079                 | 0.780    | 0.549   |             |        |
|                                                                                | 50        | 0.697                 | 0.859    | 1.092   |             |        |
| 8.51                                                                           | 20        | 0.897                 | 0.735    | 0.796   |             |        |
| 6.29                                                                           | 20        | 0.698                 | 0.668    | 1.036   |             |        |

| 12.5 kHz Channel Separation, Digital modulation, Assigned Frequency For VHF-10W |           |                       |          |         |             |        |
|---------------------------------------------------------------------------------|-----------|-----------------------|----------|---------|-------------|--------|
| Test conditions                                                                 |           | Frequency error (ppm) |          |         | Limit (ppm) | Result |
| Voltage (V)                                                                     | Temp (°C) | Test Frequency (MHz)  |          |         |             |        |
|                                                                                 |           | 136.025               | 155.7525 | 173.975 |             |        |
| 7.40                                                                            | -30       | 1.063                 | 0.829    | 0.788   | 2.5         | Pass   |
|                                                                                 | -20       | 0.546                 | 0.940    | 0.560   |             |        |
|                                                                                 | -10       | 1.056                 | 0.753    | 1.038   |             |        |
|                                                                                 | 0         | 0.885                 | 0.528    | 1.023   |             |        |
|                                                                                 | 10        | 0.814                 | 0.982    | 0.954   |             |        |
|                                                                                 | 20        | 0.866                 | 0.984    | 0.655   |             |        |
|                                                                                 | 30        | 0.911                 | 0.822    | 1.075   |             |        |
|                                                                                 | 40        | 1.054                 | 0.580    | 0.901   |             |        |
|                                                                                 | 50        | 0.922                 | 0.786    | 1.096   |             |        |
| 8.51                                                                            | 20        | 0.982                 | 0.801    | 0.881   | 2.5         | Pass   |
| 6.29                                                                            | 20        | 0.954                 | 1.080    | 1.048   |             |        |

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| 12.5 kHz Channel Separation, Analog modulation, Assigned Frequency For UHF-10W |           |                       |          |          |         |             |        |
|--------------------------------------------------------------------------------|-----------|-----------------------|----------|----------|---------|-------------|--------|
| Test conditions                                                                |           | Frequency error (ppm) |          |          |         | Limit (ppm) | Result |
| Voltage (V)                                                                    | Temp (°C) | Test Frequency (MHz)  |          |          |         |             |        |
|                                                                                |           | 406.125               | 453.2125 | 458.2125 | 479.975 |             |        |
| 7.40                                                                           | -30       | 1.040                 | 0.553    | 0.802    | 0.829   | 2.5         | Pass   |
|                                                                                | -20       | 0.942                 | 0.660    | 0.946    | 0.417   |             |        |
|                                                                                | -10       | 0.516                 | 0.729    | 0.585    | 0.429   |             |        |
|                                                                                | 0         | 0.910                 | 0.973    | 0.897    | 0.551   |             |        |
|                                                                                | 10        | 0.821                 | 0.889    | 1.052    | 0.633   |             |        |
|                                                                                | 20        | 1.099                 | 0.556    | 1.029    | 0.368   |             |        |
|                                                                                | 30        | 0.675                 | 1.068    | 0.756    | 0.572   |             |        |
|                                                                                | 40        | 0.915                 | 0.758    | 0.950    | 0.540   |             |        |
|                                                                                | 50        | 0.554                 | 0.574    | 0.685    | 0.934   |             |        |
| 8.51                                                                           | 20        | 0.650                 | 0.599    | 0.858    | 0.385   | 2.5         | Pass   |
| 6.29                                                                           | 20        | 0.764                 | 0.689    | 0.667    | 0.575   |             |        |

| 12.5 kHz Channel Separation,Digital modulation, Assigned Frequency For UHF-10W |          |                       |          |          |         |             |        |
|--------------------------------------------------------------------------------|----------|-----------------------|----------|----------|---------|-------------|--------|
| Test conditions                                                                |          | Frequency error (ppm) |          |          |         | Limit (ppm) | Result |
| Voltage (V)                                                                    | Temp (℃) | Test Frequency (MHz)  |          |          |         |             |        |
|                                                                                |          | 406.125               | 453.2125 | 458.2125 | 479.975 |             |        |
| 7.40                                                                           | -30      | 1.042                 | 0.661    | 1.095    | 0.460   | 2.5         | Pass   |
|                                                                                | -20      | 0.692                 | 0.704    | 1.040    | 0.994   |             |        |
|                                                                                | -10      | 0.583                 | 1.050    | 0.739    | 0.400   |             |        |
|                                                                                | 0        | 0.689                 | 0.896    | 0.825    | 0.453   |             |        |
|                                                                                | 10       | 1.013                 | 0.539    | 0.673    | 0.702   |             |        |
|                                                                                | 20       | 0.757                 | 0.966    | 0.591    | 0.762   |             |        |
|                                                                                | 30       | 0.860                 | 0.916    | 0.624    | 0.498   |             |        |
|                                                                                | 40       | 0.904                 | 0.795    | 0.655    | 0.801   |             |        |
|                                                                                | 50       | 0.550                 | 0.554    | 0.680    | 0.673   |             |        |
| 8.51                                                                           | 20       | 0.778                 | 0.647    | 0.627    | 0.978   | 2.5         | Pass   |
| 6.29                                                                           | 20       | 1.029                 | 0.787    | 0.993    | 0.570   |             |        |

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## 7. EMISSION BANDWIDTH

### 7.1 PROVISIONS APPLICABLE

FCC Part 90.209 & FCC Part 2.1049:

The authorized bandwidth shall be 11.25 kHz for 12.5 kHz channel separation and 6 kHz for 6.25 kHz channel separation.

### 7.2 MEASUREMENT PROCEDURE

1.The EUT was modulated by 2.5kHz sine wave audio signal; the level of the audio signal employed is 16dB greater than that necessary to produce 50% of rated system deviation.

Rated system deviation is 2.5 kHz for 12.5kHz channel spacing).

2.Spectrum set as follow:

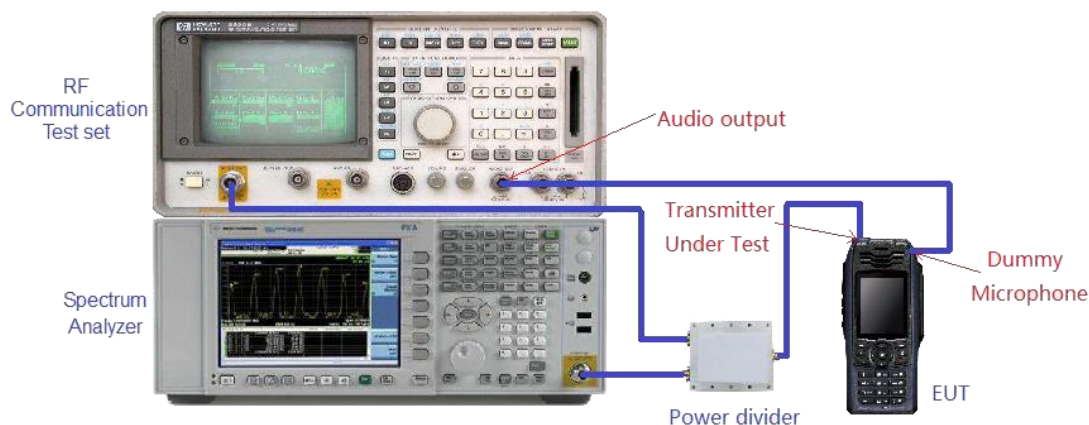
Centre frequency = fundamental frequency, span=50kHz for 12.5kHz channel spacing, RBW=100Hz, VBW=300Hz, Sweep = auto,

Detector function = peak, Trace = max hold

3.Set 99% Occupied Bandwidth and 26dB Occupied Bandwidth.

4.Measure and record the results in the test report.

### 7.3 MEASUREMENT SETUP



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#### 7.4 MEASUREMENT RESULTS

| Measurement Result of VHF-Analog Modulation-10W |                             |                    |           |        |
|-------------------------------------------------|-----------------------------|--------------------|-----------|--------|
| Operating Frequency                             | 12.5 kHz Channel Separation |                    |           |        |
|                                                 | Occupied Bandwidth          | Emission Bandwidth | Limits    | Result |
| 136.025MHz                                      | 9.670 kHz                   | 10.52 kHz          | 11.25 kHz | Pass   |
| 155.7525MHz                                     | 9.670 kHz                   | 10.52 kHz          | 11.25 kHz | Pass   |
| 173.975MHz                                      | 9.952 kHz                   | 11.31Hz            | 11.25 kHz | Pass   |

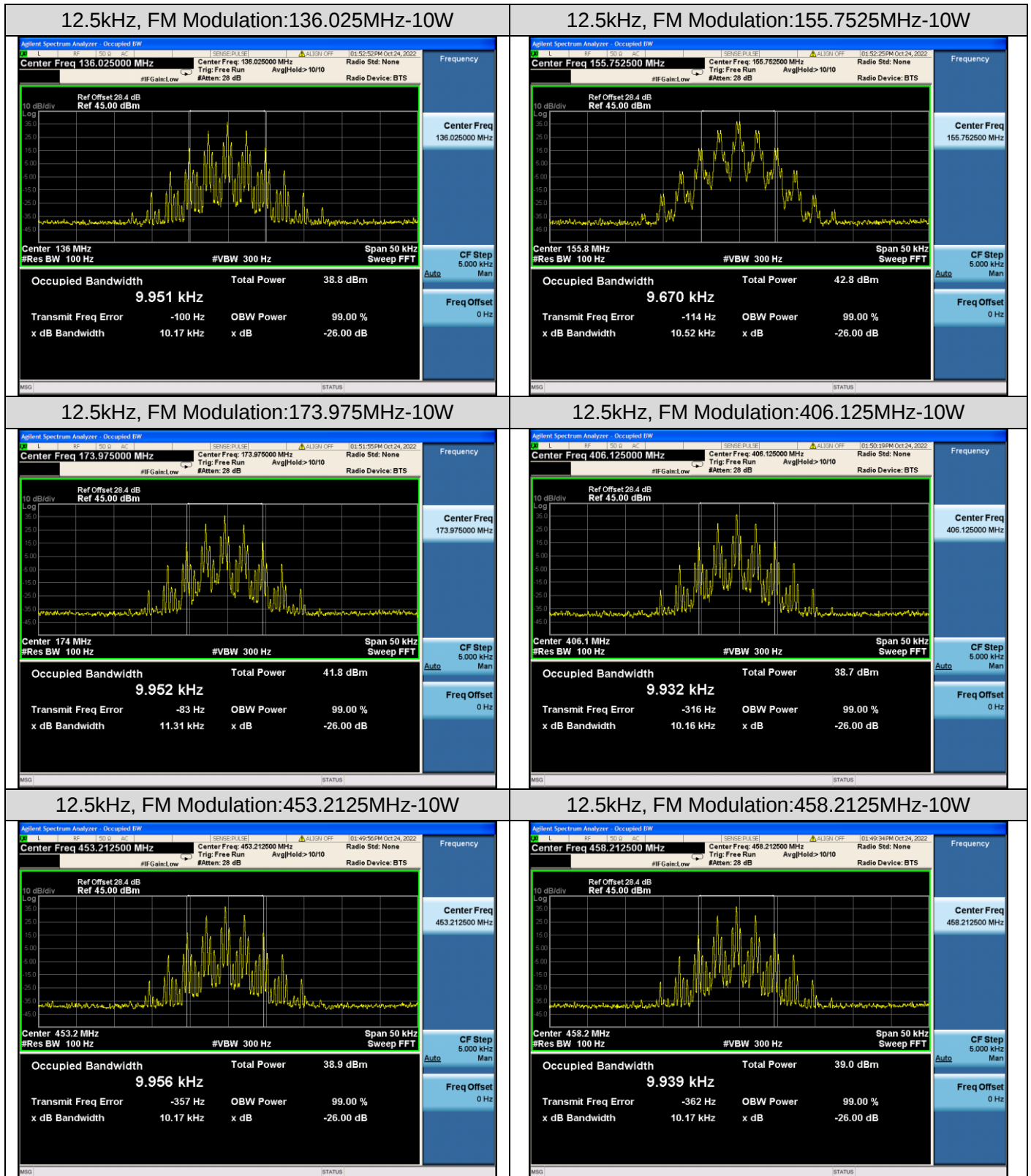
| Measurement Result of UHF-Analog Modulation-10W |                             |                    |           |        |
|-------------------------------------------------|-----------------------------|--------------------|-----------|--------|
| Operating Frequency                             | 12.5 kHz Channel Separation |                    |           |        |
|                                                 | Occupied Bandwidth          | Emission Bandwidth | Limits    | Result |
| 406.125MHz                                      | 9.932 kHz                   | 10.16 kHz          | 11.25 kHz | Pass   |
| 453.2125MHz                                     | 9.956 kHz                   | 10.17 kHz          | 11.25 kHz | Pass   |
| 458.2125MHz                                     | 9.939 kHz                   | 10.17 kHz          | 11.25 kHz | Pass   |
| 479.975MHz                                      | 9.923 kHz                   | 10.16 kHz          | 11.25 kHz | Pass   |

