

# TEST REPORT

Applicant Name: PO FUNG ELECTRONIC (HK) INTERNATIONAL GROUP COMPANY  
LIMITED  
Address: Room 1508, 15/F, Office Tower II, Grand Plaza, 625 Nathan Road,  
Kowloon, Hong Kong  
Report Number: XMTN1220728-34315E-EM-00A  
FCC ID: 2AJGM-UV17

**Test Standards:**

FCC PART 15B

**Sample Description**

Product Type: Amateur Radio  
Model No.: UV-17R, BF-17R  
Trade Mark: BAOFENG, POFUNG  
Date Received: 2022-07-28  
Date of Test: 2022-12-19 to 2022-12-21  
Report Date: 2022-12-23

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

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

**Prepared and Checked By:**

---

Zeki Ma  
EMC Engineer

**Approved By:**

---

Candy Li  
EMC Engineer

**Note:** This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk ★.

Shenzhen Accurate Technology Co., Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk \*\*. Customer model name, addresses, names, trademarks etc. are not considered data.

This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

---

**Shenzhen Accurate Technology Co., Ltd.**

1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

Tel: +86 755-26503290      Fax: +86 755-26503396      Web: [www.atc-lab.com](http://www.atc-lab.com)

## TABLE OF CONTENTS

|   |           |
|---|-----------|
| <b>DOCUMENT REVISION HISTORY .....</b>  | <b>3</b>  |
| <b>GENERAL INFORMATION.....</b>   | <b>4</b>  |
| PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....   | 4         |
| OBJECTIVE .....   | 4         |
| TEST METHODOLOGY .....  | 4         |
| MEASUREMENT UNCERTAINTY.....  | 5         |
| TEST FACILITY .....   | 5         |
| <b>SYSTEM TEST CONFIGURATION.....</b>   | <b>6</b>  |
| JUSTIFICATION .....   | 6         |
| EUT EXERCISE SOFTWARE .....   | 6         |
| SPECIAL ACCESSORIES.....  | 6         |
| EQUIPMENT MODIFICATIONS .....   | 6         |
| SUPPORT EQUIPMENT LIST AND DETAILS .....  | 6         |
| BLOCK DIAGRAM OF RADIATED TEST SETUP.....   | 7         |
| <b>SUMMARY OF TEST RESULTS.....</b>   | <b>8</b>  |
| <b>TEST EQUIPMENT LIST .....</b>  | <b>9</b>  |
| <b>FCC §15.109 - RADIATED EMISSIONS .....</b>   | <b>10</b> |
| APPLICABLE STANDARD .....   | 10        |
| EUT SETUP.....  | 10        |
| EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP .....   | 11        |
| TEST PROCEDURE .....  | 11        |
| FACTOR & OVER LIMIT CALCULATION.....  | 11        |
| TEST DATA .....   | 12        |
| <b>FCC §15.111 - ANTENNA CONDUCTED POWER FOR RECEIVES.....</b>  | <b>41</b> |
| APPLICABLE STANDARD .....   | 41        |
| EUT SETUP.....  | 41        |
| TEST PROCEDURE .....  | 41        |
| TEST DATA .....   | 41        |
| <b>FCC §15.121(B) - SCANNING RECEIVERS AND FREQUENCY CONVERTERS USED WITH SCANNING RECEIVERS.....</b> | <b>56</b> |
| APPLICABLE STANDARD .....   | 56        |
| EUT SETUP.....  | 56        |
| TEST PROCEDURE .....  | 56        |
| TEST DATA .....   | 57        |

**DOCUMENT REVISION HISTORY**

| Revision Number | Report Number             | Description of Revision | Date of Revision |
|-----------------|---------------------------|-------------------------|------------------|
| 0               | XMTN1220728-34315E-EM-00A | Original Report         | 2022-12-23       |

## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

|                             |   |
|-----------------------------|---|
| Product                     | Amateur Radio   |
| Tested Model                | UV-17R  |
| Multiple Model              | BF-17R  |
| Model Difference            | Please refer to the DOS letter  |
| Frequency Range             | RX: 136-174MHz, 400-520MHz(Scanning receiver)   |
| Highest Operation Frequency | 520 MHz (provided by the applicant.)  |
| Voltage Range               | DC 7.4V from battery or DC 5V from adapter for charging   |
| Sample number               | XMTN1220728-34315E-EM-S1 (Assigned by ATC)  |
| Sample/EUT Status           | Good condition  |
| Adapter information         | Model: BF-0502000<br>Input: 100-240V~50/60Hz 0.5A<br>Output: 5V=2A<br>(The DC line length is 0.87 meter.) |

### Objective

This report is in accordance with Part 2-Subpart J, and Part 15-Subparts A and B of the Federal Communication Commission's rules.

The objective of the manufacturer is to determine the compliance of EUT with FCC Part 15, Class B device.

### Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All radiated and conducted emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

## Measurement Uncertainty

| Parameter                          | Uncertainty            |        |
|------------------------------------|------------------------|--------|
| Occupied Channel Bandwidth         | 5%                     |        |
| RF Frequency                       | $0.082 \times 10^{-7}$ |        |
| RF output power, conducted         | 0.73dB                 |        |
| Unwanted Emission, conducted       | 1.6dB                  |        |
| AC Power Lines Conducted Emissions | 2.72dB                 |        |
| Emissions,<br>Radiated             | 9kHz - 30MHz           | 2.66dB |
|                                    | 30MHz - 1GHz           | 4.28dB |
|                                    | 1GHz - 18GHz           | 4.98dB |
| Temperature                        | 1°C                    |        |
| Humidity                           | 6%                     |        |
| Supply voltages                    | 0.4%                   |        |

*Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.*

## Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01.

Listed by Innovation, Science and Economic Development Canada (ISED), the Registration Number is 5077A.

## SYSTEM TEST CONFIGURATION

### Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

Test mode 1: Scanning receiver (scanning mode)

Test mode 2: Receiver at 136MHz

Test mode 3: Receiver at 155MHz

Test mode 4: Receiver at 174MHz

Test mode 5: Receiver at 400MHz

Test mode 6: Receiver at 460MHz

Test mode 7: Receiver at 520MHz

### EUT Exercise Software

No exercise software.

### Special Accessories

No special accessory was used.

### Equipment Modifications

No modification was made to the EUT tested.

### Support Equipment List and Details

| Manufacturer | Description             | Model   | Serial Number |
|--------------|-------------------------|---------|---------------|
| Unknown      | Earphone                | K-MS561 | Unknown       |
| AGILENT      | Vector Signal Generator | N5182A  | MY50143401    |

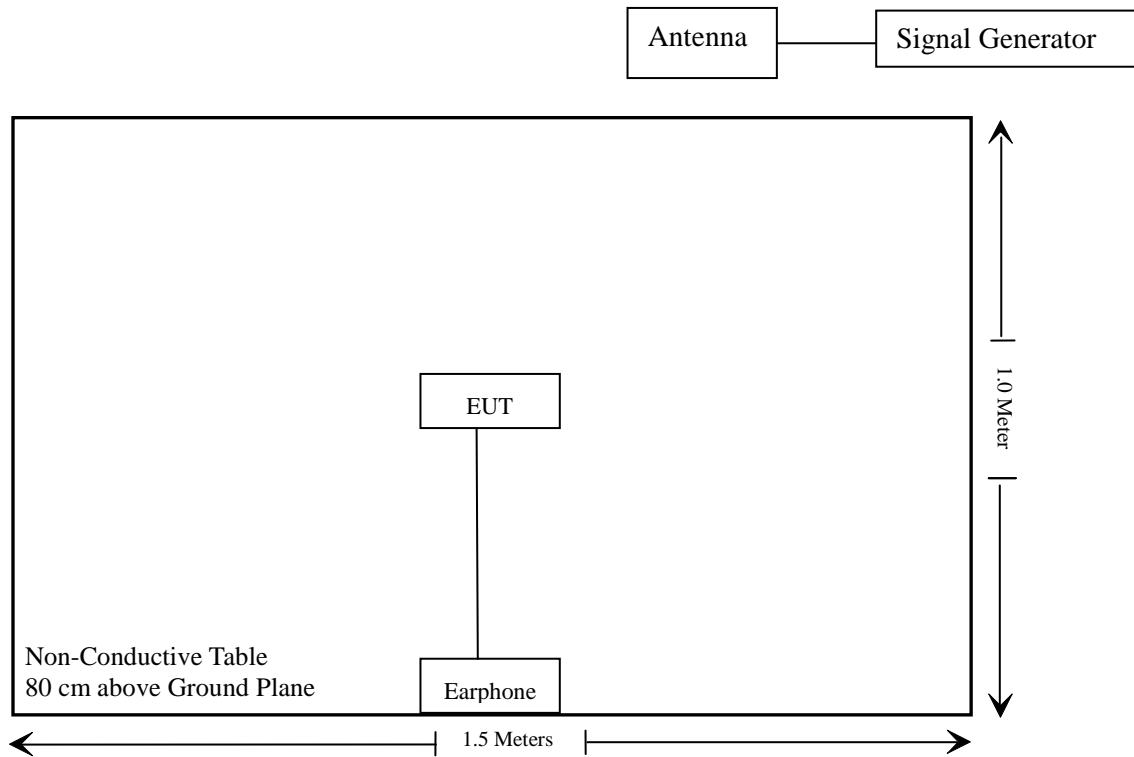
### External I/O Cable

| Cable Description | Length (m) | From Port | To Port  |
|-------------------|------------|-----------|----------|
| Audio Cable       | 1.5        | EUT       | Earphone |

## Block Diagram of Radiated Test Setup

For Radiated emission:

Test mode 1-7:



**SUMMARY OF TEST RESULTS**

| FCC Rules  | Description of Test  | Results        |
|------------|--|----------------|
| § 15.107   | Conducted Emissions  | Not Applicable |
| §15.109    | Radiated Emissions   | Compliant      |
| §15.111    | Antenna Conducted Power for receivers                                    | Compliant      |
| §15.121(b) | Scanning receivers and frequency converters used with scanning receivers | Compliant      |

Not Applicable: The product must be switched off during charging, which was declared by applicant.

## TEST EQUIPMENT LIST

| Manufacturer                                   | Description                             | Model     | Serial Number | Calibration Date | Calibration Due Date |
|--|---|-----------|---------------|------------------|----------------------|
| <b>Radiated Emissions Test</b>                 |   |           |               |                  |                      |
| Rohde & Schwarz                                | Test Receiver                           | ESR       | 102725        | 2022/11/25       | 2023/11/24           |
| Rohde & Schwarz                                | Spectrum Analyzer                       | FSV40     | 101949        | 2022/11/25       | 2023/11/24           |
| A.H. Systems, inc.                             | Preamplifier                            | PAM-0118P | 135           | 2022/11/08       | 2023/11/07           |
| SONOMA INSTRUMENT                              | Amplifier                               | 310 N     | 186131        | 2022/11/08       | 2023/11/07           |
| Schwarzbeck                                    | Bilog Antenna                           | VULB9163  | 9163-323      | 2021/07/06       | 2024/07/05           |
| Schwarzbeck                                    | Horn Antenna                            | BBHA9120D | 9120D-1067    | 2020/01/05       | 2023/01/04           |
| AGILENT  | Vector Signal Generator                 | N5182A    | MY50143401    | 2022/10/24       | 2023/10/23           |
| Unknown  | RF Coaxial Cable                        | No.10     | N050          | 2022/11/25       | 2023/11/24           |
| Unknown  | RF Coaxial Cable                        | No.11     | N1000         | 2022/11/25       | 2023/11/24           |
| Unknown  | RF Coaxial Cable                        | No.12     | N040          | 2022/11/25       | 2023/11/24           |
| Unknown  | RF Coaxial Cable                        | No.13     | N300          | 2022/11/25       | 2023/11/24           |
| Unknown  | RF Coaxial Cable                        | No.14     | N800          | 2022/11/25       | 2023/11/24           |
| Radiated Emission Test Software: e3 19821b(V9) |   |           |               |                  |                      |
| <b>RF Conducted Test</b>                       |   |           |               |                  |                      |
| Rohde & Schwarz                                | Spectrum Analyzer                       | FSV-40    | 101495        | 2022/11/25       | 2023/11/24           |
| AGILENT  | Vector Signal Generator                 | N5182A    | MY50143401    | 2022/10/24       | 2023/10/23           |
| HP Agilent                                     | RF Communication test set               | 8920B     | 3325U00859    | 2022/09/02       | 2023/09/01           |
| Aeroflex/Weinschel                             | 30dB Attenuator (Input 250W/Output 50W) | 58-30-33  | PS467         | 2022/11/25       | 2023/11/24           |
| Unknown  | RF Coaxial Cable                        | No.33     | RF-03         | Each time        |                      |

\* **Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

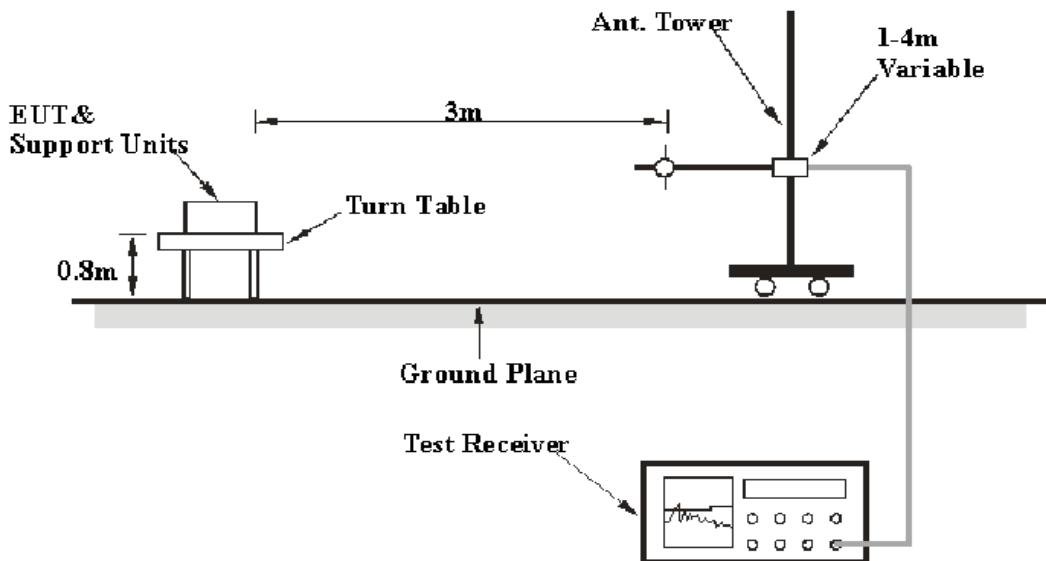
## FCC §15.109 - RADIATED EMISSIONS

### Applicable Standard

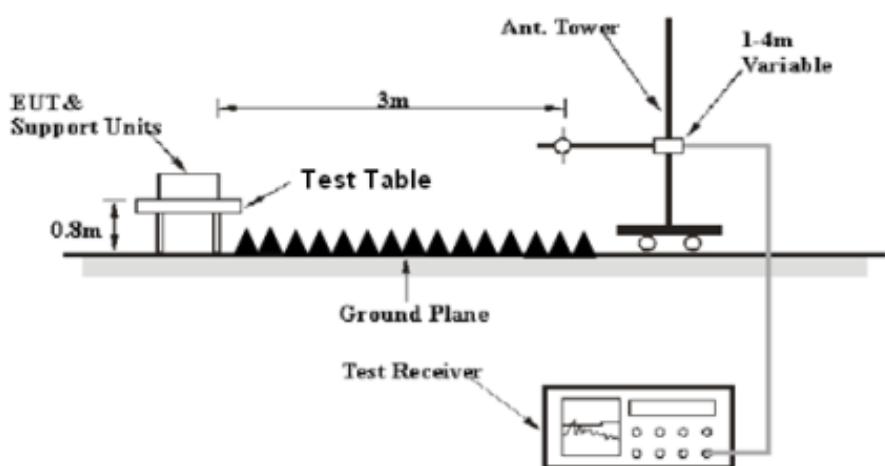
FCC §15.109

### EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

### EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 5 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup was set with the following configurations:

| Frequency Range  | RBW     | Video B/W | IF B/W | Detector |
|------------------|---------|-----------|--------|----------|
| 30MHz – 1000 MHz | 120 kHz | 300 kHz   | 120kHz | QP       |
| Above 1 GHz      | 1MHz    | 3 MHz     | /      | Peak     |
|                  | 1MHz    | 10Hz      | /      | AV       |

All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz, Peak and average detection mode above 1 GHz.

If the maximized peak measured value complies with the limit, then it is unnecessary to perform QP/Average measurement.

### Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

### Factor & Over Limit Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

$$\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Over Limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Over Limit} = \text{Level} - \text{Limit}$$

$$\text{Level} = \text{Reading} + \text{Factor}$$

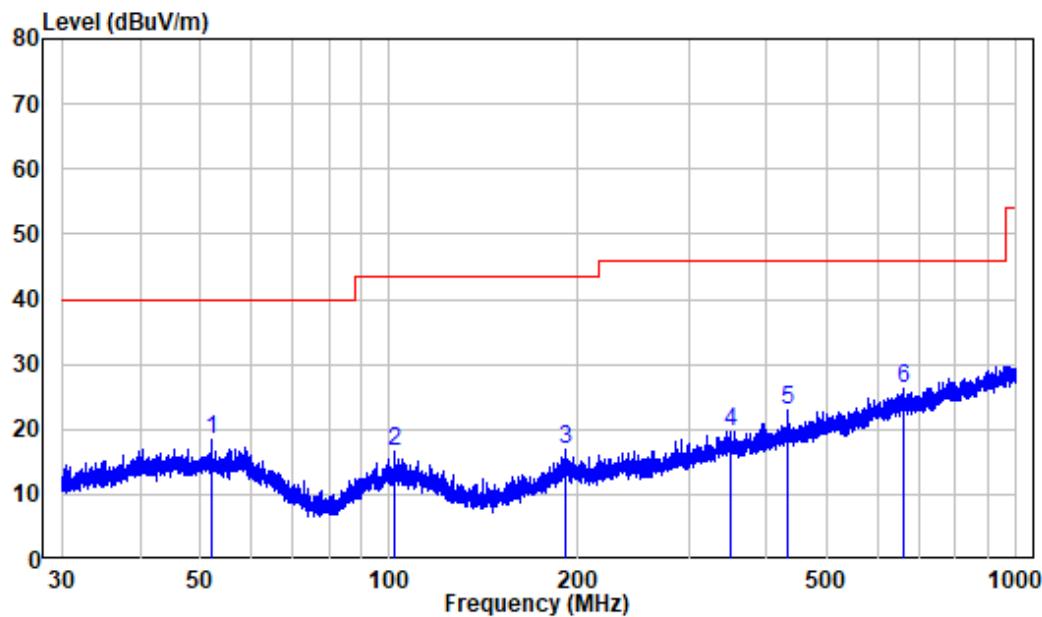
## Test Data

### Environmental Conditions

|                    |         |
|--------------------|---------|
| Temperature:       | 21°C    |
| Relative Humidity: | 55 %    |
| ATM Pressure:      | 101 kPa |

*The testing was performed by Jason Liu on 2022-12-19*

Note: Pre-scan in the X, Y and Z axes of orientation, the worst case Y-axis of orientation was recorded.

