

**NCC RADIO TEST REPORT**

|                                    |                        |
|------------------------------------|------------------------|
| <b>Product name</b>                | Projector              |
| <b>Applicant</b>                   | 遠寬電信股份有限公司             |
| <b>Manufacture</b>                 | 成都極米科技股份有限公司           |
| <b>Rating(s)</b>                   | 100-240V~ 50/60Hz 3.5A |
| <b>Trademark</b>                   | XGIMI                  |
| <b>Model and/or type reference</b> | XM03A                  |
| <b>Standard</b>                    | LP0002:2020            |
| <b>Test Result</b>                 | <b>Pass</b>            |

Date of receipt : 05-28-2021

Signature :

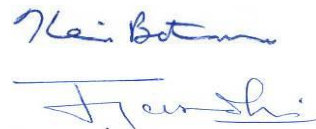


Date of Issue : 07-23-2021

**NCC RADIO TEST REPORT****Report Reference No.**..... M210723N5-02

Compiled by (+ signature) ..... Kevin Bothmann

Approved by (+ signature) ..... Jay Gandhi



Date of issue..... 2021-07-23

**Applicant's name** ..... 遠寬電信股份有限公司

Address ..... 新北市新店區安興路 127 號 10 樓

**Manufacture's Name** ..... 成都極米科技股份有限公司

Address ..... 中國(四川)自由貿易試驗區成都高新區世紀城路 1129 號 A 區 4 棟

**Test specification:**

Standard ..... LP0002: 2020

Test procedure ..... EIA 603、ANSI、FCC/47 CFR/2.1046、2.1047、2.1049、2.1051、2.1053  
and 2.1055

Non-standard test method... N/A

**Test item description**

Product name ..... : Projector

Trademark ..... : XGIMI

Model and/or type reference ..... : XM03A

Rating(s) ..... : 100-240V~ 50/60Hz 3.5A

**Testing Laboratory information**

Testing Laboratory Name ..... : Electro Magnetic Test, Inc.

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**Testing**.....

Date of receipt of test item..... Mar. 28, 2021

Date (s) of performance of tests..... Mar. 28, 2021~ July 05, 2021

Date of Issue ..... July 23, 2021

Test Result ..... **Pass**

## GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Electro Magnetic Test, Inc., which is an independent testing and consulting firm. The test report is based on testing performed Electro Magnetic Test, Inc. personnel according to the measurement procedure described in the test specification given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced in any form unless done so in full.

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Federal Government.

Electro Magnetic Test, Inc. is recognized by the following agencies for performing EMI/EMC testing:

| COUNTRY                                                              | AGENCY                                                                                                                                                                                                                                     | IDENTIFYING #                      |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| USA                                                                  | Federal Communications Commission (FCC)<br>(EMT's test site is recognized by the FCC)                                                                                                                                                      | Registration Number:<br>90576      |
| USA, Canada, Taiwan,<br>Australia/New Zealand,<br>European Community | National Voluntary Lab Accreditation Program (NVLAP)<br>(EMT is accredited by NVLAP. A copy of the NVLAP<br>Scope Of Accreditation is available upon request.)                                                                             | Lab Code: 200147-0                 |
| Canada                                                               | Industry Canada                                                                                                                                                                                                                            | File No.: IC 2804                  |
| Japan                                                                | Voluntary Control Council For Interference (VCCI)                                                                                                                                                                                          | See Below                          |
|                                                                      | Open Field Test Site "A"                                                                                                                                                                                                                   | R-589                              |
|                                                                      | Mains Conducted Emissions Test Site "A"                                                                                                                                                                                                    | C-604                              |
|                                                                      | Telecom Conducted Emissions Test Site "A"                                                                                                                                                                                                  | T-1655                             |
|                                                                      | 3 Meter Semi-Anechoic Chamber Site "E"                                                                                                                                                                                                     | R-3227                             |
|                                                                      | 3 Meter Semi-Anechoic Chamber Site "E" (1GHz – 6GHz)                                                                                                                                                                                       | G-219                              |
|                                                                      | Mains Conducted Emissions Test Site "E"                                                                                                                                                                                                    | C-35793                            |
|                                                                      | Telecom Conducted Emissions Test Site "E"                                                                                                                                                                                                  | T-1715                             |
| Korea                                                                | Ministry of Information and Communication's Radio<br>Research Laboratory (RRL) under the Asia Pacific<br>Economic Cooperation (APEC) Mutual Recognition<br>Arrangement (A copy of the Scope Of Accreditation is<br>available upon request) | US0036                             |
| Taiwan                                                               | Bureau Of Standards, Metrology and Inspection (BSMI)                                                                                                                                                                                       | Reference Number:<br>SL2-IN-E-1024 |
| Australia / New Zealand                                              | Australian Communications Authority (AUSTEL)                                                                                                                                                                                               | *                                  |

**\*THESE AGENCIES DO NOT ISSUE AN IDENTIFYING NUMBER TO TEST LABS.**

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## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

| LP0002 : 2020    |                             |          |        |
|------------------|-----------------------------|----------|--------|
| Standard Section | Test Item                   | Judgment | Remark |
| 3.3              | Conducted Emission          | PASS     | None   |
| 4.10.1.5/3.6     | Radiated Spurious Emission  | PASS     | None   |
| 4.10.1.2         | Peak Output Power           | PASS     | None   |
| 4.10.1.6         | Occupied Bandwidth          | PASS     | None   |
| 4.10.1.6         | Hopping Channel Separation  | PASS     | None   |
| 4.10.1.6         | Number of Hopping Frequency | PASS     | None   |
| 4.10.1.6         | Dwell Time                  | PASS     | None   |
| 4.10.1.5/3.6     | Restricted Bands            | PASS     | None   |
| 4.10.1.3         | Antenna Requirement         | PASS     | None   |

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report.

## 1.1 MEASUREMENT UNCERTAINTY

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

| No. | Item                         | Uncertainty |
|-----|------------------------------|-------------|
| 1   | Conducted Emission Test      | 1.38dB      |
| 2   | Radiated Emission Test       | 3.17dB      |
| 3   | RF power,conducted           | 0.16dB      |
| 4   | Spurious emissions,conducted | 0.21dB      |
| 5   | All emissions,radiated(<1G)  | 4.68dB      |
| 6   | All emissions,radiated(>1G)  | 4.89dB      |

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

|                        |                                   |                                                                                                |
|------------------------|-----------------------------------|------------------------------------------------------------------------------------------------|
| Equipment              | Projector                         |                                                                                                |
| Trade Name             | XGIMI                             |                                                                                                |
| Model Name             | XM03A                             |                                                                                                |
| Serial Model Name      | N/A                               |                                                                                                |
| Model Difference       | N/A                               |                                                                                                |
| Product Description    | The EUT is a Projector            |                                                                                                |
|                        | Operation Frequency:              | 2402~2480 MHz                                                                                  |
|                        | Modulation Type:                  | GFSK(1Mbps)<br>Π/4 DQPSK(2Mbps)<br>8QPSKA(3Mbps)                                               |
|                        | Number Of Channel                 | 79 CH                                                                                          |
|                        | Antenna Designation:              | Please see Note 3.                                                                             |
|                        | Antenna Gain(Peak)                | 3.49dBi                                                                                        |
|                        | Output Power:                     | 1Mbps Mode: 9.065 dBm (Max.)<br>2Mbps Mode: 10.638 dBm (Max.)<br>3Mbps Mode: 10.960 dBm (Max.) |
| Channel List           | Please refer to the Note 2.       |                                                                                                |
| Rating                 | Input: 100-240V~ 50/60Hz 3.5A     |                                                                                                |
| Connecting I/O Port(s) | Please refer to the User's Manual |                                                                                                |
| Products Covered       | N/A                               |                                                                                                |
| EUT Modification(s)    | N/A                               |                                                                                                |
| Model difference       | N/A                               |                                                                                                |

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

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

3.

Table for Filed Antenna

|   | Trade Name                                                      | Model Name       | Antenna Type | Connector | Gain (dBi) |
|---|-----------------------------------------------------------------|------------------|--------------|-----------|------------|
| 1 | Shenzhen Zhongtian Xun Communication Technology Shares Co.,Ltd. | ZTX-AX01-BT-V3.0 | PIFA antenna | N/A       | 3.49 dBi   |

## 2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

| Pretest Mode | Description |
|--------------|-------------|
| Mode 1       | 1Mbps       |
| Mode 2       | 2Mbps       |
| Mode 3       | 3Mbps       |
| Mode 4       | RX          |
| Mode 5       | Working     |

| For Conducted Emission |                |
|------------------------|----------------|
| Final Test Mode        | Description    |
| Mode 3                 | TX(worst case) |

| For Radiated Emission |                |
|-----------------------|----------------|
| Final Test Mode       | Description    |
| Mode 3                | TX(worst case) |
| Mode 4                | RX(worst case) |
| Mode 5                | Working        |

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

## 2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of FHSS

| RF Function | Type   | Mode Or Modulation type | ANT Gain(dBi) | ANT_A Power Class | Test Software             |
|-------------|--------|-------------------------|---------------|-------------------|---------------------------|
| BT          | BR+EDR | GFSK                    | 3.49          | 7                 | WCN Combo Tool_v2.1747.00 |
|             |        | $\pi/4$ -DQPSK          |               | 7                 |                           |
|             |        | 8DPSK                   |               | 7                 |                           |

1. Connect the computer with USB ports.
2. Open the "WCN\_Combo\_Tool" test software.
3. Set the commands and click "ENTER" transmitter.

**2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED**

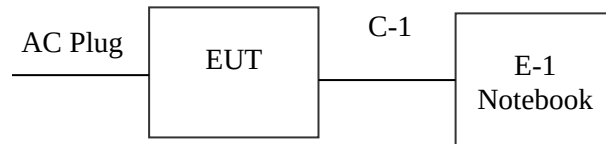
Block diagram of EUT configuration

**CONDUCTED EMISSION**

Test mode: mode 3

Non-Conductive Table

80 cm above Ground Plane

**CONDUCTED EMISSION Test Set**

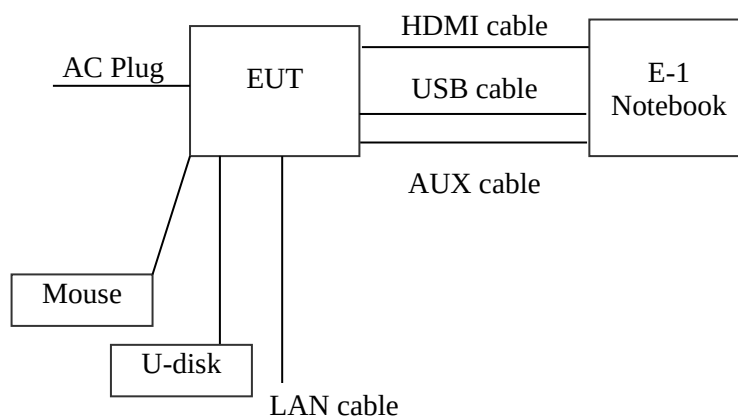
Block diagram of EUT configuration

**RADIATED EMISSION**

Test mode: mode 1, 2, 3 ,4 ,5

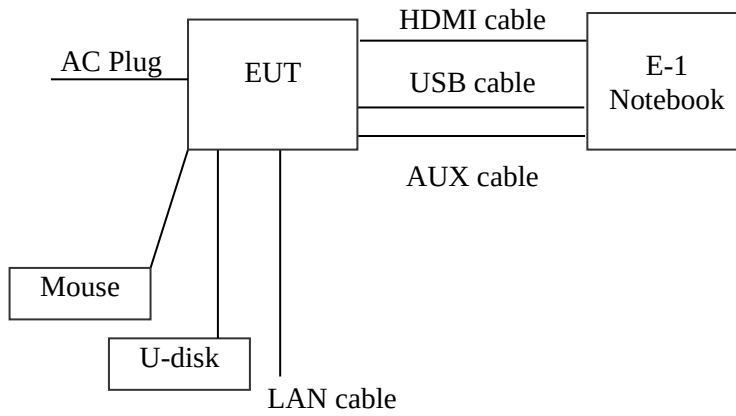
Non-Conductive Table

80 cm above Ground Plane

**Below 1 GHz Radiation Test Set**

150 cm above Ground Plane

Above 1 GHz Radiation Test Set



## 2.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Item | Equipment         | Mfr/Brand | Model/Type No. | FCC ID | Series No. | Note                  |
|------|-------------------|-----------|----------------|--------|------------|-----------------------|
| /    | AC Cable          | ASAP      | 246445         | N/A    | N/A        | necessary accessories |
| /    | Remote control    | XGIMI     | B981C          | N/A    | N/A        |                       |
| E-1  | Personal computer | DELL      | VOSTRO.3800    | N/A    | N/A        | support units*.       |
| C-1  | USB Cable         | UGREEN    | 10368          | N/A    | N/A        |                       |
| /    | Mouse             | HP        | MODGUO         | N/A    | N/A        |                       |
| /    | HDMI Cable        | SONY      | 20276          | N/A    | N/A        |                       |
| /    | AUX Cable         | UGREEN    | AV175          | N/A    | N/A        |                       |
| /    | U Disk            | Kingston  | DTKN/128GB     | N/A    | N/A        |                       |
| /    | LAN Cable         | SAMZHE    | 283M           | N/A    | N/A        |                       |

| Item | Equipment | Mfr/Brand | Model/Type No. | Note |
|------|-----------|-----------|----------------|------|
| N/A  | N/A       | N/A       | N/A            | N/A  |

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” or “with ferrite core”; “NO” means “unshielded” or “without ferrite core”
- (4) “\*”: In this report, the applicant did not provide the accompanying accessories with the equipment. The accessories were provided by the laboratory (or the applicant) and inspected simultaneously.

## 2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

| EQUIPMENT TYPE       | MANU-FACTURER   | MODEL NUMBER | SERIAL NUMBER | CAL. DATE          | CAL. CYCLE |
|----------------------|-----------------|--------------|---------------|--------------------|------------|
| Spectrum Analyzer    | Keysight        | N9020A       | MY53300466    | April 29, 2021     | 1 Year     |
| RF Preselector       | Hewlett Packard | 85685A       | 3010A01157    | April 29, 2021     | 1 Year     |
| Quasi-Peak Adapter   | Hewlett Packard | 85650        | 2521A00584    | April 29, 2021     | 1 Year     |
| Preamplifier         | Com Power       | PA-102       | 1482          | April 29, 2021     | 1 Year     |
| RF Attenuator        | Mini-Circuits   | CAT-10       | Asset #1000   | December 08, 2020  | 1 Year     |
| LISN                 | Com Power       | LI-200       | 12012         | September 09, 2020 | 1 Year     |
| LISN                 | Com Power       | LI-200       | 12214         | September 09, 2020 | 1 Year     |
| LISN                 | Com Power       | LI-200       | 1767          | September 09, 2020 | 1 Year     |
| LISN                 | Com Power       | LI-200       | 1768          | September 09, 2020 | 1 Year     |
| Biconical Antenna    | Com Power       | AB-100       | 01557         | December 29, 2020  | 1 Year     |
| Log Periodic Antenna | Com Power       | AL-100       | 16037         | December 22, 2020  | 1 Year     |
| Horn Antenna         | Com Power       | AHA-118      | 711054        | December 22, 2020  | 1 Year     |
| Antenna Mast         | Com Power       | AM-400       | N/A           | N/A                | N/A        |
| Turntable            | Com Power       | TT-100       | N/A           | N/A                | N/A        |
| Computer             | Dell, Inc.      | DHS          | DNSV641       | N/A                | N/A        |

**EMI Test Equipment (Continued)**

| EQUIPMENT TYPE                | MANU-FACTURER   | MODEL NUMBER | SERIAL NUMBER | CAL. DATE       | CAL. CYCLE |
|-------------------------------|-----------------|--------------|---------------|-----------------|------------|
| EMI Receiver                  | Rohde & Schwarz | ESU40        | 100127        | June 12, 2021   | 1 Year     |
| BiConiLog Antenna             | ETS-Lindgren    | 3142D        | 00102183      | August 13, 2020 | 1 Year     |
| Horn Antenna<br>(1GHz-18GHz)  | ETS-Lindgren    | 3117         | 00109294      | May 6, 2021     | 1 Year     |
| Horn Antenna<br>(15GHz-40GHz) | SCHWARZBECK     | BBHA 9170    | BBHA9170242   | May 6, 2021     | 1 Year     |
| Preamplifier                  | Rohde & Schwarz | TS-PR18      | 100056        | June 12, 2021   | 1 Year     |
| Pre-Amplifier                 | Agilent         | 8449B        | 3008A00409    | June 12, 2021   | 1 Year     |
| Antenna Mast                  | ETS-Lindgren    | 2175         | 00095727      | N/A             | N/A        |
| Turntable                     | ETS-Lindgren    | 2187-3.0     | 00118231      | N/A             | N/A        |
| Computer                      | Acer            | Aspire 8930  | 85100050123   | N/A             | N/A        |
| Multi-Function Controller     | ETS-Lindgren    | 2090         | 00102270      | N/A             | N/A        |
| Loop Antenna                  | ARA             | PLA-1030/B   | 1029          | May 19, 2021    | 1 Year     |

### 3. EMC EMISSION TEST

#### 3.1 CONDUCTED EMISSION MEASUREMENT

##### 3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

| FREQUENCY (MHz) | Class B (dBuV) |           | Standard |
|-----------------|----------------|-----------|----------|
|                 | Quasi-peak     | Average   |          |
| 0.15 -0.5       | 66 - 56 *      | 56 - 46 * | CISPR    |
| 0.50 -5.0       | 56.00          | 46.00     | CISPR    |
| 5.0 -30.0       | 60.00          | 50.00     | CISPR    |

|           |           |           |        |
|-----------|-----------|-----------|--------|
| 0.15 -0.5 | 66 - 56 * | 56 - 46 * | LP0002 |
| 0.50 -5.0 | 56.00     | 46.00     | LP0002 |
| 5.0 -30.0 | 60.00     | 50.00     | LP0002 |

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

| Receiver Parameters | Setting  |
|---------------------|----------|
| Attenuation         | 10 dB    |
| Start Frequency     | 0.15 MHz |
| Stop Frequency      | 30 MHz   |
| IF Bandwidth        | 9 kHz    |

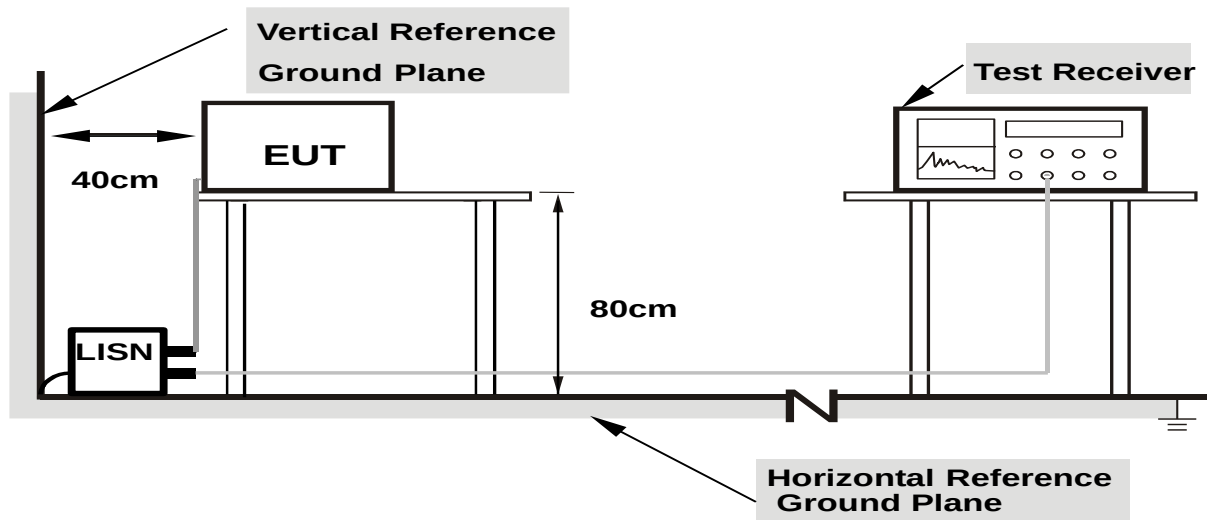
### 3.1.2 TEST PROCEDURE

- The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

### 3.1.3 DEVIATION FROM TEST STANDARD

No deviation

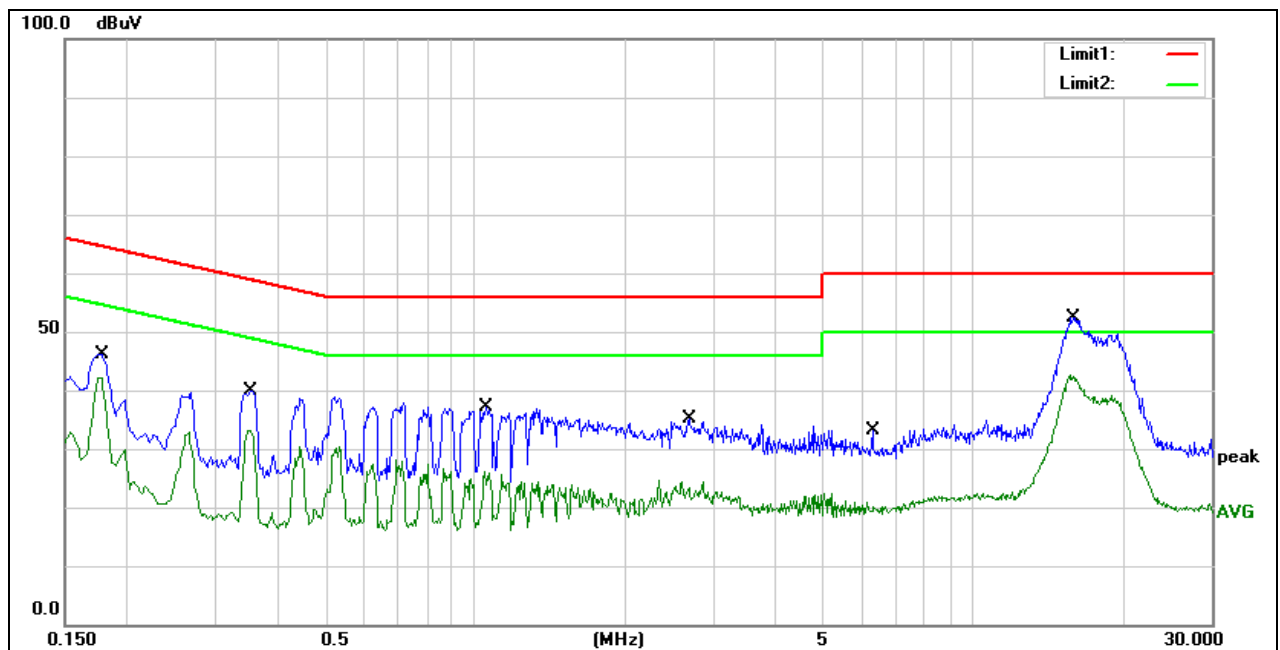
### 3.1.4 TEST SETUP



- Note:**
- Support units were connected to second LISN.
  - Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

## 3.1.5 TEST RESULTS

|                |                |                     |            |
|----------------|----------------|---------------------|------------|
| EUT :          | Projector      | Model Name. :       | XM03A      |
| Temperature :  | 26.0 °C        | Relative Humidity : | 59%        |
| Pressure :     | 1010hPa        | Test Date :         | 2021-06-03 |
| Test Mode :    | TX(worst case) | Phase :             | L          |
| Test Voltage : | AC 110V/60Hz   |                     |            |

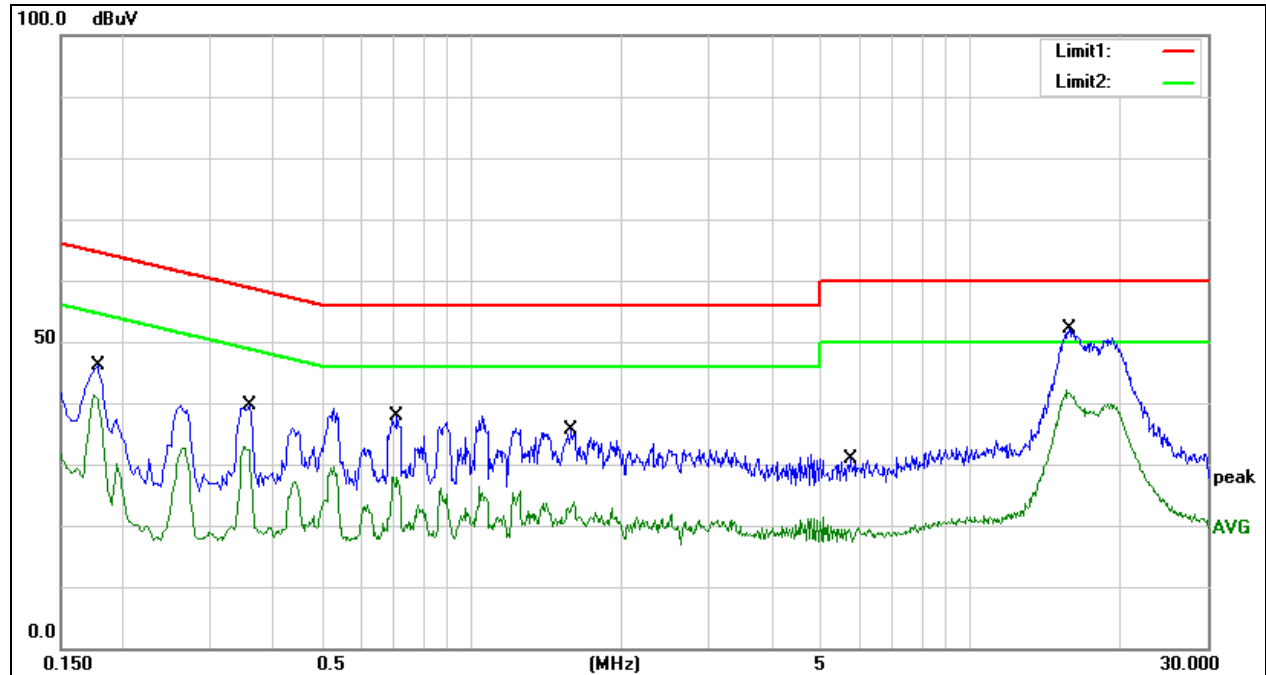


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss + Pulse limit.
3. '\*' means the worst case

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-----------------------|------------------|-----------------|----------------|--------|
| 1   | 0.1796             | 24.97             | 20.31                 | 45.28            | 64.50           | -19.22         | QP     |
| 2   | 0.1796             | 17.41             | 20.31                 | 37.72            | 54.50           | -16.78         | AVG    |
| 3   | 0.3540             | 19.35             | 20.64                 | 39.99            | 58.87           | -18.88         | QP     |
| 4   | 0.3540             | 12.57             | 20.64                 | 33.21            | 48.87           | -15.66         | AVG    |
| 5   | 1.0500             | 16.86             | 20.30                 | 37.16            | 56.00           | -18.84         | QP     |
| 6   | 1.0500             | 4.63              | 20.30                 | 24.93            | 46.00           | -21.07         | AVG    |
| 7   | 2.6820             | 14.87             | 20.33                 | 35.20            | 56.00           | -20.80         | QP     |
| 8   | 2.6820             | 1.77              | 20.33                 | 22.10            | 46.00           | -23.90         | AVG    |
| 9   | 6.2580             | 12.56             | 20.53                 | 33.09            | 60.00           | -26.91         | QP     |
| 10  | 6.2580             | -0.75             | 20.53                 | 19.78            | 50.00           | -30.22         | AVG    |
| 11  | 15.8060            | 30.49             | 21.92                 | 52.41            | 60.00           | -7.59          | QP     |
| 12  | 15.8060            | 20.67             | 21.92                 | 42.59            | 50.00           | -7.41          | AVG    |

|                |                |                     |            |
|----------------|----------------|---------------------|------------|
| EUT :          | Projector      | Model Name. :       | XM03A      |
| Temperature :  | 26.0 °C        | Relative Humidity : | 59%        |
| Pressure :     | 1010hPa        | Test Date :         | 2021-06-03 |
| Test Mode :    | TX(worst case) | Phase :             | N          |
| Test Voltage : | AC 110V/60Hz   |                     |            |



Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss + Pulse limit.
3. '\*' means the worst case

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-----------------------|------------------|-----------------|----------------|--------|
| 1   | 0.1780             | 25.69             | 20.31                 | 46.00            | 64.58           | -18.58         | QP     |
| 2   | 0.1780             | 19.42             | 20.31                 | 39.73            | 54.58           | -14.85         | AVG    |
| 3   | 0.3580             | 19.03             | 20.63                 | 39.66            | 58.77           | -19.11         | QP     |
| 4   | 0.3580             | 9.73              | 20.63                 | 30.36            | 48.77           | -18.41         | AVG    |
| 5   | 0.7100             | 17.46             | 20.35                 | 37.81            | 56.00           | -18.19         | QP     |
| 6   | 0.7100             | 6.28              | 20.35                 | 26.63            | 46.00           | -19.37         | AVG    |
| 7   | 1.5900             | 15.29             | 20.30                 | 35.59            | 56.00           | -20.41         | QP     |
| 8   | 1.5900             | 2.94              | 20.30                 | 23.24            | 46.00           | -22.76         | AVG    |
| 9   | 5.7740             | 10.32             | 20.51                 | 30.83            | 60.00           | -29.17         | QP     |
| 10  | 5.7740             | -1.65             | 20.51                 | 18.86            | 50.00           | -31.14         | AVG    |
| 11  | 15.8100            | 30.09             | 21.92                 | 52.01            | 60.00           | -7.99          | QP     |
| 12  | 15.8100            | 20.32             | 21.92                 | 42.24            | 50.00           | -7.76          | AVG    |

### 3.2 RADIATED EMISSION MEASUREMENT

#### 3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 3.5, then the 3.6 limit in the table below has to be followed.

| Frequencies<br>(MHz) | Field Strength<br>(micorvolts/meter) | Measurement Distance<br>(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                                |

#### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

| FREQUENCY (MHz) | LIMITS (at 3M) |         |
|-----------------|----------------|---------|
|                 | PEAK           | AVERAGE |
| Above 1000      | 74             | 54      |

Notes:

- (1) The limit for radiated test was performed according to LP0002.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

#### FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Frequency measurement range:

- 1, The spectrum shall be measured from the lowest radio frequency signal generated in the device (without going below 9 kHz), and the upper limit of the measurement range shall be decided according to the maximum operating frequency.
  - 1.1 Maximum operating frequency less than 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
  - 1.2 Maximum operating frequency between 10 GHz~30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
  - 1.3 Maximum operating frequency over 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower.
- 2 Particular attention should be paid to harmonics and subharmonics of the carrier frequency as well as to those frequencies removed from the carrier by multiples of the oscillator frequency. Radiation at the frequencies of multiplier stages should also be checked.

| Spectrum Parameter |             | Setting               |           |
|--------------------|-------------|-----------------------|-----------|
| Attenuation        |             | Auto                  |           |
| Start Frequency    |             | 1000 MHz              |           |
| Stop Frequency     |             | 10th carrier harmonic |           |
| Measurement        | Duty cycle  | RBW                   | Video B/W |
| PK                 | Any         | 1MHz                  | 3MHz      |
| AV                 | $\geq 98\%$ | 1MHz                  | 10Hz      |
|                    | $< 98\%$    | 1MHz                  | 1/T       |

NOTE: KDB 558074 Zero-Span Spectrum Analyzer Method

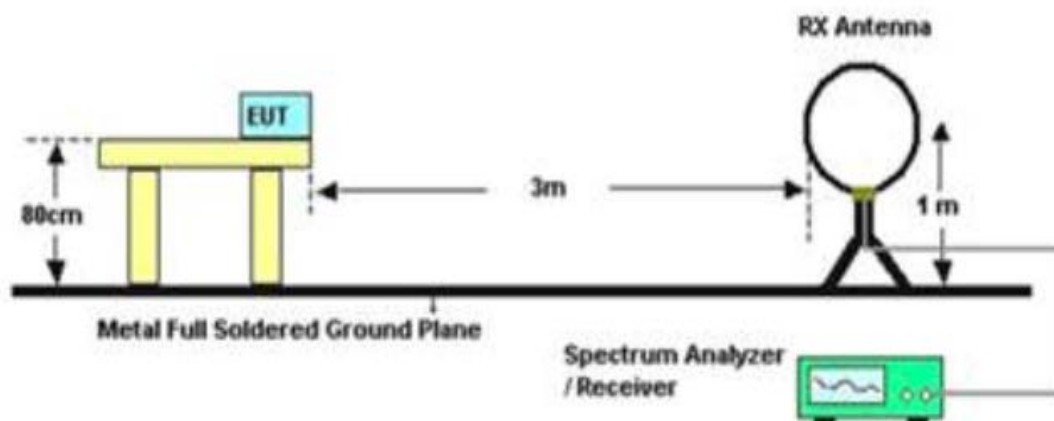
| Receiver Parameter     | Setting                          |
|------------------------|----------------------------------|
| Attenuation            | Auto                             |
| Start ~ Stop Frequency | 9kHz~150kHz / RB 200Hz for QP    |
| Start ~ Stop Frequency | 150kHz~30MHz / RB 9kHz for QP    |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB 120kHz for QP |

### 3.2.2 TEST PROCEDURE

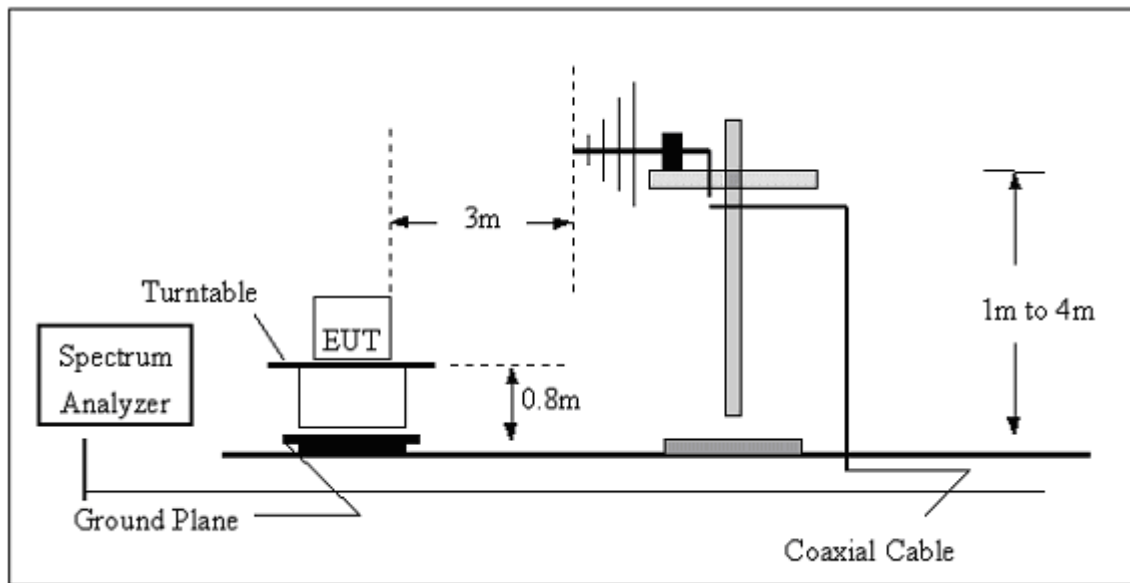
- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters (For frequencies above 1GHz, table 1.5 meters) above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