| Measurement Result of VHF-Digital Modulation-10W |                             |                    |           |        |
|--------------------------------------------------|-----------------------------|--------------------|-----------|--------|
| Operating Frequency                              | 12.5 kHz Channel Separation |                    |           |        |
|                                                  | Occupied Bandwidth          | Emission Bandwidth | Limits    | Result |
| 136.025MHz                                       | 7.578 kHz                   | 9.667 kHz          | 11.25 kHz | Pass   |
| 155.7525MHz                                      | 7.477 kHz                   | 9.342 kHz          | 11.25 kHz | Pass   |
| 173.975MHz                                       | 7.856 kHz                   | 9.685 kHz          | 11.25 kHz | Pass   |

| Measurement Result of UHF-Digital Modulation-10W |                             |                    |           |        |
|--------------------------------------------------|-----------------------------|--------------------|-----------|--------|
| Operating Frequency                              | 12.5 kHz Channel Separation |                    |           |        |
|                                                  | Occupied Bandwidth          | Emission Bandwidth | Limits    | Result |
| 406.125MHz                                       | 7.733 kHz                   | 10.52 kHz          | 11.25 kHz | Pass   |
| 453.2125MHz                                      | 7.631 kHz                   | 10.39 kHz          | 11.25 kHz | Pass   |
| 458.2125MHz                                      | 7.778 kHz                   | 10.18 kHz          | 11.25 kHz | Pass   |
| 479.975MHz                                       | 7.903 kHz                   | 10.39 kHz          | 11.25 kHz | Pass   |

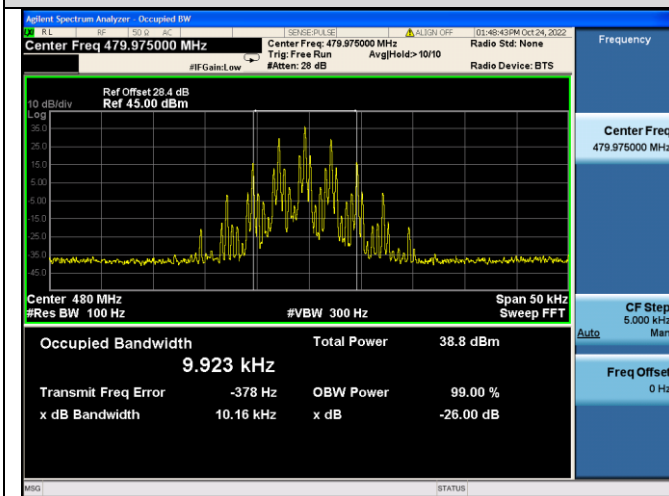
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Test plot as follows:

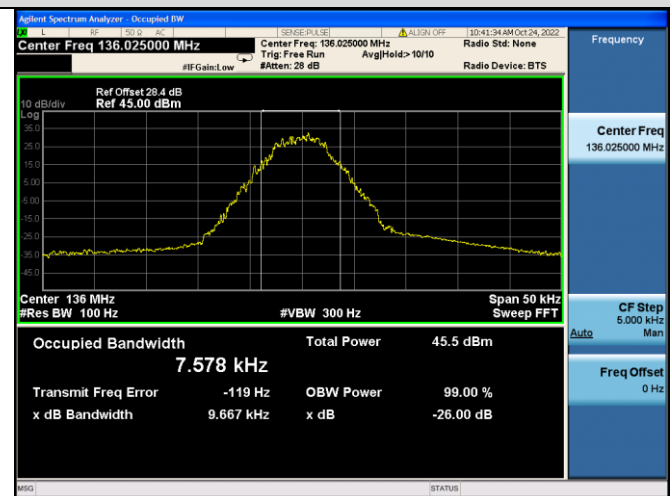


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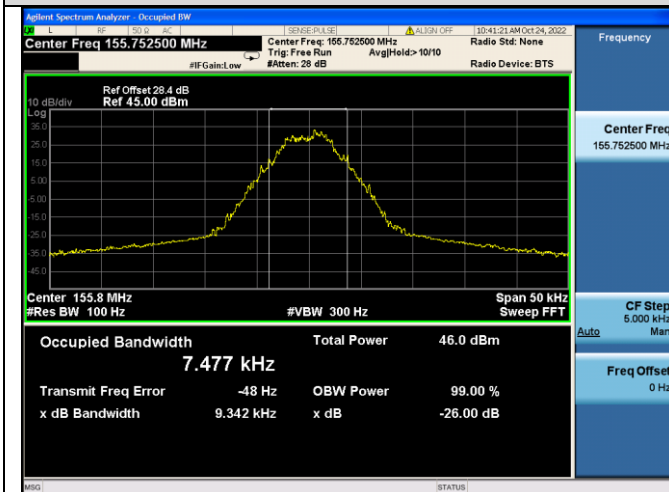
### 12.5kHz, FM Modulation:479.975MHz-10W



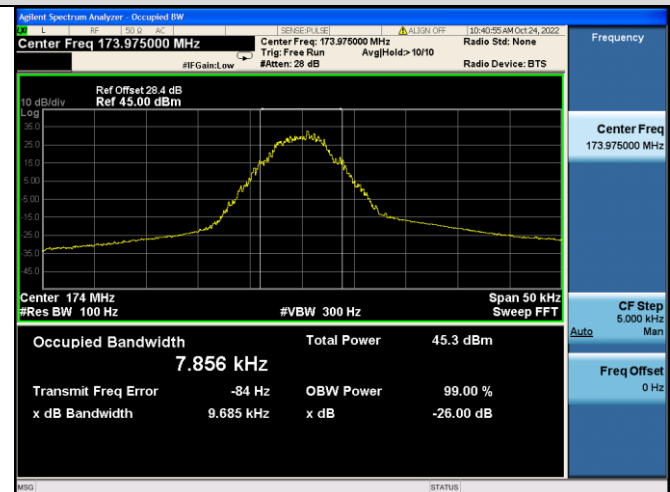
### 12.5kHz, 4FSK Modulation:136.025MHz-10W



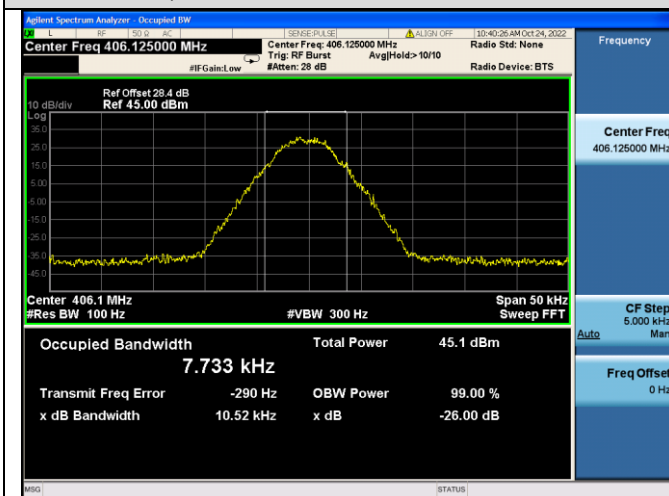
### 12.5kHz, 4FSK Modulation:155.7525MHz-10W



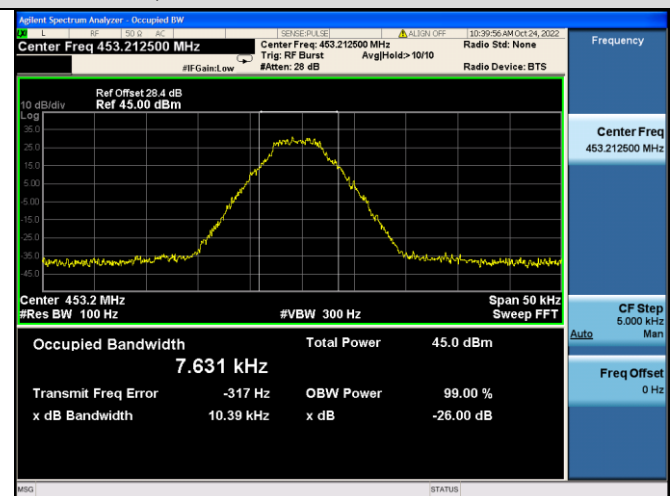
### 12.5kHz, 4FSK Modulation:173.975MHz-10W



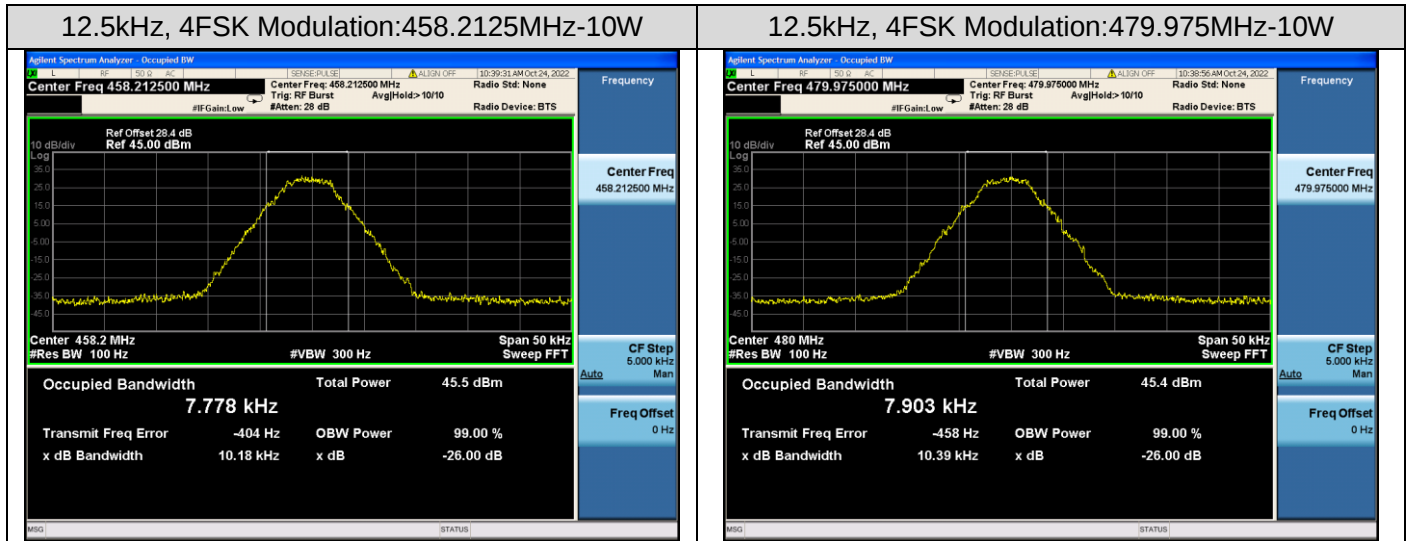
### 12.5kHz, 4FSK Modulation:406.125MHz-10W



### 12.5kHz, 4FSK Modulation:453.2125MHz-10W



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## 8. SPURIOUS RADIATED EMISSION

### 8.1 PROVISIONS APPLICABLE

According to FCC §2.1053 and §90.210, the power of each unwanted emission shall be less than Transmitted Power as specified below for transmitters designed to operate with each channel separation.