**30MHz-1GHz:****Test mode 1: Scanning receiver****Horizontal:**

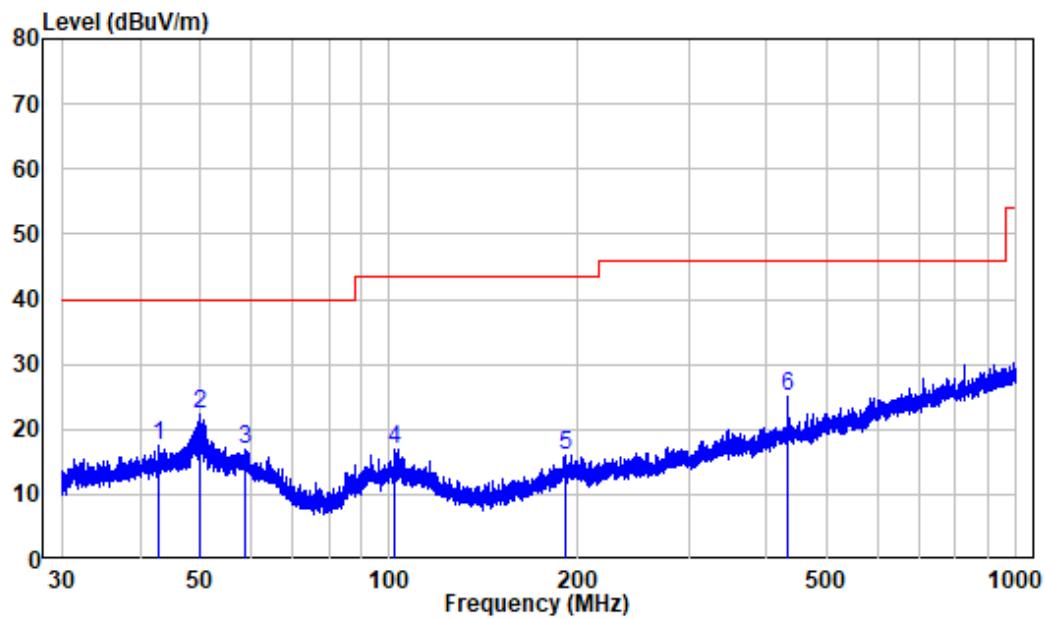
Site : chamber

Condition: 3m HORIZONTAL

Job No. : XMTN1220728-34315E-EM

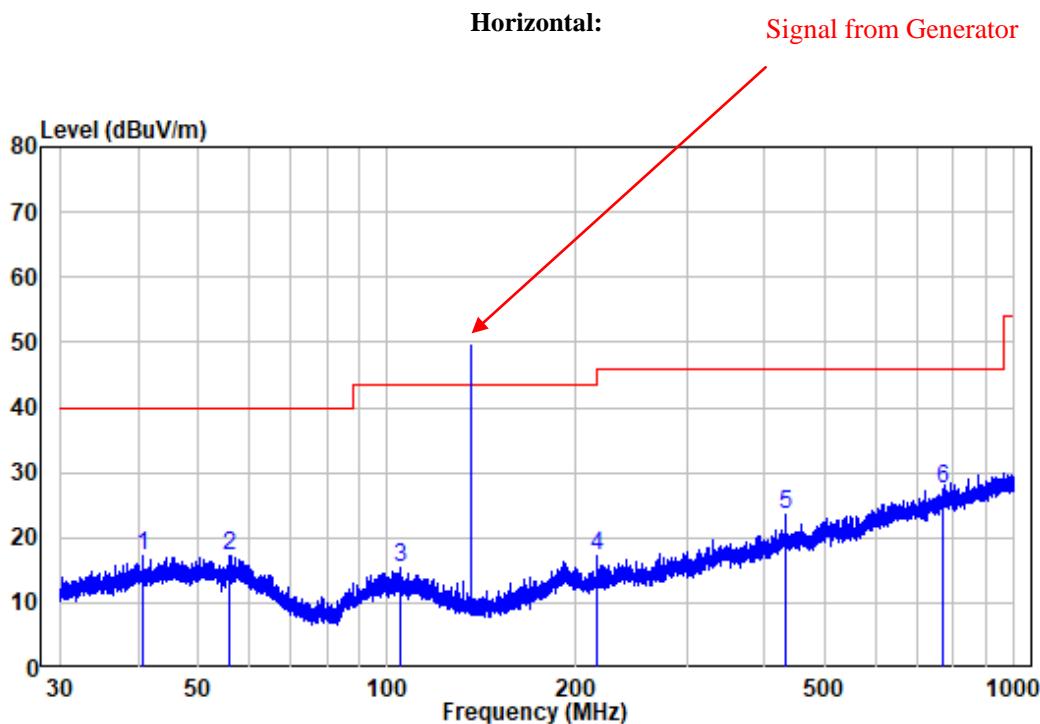
Test Mode: Scanning receiver

|   | Freq    | Factor | Read Level | Limit Level | Limit Line | Over Limit | Remark |
|---|---------|--------|------------|-------------|------------|------------|--------|
|   | MHz     | dB/m   | dBuV       | dBuV/m      | dBuV/m     | dB         |        |
| 1 | 52.048  | -9.98  | 28.27      | 18.29       | 40.00      | -21.71     | Peak   |
| 2 | 101.912 | -11.58 | 28.13      | 16.55       | 43.50      | -26.95     | Peak   |
| 3 | 191.577 | -11.31 | 28.13      | 16.82       | 43.50      | -26.68     | Peak   |
| 4 | 349.097 | -7.29  | 26.92      | 19.63       | 46.00      | -26.37     | Peak   |
| 5 | 431.977 | -5.75  | 28.74      | 22.99       | 46.00      | -23.01     | Peak   |
| 6 | 662.892 | -1.65  | 28.01      | 26.36       | 46.00      | -19.64     | Peak   |

**Vertical**

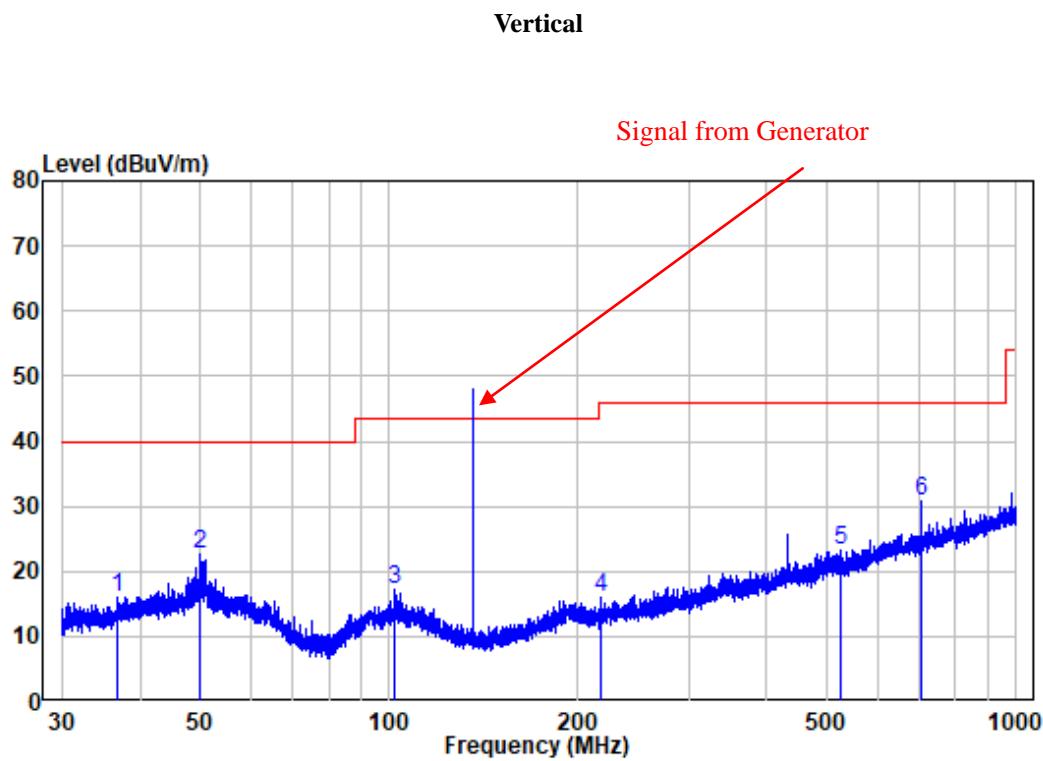
Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Scanning receiver

|   | Freq    | Read Factor | Level | Limit Level | Line   | Over Limit | Remark |
|---|---------|-------------|-------|-------------|--------|------------|--------|
|   | MHz     | dB/m        | dBuV  | dBuV/m      | dBuV/m | dB         |        |
| 1 | 42.937  | -9.96       | 27.43 | 17.47       | 40.00  | -22.53     | Peak   |
| 2 | 49.816  | -9.92       | 32.18 | 22.26       | 40.00  | -17.74     | Peak   |
| 3 | 58.973  | -10.26      | 27.13 | 16.87       | 40.00  | -23.13     | Peak   |
| 4 | 101.912 | -11.58      | 28.54 | 16.96       | 43.50  | -26.54     | Peak   |
| 5 | 191.074 | -11.40      | 27.51 | 16.11       | 43.50  | -27.39     | Peak   |
| 6 | 431.977 | -5.75       | 30.86 | 25.11       | 46.00  | -20.89     | Peak   |

**Test mode 2: Receiver at 136MHz**

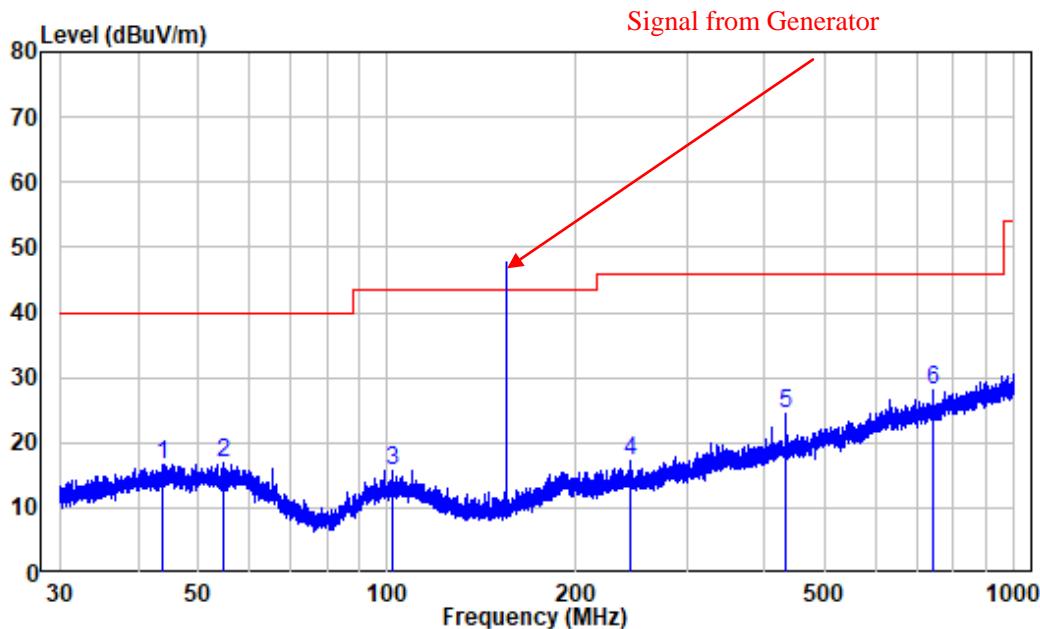
Site : chamber  
Condition: 3m HORIZONTAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 136MHz

|   | Freq    | Factor | Read Level | Limit Level | Over Line | Over Limit | Remark |
|---|---------|--------|------------|-------------|-----------|------------|--------|
|   | MHz     | dB/m   | dBuV       | dBuV/m      | dBuV/m    | dB         |        |
| 1 | 40.773  | -10.21 | 27.39      | 17.18       | 40.00     | -22.82     | Peak   |
| 2 | 55.976  | -10.18 | 27.34      | 17.16       | 40.00     | -22.84     | Peak   |
| 3 | 104.995 | -11.83 | 27.12      | 15.29       | 43.50     | -28.21     | Peak   |
| 4 | 216.024 | -11.63 | 28.90      | 17.27       | 46.00     | -28.73     | Peak   |
| 5 | 431.977 | -5.75  | 29.36      | 23.61       | 46.00     | -22.39     | Peak   |
| 6 | 769.422 | -0.21  | 27.62      | 27.41       | 46.00     | -18.59     | Peak   |



Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 136MHz

|   | Read<br>Freq | Factor | Level | Limit<br>Level | Line   | Over<br>Limit | Over<br>Remark |
|---|--------------|--------|-------|----------------|--------|---------------|----------------|
|   | MHz          | dB/m   | dBuV  | dBuV/m         | dBuV/m | dB            |                |
| 1 | 36.879       | -11.04 | 27.19 | 16.15          | 40.00  | -23.85        | Peak           |
| 2 | 49.881       | -9.92  | 32.64 | 22.72          | 40.00  | -17.28        | Peak           |
| 3 | 101.867      | -11.58 | 28.68 | 17.10          | 43.50  | -26.40        | Peak           |
| 4 | 217.831      | -11.53 | 27.52 | 15.99          | 46.00  | -30.01        | Peak           |
| 5 | 525.014      | -4.37  | 27.54 | 23.17          | 46.00  | -22.83        | Peak           |
| 6 | 704.535      | -1.48  | 32.25 | 30.77          | 46.00  | -15.23        | Peak           |

**Test mode 3: Receiver at 155MHz****Horizontal:**

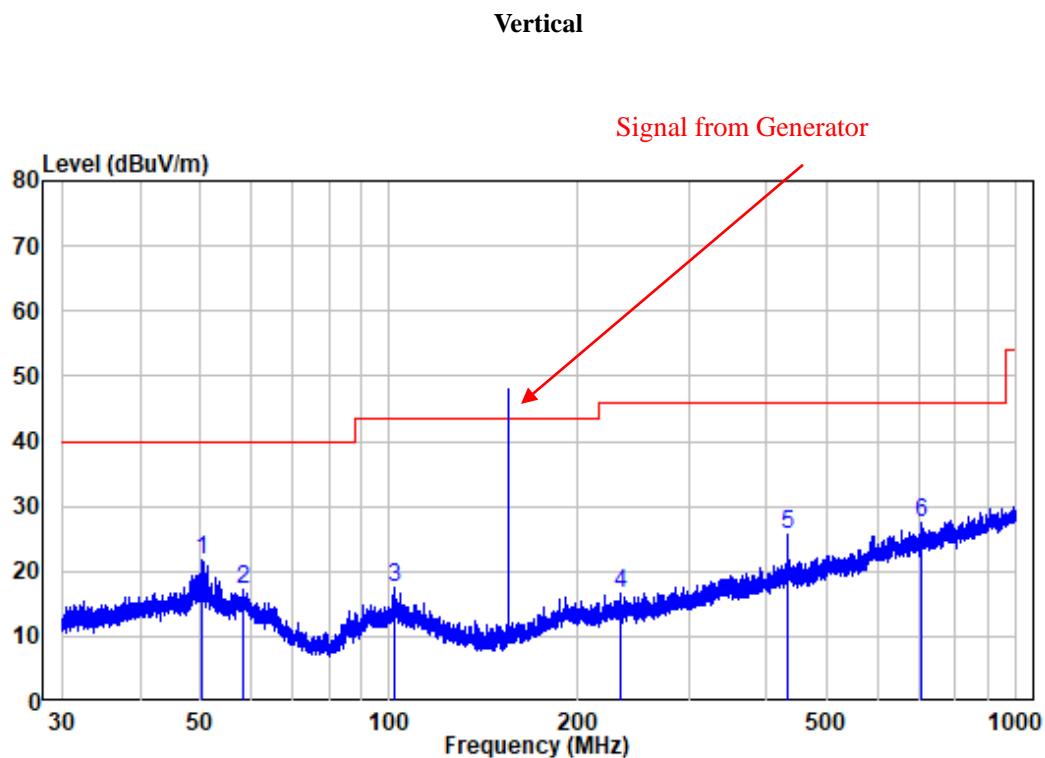
Site : chamber

Condition: 3m HORIZONTAL

Job No. : XMTN1220728-34315E-EM

Test Mode: Receive at 155MHz

| Freq | Factor  | Read   |       | Limit |        | Over   | Remark |
|------|---------|--------|-------|-------|--------|--------|--------|
|      |         | MHz    | dB/m  | dBuV  | dBuV/m | Line   |        |
| 1    | 43.678  | -9.92  | 26.67 | 16.75 | 40.00  | -23.25 | Peak   |
| 2    | 54.619  | -10.31 | 27.17 | 16.86 | 40.00  | -23.14 | Peak   |
| 3    | 101.867 | -11.58 | 27.18 | 15.60 | 43.50  | -27.90 | Peak   |
| 4    | 244.018 | -10.64 | 27.75 | 17.11 | 46.00  | -28.89 | Peak   |
| 5    | 431.977 | -5.75  | 30.11 | 24.36 | 46.00  | -21.64 | Peak   |
| 6    | 739.985 | -0.79  | 28.82 | 28.03 | 46.00  | -17.97 | Peak   |

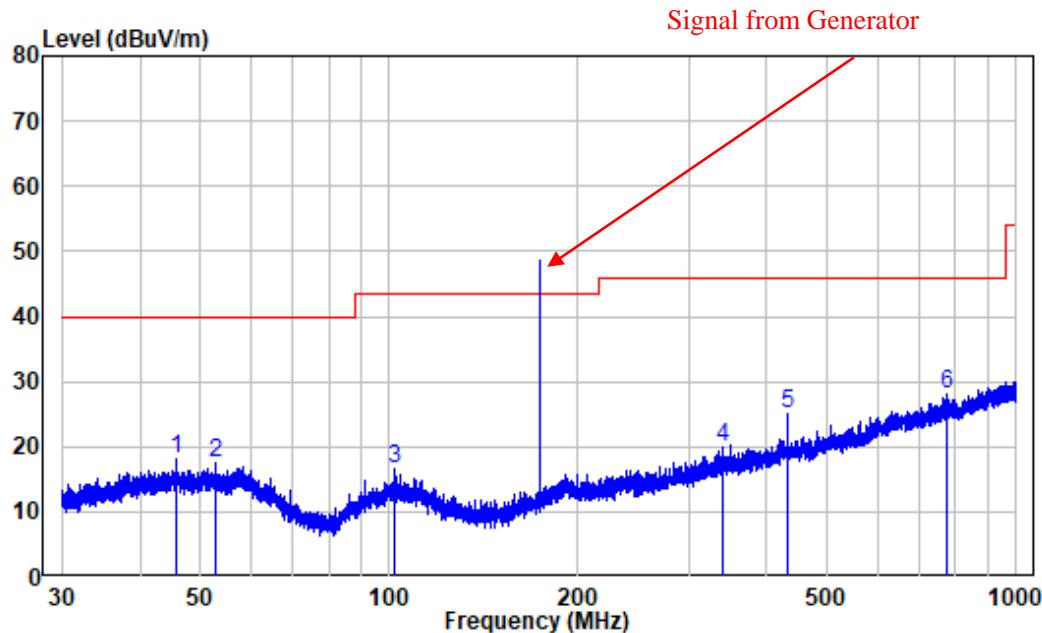


Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 155MHz

|   | Freq    | Read Factor | Level | Limit Level | Line   | Over Limit | Remark |
|---|---------|-------------|-------|-------------|--------|------------|--------|
|   | MHz     | dB/m        | dBuV  | dBuV/m      | dBuV/m | dB         |        |
| 1 | 50.101  | -9.92       | 31.51 | 21.59       | 40.00  | -18.41     | Peak   |
| 2 | 58.331  | -10.02      | 27.27 | 17.25       | 40.00  | -22.75     | Peak   |
| 3 | 101.912 | -11.58      | 29.18 | 17.60       | 43.50  | -25.90     | Peak   |
| 4 | 234.168 | -10.98      | 27.54 | 16.56       | 46.00  | -29.44     | Peak   |
| 5 | 431.977 | -5.75       | 31.41 | 25.66       | 46.00  | -20.34     | Peak   |
| 6 | 704.535 | -1.48       | 28.89 | 27.41       | 46.00  | -18.59     | Peak   |