### 3.2.3 TEST SETUP

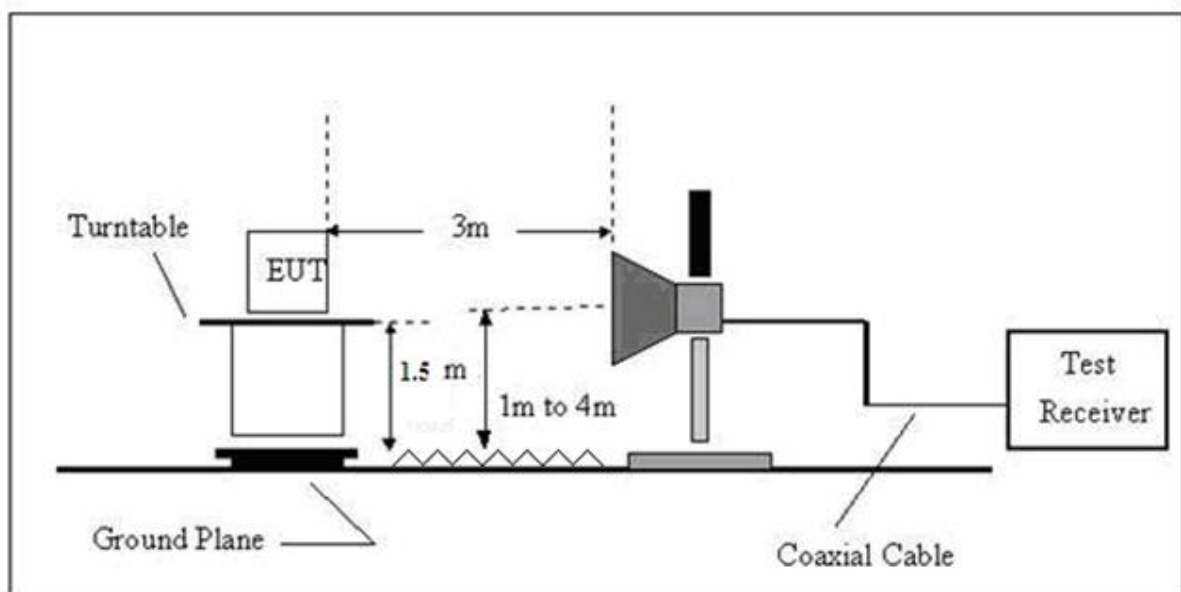
( A ) Radiated Emission Test-Up Frequency Below 30MHz



( B ) Radiated Emission Test-Up Frequency 30MHz~1GHz



( C ) Radiated Emission Test-Up Frequency Above 1GHz



### 3.2.4 EUT OPERATING CONDITIONS

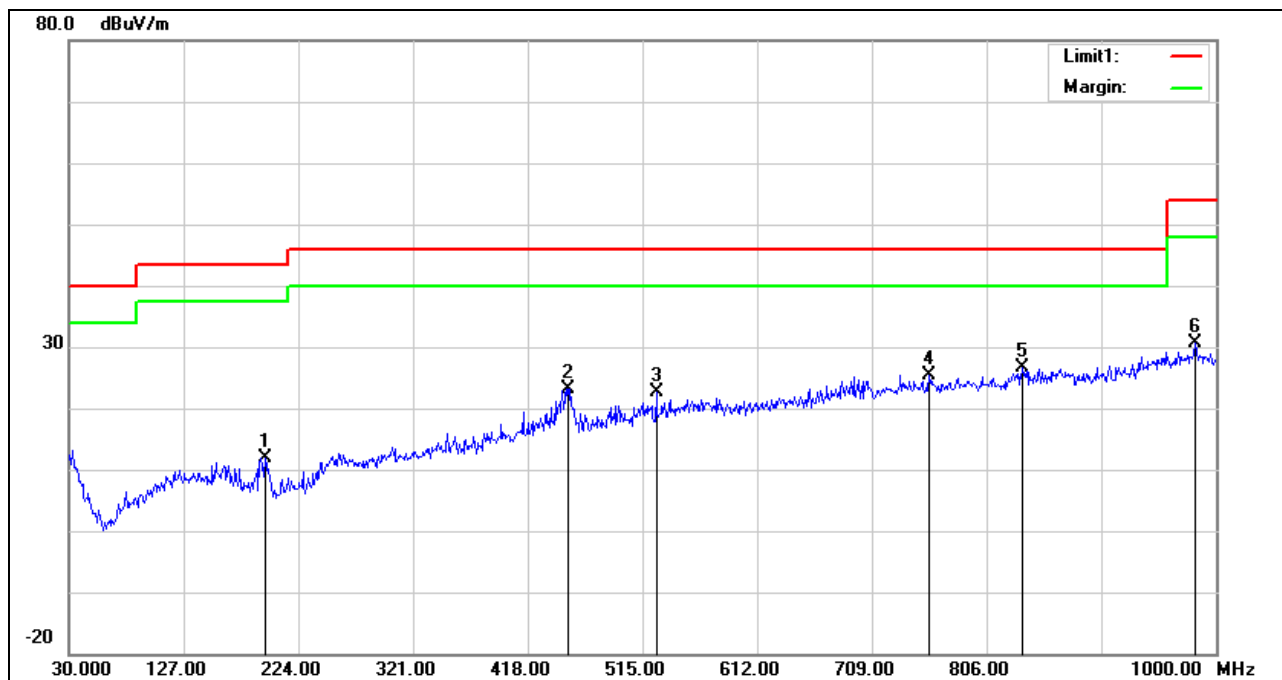
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

### 3.2.5 TEST RESULTS (BLOW 30 MHZ)

There is no detected blow 30MHz

### 3.2.6 TEST RESULTS (BETWEEN30 – 1000 MHZ)

|               |                                  |                     |            |
|---------------|----------------------------------|---------------------|------------|
| EUT :         | Projector                        | Model Name :        | XM03A      |
| Temperature : | 23.1 °C                          | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa                         | Test Date :         | 2021-06-19 |
| Test Mode :   | TX 2402MHz<br>(3Mbps-worst case) | Polarization :      | Vertical   |
| Test Power :  | AC 110V/60Hz                     |                     |            |

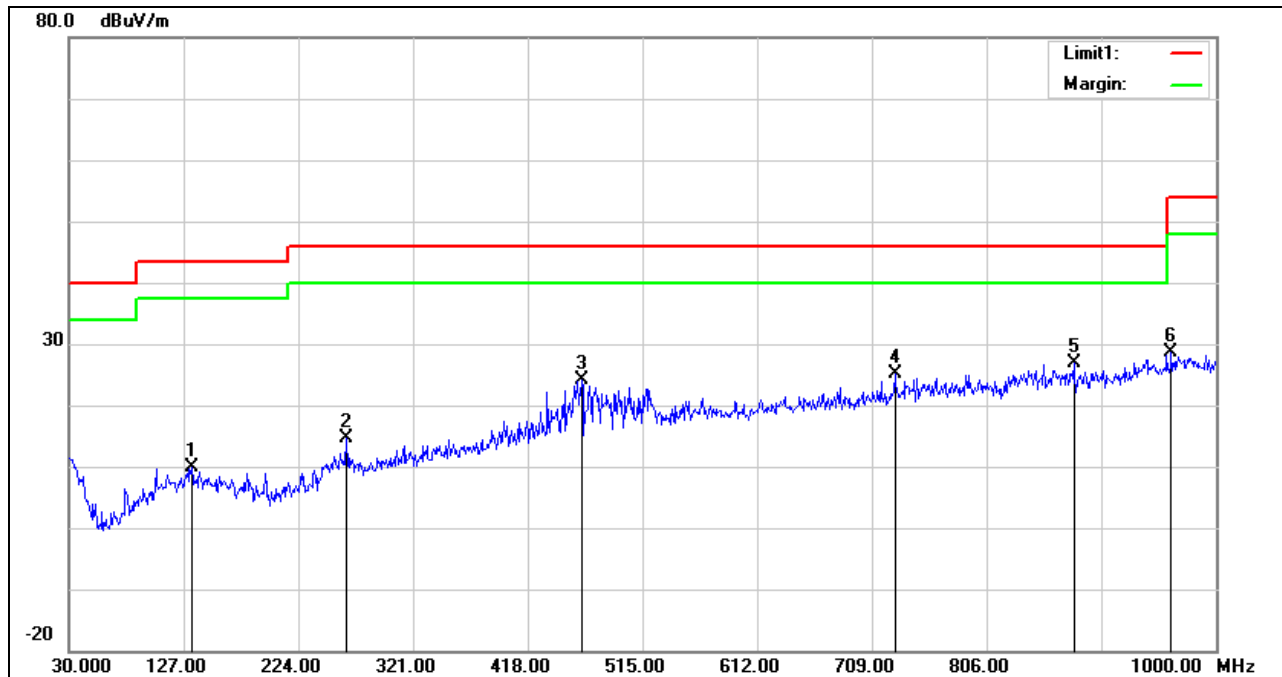


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 195.8700           | 33.03             | -21.14                  | 11.89              | 43.50             | -31.61         | QP     |
| 2   | 451.9500           | 32.80             | -9.62                   | 23.18              | 46.00             | -22.82         | QP     |
| 3   | 526.6400           | 30.32             | -7.58                   | 22.74              | 46.00             | -23.26         | QP     |
| 4   | 757.5000           | 27.57             | -2.17                   | 25.40              | 46.00             | -20.60         | QP     |
| 5   | 836.0700           | 27.11             | -0.50                   | 26.61              | 46.00             | -19.39         | QP     |
| 6   | 982.5400           | 28.04             | 2.52                    | 30.56              | 54.00             | -23.44         | QP     |

|               |                                  |                     |            |
|---------------|----------------------------------|---------------------|------------|
| EUT :         | Projector                        | Model Name :        | XM03A      |
| Temperature : | 23.1 °C                          | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa                         | Test Date :         | 2021-06-19 |
| Test Mode :   | TX 2402MHz<br>(3Mbps-worst case) | Polarization :      | Horizontal |
| Test Power :  | AC 110V/60Hz                     |                     |            |

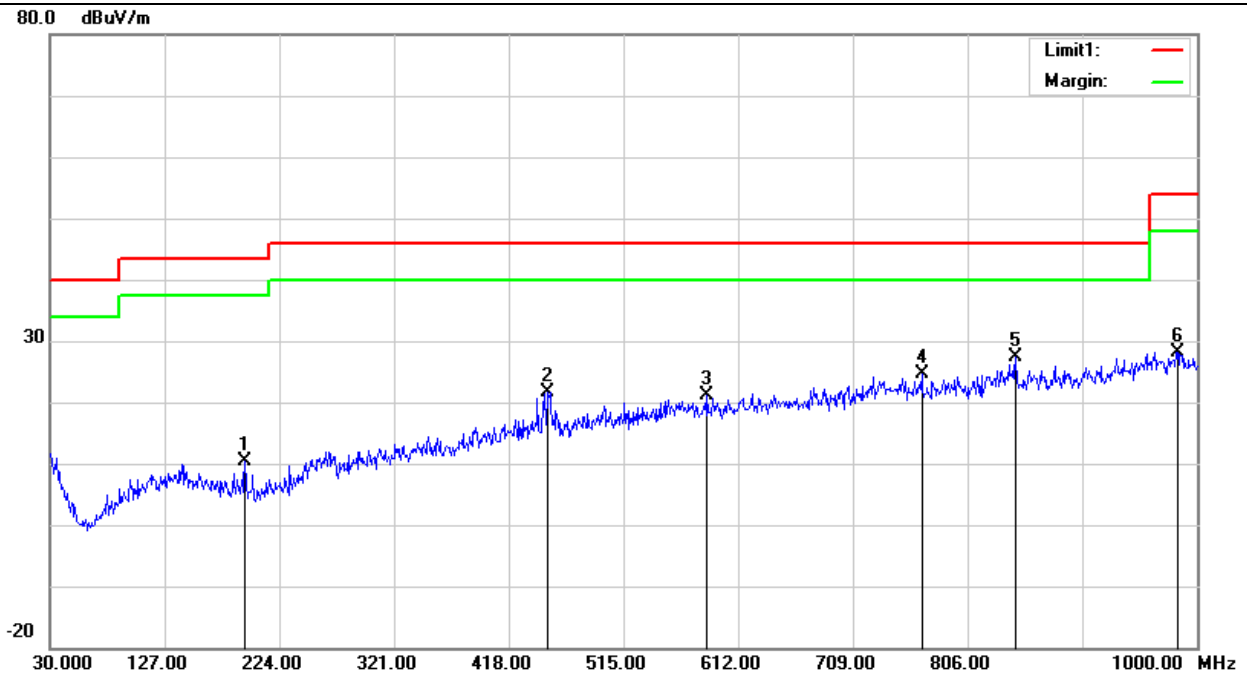


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 133.7900           | 27.99             | -18.14                  | 9.85               | 43.50             | -33.65         | QP     |
| 2   | 264.7400           | 29.47             | -14.75                  | 14.72              | 46.00             | -31.28         | QP     |
| 3   | 463.5900           | 33.38             | -9.29                   | 24.09              | 46.00             | -21.91         | QP     |
| 4   | 728.4000           | 27.80             | -2.60                   | 25.20              | 46.00             | -20.80         | QP     |
| 5   | 879.7200           | 27.47             | -0.66                   | 26.81              | 46.00             | -19.19         | QP     |
| 6   | 962.1700           | 26.76             | 1.81                    | 28.57              | 54.00             | -25.43         | QP     |

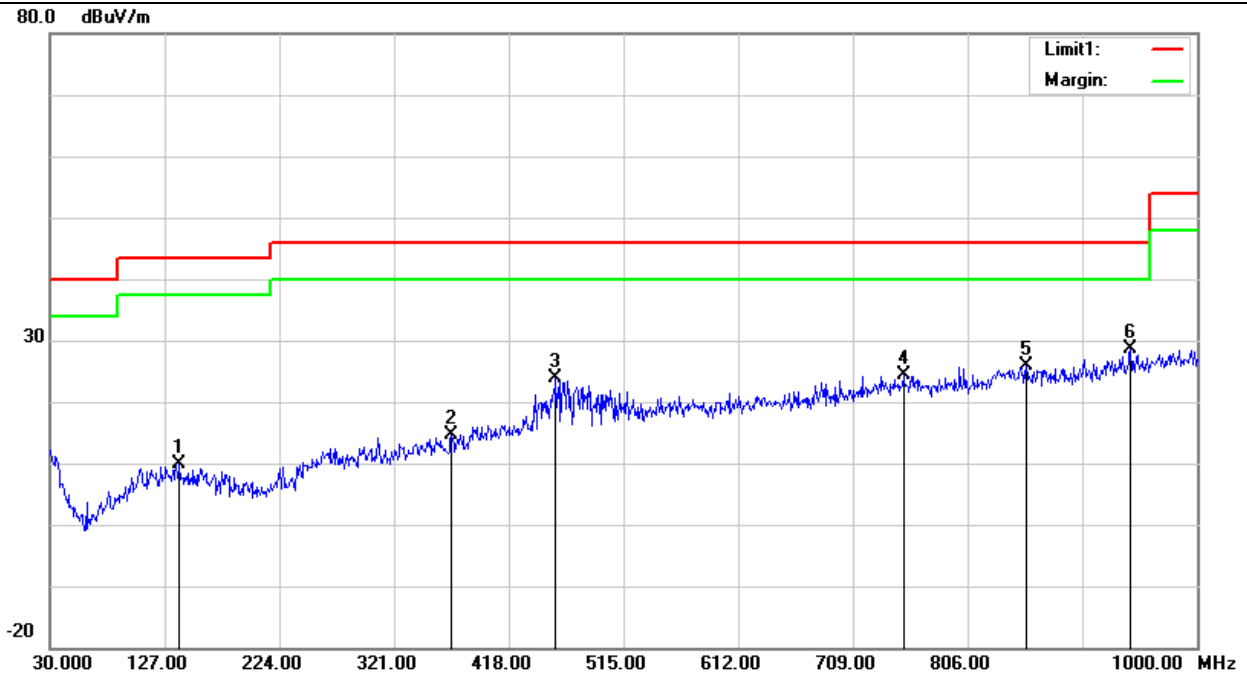
|               |                |                     |            |
|---------------|----------------|---------------------|------------|
| EUT :         | Projector      | Model Name :        | XM03A      |
| Temperature : | 23.1 °C        | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa       | Test Date :         | 2021-06-19 |
| Test Mode :   | RX(Worst Case) | Polarization :      | Vertical   |
| Test Power :  | AC 110V/60Hz   |                     |            |



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 194.9000           | 31.58             | -21.14                  | 10.44              | 43.50             | -33.06         | QP     |
| 2   | 450.9800           | 31.28             | -9.65                   | 21.63              | 46.00             | -24.37         | QP     |
| 3   | 585.8100           | 26.96             | -5.80                   | 21.16              | 46.00             | -24.84         | QP     |
| 4   | 767.2000           | 26.97             | -2.29                   | 24.68              | 46.00             | -21.32         | QP     |
| 5   | 846.7400           | 28.08             | -0.62                   | 27.46              | 46.00             | -18.54         | QP     |
| 6   | 983.5100           | 25.79             | 2.46                    | 28.25              | 54.00             | -25.75         | QP     |

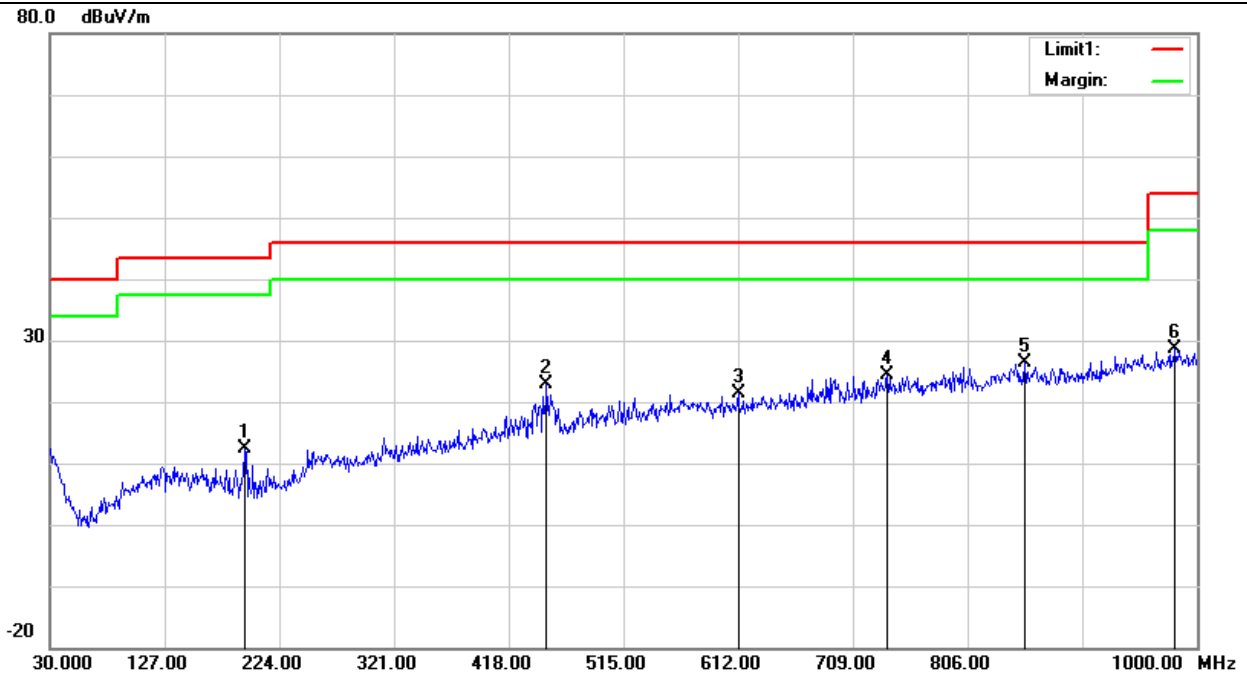
|               |                |                     |            |
|---------------|----------------|---------------------|------------|
| EUT :         | Projector      | Model Name :        | XM03A      |
| Temperature : | 23.1 °C        | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa       | Test Date :         | 2021-06-19 |
| Test Mode :   | RX(Worst Case) | Polarization :      | Horizontal |
| Test Power :  | AC 110V/60Hz   |                     |            |



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 139.6100           | 27.89             | -18.02                  | 9.87               | 43.50             | -33.63         | QP     |
| 2   | 369.5000           | 27.13             | -12.51                  | 14.62              | 46.00             | -31.38         | QP     |
| 3   | 457.7700           | 33.31             | -9.51                   | 23.80              | 46.00             | -22.20         | QP     |
| 4   | 751.6800           | 26.46             | -2.17                   | 24.29              | 46.00             | -21.71         | QP     |
| 5   | 855.4700           | 26.35             | -0.57                   | 25.78              | 46.00             | -20.22         | QP     |
| 6   | 943.7400           | 27.26             | 1.46                    | 28.72              | 46.00             | -17.28         | QP     |

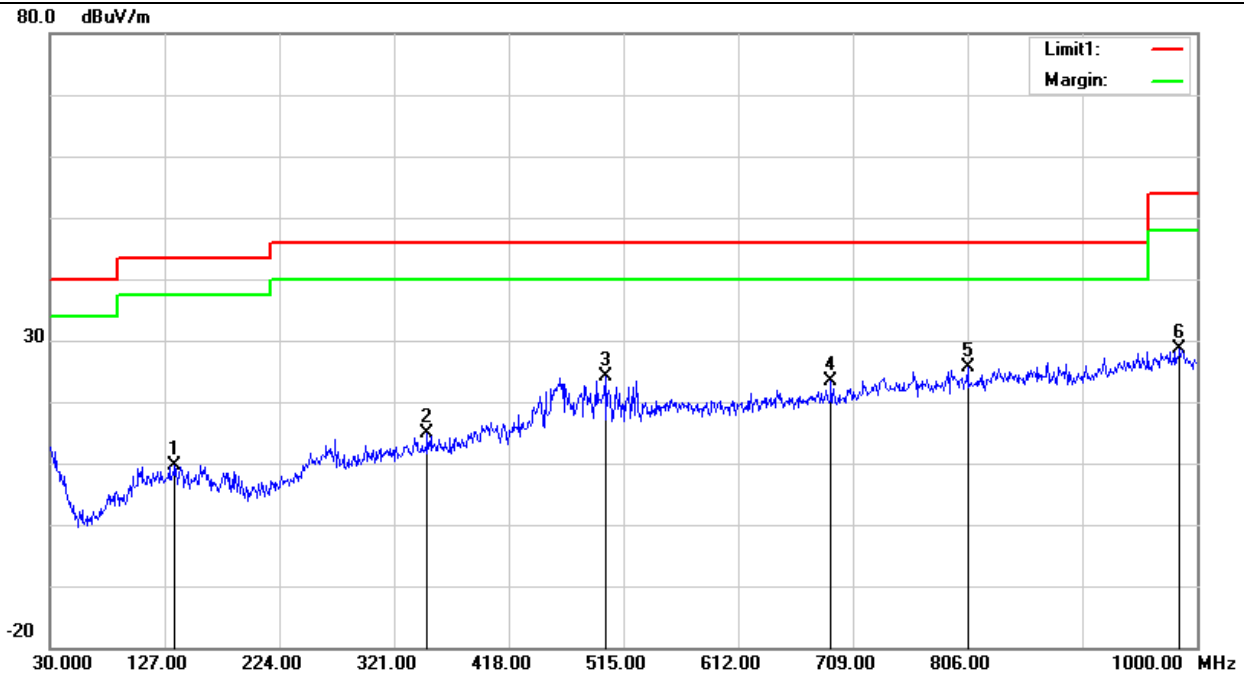
|               |              |                     |            |
|---------------|--------------|---------------------|------------|
| EUT :         | Projector    | Model Name :        | XM03A      |
| Temperature : | 23.1 °C      | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa     | Test Date :         | 2021-06-19 |
| Test Mode :   | Working      | Polarization :      | Vertical   |
| Test Power :  | AC 110V/60Hz |                     |            |



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 194.9000           | 33.59             | -21.14                  | 12.45              | 43.50             | -31.05         | QP     |
| 2   | 450.0100           | 32.62             | -9.67                   | 22.95              | 46.00             | -23.05         | QP     |
| 3   | 612.0000           | 26.80             | -5.50                   | 21.30              | 46.00             | -24.70         | QP     |
| 4   | 738.1000           | 26.53             | -2.18                   | 24.35              | 46.00             | -21.65         | QP     |
| 5   | 854.5000           | 26.94             | -0.61                   | 26.33              | 46.00             | -19.67         | QP     |
| 6   | 981.5700           | 26.10             | 2.57                    | 28.67              | 54.00             | -25.33         | QP     |

|               |              |                     |            |
|---------------|--------------|---------------------|------------|
| EUT :         | Projector    | Model Name :        | XM03A      |
| Temperature : | 23.1 °C      | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa     | Test Date :         | 2021-06-19 |
| Test Mode :   | Working      | Polarization :      | Horizontal |
| Test Power :  | AC 110V/60Hz |                     |            |



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| No. | Frequency | Reading | Correct      | Result   | Limit    | Margin | Remark |
|-----|-----------|---------|--------------|----------|----------|--------|--------|
|     | (MHz)     | (dBuV)  | Factor(dB/m) | (dBuV/m) | (dBuV/m) | (dB)   |        |
| 1   | 135.7300  | 27.70   | -18.09       | 9.61     | 43.50    | -33.89 | QP     |
| 2   | 349.1300  | 27.86   | -13.09       | 14.77    | 46.00    | -31.23 | QP     |
| 3   | 499.4800  | 32.11   | -8.02        | 24.09    | 46.00    | -21.91 | QP     |
| 4   | 690.5700  | 27.62   | -4.33        | 23.29    | 46.00    | -22.71 | QP     |
| 5   | 806.0000  | 27.72   | -2.01        | 25.71    | 46.00    | -20.29 | QP     |
| 6   | 985.4500  | 26.31   | 2.33         | 28.64    | 54.00    | -25.36 | QP     |

**Test result: The unit does meet the NCC requirements.**

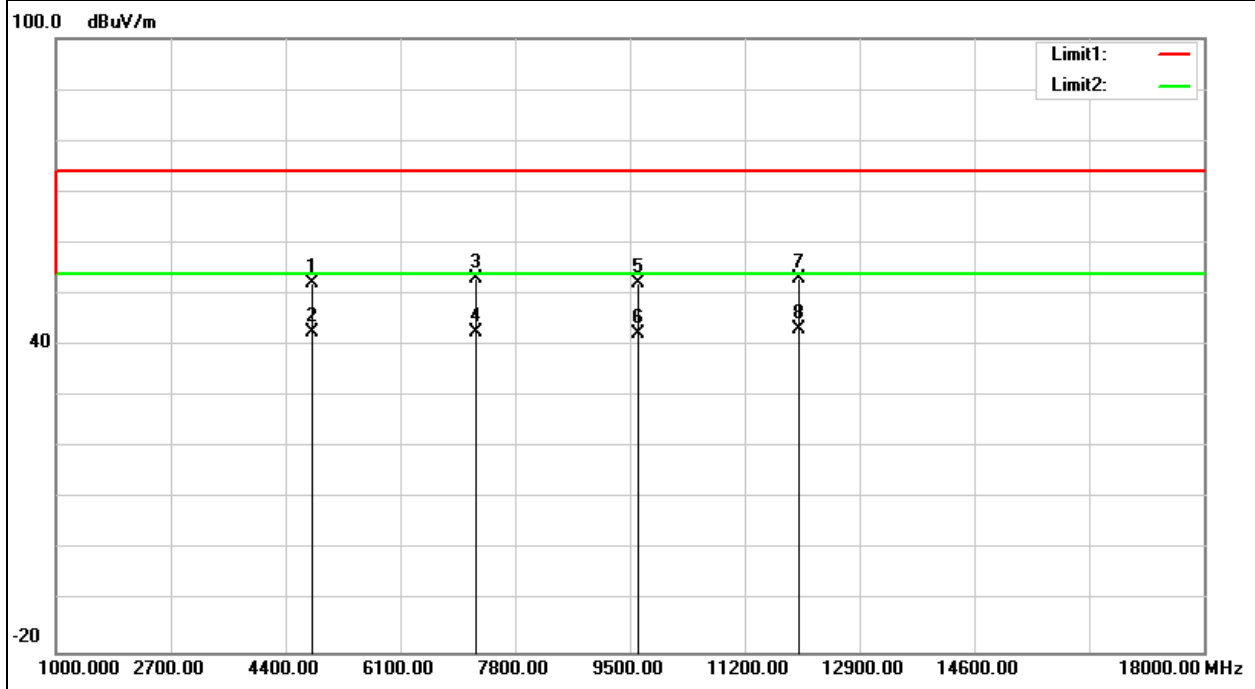
## 3.2.7 TEST RESULTS (FRENQUENCY RANGE 1000-25000 MHZ)

|               |                                  |                     |            |
|---------------|----------------------------------|---------------------|------------|
| EUT :         | Projector                        | Model Name :        | XM03A      |
| Temperature : | 23.1 °C                          | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa                         | Test Date :         | 2021-06-18 |
| Test Mode :   | TX 2402MHz<br>(3Mbps-worst case) | Polarization :      | Horizontal |
| Test Power :  | AC 110V/60Hz                     |                     |            |

| Frequency<br>(MHz) | Meter<br>Reading<br>(dBμV) | Factor<br>(dB) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|----------------------------|----------------|-------------------------------|--------------------|----------------|---------------|
| 4806.000           | 59.34                      | -7.20          | 52.14                         | 74.00              | -21.86         | peak          |
| 4806.000           | 49.82                      | -7.20          | 42.62                         | 54.00              | -11.38         | AVG           |
| 7215.000           | 52.37                      | 0.58           | 52.95                         | 74.00              | -21.05         | peak          |
| 7215.000           | 41.91                      | 0.58           | 42.49                         | 54.00              | -11.51         | AVG           |
| 9618.000           | 49.09                      | 3.19           | 52.28                         | 74.00              | -21.72         | peak          |
| 9618.000           | 39.12                      | 3.19           | 42.31                         | 54.00              | -11.69         | AVG           |
| 12015.000          | 47.14                      | 5.80           | 52.94                         | 74.00              | -21.06         | peak          |
| 12015.000          | 37.22                      | 5.80           | 43.02                         | 54.00              | -10.98         | AVG           |

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

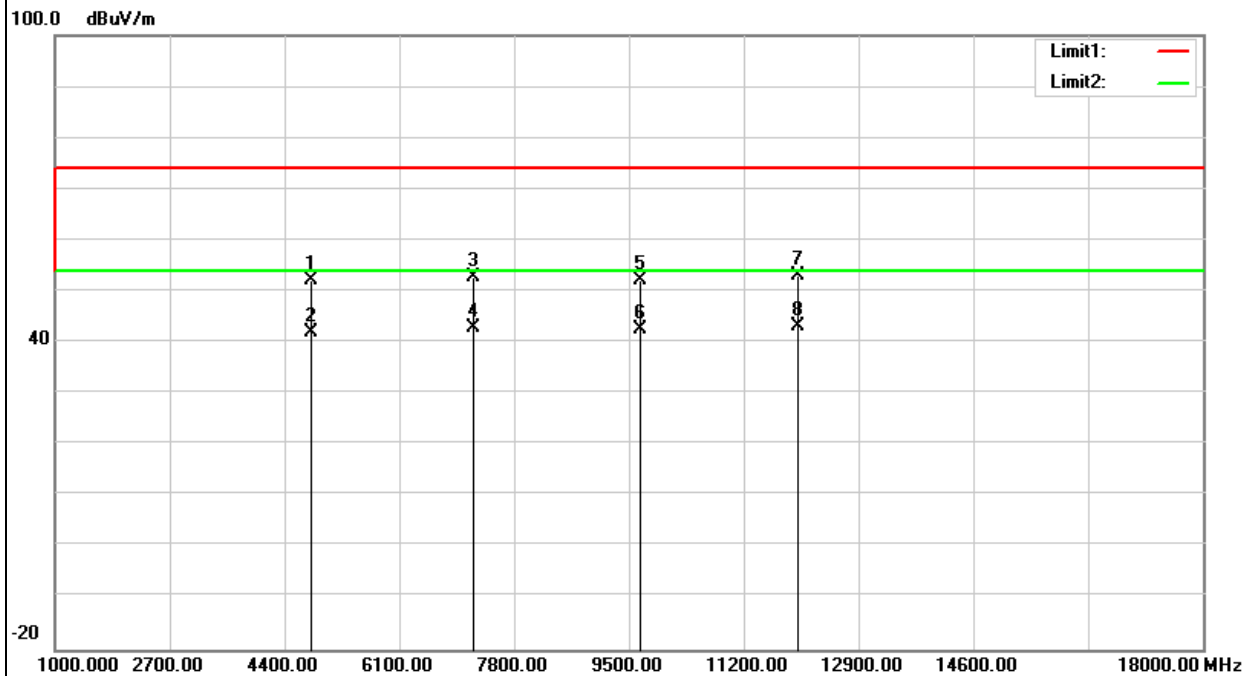


|               |                                  |                     |            |
|---------------|----------------------------------|---------------------|------------|
| EUT :         | Projector                        | Model Name :        | XM03A      |
| Temperature : | 23.1 °C                          | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa                         | Test Date :         | 2021-06-18 |
| Test Mode :   | TX 2402MHz<br>(3Mbps-worst case) | Polarization :      | Vertical   |
| Test Power :  | AC 110V/60Hz                     |                     |            |

| Frequency<br>(MHz) | Meter<br>Reading<br>(dBμV) | Factor<br>(dB) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|----------------------------|----------------|-------------------------------|--------------------|----------------|---------------|
| 4805.000           | 59.41                      | -7.20          | 52.21                         | 74.00              | -21.79         | peak          |
| 4805.000           | 49.22                      | -7.20          | 42.02                         | 54.00              | -11.98         | AVG           |
| 7206.000           | 52.09                      | 0.55           | 52.64                         | 74.00              | -21.36         | peak          |
| 7206.000           | 42.40                      | 0.55           | 42.95                         | 54.00              | -11.05         | AVG           |
| 9661.000           | 49.05                      | 3.21           | 52.26                         | 74.00              | -21.74         | peak          |
| 9661.000           | 39.36                      | 3.21           | 42.57                         | 54.00              | -11.43         | AVG           |
| 12011.000          | 47.16                      | 5.80           | 52.96                         | 74.00              | -21.04         | peak          |
| 12011.000          | 37.26                      | 5.80           | 43.06                         | 54.00              | -10.94         | AVG           |

