

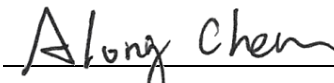
FCC Test Report

FCC ID : SQG-SONAIF573
Equipment : Sona IF573 802.11ax Wi-Fi 6E Module with Bluetooth 5.4
Model No. : Sona IF573
Brand Name : Laird Connectivity
Applicant : Laird Connectivity LLC
Address : W66N220 Commerce Court, Cedarburg, WI 53012 United States Of America
Standard : 47 CFR FCC Part 15.247
Received Date : Jan. 17, 2023
Tested Date : Apr. 13 ~ May 18, 2023

We, International Certification Corporation, would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:

Approved by:



Along Chen / Assistant Manager



Gary Chang / Manager

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Appendix A. Unwanted Emissions into Restricted Frequency Bands

Appendix B. Unwanted Emissions into Non-Restricted Frequency Bands

Appendix C. Conducted Output Power

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Appendix E. 20dB and Occupied Bandwidth

Appendix F. Channel Separation

Appendix G. Number of Dwell Time

Appendix H. AC Power Line Conducted Emissions

Release Record

| Report No. | Version | Description | Issued Date |
|------------|---------|---------------|---------------|
| FR311701AD | Rev. 01 | Initial issue | Jul. 28, 2023 |

Summary of Test Results

| FCC Rules | Test Items | Measured | Result |
|---------------------|----------------------------------|---|--------|
| 15.207 | AC Power Line Conducted Emission | [dBuV]: 0.500MHz 39.27 (Margin -6.73dB) - AV | Pass |
| 15.247(d) 15.209 | Unwanted Emissions | [dBuV/m at 3m]: 4000.00MHz 50.92 (Margin -3.08dB) - AV | Pass |
| 15.247(d) | Band Edge | Meet the requirement of limit | Pass |
| 15.247(b)(1) | Conducted Output Power | Power [dBm]: 8.35 | Pass |
| 15.247(a)(1)(iii) | Number of Hopping Channels | Meet the requirement of limit | Pass |
| 15.247(a)(1) | Hopping Channel Separation | Meet the requirement of limit | Pass |
| 15.247(a)(1)(iii) | Dwell Time | Meet the requirement of limit | Pass |
| 15.203 | Antenna Requirement | Meet the requirement of limit | Pass |

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Information

1.1.1 Product Details

The four configurations of the EUT are shown on the following:

| Model Name | Part No. | Description |
|------------|-----------|--|
| Sona IF573 | 453-00117 | Module, Sona IF573, MIMO, MHF4 |
| | 453-00118 | Module, Sona IF573, MIMO, Trace Pin |
| | 453-00119 | Module, Sona IF573, MIMO, M.2, Key E, SDIO, UART |
| | 453-00120 | Module, Sona IF573, MIMO, M.2, Key E, PCIe, UART |

1.1.2 Specification of the Equipment under Test (EUT)

| RF General Information | | | | |
|------------------------|----------------|---------------------|----------------|-----------|
| Frequency Range (MHz) | Bluetooth Mode | Ch. Frequency (MHz) | Channel Number | Data Rate |
| 2400-2483.5 | BR | 2402-2480 | 0-78 [79] | 1 Mbps |
| 2400-2483.5 | EDR | 2402-2480 | 0-78 [79] | 2 Mbps |
| 2400-2483.5 | EDR | 2402-2480 | 0-78 [79] | 3 Mbps |

Note 1: RF output power specifies that Maximum Peak Conducted Output Power.
 Note 2: Bluetooth BR uses a GFSK.
 Note 3: Bluetooth EDR uses a combination of $\pi/4$ -DQPSK and 8DPSK.