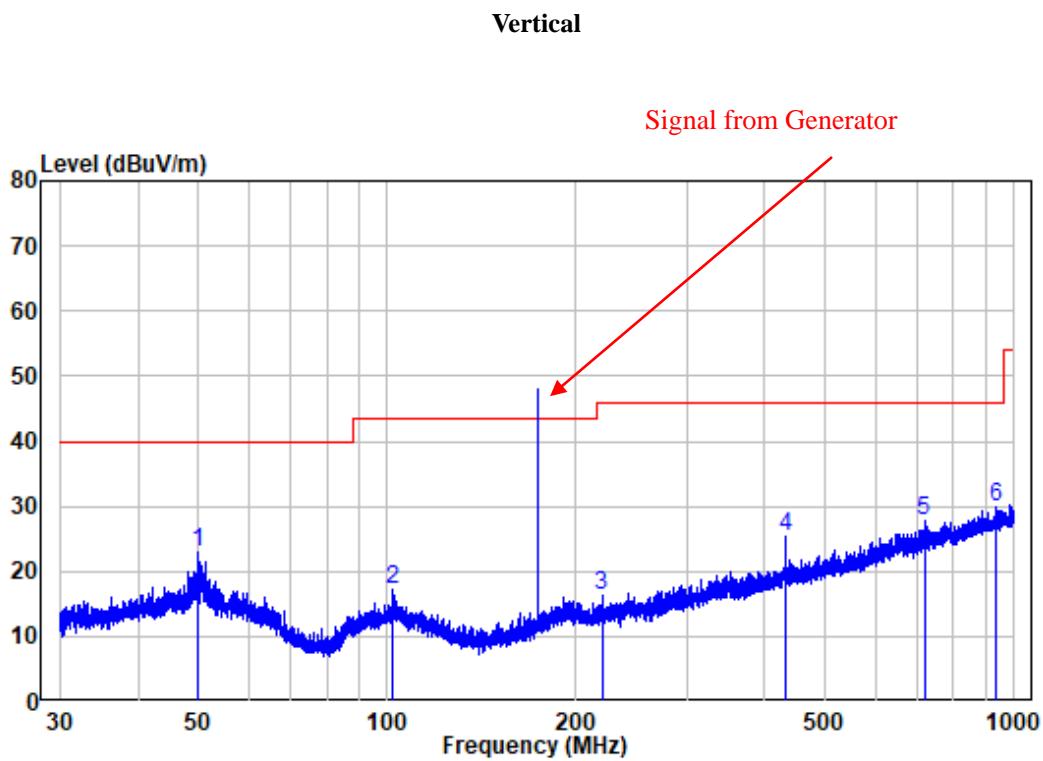
## Test mode 4: Receiver at 174MHz

Horizontal:



Site : chamber  
Condition: 3m HORIZONTAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 174MHz

|   | Freq    | Factor | Read Level | Limit Level | Over Line | Over Limit | Remark |
|---|---------|--------|------------|-------------|-----------|------------|--------|
|   | MHz     | dB/m   | dBuV       | dBuV/m      | dBuV/m    | dB         |        |
| 1 | 45.575  | -9.97  | 28.09      | 18.12       | 40.00     | -21.88     | Peak   |
| 2 | 52.644  | -10.10 | 27.72      | 17.62       | 40.00     | -22.38     | Peak   |
| 3 | 101.867 | -11.58 | 28.24      | 16.66       | 43.50     | -26.84     | Peak   |
| 4 | 339.291 | -7.46  | 27.38      | 19.92       | 46.00     | -26.08     | Peak   |
| 5 | 431.977 | -5.75  | 30.73      | 24.98       | 46.00     | -21.02     | Peak   |
| 6 | 774.837 | 0.03   | 28.07      | 28.10       | 46.00     | -17.90     | Peak   |

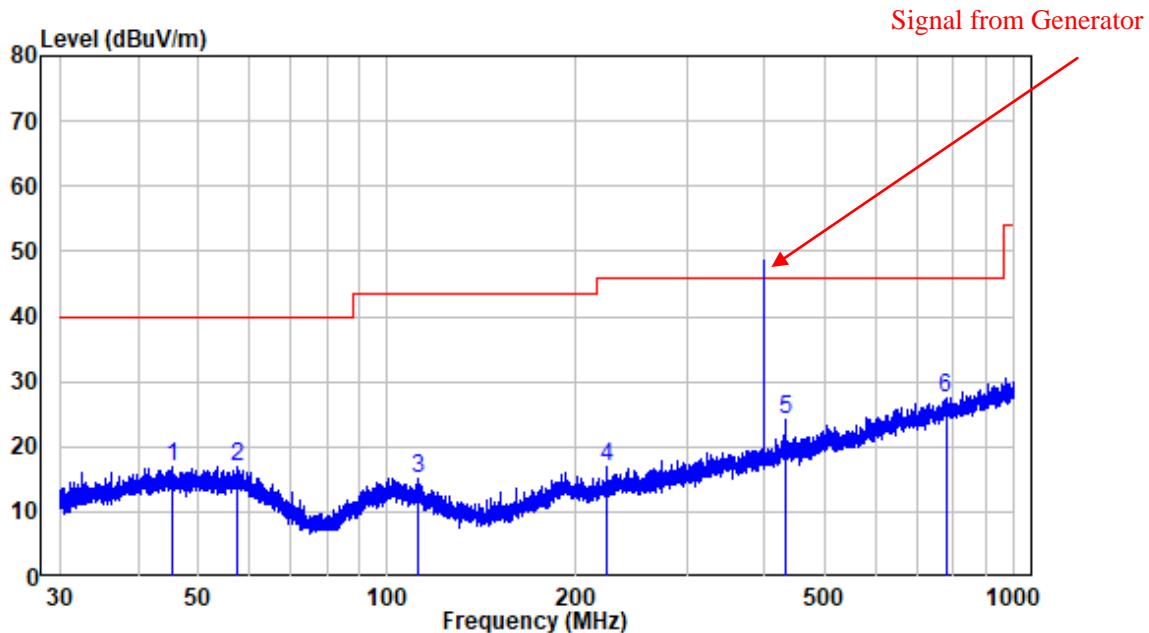


Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 174MHz

|   | Read    | Limit  | Over  |        |        |        |        |
|---|---------|--------|-------|--------|--------|--------|--------|
|   | Freq    | Factor | Level | Level  | Line   | Limit  | Remark |
|   | MHz     | dB/m   | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1 | 49.991  | -9.91  | 32.95 | 23.04  | 40.00  | -16.96 | Peak   |
| 2 | 101.867 | -11.58 | 28.75 | 17.17  | 43.50  | -26.33 | Peak   |
| 3 | 219.845 | -11.42 | 27.81 | 16.39  | 46.00  | -29.61 | Peak   |
| 4 | 431.977 | -5.75  | 31.01 | 25.26  | 46.00  | -20.74 | Peak   |
| 5 | 718.569 | -1.34  | 28.98 | 27.64  | 46.00  | -18.36 | Peak   |
| 6 | 937.188 | 1.76   | 28.10 | 29.86  | 46.00  | -16.14 | Peak   |

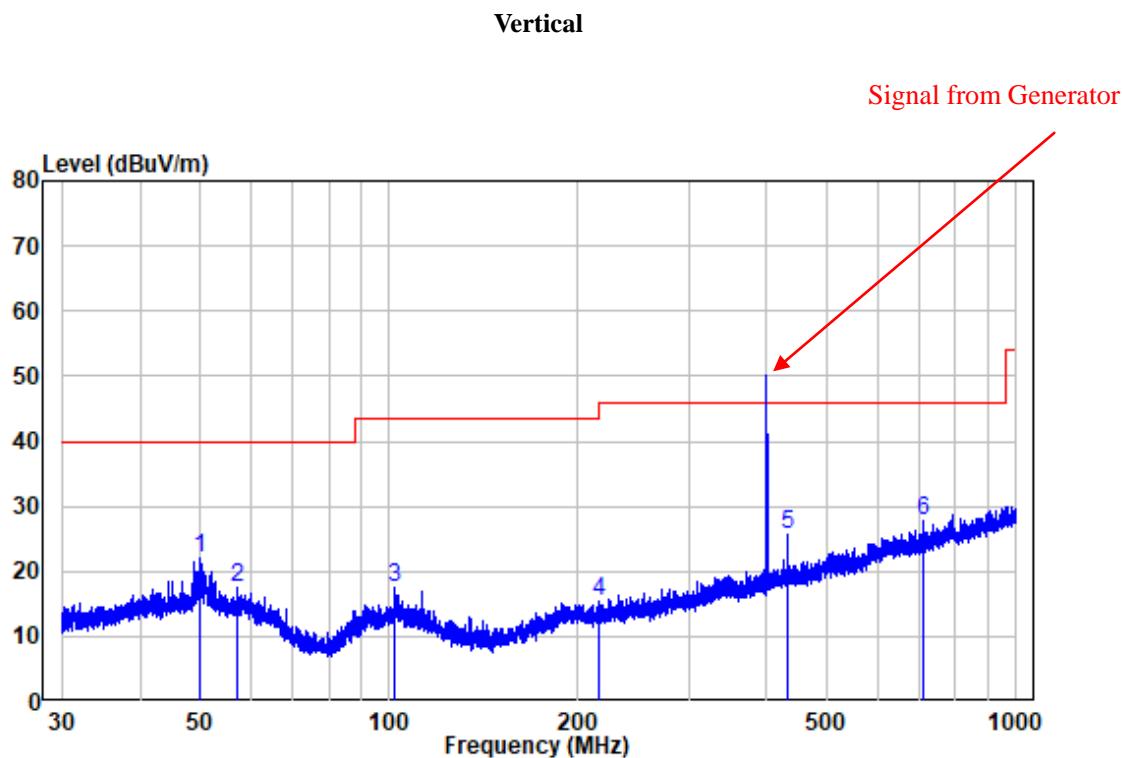
## Test mode 5: Receiver at 400MHz

Horizontal:



Site : chamber  
Condition: 3m HORIZONTAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 400MHz

| Freq | Factor  | Read   |       | Limit |        | Over   | Remark |
|------|---------|--------|-------|-------|--------|--------|--------|
|      |         | MHz    | dB/m  | dBuV  | dBuV/m | dBuV/m |        |
| 1    | 45.276  | -9.95  | 26.89 | 16.94 | 40.00  | -23.06 | Peak   |
| 2    | 57.443  | -9.99  | 26.80 | 16.81 | 40.00  | -23.19 | Peak   |
| 3    | 111.836 | -12.22 | 27.29 | 15.07 | 43.50  | -28.43 | Peak   |
| 4    | 223.439 | -11.30 | 28.28 | 16.98 | 46.00  | -29.02 | Peak   |
| 5    | 431.977 | -5.75  | 29.96 | 24.21 | 46.00  | -21.79 | Peak   |
| 6    | 777.900 | 0.07   | 27.50 | 27.57 | 46.00  | -18.43 | Peak   |

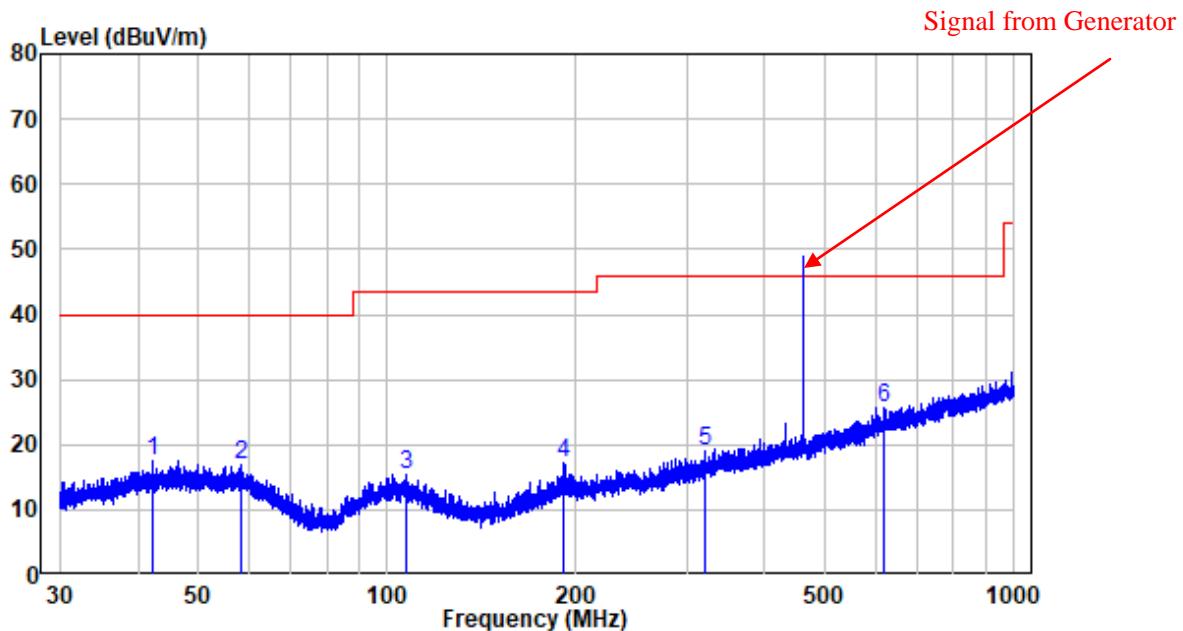


Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 400MHz

|   | Freq    | Read Factor | Level | Limit Level | Line   | Over Limit | Remark |
|---|---------|-------------|-------|-------------|--------|------------|--------|
|   | MHz     | dB/m        | dBuV  | dBuV/m      | dBuV/m | dB         |        |
| 1 | 49.750  | -9.92       | 32.03 | 22.11       | 40.00  | -17.89     | Peak   |
| 2 | 57.267  | -10.01      | 27.38 | 17.37       | 40.00  | -22.63     | Peak   |
| 3 | 101.912 | -11.58      | 29.00 | 17.42       | 43.50  | -26.08     | Peak   |
| 4 | 215.929 | -11.63      | 27.08 | 15.45       | 43.50  | -28.05     | Peak   |
| 5 | 431.977 | -5.75       | 31.45 | 25.70       | 46.00  | -20.30     | Peak   |
| 6 | 709.182 | -1.48       | 29.19 | 27.71       | 46.00  | -18.29     | Peak   |

## Test mode 6: Receiver at 460MHz

Horizontal:



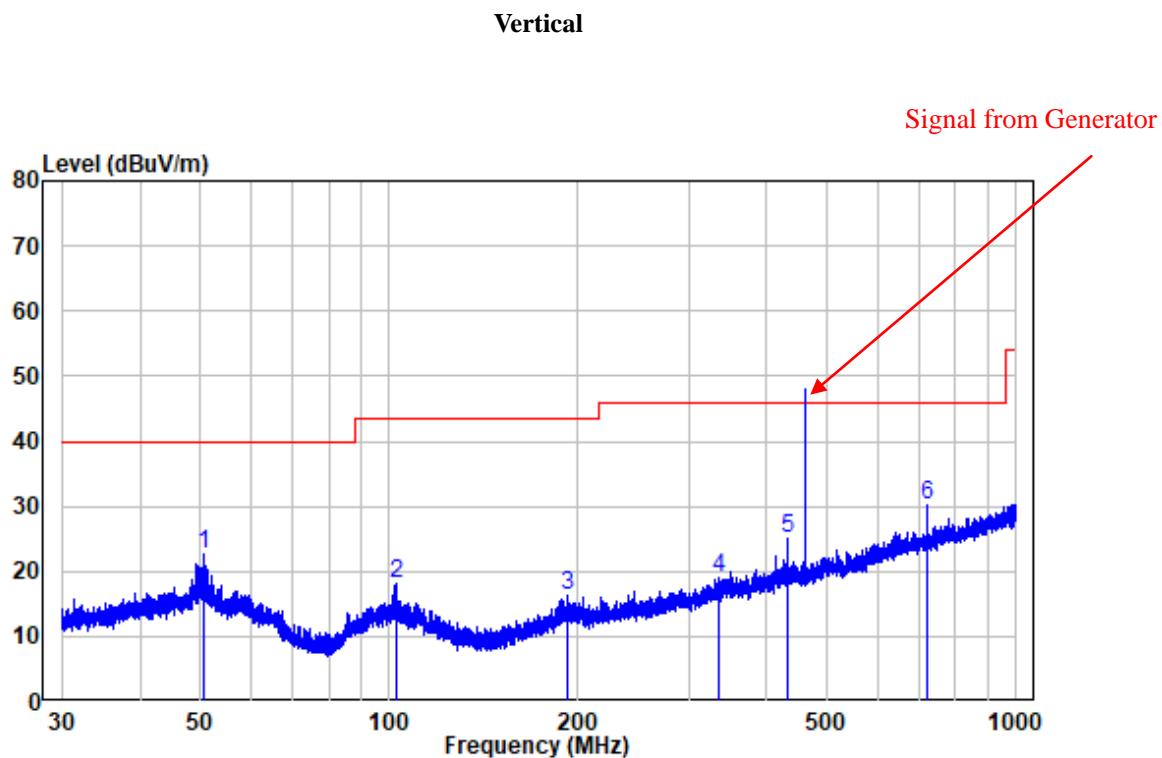
Site : chamber

Condition: 3m HORIZONTAL

Job No. : XMTN1220728-34315E-EM

Test Mode: Receive at 460MHz

| Freq | Factor  | Read   |       | Limit |        | Over   | Remark |
|------|---------|--------|-------|-------|--------|--------|--------|
|      |         | MHz    | dB/m  | dBuV  | dBuV/m | Line   |        |
| 1    | 42.284  | -10.01 | 27.51 | 17.50 | 40.00  | -22.50 | Peak   |
| 2    | 58.356  | -10.03 | 26.87 | 16.84 | 40.00  | -23.16 | Peak   |
| 3    | 107.087 | -11.96 | 27.22 | 15.26 | 43.50  | -28.24 | Peak   |
| 4    | 191.325 | -11.36 | 28.46 | 17.10 | 43.50  | -26.40 | Peak   |
| 5    | 322.189 | -8.37  | 27.24 | 18.87 | 46.00  | -27.13 | Peak   |
| 6    | 621.799 | -2.46  | 28.20 | 25.74 | 46.00  | -20.26 | Peak   |

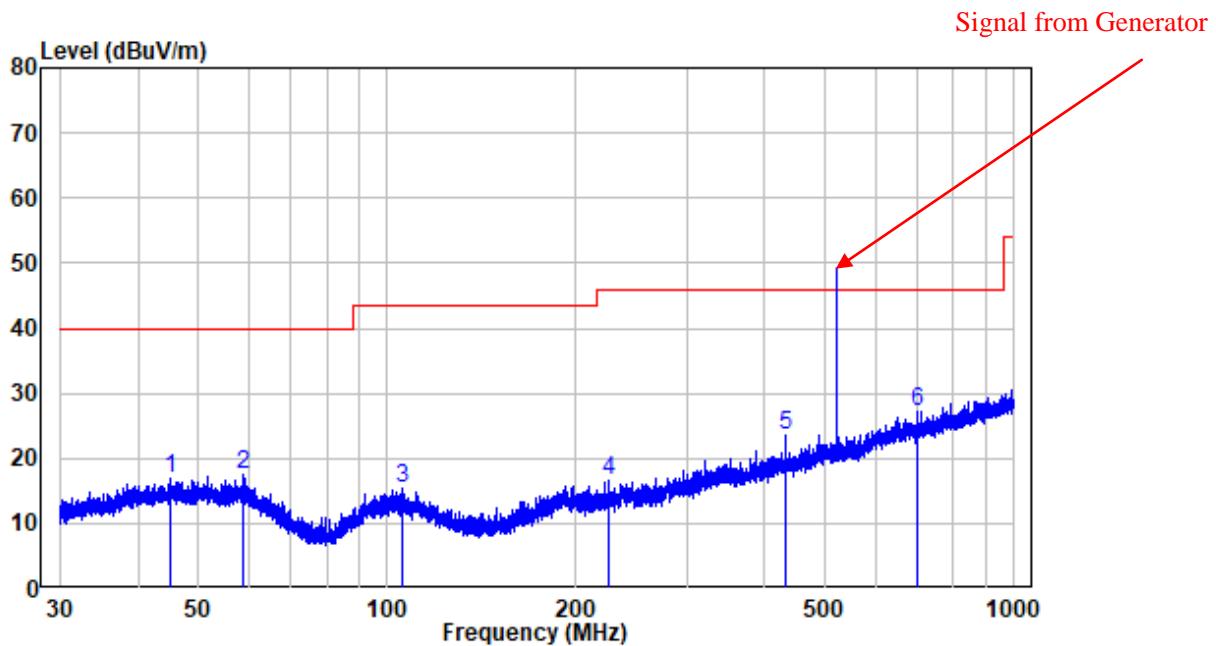


Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 460MHz

|   | Read<br>Freq | Factor | Level | Limit<br>Level | Over<br>Line | Over<br>Limit | Remark |
|---|--------------|--------|-------|----------------|--------------|---------------|--------|
|   | MHz          | dB/m   | dBuV  | dBuV/m         | dBuV/m       | dB            |        |
| 1 | 50.675       | -9.93  | 32.45 | 22.52          | 40.00        | -17.48        | Peak   |
| 2 | 102.494      | -11.61 | 29.73 | 18.12          | 43.50        | -25.38        | Peak   |
| 3 | 191.913      | -11.26 | 27.64 | 16.38          | 43.50        | -27.12        | Peak   |
| 4 | 335.300      | -7.60  | 26.72 | 19.12          | 46.00        | -26.88        | Peak   |
| 5 | 431.977      | -5.75  | 30.95 | 25.20          | 46.00        | -20.80        | Peak   |
| 6 | 722.042      | -1.32  | 31.66 | 30.34          | 46.00        | -15.66        | Peak   |