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

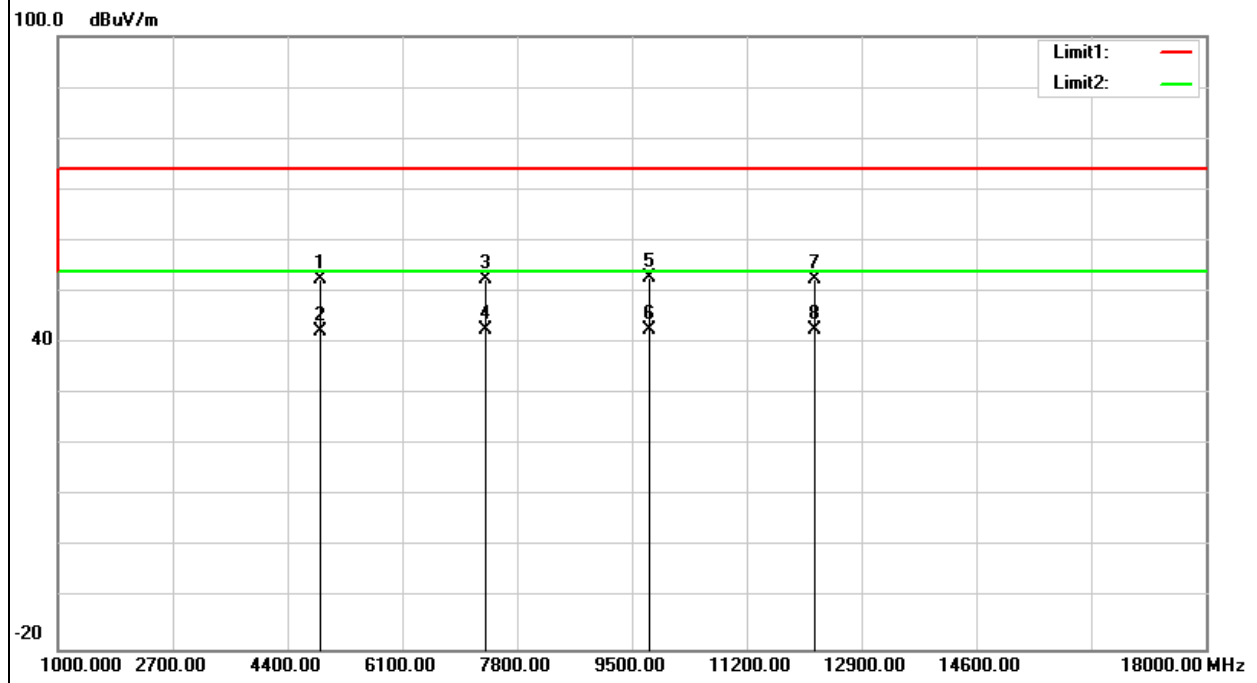


|               |                                  |                     |            |
|---------------|----------------------------------|---------------------|------------|
| EUT :         | Projector                        | Model Name :        | XM03A      |
| Temperature : | 23.1 °C                          | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa                         | Test Date :         | 2021-06-18 |
| Test Mode :   | TX 2441MHz<br>(3Mbps-worst case) | Polarization :      | Horizontal |
| Test Power :  | AC 110V/60Hz                     |                     |            |

| Frequency<br>(MHz) | Meter<br>Reading<br>(dBμV) | Factor<br>(dB) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|----------------------------|----------------|-------------------------------|--------------------|----------------|---------------|
| 4887.000           | 59.31                      | -6.89          | 52.42                         | 74.00              | -21.58         | peak          |
| 4887.000           | 49.26                      | -6.89          | 42.37                         | 54.00              | -11.63         | AVG           |
| 7332.000           | 51.43                      | 1.02           | 52.45                         | 74.00              | -21.55         | peak          |
| 7332.000           | 41.52                      | 1.02           | 42.54                         | 54.00              | -11.46         | AVG           |
| 9761.000           | 49.60                      | 3.25           | 52.85                         | 74.00              | -21.15         | peak          |
| 9761.000           | 39.26                      | 3.25           | 42.51                         | 54.00              | -11.49         | AVG           |
| 12216.000          | 46.64                      | 5.81           | 52.45                         | 74.00              | -21.55         | peak          |
| 12216.000          | 36.76                      | 5.81           | 42.57                         | 54.00              | -11.43         | AVG           |

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

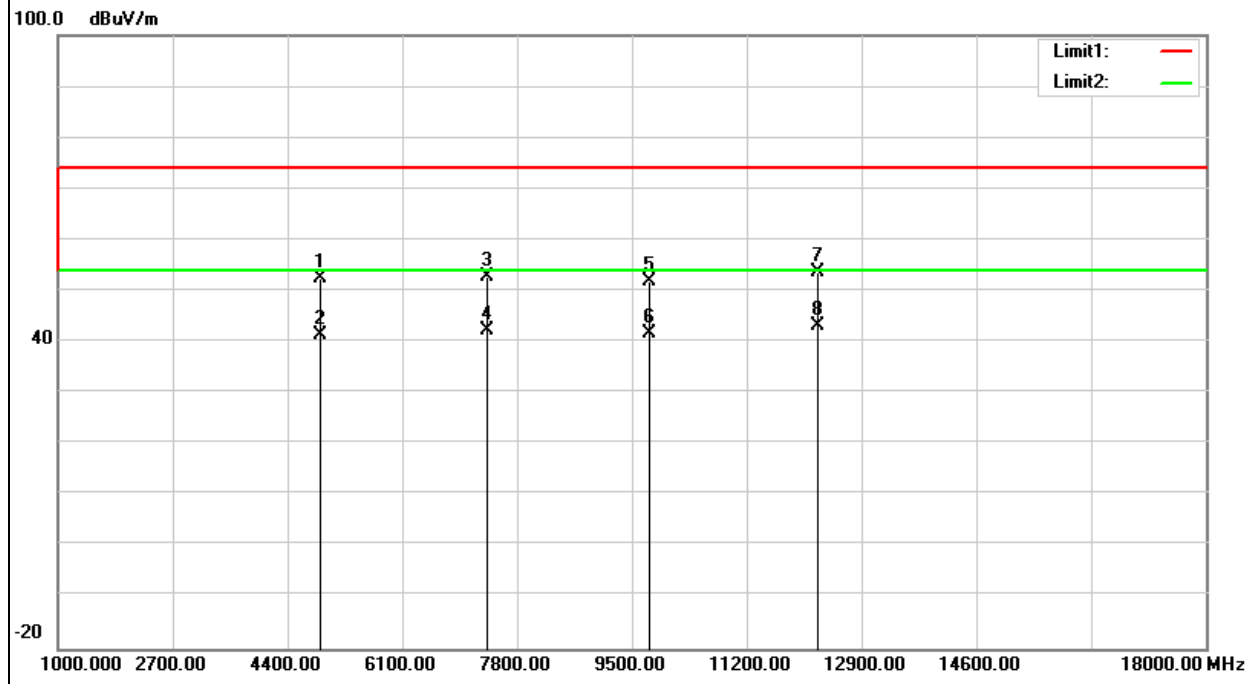


|               |                                  |                     |            |
|---------------|----------------------------------|---------------------|------------|
| EUT :         | Projector                        | Model Name :        | XM03A      |
| Temperature : | 23.1 °C                          | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa                         | Test Date :         | 2021-06-18 |
| Test Mode :   | TX 2441MHz<br>(3Mbps-worst case) | Polarization :      | Vertical   |
| Test Power :  | AC 110V/60Hz                     |                     |            |

| Frequency<br>(MHz) | Meter<br>Reading<br>(dBμV) | Factor<br>(dB) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|----------------------------|----------------|-------------------------------|--------------------|----------------|---------------|
| 4889.000           | 59.19                      | -6.88          | 52.31                         | 74.00              | -21.69         | peak          |
| 4889.000           | 48.28                      | -6.88          | 41.40                         | 54.00              | -12.60         | AVG           |
| 7365.000           | 51.50                      | 1.14           | 52.64                         | 74.00              | -21.36         | peak          |
| 7365.000           | 41.11                      | 1.14           | 42.25                         | 54.00              | -11.75         | AVG           |
| 9766.000           | 48.60                      | 3.26           | 51.86                         | 74.00              | -22.14         | peak          |
| 9766.000           | 38.43                      | 3.26           | 41.69                         | 54.00              | -12.31         | AVG           |
| 12254.000          | 47.78                      | 5.82           | 53.60                         | 74.00              | -20.40         | peak          |
| 12254.000          | 37.43                      | 5.82           | 43.25                         | 54.00              | -10.75         | AVG           |

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

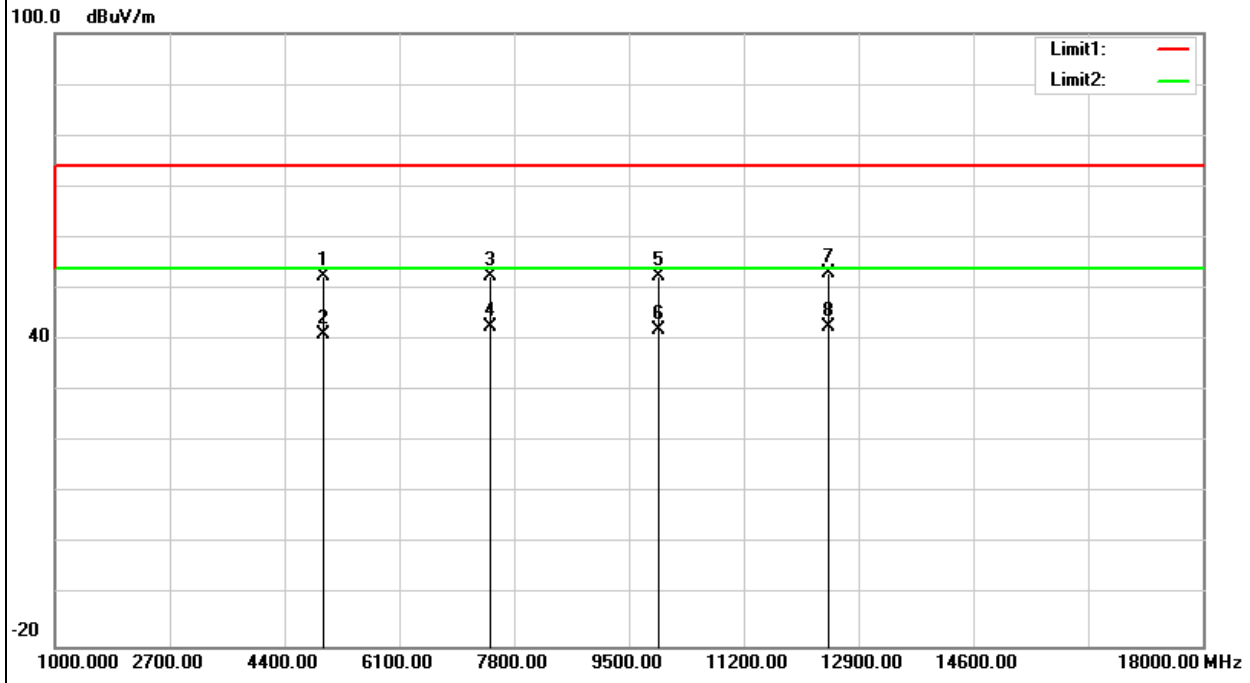


|               |                                  |                     |            |
|---------------|----------------------------------|---------------------|------------|
| EUT :         | Projector                        | Model Name :        | XM03A      |
| Temperature : | 23.1 °C                          | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa                         | Test Date :         | 2021-06-18 |
| Test Mode :   | TX 2480MHz<br>(3Mbps-worst case) | Polarization :      | Horizontal |
| Test Power :  | AC 110V/60Hz                     |                     |            |

| Frequency<br>(MHz) | Meter<br>Reading<br>(dBμV) | Factor<br>(dB) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|----------------------------|----------------|-------------------------------|--------------------|----------------|---------------|
| 4987.000           | 58.71                      | -6.28          | 52.43                         | 74.00              | -21.57         | peak          |
| 4987.000           | 47.45                      | -6.28          | 41.17                         | 54.00              | -12.83         | AVG           |
| 7446.000           | 51.04                      | 1.43           | 52.47                         | 74.00              | -21.53         | peak          |
| 7446.000           | 41.16                      | 1.43           | 42.59                         | 54.00              | -11.41         | AVG           |
| 9931.000           | 48.98                      | 3.33           | 52.31                         | 74.00              | -21.69         | peak          |
| 9931.000           | 38.71                      | 3.33           | 42.04                         | 54.00              | -11.96         | AVG           |
| 12459.000          | 47.15                      | 5.83           | 52.98                         | 74.00              | -21.02         | peak          |
| 12459.000          | 36.82                      | 5.83           | 42.65                         | 54.00              | -11.35         | AVG           |

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

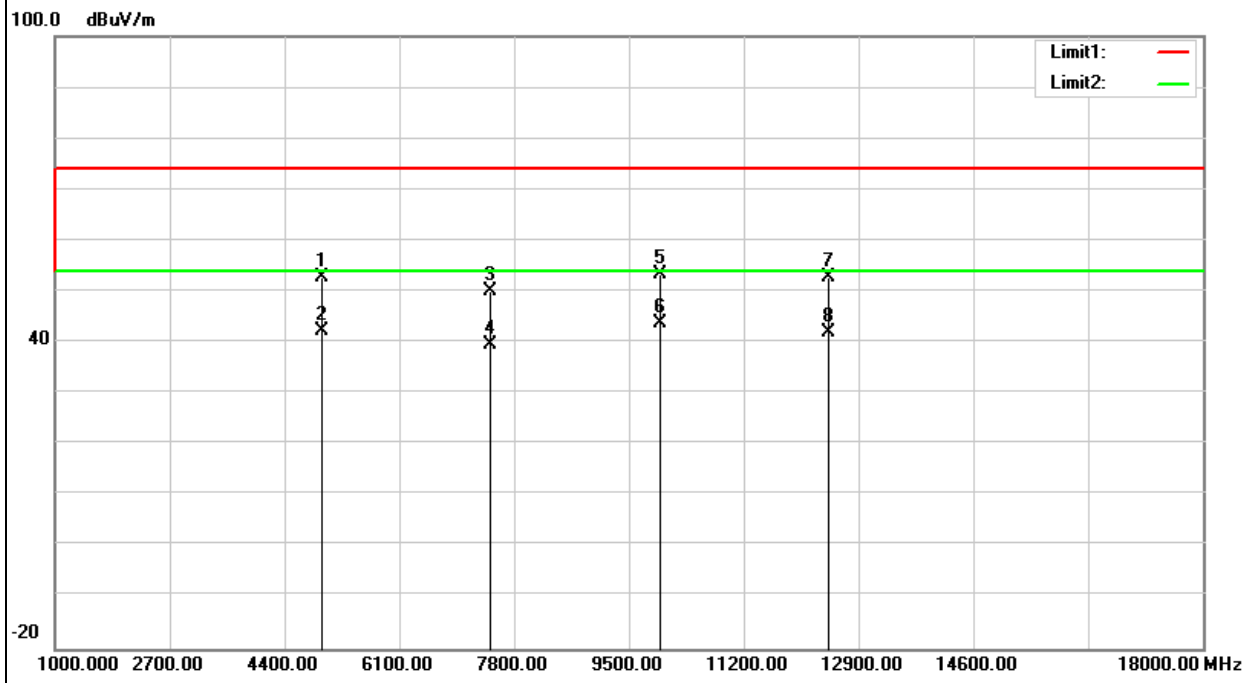


|               |                                  |                     |            |
|---------------|----------------------------------|---------------------|------------|
| EUT :         | Projector                        | Model Name :        | XM03A      |
| Temperature : | 23.1 °C                          | Relative Humidity : | 60%        |
| Pressure :    | 1010 hPa                         | Test Date :         | 2021-06-18 |
| Test Mode :   | TX 2480MHz<br>(3Mbps-worst case) | Polarization :      | Vertical   |
| Test Power :  | AC 110V/60Hz                     |                     |            |

| Frequency<br>(MHz) | Meter<br>Reading<br>(dBμV) | Factor<br>(dB) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|----------------------------|----------------|-------------------------------|--------------------|----------------|---------------|
| 4960.000           | 59.09                      | -6.45          | 52.64                         | 74.00              | -21.36         | peak          |
| 4960.000           | 48.82                      | -6.45          | 42.37                         | 54.00              | -11.63         | AVG           |
| 7443.000           | 48.71                      | 1.42           | 50.13                         | 74.00              | -23.87         | peak          |
| 7443.000           | 38.22                      | 1.42           | 39.64                         | 54.00              | -14.36         | AVG           |
| 9964.000           | 49.94                      | 3.34           | 53.28                         | 74.00              | -20.72         | peak          |
| 9964.000           | 40.44                      | 3.34           | 43.78                         | 54.00              | -10.22         | AVG           |
| 12456.000          | 46.78                      | 5.83           | 52.61                         | 74.00              | -21.39         | peak          |
| 12456.000          | 36.19                      | 5.83           | 42.02                         | 54.00              | -11.98         | AVG           |

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Remark:

All the modes had been tested, but only the worst data recorded in the report.

In frequency ranges 1~25GHz no any other harmonic emissions detected which are tested to compliance with the limit. No recording in the test report.

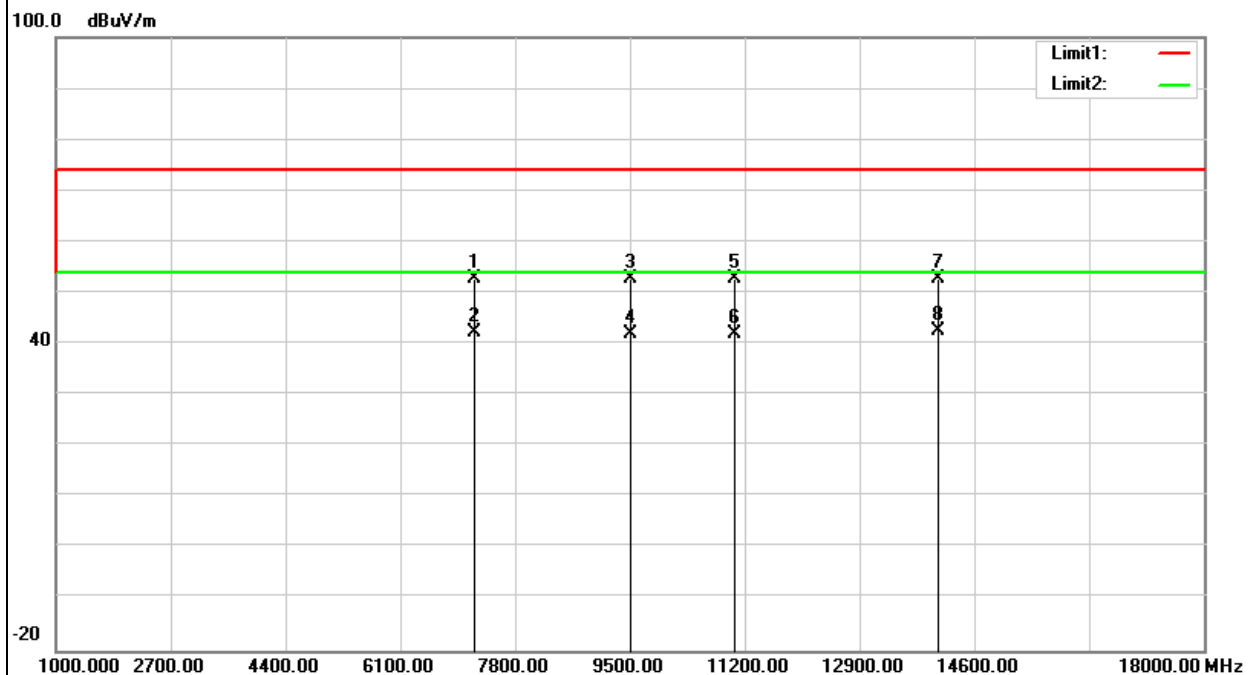
Test result: The unit does meet the NCC requirements.

|                      |                 |                     |               |
|----------------------|-----------------|---------------------|---------------|
| EUT :                | Projector       | Model Name :        | XM03A         |
| Temperature :        | 23.1 °C         | Relative Humidity : | 60%           |
| Pressure :           | 1010 hPa        | Test Date :         | 2021-06-18    |
| Test Mode :          | RX (worst case) | Polarization :      | Horizontal    |
| Measurement Distance | 3 m             | Frenqucy Range      | 1GHz to 18GHz |
| Test Power :         | AC 110V/60Hz    |                     |               |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 7205.000           | 52.09                   | 0.55           | 52.64                      | 74.00              | -21.36         | peak          |
| 7205.000           | 41.57                   | 0.55           | 42.12                      | 54.00              | -11.88         | AVG           |
| 9500.000           | 49.46                   | 3.14           | 52.60                      | 74.00              | -21.40         | peak          |
| 9500.000           | 38.92                   | 3.14           | 42.06                      | 54.00              | -11.94         | AVG           |
| 11047.000          | 46.34                   | 6.30           | 52.64                      | 74.00              | -21.36         | peak          |
| 11047.000          | 35.75                   | 6.30           | 42.05                      | 54.00              | -11.95         | AVG           |
| 14073.000          | 40.45                   | 12.19          | 52.64                      | 74.00              | -21.36         | peak          |
| 14073.000          | 30.35                   | 12.19          | 42.54                      | 54.00              | -11.46         | AVG           |

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

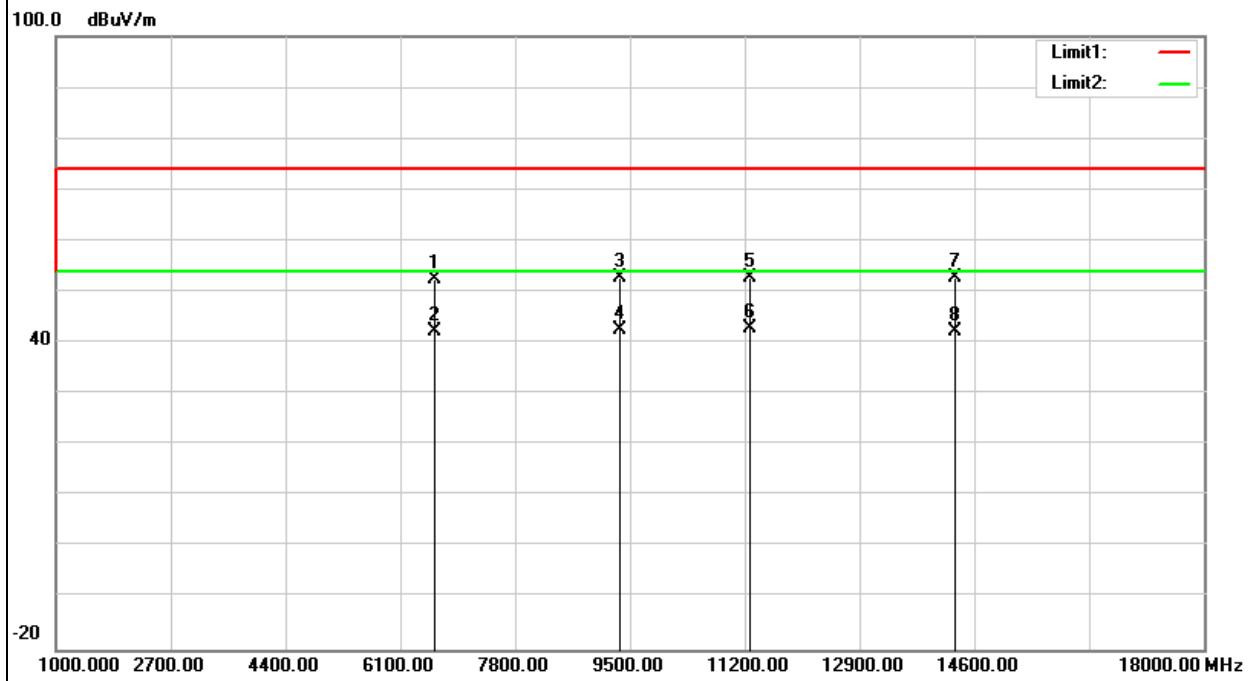


|                      |                 |                     |               |
|----------------------|-----------------|---------------------|---------------|
| EUT :                | Projector       | Model Name :        | XM03A         |
| Temperature :        | 23.1 °C         | Relative Humidity : | 60%           |
| Pressure :           | 1010 hPa        | Test Date :         | 2021-06-18    |
| Test Mode :          | RX (worst case) | Polarization :      | Vertical      |
| Measurement Distance | 3 m             | Frenqucy Range      | 1GHz to 18GHz |
| Test Power :         | AC 110V/60Hz    |                     |               |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 6610.000           | 54.02                   | -1.68          | 52.34                      | 74.00              | -21.66         | peak          |
| 6610.000           | 43.93                   | -1.68          | 42.25                      | 54.00              | -11.75         | AVG           |
| 9347.000           | 49.79                   | 2.93           | 52.72                      | 74.00              | -21.28         | peak          |
| 9347.000           | 39.71                   | 2.93           | 42.64                      | 54.00              | -11.36         | AVG           |
| 11268.000          | 46.48                   | 6.36           | 52.84                      | 74.00              | -21.16         | peak          |
| 11268.000          | 36.39                   | 6.36           | 42.75                      | 54.00              | -11.25         | AVG           |
| 14311.000          | 40.88                   | 11.76          | 52.64                      | 74.00              | -21.36         | peak          |
| 14311.000          | 30.43                   | 11.76          | 42.19                      | 54.00              | -11.81         | AVG           |

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

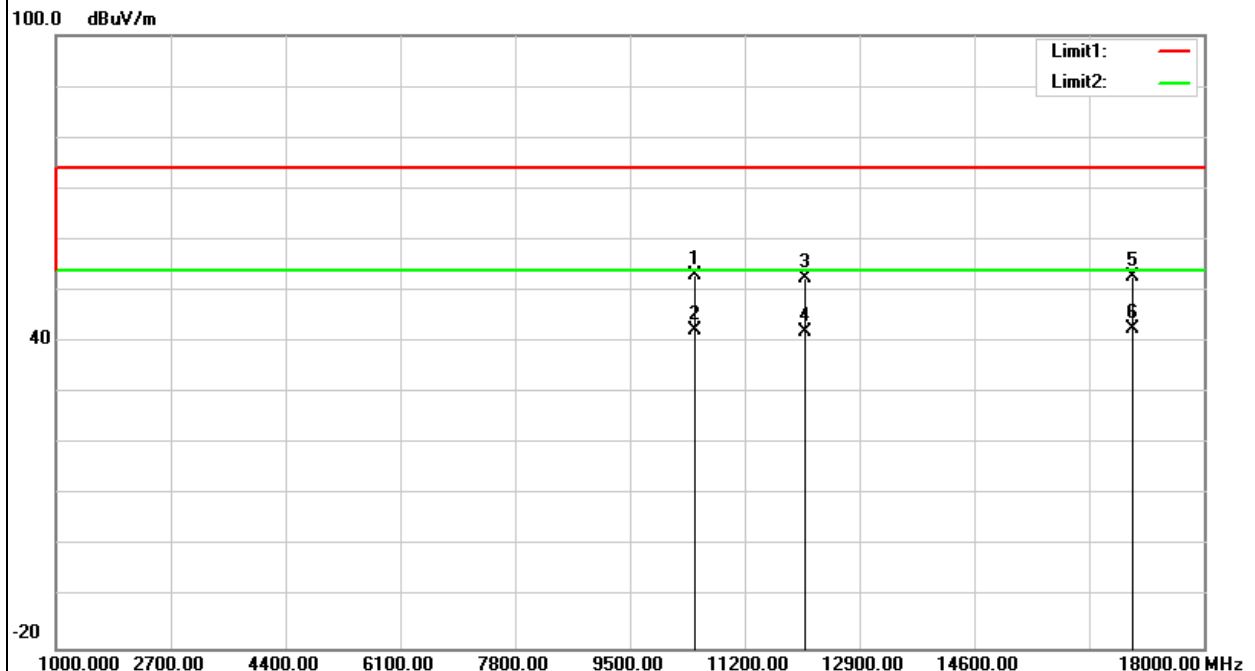


|                      |              |                     |                |
|----------------------|--------------|---------------------|----------------|
| EUT :                | Projector    | Model Name :        | XM03A          |
| Temperature :        | 23.1 °C      | Relative Humidity : | 60%            |
| Pressure :           | 1010 hPa     | Test Date :         | 2021-06-23     |
| Test Mode :          | Working      | Polarization :      | Horizontal     |
| Measurement Distance | 3 m          | Frenqucy Range      | 18GHz to 25GHz |
| Test Power :         | AC 110V/60Hz |                     |                |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 10452.000          | 48.12                   | 4.81           | 52.93                      | 74.00              | -21.07         | peak          |
| 10452.000          | 37.44                   | 4.81           | 42.25                      | 54.00              | -11.75         | AVG           |
| 12101.000          | 46.53                   | 5.81           | 52.34                      | 74.00              | -21.66         | peak          |
| 12101.000          | 36.21                   | 5.81           | 42.02                      | 54.00              | -11.98         | AVG           |
| 16946.000          | 42.89                   | 9.76           | 52.65                      | 74.00              | -21.35         | peak          |
| 16946.000          | 32.81                   | 9.76           | 42.57                      | 54.00              | -11.43         | AVG           |

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

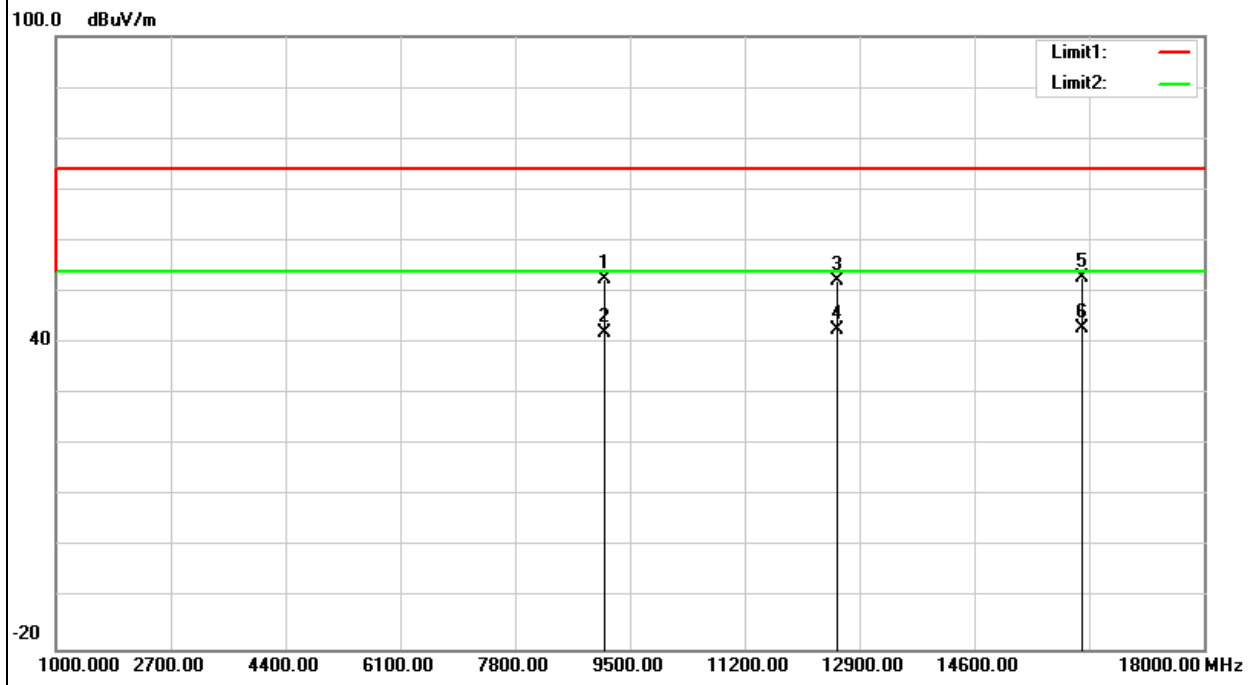


|                      |              |                     |                |
|----------------------|--------------|---------------------|----------------|
| EUT :                | Projector    | Model Name :        | XM03A          |
| Temperature :        | 23.1 °C      | Relative Humidity : | 60%            |
| Pressure :           | 1010 hPa     | Test Date :         | 2021-06-23     |
| Test Mode :          | Working      | Polarization :      | Vertical       |
| Measurement Distance | 3 m          | Frenqucy Range      | 18GHz to 25GHz |
| Test Power :         | AC 110V/60Hz |                     |                |

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 9126.000           | 49.71                   | 2.63           | 52.34                      | 74.00              | -21.66         | peak          |
| 9126.000           | 39.39                   | 2.63           | 42.02                      | 54.00              | -11.98         | AVG           |
| 12560.000          | 46.13                   | 5.92           | 52.05                      | 74.00              | -21.95         | peak          |
| 12560.000          | 36.72                   | 5.92           | 42.64                      | 54.00              | -11.36         | AVG           |
| 16198.000          | 44.97                   | 7.68           | 52.65                      | 74.00              | -21.35         | peak          |
| 16198.000          | 35.29                   | 7.68           | 42.97                      | 54.00              | -11.03         | AVG           |

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Remark:

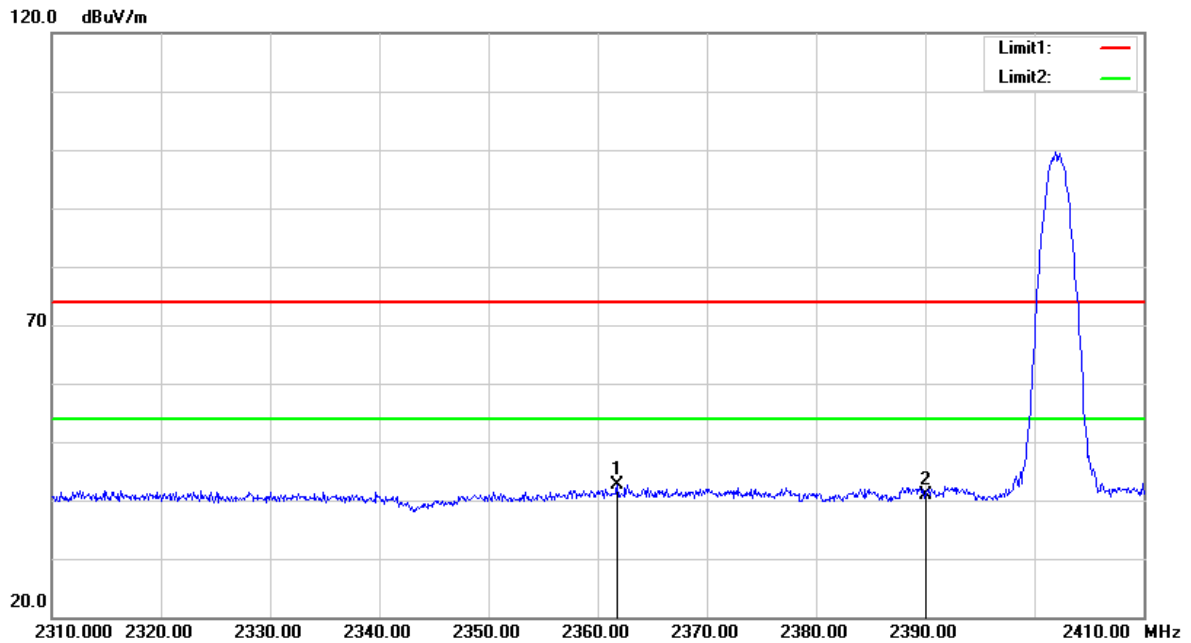
All the modes had been tested, but only the worst data recorded in the report.