1.1.3 Antenna Details

| Ant. No. | Manufacturer | Model | Part Number | Type | Connector | Gain (dBi) |
|----------|--------------|---------------------------|--------------------|------------|-----------|------------|
| 1 | JOYMAX | TWX-100BRSAX-2001 | NA | Dipole | RP-SMA | 2 |
| 2 | Laird | FlexMIMO 6E | EFD2471A3S-10 MH4L | PIFA | MHF4L | 2.2 |
| 3 | Laird | Mini NanoBlade Flex 6 GHz | EMF2471A3S-10 MH4L | PCB Dipole | MHF4L | 2.4 |
| 4 | Laird | FlexPIFA 6E | EFB2471A3S-10 MH4L | PIFA | MHF4L | 2.2 |

1.1.4 Power Supply Type of Equipment under Test (EUT)

| | |
|-------------------|------------------|
| Power Supply Type | 3.3Vdc from host |
|-------------------|------------------|

1.1.5 Accessories

N/A

1.1.6 Channel List

| Frequency band (MHz) | | | | 2400~2483.5 | | | |
|----------------------|-----------------|---------|-----------------|-------------|-----------------|---------|-----------------|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 0 | 2402 | 20 | 2422 | 40 | 2442 | 60 | 2462 |
| 1 | 2403 | 21 | 2423 | 41 | 2443 | 61 | 2463 |
| 2 | 2404 | 22 | 2424 | 42 | 2444 | 62 | 2464 |
| 3 | 2405 | 23 | 2425 | 43 | 2445 | 63 | 2465 |
| 4 | 2406 | 24 | 2426 | 44 | 2446 | 64 | 2466 |
| 5 | 2407 | 25 | 2427 | 45 | 2447 | 65 | 2467 |
| 6 | 2408 | 26 | 2428 | 46 | 2448 | 66 | 2468 |
| 7 | 2409 | 27 | 2429 | 47 | 2449 | 67 | 2469 |
| 8 | 2410 | 28 | 2430 | 48 | 2450 | 68 | 2470 |
| 9 | 2411 | 29 | 2431 | 49 | 2451 | 69 | 2471 |
| 10 | 2412 | 30 | 2432 | 50 | 2452 | 70 | 2472 |
| 11 | 2413 | 31 | 2433 | 51 | 2453 | 71 | 2473 |
| 12 | 2414 | 32 | 2434 | 52 | 2454 | 72 | 2474 |
| 13 | 2415 | 33 | 2435 | 53 | 2455 | 73 | 2475 |
| 14 | 2416 | 34 | 2436 | 54 | 2456 | 74 | 2476 |
| 15 | 2417 | 35 | 2437 | 55 | 2457 | 75 | 2477 |
| 16 | 2418 | 36 | 2438 | 56 | 2458 | 76 | 2478 |
| 17 | 2419 | 37 | 2439 | 57 | 2459 | 77 | 2479 |
| 18 | 2420 | 38 | 2440 | 58 | 2460 | 78 | 2480 |
| 19 | 2421 | 39 | 2441 | 59 | 2461 | --- | --- |

1.1.7 Test Tool and Duty Cycle

| Test Tool | Bluetooth Simulator, Brand: R&S, Model: CMW270 | |
|-----------------|--|------------------|
| Modulation Mode | Duty Cycle Of Test Signal (%) | Duty Factor (dB) |
| DH5 | 78.23% | 1.07 |
| 2DH5 | 78.23% | 1.07 |
| 3DH5 | 78.14% | 1.07 |