Emission Mask D -for 12.5 kHz Channel Separation:

- (1) On any frequency removed 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)  $f_0$  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)  $f_0$  of more than 12.5 kHz: At least  $50 + 10 \log(P)$  dB or 70 dB, whichever is lesser attenuation.

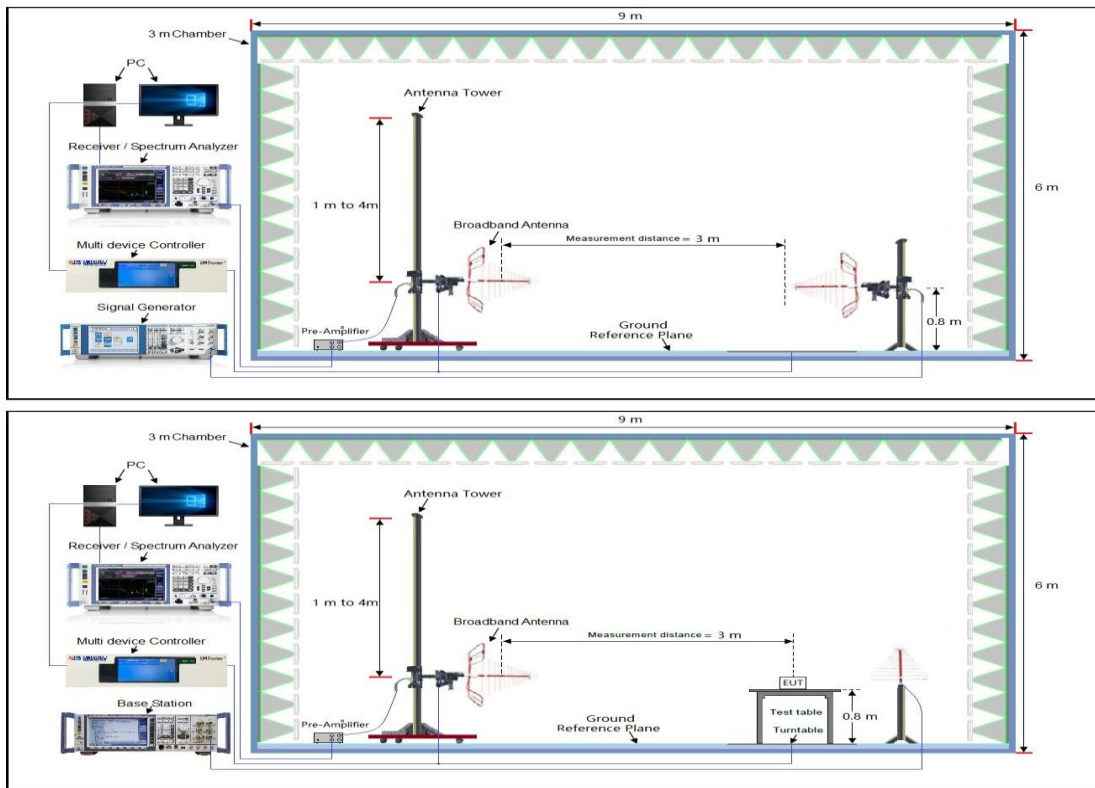
### 8.2 MEASUREMENT PROCEDURE

- (1) On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3) The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- (4) The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- (5) The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- (6) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- (7) The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- (8) The maximum signal level detected by the measuring receiver shall be noted.
- (9) The measurement shall be repeated with the test antenna set to horizontal polarization.
- (10) Replace the antenna with a proper Antenna (substitution antenna).
- (11) The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- (12) The substitution antenna shall be connected to a calibrated signal generator.
- (13) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- (14) The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- (15) The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- (16) The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- (17) The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

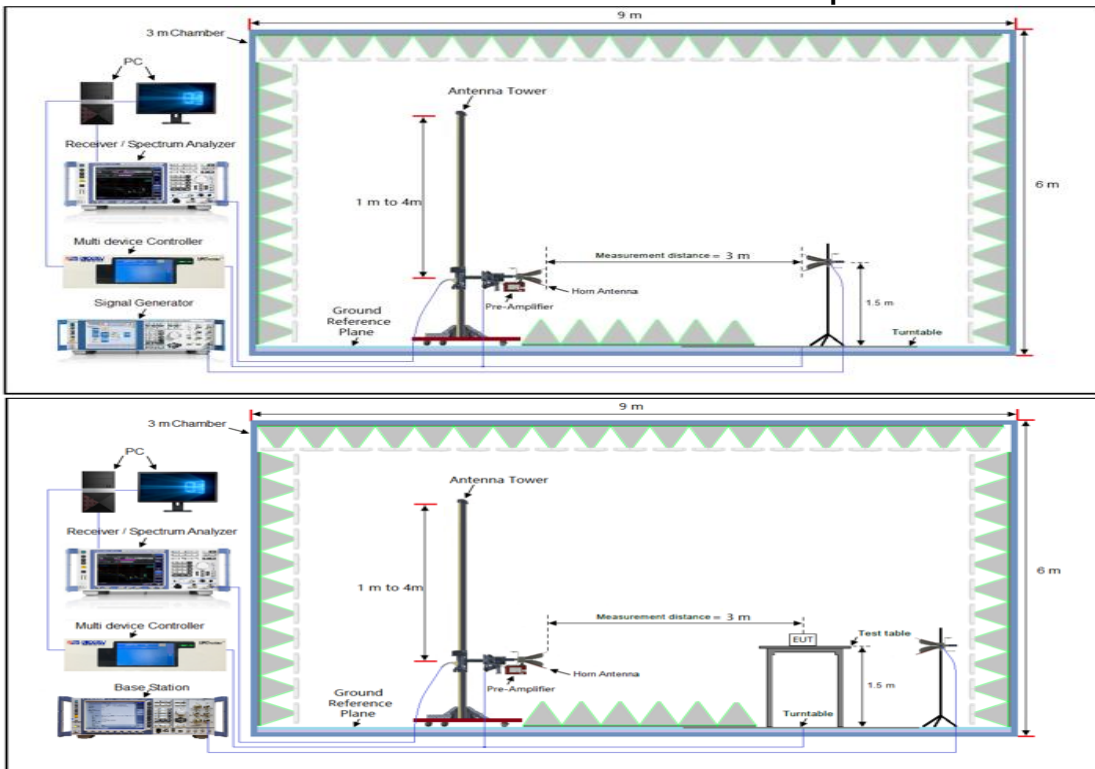
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### 8.3 MEASUREMENT SETUP

#### Radiated Emissions 30MHz to 1GHz Test setup



#### Radiated Emissions Above 1GHz Test setup



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#### 8.4 MEASUREMENT RESULTS

The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz for below 1GHz, and 1MHz for above 1GHz. Sufficient scans were taken to show any out of band emissions up to 10 harmonic.

In the semi-anechoic chamber, setup as illustrated above the DUT placed on the 0.8m height of Turn Table, rotated the table 45 degree each interval to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power for each degree interval. The "Read Value" is the spectrum reading of maximum power value.

The substitution antenna is substituted for DUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the Measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.

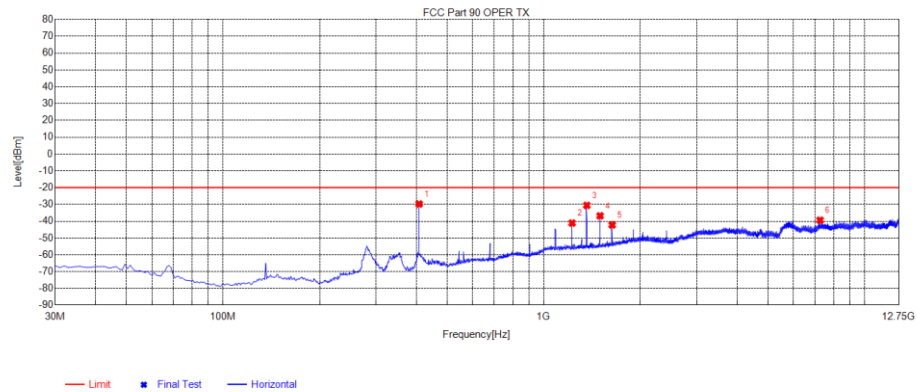
EIRP = "Read Value" + Measured substitution value + 2.15.

Test limit calculation:

| Preliminary calculation                                    | Final Result                                                   |
|------------------------------------------------------------|----------------------------------------------------------------|
| At least $50 + 10 \log(P) = 50 + 10 \log(10) = 60.00$ (dB) | Limit = P- Preliminary calculation = $40.00 - 60.00 = -20$ dBm |

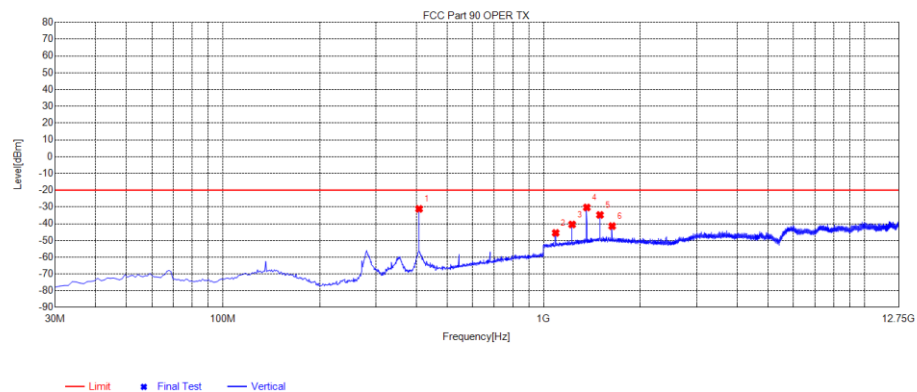
**Note:** In this case, Part 22 (-13 dBm) is greater than the limit of Part 90 (-20 dBm), so we do not need to test Part 22 meeting the spurious limits of PART 90+22.

|            |                    |           |            |
|------------|--------------------|-----------|------------|
| Test Mode: | TX:136.025MHz-4FSK | Polarity: | Horizontal |
|------------|--------------------|-----------|------------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 408.3       | -64.36        | -29.78      | -20.00      | 9.78        | 34.58       | 175       | Horizontal |
| 2   | 1224.4474   | -37.33        | -41.12      | -20.00      | 21.12       | -3.79       | 34        | Horizontal |
| 3   | 1360.7611   | -27.11        | -30.61      | -20.00      | 10.61       | -3.50       | 303       | Horizontal |
| 4   | 1497.0747   | -33.59        | -36.81      | -20.00      | 16.81       | -3.22       | 119       | Horizontal |
| 5   | 1632.2132   | -40.03        | -42.25      | -20.00      | 22.25       | -2.22       | 92        | Horizontal |
| 6   | 7261.0261   | -52.13        | -39.43      | -20.00      | 19.43       | 12.70       | 0         | Horizontal |

|            |                    |           |          |
|------------|--------------------|-----------|----------|
| Test Mode: | TX:136.025MHz-4FSK | Polarity: | Vertical |
|------------|--------------------|-----------|----------|