No any other emissions detected which are tested to compliance with the limit. No recording in the test report.

Test result: The unit does meet the NCC requirements.

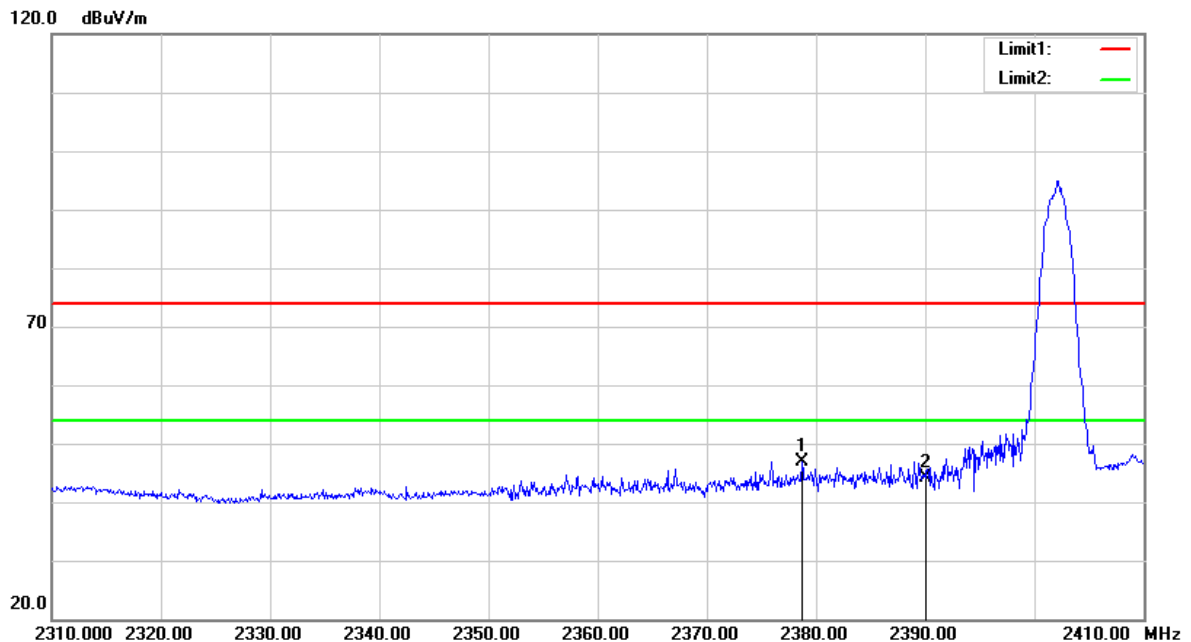
## 3.2.8 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)

### GFSK Low channel Horizontal

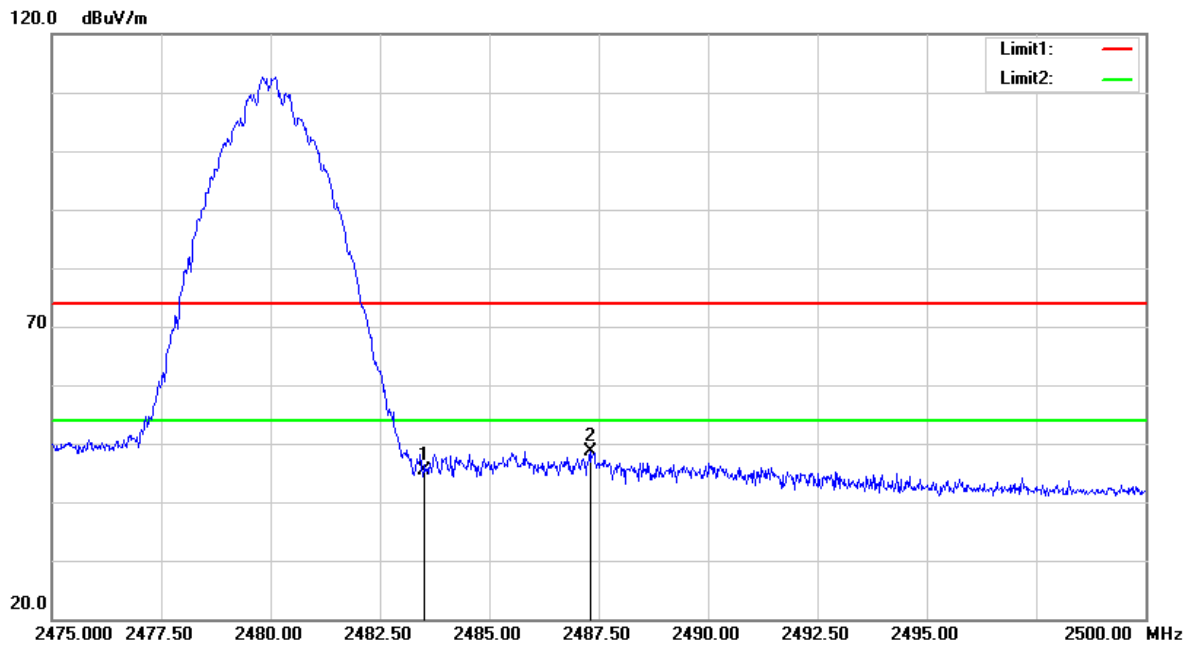


| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 2361.800           | 38.63             | 3.92                    | 42.55              | 74.00             | -31.45         | peak   |
| 2   | 2390.000           | 36.58             | 4.34                    | 40.92              | 74.00             | -33.08         | peak   |

### Vertical

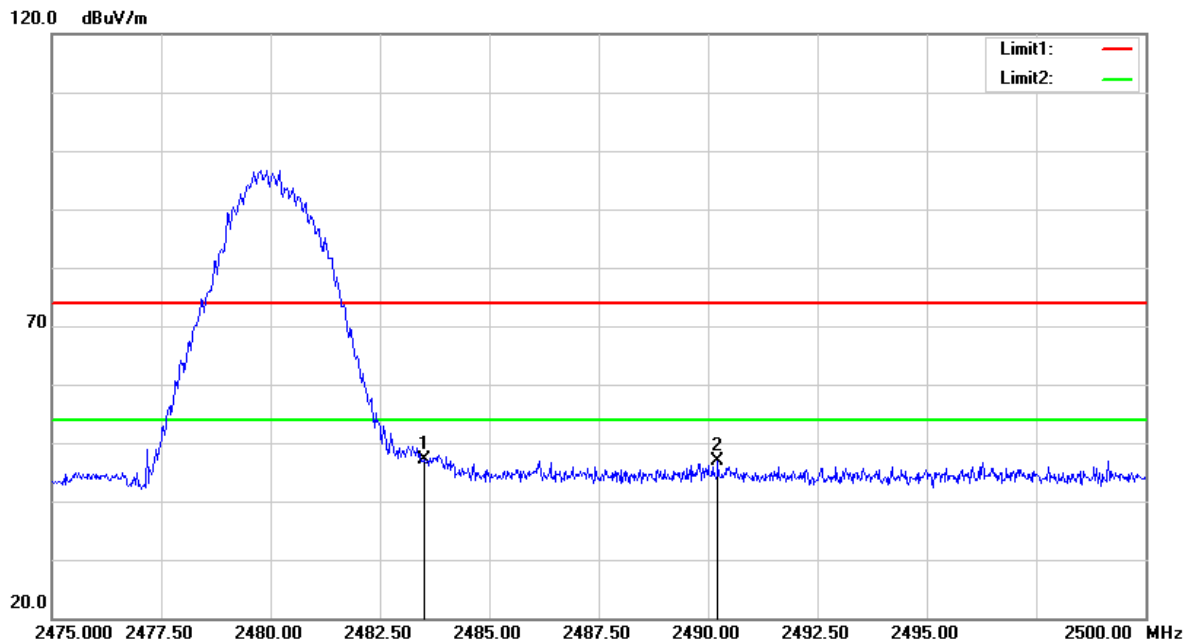


| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 2378.700           | 42.80             | 4.17                    | 46.97              | 74.00             | -27.03         | peak   |
| 2   | 2390.000           | 39.71             | 4.34                    | 44.05              | 74.00             | -29.95         | peak   |

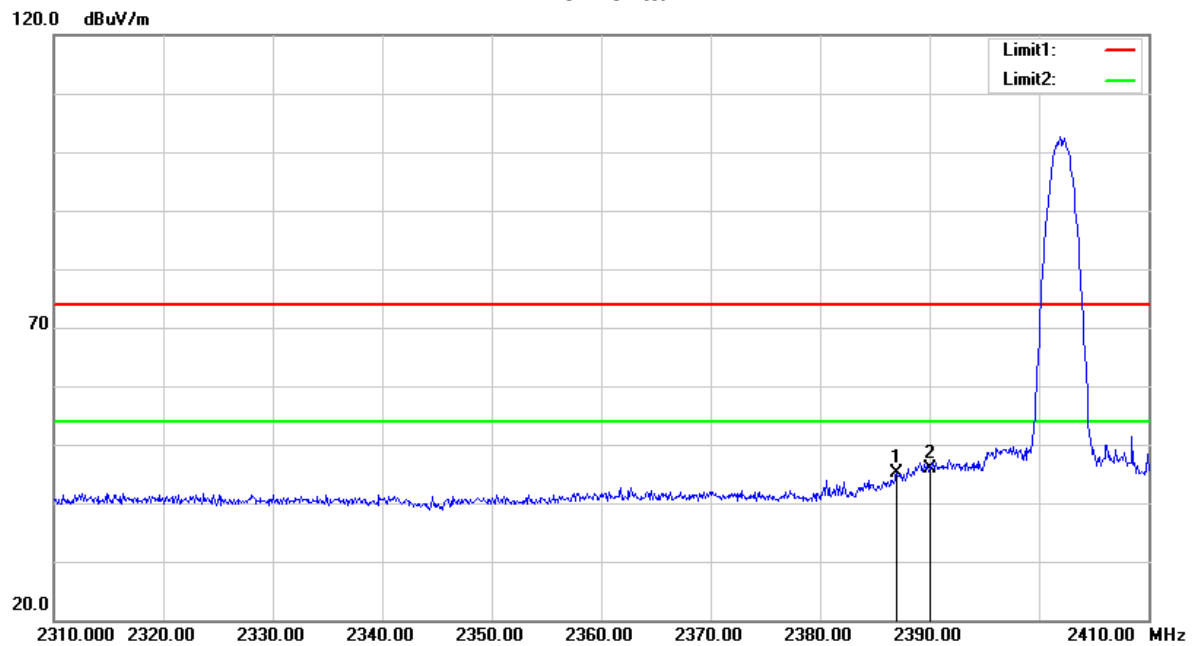
GFSK High channel  
Horizontal

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 2483.500           | 40.71             | 4.60                    | 45.31              | 74.00             | -28.69         | peak   |
| 2   | 2487.300           | 44.01             | 4.62                    | 48.63              | 74.00             | -25.37         | peak   |

## Vertical

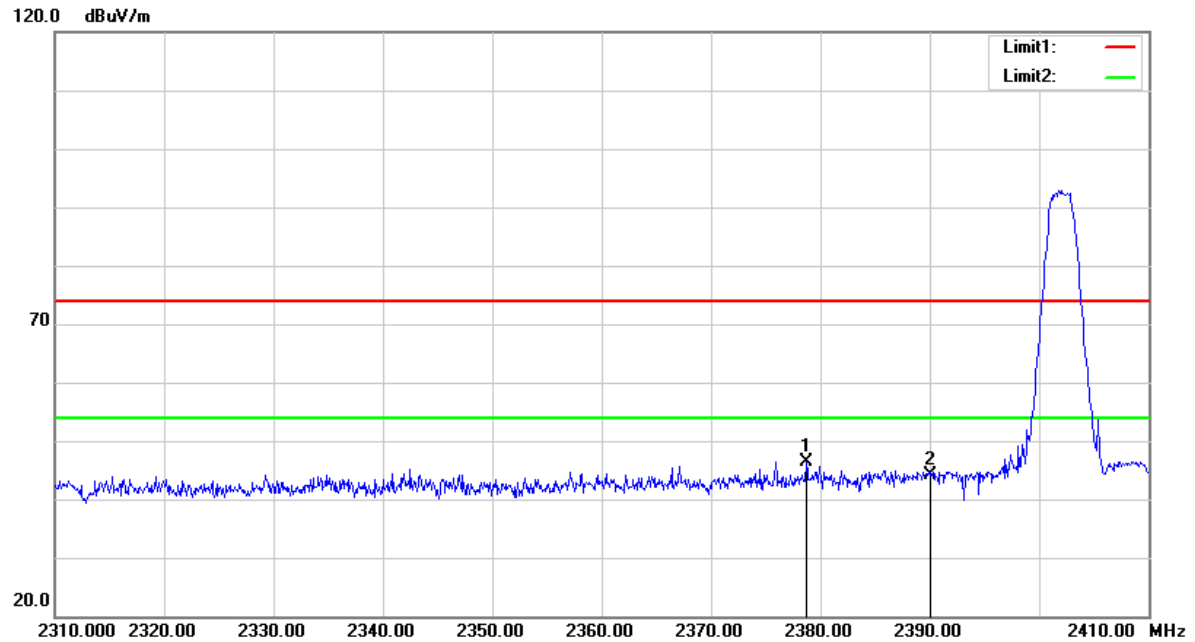


| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 2483.500           | 42.63             | 4.60                    | 47.23              | 74.00             | -26.77         | peak   |
| 2   | 2490.225           | 42.22             | 4.63                    | 46.85              | 74.00             | -27.15         | peak   |

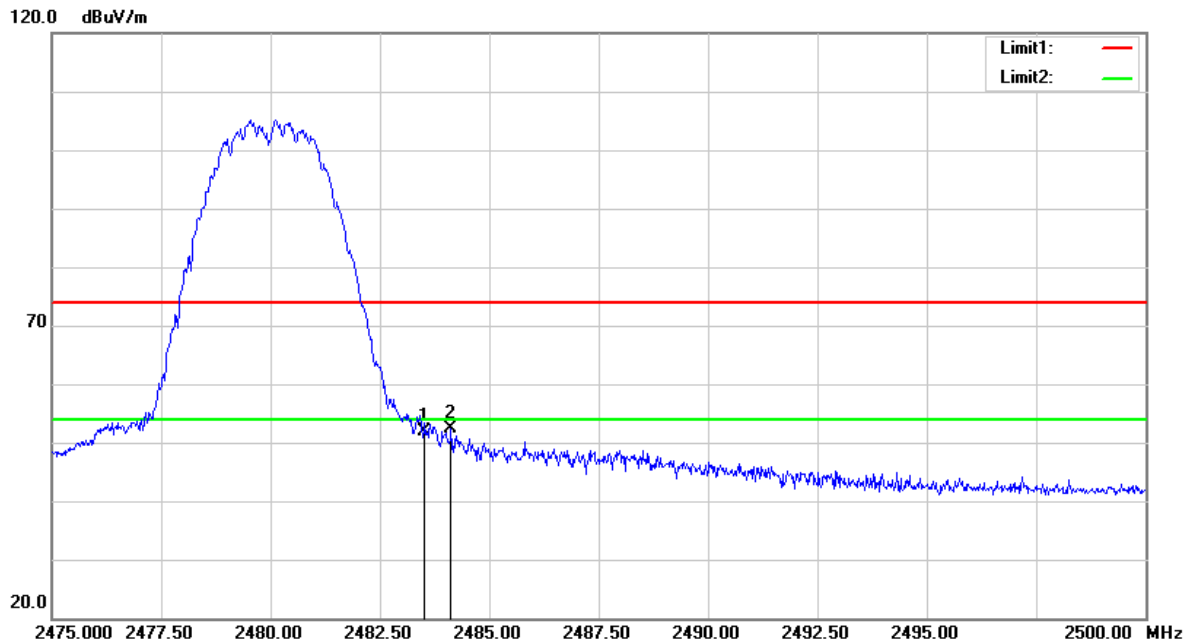
$\pi/4$ -DQPSK Low channel  
Horizontal

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 2387.000           | 40.80             | 4.30                    | 45.10              | 74.00             | -28.90         | peak   |
| 2   | 2390.000           | 41.58             | 4.34                    | 45.92              | 74.00             | -28.08         | peak   |

## Vertical

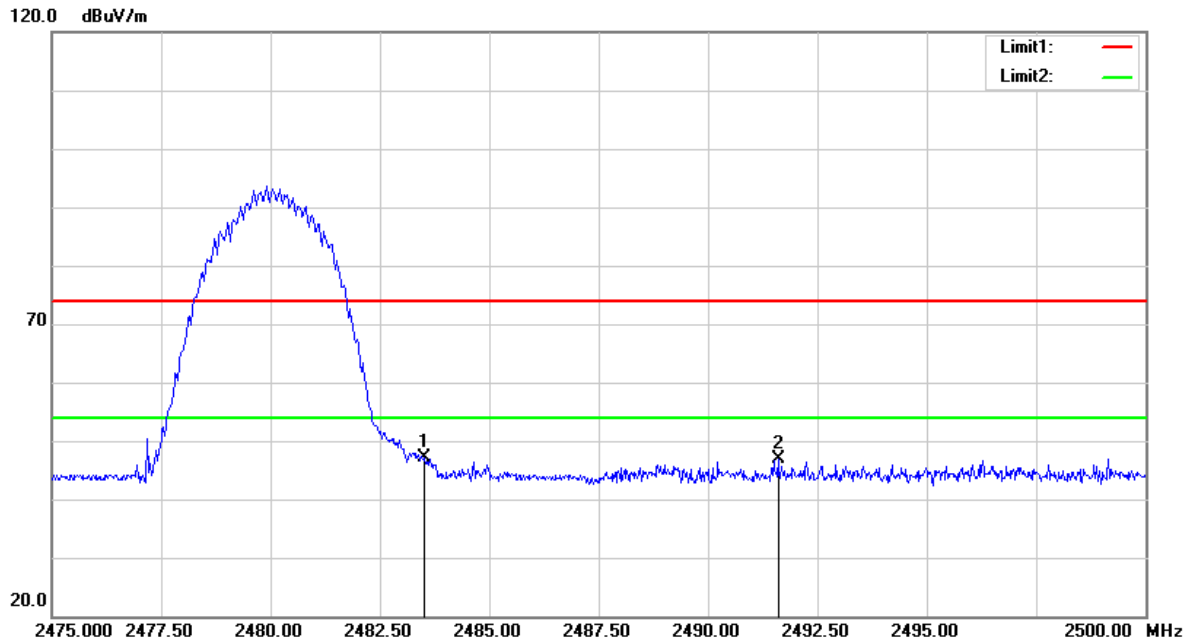


| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 2378.700           | 42.30             | 4.17                    | 46.47              | 74.00             | -27.53         | peak   |
| 2   | 2390.000           | 39.71             | 4.34                    | 44.05              | 74.00             | -29.95         | peak   |

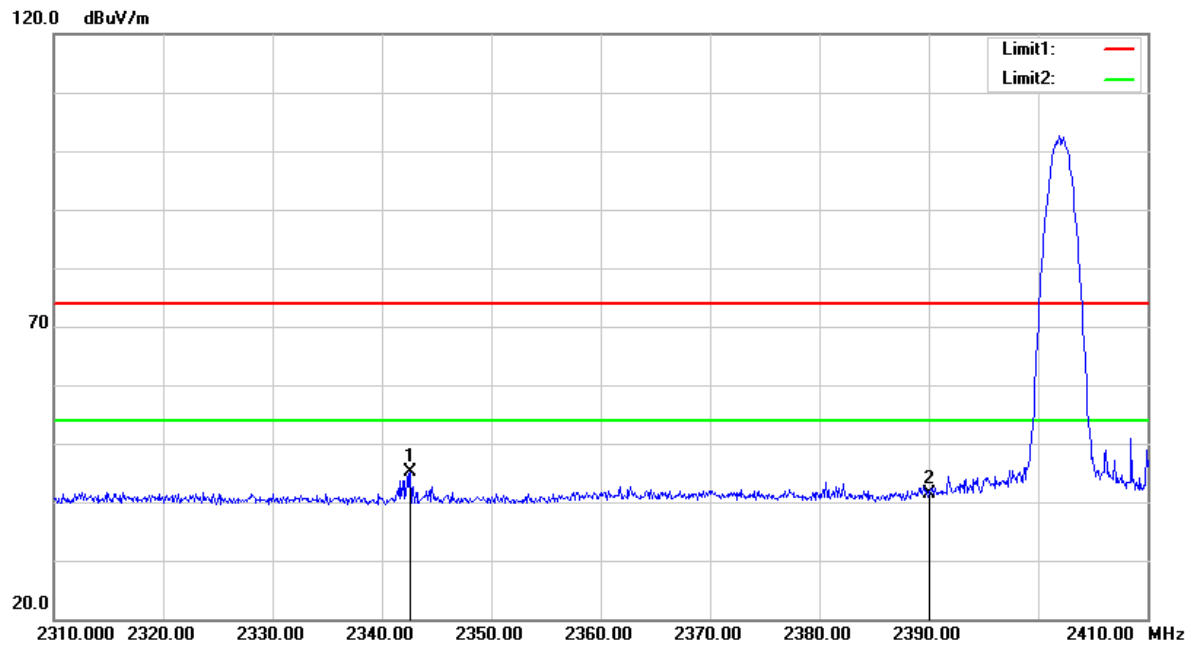
$\pi/4$ -DQPSK High channel  
Horizontal

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 2483.500           | 47.21             | 4.60                    | 51.81              | 74.00             | -22.19         | peak   |
| 2   | 2484.125           | 47.81             | 4.61                    | 52.42              | 74.00             | -21.58         | peak   |

## Vertical

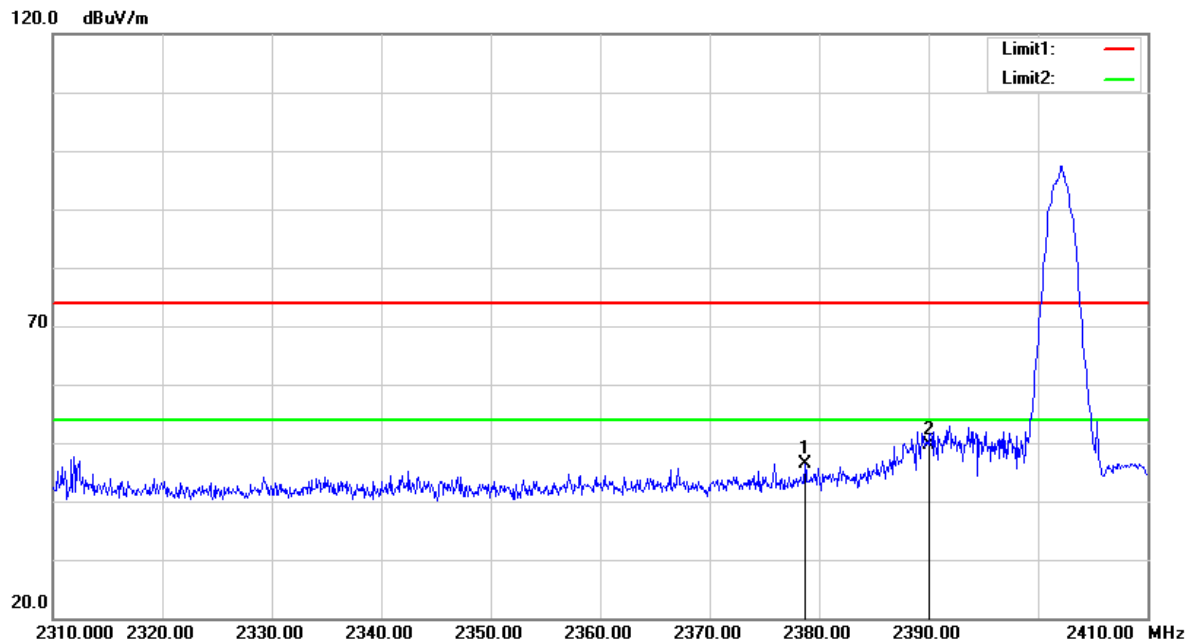


| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 2483.500           | 42.63             | 4.60                    | 47.23              | 74.00             | -26.77         | peak   |
| 2   | 2491.600           | 42.20             | 4.63                    | 46.83              | 74.00             | -27.17         | peak   |

8DPSK Low channel  
Horizontal

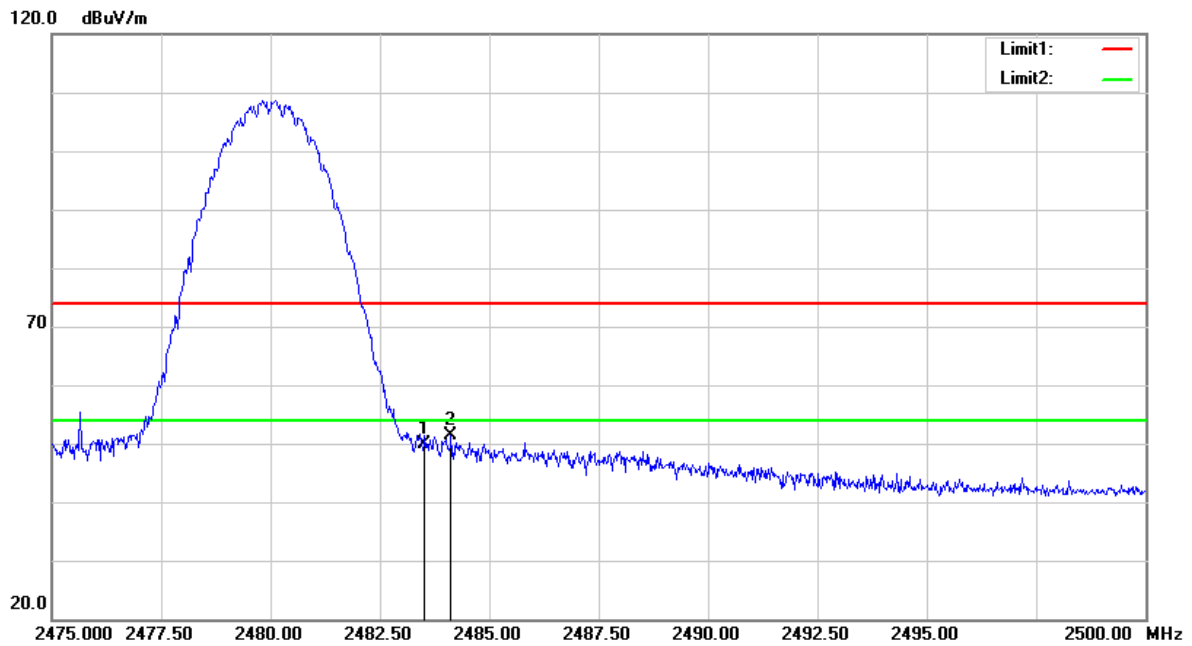
| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 2342.600           | 41.46             | 3.70                    | 45.16              | 74.00             | -28.84         | peak   |
| 2   | 2390.000           | 37.08             | 4.34                    | 41.42              | 74.00             | -32.58         | peak   |

## Vertical



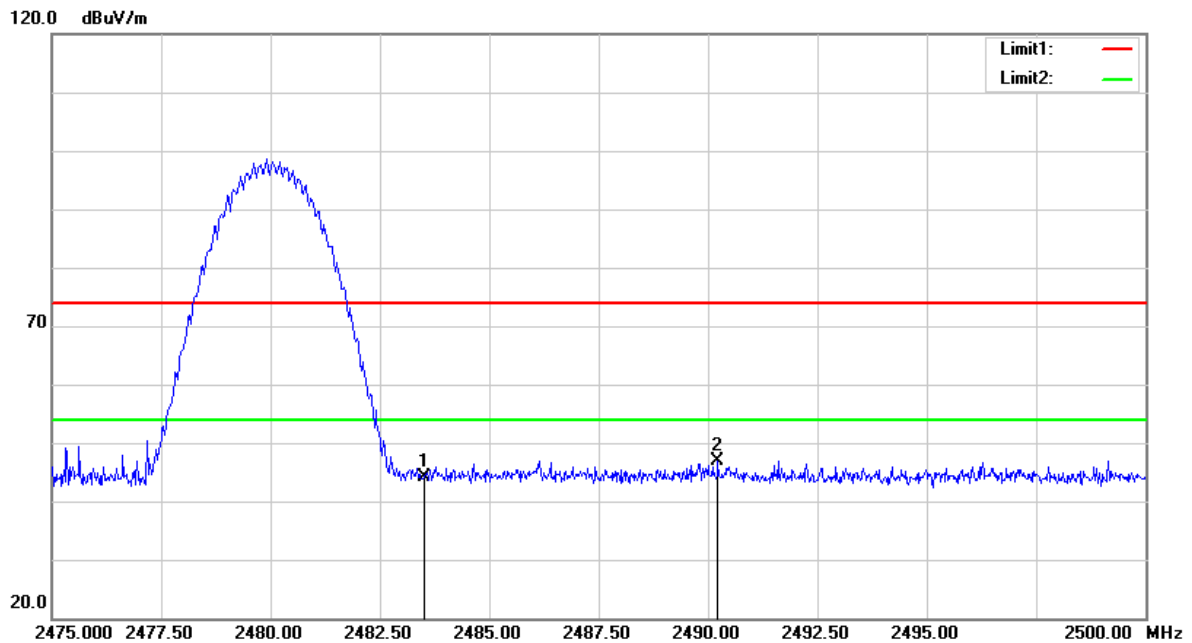
| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|--------|
| 1   | 2378.700           | 42.30             | 4.17                    | 46.47              | 74.00             | -27.53         | peak   |
| 2   | 2390.000           | 45.21             | 4.34                    | 49.55              | 74.00             | -24.45         | peak   |

## 8DPSK High channel Horizontal



| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------------|-----------------|----------------|-------------|--------|
| 1   | 2483.500        | 39.63          | 4.60                 | 44.23           | 74.00          | -29.77      | peak   |
| 2   | 2490.225        | 42.22          | 4.63                 | 46.85           | 74.00          | -27.15      | peak   |

## Vertical



| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------------|-----------------|----------------|-------------|--------|
| 1   | 2483.500        | 38.81          | 4.60                 | 43.41           | 74.00          | -30.59      | peak   |
| 2   | 2495.375        | 41.64          | 4.63                 | 46.27           | 74.00          | -27.73      | peak   |

**Test result: The unit does meet the NCC requirements.**

## 4. OCCUPIED BANDWIDTH TEST

### 4.1 APPLIED PROCEDURES / LIMIT

| LP0002        |           |       |                       |        |
|---------------|-----------|-------|-----------------------|--------|
| Section       | Test Item | Limit | Frequency Range (MHz) | Result |
| 4.10.1(6.1.1) | Bandwidth | N/A   | 2402-2480             | PASS   |

| Spectrum Parameter | Setting                                                    |
|--------------------|------------------------------------------------------------|
| Attenuation        | Auto                                                       |
| Span Frequency     | wide enough to capture the peaks of two adjacent channels. |
| RB                 | 30 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)     |
| VB                 | 100 kHz (20dB Bandwidth) / 300 kHz (Channel Separation)    |
| Detector           | Peak                                                       |
| Trace              | Max Hold                                                   |
| Sweep Time         | Auto                                                       |

#### 4.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW= 30KHz, VBW=100KHz, Sweep time = Auto, Span=3MHz.

#### 4.1.2 TEST SETUP



#### 4.1.3 EUT OPERATION CONDITIONS

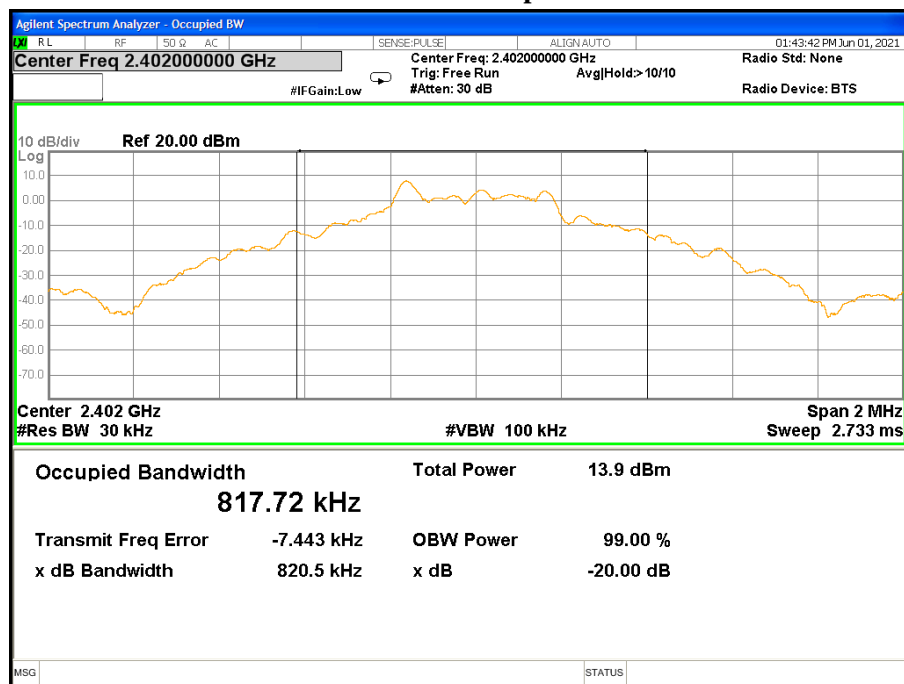
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