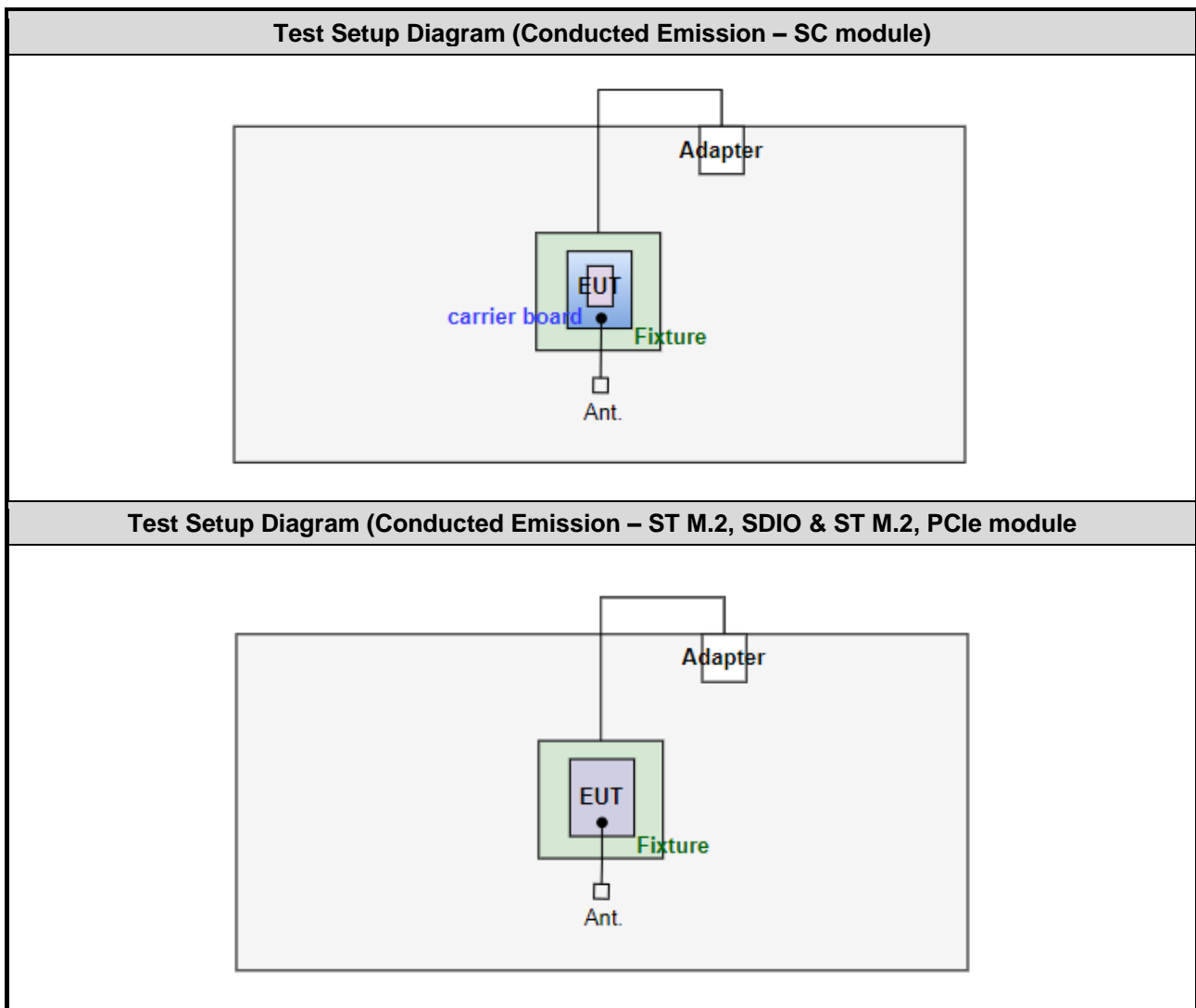
1.1.8 Power Index of Test Tool

| Modulation Mode | Test Frequency (MHz) | | |
|-----------------------|----------------------|---------|---------|
| | 2402 | 2441 | 2480 |
| GFSK/1Mbps | Default | Default | Default |
| $\pi/4$ -DQPSK /2Mbps | Default | Default | Default |
| 8DPSK/3Mbps | Default | Default | Default |