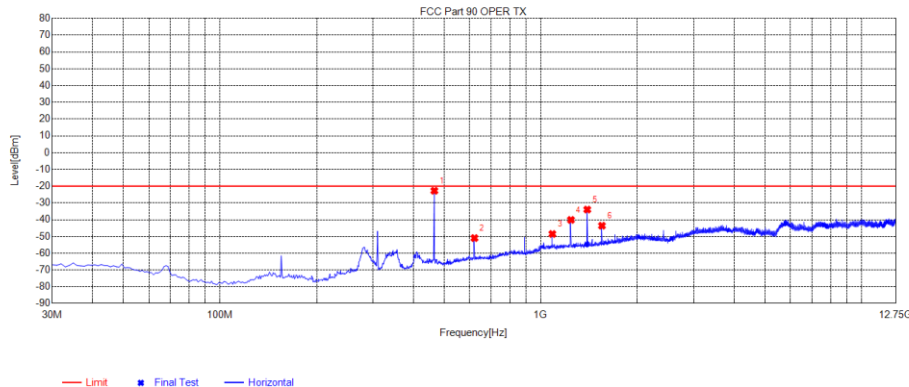


| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 408.3       | -66.29        | -31.18      | -20.00      | 11.18       | 35.11       | 210       | Vertical |
| 2   | 1088.1338   | -44.96        | -45.53      | -20.00      | 25.53       | -0.57       | 360       | Vertical |
| 3   | 1224.4474   | -40.81        | -40.48      | -20.00      | 20.48       | 0.33        | 349       | Vertical |
| 4   | 1360.7611   | -31.58        | -30.34      | -20.00      | 10.34       | 1.24        | 9         | Vertical |
| 5   | 1495.8996   | -36.93        | -34.80      | -20.00      | 14.80       | 2.13        | 312       | Vertical |
| 6   | 1632.2132   | -43.13        | -41.43      | -20.00      | 21.43       | 1.70        | 349       | Vertical |

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|            |                     |           |            |
|------------|---------------------|-----------|------------|
| Test Mode: | TX:155.7525MHz-4FSK | Polarity: | Horizontal |
|------------|---------------------|-----------|------------|

FCC Part 90 OPER TX

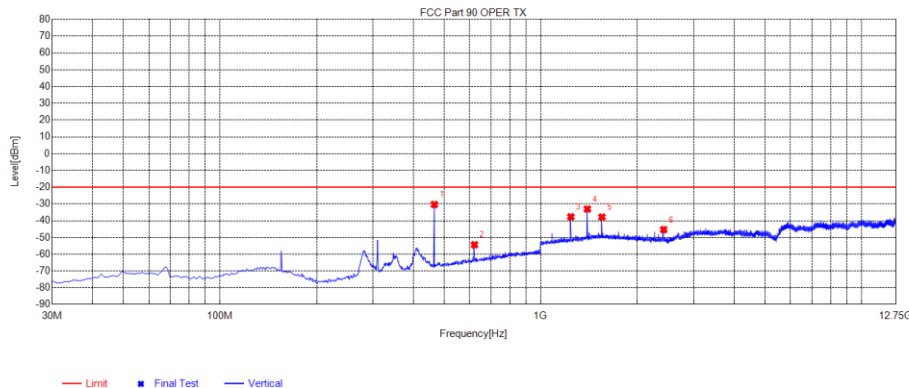


— Limit   ■ Final Test   — Horizontal

| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 465.53      | -58.41        | -22.74      | -20.00      | 2.74        | 35.67       | 107       | Horizontal |
| 2   | 620.73      | -90.89        | -50.98      | -20.00      | 30.98       | 39.91       | 153       | Horizontal |
| 3   | 1085.7836   | -44.44        | -48.52      | -20.00      | 28.52       | -4.08       | 8         | Horizontal |
| 4   | 1240.8991   | -36.37        | -40.12      | -20.00      | 20.12       | -3.75       | 299       | Horizontal |
| 5   | 1394.8395   | -30.54        | -33.97      | -20.00      | 13.97       | -3.43       | 324       | Horizontal |
| 6   | 1549.955    | -40.76        | -43.60      | -20.00      | 23.60       | -2.84       | 117       | Horizontal |

|            |                     |           |          |
|------------|---------------------|-----------|----------|
| Test Mode: | TX:155.7525MHz-4FSK | Polarity: | Vertical |
|------------|---------------------|-----------|----------|

FCC Part 90 OPER TX



— Limit   ■ Final Test   — Vertical

| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 465.53      | -66.27        | -30.36      | -20.00      | 10.36       | 35.91       | 151       | Vertical |
| 2   | 620.73      | -93.45        | -54.38      | -20.00      | 34.38       | 39.07       | 360       | Vertical |
| 3   | 1239.724    | -38.14        | -37.71      | -20.00      | 17.71       | 0.43        | 1         | Vertical |
| 4   | 1396.0146   | -34.56        | -33.09      | -20.00      | 13.09       | 1.47        | 301       | Vertical |
| 5   | 1549.955    | -39.85        | -37.86      | -20.00      | 17.86       | 1.99        | 209       | Vertical |
| 6   | 2413.6664   | -44.51        | -45.34      | -20.00      | 25.34       | -0.83       | 35        | Vertical |

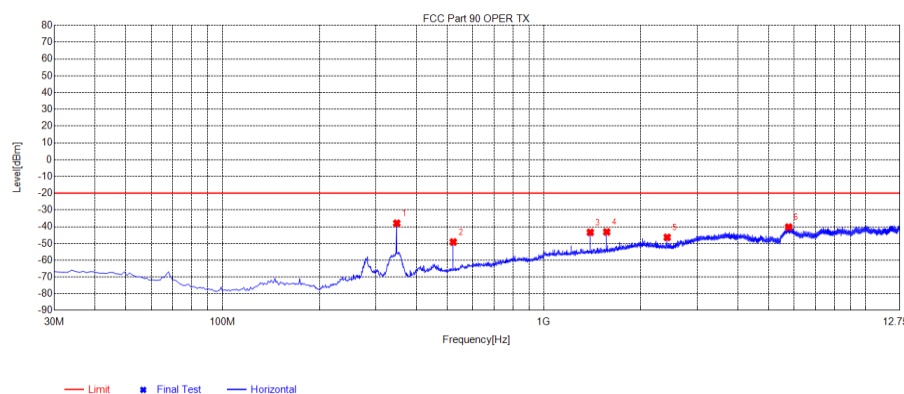
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|            |                    |           |            |
|------------|--------------------|-----------|------------|
| Test Mode: | TX:173.975MHz-4FSK | Polarity: | Horizontal |
|------------|--------------------|-----------|------------|



FCC Part 90 OPER TX

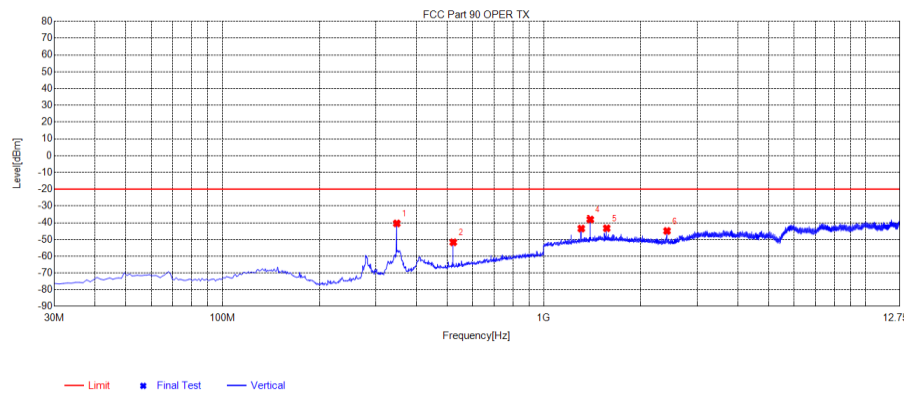
Level [dBm]

Frequency [Hz]

— Limit    ■ Final Test    — Horizontal

| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 348.16      | -71.07        | -37.93      | -20.00      | 17.93       | 33.14       | 268       | Horizontal |
| 2   | 521.79      | -86.24        | -49.14      | -20.00      | 29.14       | 37.10       | 359       | Horizontal |
| 3   | 1392.4892   | -39.96        | -43.40      | -20.00      | 23.40       | -3.44       | 143       | Horizontal |
| 4   | 1566.4066   | -40.43        | -43.14      | -20.00      | 23.14       | -2.71       | 124       | Horizontal |
| 5   | 2416.0166   | -45.26        | -46.37      | -20.00      | 26.37       | -1.11       | 359       | Horizontal |
| 6   | 5766.2766   | -50.16        | -40.24      | -20.00      | 20.24       | 9.92        | 163       | Horizontal |

|            |                    |           |          |
|------------|--------------------|-----------|----------|
| Test Mode: | TX:173.975MHz-4FSK | Polarity: | Vertical |
|------------|--------------------|-----------|----------|



FCC Part 90 OPER TX

Level [dBm]

Frequency [Hz]

— Limit    ■ Final Test    — Vertical

| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 348.16      | -73.31        | -40.42      | -20.00      | 20.42       | 32.89       | 223       | Vertical |
| 2   | 521.79      | -88.60        | -51.70      | -20.00      | 31.70       | 36.90       | 93        | Vertical |
| 3   | 1305.5306   | -44.39        | -43.52      | -20.00      | 23.52       | 0.87        | 113       | Vertical |
| 4   | 1392.4892   | -39.57        | -38.12      | -20.00      | 18.12       | 1.45        | 333       | Vertical |
| 5   | 1566.4066   | -45.27        | -43.34      | -20.00      | 23.34       | 1.93        | 131       | Vertical |
| 6   | 2412.4912   | -44.11        | -44.94      | -20.00      | 24.94       | -0.83       | 359       | Vertical |

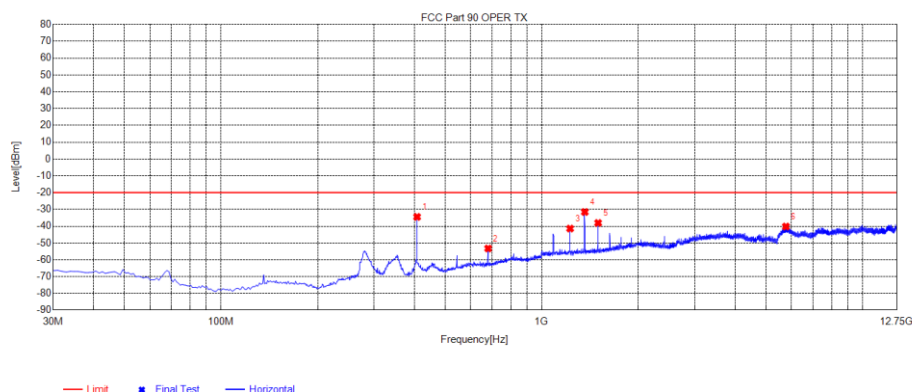
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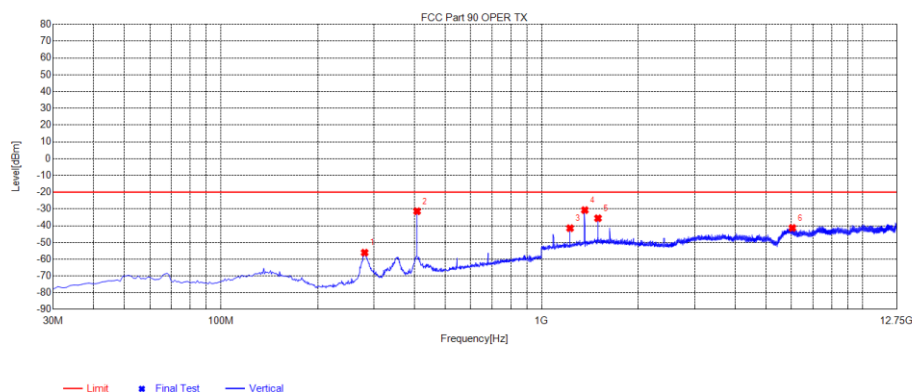
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|            |                  |           |            |
|------------|------------------|-----------|------------|
| Test Mode: | TX:136.025MHz-FM | Polarity: | Horizontal |
|------------|------------------|-----------|------------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 408.3       | -69.05        | -34.47      | -20.00      | 14.47       | 34.58       | 38        | Horizontal |
| 2   | 679.9       | -93.32        | -53.25      | -20.00      | 33.25       | 40.07       | 164       | Horizontal |
| 3   | 1224.4474   | -37.62        | -41.41      | -20.00      | 21.41       | -3.79       | 38        | Horizontal |
| 4   | 1360.7611   | -28.05        | -31.55      | -20.00      | 11.55       | -3.50       | 314       | Horizontal |
| 5   | 1497.0747   | -34.85        | -38.07      | -20.00      | 18.07       | -3.22       | 116       | Horizontal |
| 6   | 5763.9264   | -50.11        | -40.20      | -20.00      | 20.20       | 9.91        | 359       | Horizontal |