## 4.1.4 TEST RESULTS

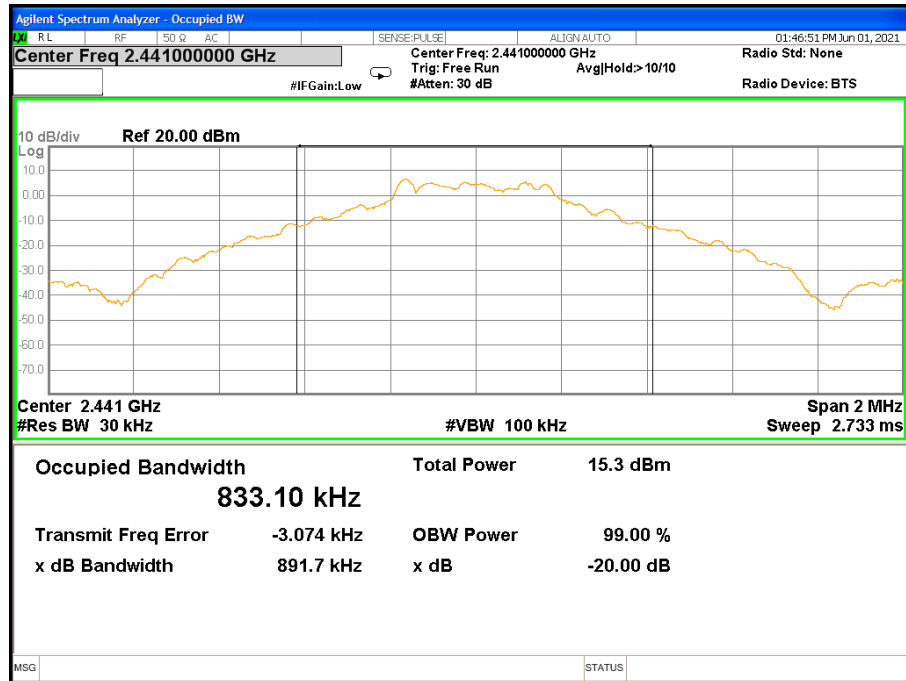
|               |                                |                     |              |
|---------------|--------------------------------|---------------------|--------------|
| EUT :         | Projector                      | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                        | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                       | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00 / CH39 /CH78 (1Mbps Mode) |                     |              |
| Test Date :   | 2021-06-01                     |                     |              |

| Frequency | 20dB Bandwidth (MHz) | Result |
|-----------|----------------------|--------|
| 2402 MHz  | 0.821                | Pass   |
| 2441 MHz  | 0.892                | Pass   |
| 2480 MHz  | 0.891                | Pass   |

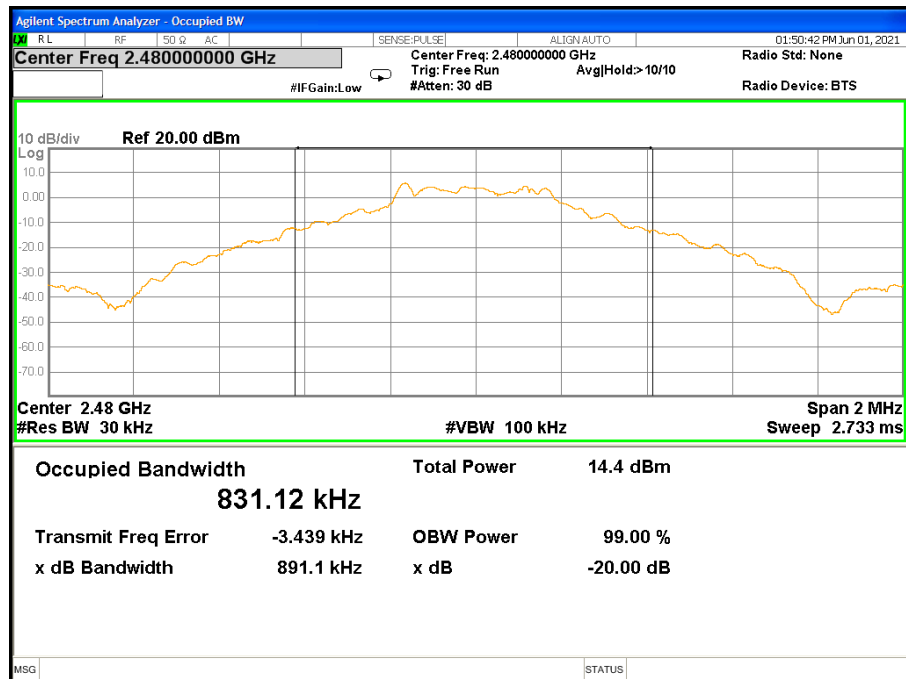
### CH 00-1Mbps



## CH 39-1Mbps



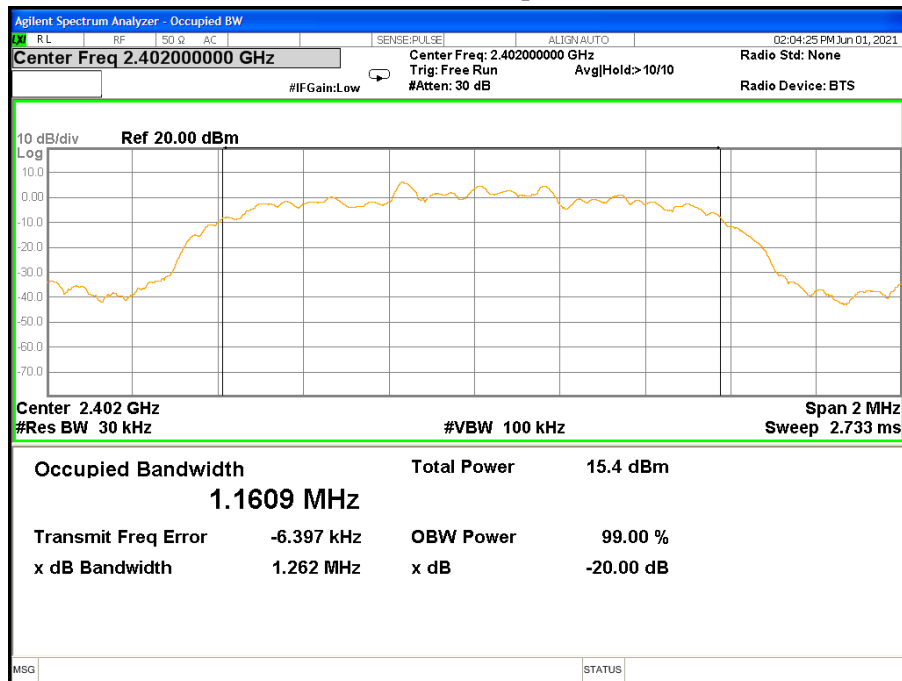
## CH 78-1Mbps



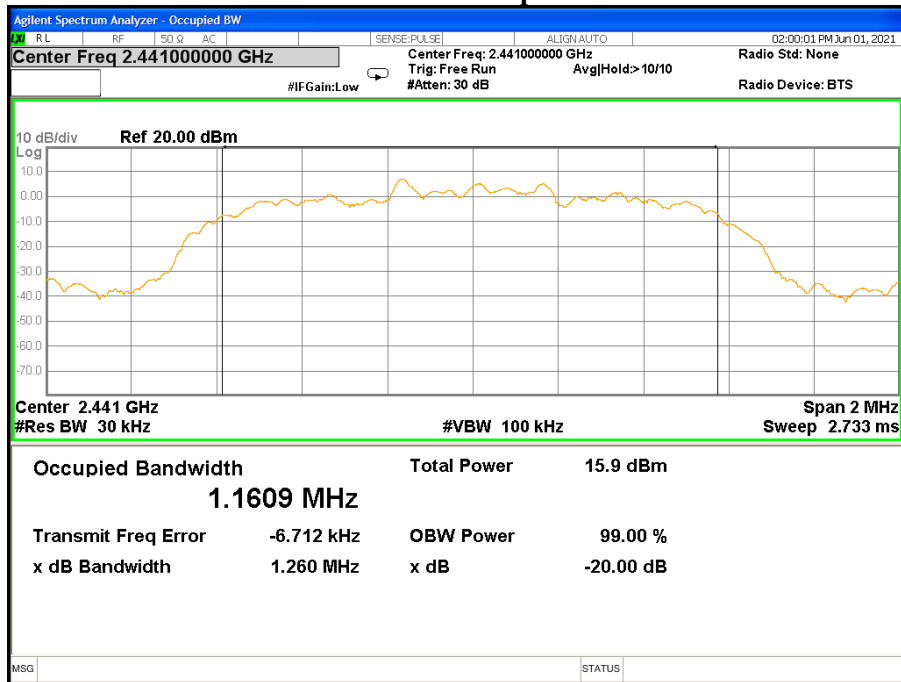
|               |                                |                     |              |
|---------------|--------------------------------|---------------------|--------------|
| EUT :         | Projector                      | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                        | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                       | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00 / CH39 /CH78 (2Mbps Mode) |                     |              |
| Test Date :   | 2021-06-01                     |                     |              |

| Frequency | 20dB Bandwidth (MHz) | Result |
|-----------|----------------------|--------|
| 2402 MHz  | 1.262                | Pass   |
| 2441 MHz  | 1.260                | Pass   |
| 2480 MHz  | 1.260                | Pass   |

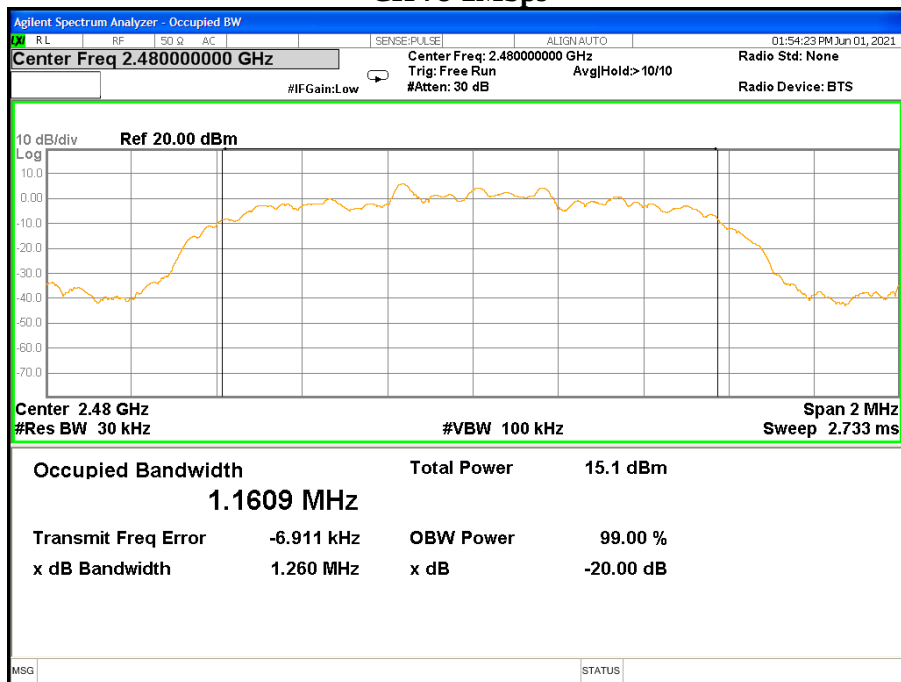
## CH 00-2Mbps



## CH 39-2Mbps



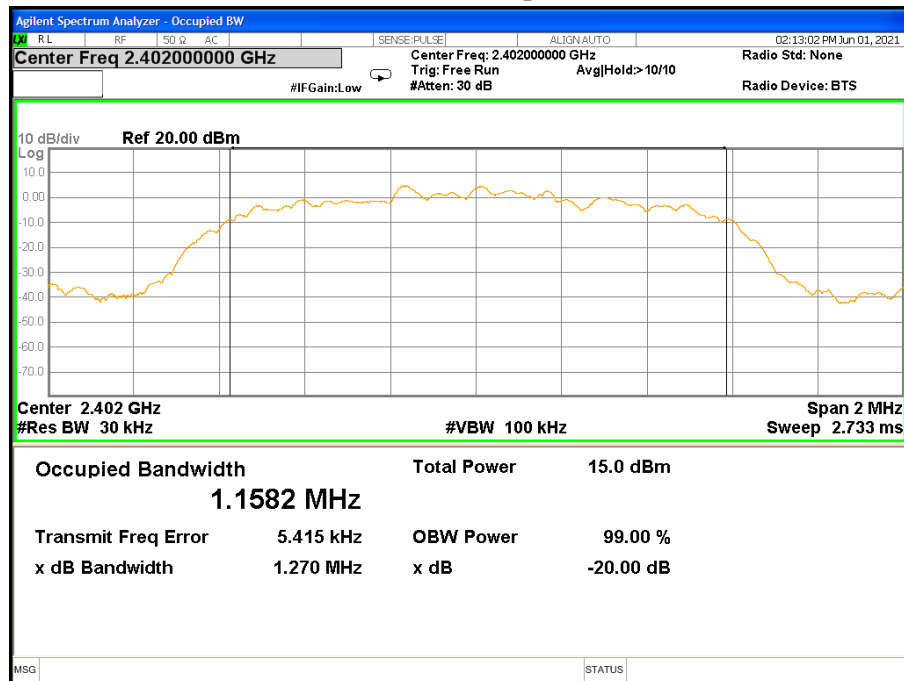
## CH 78-2Mbps



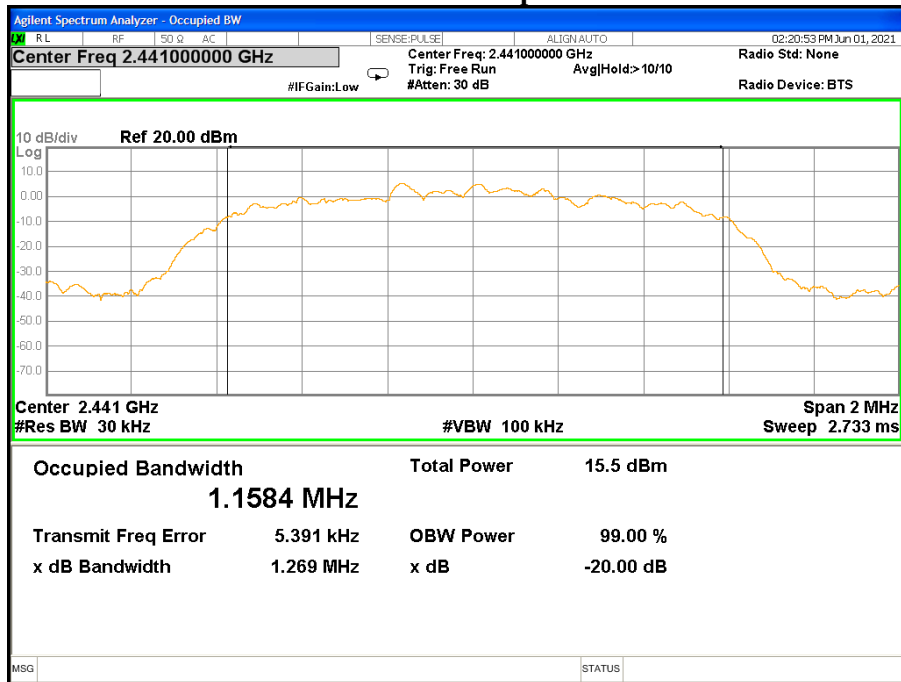
|               |                                |                     |              |
|---------------|--------------------------------|---------------------|--------------|
| EUT :         | Projector                      | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                        | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                       | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00 / CH39 /CH78 (3Mbps Mode) |                     |              |
| Test Date :   | 2021-06-01                     |                     |              |

| Frequency | 20dB Bandwidth (MHz) | Result |
|-----------|----------------------|--------|
| 2402 MHz  | 1.270                | Pass   |
| 2441 MHz  | 1.269                | Pass   |
| 2480 MHz  | 1.267                | Pass   |

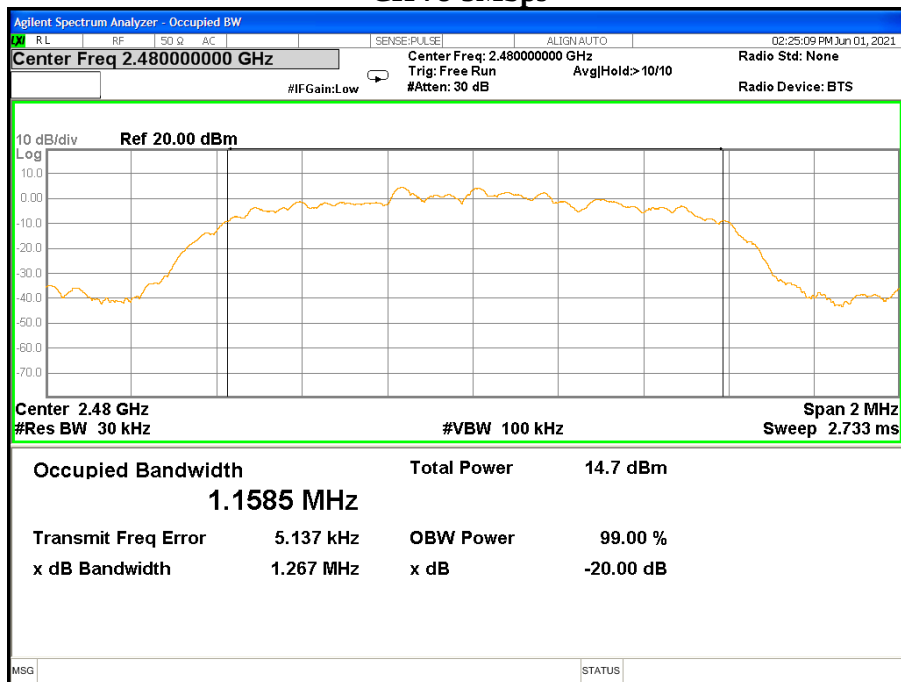
## CH 00-3Mbps



## CH 39-3Mbps



## CH 78-3Mbps



## 5. NUMBER OF HOPPING CHANNEL

### 5.1 APPLIED PROCEDURES / LIMIT

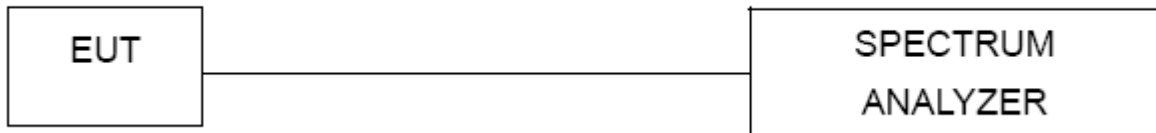
| LP0002        |                           |                       |        |
|---------------|---------------------------|-----------------------|--------|
| Section       | Test Item                 | Frequency Range (MHz) | Result |
| 4.10.1(6.1.1) | Number of Hopping Channel | 2400-2483.5           | PASS   |

| Spectrum Parameters | Setting                         |
|---------------------|---------------------------------|
| Attenuation         | Auto                            |
| Span Frequency      | the frequency band of operation |
| RB                  | 300kHz                          |
| VB                  | 1 MHz                           |
| Detector            | Peak                            |
| Trace               | Max Hold                        |
| Sweep Time          | Auto                            |

#### 5.1.1 TEST PROCEDURE

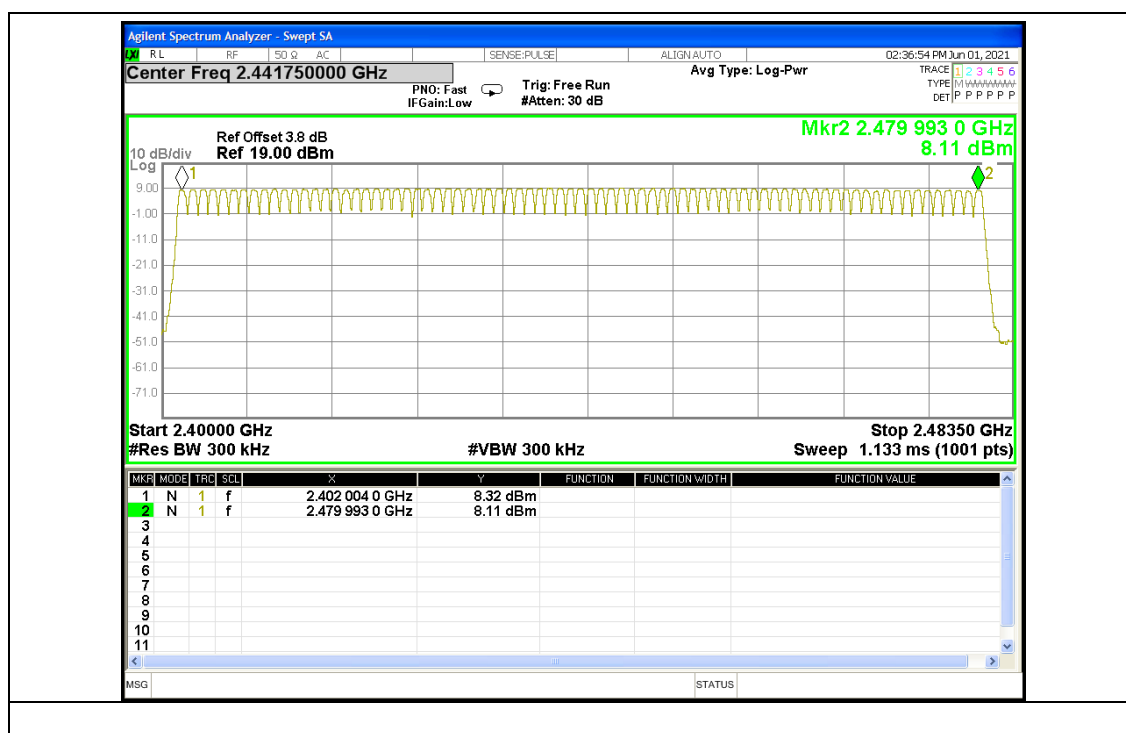
- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 300kHz, VBW=1 MHz, Sweep time = Auto.

#### 5.1.2 TEST SETUP



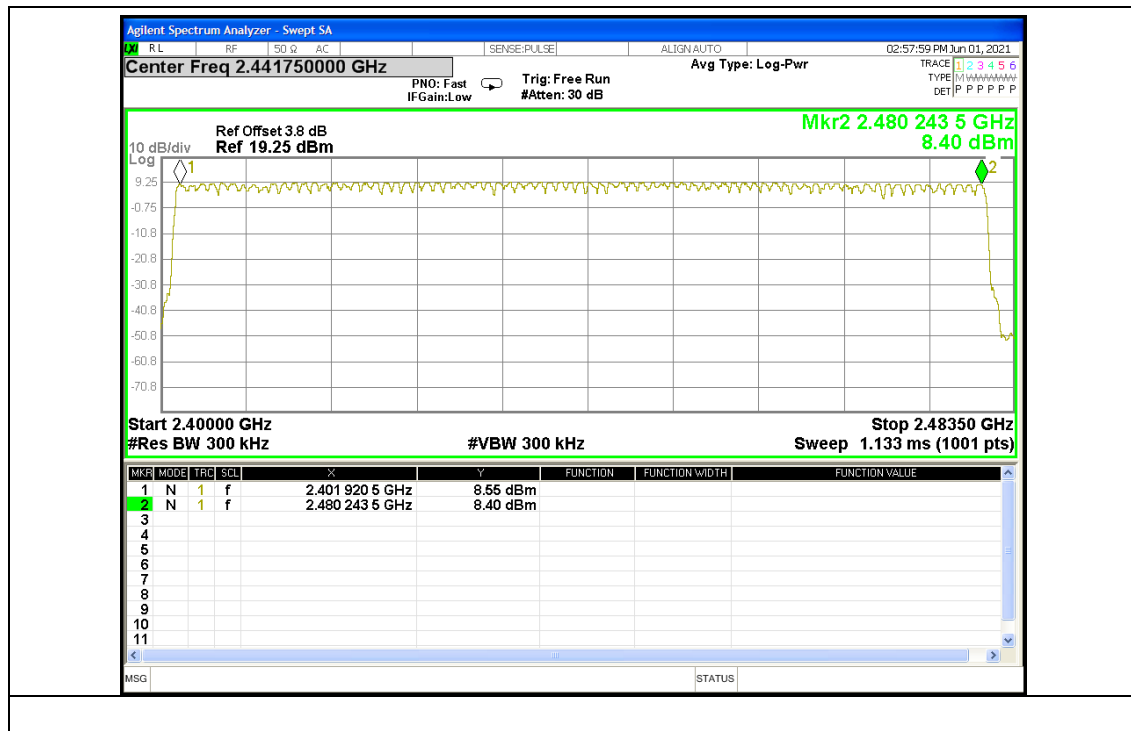
#### 5.1.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.



|               |                          |                     |              |
|---------------|--------------------------|---------------------|--------------|
| EUT :         | Projector                | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                  | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                 | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | Hopping Mode –2Mbps mode |                     |              |
| Test Date :   | 2021-06-01               |                     |              |

|                           |    |
|---------------------------|----|
| Number of Hopping Channel | 79 |
|---------------------------|----|





## 6. AVERAGE TIME OF OCCUPANCY

### 6.1 APPLIED PROCEDURES / LIMIT

| LP0002        |                           |        |                       |        |
|---------------|---------------------------|--------|-----------------------|--------|
| Section       | Test Item                 | Limit  | Frequency Range (MHz) | Result |
| 4.10.1(6.1.2) | Average Time of Occupancy | 0.4sec | 2400-2483.5           | PASS   |

#### 6.1.1 TEST PROCEDURE

- The transmitter output (antenna port) was connected to the spectrum analyzer
- Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
- Use a video trigger with the trigger level set to enable triggering only on full pulses.
- Sweep Time is more than once pulse time.
- Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- Measure the maximum time duration of one single pulse.
- Set the EUT for DH5, DH3 and DH1 packet transmitting.
- Measure the maximum time duration of one single pulse.
- DH5 Packet permit maximum  $1600 / 79 / 6 = 3.37$  hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times  $3.37 \times 31.6 = 106.6$  within 31.6 seconds.
- DH3 Packet permit maximum  $1600 / 79 / 4 = 5.06$  hops per second in each channel (3 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times  $5.06 \times 31.6 = 160$  within 31.6 seconds.
- DH1 Packet permit maximum  $1600 / 79 / 2 = 10.12$  hops per second in each channel (1 time slot RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times  $10.12 \times 31.6 = 320$  within 31.6 seconds.

#### 6.1.2 TEST SETUP



#### 6.1.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

#### 6.1.4 TEST RESULTS

|               |                               |                     |              |
|---------------|-------------------------------|---------------------|--------------|
| EUT :         | Projector                     | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                       | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                      | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00-DH1/DH3/DH5 (1Mbps Mode) |                     |              |
| Test Date :   | 2021-06-02                    |                     |              |

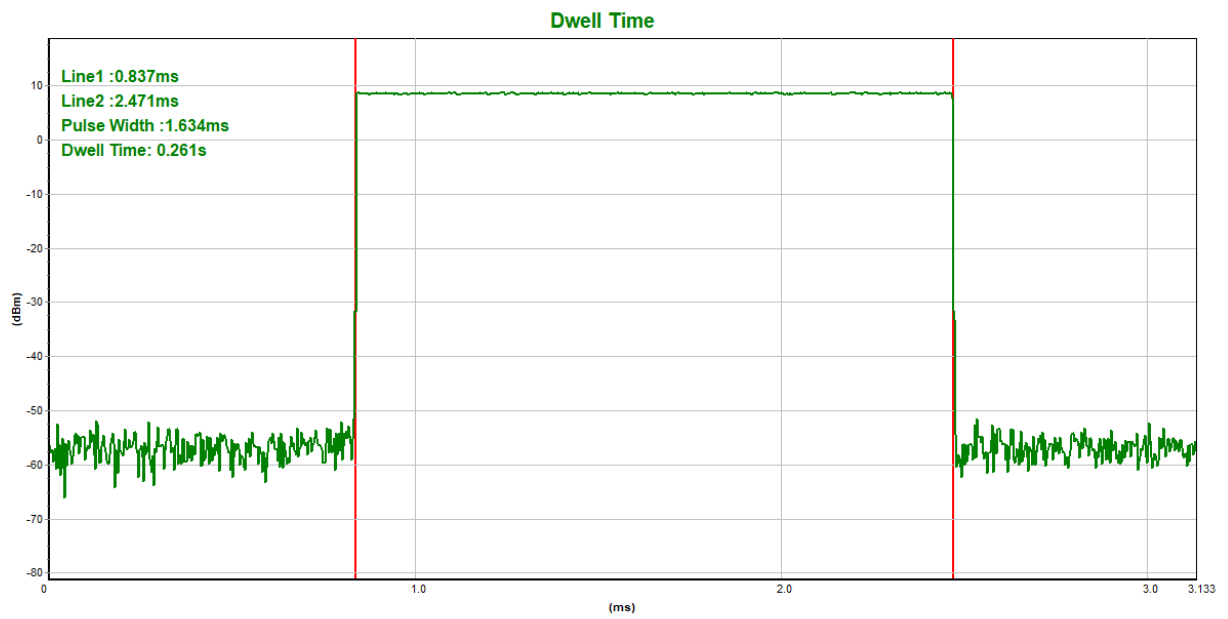
| Modulation | Data Packet | Channel | pulse time(ms) | Dwell Time(s) | Limits(s) |
|------------|-------------|---------|----------------|---------------|-----------|
| GFSK       | DH1         | middle  | 0.374          | 0.120         | 0.4       |
|            | DH3         | middle  | 1.634          | 0.261         | 0.4       |
|            | DH5         | middle  | 2.876          | 0.307         | 0.4       |

| Data Packet | ON Time B (msec) | Period (msec) | Duty Cycle x (linear) | Duty Cycle (%) | 10log(1/x)Duty Cycle Correction Factor (dB) | 1/B Minimum VBW (kHz) |
|-------------|------------------|---------------|-----------------------|----------------|---------------------------------------------|-----------------------|
| DH1         | 0.400            | 2.505         | 0.160                 | 15.97%         | 7.967                                       | 2.500                 |

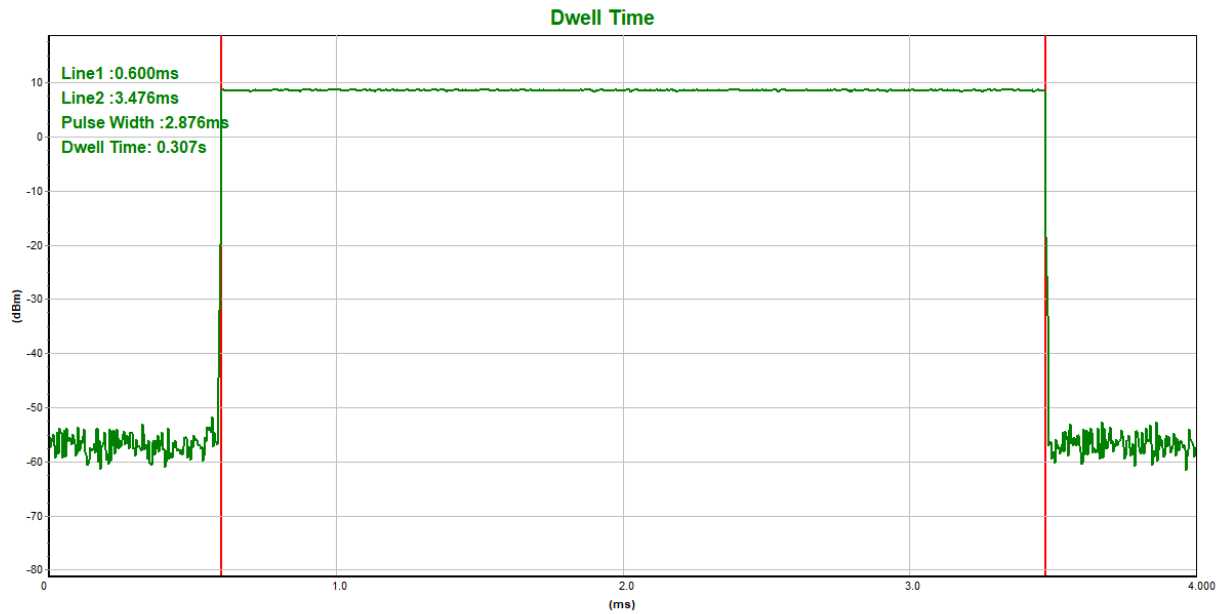
## CH 00- DH1



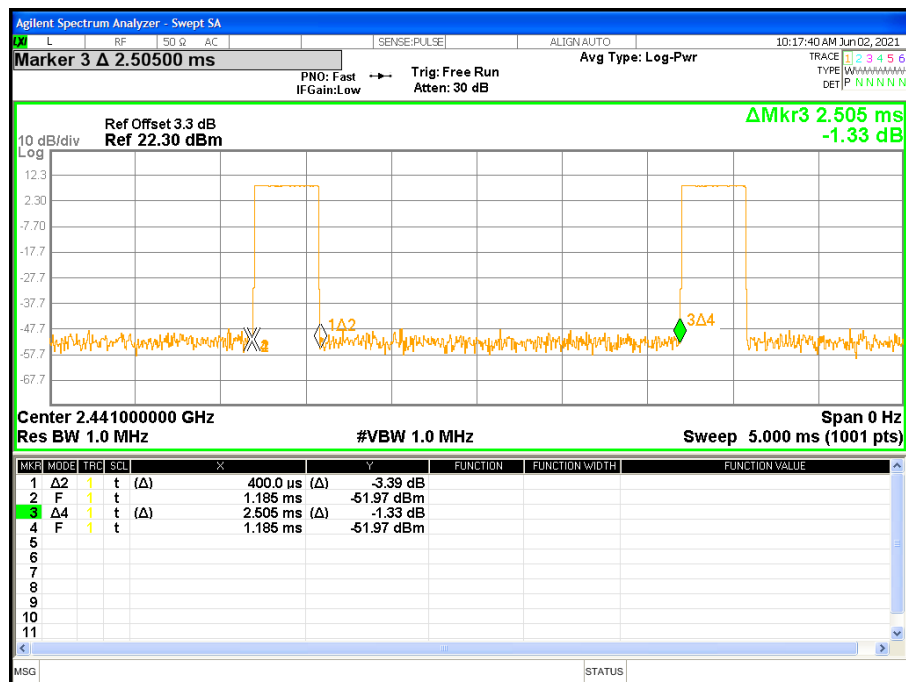
## CH 00- DH3



## CH 00- DH5



## CH 00- DH1

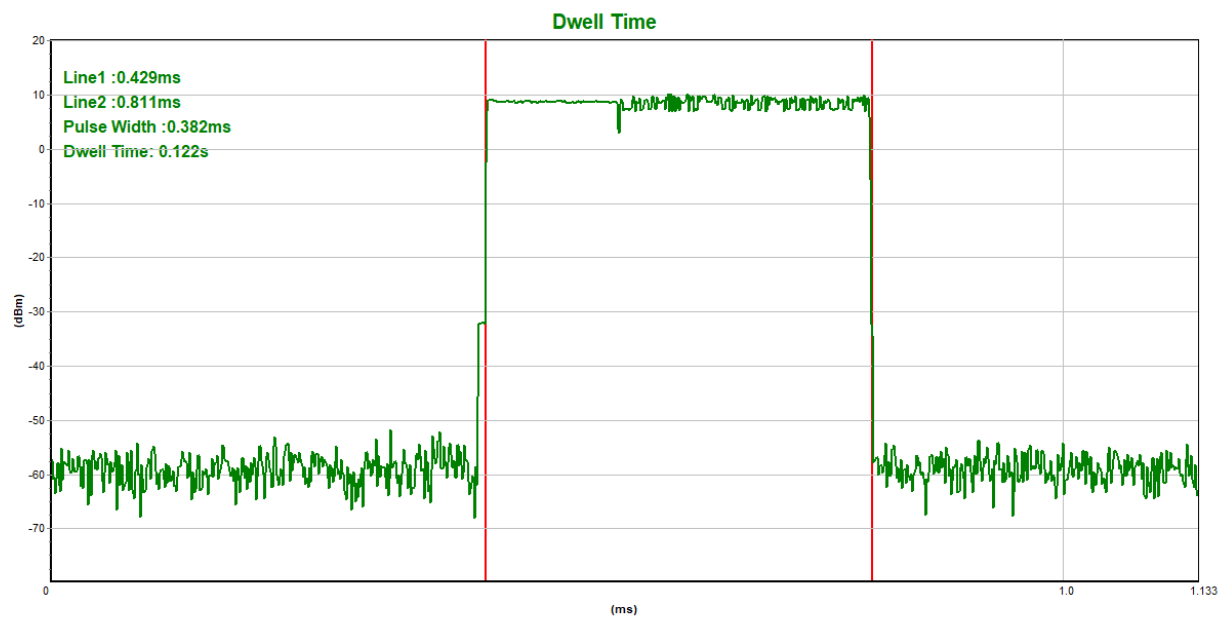


|               |                               |                     |              |
|---------------|-------------------------------|---------------------|--------------|
| EUT :         | Projector                     | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                       | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                      | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00-DH1/DH3/DH5 (2Mbps Mode) |                     |              |
| Test Date :   | 2021-06-02                    |                     |              |

