



# FCC RADIO TEST REPORT

Applicant : Guangzhou Shirui Electronics Co.,Ltd  
Address : 192 Kezhu Road, Sciencetech Park, Guangzhou  
Economic & Technology Development District,  
Guangzhou, Guangdong, China  
Equipment : Speakerphone  
Model No. : BM11, BMXXX(X=A-Z,a-z or blank)  
Trade Name : MAXHUB  
FCC ID. : 2AFG6-BM11  
Standard : FCC part 15 Subpart C §15.247

## I HEREBY CERTIFY THAT :

The sample was received on Mar. 02, 2021 and the testing was completed on Mar. 15, 2021 at CerpPASS Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of CerpPASS Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Leevin Li

Supervisor of EMC Testing Dept.



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**History of this test report**☒ Original☐ Additional attachment as following record:

| Attachment No. | Issue Date    | Description   |
|----------------|---------------|---------------|
| DEFB2102034    | Mar. 15, 2021 | Initial Issue |
|                |               |               |
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| Report Type                         |                   | Description |
|-------------------------------------|-------------------|-------------|
| <input checked="" type="checkbox"/> | Original report   | NA          |
| <input type="checkbox"/>            | Derivative Report | NA          |



## 1. Report of Measurements and Examinations

### 1.1 List of Measurements and Examinations

ANSI C63.10: 2013

KDB 558074 D01 DTS Meas Guidance v05r02

FCC Rules and Regulations Part 15 Subpart C §15.247

| FCC Rule       | Description of Test                    | Result |
|----------------|----------------------------------------|--------|
| § 15.203       | Antenna Requirement                    | Pass   |
| § 15.207(a)    | Conducted Emission                     | Pass   |
| § 15.209(a)    | Radiated Emission                      | Pass   |
| § 15.247(a)(1) | Channel Carrier Frequencies Separation | Pass   |
| § 15.247(a)(1) | 20dB Bandwidth Measurement             | Pass   |
| § 15.247(a)(1) | Dwell Time                             | Pass   |
| § 15.247(b)    | Number of Hopping Channels             | Pass   |
| § 15.247(b)    | Peak Output Power Measurement Data     | Pass   |
| § 15.247(d)    | Band Edges Measurement Data            | Pass   |



## 2. Test Configuration of Equipment under Test

### 2.1 Feature of Equipment under Test

|                    |                                                                                                                                          |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment          | Speakerphone                                                                                                                             |
| Model Name         | BM11, BMXXX(X=A-Z,a-z or blank)                                                                                                          |
| Model Discrepancy  | All models are electrically identical, different model names are for marketing purpose. Model BM11 is the representative for final test. |
| Frequency Range    | 2402~2480MHz                                                                                                                             |
| Number of Channels | 79                                                                                                                                       |
| Modulation         | GFSK (1Mbps), $\pi/4$ DQPSK (2Mbps) ,8DPSK(3Mbps)                                                                                        |
| Data Rates         | Bluetooth: 1, 2, 3Mbps                                                                                                                   |
| Antenna Type       | PCB Antenna / 3dBi                                                                                                                       |
| Power Source       | Input: 5Vdc, 2A                                                                                                                          |
|                    | Rechargeable Li-ion Battery                                                                                                              |
|                    | Model: ICR18650-2S                                                                                                                       |
|                    | Spec: 7.4V, 2200mAh, 16.28Wh                                                                                                             |

Note: for more details, please refer to the User's manual of the EUT.

### 2.2 Carrier Frequency of Channels

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| 00      | 2402            | 20      | 2422            | 40      | 2442            | 60      | 2462            |
| 01      | 2403            | 21      | 2423            | 41      | 2443            | 61      | 2463            |
| 02      | 2404            | 22      | 2424            | 42      | 2444            | 62      | 2464            |
| 03      | 2405            | 23      | 2425            | 43      | 2445            | 63      | 2465            |
| 04      | 2406            | 24      | 2426            | 44      | 2446            | 64      | 2466            |
| 05      | 2407            | 25      | 2427            | 45      | 2447            | 65      | 2467            |
| 06      | 2408            | 26      | 2428            | 46      | 2448            | 66      | 2468            |
| 07      | 2409            | 27      | 2429            | 47      | 2449            | 67      | 2469            |
| 08      | 2410            | 28      | 2430            | 48      | 2450            | 68      | 2470            |
| 09      | 2411            | 29      | 2431            | 49      | 2451            | 69      | 2471            |
| 10      | 2412            | 30      | 2432            | 50      | 2452            | 70      | 2472            |
| 11      | 2413            | 31      | 2433            | 51      | 2453            | 71      | 2473            |
| 12      | 2414            | 32      | 2434            | 52      | 2454            | 72      | 2474            |
| 13      | 2415            | 33      | 2435            | 53      | 2455            | 73      | 2475            |
| 14      | 2416            | 34      | 2436            | 54      | 2456            | 74      | 2476            |
| 15      | 2417            | 35      | 2437            | 55      | 2457            | 75      | 2477            |
| 16      | 2418            | 36      | 2438            | 56      | 2458            | 76      | 2478            |
| 17      | 2419            | 37      | 2439            | 57      | 2459            | 77      | 2479            |
| 18      | 2420            | 38      | 2440            | 58      | 2460            | 78      | 2480            |
| 19      | 2421            | 39      | 2441            | 59      | 2461            | ---     | ---             |



## 2.3 Test Mode & Test Software

- During testing, the interface cables and equipment positions were varied according to ANSI C63.10
- The complete test system included support units and EUT for RF test.
- Run the test software "SecureCRT.exe".
- The following test modes were performed for the test:

| Conducted Emissions from the AC mains power ports                                                                |                                                                     |
|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Test Mode                                                                                                        | Operating Description                                               |
| Mode 1                                                                                                           | GFSK: CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.(120V)         |
| Mode 2                                                                                                           | $\pi/4$ DQPSK:CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.(120V) |
| Mode 3                                                                                                           | 8DPSK: CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.(120V)        |
| Mode 4                                                                                                           | 8DPSK: CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.(240V)        |
| caused "Test Mode 3: 8DPSK: CH 00: 2402MHz. (120V)" generated the worst case, it was reported as the final data. |                                                                     |
| Radiation Emissions (30MHz ~ 1GHz)                                                                               |                                                                     |
| Test Mode                                                                                                        | Operating Description                                               |
| 1                                                                                                                | GFSK: CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.               |
| 2                                                                                                                | $\pi/4$ DQPSK:CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.       |
| 3                                                                                                                | 8DPSK: CH 00: 2402MHz, CH 39: 2441MHz, CH 78: 2480MHz.              |
| caused "Test Mode 3: 8DPSK: CH 00: 2402MHz." generated the worst case, it was reported as the final data.        |                                                                     |
| Radiation Emissions (1GHz ~ 25GHz)                                                                               |                                                                     |
| Test Mode                                                                                                        | Operating Description                                               |
| 1                                                                                                                | GFSK (1Mbps)                                                        |
| 2                                                                                                                | $\pi/4$ -DQPSK (2Mbps)                                              |
| 3                                                                                                                | 8DPSK (3Mbps)                                                       |
| caused "Test Mode 1,2, 3" generated the worst case, they were reported as the final data.                        |                                                                     |

## 2.4 Description of Test System

| Device   | Manufacturer | Model No.  | Description |
|----------|--------------|------------|-------------|
| Notebook | Sony         | PCG-71811P | N/A         |

Used cable

| Cable        | Quantity | Description        |
|--------------|----------|--------------------|
| Type-C Cable | 1        | 1.0m Non Shielding |



## 2.5 General Information of Test

|                      |                                                                                                                                                                                                              |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Site            | <b>Cerpass Technology Corporation(Cerpass Laboratory)</b><br>Address: Room 102, No. 5, Xing'an Road, Chang'an Town,<br>Dongguan City, Guangdong Province<br>Tel: +86-769-8547-1212<br>Fax: +86-769-8547-1912 |
| FCC Designation No.: | CN1288                                                                                                                                                                                                       |



## 2.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

### RF Conducted Measurement

| Test Item                     |            | Uncertainty              | Limit                  |
|-------------------------------|------------|--------------------------|------------------------|
| Radio Frequency               |            | $\pm 8.7 \times 10^{-7}$ | $\pm 1 \times 10^{-5}$ |
| RF output power, conducted    |            | $\pm 0.63 \text{ dB}$    | $\pm 1.5 \text{ dB}$   |
| Power density, conducted      |            | $\pm 1.21 \text{ dB}$    | $\pm 3 \text{ dB}$     |
| Unwanted emissions, conducted | 30-1000MHz | $\pm 0.51 \text{ dB}$    | $\pm 3 \text{ dB}$     |
|                               | 1-12.75GHz | $\pm 0.67 \text{ dB}$    | $\pm 3 \text{ dB}$     |
| All emissions, radiated       | 30-1000MHz | $\pm 2.28 \text{ dB}$    | $\pm 6 \text{ dB}$     |
|                               | 1-12.75GHz | $\pm 2.59 \text{ dB}$    | $\pm 6 \text{ dB}$     |
| Temperature                   |            | $\pm 0.8^\circ \text{C}$ | $\pm 1^\circ \text{C}$ |
| Humidity                      |            | $\pm 3\%$                | $\pm 5\%$              |
| DC and low frequency voltages |            | $\pm 3\%$                | $\pm 3\%$              |

### AC Conducted Measurement

| Measurement                   | Frequency    | Uncertainty   |
|-------------------------------|--------------|---------------|
| Conducted emissions(LINE)     | 9KHz-30MHz   | +/- 0.7738 dB |
| Conducted emissions(NEUTRAL)  | 9KHz-30MHz   | +/- 0.7886 dB |
| Conducted emissions(10Mbps)   | 150KHz-30MHz | +/- 1.3013dB  |
| Conducted emissions(100Mbps)  | 150KHz-30MHz | +/- 1.3197 dB |
| Conducted emissions(1000Mbps) | 150KHz-30MHz | +/- 1.2987 dB |

### Radiated Measurement

| Measurement        | Polarity   | Frequency  | Uncertainty    |
|--------------------|------------|------------|----------------|
| Radiated emissions | Horizontal | below 1GHz | +/- 3.8936 dB  |
|                    | Vertical   | below 1GHz | +/- 3.8928 dB  |
|                    | Horizontal | above 1GHz | +/- 5.18858dB  |
|                    | Vertical   | above 1GHz | +/- 5.18928 dB |



### 3. Test Equipment and Ancillaries Used for Tests

| Test Item                           | AC Power Line Conducted Emission |             |            |                  |             |
|-------------------------------------|----------------------------------|-------------|------------|------------------|-------------|
| Instrument/Ancillary                | Manufacturer                     | Model No.   | Serial No. | Calibration Date | Valid Date. |
| Test Receiver                       | R&S                              | ESCI        | 100564     | 2021.01.07       | 2022.01.06  |
| LISN                                | SCHWARZBECK                      | NSLK 8127   | 8127748    | 2021.01.07       | 2022.01.06  |
| LISN                                | SCHWARZBECK                      | NSLK 8127   | 8127749    | 2021.01.07       | 2022.01.06  |
| ISN                                 | TESEQ                            | ISN T800    | 42809      | 2020.05.18       | 2021.05.17  |
| Pulse Limiter with 10dB Attenuation | SCHWARZBECK                      | VTSD 9561-F | 9561-F106  | 2021.01.07       | 2022.01.06  |
| Temperature/Humidity Meter          | mingle                           | ETH529      | N/A        | 2021.01.07       | 2022.01.06  |

| Test Item                  | Radiated Emissions |            |             |                  |            |
|----------------------------|--------------------|------------|-------------|------------------|------------|
| Instrument                 | Manufacturer       | Model No.  | Serial No.  | Calibration Date | Valid Date |
| EMI Test Receiver          | R&S                | ESCI       | 100565      | 2020.06.08       | 2021.06.07 |
| Amplifier                  | EMCI               | EMC330     | 980082      | 2020.06.08       | 2021.06.07 |
| Loop Antenna               | R&S                | HFH2-Z2    | 100150      | 2020.06.08       | 2022.06.07 |
| Bilog Antenna              | Sunol Science      | JB1        | A072414-2   | 2020.06.08       | 2022.06.07 |
| Preamplifier               | EMCI               | EMC-051835 | 980085      | 2020.06.08       | 2021.06.07 |
| Preamplifier               | COM-POWER          | PA-840     | 711885      | 2020.06.08       | 2021.06.07 |
| Broad-Band Horn Antenna    | Schwarzbeck        | BBHA9120D  | 9120D-619   | 2020.06.08       | 2022.06.07 |
| Standard Gain Horn Antenna | TRC                | HA-2640    | 18050       | 2020.06.08       | 2022.06.07 |
| Standard Gain Horn Antenna | TRC                | HA-1726    | 18051       | 2020.06.08       | 2022.06.07 |
| FSQ Sinal Analyzer         | R&S                | FSQ40      | 1163.039.02 | 2020.06.08       | 2021.06.07 |
| Temperature/Humidity Meter | mingle             | ETH529     | N/A         | 2021.01.07       | 2022.01.06 |

| Test Item                   | RF Conducted |           |            |                  |            |
|-----------------------------|--------------|-----------|------------|------------------|------------|
| Instrument                  | Manufacturer | Model No. | Serial No. | Calibration Date | Valid Date |
| Temperature/Humidity Meter  | mingle       | ETH529    | N/A        | 2018.01.29       | 2019.01.28 |
| MXA Signal Analyzer         | KEYSIGHT     | N9020A    | US46220290 | 2020.05.15       | 2021.05.14 |
| ESG VECTOR SIGNAL GENERATOR | Agilent      | E4438C    | MY45092582 | 2020.05.15       | 2021.05.14 |
| MXG VECTOR SIGNAL GENERATOR | Agilent      | N5182B    | MY53050127 | 2020.05.15       | 2021.05.14 |
| USB Average Power Sensor    | Boonton      | 55006     | 9778       | 2020.03.10       | 2021.03.09 |



## 4. Antenna Requirements

### 4.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 4.2 Antenna Construction and Directional Gain

| Antenna     | Peak Gain |
|-------------|-----------|
| PCB Antenna | 3dBi      |



## 5. Test of Conducted Emission

### 5.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.10-2013. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 6.2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions

| Frequency (MHz) | Quasi Peak (dB $\mu$ V) | Average (dB $\mu$ V) |
|-----------------|-------------------------|----------------------|
| 0.15 – 0.5      | 66-56*                  | 56-46*               |
| 0.5 – 5.0       | 56                      | 46                   |
| 5.0 – 30.0      | 60                      | 50                   |

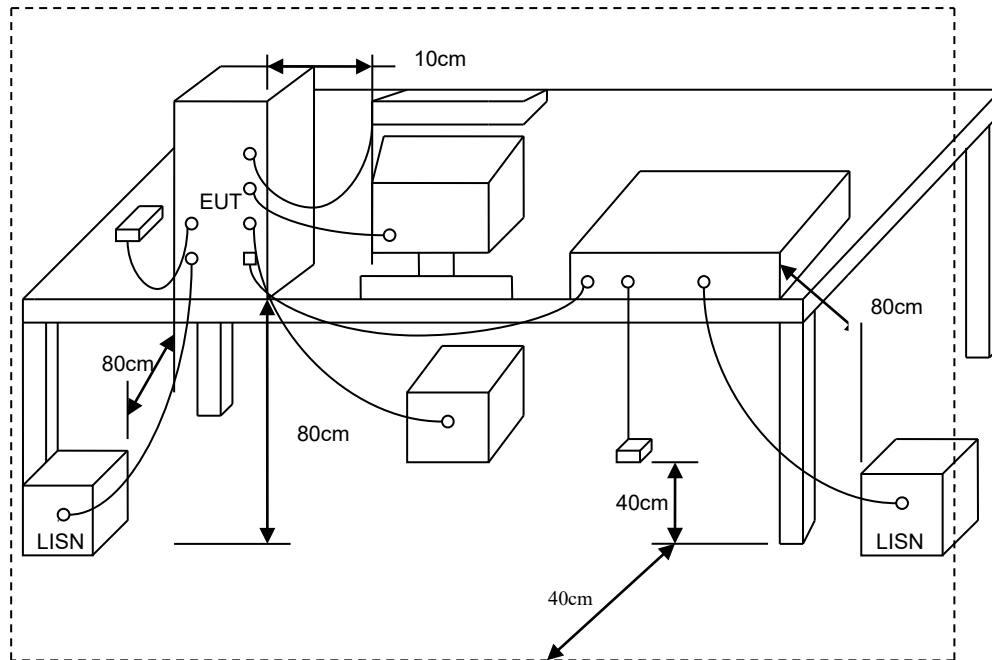
\*Decreases with the logarithm of the frequency.

### 5.2 Test Procedures

- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



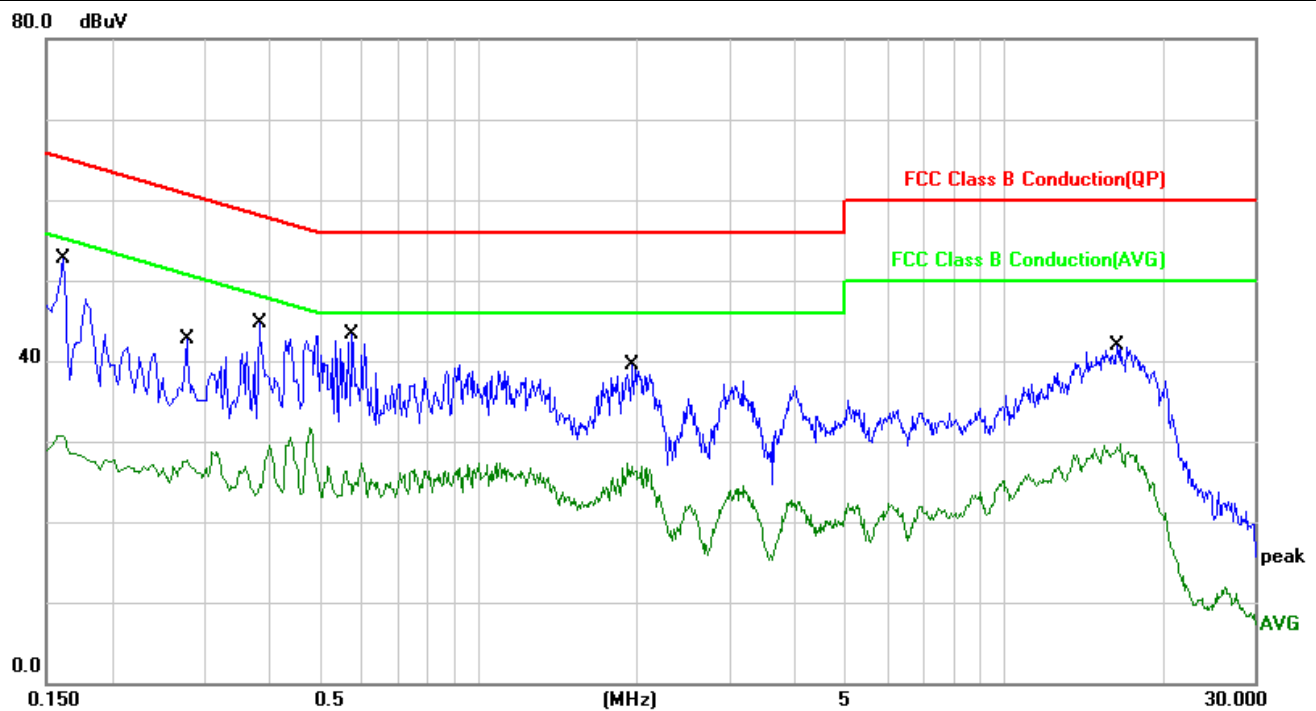
### 5.3 Typical Test Setup





## 5.4 Test Result and Data

|                  |              |           |            |
|------------------|--------------|-----------|------------|
| Test Mode :      | TX           |           |            |
| AC Power :       | AC 120V/60Hz | Phase:    | LINE       |
| Temperature :    | 26°C         | Humidity: | 60%        |
| Pressure(mbar) : | 1002         | Date:     | 2021-03-13 |

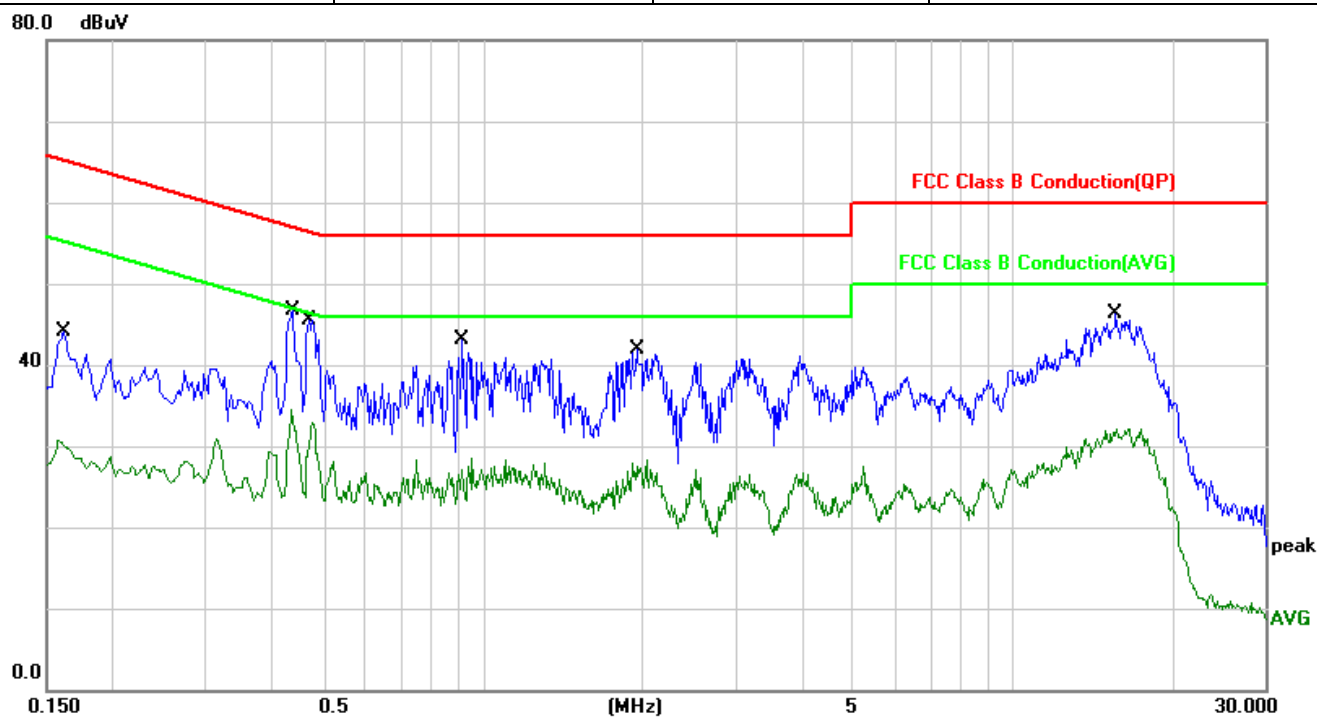


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 0.1620          | 10.12       | 30.68          | 40.80        | 65.36        | -24.56      | QP       |
| 2   | 0.1620          | 10.12       | 19.36          | 29.48        | 55.36        | -25.88      | AVG      |
| 3   | 0.2779          | 10.39       | 25.20          | 35.59        | 60.88        | -25.29      | QP       |
| 4   | 0.2779          | 10.39       | 17.04          | 27.43        | 50.88        | -23.45      | AVG      |
| 5   | 0.3820          | 10.12       | 20.07          | 30.19        | 58.23        | -28.04      | QP       |
| 6   | 0.3820          | 10.12       | 13.40          | 23.52        | 48.23        | -24.71      | AVG      |
| 7   | 0.5740          | 10.03       | 18.71          | 28.74        | 56.00        | -27.26      | QP       |
| 8   | 0.5740          | 10.03       | 13.39          | 23.42        | 46.00        | -22.58      | AVG      |
| 9   | 1.9620          | 10.11       | 24.39          | 34.50        | 56.00        | -21.50      | QP       |
| 10  | 1.9620          | 10.11       | 15.65          | 25.76        | 46.00        | -20.24      | AVG      |
| 11  | 16.4500         | 10.45       | 25.88          | 36.33        | 60.00        | -23.67      | QP       |
| 12  | 16.4500         | 10.45       | 17.94          | 28.39        | 50.00        | -21.61      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor



|                  |              |           |            |
|------------------|--------------|-----------|------------|
| Test Mode :      | TX           |           |            |
| AC Power :       | AC 120V/60Hz | Phase:    | NEUTRAL    |
| Temperature :    | 26°C         | Humidity: | 60%        |
| Pressure(mbar) : | 1002         | Date:     | 2021-03-13 |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 0.1620          | 10.13       | 34.21          | 44.34        | 65.36        | -21.02      | QP       |
| 2   | 0.1620          | 10.13       | 20.25          | 30.38        | 55.36        | -24.98      | AVG      |
| 3   | 0.4380          | 10.11       | 33.76          | 43.87        | 57.10        | -13.23      | QP       |
| 4   | 0.4380          | 10.11       | 23.43          | 33.54        | 47.10        | -13.56      | AVG      |
| 5   | 0.4700          | 10.11       | 33.64          | 43.75        | 56.51        | -12.76      | QP       |
| 6   | 0.4700          | 10.11       | 20.12          | 30.23        | 46.51        | -16.28      | AVG      |
| 7   | 0.9140          | 10.09       | 29.46          | 39.55        | 56.00        | -16.45      | QP       |
| 8   | 0.9140          | 10.09       | 16.77          | 26.86        | 46.00        | -19.14      | AVG      |
| 9   | 1.9540          | 10.14       | 26.78          | 36.92        | 56.00        | -19.08      | QP       |
| 10  | 1.9540          | 10.14       | 16.68          | 26.82        | 46.00        | -19.18      | AVG      |
| 11  | 15.6700         | 10.47       | 29.36          | 39.83        | 60.00        | -20.17      | QP       |
| 12  | 15.6700         | 10.47       | 19.78          | 30.25        | 50.00        | -19.75      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor