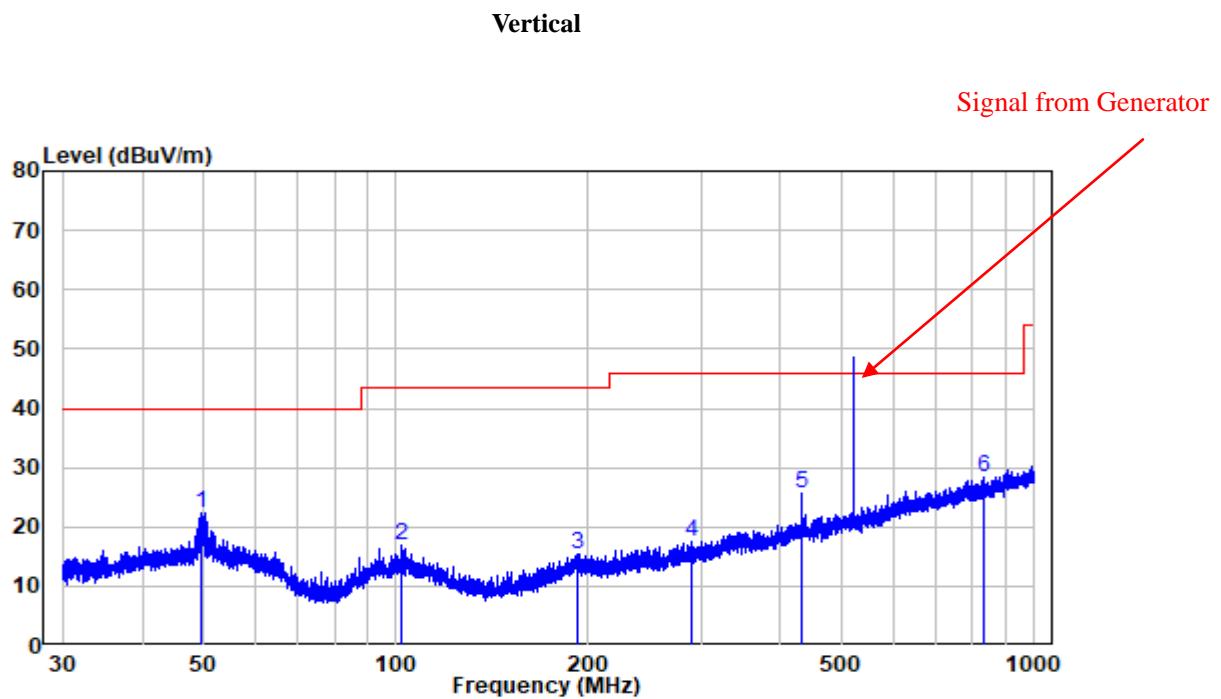
## Test mode 7: Receiver at 520MHz

Horizontal:



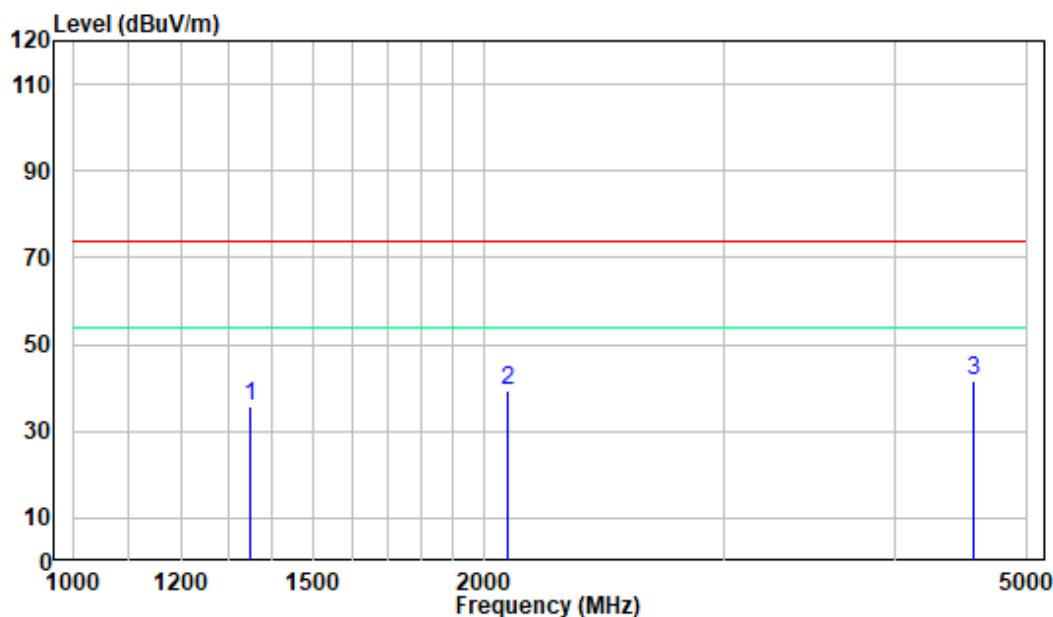
Site : chamber  
Condition: 3m HORIZONTAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 520MHz

|   | Freq    | Factor | Read Level | Limit Level | Over Line | Over Limit | Remark |
|---|---------|--------|------------|-------------|-----------|------------|--------|
|   | MHz     | dB/m   | dBuV       | dBuV/m      | dBuV/m    | dB         |        |
| 1 | 44.960  | -9.94  | 26.74      | 16.80       | 40.00     | -23.20     | Peak   |
| 2 | 58.896  | -10.23 | 27.59      | 17.36       | 40.00     | -22.64     | Peak   |
| 3 | 105.827 | -11.91 | 27.36      | 15.45       | 43.50     | -28.05     | Peak   |
| 4 | 225.703 | -11.24 | 27.79      | 16.55       | 46.00     | -29.45     | Peak   |
| 5 | 431.977 | -5.75  | 29.32      | 23.57       | 46.00     | -22.43     | Peak   |
| 6 | 699.611 | -1.62  | 28.87      | 27.25       | 46.00     | -18.75     | Peak   |



Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 520MHz

| Freq | Factor  | Read   | Limit | Over  | Remark            |
|------|---------|--------|-------|-------|-------------------|
|      |         | Level  | Level | Line  |                   |
| 1    | 49.511  | -9.93  | 32.35 | 22.42 | 40.00 -17.58 Peak |
| 2    | 101.823 | -11.59 | 28.48 | 16.89 | 43.50 -26.61 Peak |
| 3    | 192.250 | -11.25 | 26.72 | 15.47 | 43.50 -28.03 Peak |
| 4    | 289.509 | -9.32  | 26.89 | 17.57 | 46.00 -28.43 Peak |
| 5    | 431.977 | -5.75  | 31.30 | 25.55 | 46.00 -20.45 Peak |
| 6    | 833.317 | 0.14   | 28.35 | 28.49 | 46.00 -17.51 Peak |

**Above 1 GHz:****Test mode 1: Scanning receiver****Horizontal**

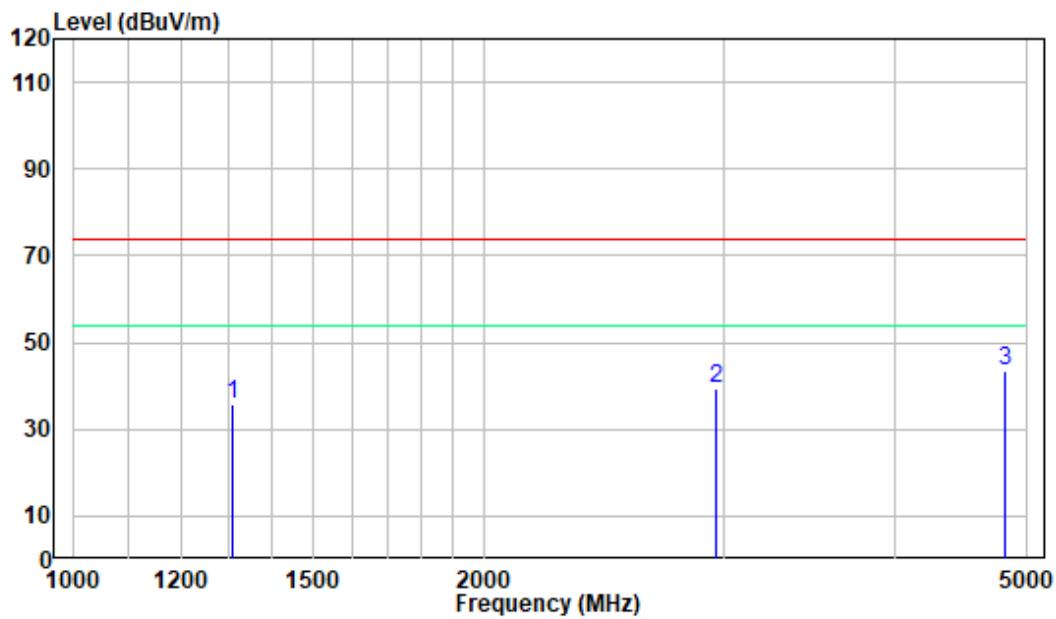
Site : chamber

Condition: 3m HORIZONTAL

Job No. : XMTN1220728-34315E-EM

Test Mode: Scanning receiver

| Freq | Factor   | Read   |       | Limit |        | Over   | Limit | Remark |
|------|----------|--------|-------|-------|--------|--------|-------|--------|
|      |          | MHz    | dB/m  | dBuV  | dBuV/m |        |       |        |
| 1    | 1349.500 | -10.02 | 45.70 | 35.68 | 74.00  | -38.32 | Peak  |        |
| 2    | 2081.000 | -7.25  | 46.52 | 39.27 | 74.00  | -34.73 | Peak  |        |
| 3    | 4563.500 | -4.47  | 46.14 | 41.67 | 74.00  | -32.33 | Peak  |        |

**Vertical**

Site : chamber

Condition: 3m VERTICAL

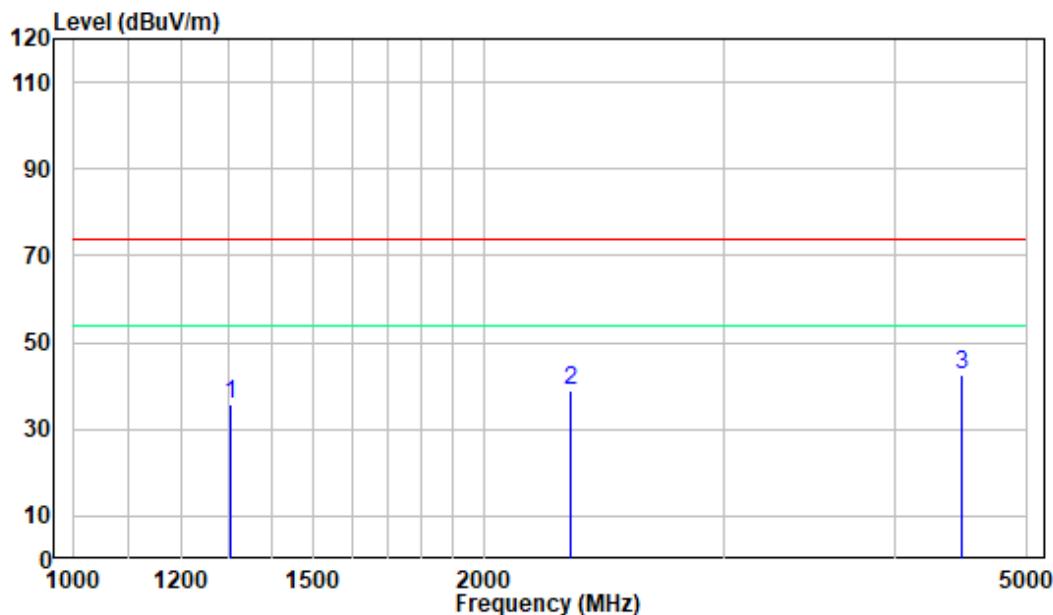
Job No. : XMTN1220728-34315E-EM

Test Mode: Scanning receiver

|      | Read     | Limit  | Over  |        |        |             |
|------|----------|--------|-------|--------|--------|-------------|
| Freq | Factor   | Level  | Level | Line   | Limit  | Remark      |
|      | MHz      | dB/m   | dBuV  | dBuV/m | dBuV/m | dB          |
| 1    | 1307.500 | -10.18 | 46.16 | 35.98  | 74.00  | -38.02 Peak |
| 2    | 2956.000 | -5.94  | 45.49 | 39.55  | 74.00  | -34.45 Peak |
| 3    | 4821.000 | -3.52  | 46.90 | 43.38  | 74.00  | -30.62 Peak |

## Test mode 2: Receiver at 136MHz

Horizontal



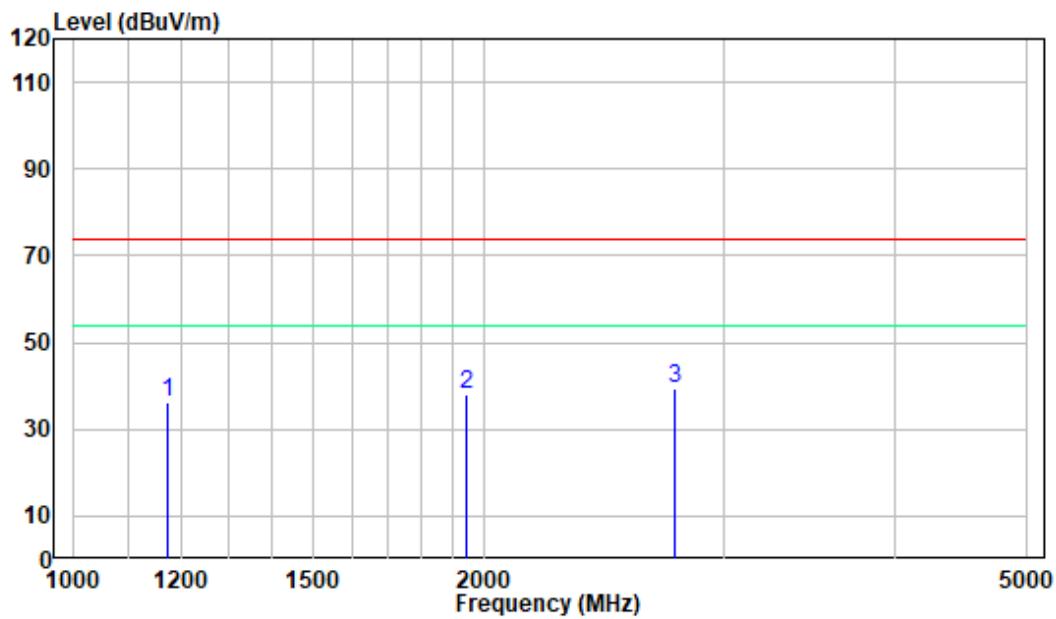
Site : chamber

Condition: 3m HORIZONTAL

Job No. : XMTN1220728-34315E-EM

Test Mode: Receive at 136MHz

| Freq | Factor   | Read   |       | Limit |        | Over   | Remark |
|------|----------|--------|-------|-------|--------|--------|--------|
|      |          | MHz    | dB/m  | dBuV  | dBuV/m | dBuV/m |        |
| 1    | 1306.000 | -10.19 | 45.86 | 35.67 | 74.00  | -38.33 | Peak   |
| 2    | 2319.000 | -7.23  | 46.13 | 38.90 | 74.00  | -35.10 | Peak   |
| 3    | 4482.500 | -4.72  | 47.17 | 42.45 | 74.00  | -31.55 | Peak   |

**Vertical**

Site : chamber

Condition: 3m VERTICAL

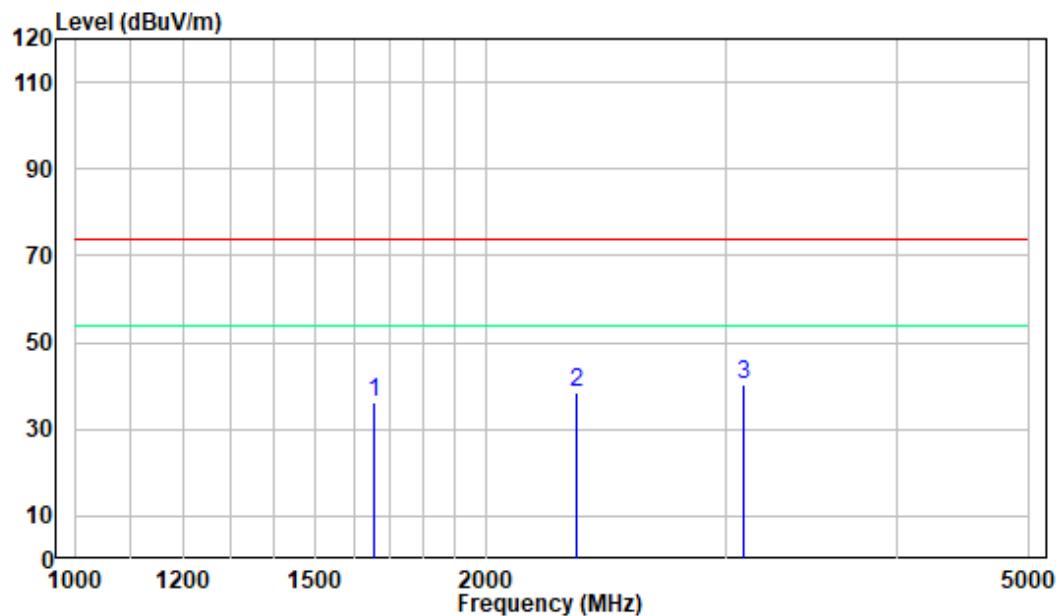
Job No. : XMTN1220728-34315E-EM

Test Mode: Receive at 136MHz

|   | Read<br>Freq | Factor | Level | Limit<br>Level | Line  | Over<br>Limit | Remark |
|---|--------------|--------|-------|----------------|-------|---------------|--------|
| 1 | 1175.000     | -10.28 | 46.40 | 36.12          | 74.00 | -37.88        | Peak   |
| 2 | 1939.500     | -7.70  | 45.88 | 38.18          | 74.00 | -35.82        | Peak   |
| 3 | 2762.500     | -6.51  | 46.09 | 39.58          | 74.00 | -34.42        | Peak   |