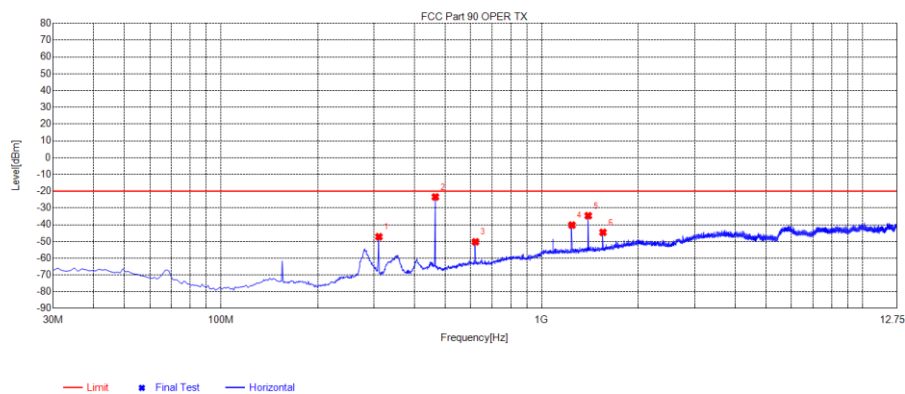
|            |                  |           |          |
|------------|------------------|-----------|----------|
| Test Mode: | TX:136.025MHz-FM | Polarity: | Vertical |
|------------|------------------|-----------|----------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 280.26      | -86.81        | -56.08      | -20.00      | 36.08       | 30.73       | 160       | Vertical |
| 2   | 408.3       | -66.51        | -31.40      | -20.00      | 11.40       | 35.11       | 215       | Vertical |
| 3   | 1224.4474   | -41.81        | -41.48      | -20.00      | 21.48       | 0.33        | 349       | Vertical |
| 4   | 1360.7611   | -31.97        | -30.73      | -20.00      | 10.73       | 1.24        | 18        | Vertical |
| 5   | 1495.8996   | -37.70        | -35.57      | -20.00      | 15.57       | 2.13        | 314       | Vertical |
| 6   | 6037.7288   | -52.33        | -41.35      | -20.00      | 21.35       | 10.98       | 250       | Vertical |

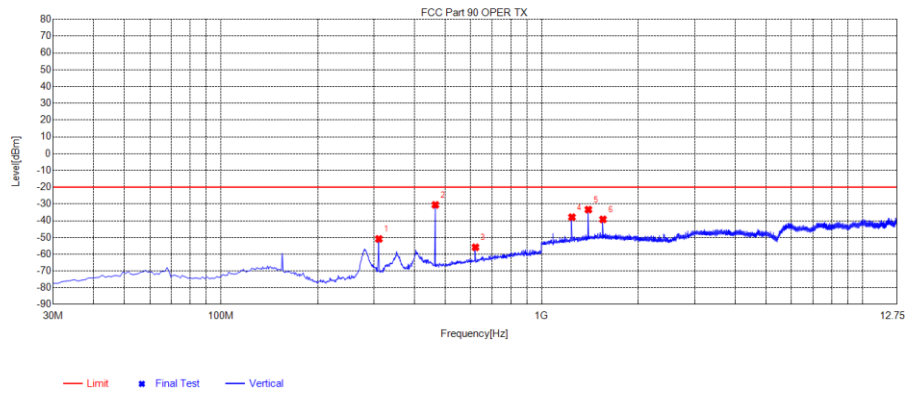
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|            |                   |           |            |
|------------|-------------------|-----------|------------|
| Test Mode: | TX:155.7525MHz-FM | Polarity: | Horizontal |
|------------|-------------------|-----------|------------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 310.33      | -79.41        | -47.20      | -20.00      | 27.20       | 32.21       | 139       | Horizontal |
| 2   | 465.53      | -59.13        | -23.46      | -20.00      | 3.46        | 35.67       | 110       | Horizontal |
| 3   | 620.73      | -90.13        | -50.22      | -20.00      | 30.22       | 39.91       | 156       | Horizontal |
| 4   | 1240.8991   | -36.50        | -40.25      | -20.00      | 20.25       | -3.75       | 30        | Horizontal |
| 5   | 1394.8395   | -31.24        | -34.67      | -20.00      | 14.67       | -3.43       | 322       | Horizontal |
| 6   | 1549.955    | -41.75        | -44.59      | -20.00      | 24.59       | -2.84       | 110       | Horizontal |

|            |                   |           |          |
|------------|-------------------|-----------|----------|
| Test Mode: | TX:155.7525MHz-FM | Polarity: | Vertical |
|------------|-------------------|-----------|----------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 310.33      | -82.25        | -50.90      | -20.00      | 30.90       | 31.35       | 140       | Vertical |
| 2   | 465.53      | -66.51        | -30.60      | -20.00      | 10.60       | 35.91       | 158       | Vertical |
| 3   | 620.73      | -94.96        | -55.89      | -20.00      | 35.89       | 39.07       | 130       | Vertical |
| 4   | 1240.8991   | -38.35        | -37.91      | -20.00      | 17.91       | 0.44        | 358       | Vertical |
| 5   | 1396.0146   | -34.88        | -33.41      | -20.00      | 13.41       | 1.47        | 304       | Vertical |
| 6   | 1549.955    | -41.22        | -39.23      | -20.00      | 19.23       | 1.99        | 214       | Vertical |

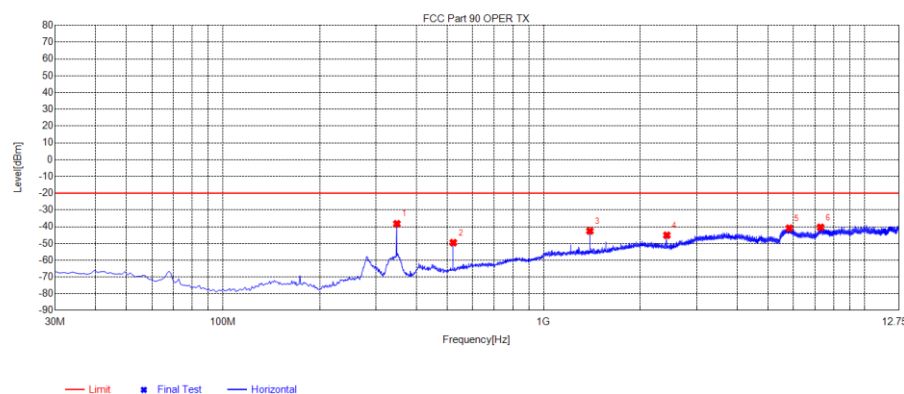
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|            |                  |           |            |
|------------|------------------|-----------|------------|
| Test Mode: | TX:173.975MHz-FM | Polarity: | Horizontal |
|------------|------------------|-----------|------------|



FCC Part 90 OPER TX

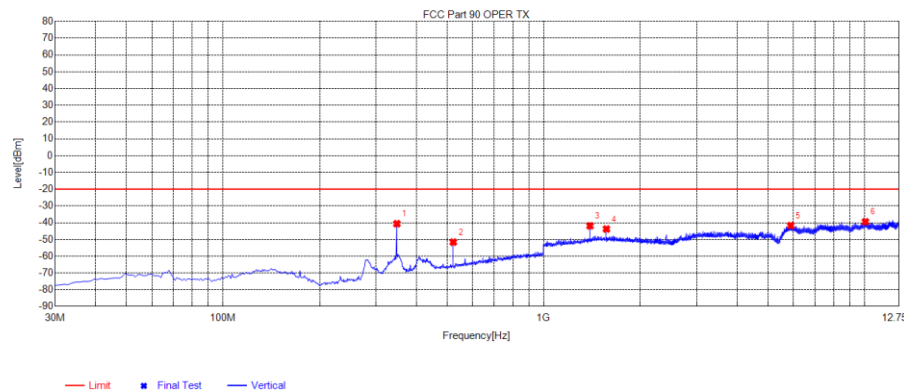
Level [dBm]

Frequency [Hz]

— Limit   ■ Final Test   — Horizontal

| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 348.16      | -71.40        | -38.26      | -20.00      | 18.26       | 33.14       | 28        | Horizontal |
| 2   | 521.79      | -86.63        | -49.53      | -20.00      | 29.53       | 37.10       | 350       | Horizontal |
| 3   | 1391.3141   | -39.12        | -42.56      | -20.00      | 22.56       | -3.44       | 146       | Horizontal |
| 4   | 2417.1917   | -44.01        | -45.12      | -20.00      | 25.12       | -1.11       | 312       | Horizontal |
| 5   | 5820.332    | -51.04        | -40.92      | -20.00      | 20.92       | 10.12       | 224       | Horizontal |
| 6   | 7285.7036   | -53.18        | -40.38      | -20.00      | 20.38       | 12.80       | 350       | Horizontal |

|            |                  |           |          |
|------------|------------------|-----------|----------|
| Test Mode: | TX:173.975MHz-FM | Polarity: | Vertical |
|------------|------------------|-----------|----------|



FCC Part 90 OPER TX

Level [dBm]

Frequency [Hz]

— Limit   ■ Final Test   — Vertical

| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 348.16      | -73.51        | -40.62      | -20.00      | 20.62       | 32.89       | 217       | Vertical |
| 2   | 521.79      | -88.50        | -51.60      | -20.00      | 31.60       | 36.90       | 102       | Vertical |
| 3   | 1392.4892   | -43.35        | -41.90      | -20.00      | 21.90       | 1.45        | 291       | Vertical |
| 4   | 1566.4066   | -45.72        | -43.79      | -20.00      | 23.79       | 1.93        | 209       | Vertical |
| 5   | 5879.0879   | -51.46        | -41.70      | -20.00      | 21.70       | 9.76        | 282       | Vertical |
| 6   | 10048.4048  | -55.62        | -39.47      | -20.00      | 19.47       | 16.15       | 9         | Vertical |