## 6. Test of Radiated Emission

### 6.1 Test Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

| FREQUENCIES(MHz) | FIELD<br>STRENGTH(microvolts/meter) | MEASUREMENT<br>DISTANCE(meters) |
|------------------|-------------------------------------|---------------------------------|
| 0.009~0.490      | 2400/F(kHz)                         | 300                             |
| 0.490~1.705      | 24000/F(kHz)                        | 30                              |
| 1.705~30.0       | 30                                  | 30                              |
| 30~88            | 100                                 | 3                               |
| 88~216           | 150                                 | 3                               |
| 216~960          | 200                                 | 3                               |
| Above 960        | 500                                 | 3                               |

For unintentional device, according to CISPR PUB.22, for Class B digital devices, the general requirement of field strength of radiated emissions from intentional radiators at a distance of 10 meters shall not exceed the above table.

| Frequency<br>(MHz) | Distance<br>Meters | Radiated<br>(dB $\mu$ V/ M) |
|--------------------|--------------------|-----------------------------|
| 30-230             | 10                 | 30                          |
| 230-1000           | 10                 | 37                          |



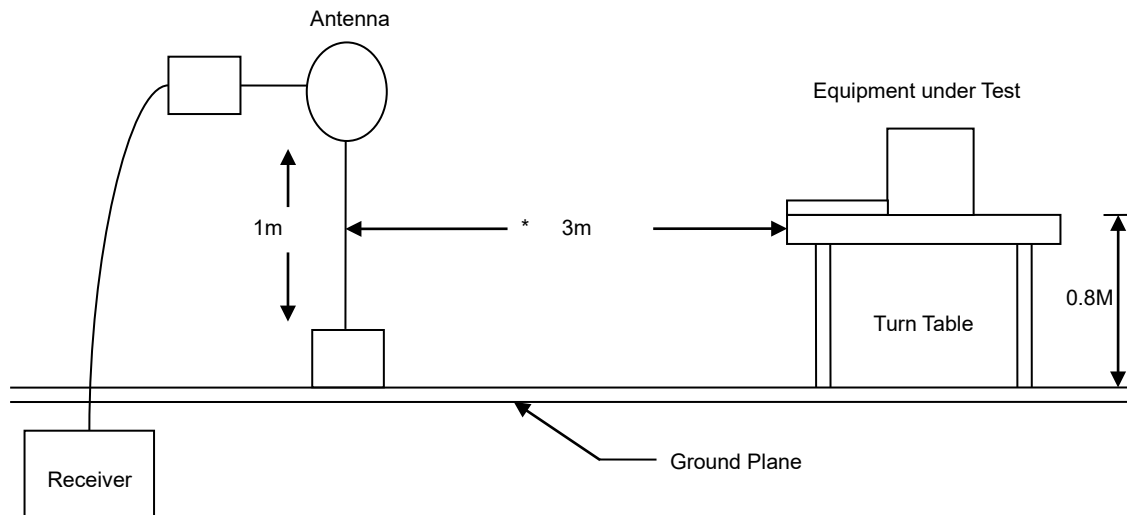
## 6.2 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground; above 1GHz, the height was 1.5m.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

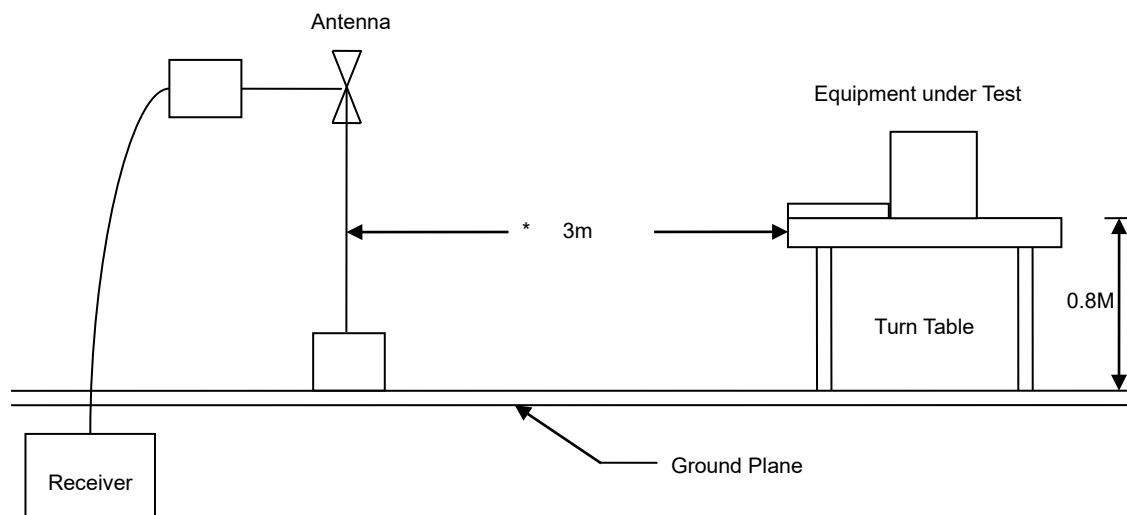


### 6.3 Typical Test Setup

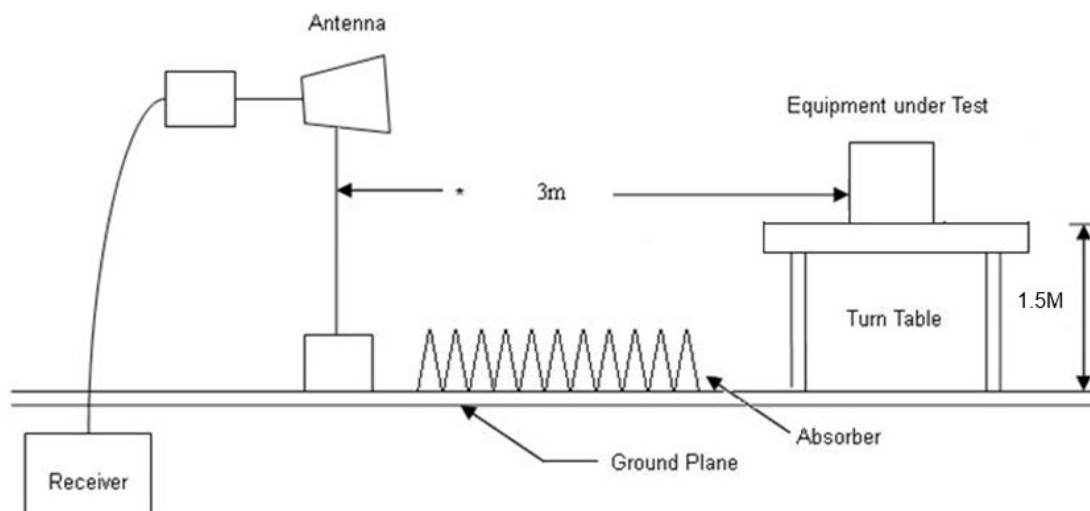
Below 30MHz test setup



30MHz- 1GHz Test Setup



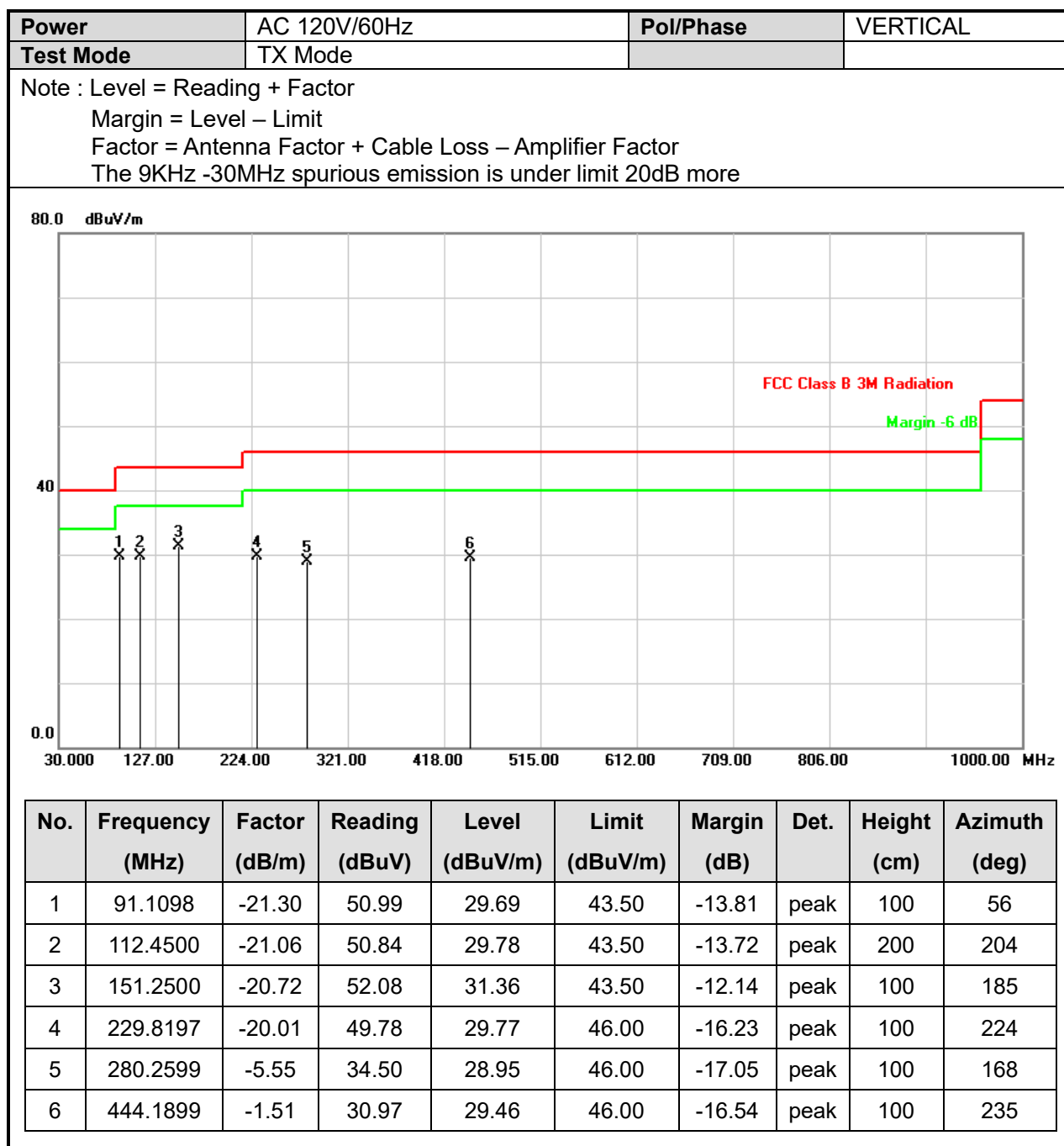
Above 1GHz Test Setup

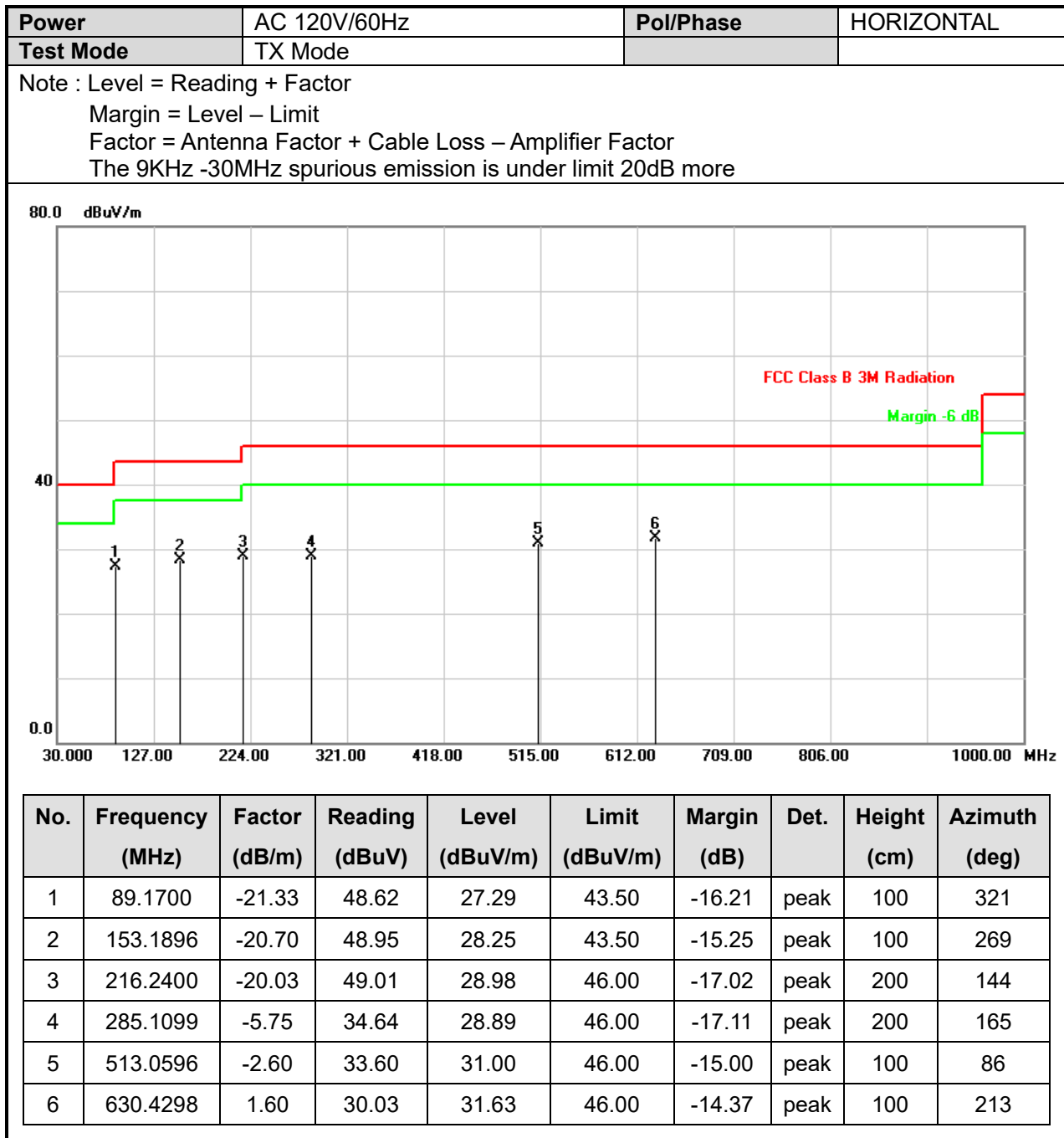




### 6.3.1 Test Result and Data

#### Below 1GHz







## Above 1GHz

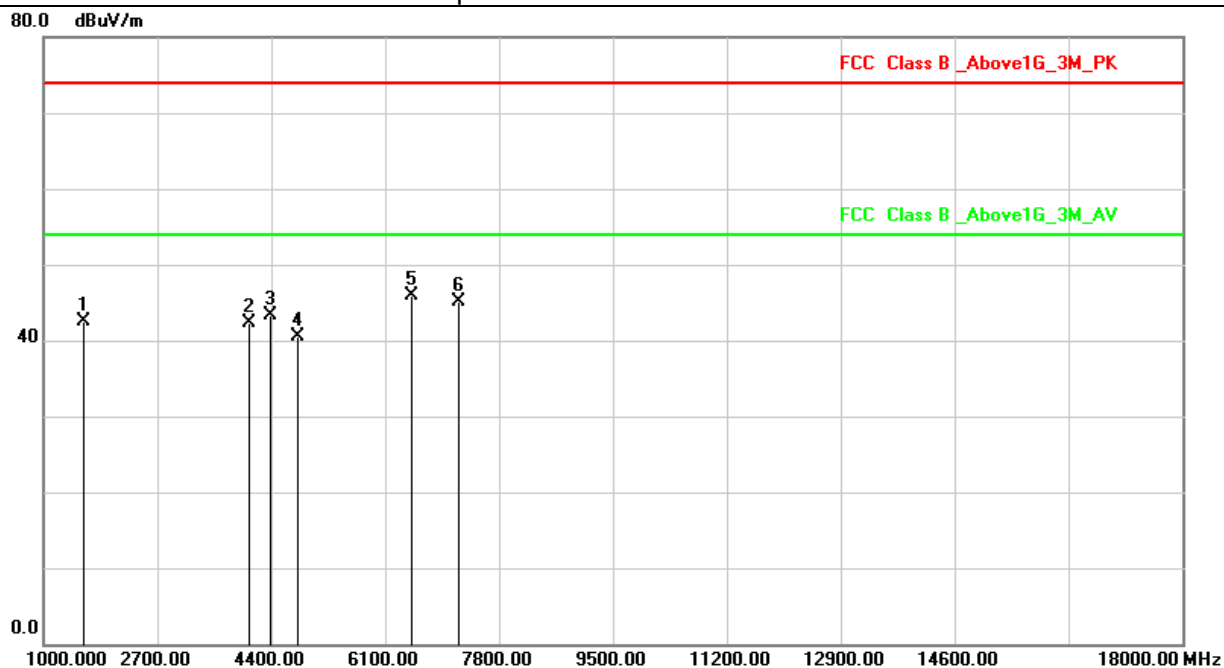
|           |               |                |          |
|-----------|---------------|----------------|----------|
| Power     | AC 120V/60Hz  | Pol/Phase      | VERTICAL |
| Test Mode | Mode 1, CH 00 | Operation mode | TX       |

Note : Level = Reading + Factor

Margin = Level – Limit

Factor = Antenna Factor + Cable Loss – Amplifier Factor

The 18000MHz - 25000MHz spurious emission is under limit 20dB more.



| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|
| 1   | 1595.000        | -35.07        | 77.61          | 42.54          | 74.00          | -31.46      | peak |
| 2   | 4077.000        | -32.59        | 74.83          | 42.24          | 74.00          | -31.76      | peak |
| 3   | 4383.000        | -32.42        | 75.73          | 43.31          | 74.00          | -30.69      | peak |
| 4   | 4804.102        | -32.48        | 72.89          | 40.41          | 74.00          | -33.59      | peak |
| 5   | 6491.000        | -31.29        | 77.12          | 45.83          | 74.00          | -28.17      | peak |
| 6   | 7206.248        | -31.88        | 76.94          | 45.06          | 74.00          | -28.94      | peak |



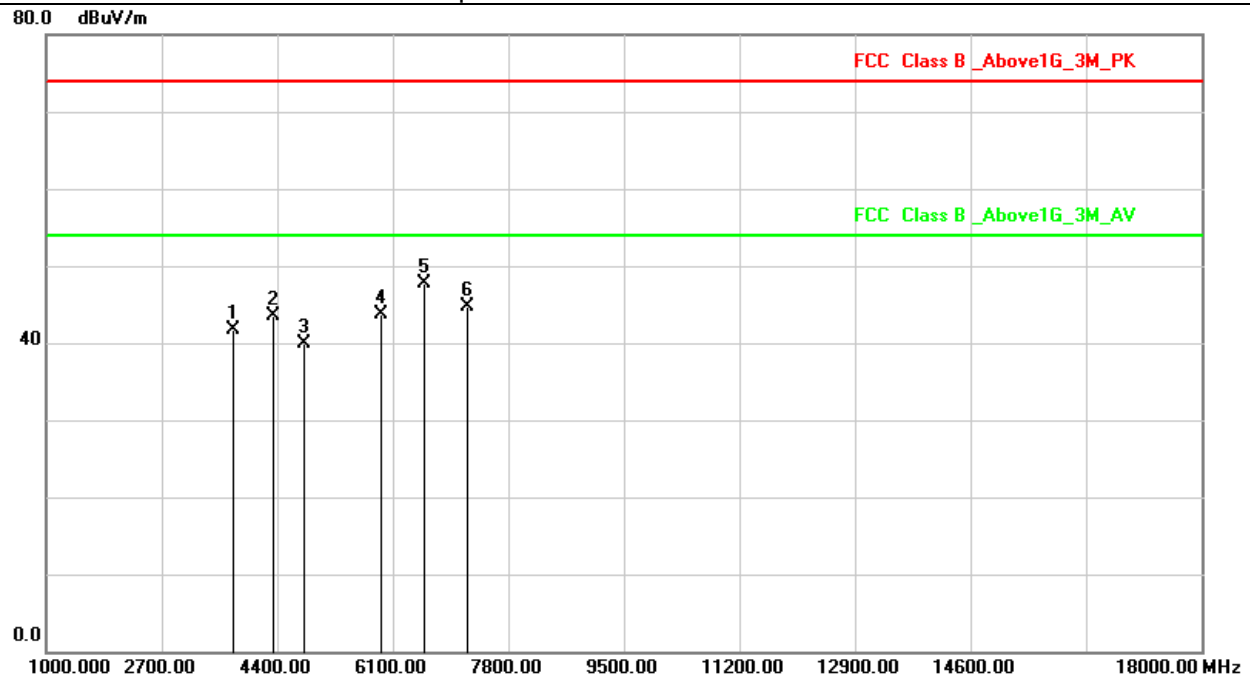
|           |               |                |            |
|-----------|---------------|----------------|------------|
| Power     | AC 120V/60Hz  | Pol/Phase      | HORIZONTAL |
| Test Mode | Mode 1, CH 00 | Operation mode | TX         |