## Test mode 3: Receiver at 155MHz

Horizontal



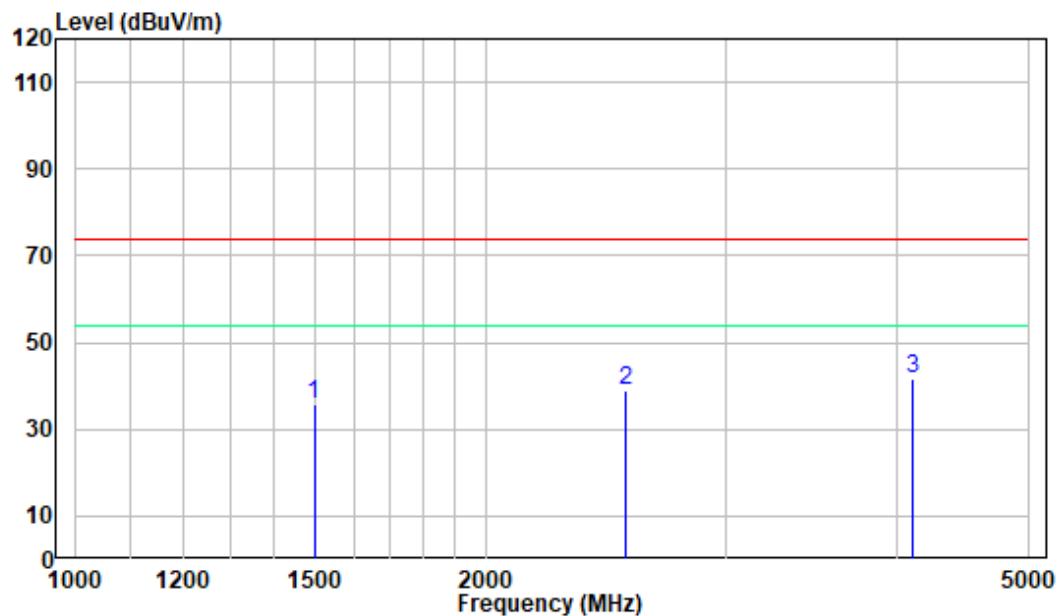
Site : chamber

Condition: 3m HORIZONTAL

Job No. : XMTN1220728-34315E-EM

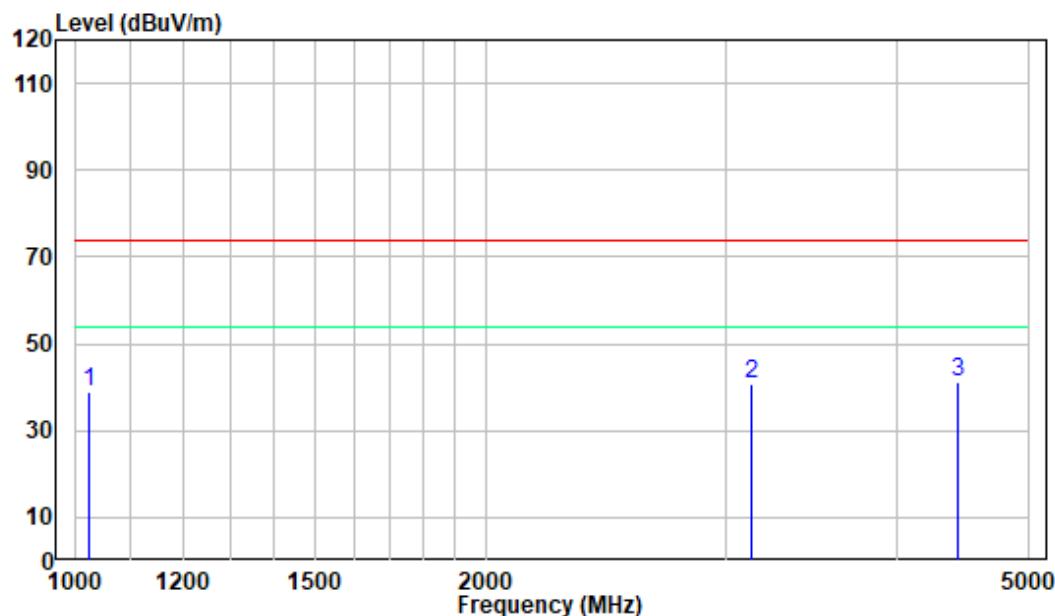
Test Mode: Receive at 155MHz

|   | Read<br>Freq | Factor | Level | Limit<br>Level | Line  | Over<br>Limit | Remark |
|---|--------------|--------|-------|----------------|-------|---------------|--------|
| 1 | 1654.500     | -9.06  | 45.45 | 36.39          | 74.00 | -37.61        | Peak   |
| 2 | 2334.000     | -7.21  | 45.78 | 38.57          | 74.00 | -35.43        | Peak   |
| 3 | 3087.000     | -5.86  | 46.06 | 40.20          | 74.00 | -33.80        | Peak   |

**Vertical**

Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 155MHz

|   | Read<br>Freq | Factor | Level | Limit<br>Level | Line  | Over<br>Limit | Remark |
|---|--------------|--------|-------|----------------|-------|---------------|--------|
| 1 | 1497.500     | -9.57  | 45.16 | 35.59          | 74.00 | -38.41        | Peak   |
| 2 | 2533.500     | -7.02  | 46.06 | 39.04          | 74.00 | -34.96        | Peak   |
| 3 | 4104.500     | -5.23  | 46.96 | 41.73          | 74.00 | -32.27        | Peak   |

**Test mode 4: Receiver at 174MHz****Horizontal**

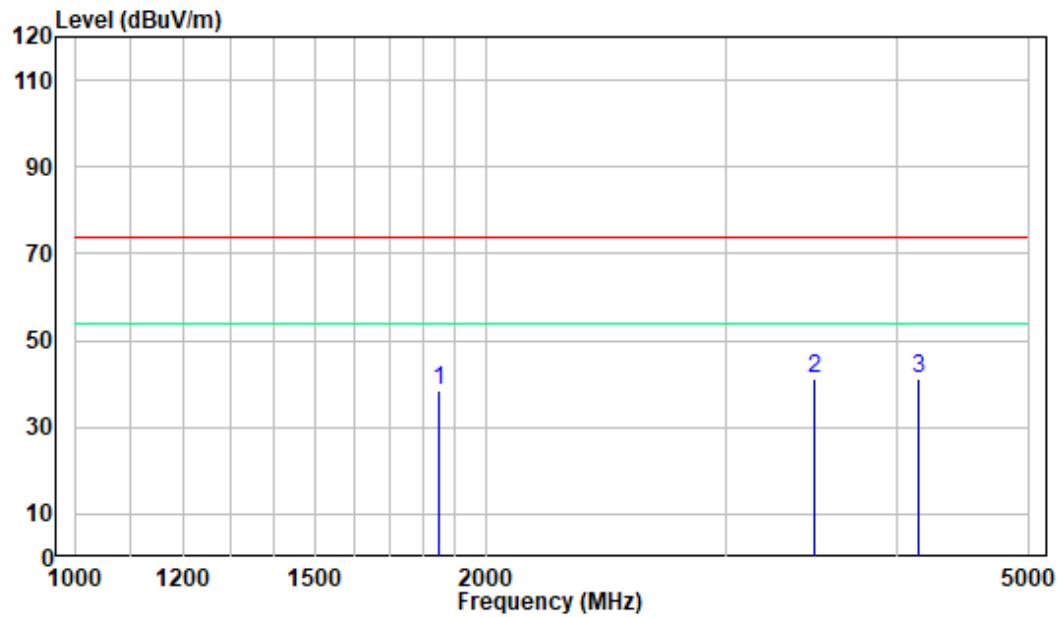
Site : chamber

Condition: 3m HORIZONTAL

Job No. : XMTN1220728-34315E-EM

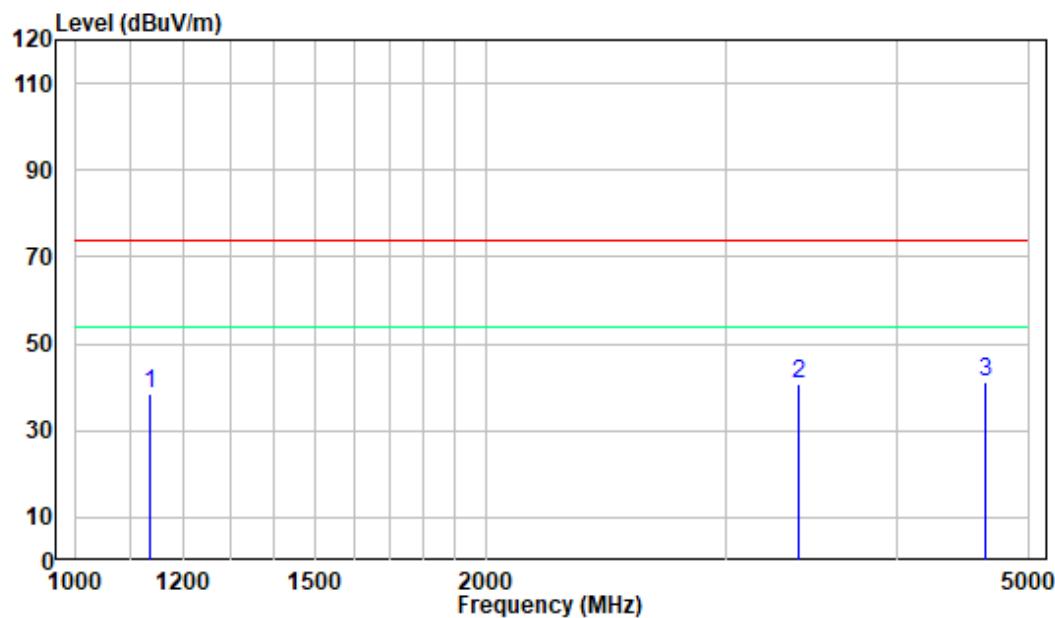
Test Mode: Receive at 174MHz

|   | Freq     | Factor | Read Level | Limit Level | Line   | Over Limit | Remark |
|---|----------|--------|------------|-------------|--------|------------|--------|
|   | MHz      | dB/m   | dBuV       | dBuV/m      | dBuV/m | dB         |        |
| 1 | 1025.250 | -10.51 | 49.43      | 38.92       | 74.00  | -35.08     | Peak   |
| 2 | 3132.500 | -5.87  | 46.63      | 40.76       | 74.00  | -33.24     | Peak   |
| 3 | 4434.100 | -4.75  | 45.89      | 41.14       | 74.00  | -32.86     | Peak   |

**Vertical**

Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 174MHz

|            | Read   | Limit | Over   |                   |
|------------|--------|-------|--------|-------------------|
| Freq       | Factor | Level | Line   | Limit Remark      |
|            |        |       |        |                   |
| MHz        | dB/m   | dBuV  | dBuV/m | dBuV/m dB         |
| 1 1848.250 | -8.38  | 46.70 | 38.32  | 74.00 -35.68 Peak |
| 2 3481.000 | -6.01  | 47.20 | 41.19  | 74.00 -32.81 Peak |
| 3 4147.240 | -5.20  | 46.55 | 41.35  | 74.00 -32.65 Peak |

**Test mode 5: Receiver at 400MHz****Horizontal**

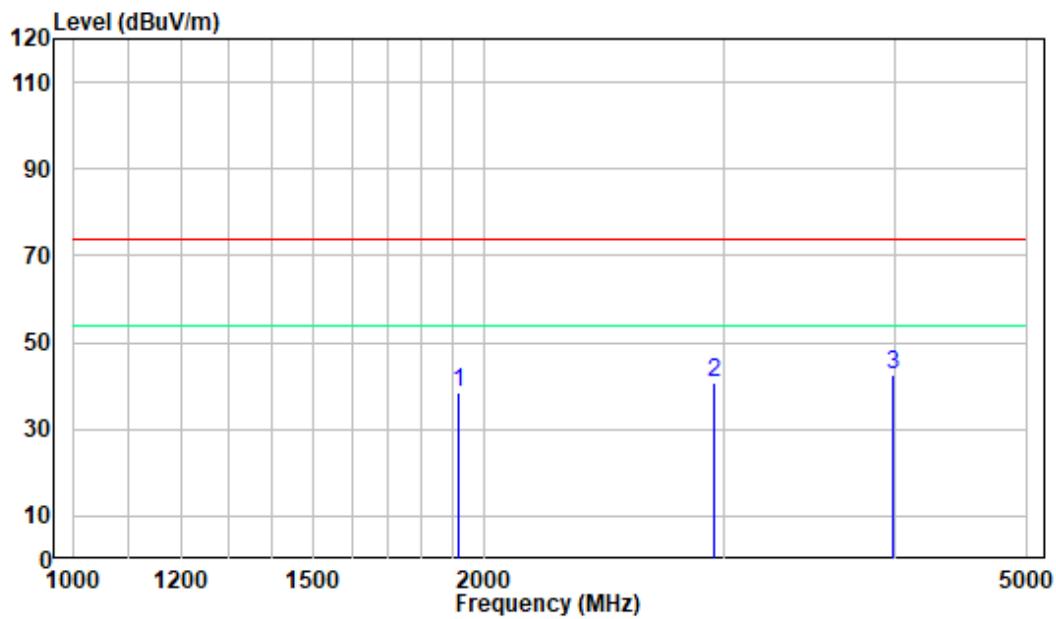
Site : chamber

Condition: 3m HORIZONTAL

Job No. : XMTN1220728-34315E-EM

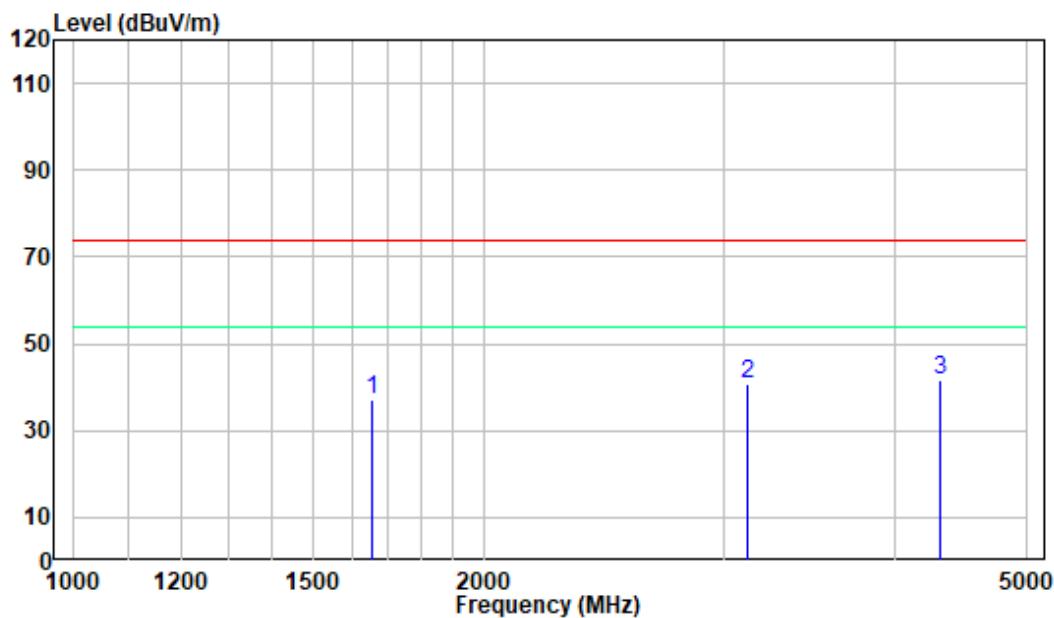
Test Mode: Receive at 400MHz

| Freq | Factor   | Read   |       | Limit |        | Over   | Remark |
|------|----------|--------|-------|-------|--------|--------|--------|
|      |          | MHz    | dB/m  | dBuV  | dBuV/m | dBuV/m |        |
| 1    | 1134.110 | -10.33 | 48.82 | 38.49 | 74.00  | -35.51 | Peak   |
| 2    | 3394.500 | -5.96  | 46.67 | 40.71 | 74.00  | -33.29 | Peak   |
| 3    | 4639.140 | -4.19  | 45.42 | 41.23 | 74.00  | -32.77 | Peak   |

**Vertical**

Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 400MHz

|   | Read<br>Freq | Factor | Level | Limit<br>Level | Line  | Over<br>Limit | Remark |
|---|--------------|--------|-------|----------------|-------|---------------|--------|
| 1 | 1919.500     | -7.86  | 46.28 | 38.42          | 74.00 | -35.58        | Peak   |
| 2 | 2947.000     | -5.96  | 46.85 | 40.89          | 74.00 | -33.11        | Peak   |
| 3 | 3993.250     | -5.45  | 48.17 | 42.72          | 74.00 | -31.28        | Peak   |

**Test mode 6: Receiver at 460MHz****Horizontal**

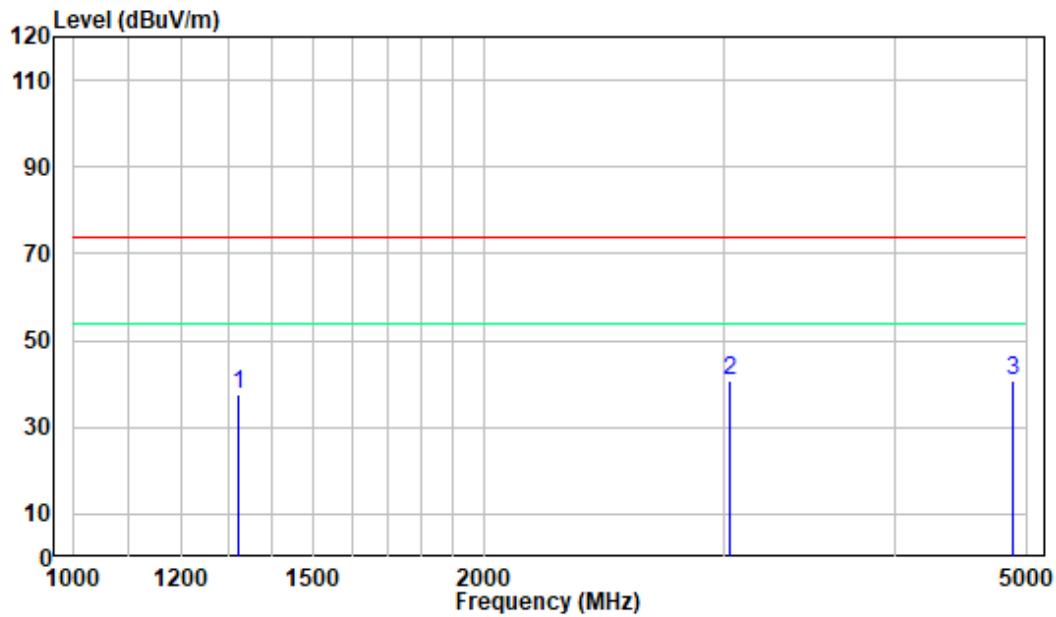
Site : chamber

Condition: 3m HORIZONTAL

Job No. : XMTN1220728-34315E-EM

Test Mode: Receive at 460MHz

|   | Freq     | Factor | Read Level | Limit Level | Line  | Over Limit | Remark |
|---|----------|--------|------------|-------------|-------|------------|--------|
| 1 | 1658.690 | -9.05  | 46.40      | 37.35       | 74.00 | -36.65     | Peak   |
| 2 | 3119.000 | -5.86  | 46.49      | 40.63       | 74.00 | -33.37     | Peak   |
| 3 | 4321.250 | -4.87  | 46.36      | 41.49       | 74.00 | -32.51     | Peak   |

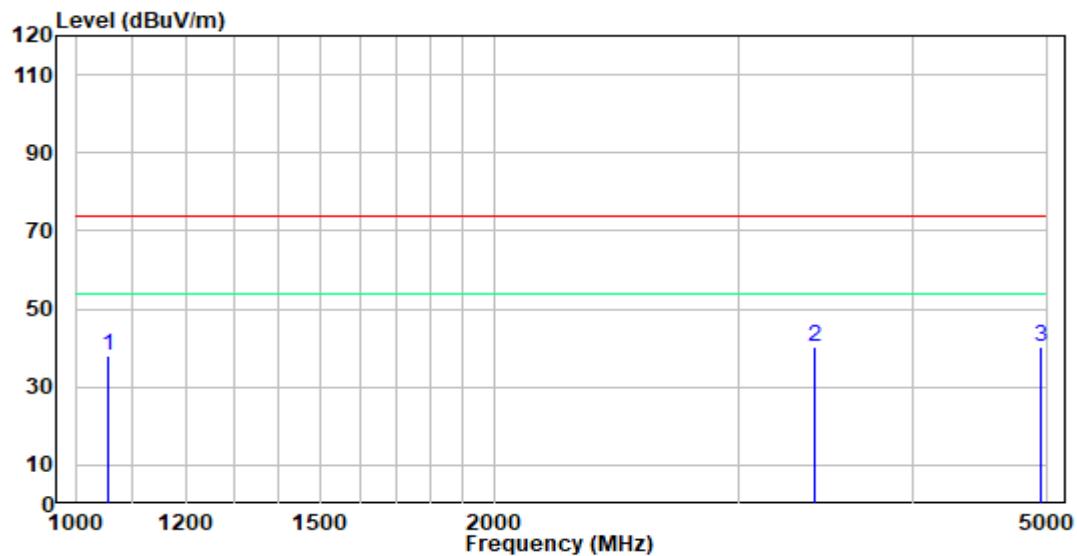
**Vertical**

Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 460MHz

|      | Read     | Limit  | Over  |        |        |             |
|------|----------|--------|-------|--------|--------|-------------|
| Freq | Factor   | Level  | Level | Line   | Limit  | Remark      |
|      | MHz      | dB/m   | dBuV  | dBuV/m | dBuV/m | dB          |
| 1    | 1324.010 | -10.11 | 47.58 | 37.47  | 74.00  | -36.53 Peak |
| 2    | 3033.000 | -5.83  | 46.48 | 40.65  | 74.00  | -33.35 Peak |
| 3    | 4882.200 | -3.37  | 43.94 | 40.57  | 74.00  | -33.43 Peak |