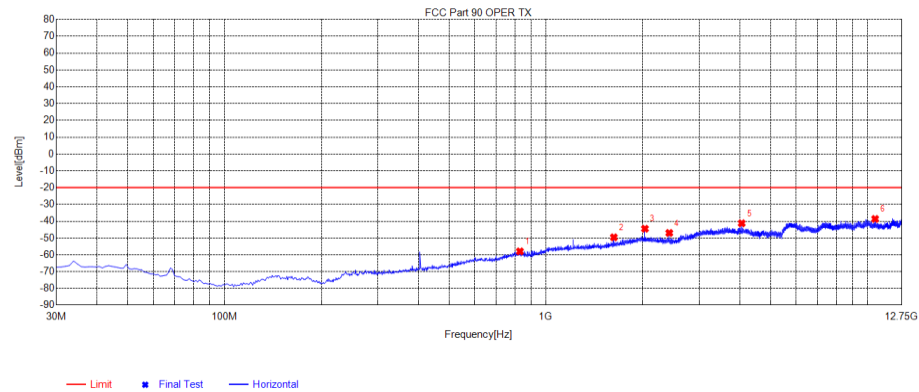
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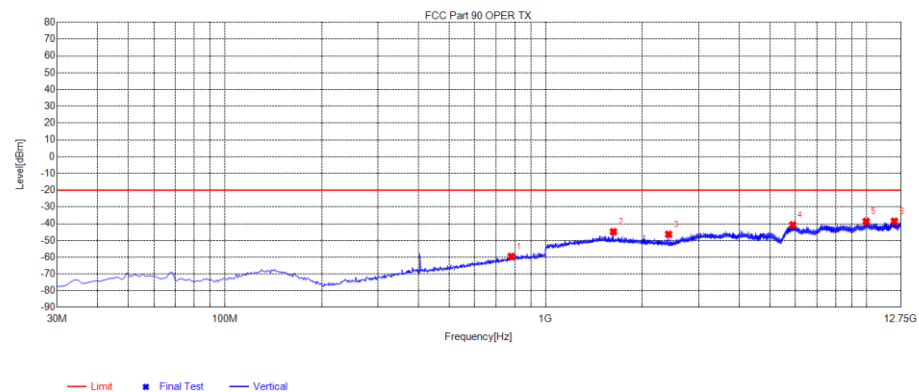
Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/

|            |                    |           |            |
|------------|--------------------|-----------|------------|
| Test Mode: | TX:406.125MHz-4FSK | Polarity: | Horizontal |
|------------|--------------------|-----------|------------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 829.28      | -101.25       | -57.97      | -20.00      | 37.97       | 43.28       | 360       | Horizontal |
| 2   | 1625.1625   | -47.33        | -49.60      | -20.00      | 29.60       | -2.27       | 360       | Horizontal |
| 3   | 2030.5781   | -44.90        | -44.49      | -20.00      | 24.49       | 0.41        | 44        | Horizontal |
| 4   | 2417.1917   | -45.89        | -47.00      | -20.00      | 27.00       | -1.11       | 354       | Horizontal |
| 5   | 4061.1811   | -45.84        | -41.25      | -20.00      | 21.25       | 4.59        | 156       | Horizontal |
| 6   | 10560.7561  | -54.27        | -38.66      | -20.00      | 18.66       | 15.61       | 36        | Horizontal |

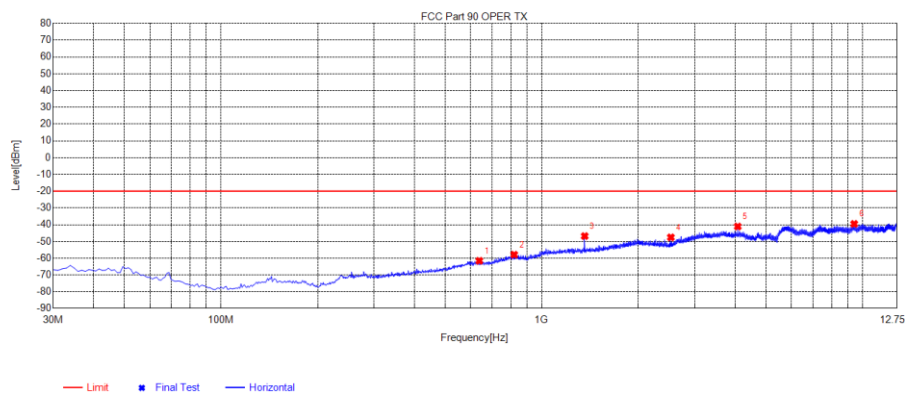
|            |                    |           |          |
|------------|--------------------|-----------|----------|
| Test Mode: | TX:406.125MHz-4FSK | Polarity: | Vertical |
|------------|--------------------|-----------|----------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 779.81      | -101.51       | -59.52      | -20.00      | 39.52       | 41.99       | 160       | Vertical |
| 2   | 1623.9874   | -46.51        | -44.78      | -20.00      | 24.78       | 1.73        | 3         | Vertical |
| 3   | 2413.6664   | -45.51        | -46.34      | -20.00      | 26.34       | -0.83       | 351       | Vertical |
| 4   | 5880.263    | -50.48        | -40.71      | -20.00      | 20.71       | 9.77        | 234       | Vertical |
| 5   | 9963.7964   | -54.74        | -38.70      | -20.00      | 18.70       | 16.04       | 0         | Vertical |
| 6   | 12196.5197  | -56.38        | -38.53      | -20.00      | 18.53       | 17.85       | 288       | Vertical |

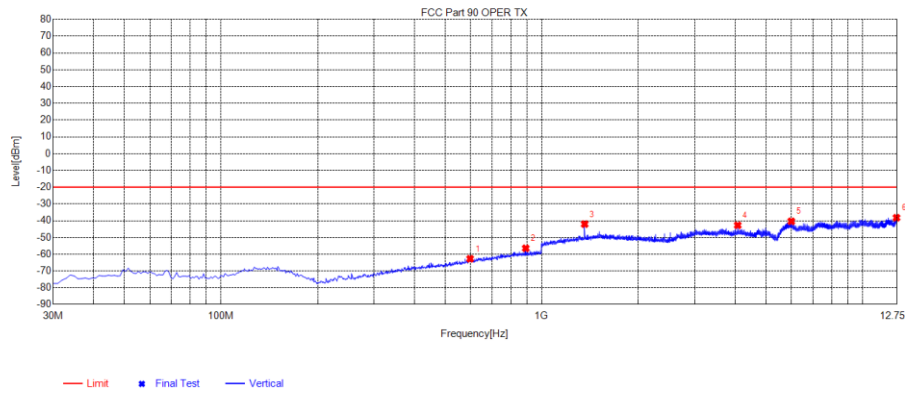
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|            |                     |           |            |
|------------|---------------------|-----------|------------|
| Test Mode: | TX:453.2125MHz-4FSK | Polarity: | Horizontal |
|------------|---------------------|-----------|------------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 638.19      | -101.51       | -61.56      | -20.00      | 41.56       | 39.95       | 138       | Horizontal |
| 2   | 819.58      | -101.21       | -57.88      | -20.00      | 37.88       | 43.33       | 312       | Horizontal |
| 3   | 1359.586    | -43.31        | -46.81      | -20.00      | 26.81       | -3.50       | 74        | Horizontal |
| 4   | 2524.1274   | -46.35        | -47.56      | -20.00      | 27.56       | -1.21       | 166       | Horizontal |
| 5   | 4078.8079   | -45.64        | -41.09      | -20.00      | 21.09       | 4.55        | 148       | Horizontal |
| 6   | 9407.9658   | -54.14        | -39.54      | -20.00      | 19.54       | 14.60       | 302       | Horizontal |

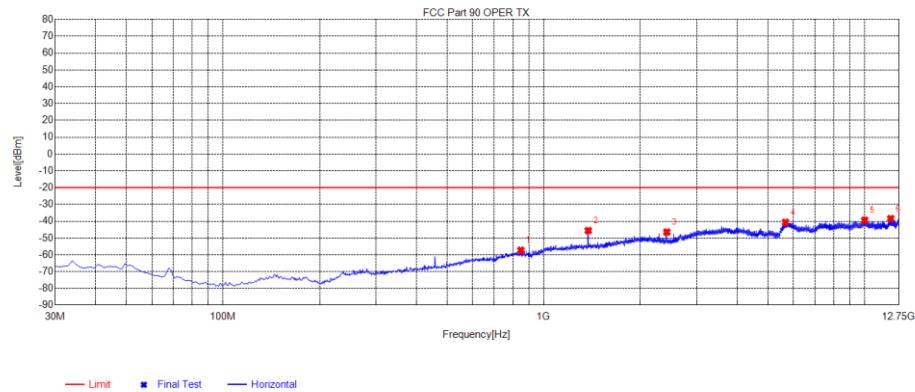
|            |                     |           |          |
|------------|---------------------|-----------|----------|
| Test Mode: | TX:453.2125MHz-4FSK | Polarity: | Vertical |
|------------|---------------------|-----------|----------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 597.45      | -101.36       | -62.71      | -20.00      | 42.71       | 38.65       | 241       | Vertical |
| 2   | 890.39      | -99.69        | -56.47      | -20.00      | 36.47       | 43.22       | 65        | Vertical |
| 3   | 1359.586    | -43.28        | -42.05      | -20.00      | 22.05       | 1.23        | 73        | Vertical |
| 4   | 4078.8079   | -46.00        | -42.75      | -20.00      | 22.75       | 3.25        | 139       | Vertical |
| 5   | 5989.549    | -51.20        | -40.37      | -20.00      | 20.37       | 10.83       | 259       | Vertical |
| 6   | 12747.6498  | -55.81        | -38.25      | -20.00      | 18.25       | 17.56       | 0         | Vertical |

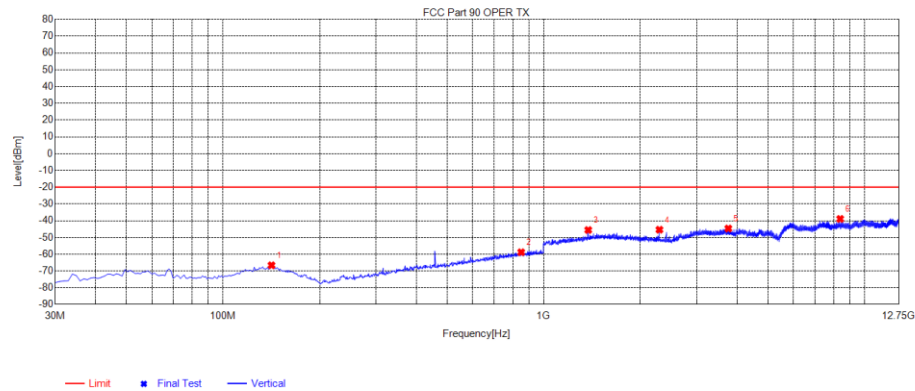
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|            |                     |           |            |
|------------|---------------------|-----------|------------|
| Test Mode: | TX:458.2125MHz-4FSK | Polarity: | Horizontal |
|------------|---------------------|-----------|------------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 847.71      | -100.44       | -57.25      | -20.00      | 37.25       | 43.19       | 220       | Horizontal |
| 2   | 1374.8625   | -42.11        | -45.58      | -20.00      | 25.58       | -3.47       | 73        | Horizontal |
| 3   | 2417.1917   | -45.38        | -46.49      | -20.00      | 26.49       | -1.11       | 1         | Horizontal |
| 4   | 5666.3916   | -50.22        | -40.67      | -20.00      | 20.67       | 9.55        | 246       | Horizontal |
| 5   | 9997.8748   | -55.37        | -39.44      | -20.00      | 19.44       | 15.93       | 9         | Horizontal |
| 6   | 12055.5056  | -55.88        | -38.45      | -20.00      | 18.45       | 17.43       | 212       | Horizontal |

|            |                     |           |          |
|------------|---------------------|-----------|----------|
| Test Mode: | TX:458.2125MHz-4FSK | Polarity: | Vertical |
|------------|---------------------|-----------|----------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 141.55      | -100.88       | -66.60      | -20.00      | 46.60       | 34.28       | 118       | Vertical |
| 2   | 849.65      | -101.66       | -58.82      | -20.00      | 38.82       | 42.84       | 351       | Vertical |
| 3   | 1374.8625   | -46.91        | -45.58      | -20.00      | 25.58       | 1.33        | 322       | Vertical |
| 4   | 2291.4541   | -44.94        | -45.40      | -20.00      | 25.40       | -0.46       | 153       | Vertical |
| 5   | 3758.0008   | -47.85        | -44.67      | -20.00      | 24.67       | 3.18        | 227       | Vertical |
| 6   | 8385.6136   | -51.93        | -38.95      | -20.00      | 18.95       | 12.98       | 82        | Vertical |