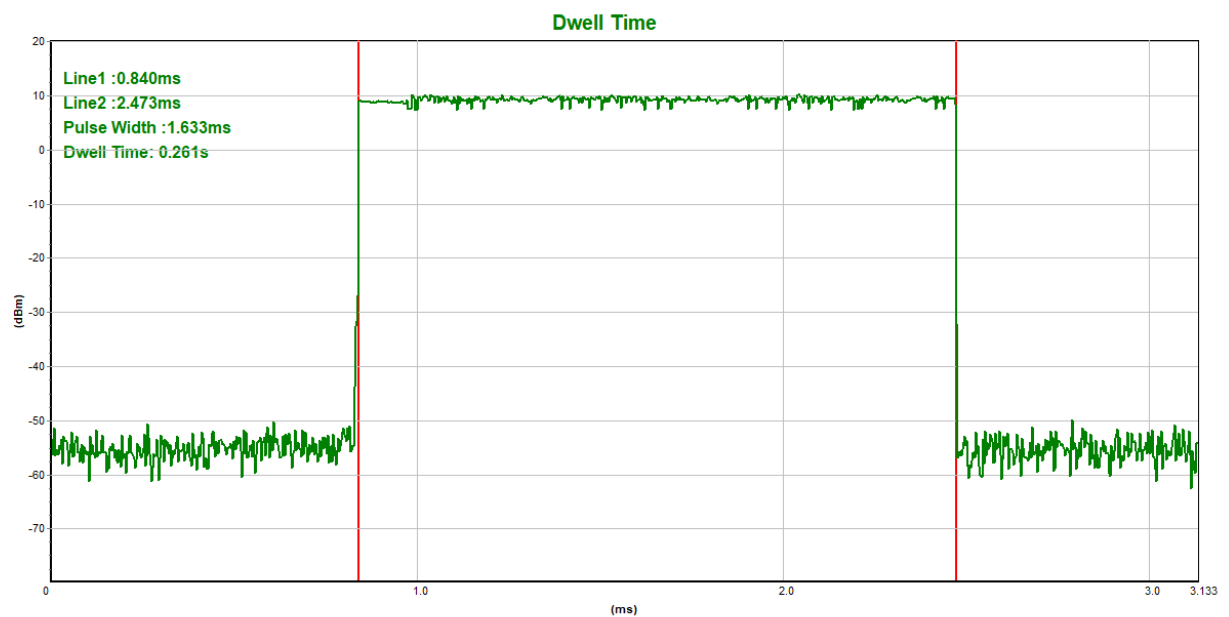
| Modulation | Data Packet | Channel | pulse time(ms) | Dwell Time(s) | Limits(s) |
|------------|-------------|---------|----------------|---------------|-----------|
| GFSK       | DH1         | middle  | 0.382          | 0.122         | 0.4       |
|            | DH3         | middle  | 1.633          | 0.261         | 0.4       |
|            | DH5         | middle  | 2.880          | 0.307         | 0.4       |

| Data Packet | ON Time B (msec) | Period (msec) | Duty Cycle x (linear) | Duty Cycle (%) | 10log(1/x)Duty Cycle Correction Factor (dB) | 1/B Minimum VBW (kHz) |
|-------------|------------------|---------------|-----------------------|----------------|---------------------------------------------|-----------------------|
| DH1         | 0.410            | 2.500         | 0.164                 | 16.40%         | 7.852                                       | 2.439                 |

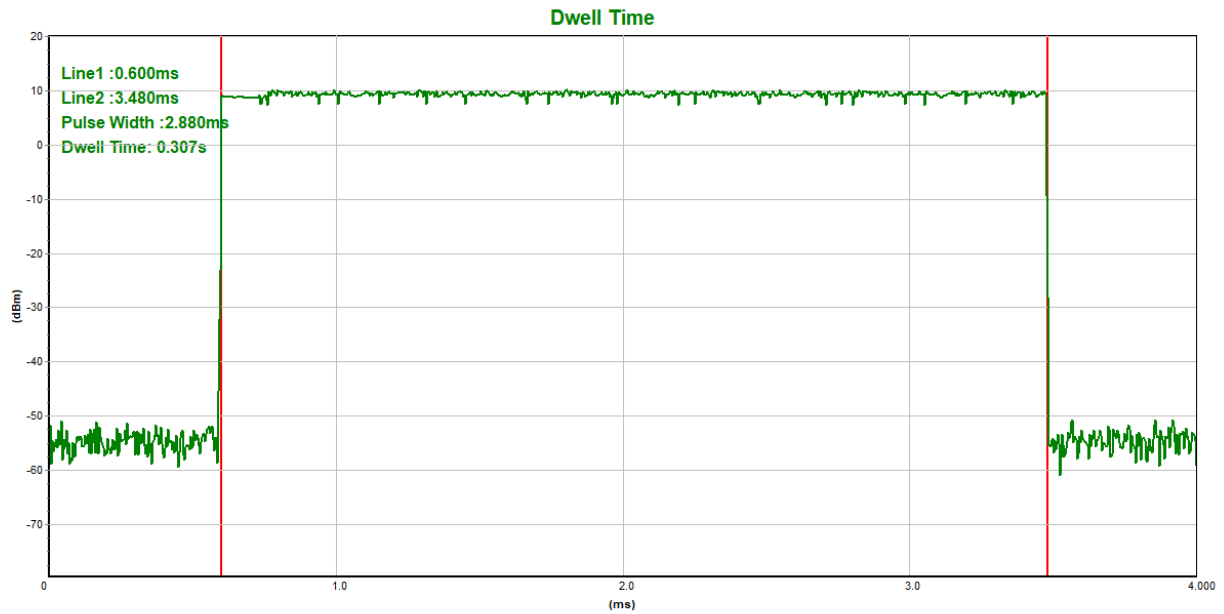
## CH 00- 2DH1



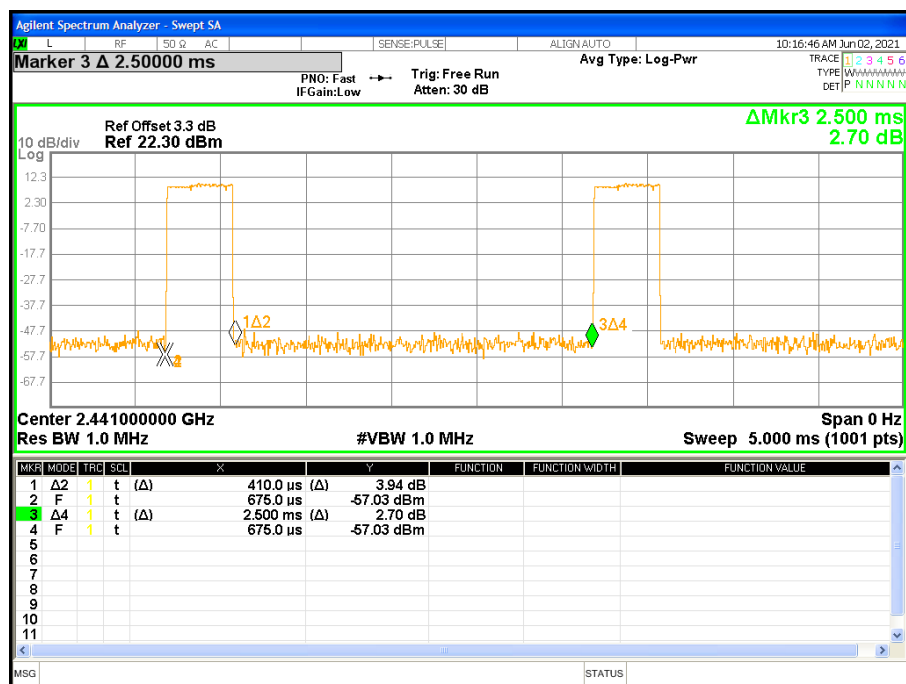
## CH 00- 2DH3



## CH 00- 2DH5



## CH 00- 2DH1



|               |                               |                     |              |
|---------------|-------------------------------|---------------------|--------------|
| EUT :         | Projector                     | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                       | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                      | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00-DH1/DH3/DH5 (3Mbps Mode) |                     |              |
| Test Date :   | 2021-06-02                    |                     |              |

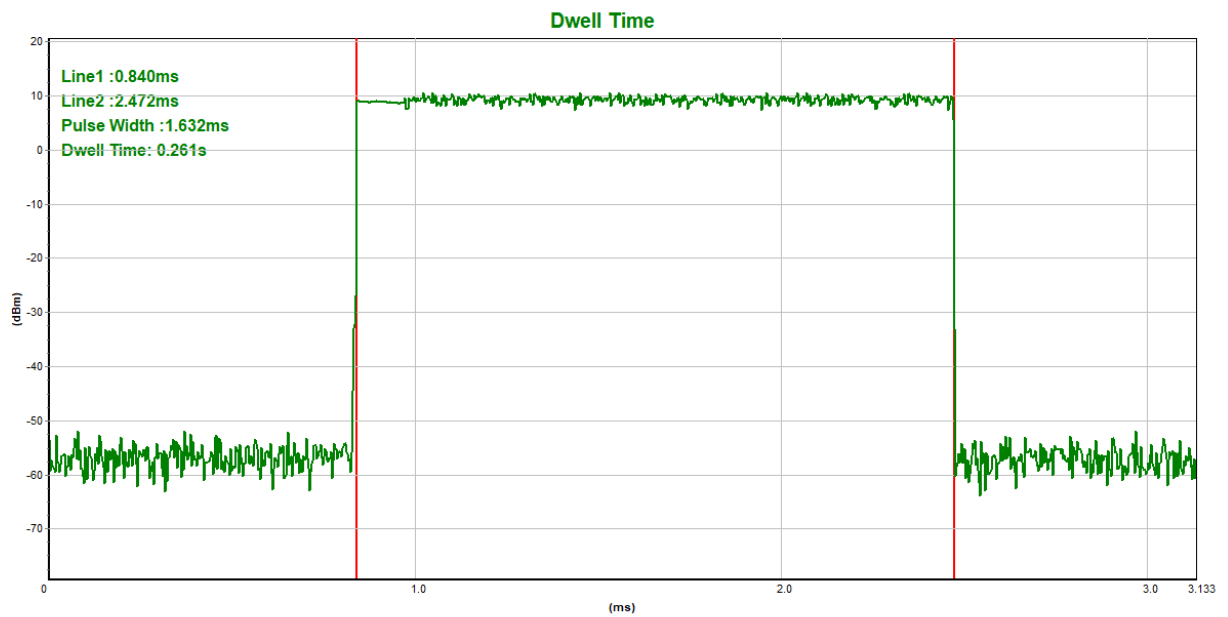
| Modulation | Data Packet | Channel | pulse time(ms) | Dwell Time(s) | Limits(s) |
|------------|-------------|---------|----------------|---------------|-----------|
| GFSK       | DH1         | middle  | 0.383          | 0.123         | 0.4       |
|            | DH3         | middle  | 1.632          | 0.261         | 0.4       |
|            | DH5         | middle  | 2.884          | 0.308         | 0.4       |

| Data Packet | ON Time B (msec) | Period (msec) | Duty Cycle x (linear) | Duty Cycle (%) | 10log(1/x)Duty Cycle Correction Factor (dB) | 1/B Minimum VBW (kHz) |
|-------------|------------------|---------------|-----------------------|----------------|---------------------------------------------|-----------------------|
| DH1         | 0.425            | 2.510         | 0.169                 | 16.93%         | 7.713                                       | 2.353                 |

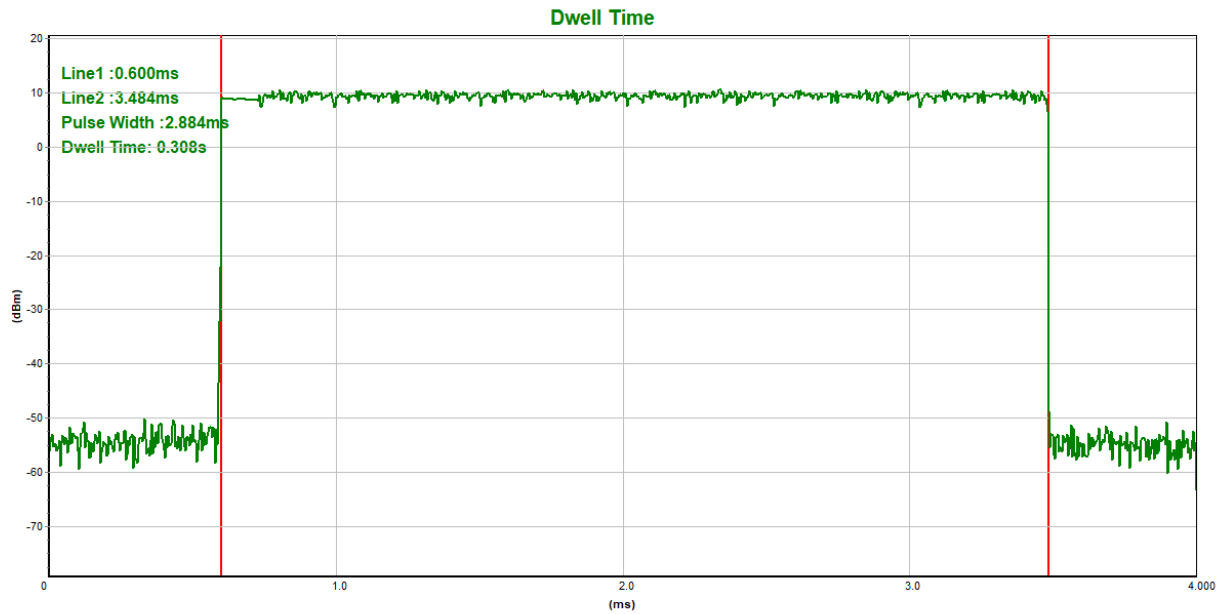
## CH 00- 3DH1



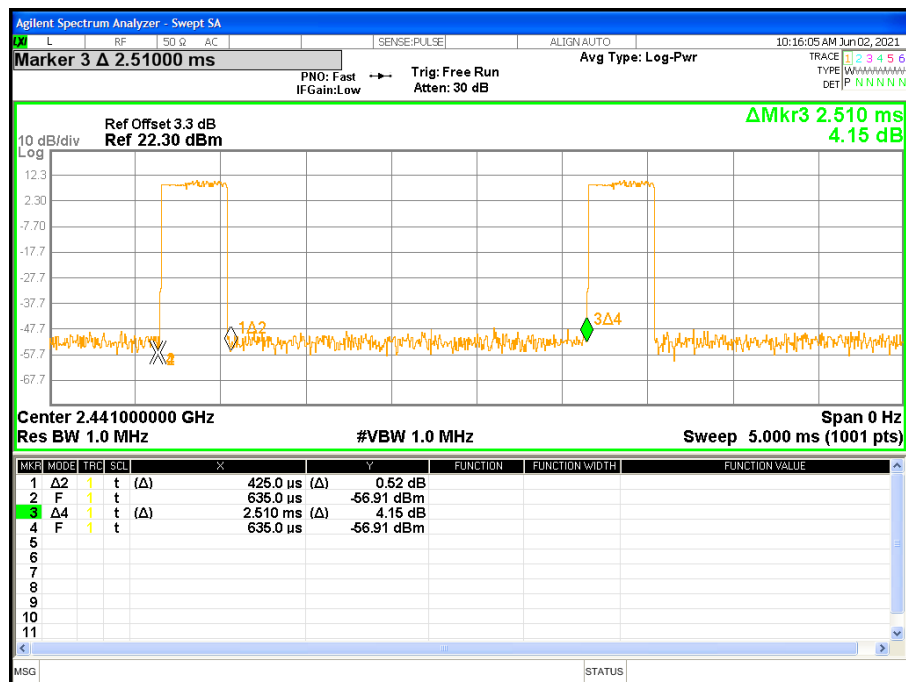
## CH 00- 3DH3



## CH 00- 3DH5



## CH 00- 3DH1



## 7. HOPPING CHANNEL SEPARATION MEASUREMENT

### 7.1 APPLIED PROCEDURES / LIMIT

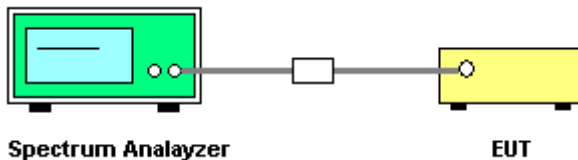
Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

| Spectrum Parameter | Setting                                                |
|--------------------|--------------------------------------------------------|
| Attenuation        | Auto                                                   |
| Span Frequency     | > Measurement Bandwidth or Channel Separation          |
| RB                 | 30 kHz (20dB Bandwidth) / 300 kHz (Channel Separation) |
| VB                 | 100 kHz (20dB Bandwidth) / 1MHz (Channel Separation)   |
| Detector           | Peak                                                   |
| Trace              | Max Hold                                               |
| Sweep Time         | Auto                                                   |

#### 7.1.1 TEST PROCEDURE

- The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
- The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for 20 dB bandwidth measurement.
- The resolution bandwidth of 300 kHz and the video bandwidth of 1MHz were utilised for channel separation measurement.

#### 7.1.2 TEST SETUP

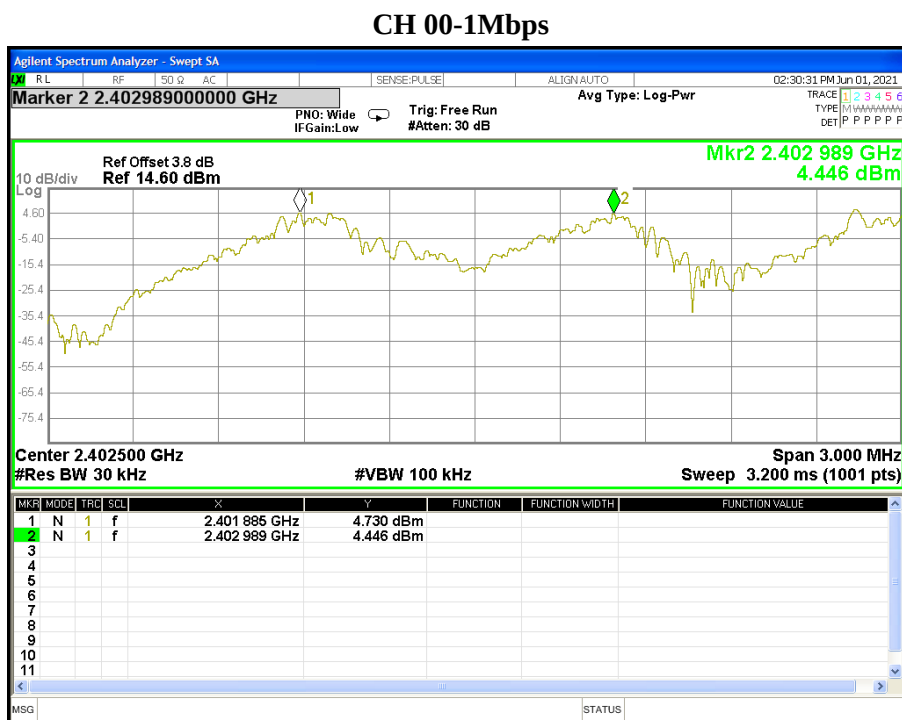


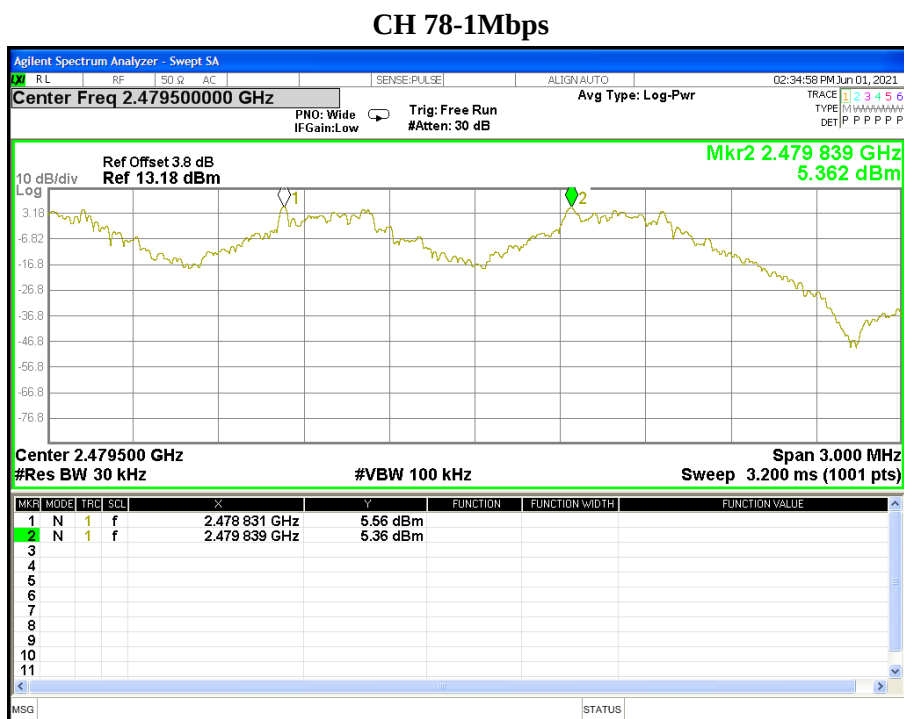
#### 7.1.3 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

|               |                                |                     |              |
|---------------|--------------------------------|---------------------|--------------|
| EUT :         | Projector                      | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                        | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                       | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00 / CH39 /CH78 (1Mbps Mode) |                     |              |
| Test Date :   | 2021-06-01                     |                     |              |

| Frequency | Mark1 Frequency<br>( MHz ) | Mark2 Frequency<br>( MHz ) | Ch. Separation<br>(MHz) | Limit (MHz) | Result   |
|-----------|----------------------------|----------------------------|-------------------------|-------------|----------|
| 2402 MHz  | 2401.895                   | 2402.989                   | 1.094                   | 0.821       | Complies |
| 2441 MHz  | 2440.831                   | 2441.836                   | 1.005                   | 0.892       | Complies |
| 2480 MHz  | 2478.831                   | 2479.839                   | 1.008                   | 0.891       | Complies |



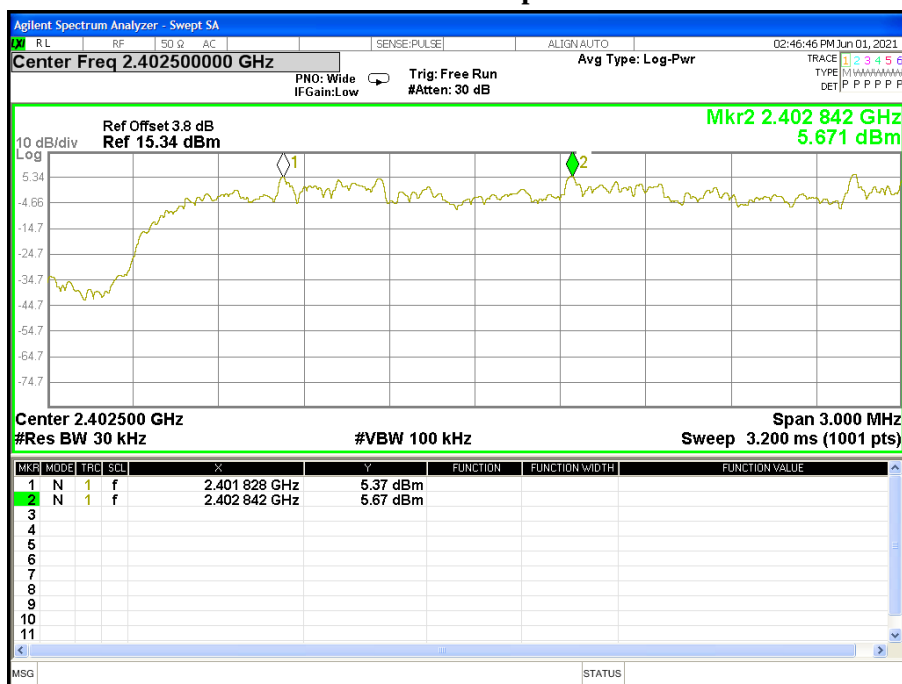


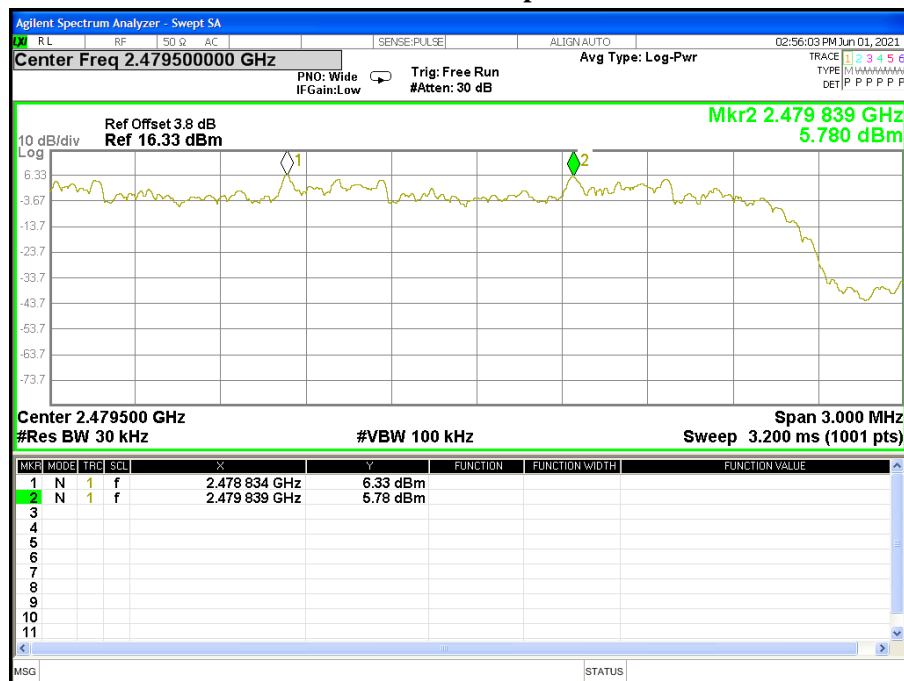
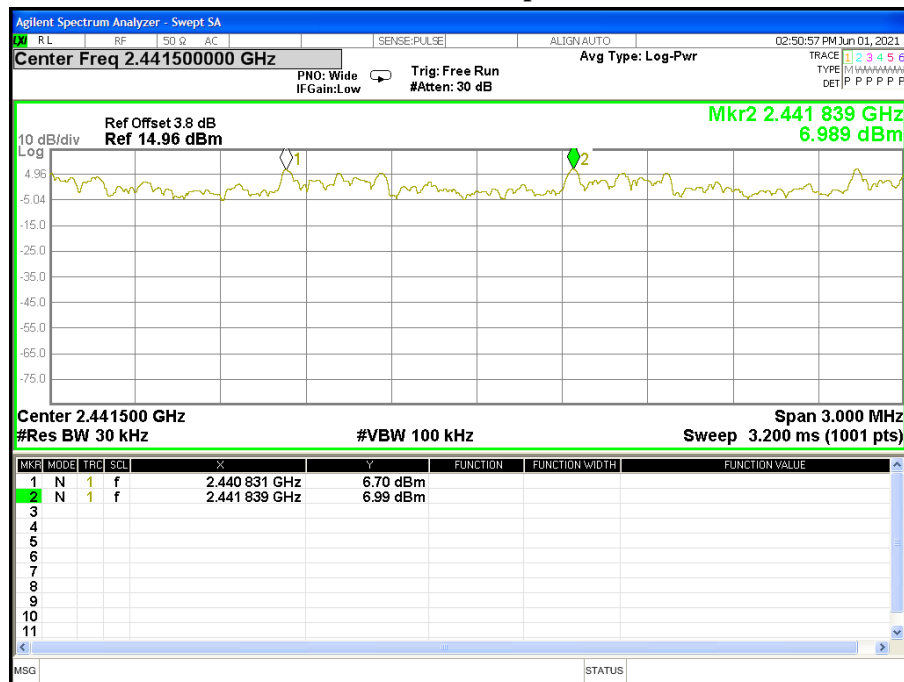
|               |                                |                     |              |
|---------------|--------------------------------|---------------------|--------------|
| EUT :         | Projector                      | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                        | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                       | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00 / CH39 /CH78 (2Mbps Mode) |                     |              |
| Test Date :   | 2021-06-01                     |                     |              |

| Frequency | Mark1 Frequency<br>( MHz ) | Mark2 Frequency<br>( MHz ) | Ch. Separation<br>(MHz) | Limit (MHz) | Result   |
|-----------|----------------------------|----------------------------|-------------------------|-------------|----------|
| 2402 MHz  | 2401.828                   | 2402.842                   | 1.014                   | 0.841       | Complies |
| 2441 MHz  | 2440.831                   | 2441.839                   | 1.008                   | 0.840       | Complies |
| 2480 MHz  | 2478.834                   | 2479.839                   | 1.005                   | 0.840       | Complies |

**Ch. Separation  $> 2/3$  (20dB bandwidth)**

## CH 00-2Mbps



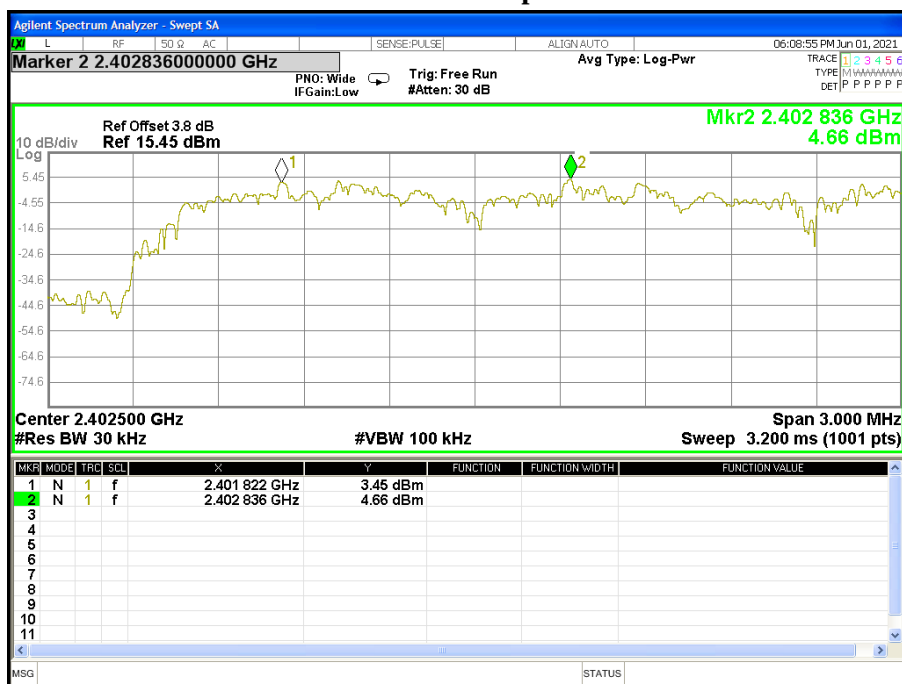


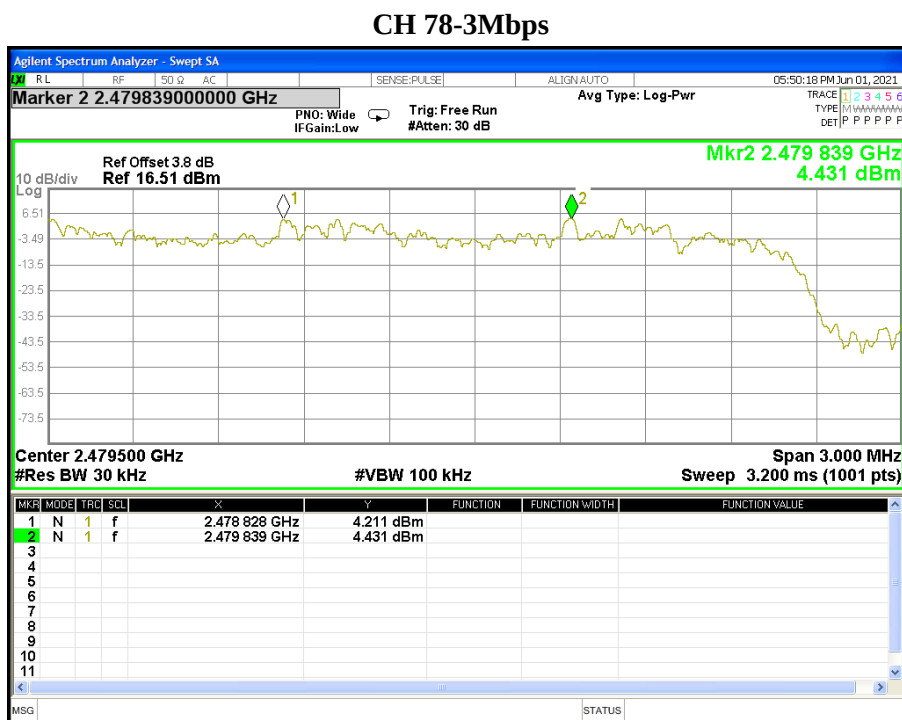
|               |                                |                     |              |
|---------------|--------------------------------|---------------------|--------------|
| EUT :         | Projector                      | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                        | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                       | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00 / CH39 /CH78 (3Mbps Mode) |                     |              |
| Test Date :   | 2021-06-01                     |                     |              |

| Frequency | Mark1 Frequency<br>( MHz ) | Mark2 Frequency<br>( MHz ) | Ch. Separation<br>(MHz) | Limit (MHz) | Result   |
|-----------|----------------------------|----------------------------|-------------------------|-------------|----------|
| 2402 MHz  | 2401.822                   | 2402.836                   | 1.014                   | 0.847       | Complies |
| 2441 MHz  | 2440.834                   | 2441.830                   | 0.996                   | 0.846       | Complies |
| 2480 MHz  | 2478.828                   | 2479.839                   | 1.011                   | 0.845       | Complies |

**Ch. Separation  $> 2/3$  (20dB bandwidth)**

## CH 00-3Mbps





## 8. PEAK OUTPUT POWER TEST

### 8.1 APPLIED PROCEDURES / LIMIT

| LP0002    |                   |                     |                       |        |
|-----------|-------------------|---------------------|-----------------------|--------|
| Section   | Test Item         | Limit               | Frequency Range (MHz) | Result |
| 4.10.1(2) | Peak Output Power | 0.125 watt or 21dBm | 2400-2483.5           | PASS   |

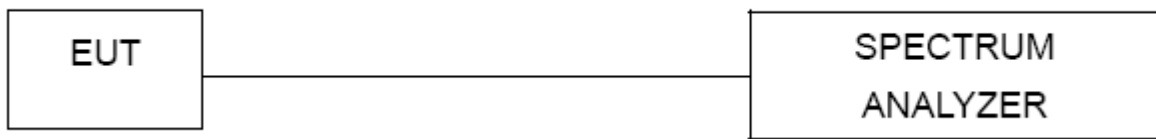
#### 8.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW=1.5MHz, VBW= 1.5MHz, Span= Approximately five times the 20 dB bandwidth , Sweep time = Auto.