Note : Level = Reading + Factor

Margin = Level – Limit

Factor = Antenna Factor + Cable Loss – Amplifier Factor

The 18000MHz - 25000MHz spurious emission is under limit 20dB more.



| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|
| 1   | 3754.000        | -32.96        | 74.66          | 41.70          | 74.00          | -32.30      | peak |
| 2   | 4349.000        | -32.36        | 75.86          | 43.50          | 74.00          | -30.50      | peak |
| 3   | 4804.150        | -32.48        | 72.36          | 39.88          | 74.00          | -34.12      | peak |
| 4   | 5930.000        | -31.79        | 75.51          | 43.72          | 74.00          | -30.28      | peak |
| 5   | 6559.000        | -31.24        | 78.88          | 47.64          | 74.00          | -26.36      | peak |
| 6   | 7206.550        | -31.88        | 76.54          | 44.66          | 74.00          | -29.34      | peak |



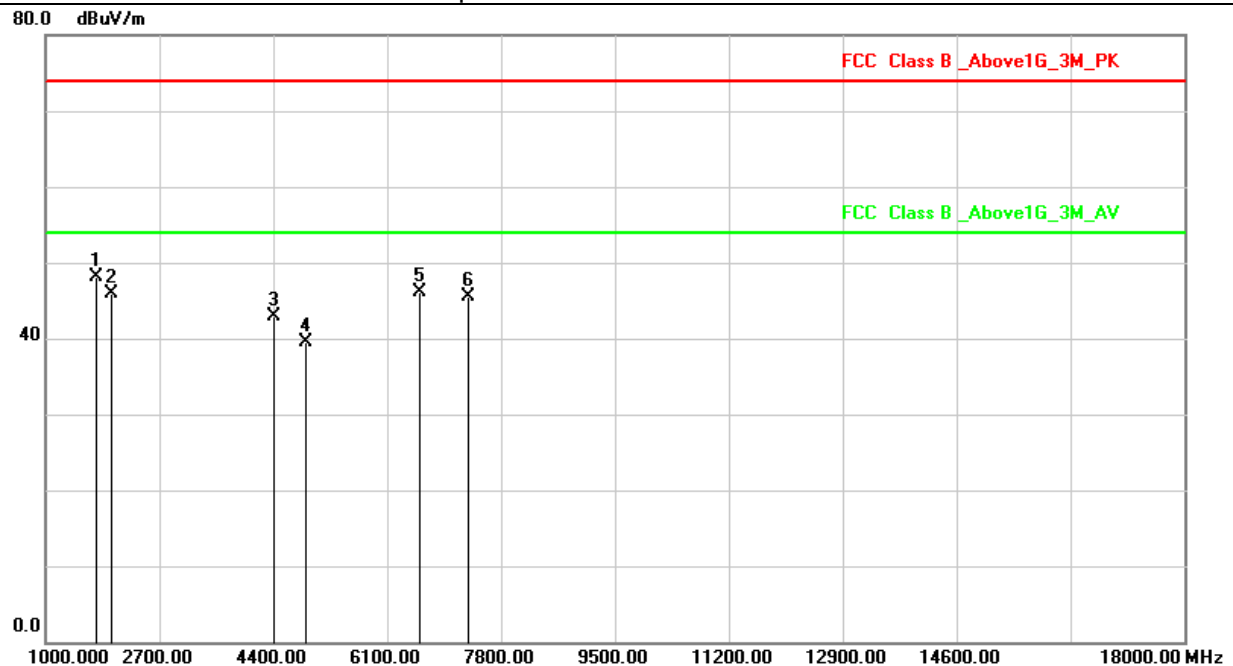
|           |               |                |          |
|-----------|---------------|----------------|----------|
| Power     | AC 120V/60Hz  | Pol/Phase      | VERTICAL |
| Test Mode | Mode 1, CH 39 | Operation mode | TX       |

Note : Level = Reading + Factor

Margin = Level – Limit

Factor = Antenna Factor + Cable Loss – Amplifier Factor

The 18000MHz - 25000MHz spurious emission is under limit 20dB more.



| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|
| 1   | 1765.000        | -33.16        | 81.36          | 48.20          | 74.00          | -25.80      | peak |
| 2   | 1986.000        | -32.08        | 77.98          | 45.90          | 74.00          | -28.10      | peak |
| 3   | 4417.000        | -32.42        | 75.29          | 42.87          | 74.00          | -31.13      | peak |
| 4   | 4882.075        | -32.27        | 71.72          | 39.45          | 74.00          | -34.55      | peak |
| 5   | 6576.000        | -31.23        | 77.24          | 46.01          | 74.00          | -27.99      | peak |
| 6   | 7323.045        | -31.62        | 77.08          | 45.46          | 74.00          | -28.54      | peak |



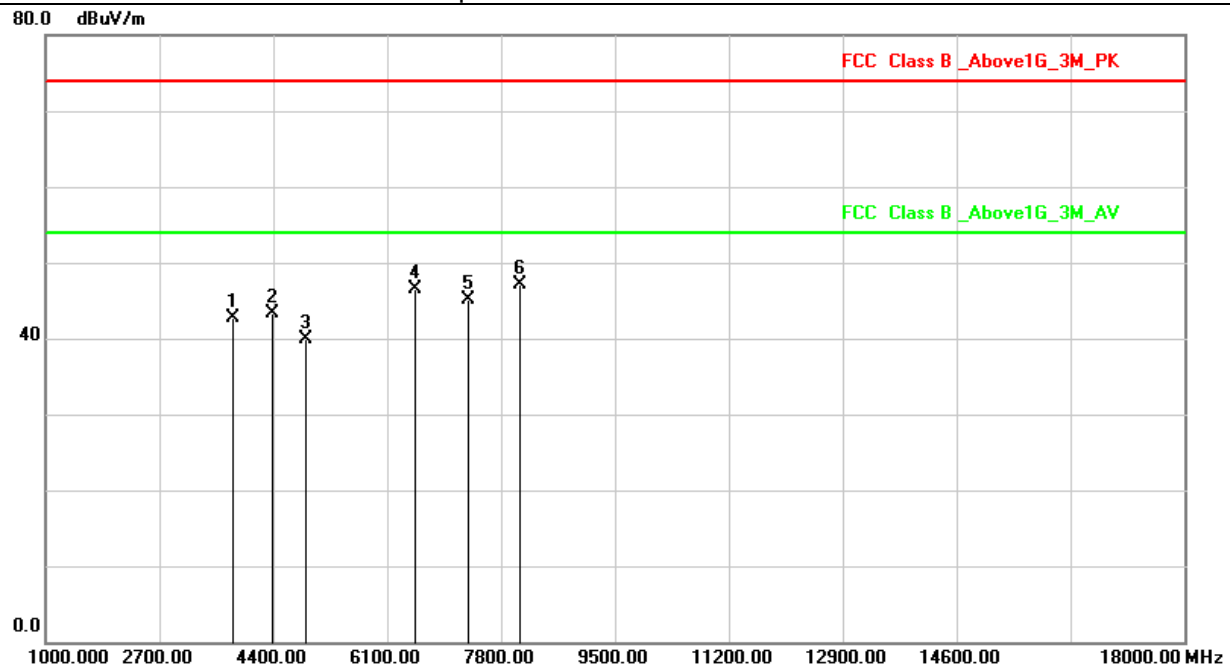
|           |               |                |            |
|-----------|---------------|----------------|------------|
| Power     | AC 120V/60Hz  | Pol/Phase      | HORIZONTAL |
| Test Mode | Mode 1, CH 39 | Operation mode | TX         |

Note : Level = Reading + Factor

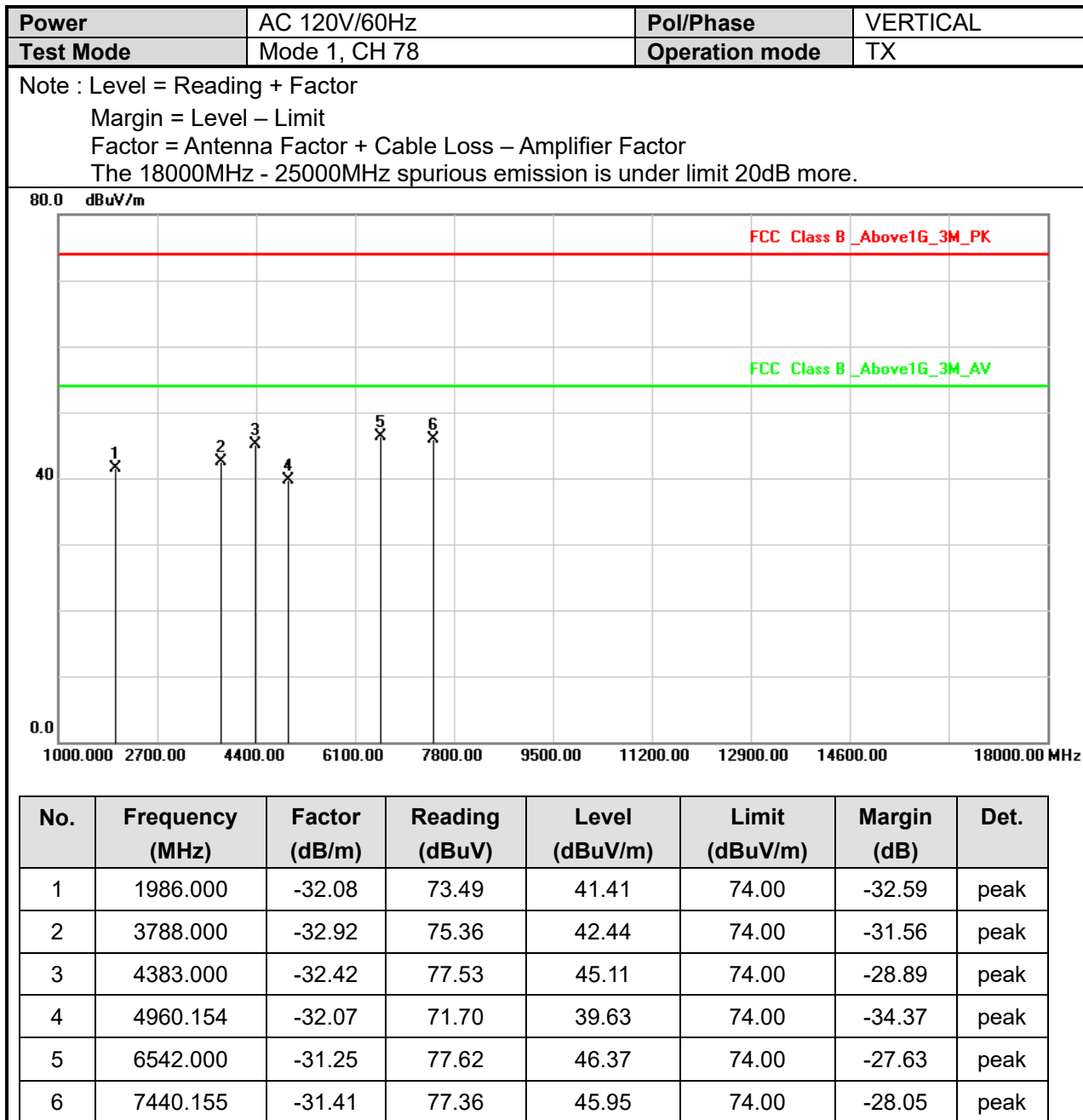
Margin = Level – Limit

Factor = Antenna Factor + Cable Loss – Amplifier Factor

The 18000MHz - 25000MHz spurious emission is under limit 20dB more.



| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|
| 1   | 3788.000        | -32.92        | 75.53          | 42.61          | 74.00          | -31.39      | peak |
| 2   | 4383.000        | -32.42        | 75.75          | 43.33          | 74.00          | -30.67      | peak |
| 3   | 4882.012        | -32.27        | 72.27          | 40.00          | 74.00          | -34.00      | peak |
| 4   | 6525.000        | -31.27        | 77.75          | 46.48          | 74.00          | -27.52      | peak |
| 5   | 7323.012        | -31.62        | 76.66          | 45.04          | 74.00          | -28.96      | peak |
| 6   | 8072.000        | -31.04        | 78.14          | 47.10          | 74.00          | -26.90      | peak |





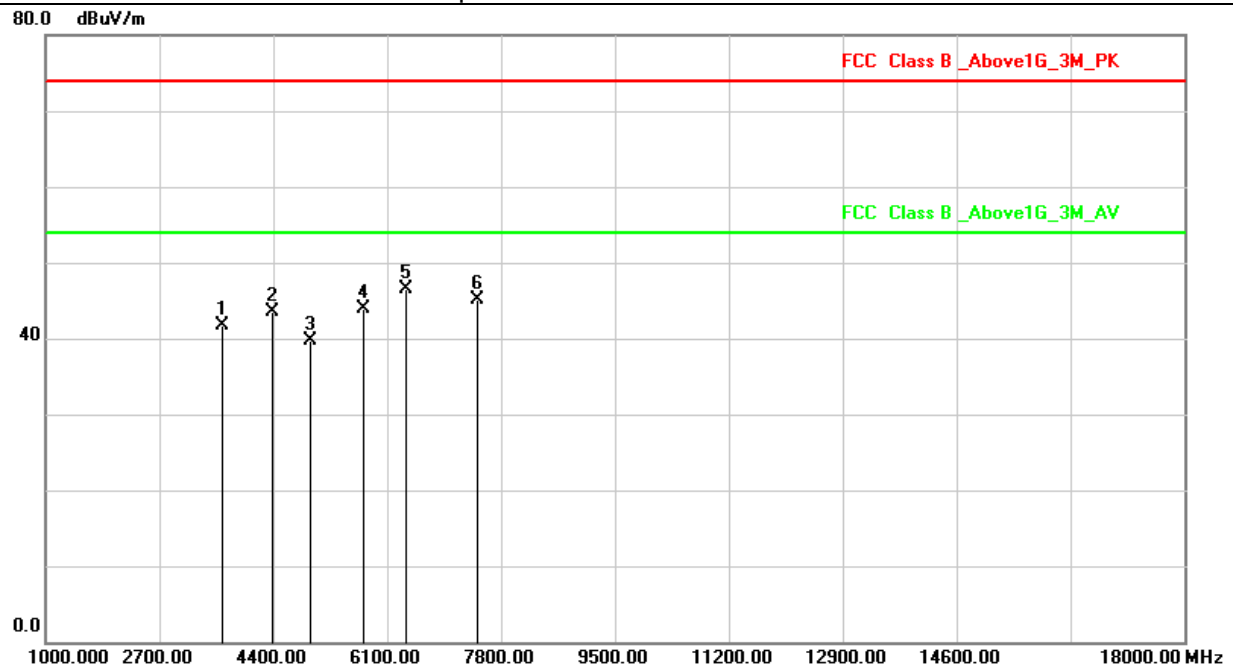
|           |               |                |            |
|-----------|---------------|----------------|------------|
| Power     | AC 120V/60Hz  | Pol/Phase      | HORIZONTAL |
| Test Mode | Mode 1, CH 78 | Operation mode | TX         |

Note : Level = Reading + Factor

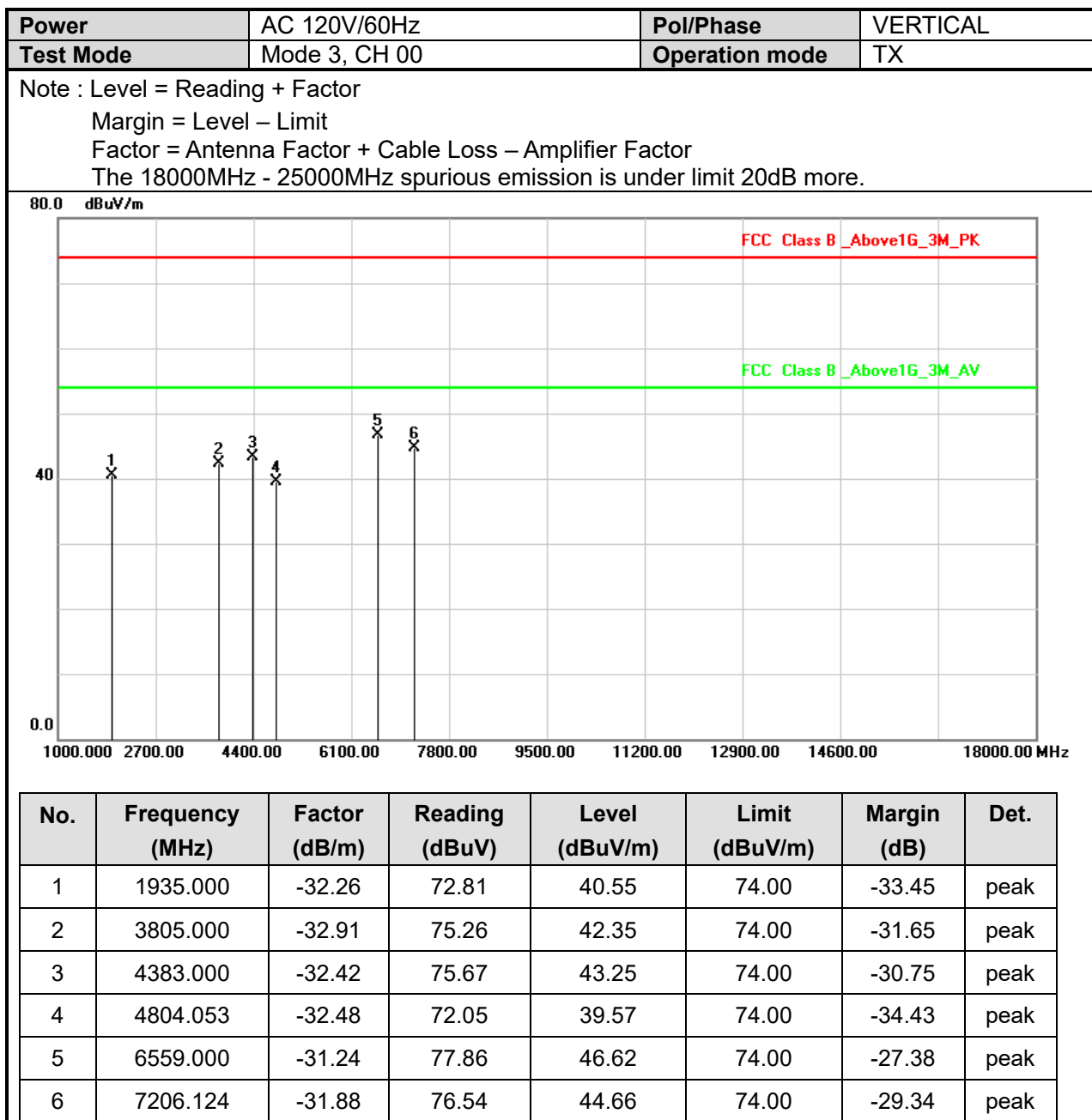
Margin = Level – Limit

Factor = Antenna Factor + Cable Loss – Amplifier Factor

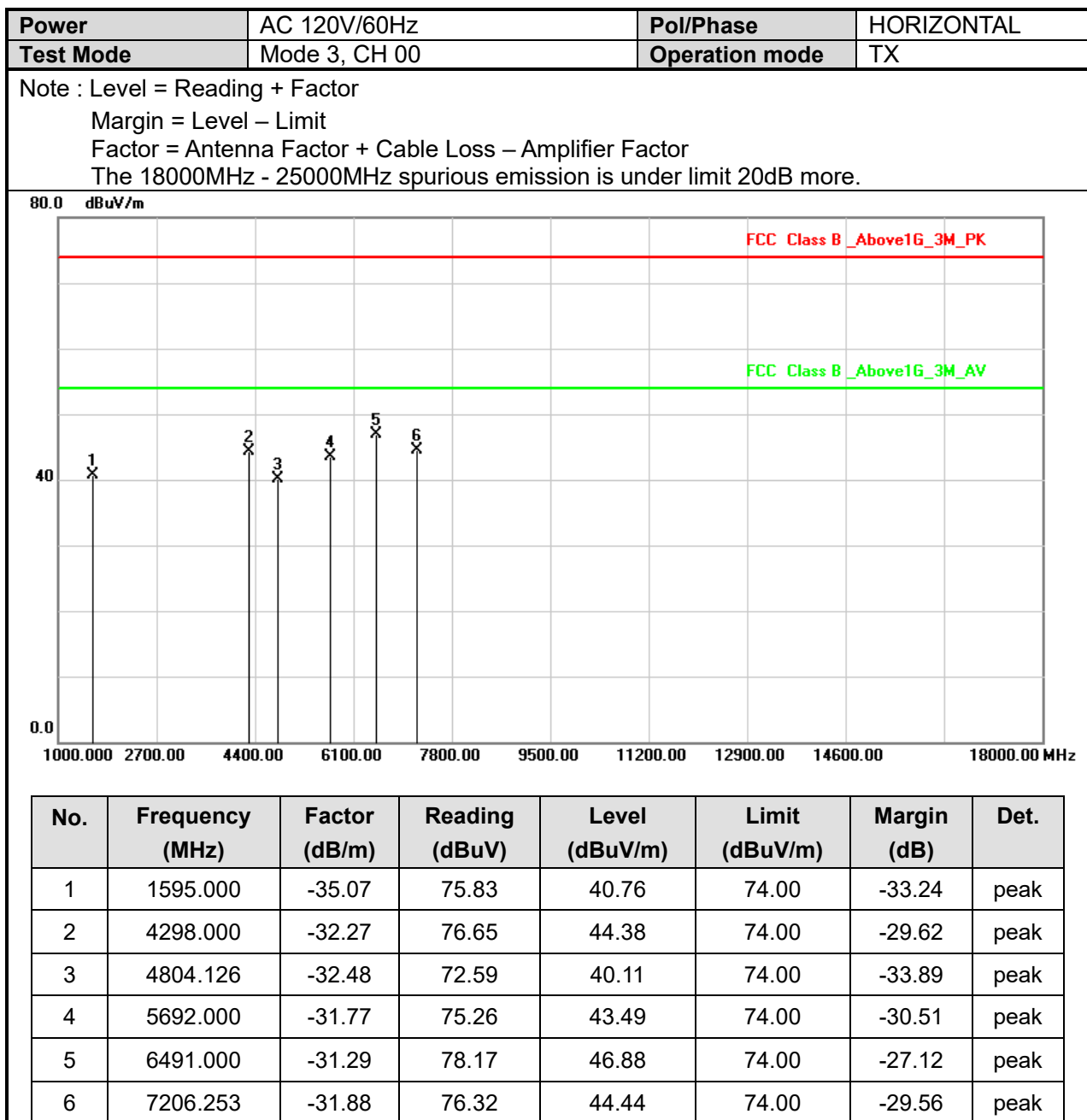
The 18000MHz - 25000MHz spurious emission is under limit 20dB more.