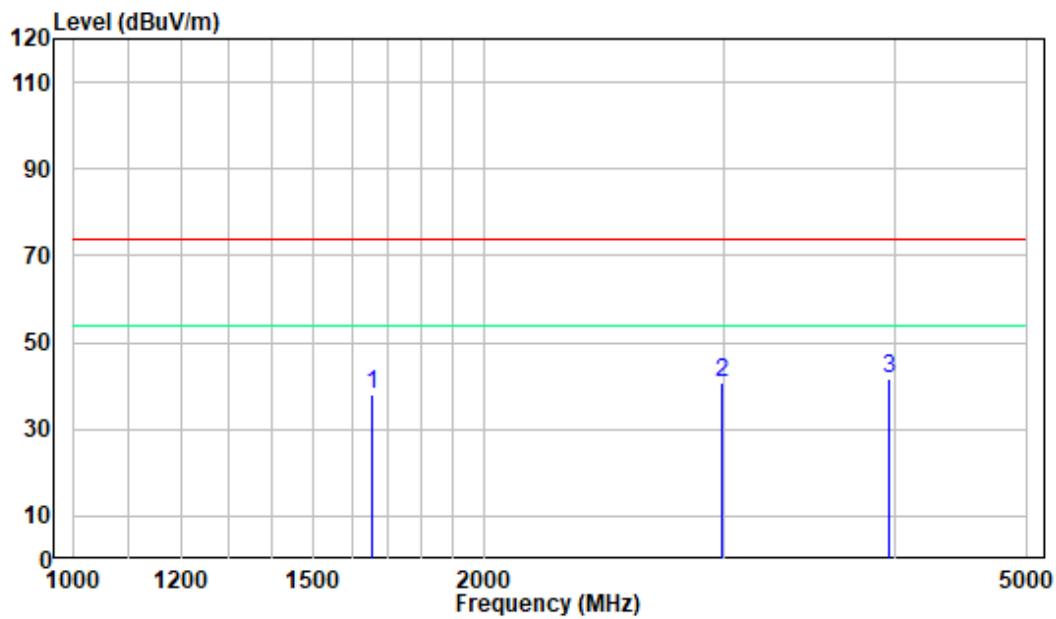
## Test mode 7: Receiver at 520MHz

## Horizontal



Site : chamber  
Condition: 3m HORIZONTAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 520MHz

| Freq | Factor   | Read   |       | Limit |       | Over   | Remark |
|------|----------|--------|-------|-------|-------|--------|--------|
|      |          | Level  | Level | Line  | Line  |        |        |
| 1    | 1057.000 | -10.44 | 48.60 | 38.16 | 74.00 | -35.84 | Peak   |
| 2    | 3400.500 | -5.96  | 46.34 | 40.38 | 74.00 | -33.62 | Peak   |
| 3    | 4952.000 | -3.03  | 43.54 | 40.51 | 74.00 | -33.49 | Peak   |

**Vertical**

Site : chamber  
Condition: 3m VERTICAL  
Job No. : XMTN1220728-34315E-EM  
Test Mode: Receive at 520MHz

|   | Read<br>Freq | Factor | Level | Limit<br>Level | Line  | Over<br>Limit | Remark |
|---|--------------|--------|-------|----------------|-------|---------------|--------|
| 1 | 1657.000     | -9.05  | 47.14 | 38.09          | 74.00 | -35.91        | Peak   |
| 2 | 2988.500     | -5.84  | 46.70 | 40.86          | 74.00 | -33.14        | Peak   |
| 3 | 3966.200     | -5.47  | 47.11 | 41.64          | 74.00 | -32.36        | Peak   |

## FCC §15.111 - ANTENNA CONDUCTED POWER FOR RECEIVES

### Applicable Standard

FCC §15.111

#### Limit

The antenna conducted power of the receiver as defined in §15.111 shall not exceed the values given in the following tables

| Frequency Range | Limit            |
|-----------------|------------------|
| 9 kHz to 5 GHz  | 2.0 nW (-57 dBm) |

### EUT Setup



### Test Procedure

1. The receiver antenna terminal connected to a spectrum analyzer.
2. The test data of the worst case condition was reported on the following Data page.

### Test Data

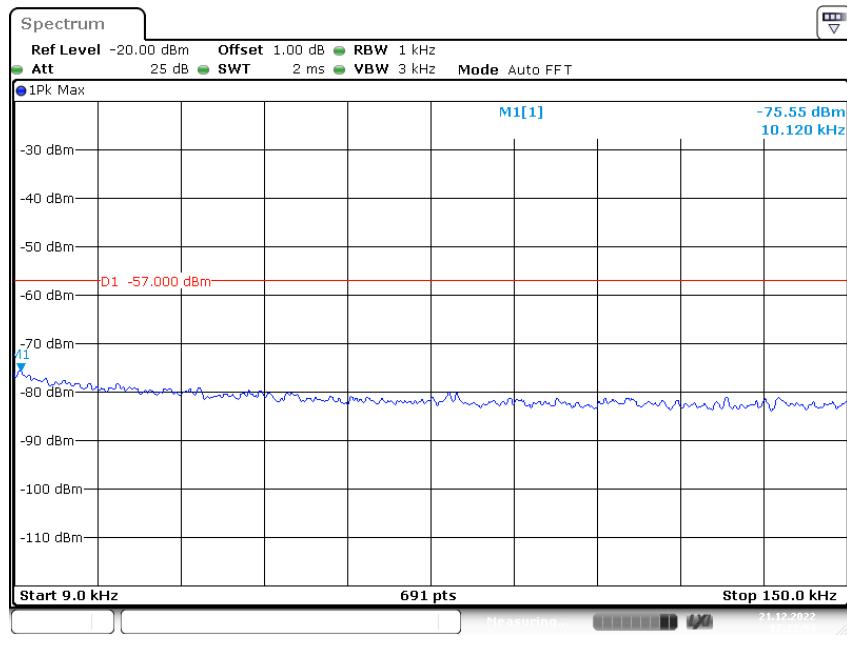
#### Environmental Conditions

|                    |        |
|--------------------|--------|
| Temperature:       | 25 °C  |
| Relative Humidity: | 52 %   |
| ATM Pressure:      | 101kPa |

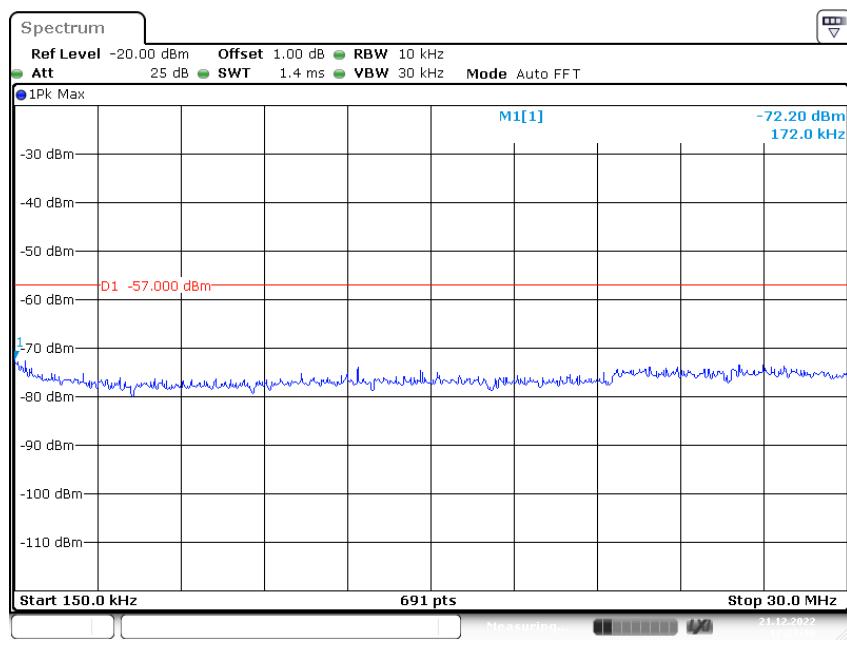
*The testing was performed by Jesse Chen on 2022-12-21*

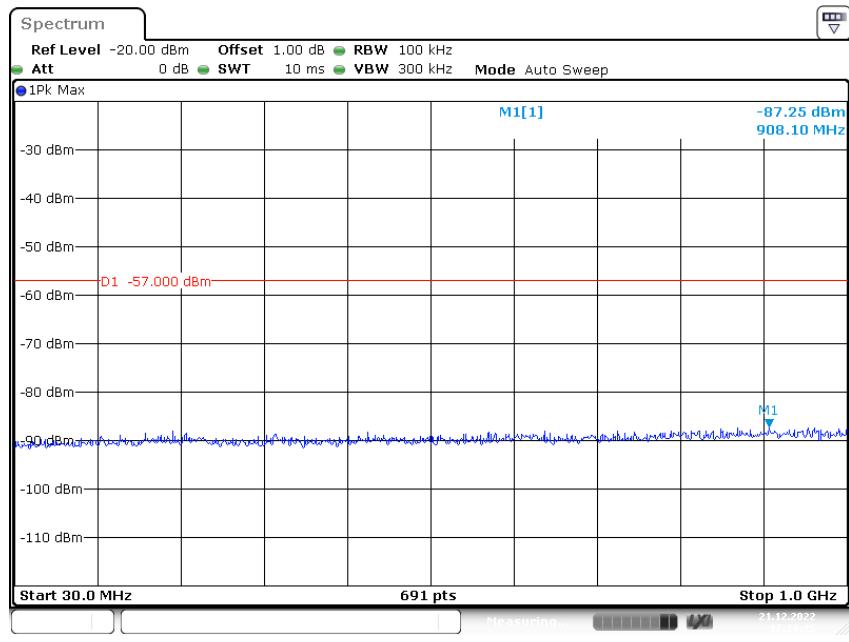
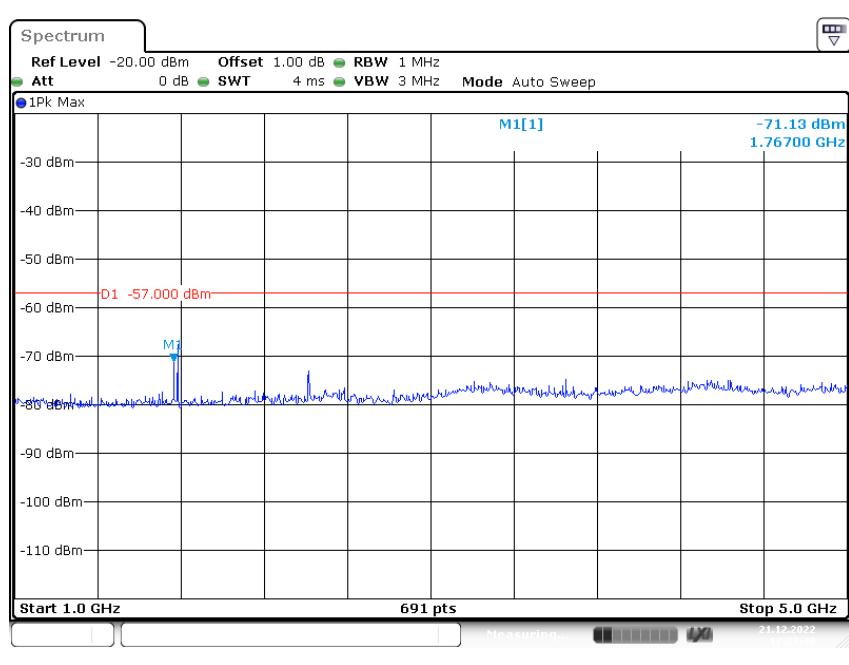
Test mode 1:

### Conducted Measurement (9 kHz to 150 kHz)



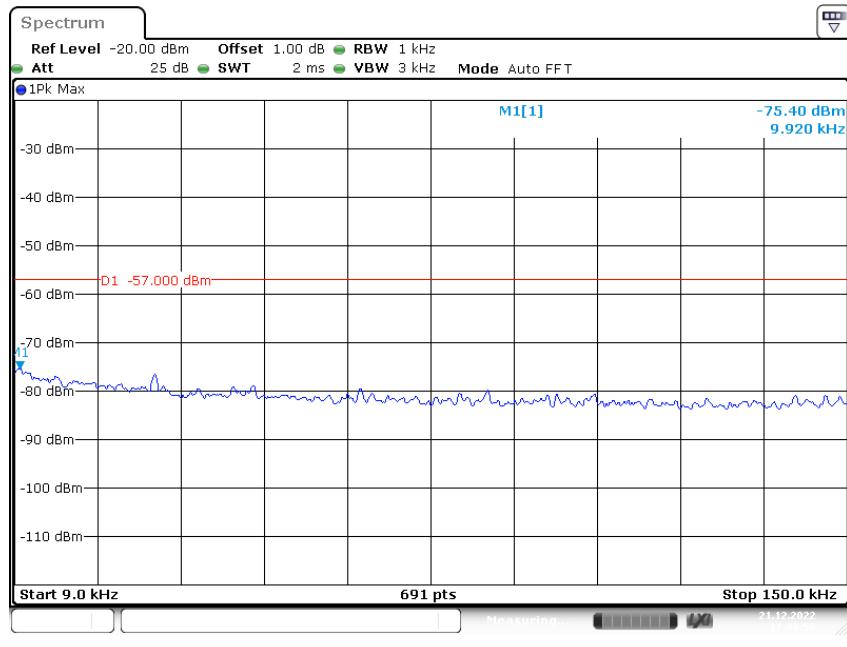
### Conducted Measurement (150 kHz to 30MHz)



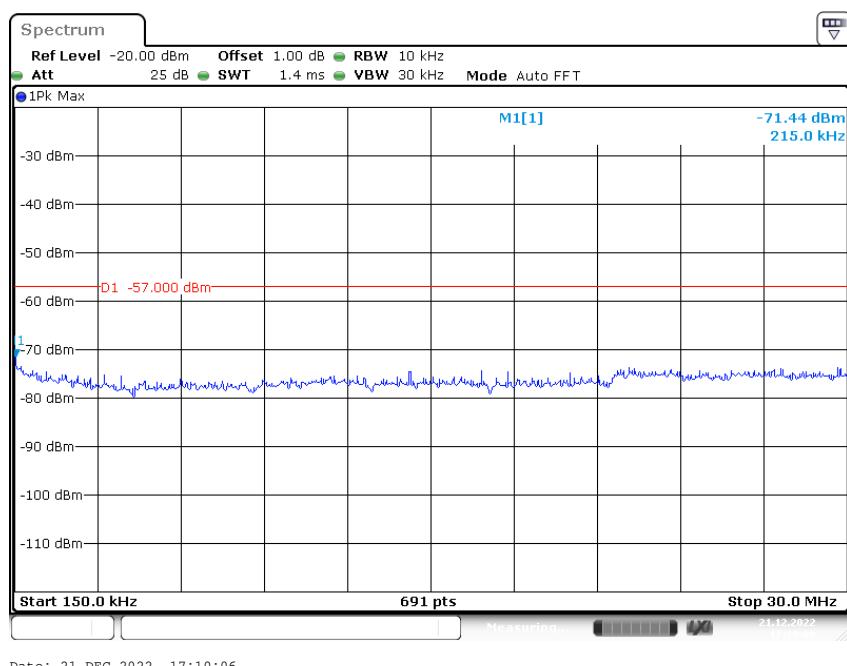
**Conducted Measurement (30MHz to 1GHz)****Conducted Measurement (1GHz to 5GHz)**

Test mode 2:

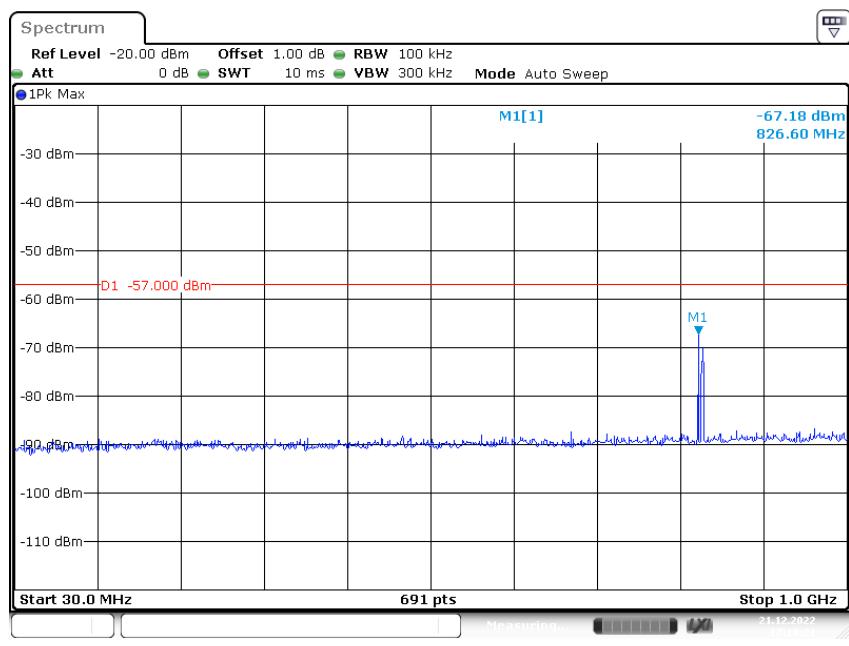
### Conducted Measurement (9 kHz to 150 kHz)



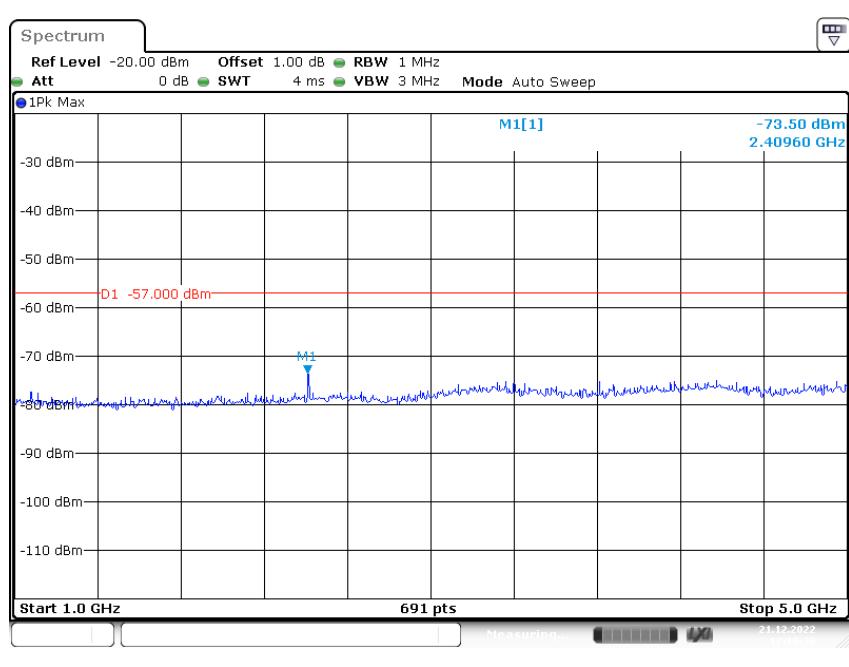
### Conducted Measurement (150 kHz to 30MHz)