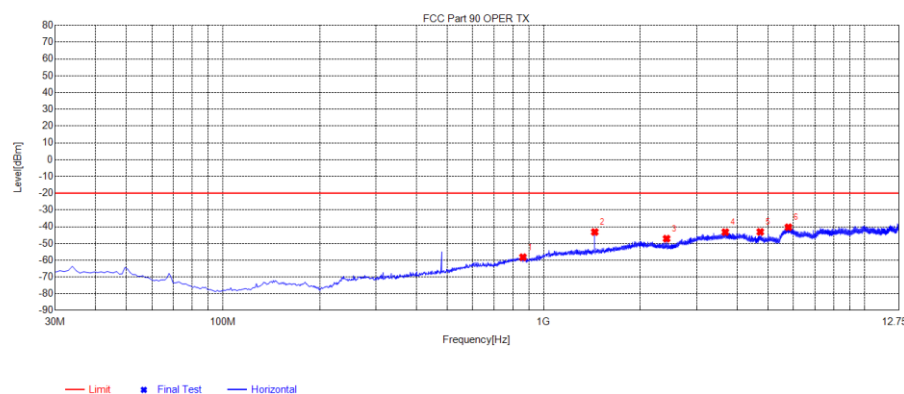
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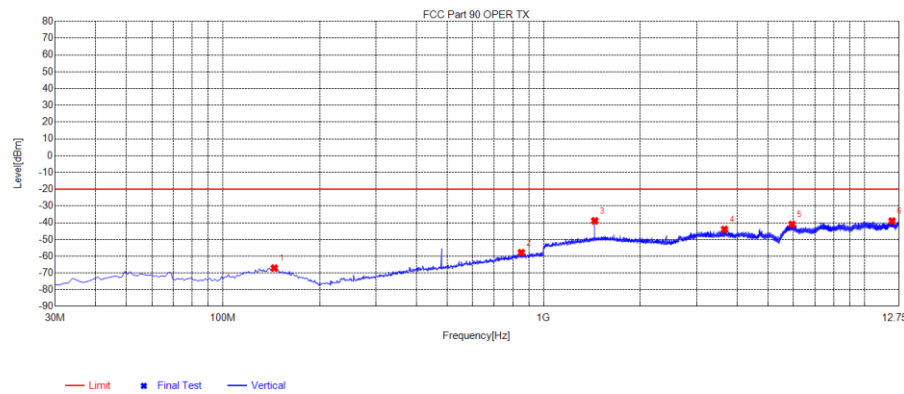
Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/

|            |                    |           |            |
|------------|--------------------|-----------|------------|
| Test Mode: | TX:479.975MHz-4FSK | Polarity: | Horizontal |
|------------|--------------------|-----------|------------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 860.32      | -101.35       | -58.22      | -20.00      | 38.22       | 43.13       | 282       | Horizontal |
| 2   | 1440.6691   | -39.85        | -43.18      | -20.00      | 23.18       | -3.33       | 336       | Horizontal |
| 3   | 2412.4912   | -46.05        | -47.15      | -20.00      | 27.15       | -1.10       | 262       | Horizontal |
| 4   | 3676.9177   | -47.63        | -43.25      | -20.00      | 23.25       | 4.38        | 308       | Horizontal |
| 5   | 4726.2976   | -46.71        | -43.11      | -20.00      | 23.11       | 3.60        | 336       | Horizontal |
| 6   | 5783.9034   | -50.33        | -40.34      | -20.00      | 20.34       | 9.99        | 228       | Horizontal |

|            |                     |           |          |
|------------|---------------------|-----------|----------|
| Test Mode: | TX:453.2125MHz-4FSK | Polarity: | Vertical |
|------------|---------------------|-----------|----------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 144.46      | -101.18       | -67.10      | -20.00      | 47.10       | 34.08       | 3         | Vertical |
| 2   | 850.62      | -100.73       | -57.88      | -20.00      | 37.88       | 42.85       | 187       | Vertical |
| 3   | 1440.6691   | -40.68        | -38.91      | -20.00      | 18.91       | 1.77        | 323       | Vertical |
| 4   | 3656.9407   | -47.16        | -44.03      | -20.00      | 24.03       | 3.13        | 123       | Vertical |
| 5   | 5937.8438   | -51.35        | -41.02      | -20.00      | 21.02       | 10.33       | 350       | Vertical |
| 6   | 12173.0173  | -56.88        | -39.04      | -20.00      | 19.04       | 17.84       | 350       | Vertical |

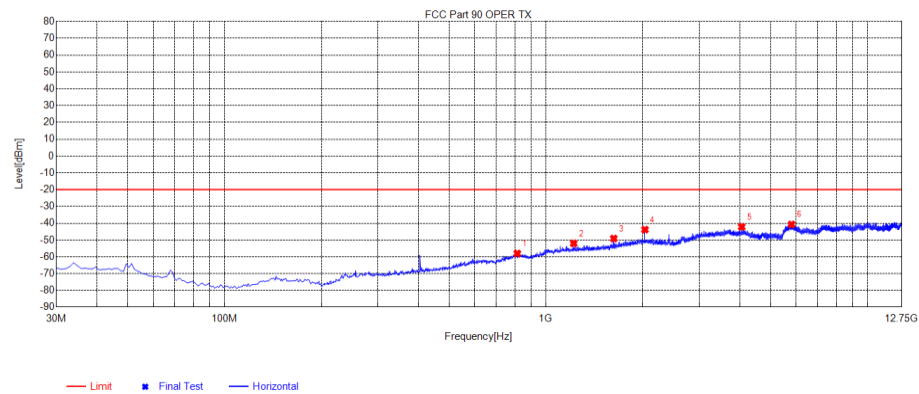
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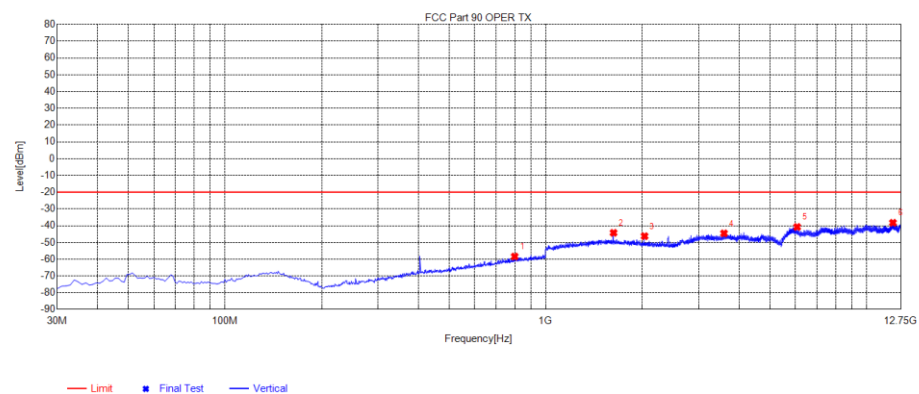
Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/

|            |                  |           |            |
|------------|------------------|-----------|------------|
| Test Mode: | TX:406.125MHz-FM | Polarity: | Horizontal |
|------------|------------------|-----------|------------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 813.76      | -101.38       | -58.03      | -20.00      | 38.03       | 43.35       | 184       | Horizontal |
| 2   | 1218.5719   | -48.22        | -52.02      | -20.00      | 32.02       | -3.80       | 298       | Horizontal |
| 3   | 1623.9874   | -46.82        | -49.10      | -20.00      | 29.10       | -2.28       | 112       | Horizontal |
| 4   | 2030.5781   | -44.26        | -43.85      | -20.00      | 23.85       | 0.41        | 46        | Horizontal |
| 5   | 4061.1811   | -46.77        | -42.18      | -20.00      | 22.18       | 4.59        | 150       | Horizontal |
| 6   | 5802.7053   | -50.81        | -40.75      | -20.00      | 20.75       | 10.06       | 360       | Horizontal |

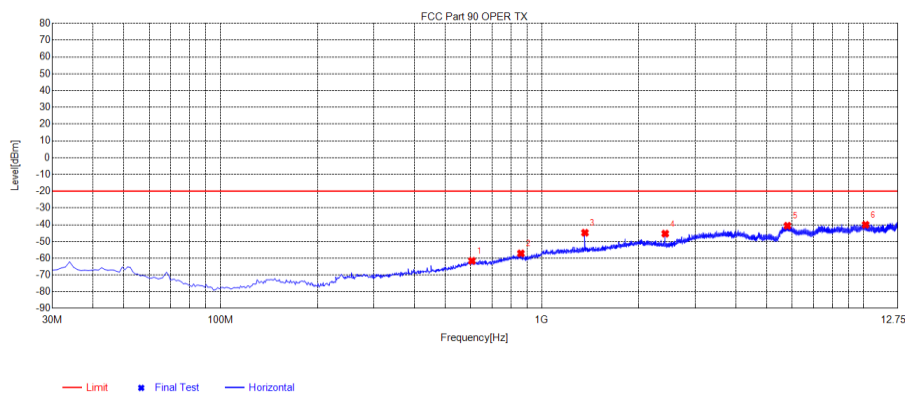
|            |                  |           |          |
|------------|------------------|-----------|----------|
| Test Mode: | TX:406.125MHz-FM | Polarity: | Vertical |
|------------|------------------|-----------|----------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 799.21      | -100.75       | -58.40      | -20.00      | 38.40       | 42.35       | 0         | Vertical |
| 2   | 1625.1625   | -45.98        | -44.26      | -20.00      | 24.26       | 1.72        | 22        | Vertical |
| 3   | 2030.5781   | -46.57        | -46.25      | -20.00      | 26.25       | 0.32        | 169       | Vertical |
| 4   | 3591.1341   | -47.68        | -44.58      | -20.00      | 24.58       | 3.10        | 240       | Vertical |
| 5   | 6069.4569   | -51.80        | -40.77      | -20.00      | 20.77       | 11.03       | 0         | Vertical |
| 6   | 12071.9572  | -56.07        | -38.28      | -20.00      | 18.28       | 17.79       | 0         | Vertical |

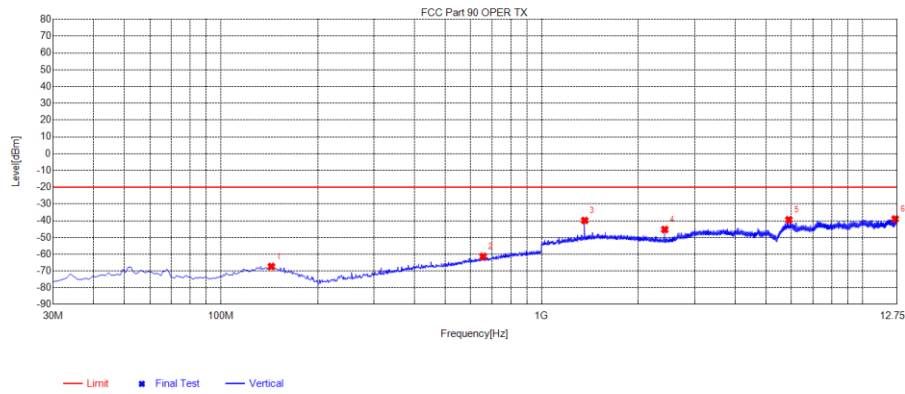
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|            |                   |           |            |
|------------|-------------------|-----------|------------|
| Test Mode: | TX:453.2125MHz-FM | Polarity: | Horizontal |
|------------|-------------------|-----------|------------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 605.21      | -101.44       | -61.58      | -20.00      | 41.58       | 39.86       | 18        | Horizontal |
| 2   | 859.35      | -100.28       | -57.14      | -20.00      | 37.14       | 43.14       | 164       | Horizontal |
| 3   | 1359.586    | -41.32        | -44.82      | -20.00      | 24.82       | -3.50       | 128       | Horizontal |
| 4   | 2416.0166   | -44.26        | -45.37      | -20.00      | 25.37       | -1.11       | 9         | Horizontal |
| 5   | 5801.5302   | -50.70        | -40.65      | -20.00      | 20.65       | 10.05       | 354       | Horizontal |
| 6   | 10151.8152  | -55.90        | -40.06      | -20.00      | 20.06       | 15.84       | 74        | Horizontal |