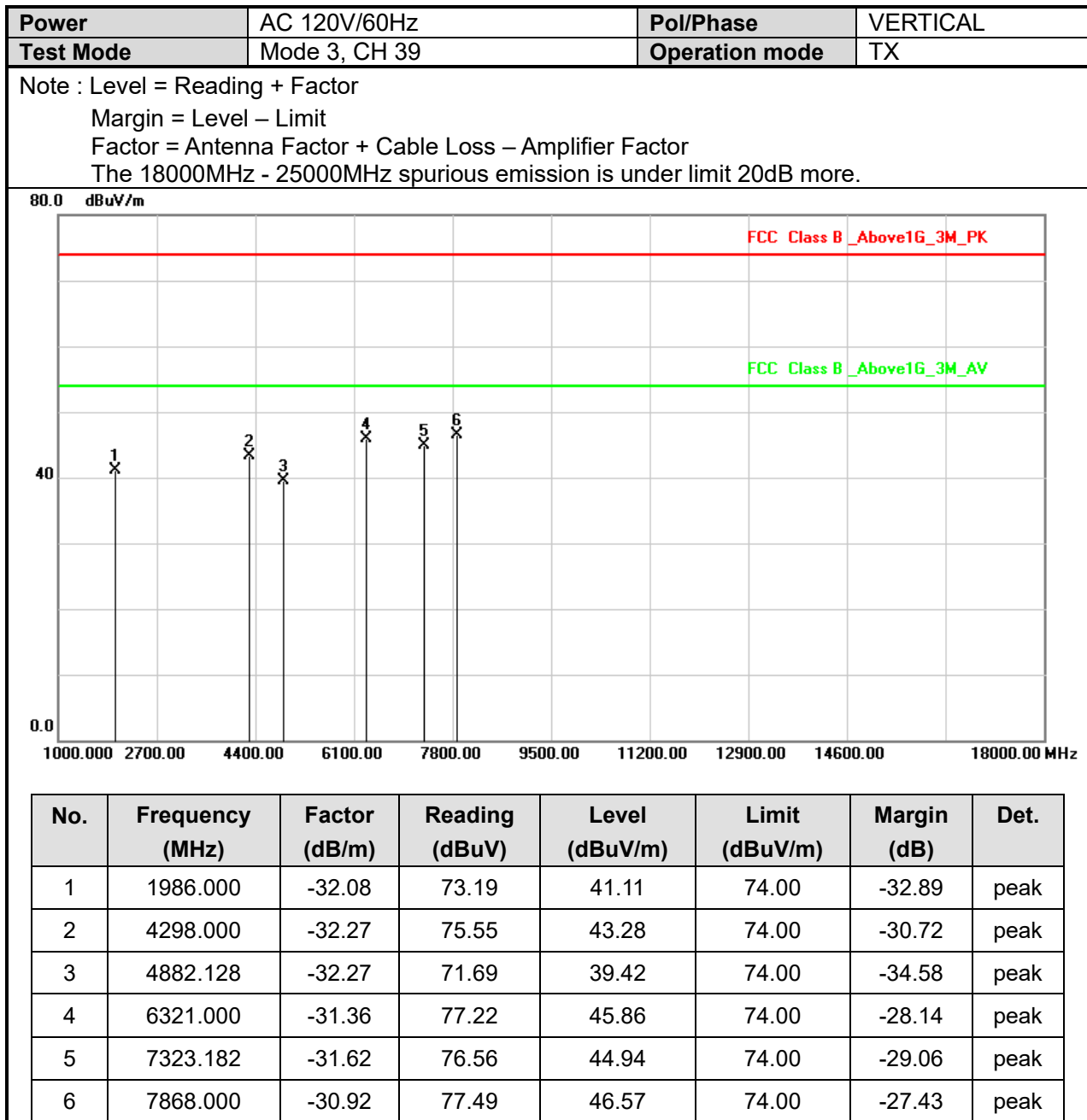


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|
| 1   | 3635.000        | -33.10        | 74.72          | 41.62          | 74.00          | -32.38      | peak |
| 2   | 4383.000        | -32.42        | 76.01          | 43.59          | 74.00          | -30.41      | peak |
| 3   | 4960.145        | -32.07        | 71.82          | 39.75          | 74.00          | -34.25      | peak |
| 4   | 5743.000        | -31.84        | 75.66          | 43.82          | 74.00          | -30.18      | peak |
| 5   | 6389.000        | -31.36        | 77.80          | 46.44          | 74.00          | -27.56      | peak |
| 6   | 7440.156        | -31.41        | 76.57          | 45.16          | 74.00          | -28.84      | peak |



S







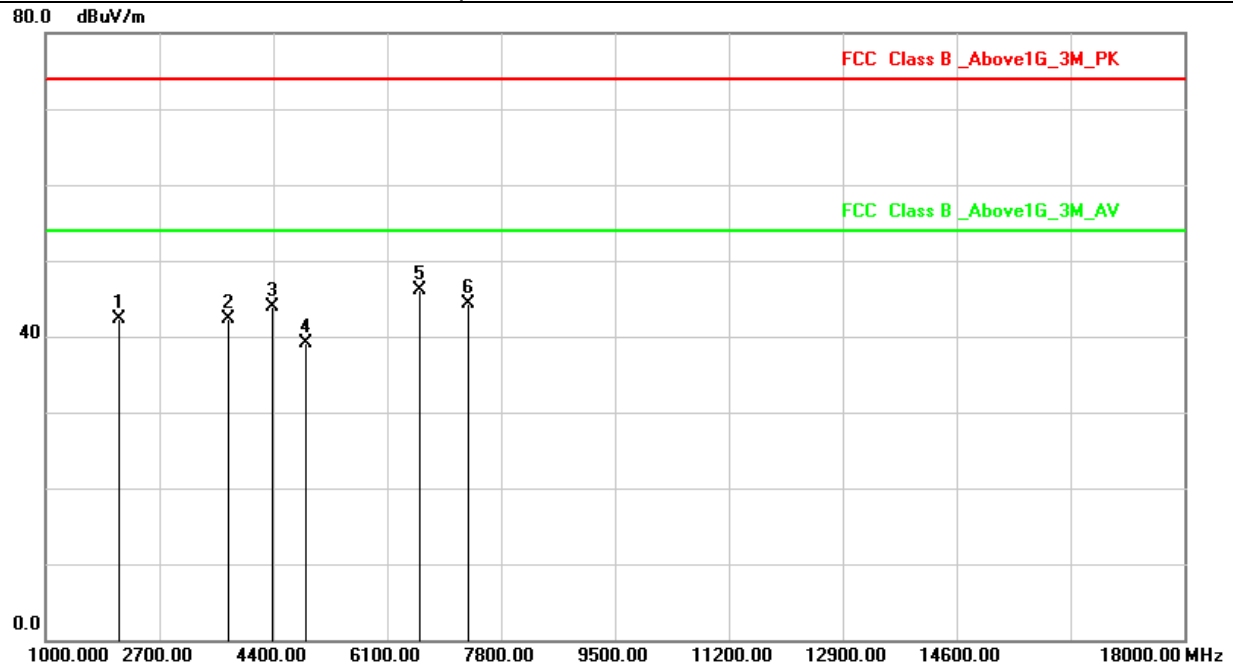
|           |               |                |            |
|-----------|---------------|----------------|------------|
| Power     | AC 120V/60Hz  | Pol/Phase      | HORIZONTAL |
| Test Mode | Mode 3, CH 39 | Operation mode | TX         |

Note : Level = Reading + Factor

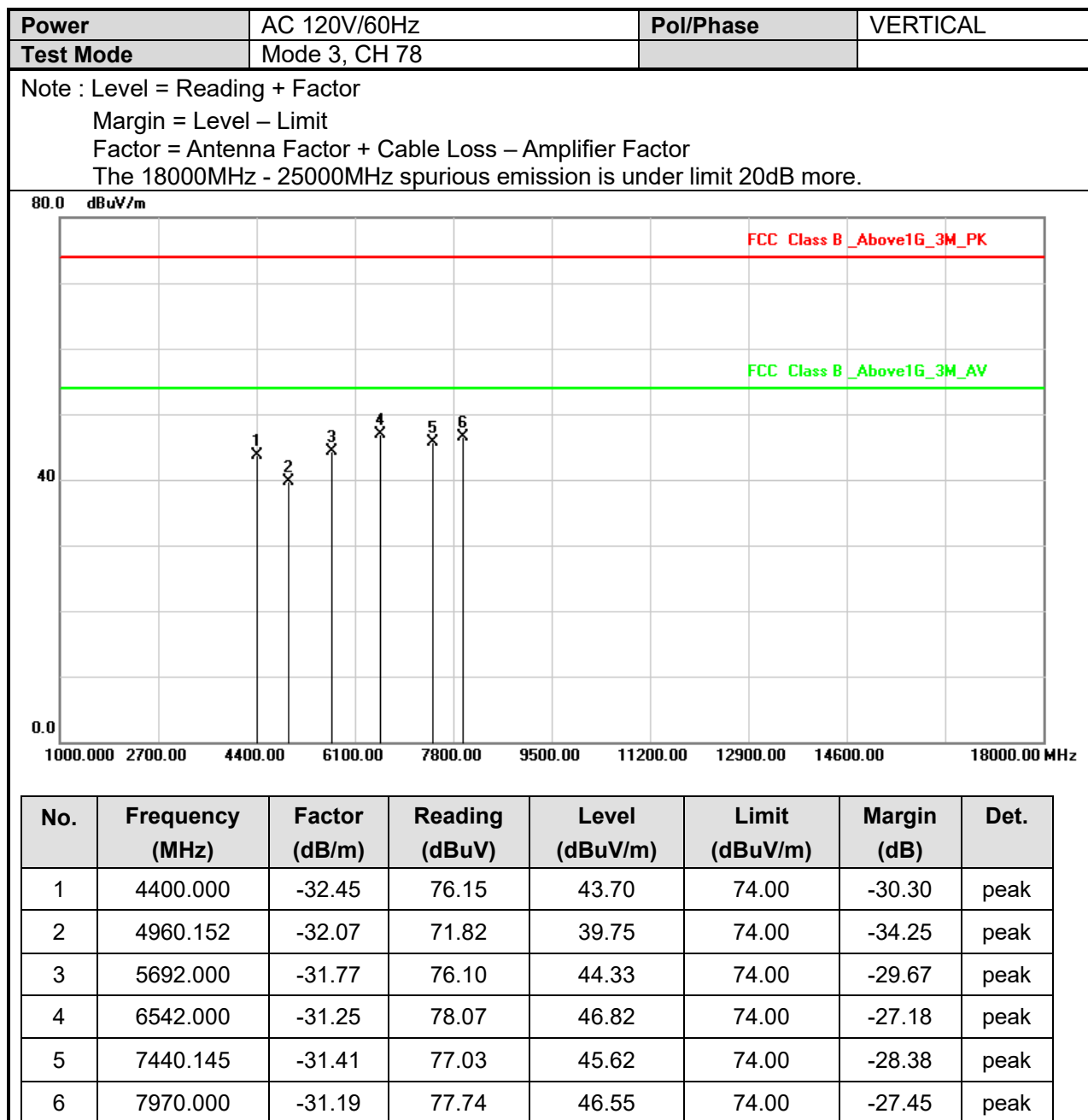
Margin = Level – Limit

Factor = Antenna Factor + Cable Loss – Amplifier Factor

The 18000MHz - 25000MHz spurious emission is under limit 20dB more.



| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|
| 1   | 2105.000        | -33.18        | 75.50          | 42.32          | 74.00          | -31.68      | peak |
| 2   | 3720.000        | -33.00        | 75.39          | 42.39          | 74.00          | -31.61      | peak |
| 3   | 4383.000        | -32.42        | 76.25          | 43.83          | 74.00          | -30.17      | peak |
| 4   | 4882.034        | -32.27        | 71.35          | 39.08          | 74.00          | -34.92      | peak |
| 5   | 6576.000        | -31.23        | 77.29          | 46.06          | 74.00          | -27.94      | peak |
| 6   | 7323.085        | -31.62        | 75.98          | 44.36          | 74.00          | -29.64      | peak |





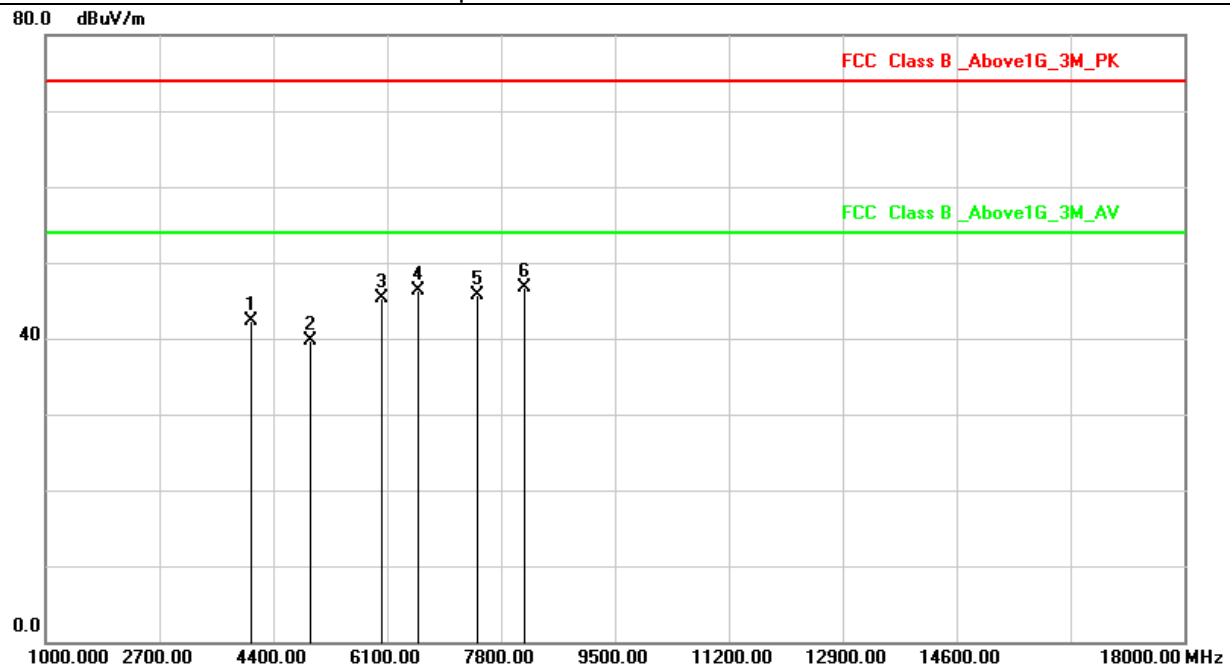
|           |               |                |            |
|-----------|---------------|----------------|------------|
| Power     | AC 120V/60Hz  | Pol/Phase      | HORIZONTAL |
| Test Mode | Mode 3, CH 78 | Operation mode | TX         |

Note : Level = Reading + Factor

Margin = Level – Limit

Factor = Antenna Factor + Cable Loss – Amplifier Factor

The 18000MHz - 25000MHz spurious emission is under limit 20dB more.



| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|
| 1   | 4060.000        | -32.66        | 75.04          | 42.38          | 74.00          | -31.62      | peak |
| 2   | 4960.145        | -32.07        | 71.85          | 39.78          | 74.00          | -34.22      | peak |
| 3   | 6015.000        | -31.69        | 76.99          | 45.30          | 74.00          | -28.70      | peak |
| 4   | 6559.000        | -31.24        | 77.61          | 46.37          | 74.00          | -27.63      | peak |
| 5   | 7440.530        | -31.41        | 77.06          | 45.65          | 74.00          | -28.35      | peak |
| 6   | 8157.000        | -30.78        | 77.40          | 46.62          | 74.00          | -27.38      | peak |

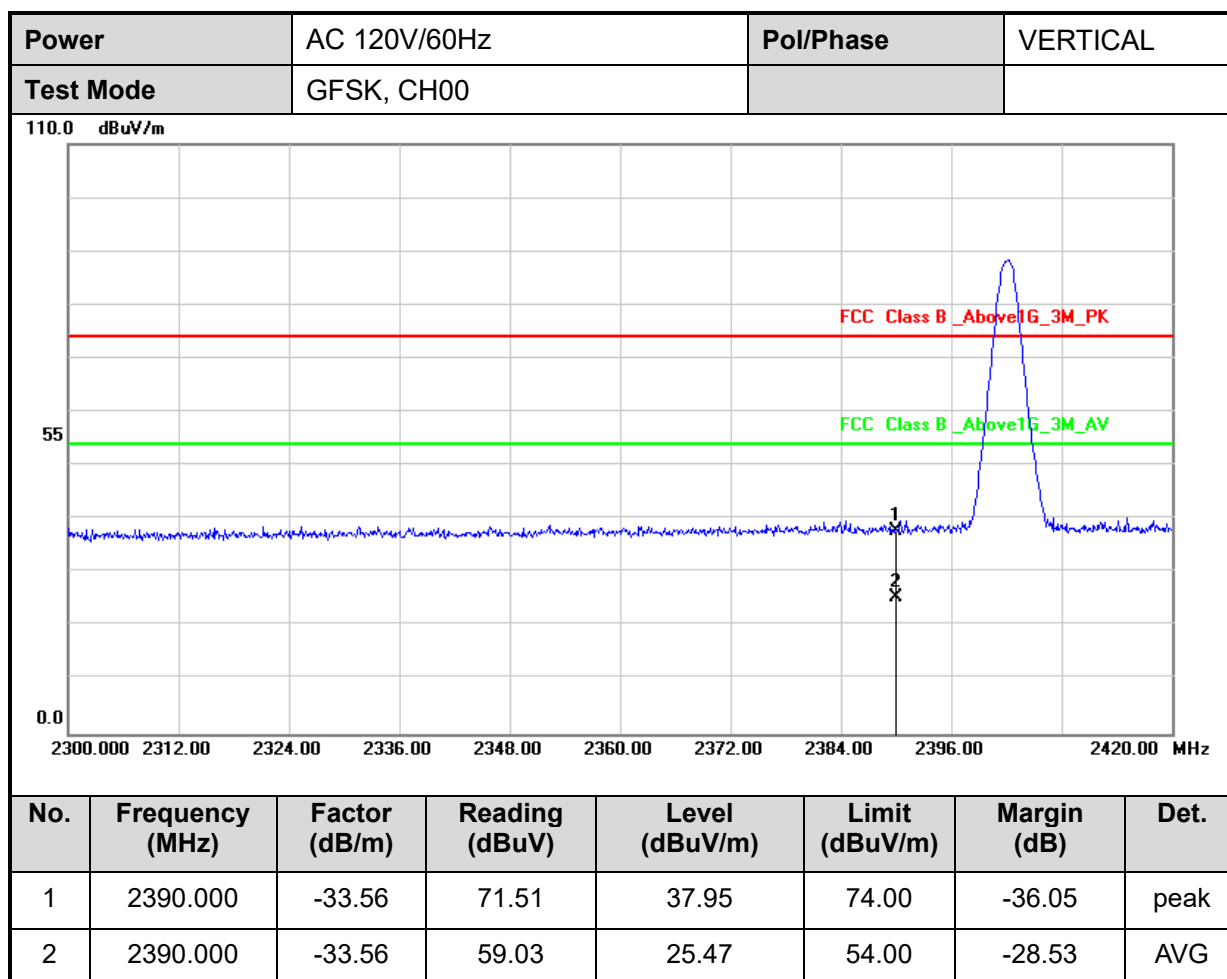


## 6.4 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

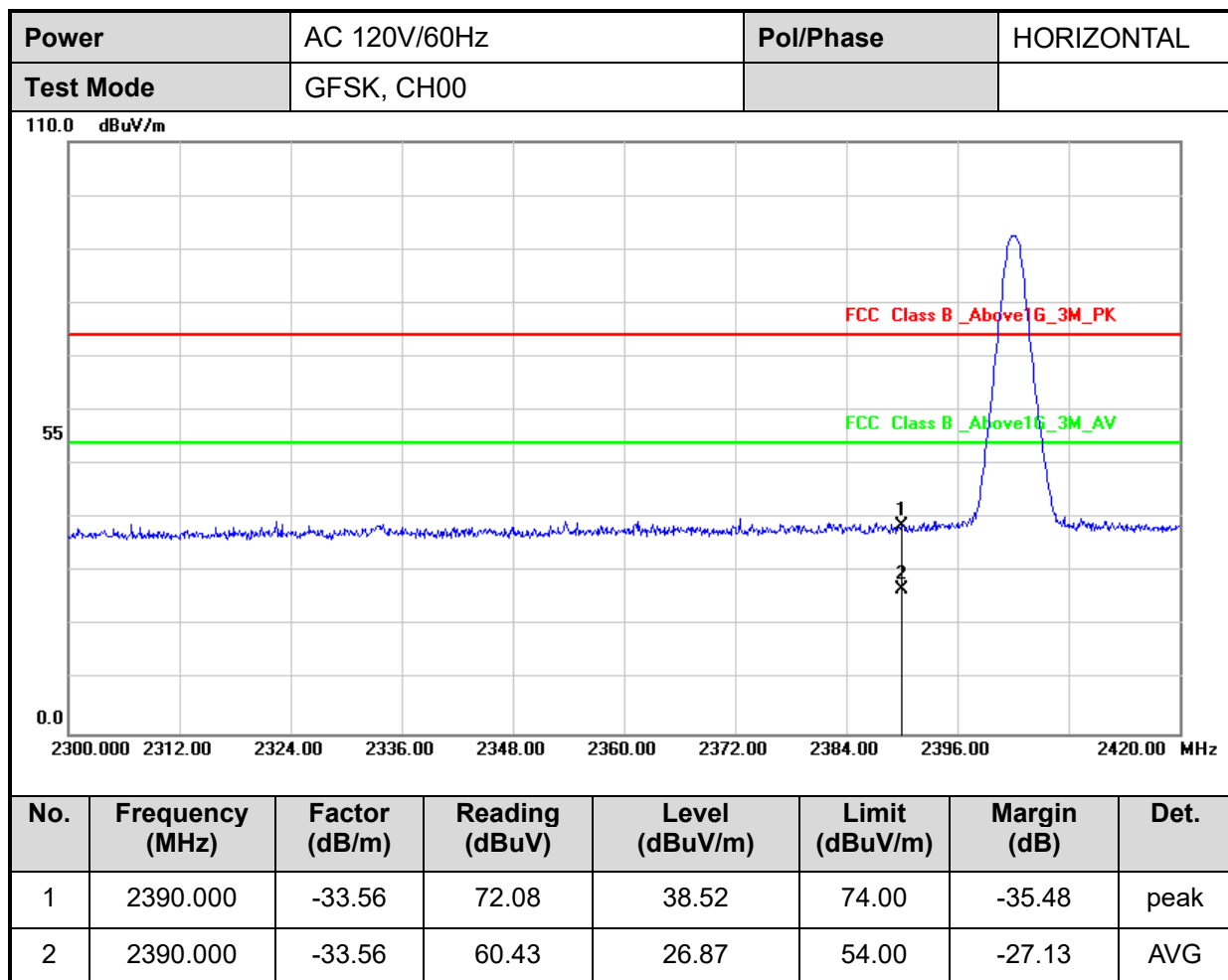
| MHz                 | MHz                   | MHz             | GHz             |
|---------------------|-----------------------|-----------------|-----------------|
| 0.09000 – 0.11000   | 16.42000 – 16.42300   | 399.9 – 410.0   | 4.500 – 5.250   |
| 0.49500 – 0.505**   | 16.69475 – 16.69525   | 608.0 – 614.0   | 5.350 – 5.460   |
| 2.17350 – 2.19050   | 16.80425 – 16.80475   | 960.0 – 1240.0  | 7.250 – 7.750   |
| 4.12500 – 4.12800   | 25.50000 – 25.67000   | 1300.0 – 1427.0 | 8.025 – 8.500   |
| 4.17725 – 4.17775   | 37.50000 – 38.25000   | 1435.0 – 1626.5 | 9.000 – 9.200   |
| 4.20725 – 4.20775   | 73.00000 – 74.60000   | 1645.5 – 1646.5 | 9.300 – 9.500   |
| 6.21500 – 6.21800   | 74.80000 – 75.20000   | 1660.0 – 1710.0 | 10.600 – 12.700 |
| 6.26775 – 6.26825   | 108.00000 – 121.94000 | 1718.8 – 1722.2 | 13.250 – 13.400 |
| 6.31175 – 6.31225   | 123.00000 – 138.00000 | 2200.0 – 2300.0 | 14.470 – 14.500 |
| 8.29100 – 8.29400   | 149.90000 – 150.05000 | 2310.0 – 2390.0 | 15.350 – 16.200 |
| 8.36200 – 8.36600   | 156.52475 – 156.52525 | 2483.5 – 2500.0 | 17.700 – 21.400 |
| 8.37625 – 8.38675   | 156.70000 – 156.90000 | 2655.0 – 2900.0 | 22.010 – 23.120 |
| 8.41425 – 8.41475   | 162.01250 – 167.17000 | 3260.0 – 3267.0 | 23.600 – 24.000 |
| 12.29000 – 12.29300 | 167.72000 – 173.20000 | 3332.0 – 3339.0 | 31.200 – 31.800 |
| 12.51975 – 12.52025 | 240.00000 – 285.00000 | 3345.8 – 3358.0 | 36.430 – 36.500 |
| 12.57675 – 12.57725 | 322.00000 – 335.40000 | 3600.0 – 4400.0 | Above 38.6      |
| 13.36000 – 13.41000 |                       |                 |                 |