## Conducted Measurement (30MHz to 1GHz)

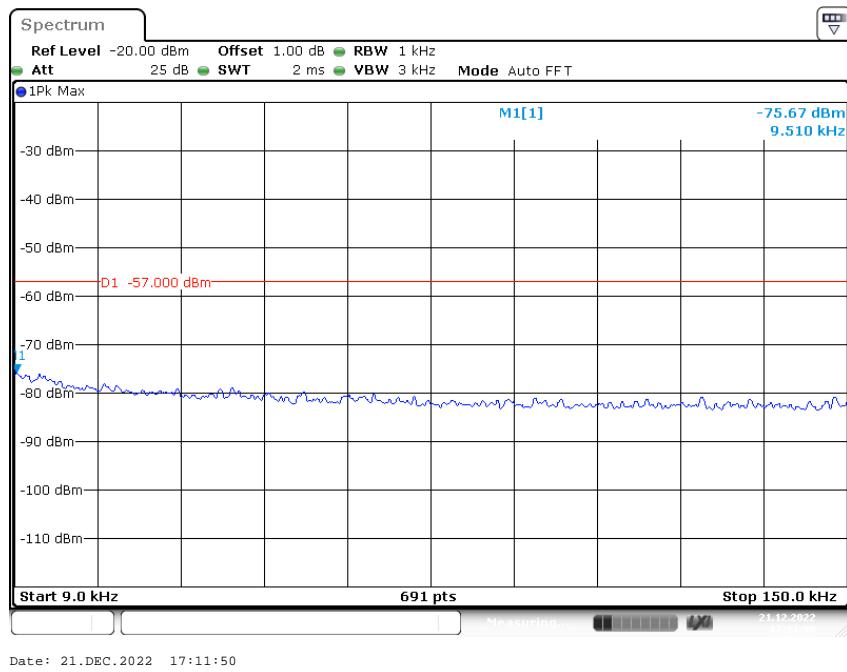


## Conducted Measurement (1GHz to 5GHz)

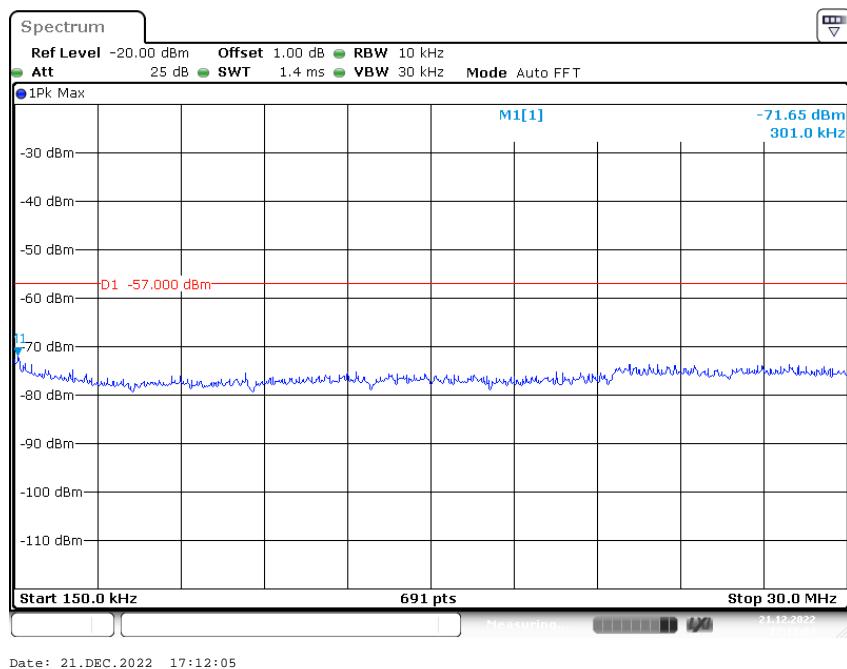


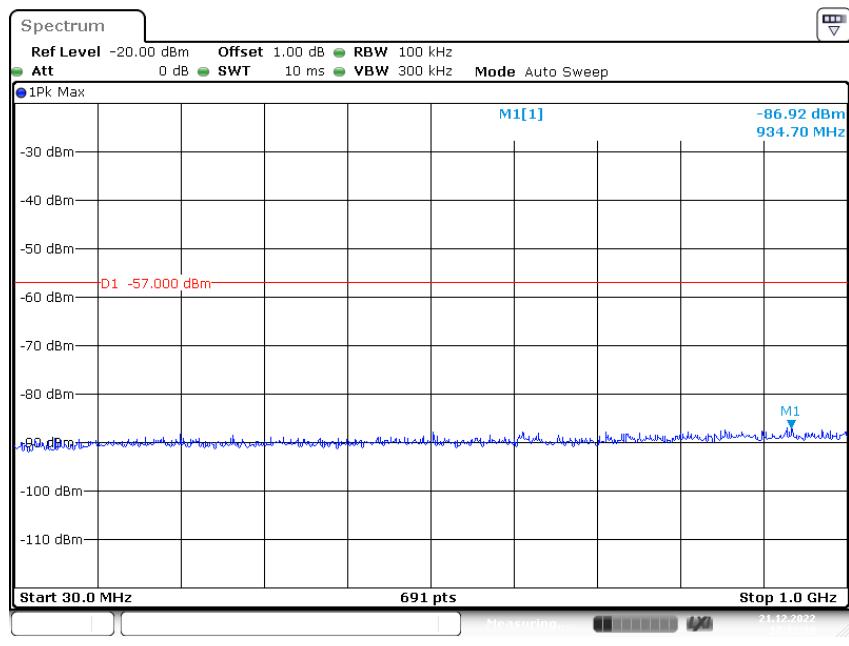
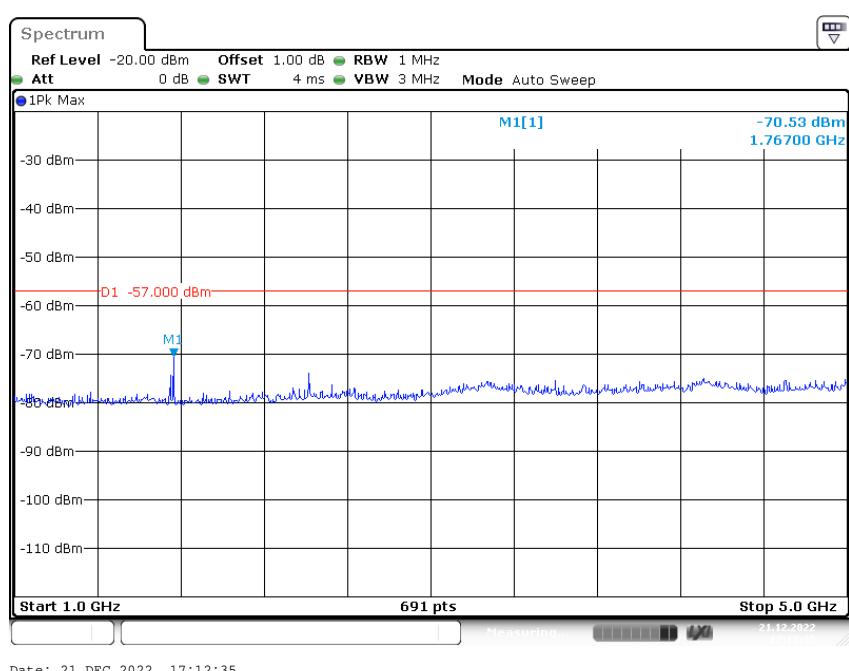
Test mode 3:

### Conducted Measurement (9 kHz to 150 kHz)



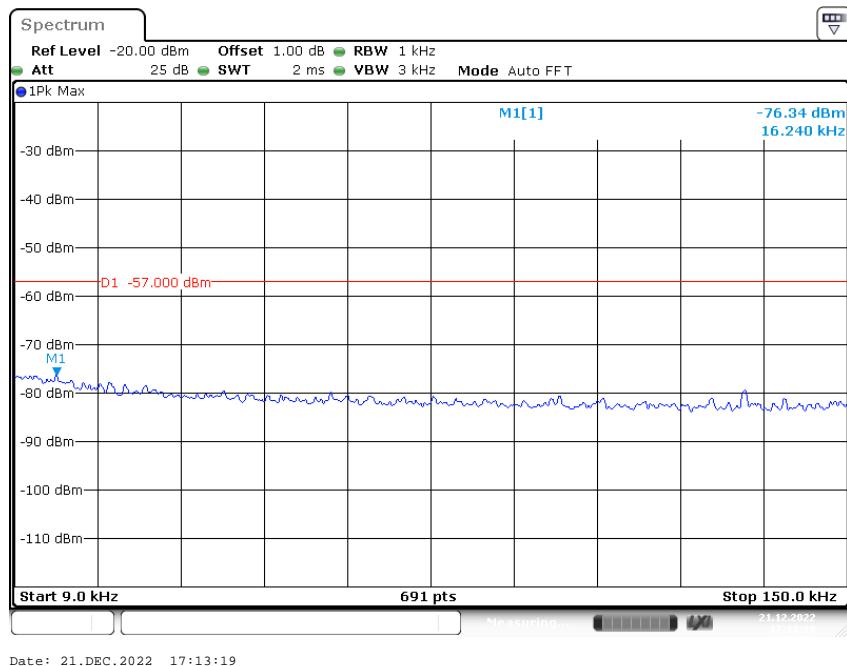
### Conducted Measurement (150 kHz to 30MHz)



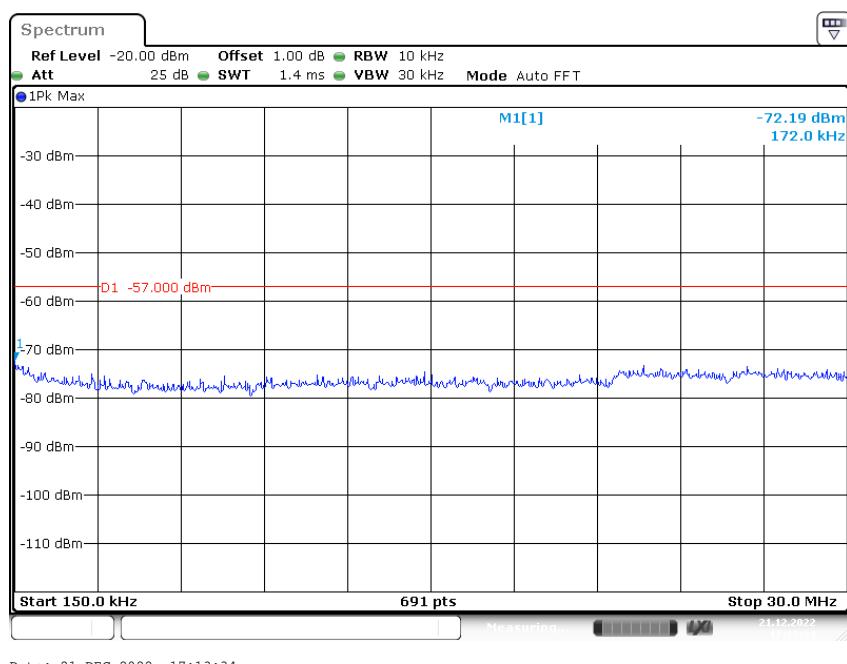
**Conducted Measurement (30MHz to 1GHz)****Conducted Measurement (1GHz to 5GHz)**

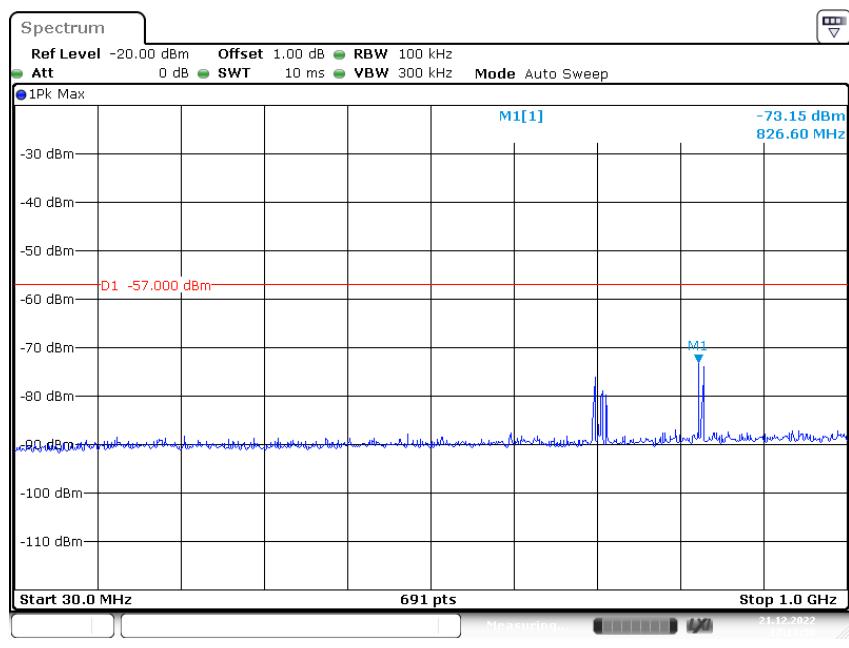
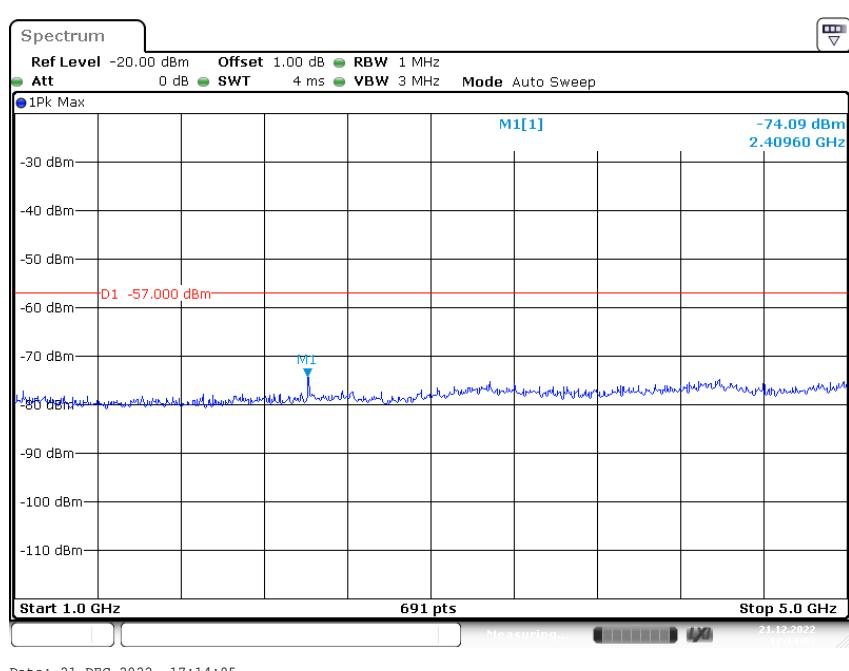
Test mode 4:

### Conducted Measurement (9 kHz to 150 kHz)



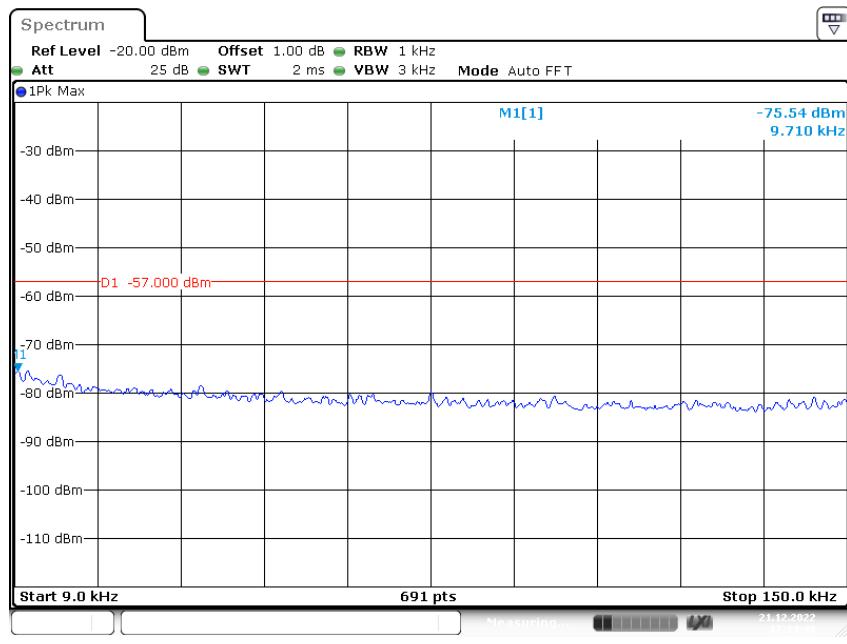
### Conducted Measurement (150 kHz to 30MHz)



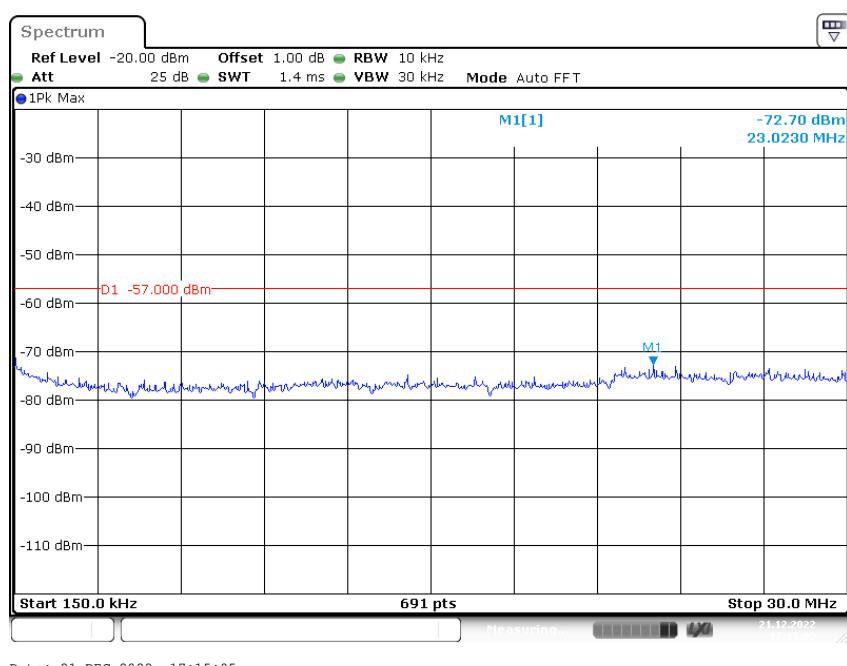
**Conducted Measurement (30MHz to 1GHz)****Conducted Measurement (1GHz to 5GHz)**

Test mode 5:

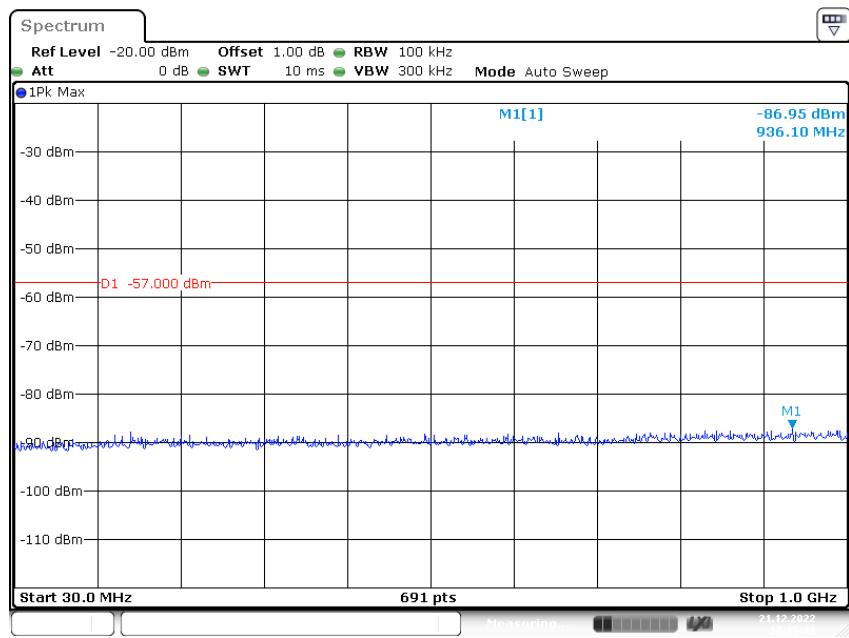
### Conducted Measurement (9 kHz to 150 kHz)