#### 8.1.2 DEVIATION FROM STANDARD

No deviation.

#### 8.1.3 TEST SETUP



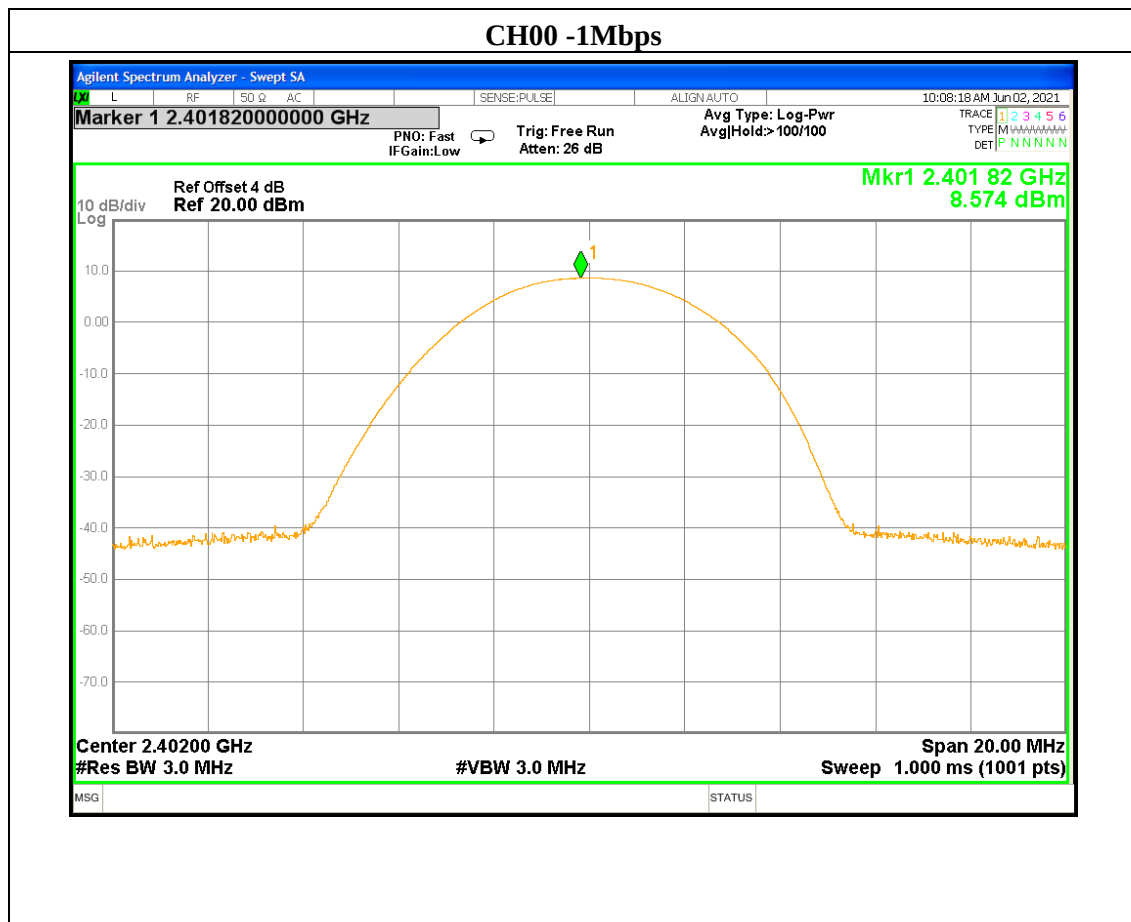
#### 8.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

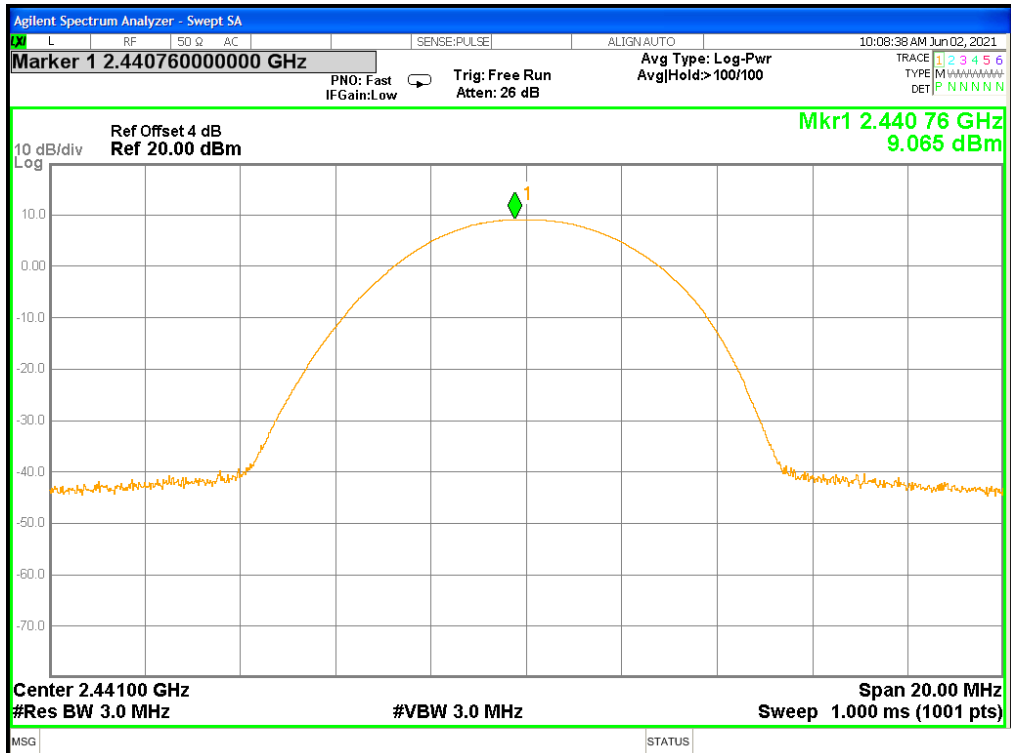
## 8.1.5 TEST RESULTS

|               |                               |                     |              |
|---------------|-------------------------------|---------------------|--------------|
| EUT :         | Projector                     | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                       | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                      | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00/ CH39 /CH78 (1Mbps Mode) |                     |              |
| Test Date :   | 2021-06-02                    |                     |              |

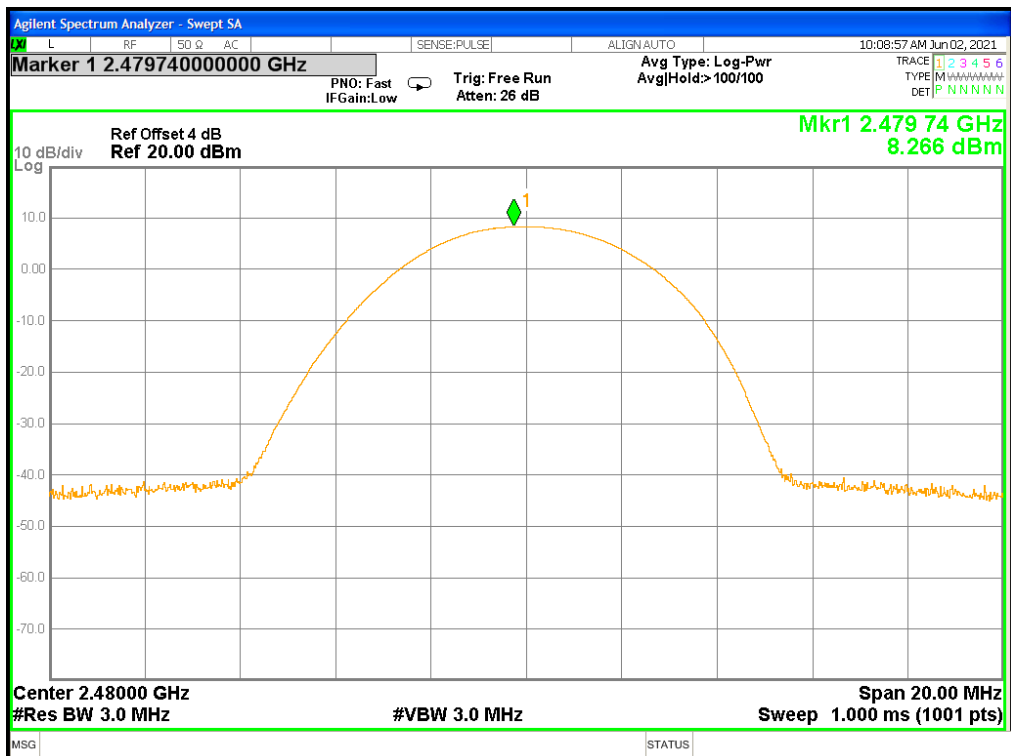
| Mode     | Channel Number | Frequency (MHz) | Peak Power | Limit |
|----------|----------------|-----------------|------------|-------|
|          |                |                 | (dBm)      | (dBm) |
| GFSK(1M) | 0              | 2402            | 8.574      | 30.00 |
|          | 39             | 2441            | 9.065      | 30.00 |
|          | 78             | 2480            | 8.266      | 30.00 |



## CH39 -1Mbps

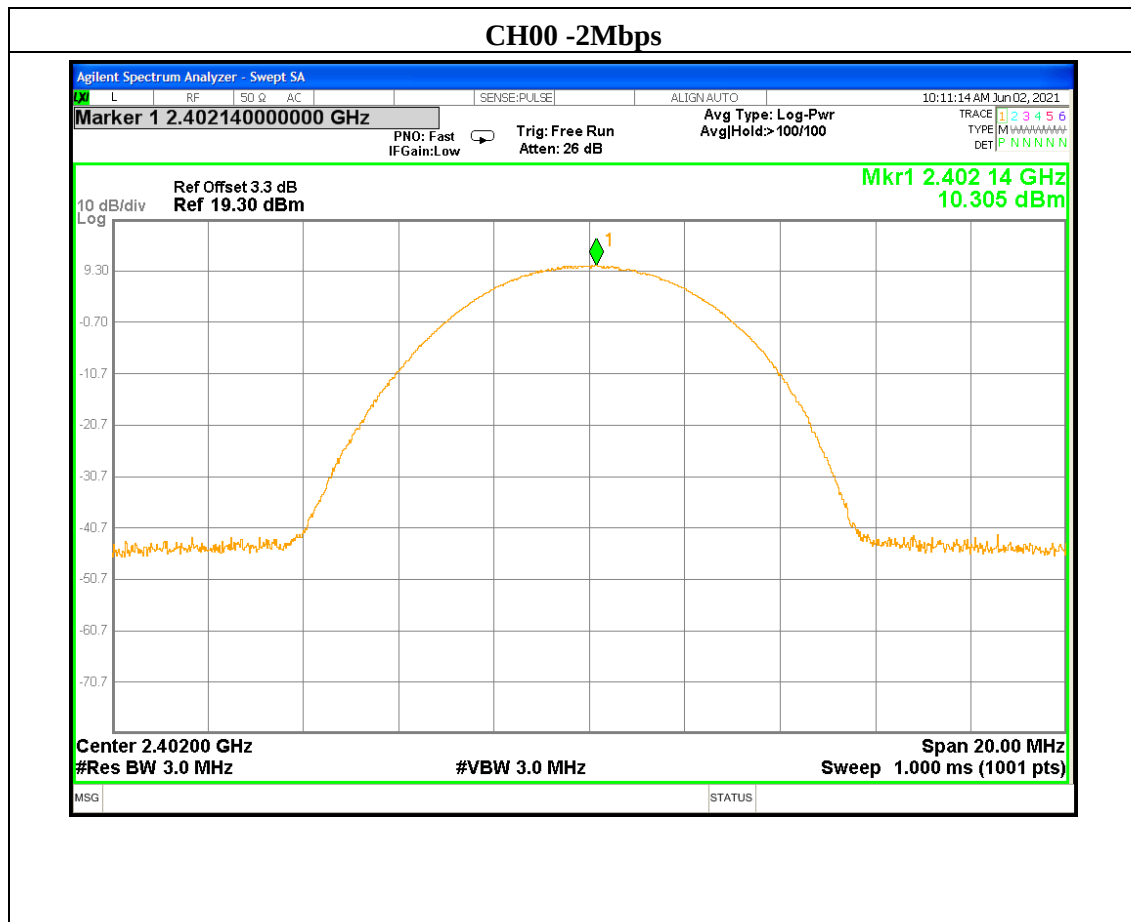


## CH78 -1Mbps

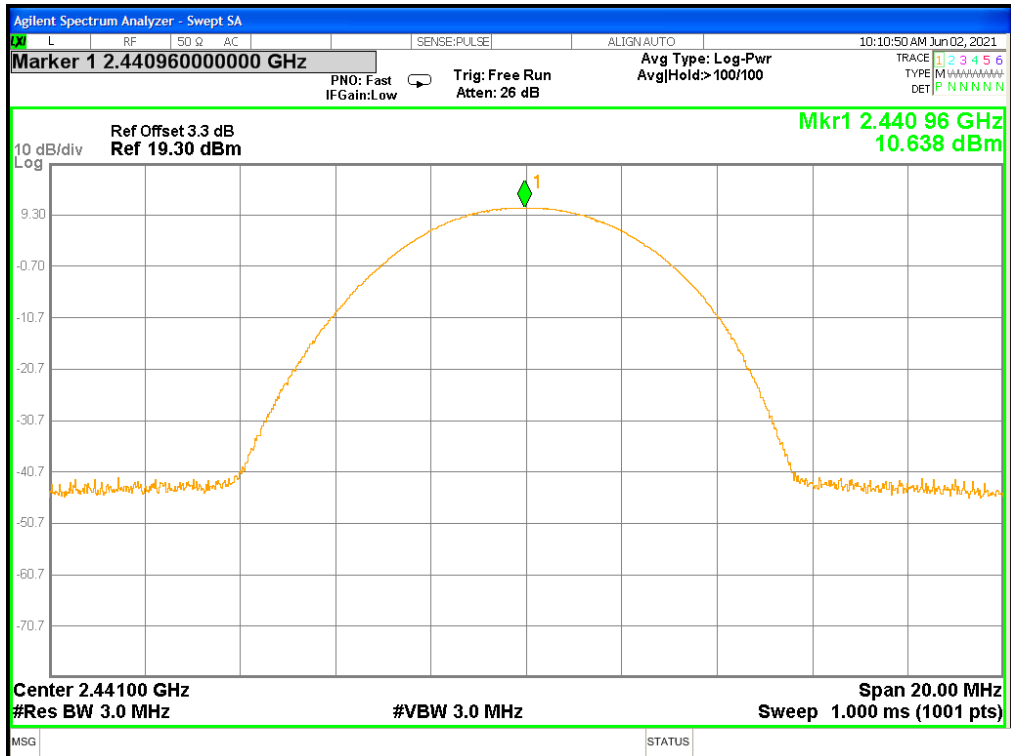


|               |                               |                     |              |
|---------------|-------------------------------|---------------------|--------------|
| EUT :         | Projector                     | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                       | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                      | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00/ CH39 /CH78 (2Mbps Mode) |                     |              |
| Test Date :   | 2021-06-02                    |                     |              |

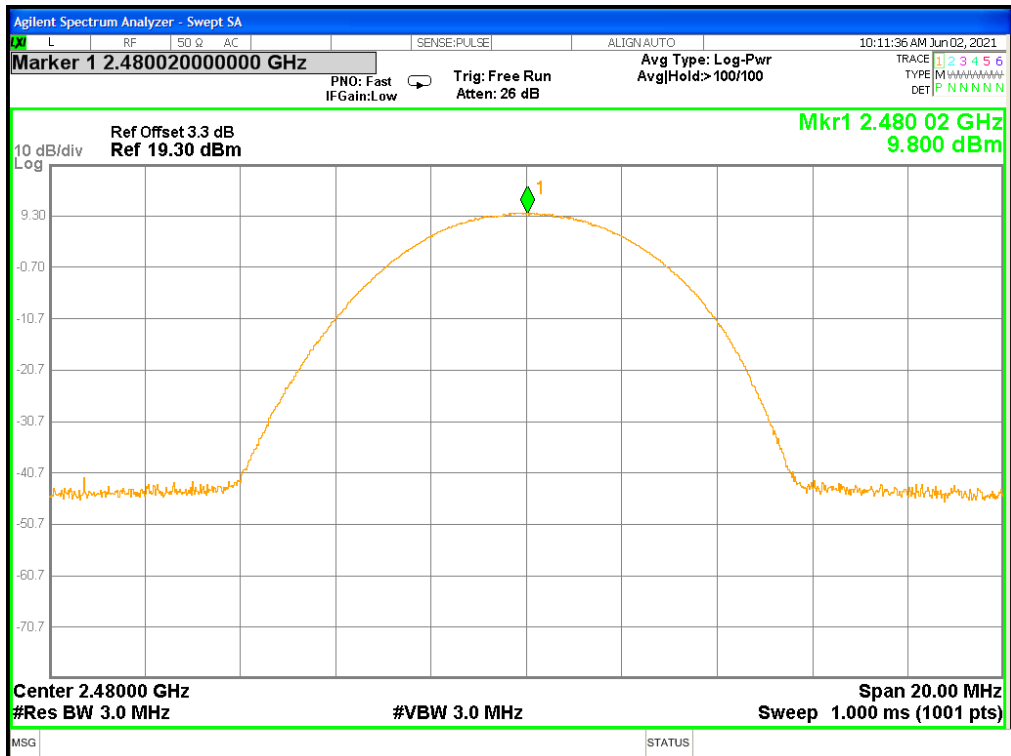
| Mode               | Channel Number | Frequency (MHz) | Peak Power | Limit |
|--------------------|----------------|-----------------|------------|-------|
|                    |                |                 | (dBm)      | (dBm) |
| $\pi/4$ -DQPSK(2M) | 0              | 2402            | 10.305     | 20.97 |
|                    | 39             | 2441            | 10.638     | 20.97 |
|                    | 78             | 2480            | 9.800      | 20.97 |



## CH39 -2Mbps

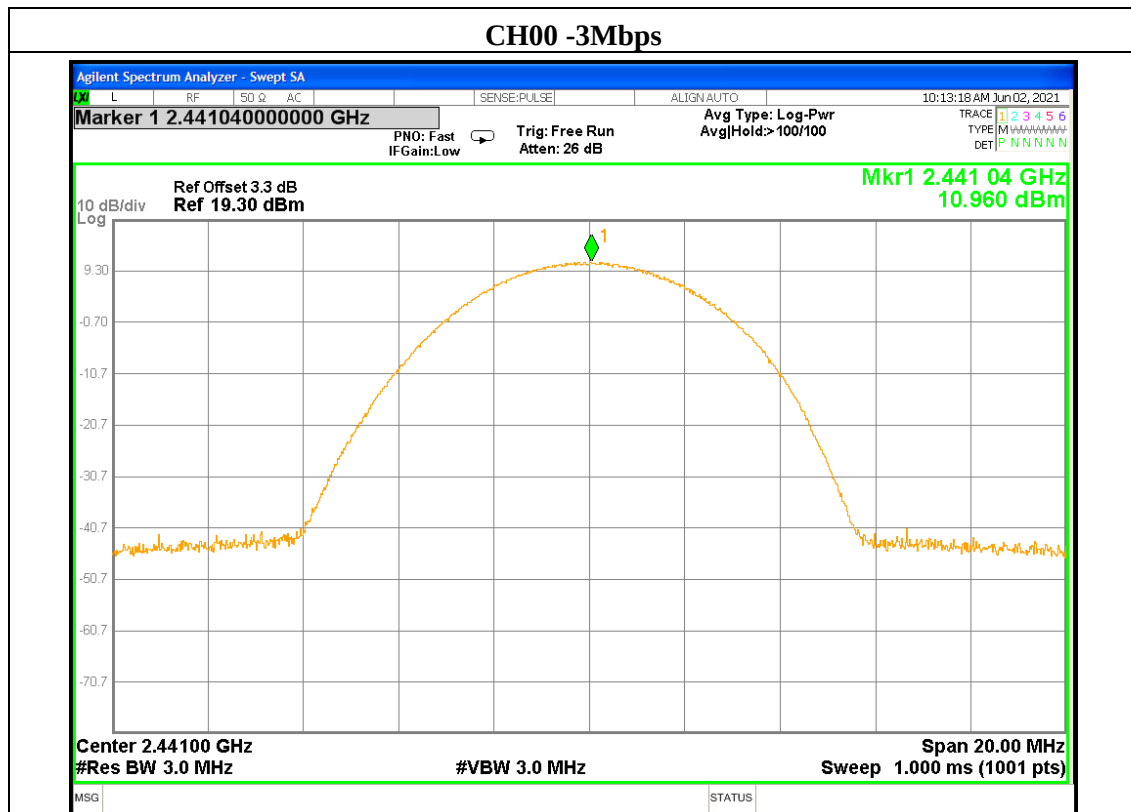


## CH78 -2Mbps

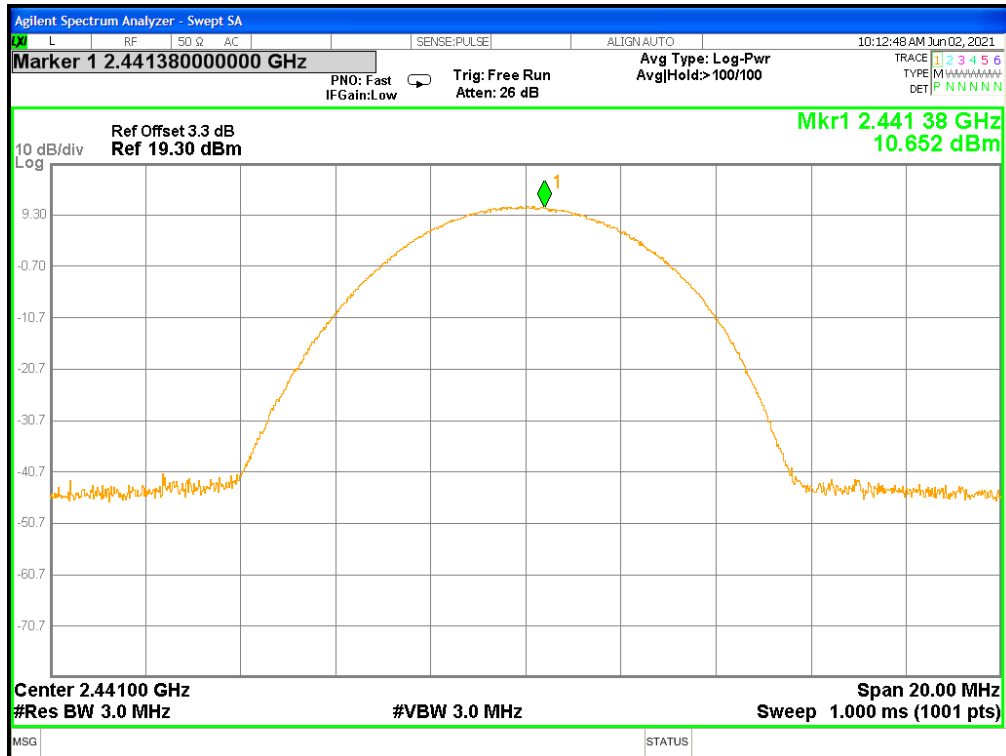


|               |                               |                     |              |
|---------------|-------------------------------|---------------------|--------------|
| EUT :         | Projector                     | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                       | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                      | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00/ CH39 /CH78 (3Mbps Mode) |                     |              |
| Test Date :   | 2021-06-01                    |                     |              |

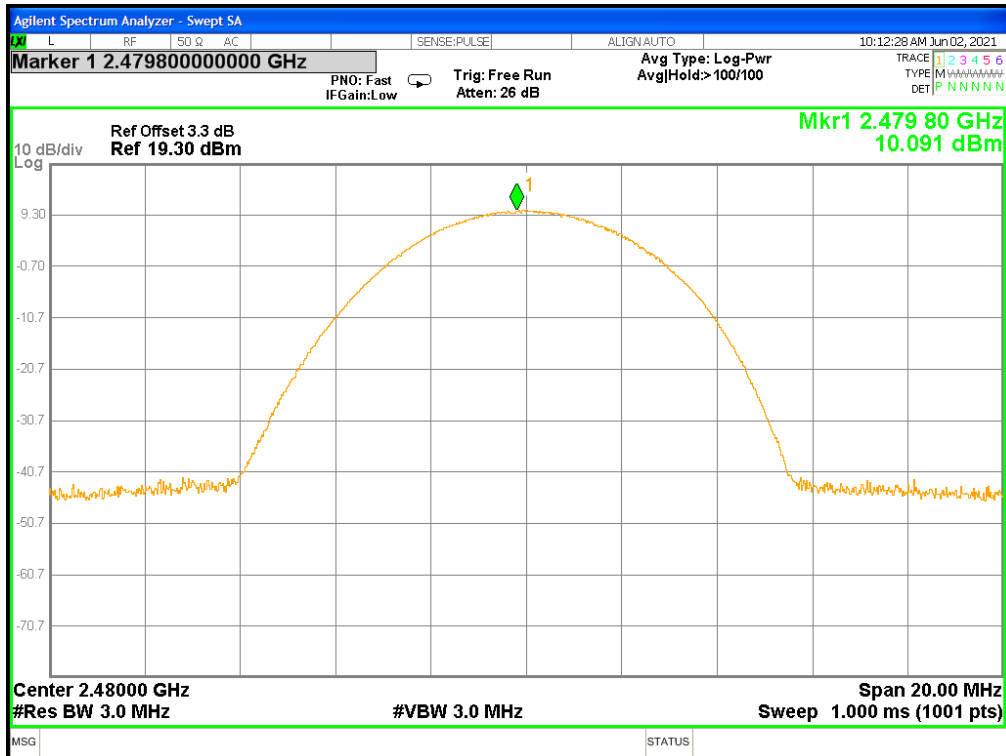
| Mode       | Channel Number | Frequency (MHz) | Peak Power | Limit |
|------------|----------------|-----------------|------------|-------|
|            |                |                 | (dBm)      | (dBm) |
| 8-DPSK(3M) | 0              | 2402            | 10.960     | 20.97 |
|            | 39             | 2441            | 10.652     | 20.97 |
|            | 78             | 2480            | 10.091     | 20.97 |



## CH39 -3Mbps



## CH78 -3Mbps



## 9. ANTENNA CONDUCTED SPURIOUS EMISSION

### 9.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the modulation products of the spreading sequence, the information sequence and the carrier frequency shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power or shall not exceed the general levels specified in Section 3.6.

| Frequencies (MHz) | Field Strength (micorvolts/meter) | Measurement 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                             |

#### 9.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=300KHz, Sweep time = Auto.

#### 9.1.2 TEST SETUP



#### 9.1.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

#### 9.1.4 TEST RESULTS

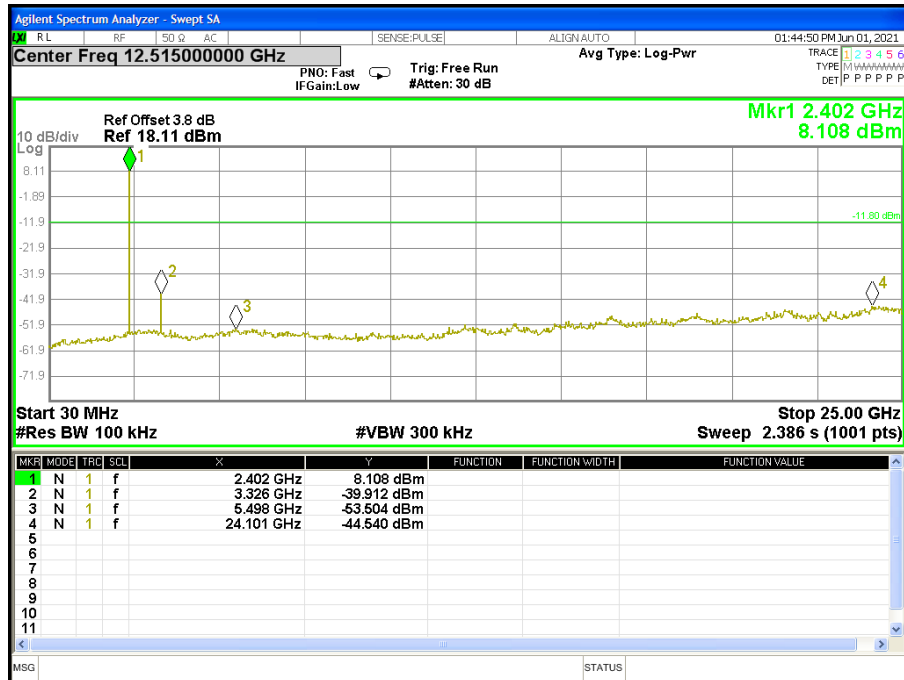
|               |                            |                     |              |
|---------------|----------------------------|---------------------|--------------|
| EUT :         | Projector                  | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                    | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                   | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00 / CH39 / CH78 (1Mbps) |                     |              |
| Test Date :   | 2021-06-01                 |                     |              |

|                                                                                                                                                                                                         |                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| in any 100kHz bandwidth outside the low frequency band                                                                                                                                                  | in any 300 kHz bandwidth outside the high frequency band |
| Pass                                                                                                                                                                                                    | Pass                                                     |
| Result                                                                                                                                                                                                  |                                                          |
| In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 300kHz bandwidth within the band that contains the highest level of the desired power. |                                                          |

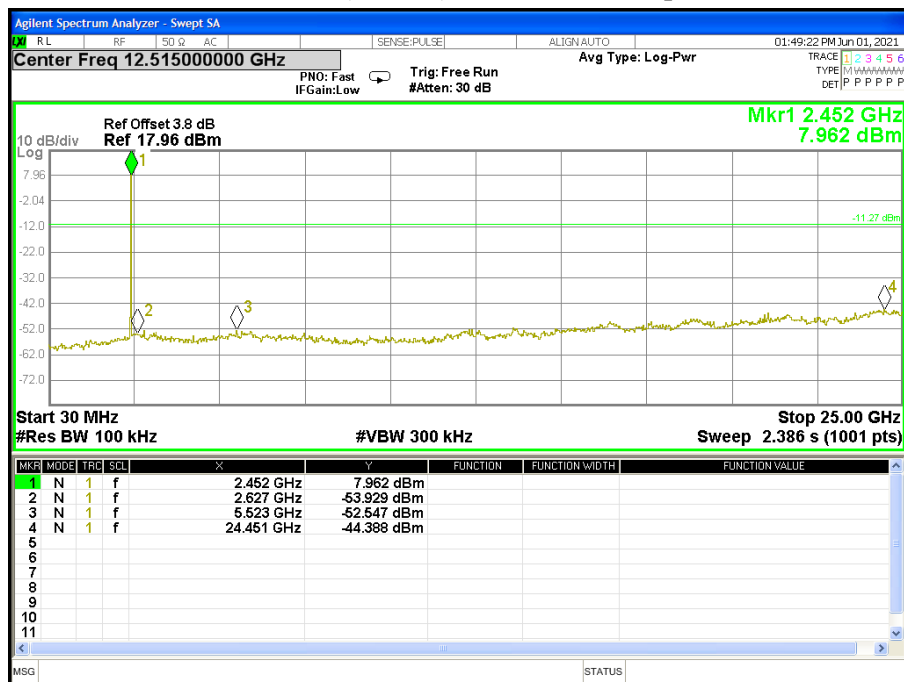
Remark :

- (1) Hopping enabled and disabled have evaluated, and the worst data was reported