\*\* : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz



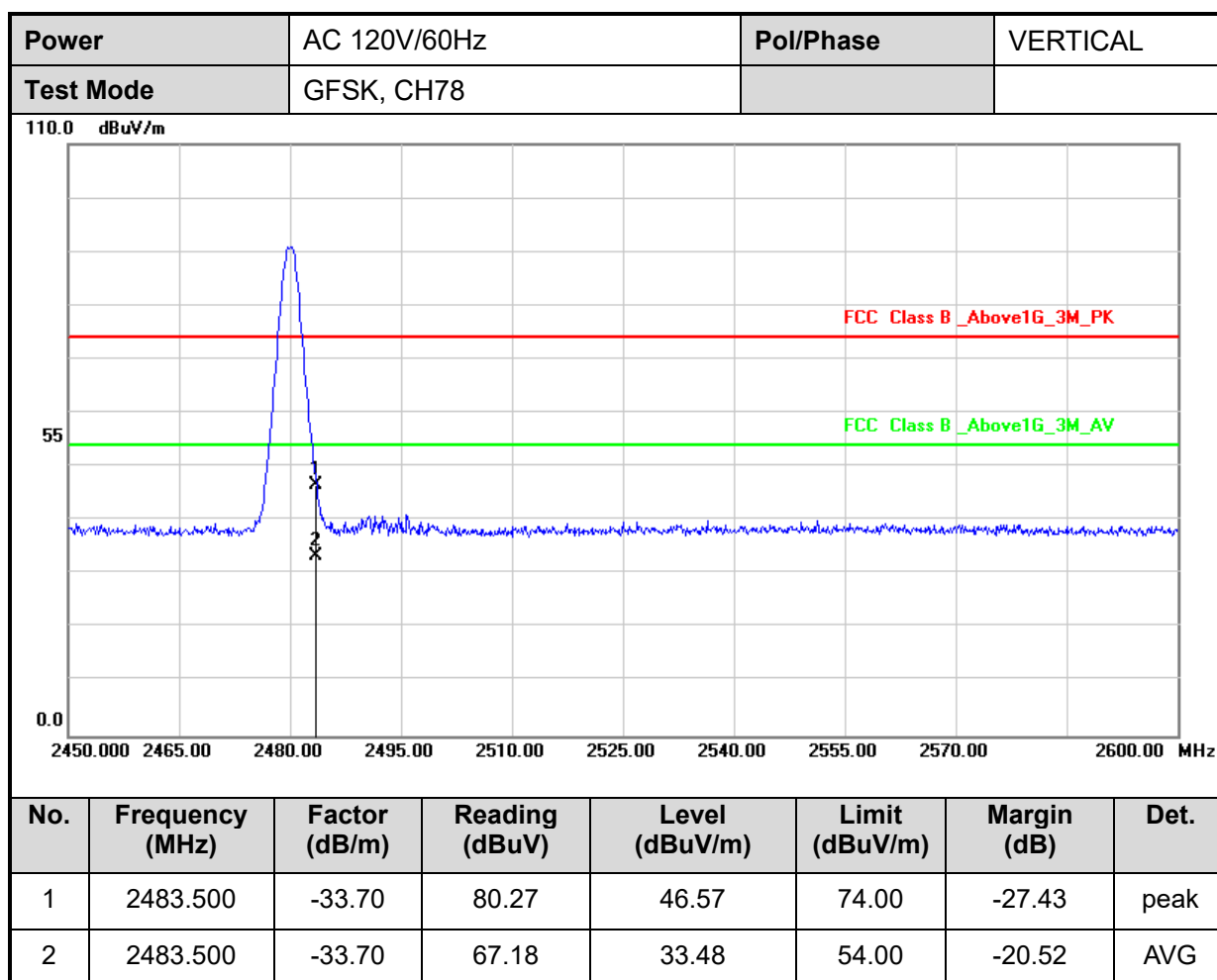
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



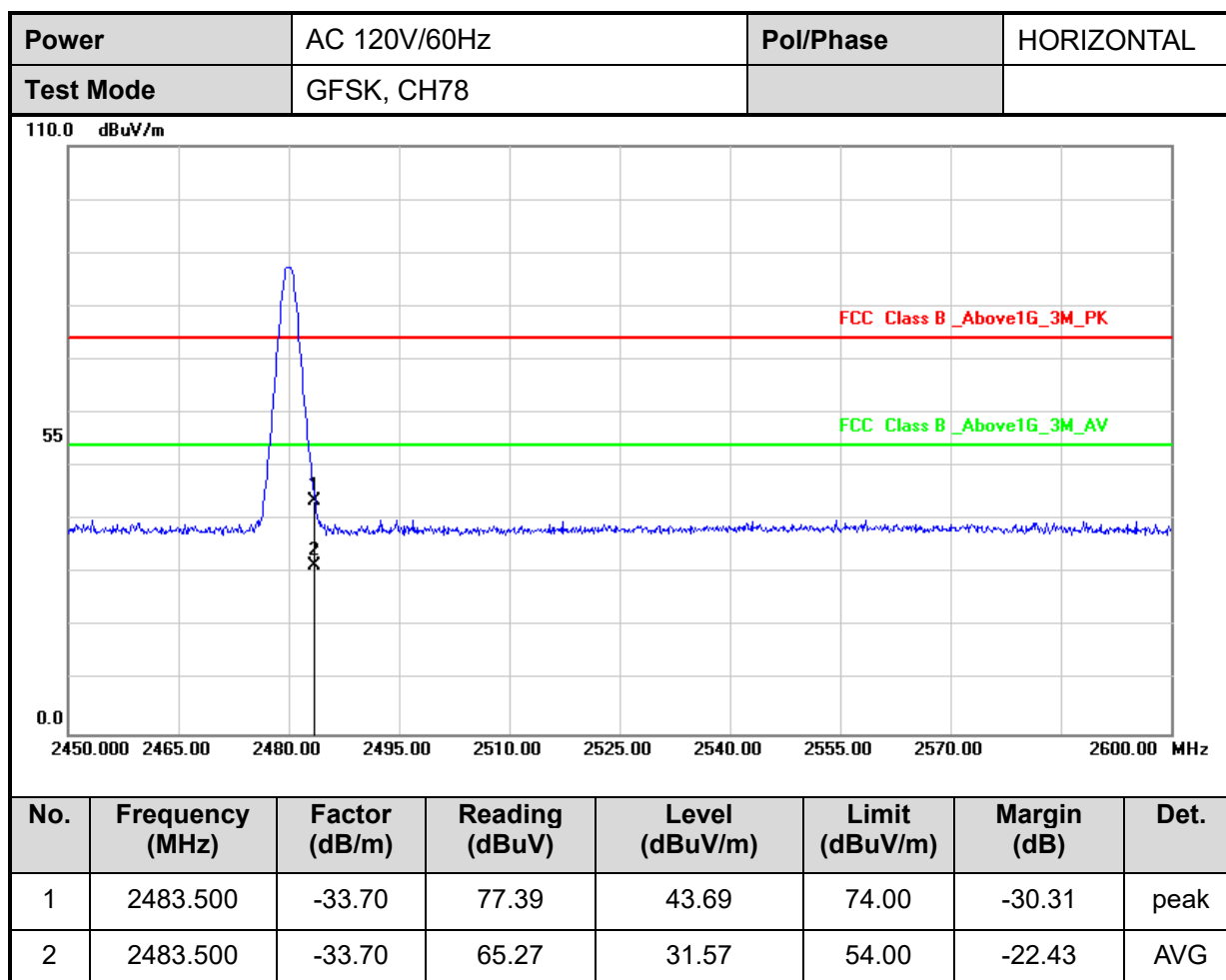
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



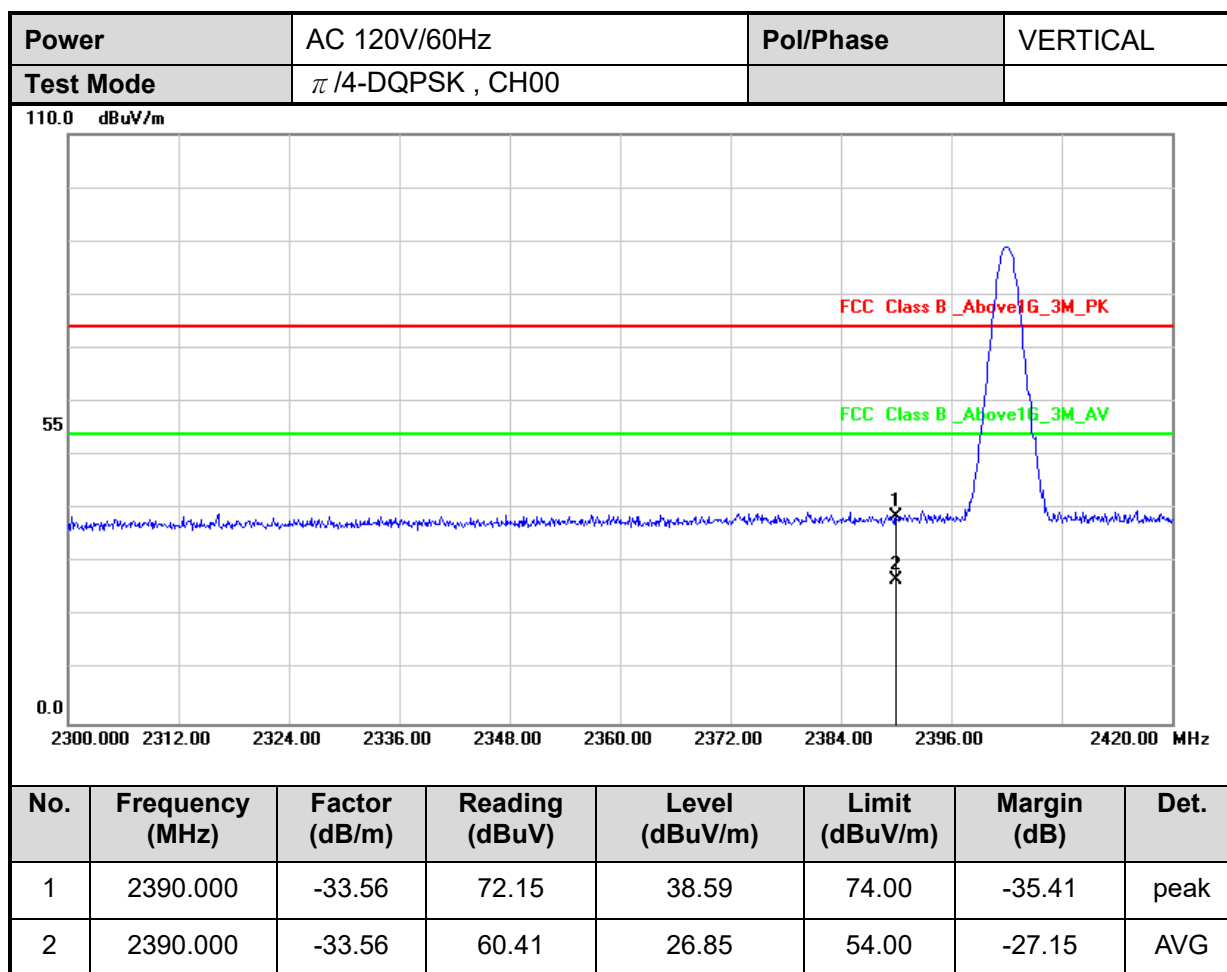
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



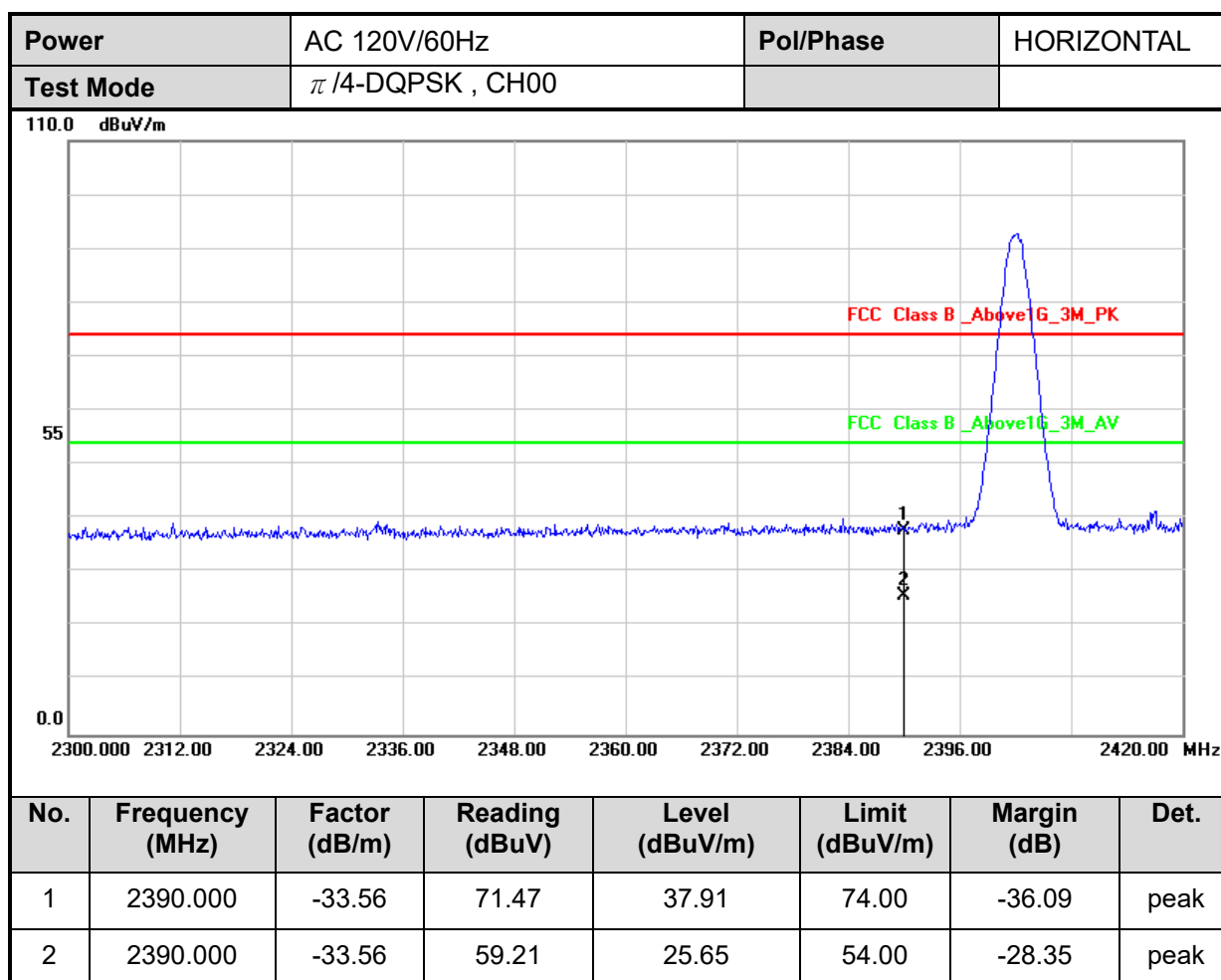
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



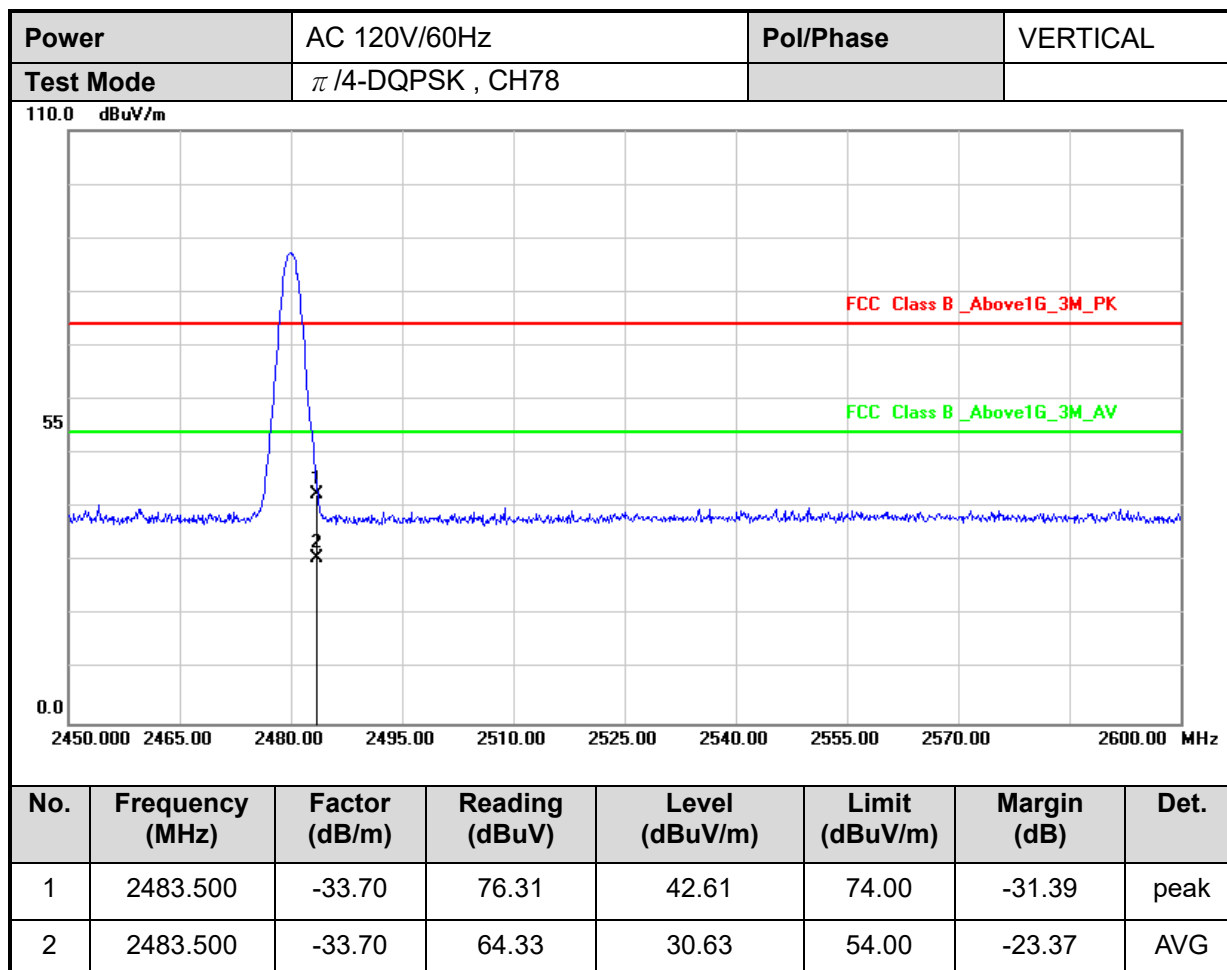
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



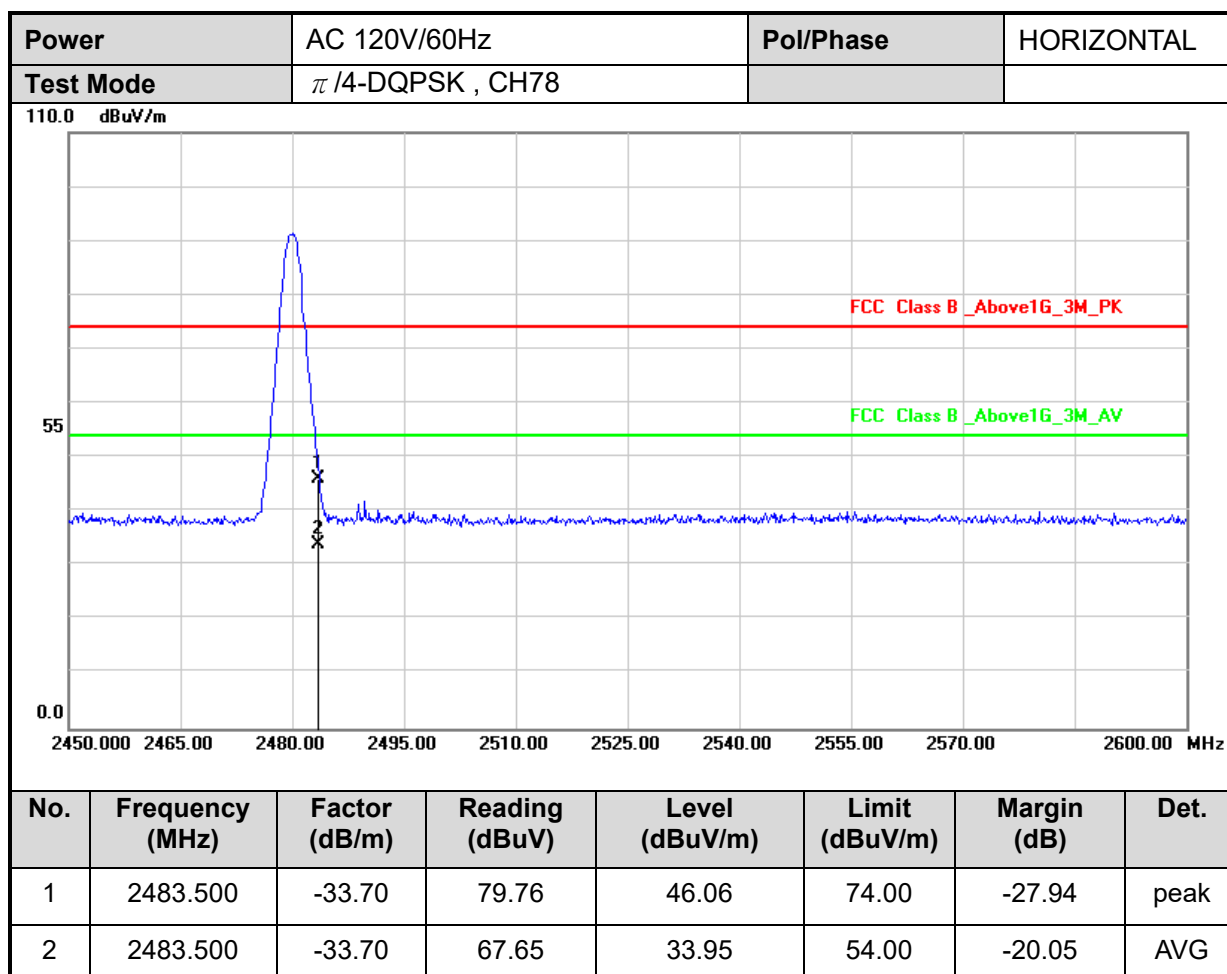
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