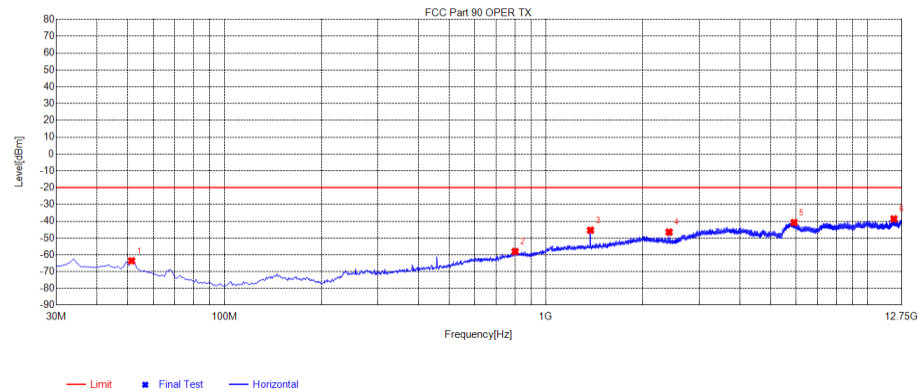
|            |                   |           |          |
|------------|-------------------|-----------|----------|
| Test Mode: | TX:453.2125MHz-FM | Polarity: | Vertical |
|------------|-------------------|-----------|----------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 143.49      | -101.47       | -67.32      | -20.00      | 47.32       | 34.15       | 45        | Vertical |
| 2   | 655.65      | -101.02       | -61.33      | -20.00      | 41.33       | 39.69       | 262       | Vertical |
| 3   | 1359.586    | -41.11        | -39.88      | -20.00      | 19.88       | 1.23        | 108       | Vertical |
| 4   | 2416.0166   | -44.44        | -45.28      | -20.00      | 25.28       | -0.84       | 0         | Vertical |
| 5   | 5886.1386   | -49.30        | -39.47      | -20.00      | 19.47       | 9.83        | 163       | Vertical |
| 6   | 12623.0873  | -56.76        | -38.98      | -20.00      | 18.98       | 17.78       | 45        | Vertical |

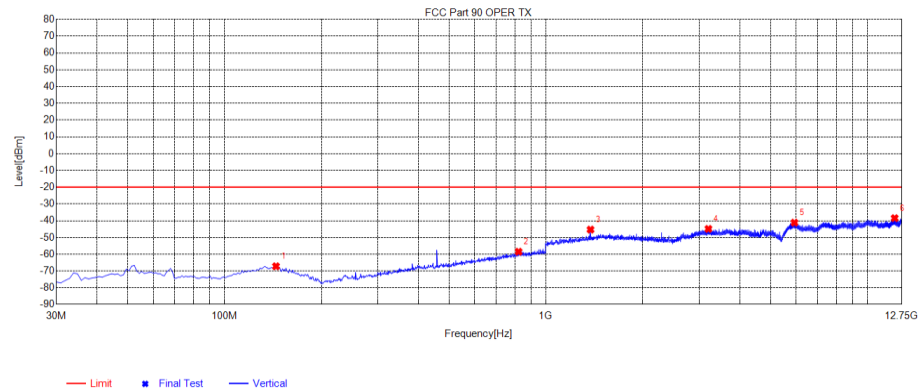
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|            |                   |           |            |
|------------|-------------------|-----------|------------|
| Test Mode: | TX:458.2125MHz-FM | Polarity: | Horizontal |
|------------|-------------------|-----------|------------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 51.34       | -96.86        | -63.59      | -20.00      | 43.59       | 33.27       | 129       | Horizontal |
| 2   | 801.15      | -101.47       | -58.06      | -20.00      | 38.06       | 43.41       | 259       | Horizontal |
| 3   | 1374.8625   | -41.91        | -45.38      | -20.00      | 25.38       | -3.47       | 121       | Horizontal |
| 4   | 2413.6664   | -45.38        | -46.48      | -20.00      | 26.48       | -1.10       | 353       | Horizontal |
| 5   | 5910.8161   | -51.29        | -40.83      | -20.00      | 20.83       | 10.46       | 224       | Horizontal |
| 6   | 12077.8328  | -56.12        | -38.67      | -20.00      | 18.67       | 17.45       | 102       | Horizontal |

|            |                   |           |          |
|------------|-------------------|-----------|----------|
| Test Mode: | TX:458.2125MHz-FM | Polarity: | Vertical |
|------------|-------------------|-----------|----------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 144.46      | -101.28       | -67.20      | -20.00      | 47.20       | 34.08       | 341       | Vertical |
| 2   | 821.52      | -101.08       | -58.51      | -20.00      | 38.51       | 42.57       | 32        | Vertical |
| 3   | 1374.8625   | -46.66        | -45.33      | -20.00      | 25.33       | 1.33        | 331       | Vertical |
| 4   | 3198.6449   | -48.05        | -44.90      | -20.00      | 24.90       | 3.15        | 134       | Vertical |
| 5   | 5924.9175   | -51.38        | -41.18      | -20.00      | 21.18       | 10.20       | 350       | Vertical |
| 6   | 12149.515   | -56.32        | -38.50      | -20.00      | 18.50       | 17.82       | 341       | Vertical |

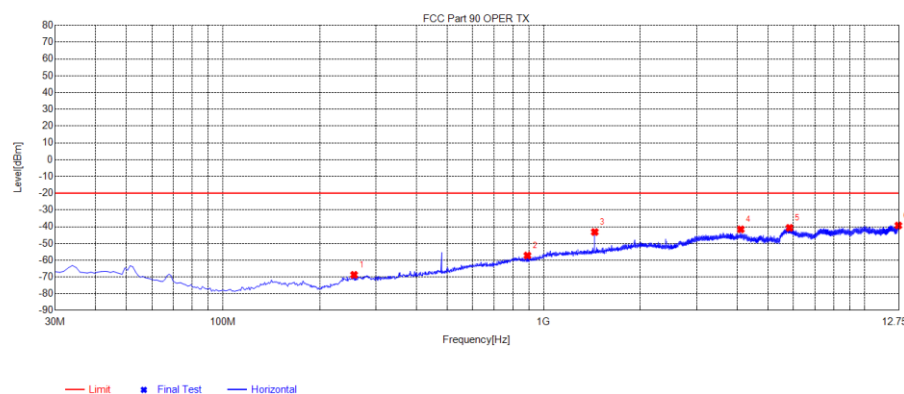
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Attestation of Global Compliance(Shenzhen)Co., Ltd

Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

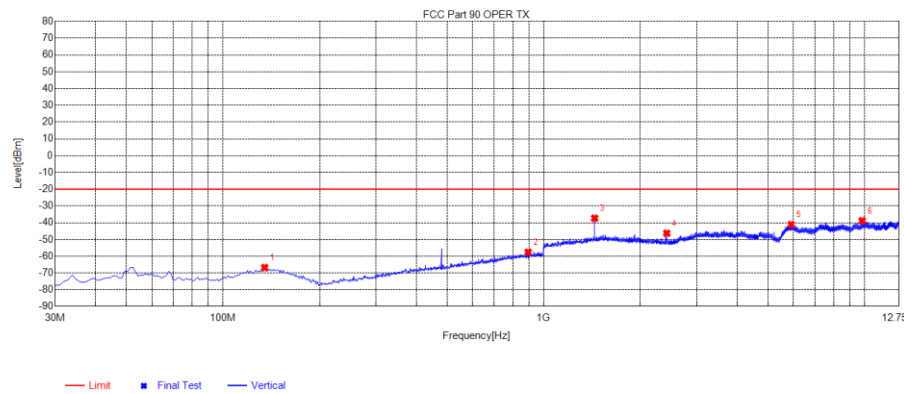
Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/

|            |                  |           |            |
|------------|------------------|-----------|------------|
| Test Mode: | TX:479.975MHz-FM | Polarity: | Horizontal |
|------------|------------------|-----------|------------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity   |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|------------|
| 1   | 256.01      | -101.04       | -68.72      | -20.00      | 48.72       | 32.32       | 134       | Horizontal |
| 2   | 888.45      | -100.20       | -57.20      | -20.00      | 37.20       | 43.00       | 161       | Horizontal |
| 3   | 1440.6691   | -39.85        | -43.18      | -20.00      | 23.18       | -3.33       | 335       | Horizontal |
| 4   | 4108.1858   | -46.06        | -41.58      | -20.00      | 21.58       | 4.48        | 99        | Horizontal |
| 5   | 5830.9081   | -50.87        | -40.71      | -20.00      | 20.71       | 10.16       | 9         | Horizontal |
| 6   | 12733.5484  | -56.78        | -39.29      | -20.00      | 19.29       | 17.49       | 38        | Horizontal |

|            |                   |           |          |
|------------|-------------------|-----------|----------|
| Test Mode: | TX:453.2125MHz-FM | Polarity: | Vertical |
|------------|-------------------|-----------|----------|



| NO. | Freq. [MHz] | Reading [dBm] | Level [dBm] | Limit [dBm] | Margin [dB] | Factor [dB] | Angle [°] | Polarity |
|-----|-------------|---------------|-------------|-------------|-------------|-------------|-----------|----------|
| 1   | 134.76      | -100.80       | -66.76      | -20.00      | 46.76       | 34.04       | 113       | Vertical |
| 2   | 893.3       | -100.85       | -57.60      | -20.00      | 37.60       | 43.25       | 351       | Vertical |
| 3   | 1439.4939   | -39.07        | -37.31      | -20.00      | 17.31       | 1.76        | 322       | Vertical |
| 4   | 2416.0166   | -45.44        | -46.28      | -20.00      | 26.28       | -0.84       | 74        | Vertical |
| 5   | 5900.24     | -51.09        | -41.13      | -20.00      | 21.13       | 9.96        | 359       | Vertical |
| 6   | 9827.4827   | -54.51        | -38.82      | -20.00      | 18.82       | 15.69       | 252       | Vertical |

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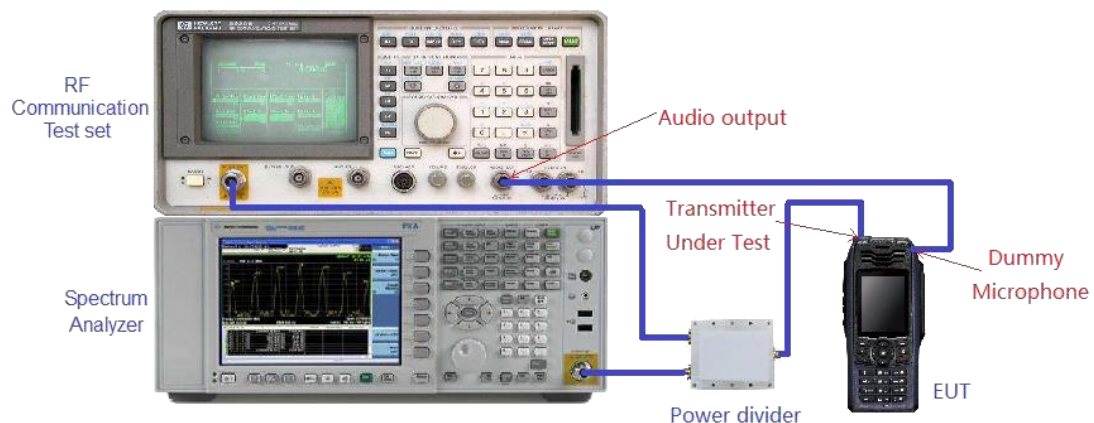
## 8.5 EMISSION MASK PLOT

The detailed procedure employed for Emission Mask measurements are specified as following:

-Connect the equipment as illustrated.

-Spectrum set as follow:

1. Centre frequency = fundamental frequency, Span=50kHz for 12.5kHz and 25kHz channel spacing, RBW=100Hz, VBW=300Hz for 12.5kHz, RBW=300Hz, VBW=1000Hz for 25kHz, Sweep = auto, Detector function = peak, Trace = max hold
2. Key the transmitter, and set the level of the unmodulated carrier to a fullscale reference line. This is the 0dB reference for the measurement.
3. Modulate the transmitter with a 2500 Hz sine wave at an input level 16 dB greater than that necessary to produce 50% of rated system deviation (Rated system deviation is 2.5 kHz for 12.5kHz channel spacing). The input level shall be established at the frequency of maximum response of the audio modulating circuit.
4. Transmitters employing digital modulation techniques that bypass the limiter and the audio low-pass filter shall be modulated as specified by the manufacturer.
5. Measure and record the results in the test report.



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