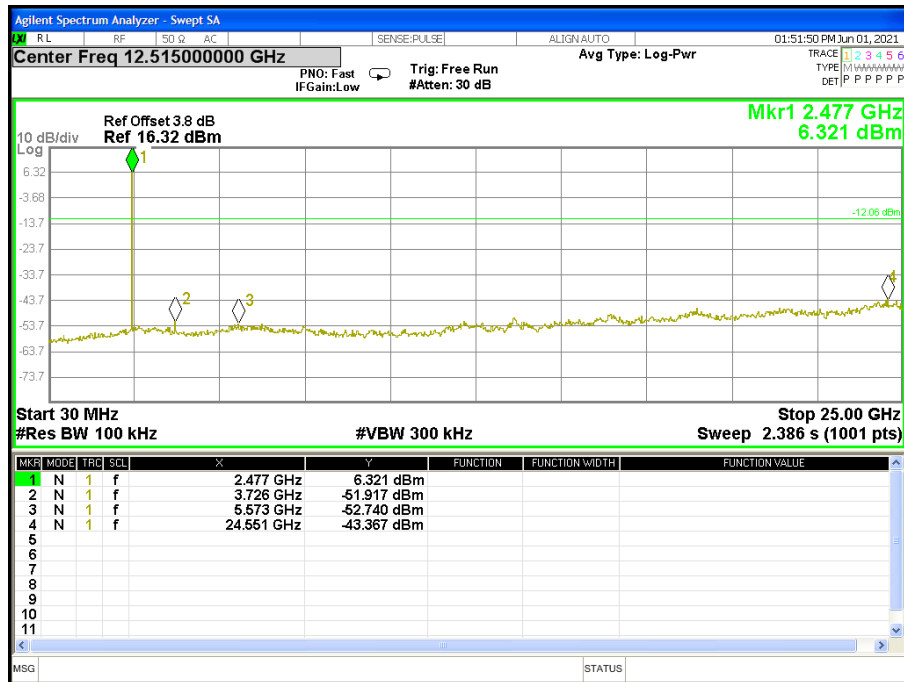
## CH00 (Lower) Data rate 1Mbps



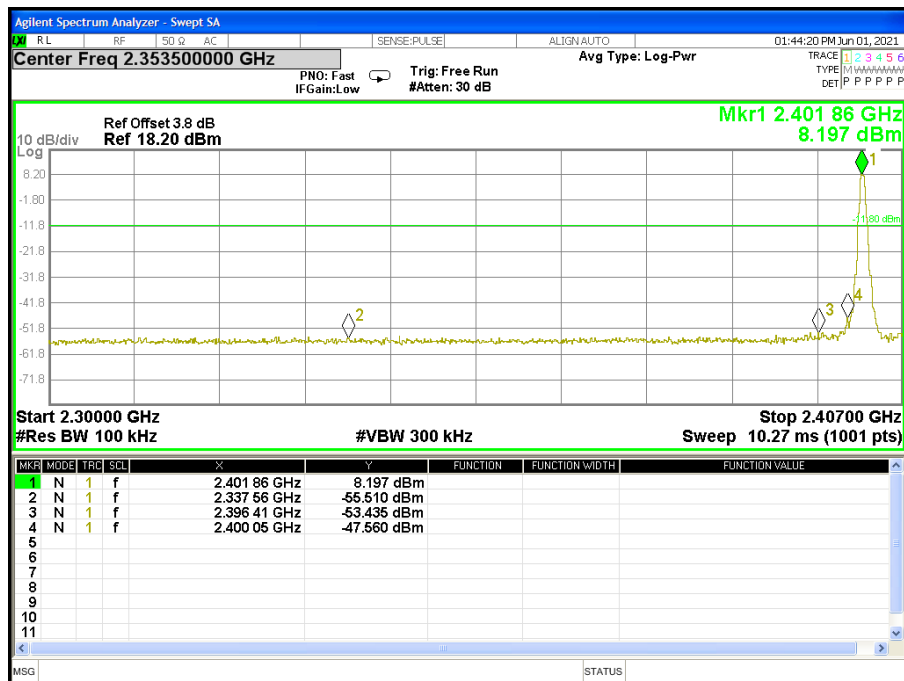
## CH39 (Middle) Data rate 1Mbps

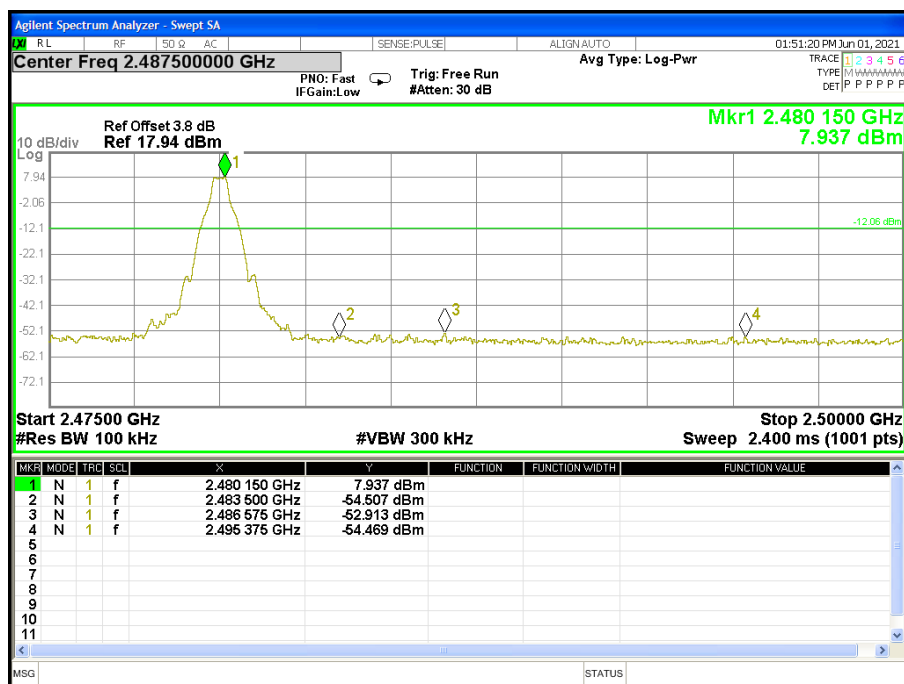
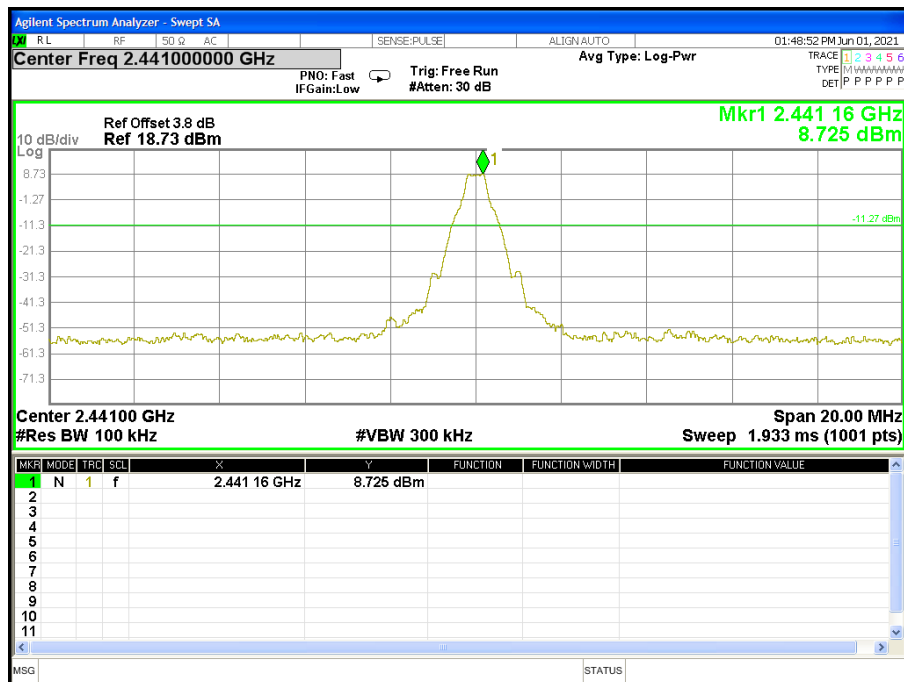


## CH 78 (Upper) Data rate 1Mbps



## CH01





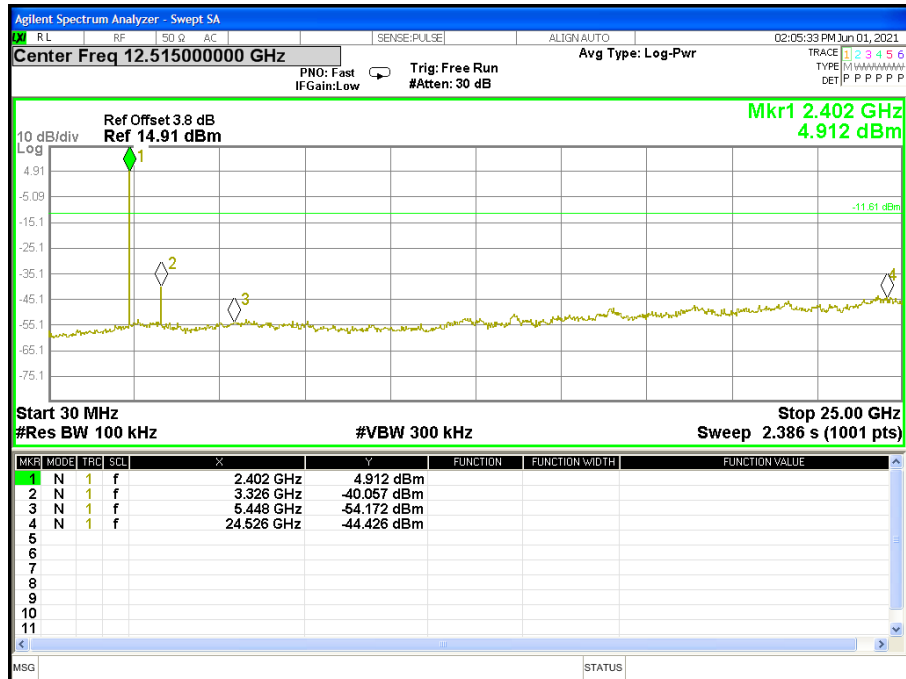
|               |                            |                     |              |
|---------------|----------------------------|---------------------|--------------|
| EUT :         | Projector                  | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                    | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                   | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00 / CH39 / CH78 (2Mbps) |                     |              |
| Test Date :   | 2021-06-01                 |                     |              |

|                                                                                                                                                                                                         |                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| in any 100kHz bandwidth outside the low frequency band                                                                                                                                                  | in any 100 kHz bandwidth outside the high frequency band |
| Pass                                                                                                                                                                                                    | Pass                                                     |
| Result                                                                                                                                                                                                  |                                                          |
| In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power. |                                                          |

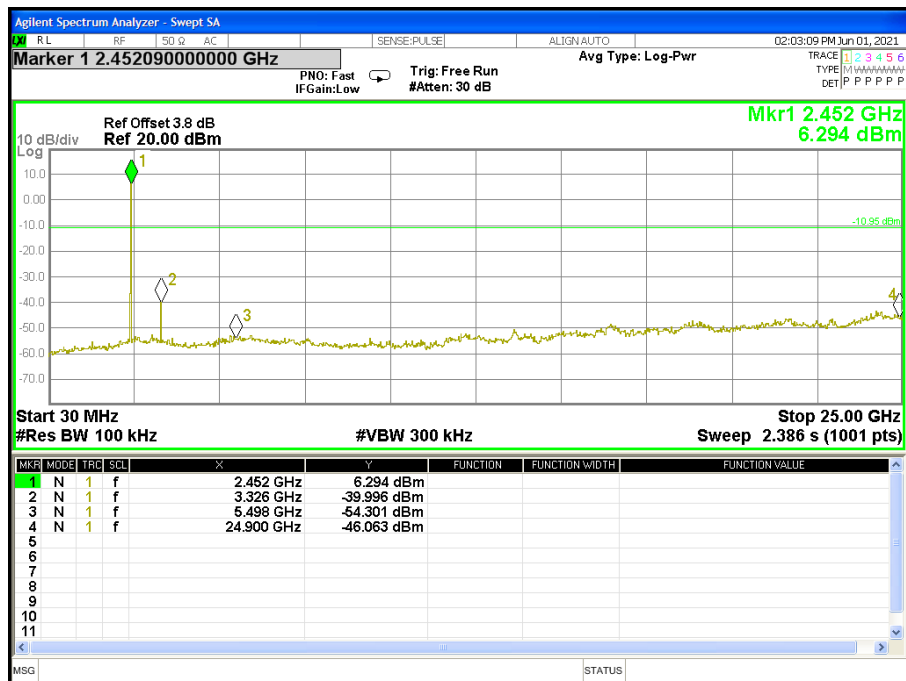
Remark :

- (1) Hopping enabled and disabled have evaluated, and the worst data was reported

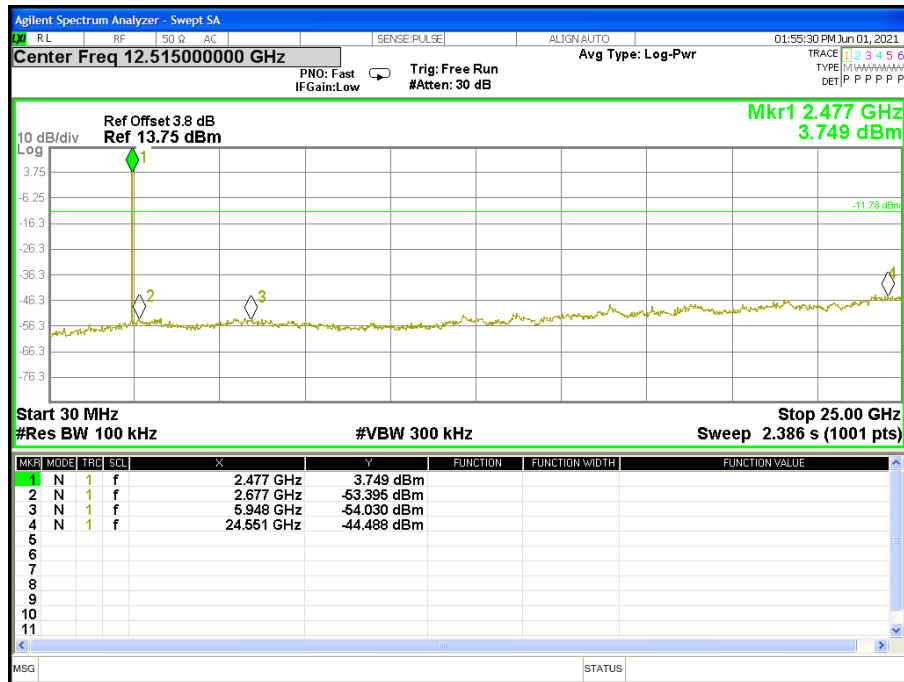
## CH00 (Lower) Data rate 2Mbps



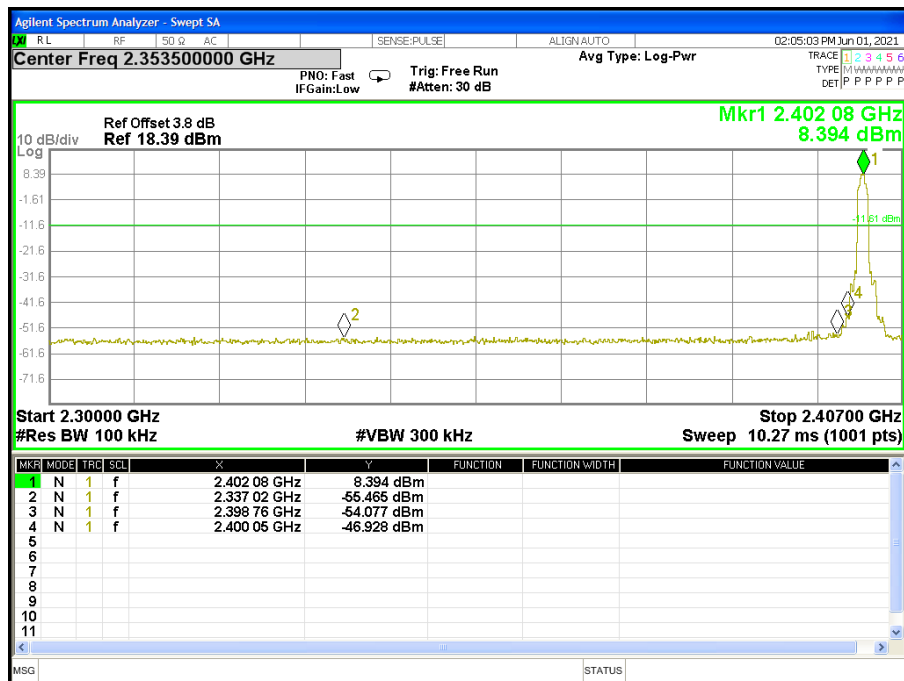
## CH39 (Middle) Data rate 2Mbps

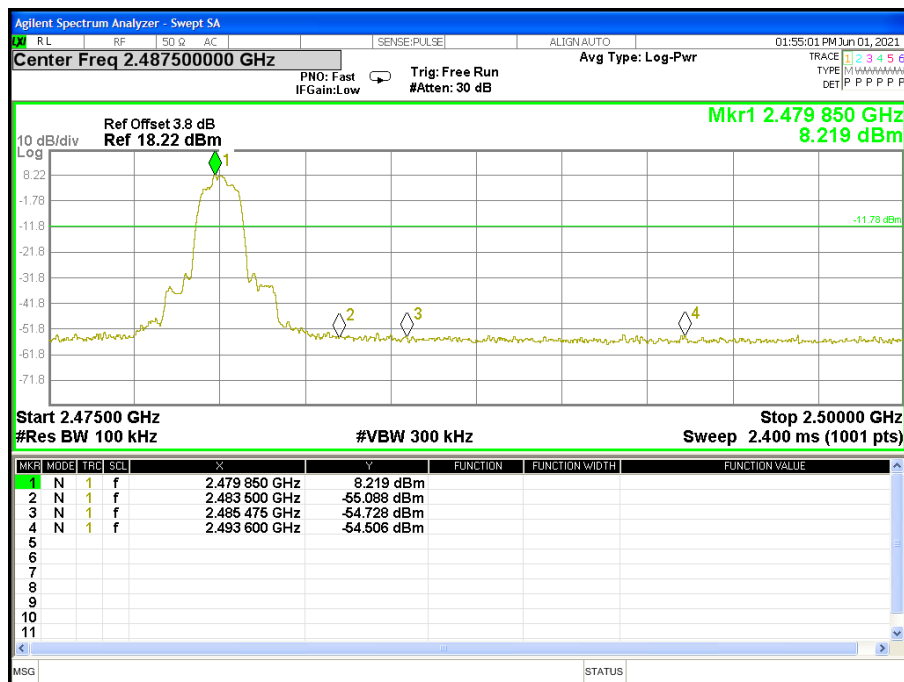
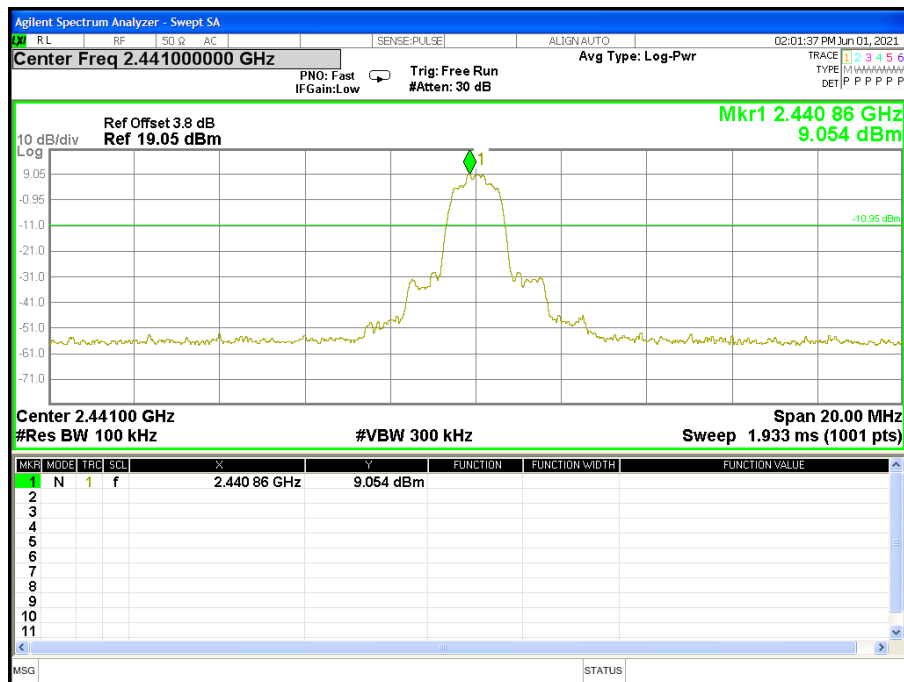


## CH 78 (Upper) Data rate 2Mbps



## CH01





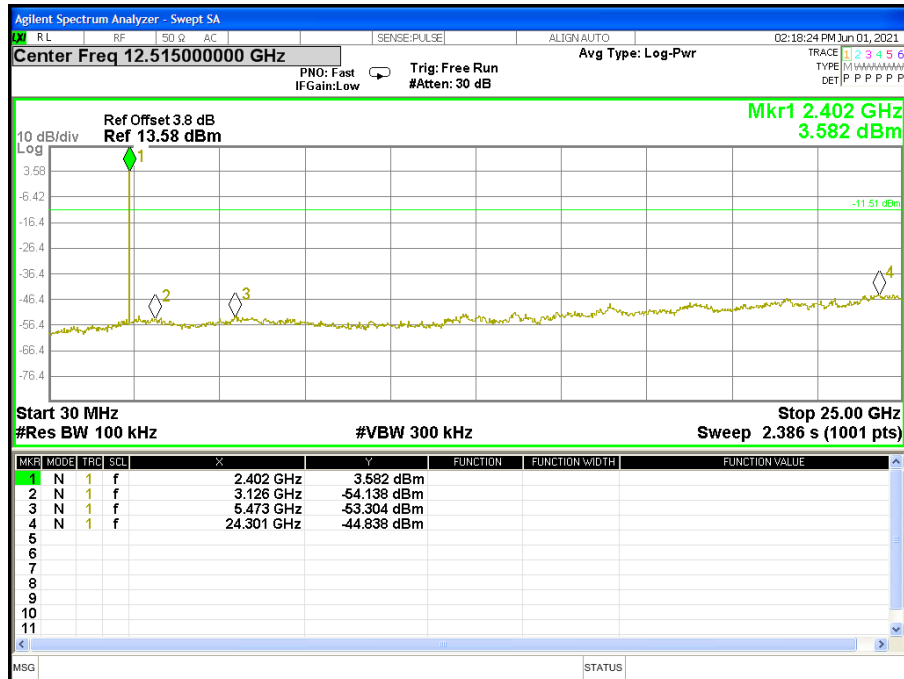
|               |                            |                     |              |
|---------------|----------------------------|---------------------|--------------|
| EUT :         | Projector                  | Model Name :        | XM03A        |
| Temperature : | 25.1 °C                    | Relative Humidity : | 52%          |
| Pressure :    | 1012 hPa                   | Test Voltage :      | AC 110V/60Hz |
| Test Mode :   | CH00 / CH39 / CH78 (3Mbps) |                     |              |
| Test Date :   | 2021-06-01                 |                     |              |

|                                                                                                                                                                                                         |                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| in any 100kHz bandwidth outside the low frequency band                                                                                                                                                  | in any 100 kHz bandwidth outside the high frequency band |
| Pass                                                                                                                                                                                                    | Pass                                                     |
| Result                                                                                                                                                                                                  |                                                          |
| In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power. |                                                          |

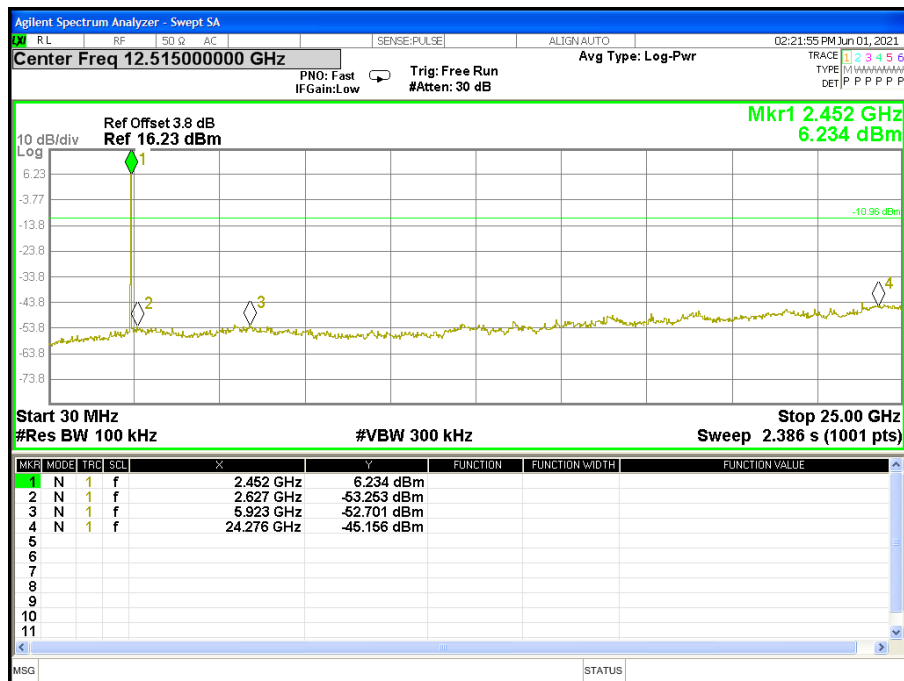
Remark :

- (1) Hopping enabled and disabled have evaluated, and the worst data was reported

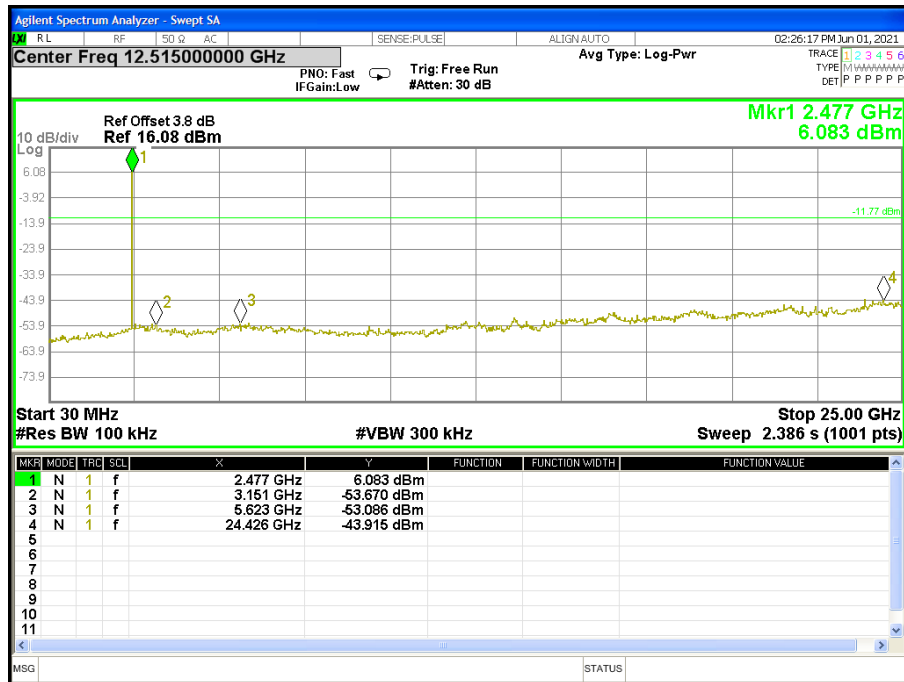
## CH00 (Lower) Data rate 3Mbps



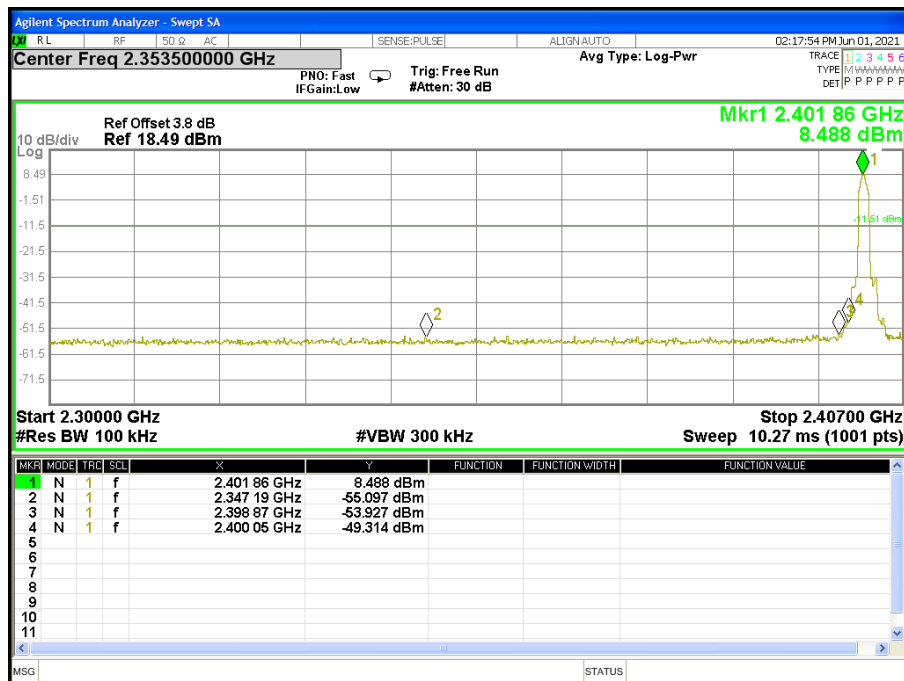
## CH39 (Middle) Data rate 3Mbps



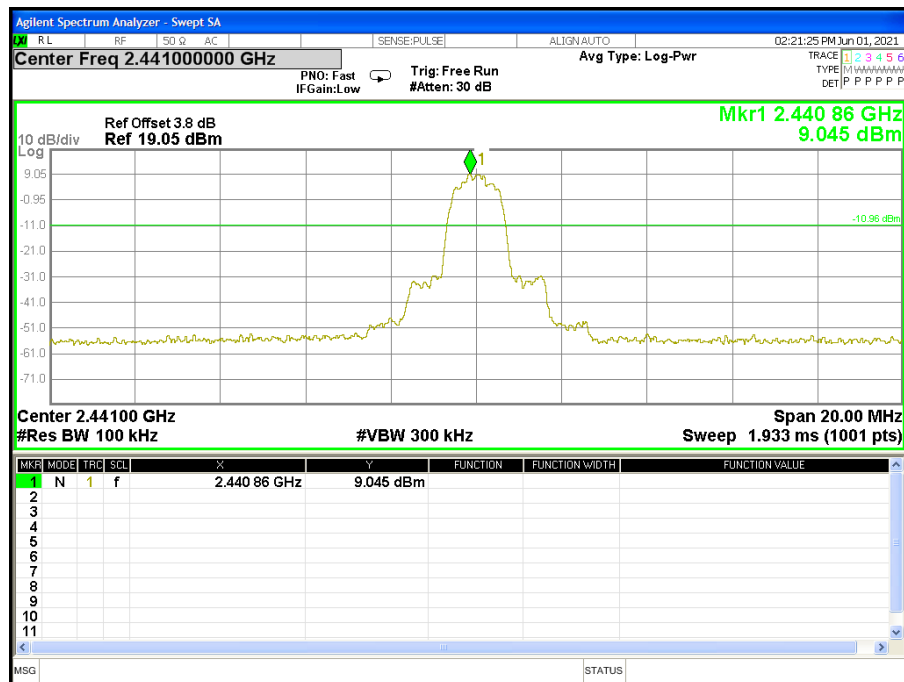
## CH 78 (Upper) Data rate 3Mbps



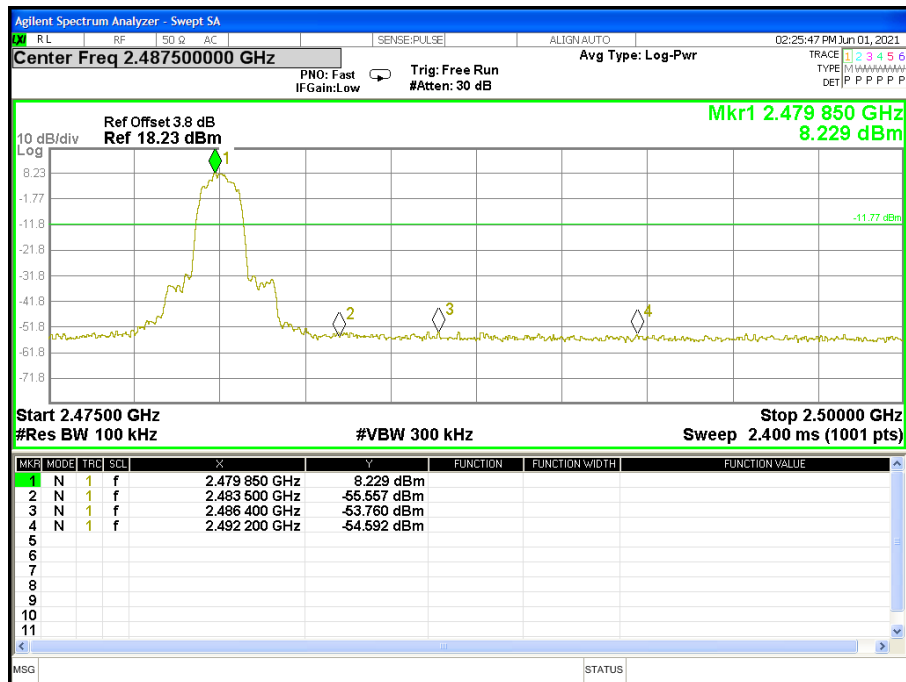
## CH01



## CH39



## CH78



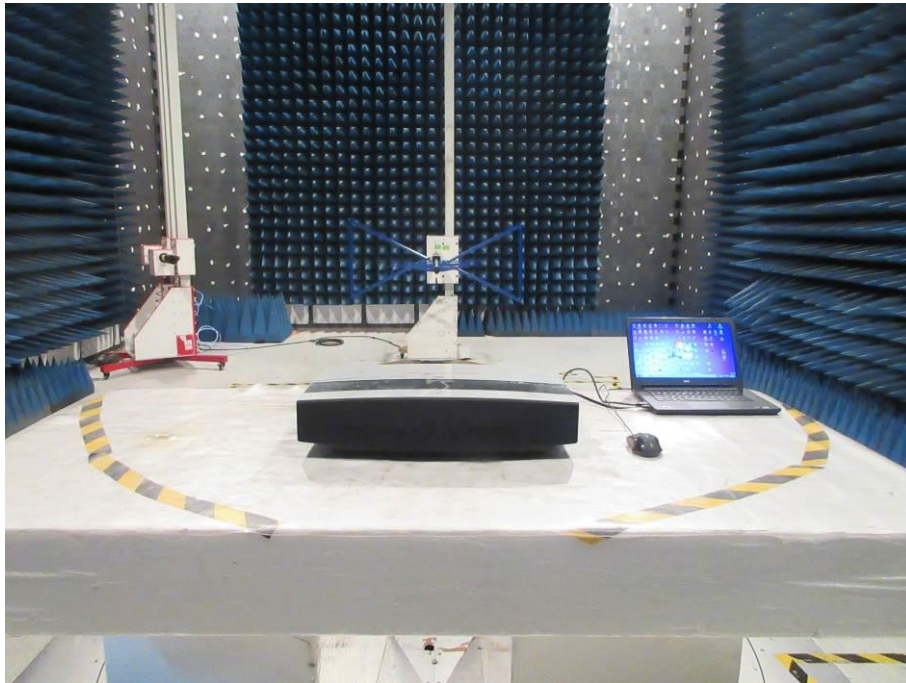
## **10. ANTENNA REQUIREMENT**

### **10.1 STANDARD REQUIREMENT**

4.10.3.1.1 requirement: Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

### **10.2 EUT ANTENNA**

The antenna is a PIFA antenna and no consideration of replacement. Antenna max gain is 3.49dBi from 2.4GHz to 2.5GHz.

**11. EUT TEST PHOTO****Radiated Measurement Photos  
30MHz-1GHz****Radiated Measurement Photos  
Above 1GHz**

**Conducted Measurement Photos**

\*\*\*\*End of the report\*\*\*\*