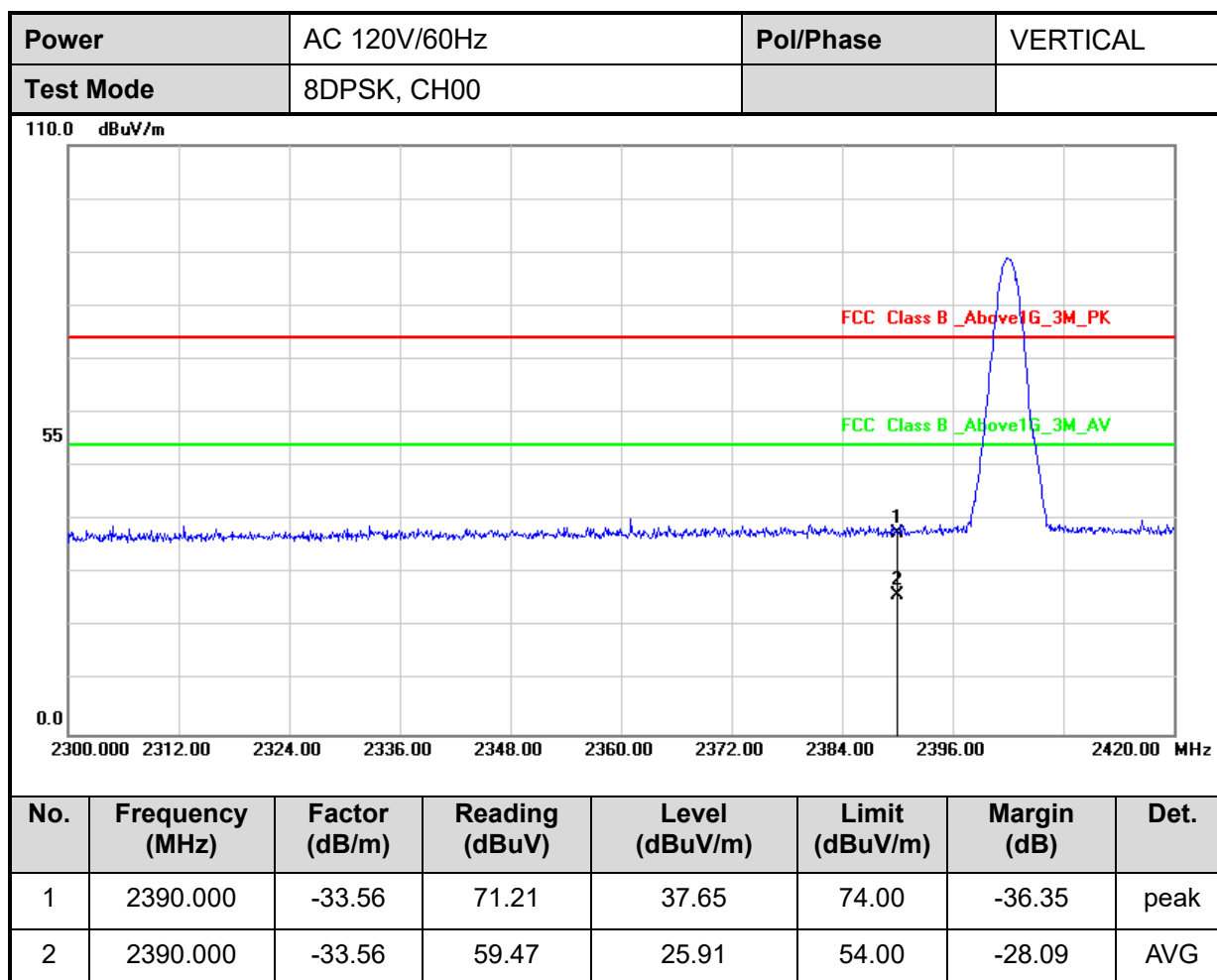
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



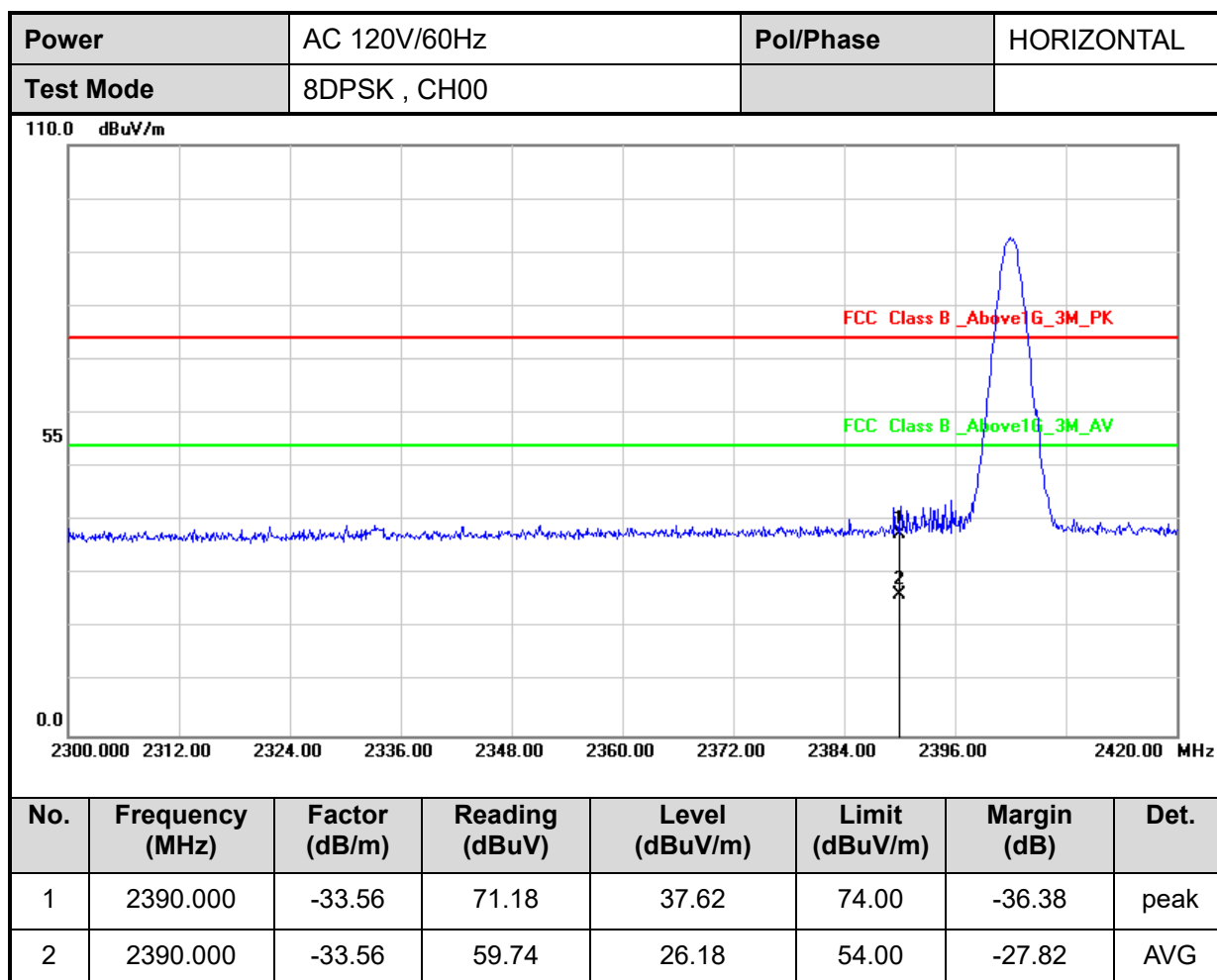
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



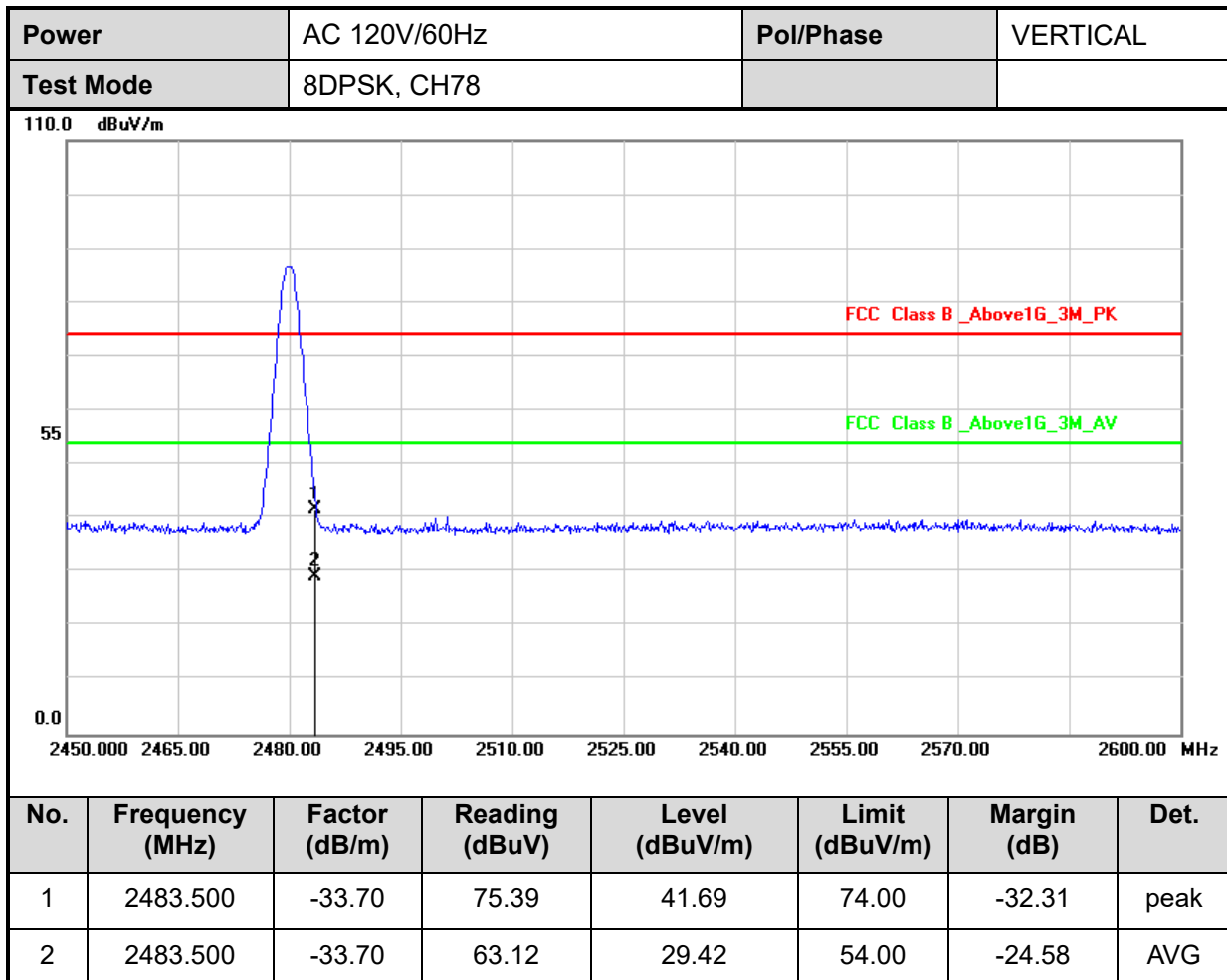
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



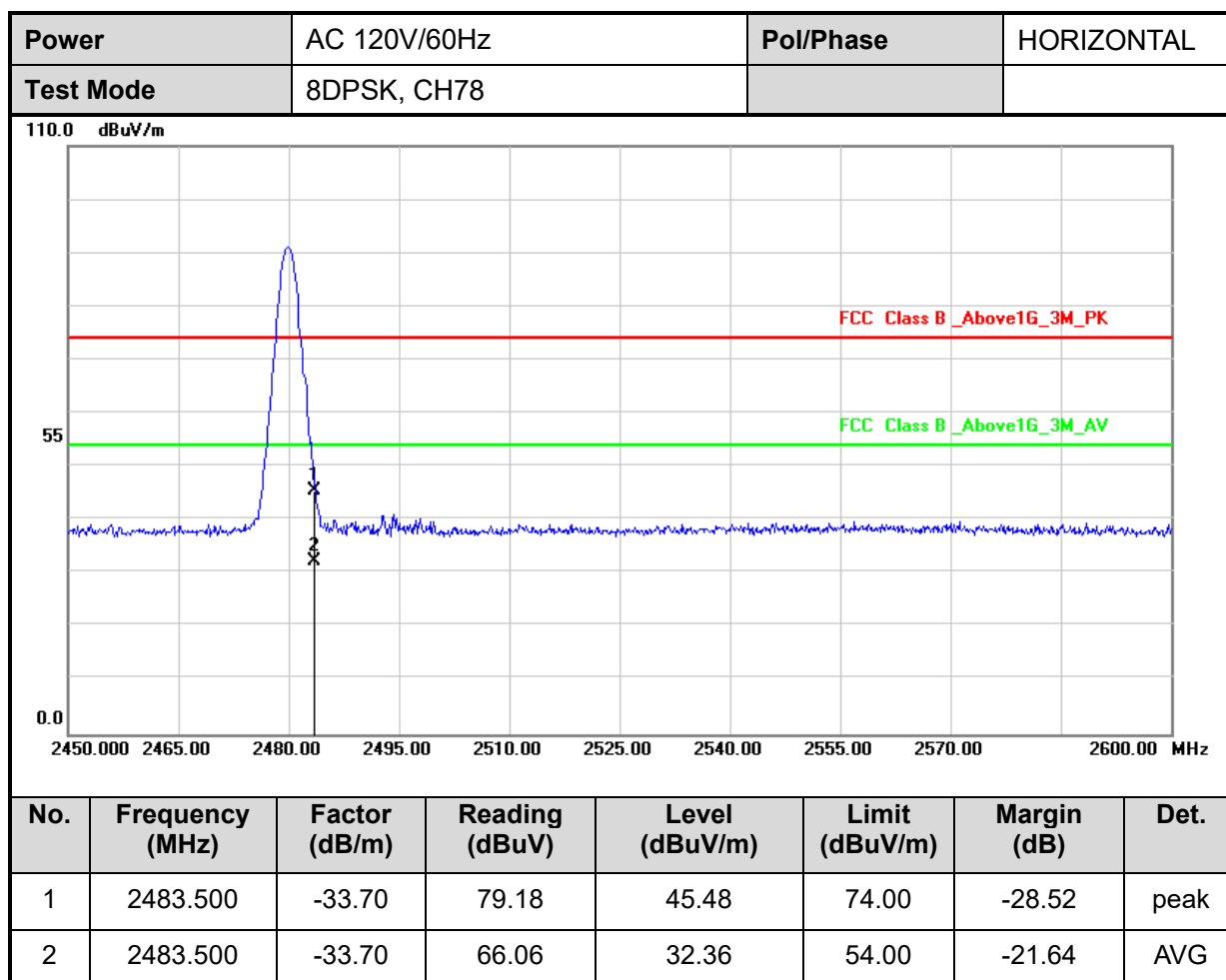
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor



## 7. 20dB Bandwidth Measurement Data

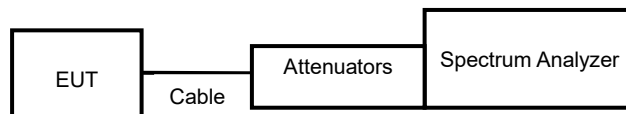
### 7.1 Test Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

### 7.2 Test Procedures

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 30 KHz and VBW to 100 KHz.
- The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

### 7.3 Test Setup Layout

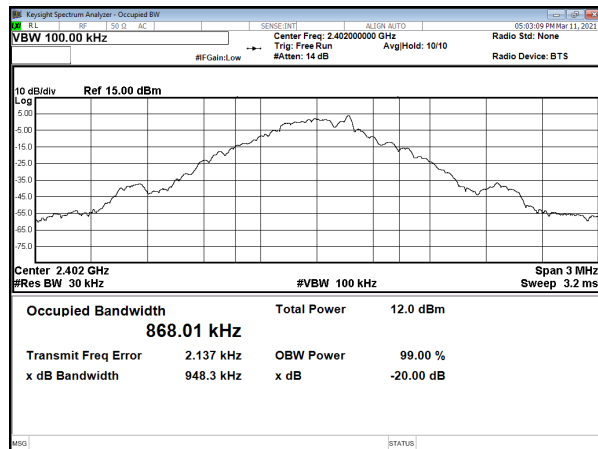


### 7.4 Test Result and Data

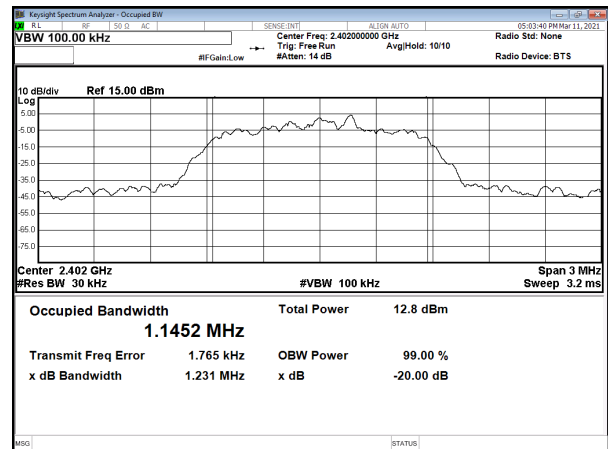
| Modulation Type        | Channel                                 | Frequency (MHz) | 20dB Bandwidth (MHz) | 2/3 20dB Bandwidth(KHz) |
|------------------------|-----------------------------------------|-----------------|----------------------|-------------------------|
| GFSK (1Mbps)           | 00                                      | 2402            | 0.948                | 632                     |
|                        | 39                                      | 2441            | 0.942                | 628                     |
|                        | 78                                      | 2480            | 0.954                | 636                     |
| $\pi/4$ -DQPSK (2Mbps) | 00                                      | 2402            | 1.231                | 821                     |
|                        | 39                                      | 2441            | 1.232                | 821                     |
|                        | 78                                      | 2480            | 1.232                | 821                     |
| 8DPSK (3Mbps)          | 00                                      | 2402            | 1.28                 | 853                     |
|                        | 39                                      | 2441            | 1.281                | 854                     |
|                        | 78                                      | 2480            | 1.279                | 853                     |
| Note                   | 2/3*20dB Bandwidth=20dB Bandwidth x 2/3 |                 |                      |                         |



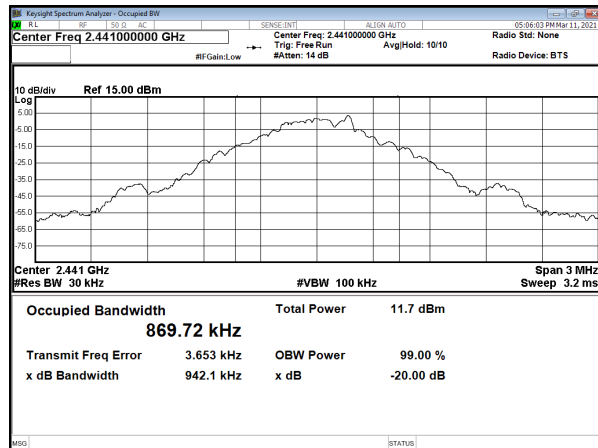
Modulation Type: GFSK (1Mbps)  
Channel: 00



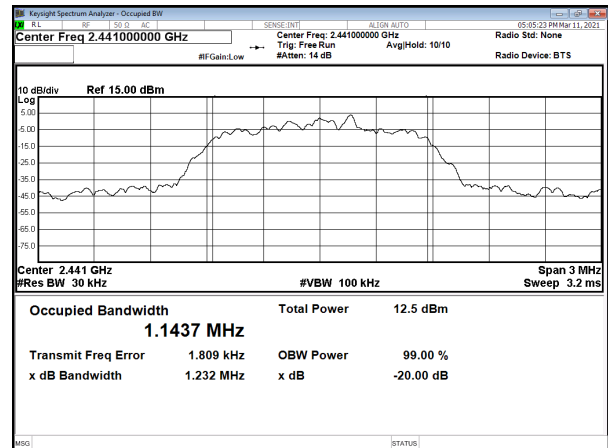
Modulation Type:  $\pi/4$ -DQPSK (2Mbps)  
Channel: 00



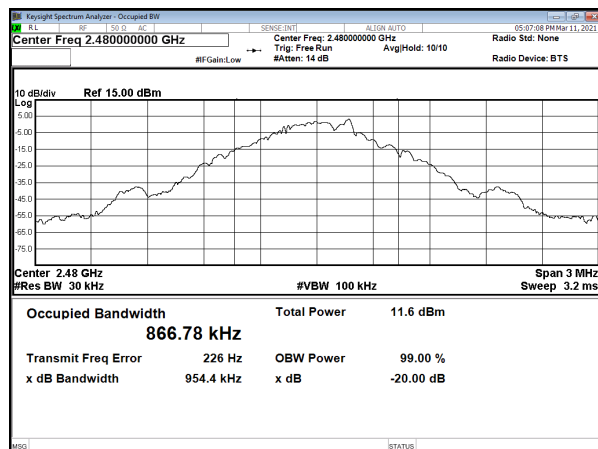
CH39



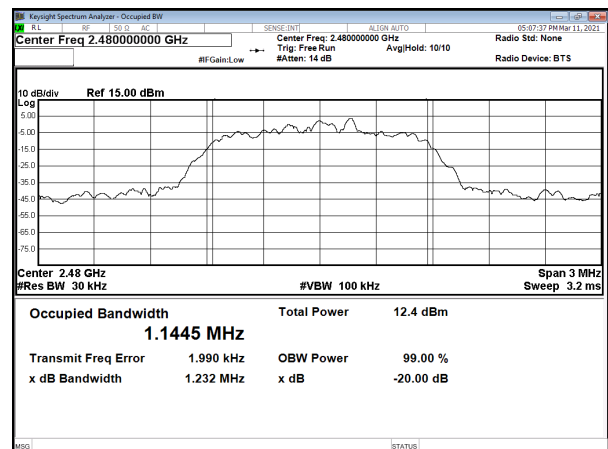
CH39



CH78

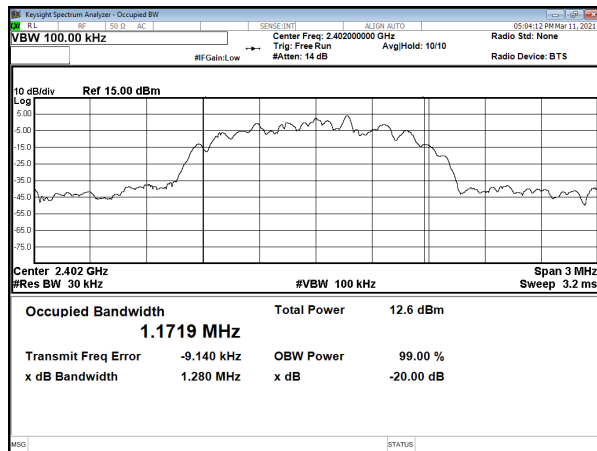


CH78

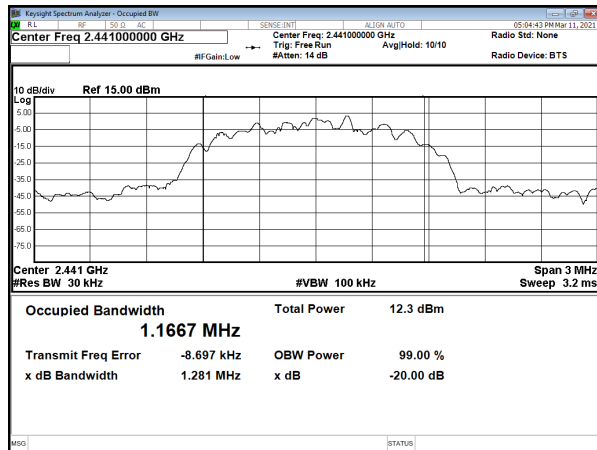




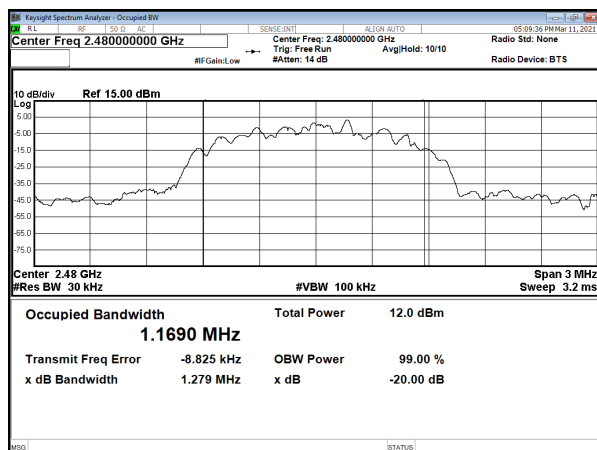
Modulation Type: 8DPSK (3Mbps)  
Channel: 00



CH39



CH78





## 8. Frequencies Separation

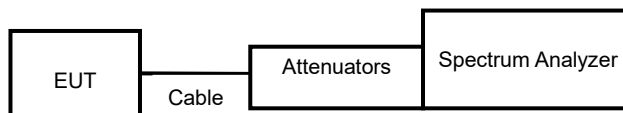
### 8.1 Test Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

### 8.2 Test Procedures

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 30 KHz and VBW to 100 KHz.
- By using the MaxHold function record the separation of two adjacent channels.
- Measure the frequency difference of these two adjacent channels.