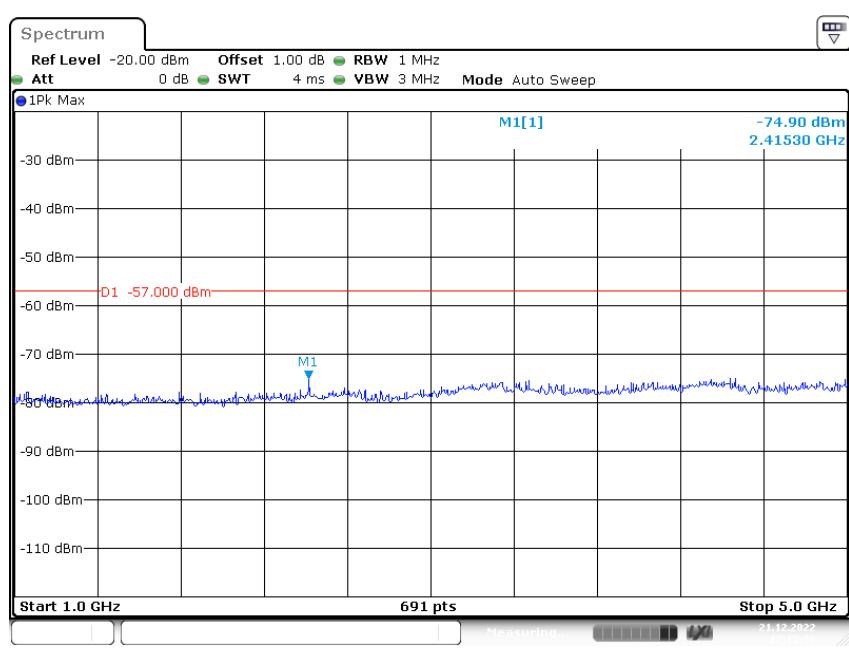
### Conducted Measurement (150 kHz to 30MHz)



## Conducted Measurement (30MHz to 1GHz)

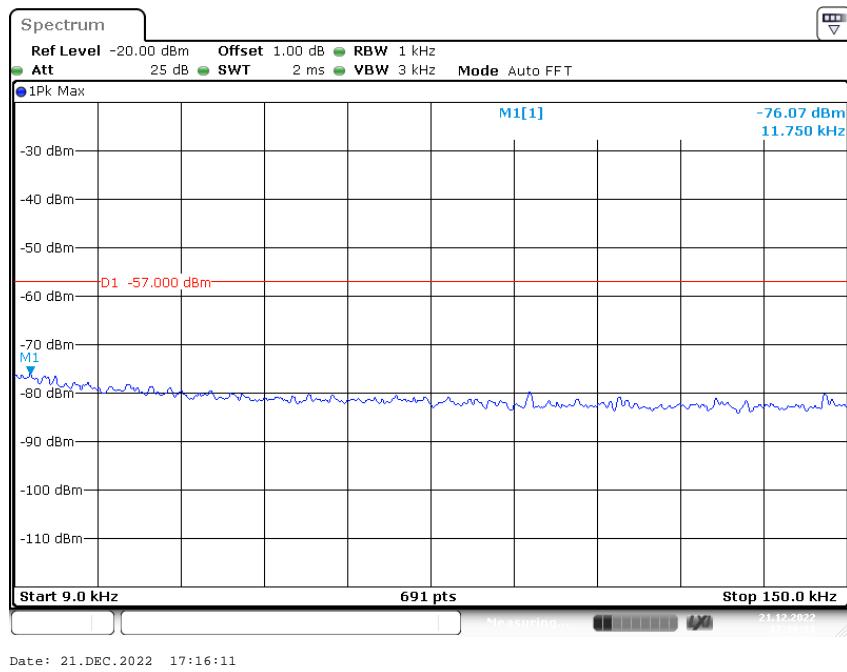


## Conducted Measurement (1GHz to 5GHz)

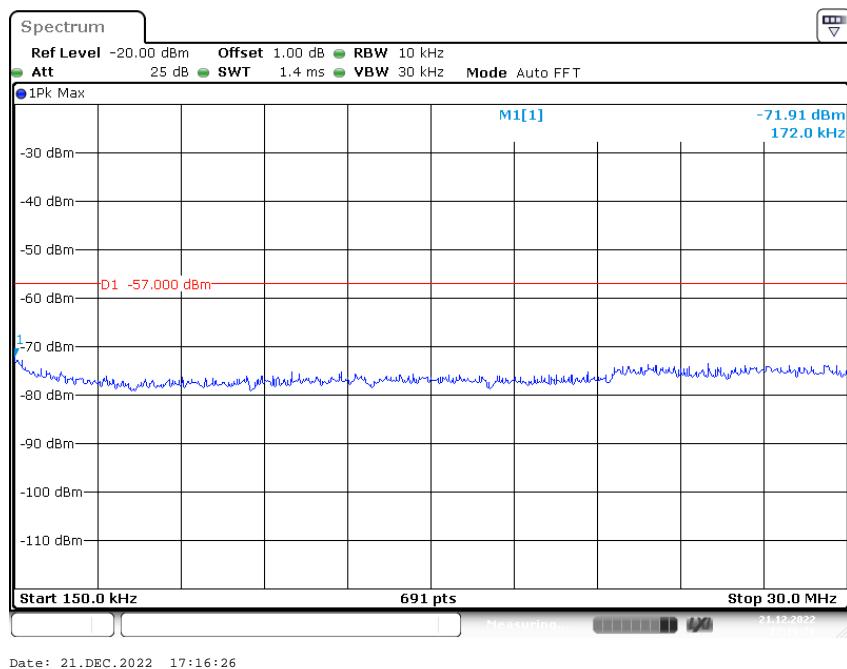


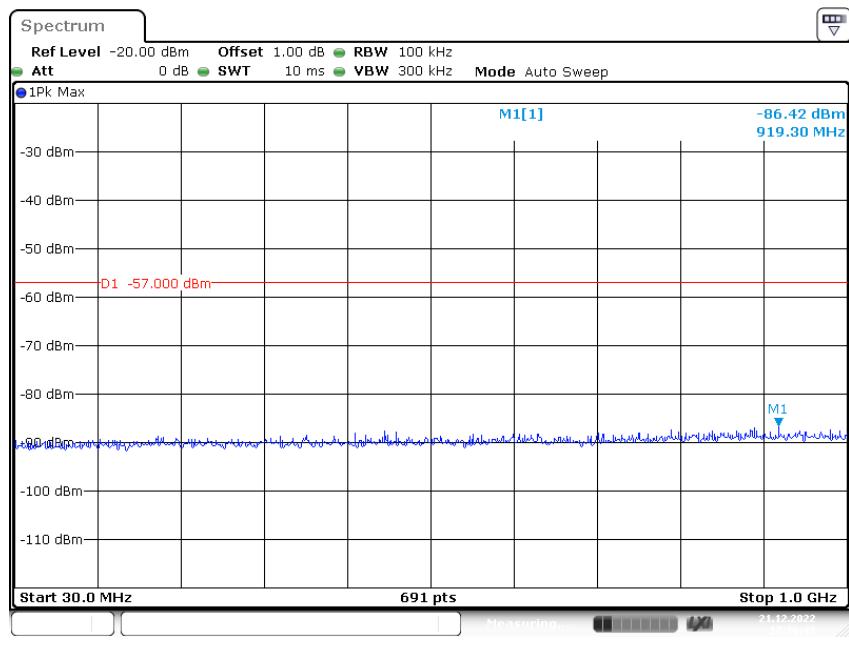
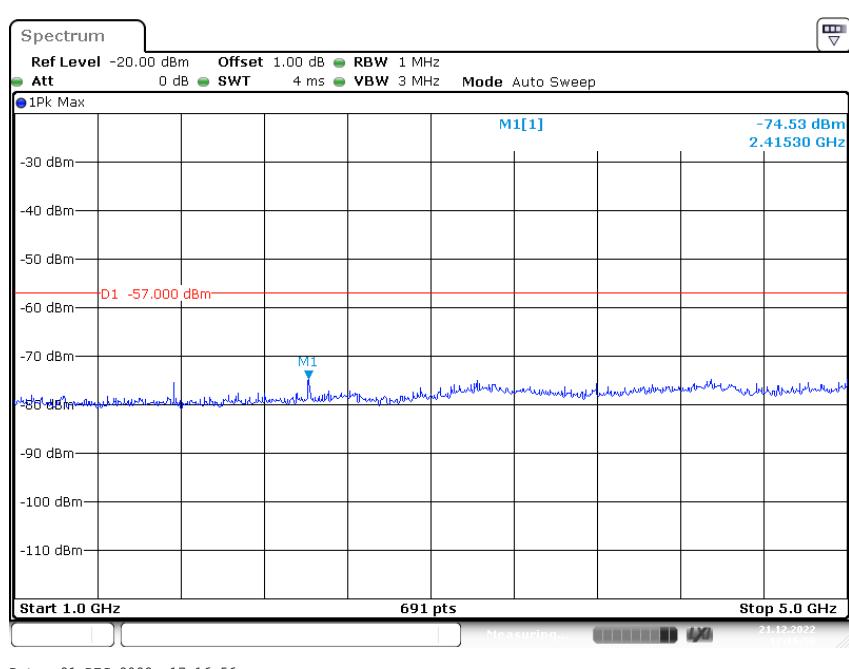
Test mode 6:

### Conducted Measurement (9 kHz to 150 kHz)



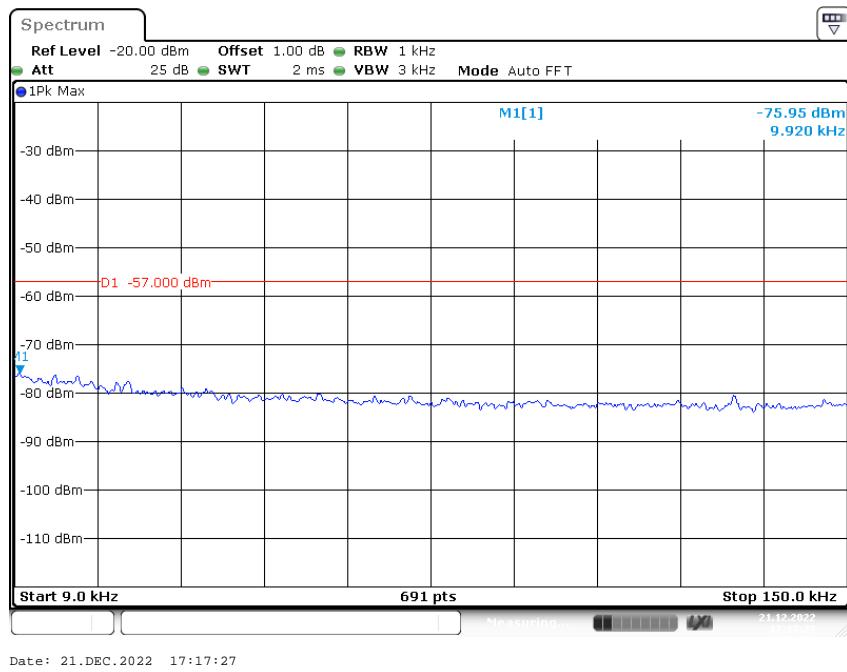
### Conducted Measurement (150 kHz to 30MHz)



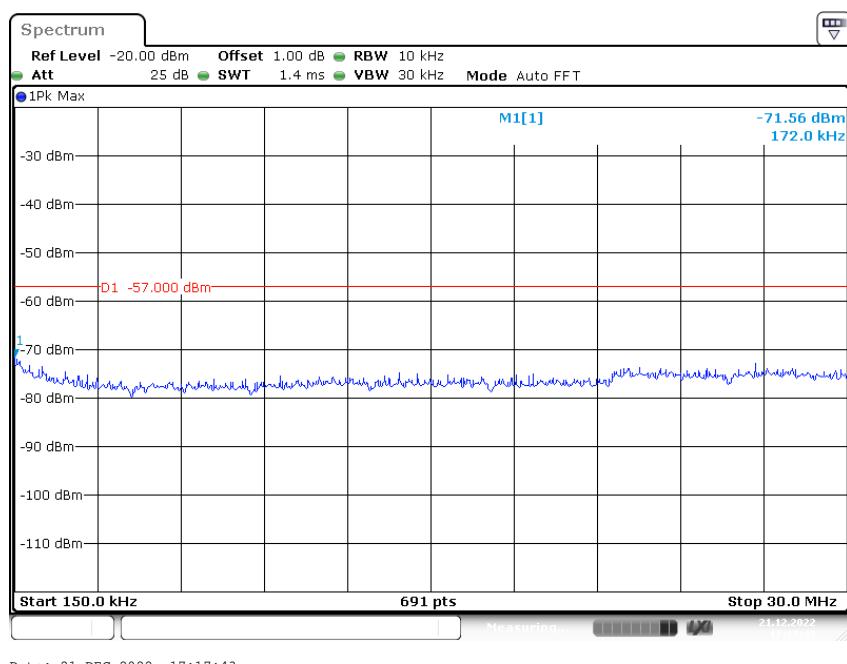
**Conducted Measurement (30MHz to 1GHz)****Conducted Measurement (1GHz to 5GHz)**

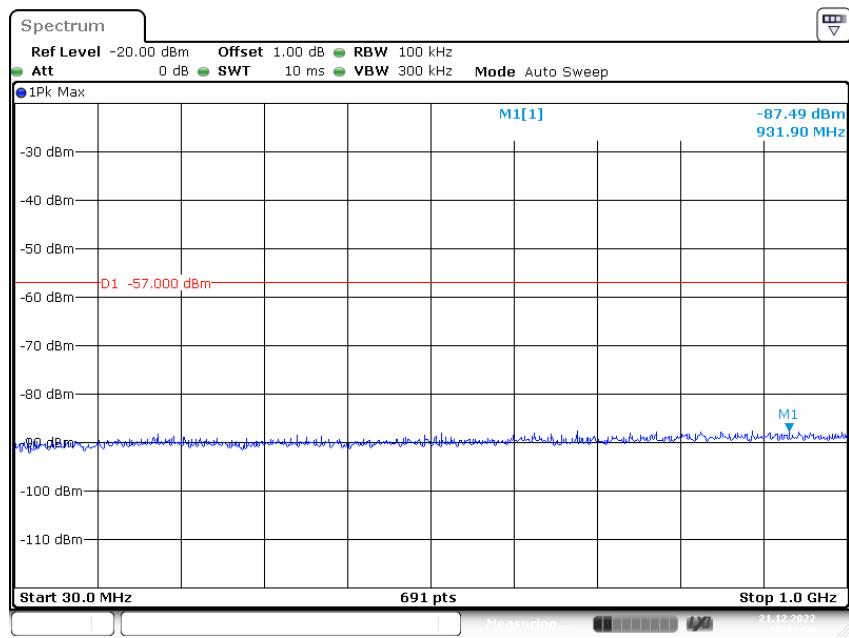
Test mode 7:

### Conducted Measurement (9 kHz to 150 kHz)

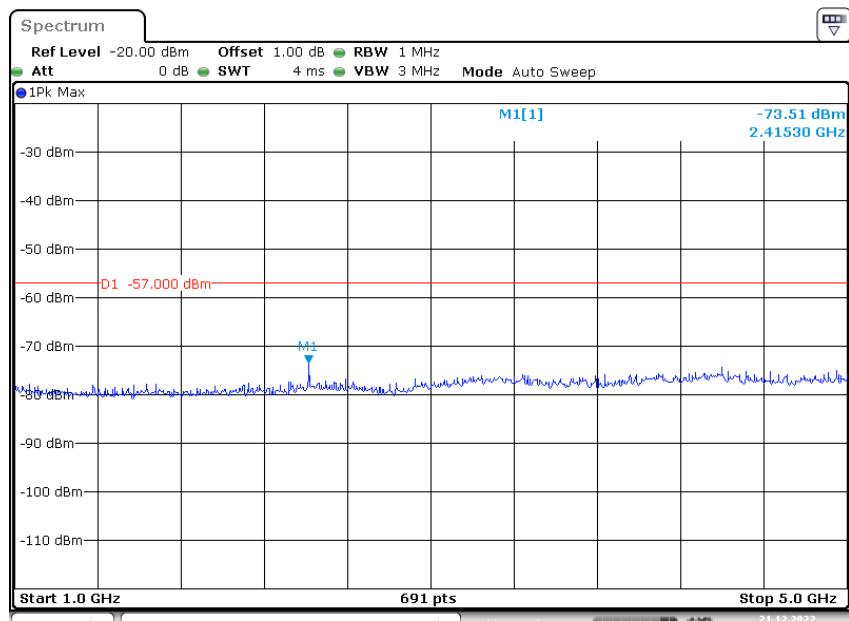


### Conducted Measurement (150 kHz to 30MHz)



**Conducted Measurement (30MHz to 1GHz)**

Date: 21.DEC.2022 17:17:59

**Conducted Measurement (1GHz to 5GHz)**

Date: 21.DEC.2022 17:18:14

## FCC §15.121(b) - SCANNING RECEIVERS AND FREQUENCY CONVERTERS USED WITH SCANNING RECEIVERS

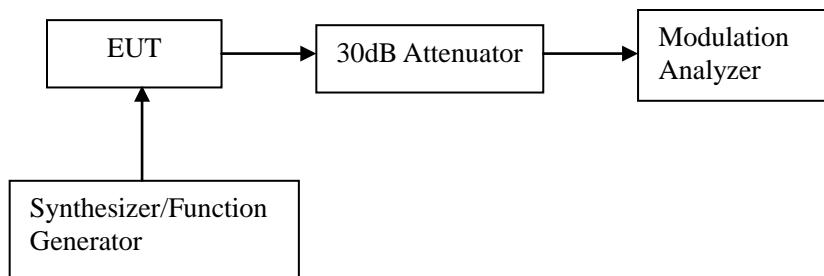
### Applicable Standard

FCC §15.121(b)

### Limit

Except as provided in paragraph (c) of this section, scanning receivers shall reject any signals from the Cellular Radiotelephone Service frequency bands that are 38 dB or lower based upon a 12 dB SINAD measurement, which is considered the threshold where a signal can be clearly discerned from any interference that may be present.

### EUT Setup



### Test Procedure

- 1) Connected the EUT as shown in the above block diagram.
- 2) Apply a RF signal to the receiver input port at lowest, middle and highest channel frequencies of receiver operation band.
- 3) Adjust the audio output level of the receiver to it's rated value with the distortion less than 10%.
- 4) Adjust the RF Signal Generator Output Power to produce 12 dB SINAD without the audio output power dropping by more than 3 dB. This output level of the RF SG at each channel frequency is the sensitivity of the receiver.
- 5) Select the lowest or worse-case sensitivity level for all of the bands as the reference sensitivity.
- 6) Adjust the RF Signal Generator output to a level of +60 dB above the reference sensitivity obtained in step 5) and its frequency to the frequency points in the cellular band.
- 7) Set the Receiver squelch to threshold, the signal required to open the squelch must be lower than the reference sensitivity level.
- 8) Set the receiver in a scanning mode and allow it to scan through it's complete receiving range.
- 9) If the receiver unsquelched or stopped on any frequency, receiving at this frequency, then adjust the signal generator output level until 12 dB SINAD is produced, this level is the spurious value and the difference between the reference sensitivity and the spurious value is the rejection ratio and must be at least 38dB.
- 10) Repeat above procedure at the frequencies 824, 836.0, and 849 MHz for the mobile band, and 869, 881.5, and 894 MHz for the cellular base band.

## Test Data

### Environmental Conditions

|                    |        |
|--------------------|--------|
| Temperature:       | 25 °C  |
| Relative Humidity: | 52 %   |
| ATM Pressure:      | 101kPa |

The testing was performed by Jesse Chen on 2022-12-21

Test mode: Scanning receiver

| Test Frequencies of<br>Cellular Band<br>(MHz) | Measurement Result<br>(dB) | Limit<br>(dB) |
|---|----------------------------|---------------|
| 824, 836.0, 849,<br>869, 881.5, 894           | 46                         | >38           |

Note: Only the worst test result was recorded.

\*\*\*\*\*END OF REPORT\*\*\*\*\*