### 8.3 Test Setup Layout

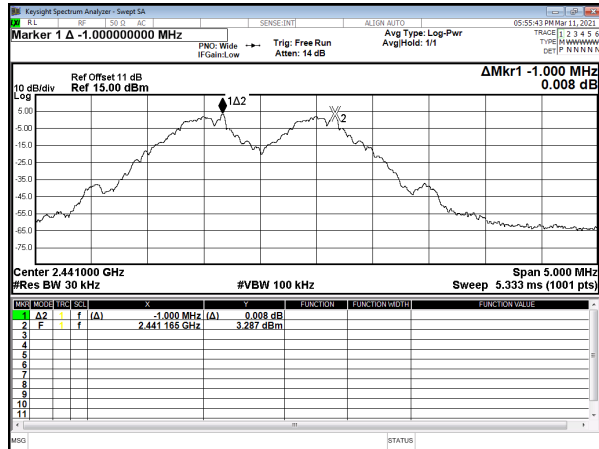


### 8.4 Test Result and Data

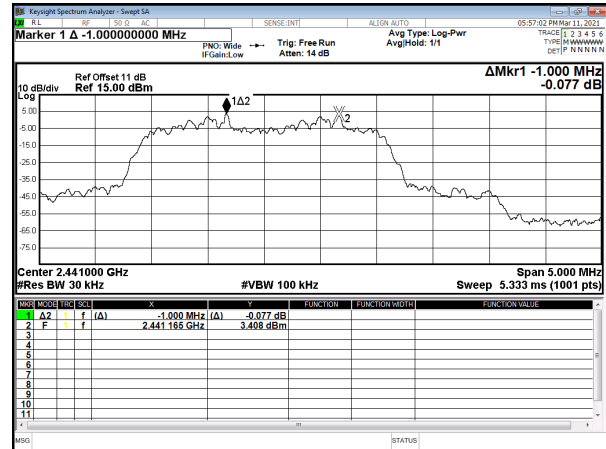
| Modulation Type | Channel Separation (MHz) | Limit (MHz) |
|-----------------|--------------------------|-------------|
| GFSK            | 1.000                    | 0.805       |
| $\pi/4$ -DQPSK  | 1.000                    | 0.914       |
| 8DPSK           | 1.000                    | 0.903       |



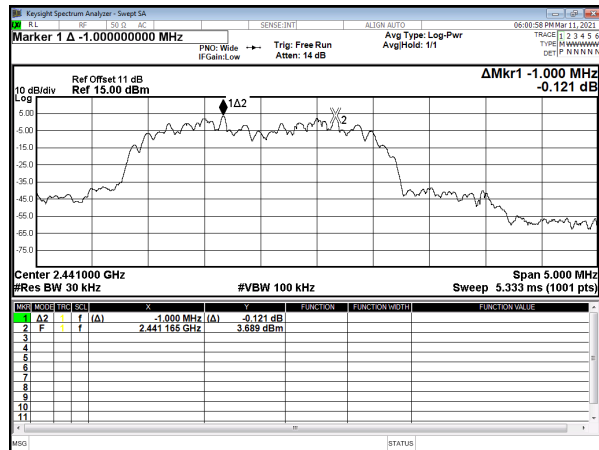
### Modulation Type: GFSK (1Mbps)



### Modulation Type: $\pi/4$ -DQPSK (2Mbps)



### Modulation Type: 8DPSK (3Mbps)





## 9. Dwell Time on each channel

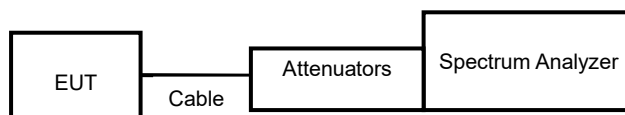
### 9.1 Test Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

### 9.2 Test Procedures

1. The transmitter output was connected to the spectrum analyzer.
2. Adjust the center frequency to measure frequency, then set zero span mode.
2. Set RBW of spectrum analyzer to 1 MHz and VBW to 1 MHz.
4. Measure the time duration of one transmission on the measured frequency.

### 9.3 Test Setup Layout

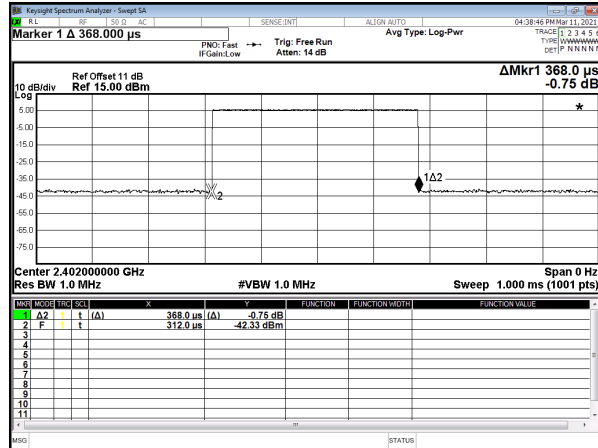
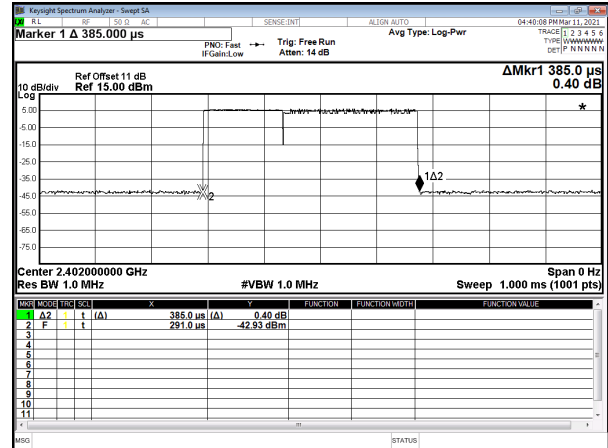




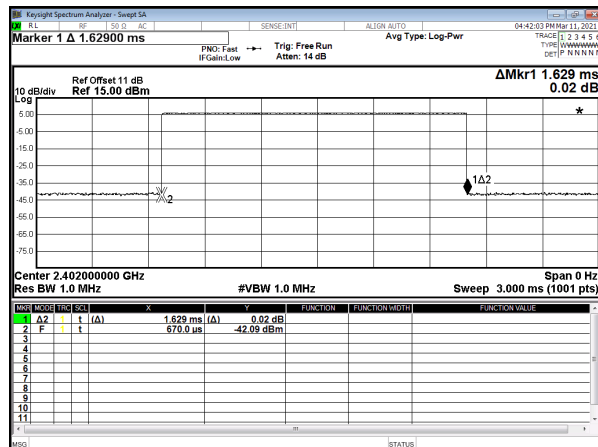
#### 9.4 Test Result and Data

Test Period = 0.4 (second/ channel) x 79 Channel = 31.6 sec

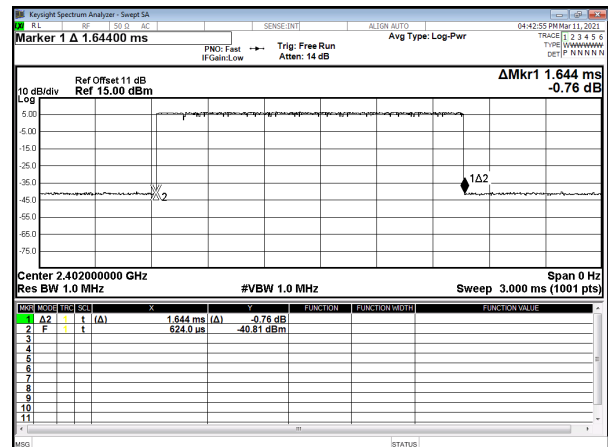
| Modulation Type      | Frequency (MHz) | Length of transmission time (ms) | Number of transmission in a 31.6 (79 Hopping*0.4) | Dwell Time (ms) | Limit (ms) |
|----------------------|-----------------|----------------------------------|---------------------------------------------------|-----------------|------------|
| GFSK (DH1)           | 2402            | 0.368                            | 320.00                                            | 117.760         | 400        |
| GFSK (DH3)           | 2402            | 1.629                            | 160.00                                            | 260.640         | 400        |
| GFSK (DH5)           | 2402            | 2.885                            | 106.67                                            | 307.733         | 400        |
| $\pi/4$ -DQPSK (DH1) | 2402            | 0.385                            | 320.00                                            | 123.200         | 400        |
| $\pi/4$ -DQPSK (DH3) | 2402            | 1.644                            | 160.00                                            | 263.040         | 400        |
| $\pi/4$ -DQPSK (DH5) | 2402            | 2.900                            | 106.67                                            | 309.333         | 400        |
| 8DPSK (DH1)          | 2402            | 0.389                            | 320.00                                            | 124.480         | 400        |
| 8DPSK (DH3)          | 2402            | 1.644                            | 160.00                                            | 263.040         | 400        |
| 8DPSK (DH5)          | 2402            | 2.895                            | 106.67                                            | 308.800         | 400        |

Modulation Type: GFSK (1Mbps)  
DH1Modulation Type:  $\pi/4$ -DQPSK (2Mbps)  
DH1

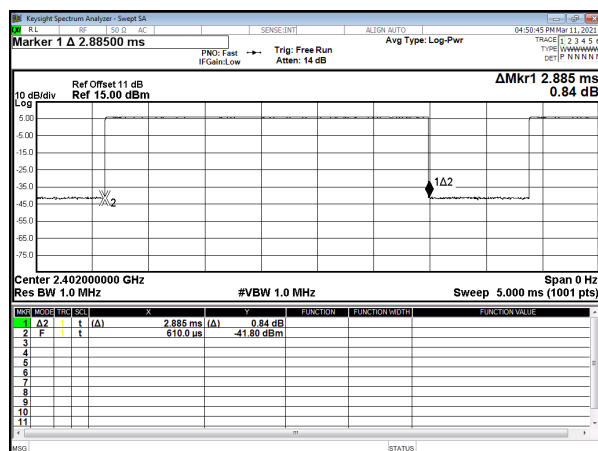
## DH3



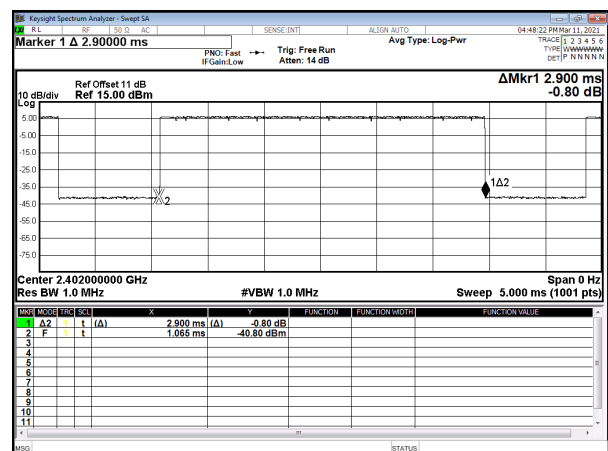
## DH3



## DH5

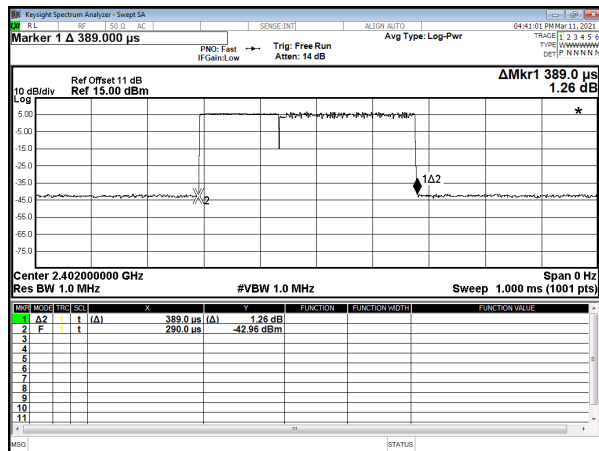


## DH5

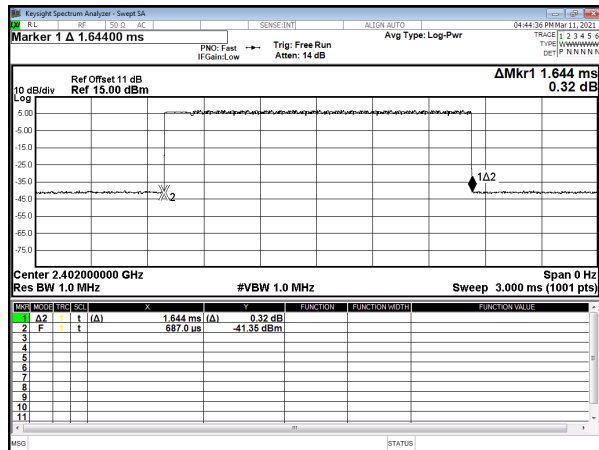




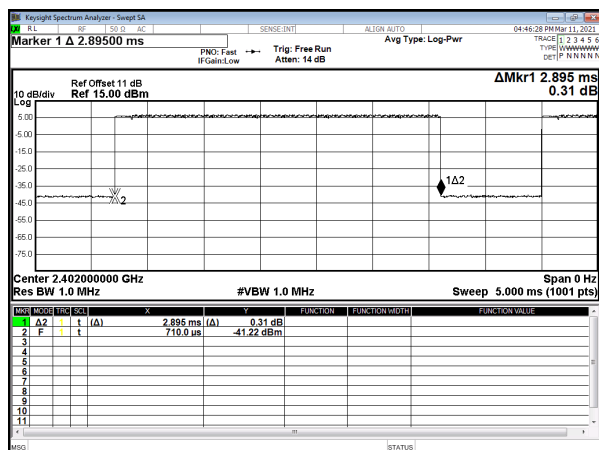
Modulation Type: 8DPSK (3Mbps)  
DH1



DH3



DH5

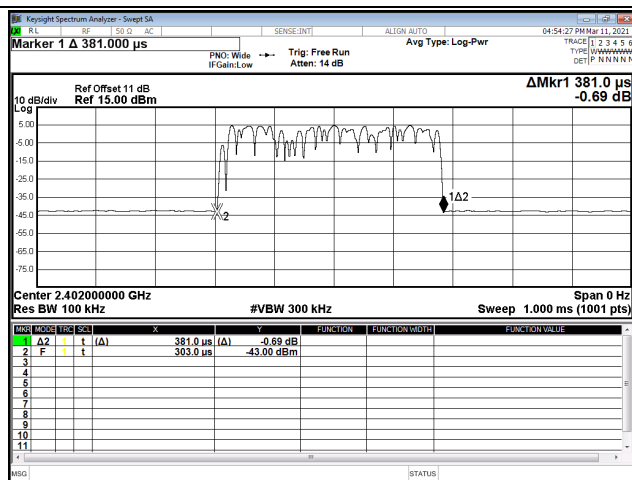




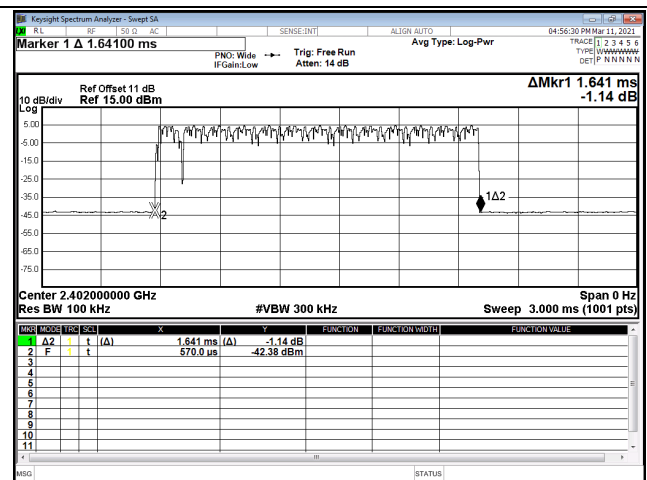
Test Period = 0.4 (second/ channel) x 20 Channel = 8 sec

| Modulation Type | Frequency (MHz) | Length of transmission time (ms) | Number of transmission in a 8 (20 Hopping*0.4) | Dwell Time (ms) | Limit (ms) |
|-----------------|-----------------|----------------------------------|------------------------------------------------|-----------------|------------|
| AFH (DH1)       | 2402-2421       | 0.381                            | 160                                            | 60.96           | 400        |
| AFH (DH3)       | 2402-2421       | 1.641                            | 80                                             | 131.28          | 400        |
| AFH (DH5)       | 2402-2421       | 2.895                            | 53.33                                          | 154.39035       | 400        |

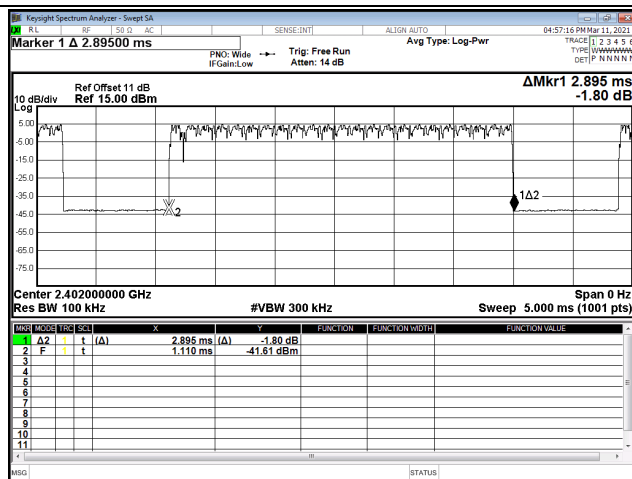
Modulation Type: AFH (DH1)



Modulation Type: AFH (DH3)



Modulation Type: AFH (DH5)





## 10. Number of Hopping Channels

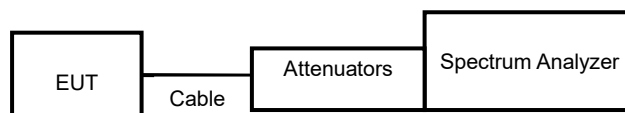
### 10.1 Test Limit

Frequency hopping systems in the 2400 ~ 2483.5 MHz band shall use at least 15 channels.

### 10.2 Test Procedures

- a. The transmitter output was connected to the spectrum analyzer.
- b. 2. Set RBW of spectrum analyzer to 300 KHz and VBW to 300 KHz.
- c. 3. Set the MaxHold function, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been record.

### 10.3 Test Setup Layout

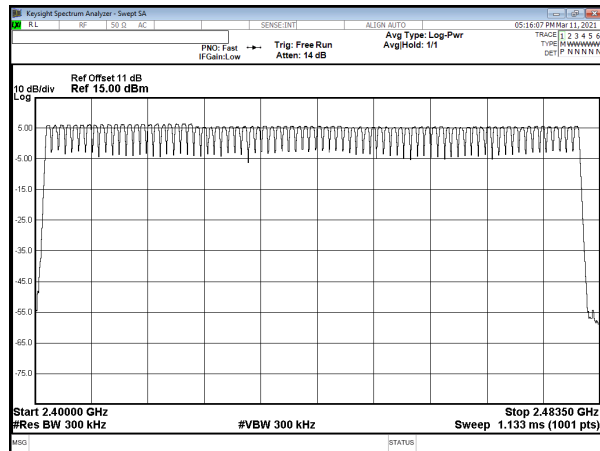


### 10.4 Test Result and Data

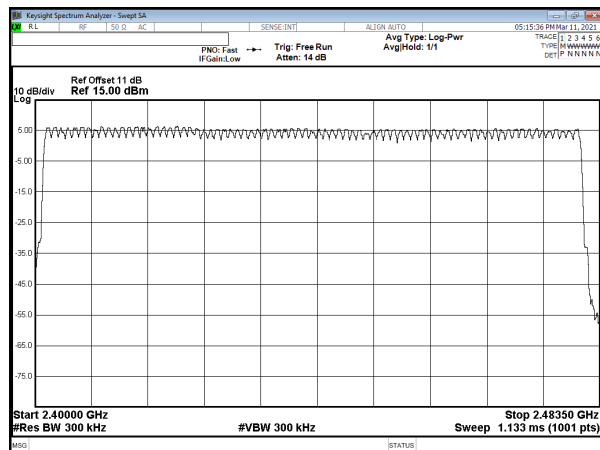
| Modulation Type | Number of hopping channels |
|-----------------|----------------------------|
| GFSK            | 79                         |
| $\pi/4$ -DQPSK  | 79                         |
| 8DPSK           | 79                         |



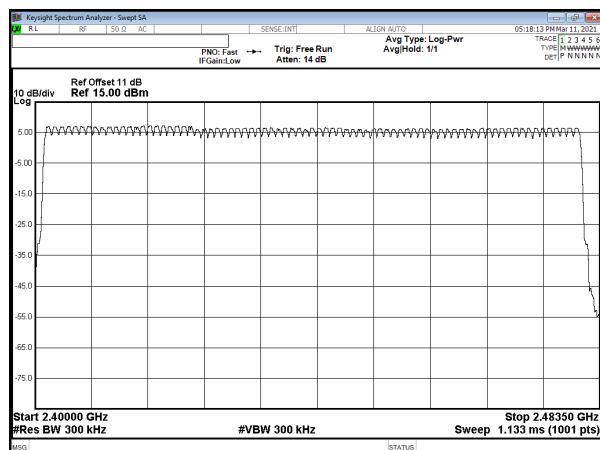
### Modulation Standard: GFSK (1Mbps)



### Modulation Standard: $\pi/4$ -DQPSK (2Mbps)



### Modulation Standard: 8DPSK (3Mbps)





## 11. Maximum Peak Output Power

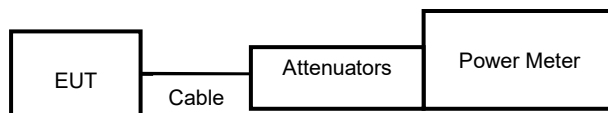
### 11.1 Test Limit

The Maximum Peak Output Power Measurement is 21dBm.

### 11.2 Test Procedures

The antenna port( RF output )of the EUT was connected to the input( RF input )of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

### 11.3 Test Setup Layout



### 11.4 Test Result and Data

| Modulation Type          | Channel | Frequency (MHz) | Peak Power Output (dBm) | Peak Power Output (mW) |
|--------------------------|---------|-----------------|-------------------------|------------------------|
| GFSK<br>(1Mbps)          | 00      | 2402            | 6.182                   | 4.151                  |
|                          | 39      | 2441            | 5.359                   | 3.435                  |
|                          | 78      | 2480            | 5.313                   | 3.399                  |
| $\pi/4$ DQPSK<br>(2Mbps) | 00      | 2402            | 7.281                   | 5.347                  |
|                          | 39      | 2441            | 6.669                   | 4.644                  |
|                          | 78      | 2480            | 6.478                   | 4.444                  |
| 8DPSK<br>(3Mbps)         | 00      | 2402            | 7.644                   | 5.813                  |
|                          | 39      | 2441            | 7.226                   | 5.280                  |
|                          | 78      | 2480            | 6.801                   | 4.787                  |



## 12. Band Edges Measurement

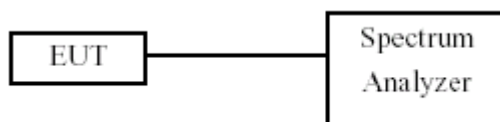
### 12.1 Test Limit

Below  $-20\text{dB}$  of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

### 12.2 Test Procedure

- The transmitter output was connected to the spectrum analyzer via a low lose cable.
- Set both RBW and VBW of spectrum analyzer to 100 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- The band edges was measured and recorded.

### 12.3 Test Setup Layout



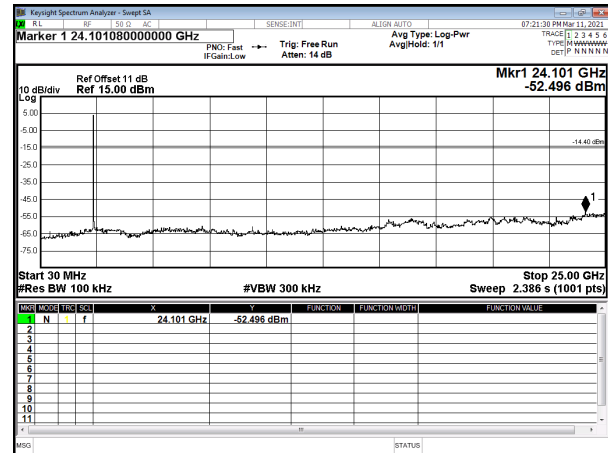
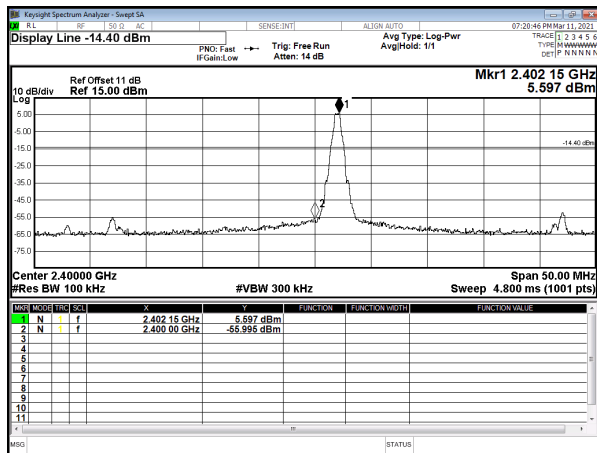


## 12.4 Test Result and Data

### Single test

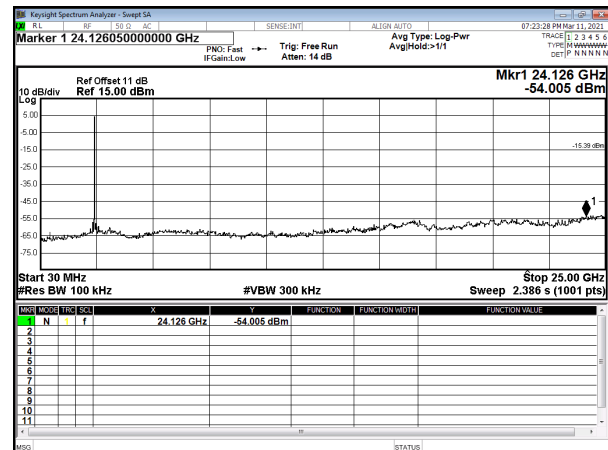
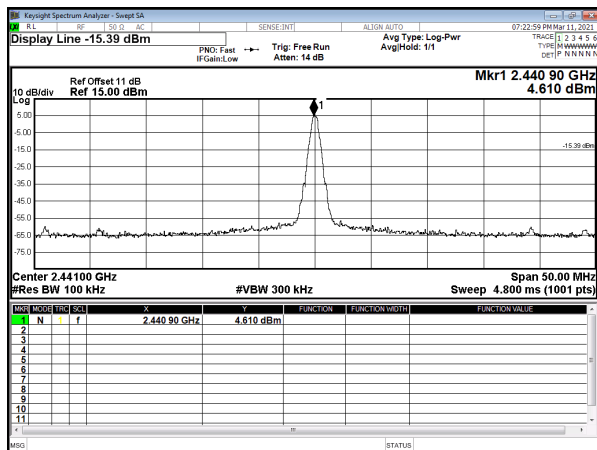
Modulation Standard: GFSK (1Mbps)

Channel: 00



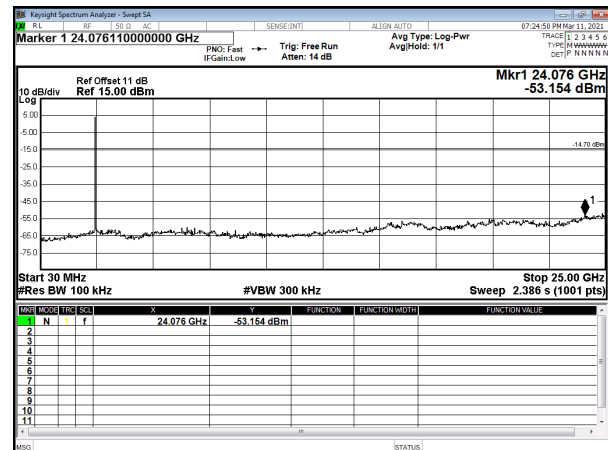
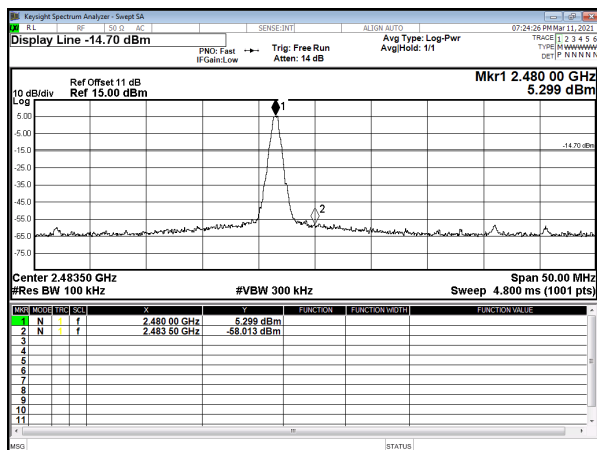
Modulation Standard: GFSK (1Mbps)

Channel: 39



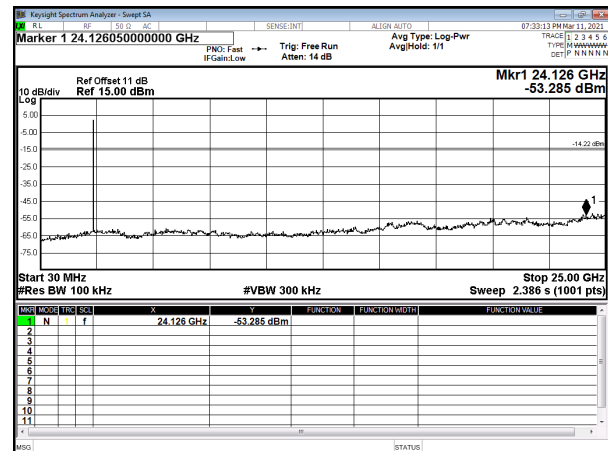
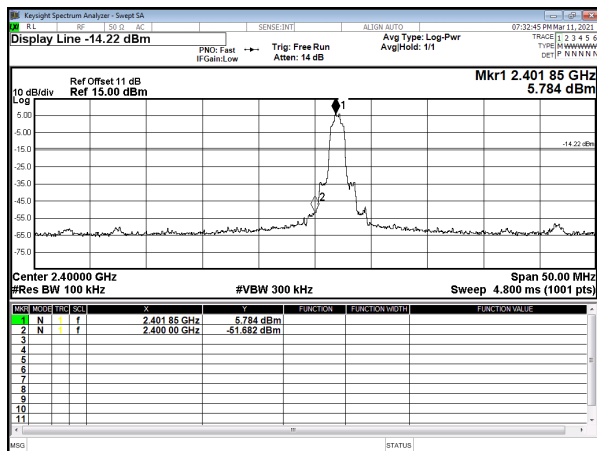
Modulation Standard: GFSK (1Mbps)

Channel: 78

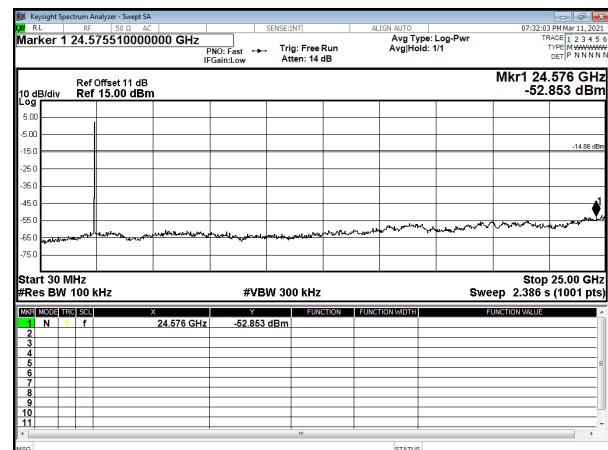
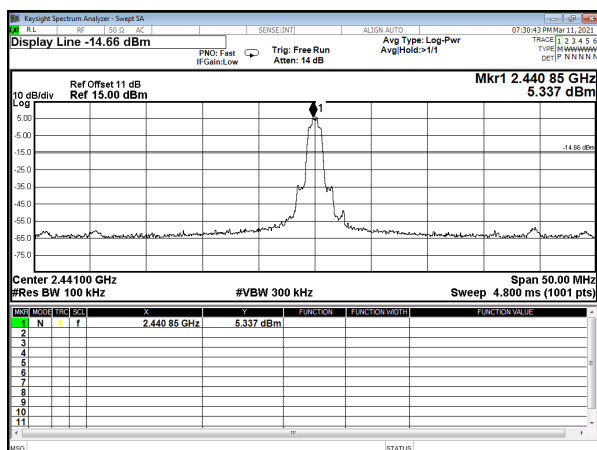




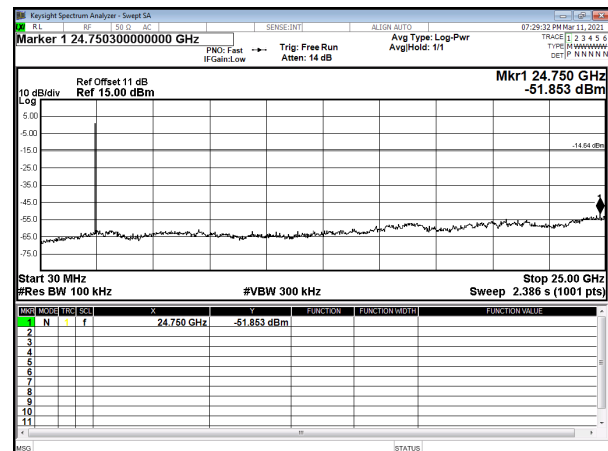
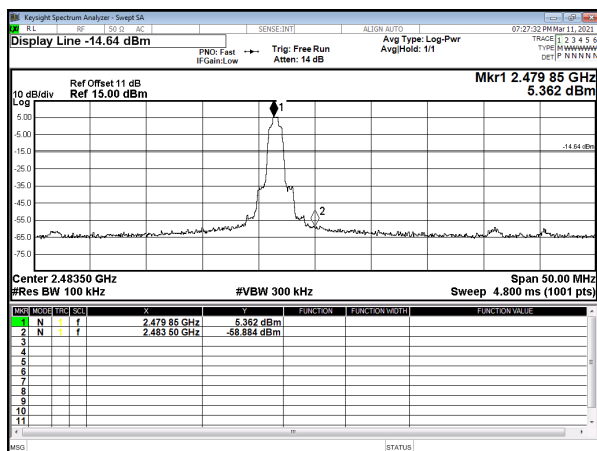
Modulation Standard:  $\pi/4$  DQPSK (2Mbps)  
Channel: 00



Modulation Standard:  $\pi/4$  DQPSK (2Mbps)  
Channel: 39

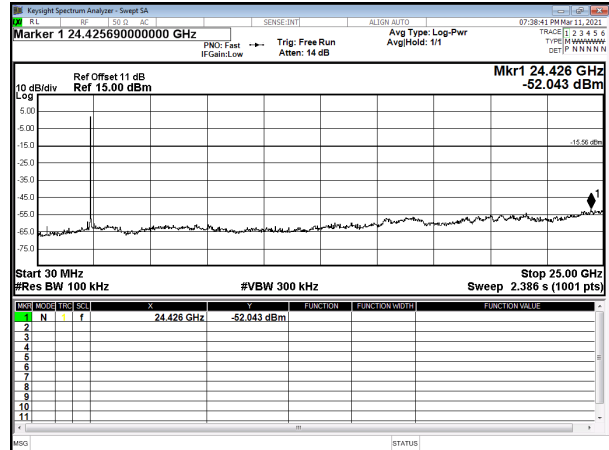
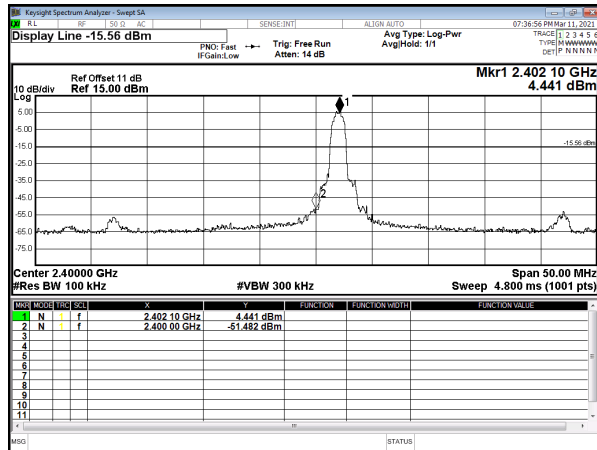


Modulation Standard:  $\pi/4$  DQPSK (2Mbps)  
Channel: 78

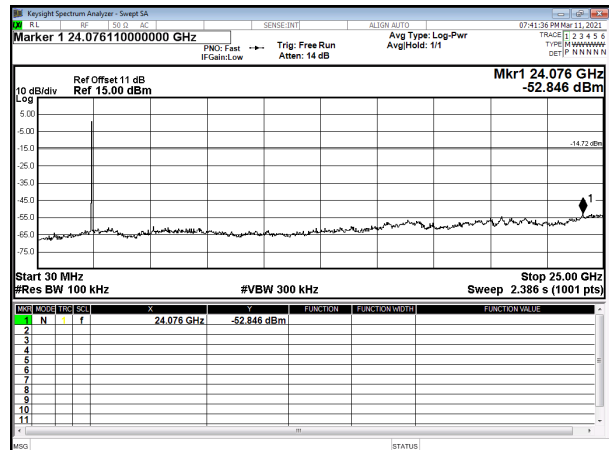
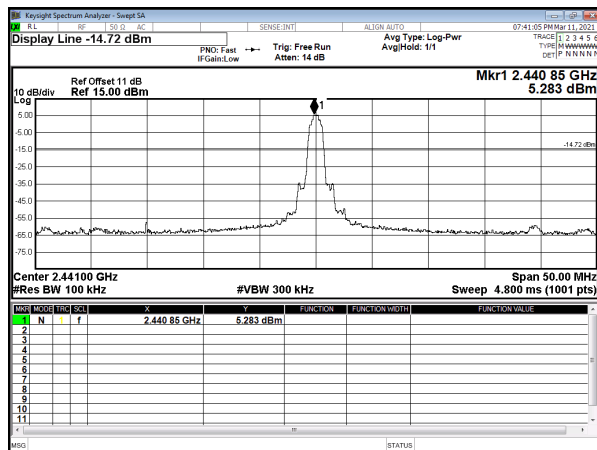




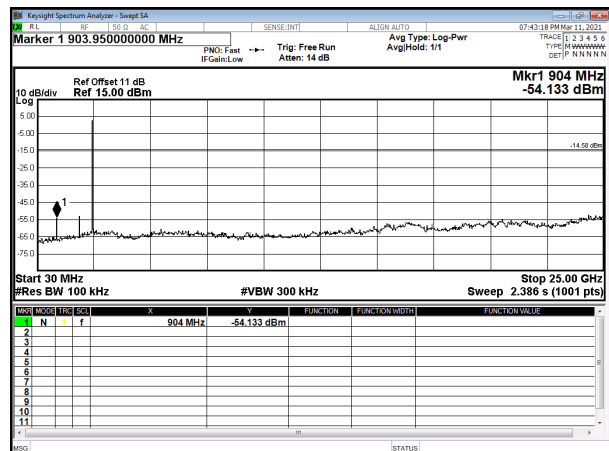
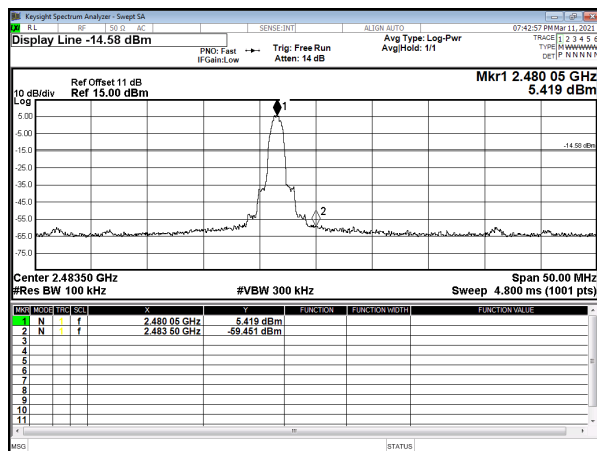
Modulation Standard: 8DPSK (3Mbps)  
Channel: 00



Modulation Standard: 8DPSK (3Mbps)  
Channel: 39

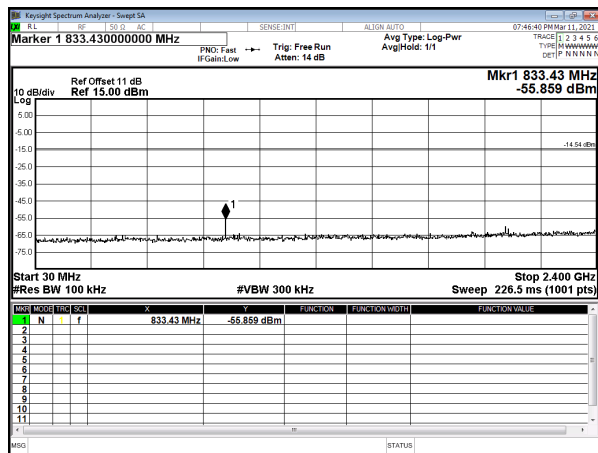


Modulation Standard: 8DPSK (3Mbps)  
Channel: 78



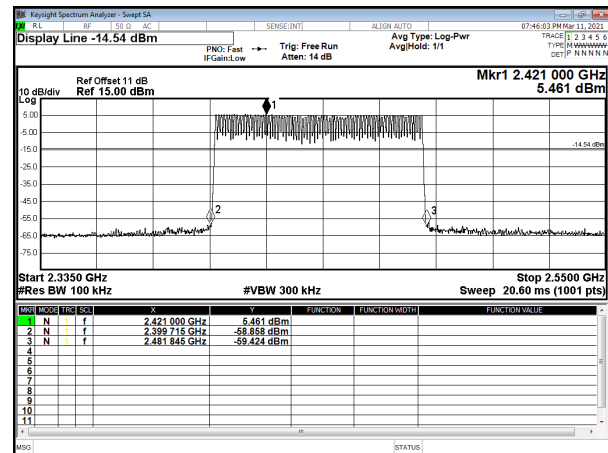
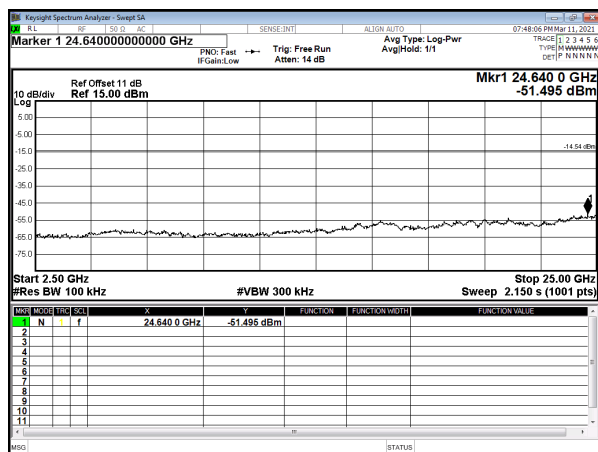
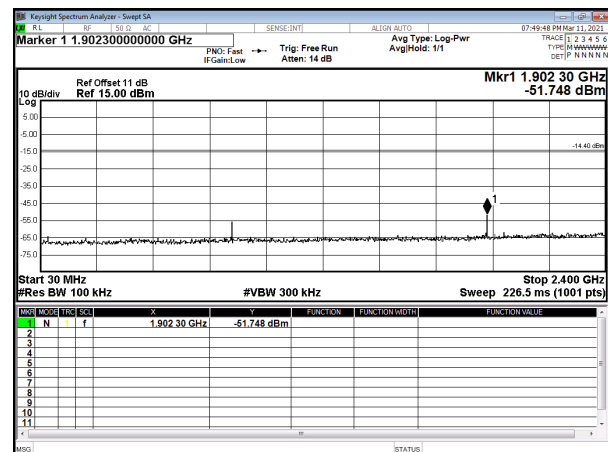
**Hopping test**

Modulation Standard: GFSK (1Mbps)



Modulation Standard: GFSK (1Mbps)

Modulation Standard: GFSK (1Mbps)

Modulation Standard:  $\pi/4$  DQPSK (2Mbps)Modulation Standard:  $\pi/4$  DQPSK (2Mbps)  
Channel: 39Modulation Standard:  $\pi/4$  DQPSK (2Mbps)  
Channel: 78