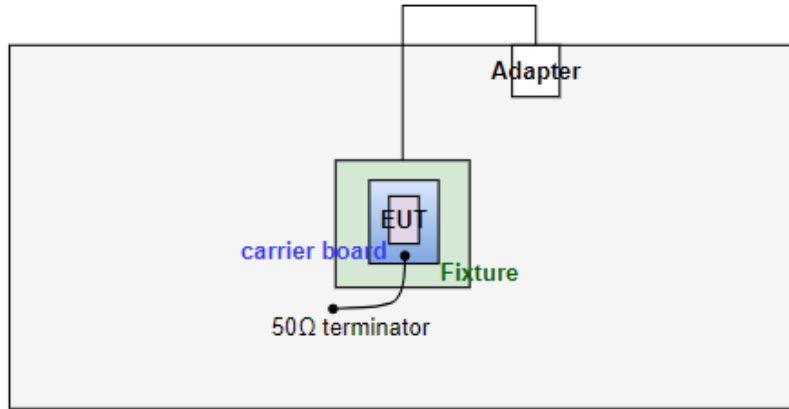
1.2 Local Support Equipment List

| Support Equipment List | | | | | |
|------------------------|-------------------|-------|-----------------|--------|--|
| No. | Equipment | Brand | Model | FCC ID | Remarks |
| 1 | Laptop | DELL | Latitude 5400 | DoC | --- |
| 2 | Fixture | --- | 700-46370 REV B | --- | Provided by applicant. |
| 3 | Fixture's adapter | --- | EA1045CR | --- | Provided by applicant. I/P: 100-240Vac, 1.5A, 50-60Hz O/P: 5.0V 3.0A |
| 4 | 50Ω terminator | --- | --- | --- | --- |

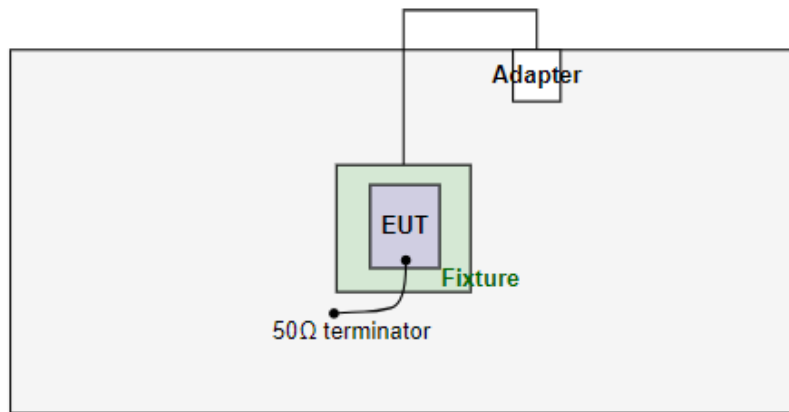
1.3 Test Setup Chart



Test Setup Diagram (Radiated Emission – SC module)



Test Setup Diagram (Radiated Emission – ST M.2, SDIO & ST M.2, PCIe module)



1.4 The Equipment List

| | | | | | |
|---|-------------------------------|------------------|-------------------|-------------------------|--------------------------|
| Test Item | Conducted Emission | | | | |
| Test Site | Conduction room 1 / (CO01-WS) | | | | |
| Tested Date | May 23, 2023 | | | | |
| Instrument | Brand | Model No. | Serial No. | Calibration Date | Calibration Until |
| Receiver | R&S | ESR3 | 101658 | Feb. 17, 2023 | Feb. 16, 2024 |
| LISN | R&S | ENV216 | 101295 | Jan. 31, 2023 | Jan. 30, 2024 |
| LISN (Support Unit) | SCHWARZBECK | Schwarzbeck 8127 | 8127667 | Jan. 03, 2023 | Jan. 02, 2024 |
| RF Cable-CON | Woken | CFD200-NL | CFD200-NL-001 | Oct. 17, 2022 | Oct. 16, 2023 |
| 50 ohm terminal (Support Unit) | NA | 50 | 03 | Jun. 08, 2022 | Jun. 07, 2023 |
| Measurement S/W | AUDIX | e3 | 6.120210k | NA | NA |
| Measurement S/W | Sporton | SENSE-EMI | V5.10.8.7 | NA | NA |
| Note: Calibration Interval of instruments listed above is one year. | | | | | |

| | | | | | |
|---|----------------------------|-----------------------|-------------------|-------------------------|--------------------------|
| Test Item | Radiated Emission | | | | |
| Test Site | 966 chamber1 / (03CH01-WS) | | | | |
| Tested Date | Apr. 13 ~ Apr. 27, 2023 | | | | |
| Instrument | Brand | Model No. | Serial No. | Calibration Date | Calibration Until |
| Wireless connectivity tester | R&S | CMW270 | 100856 | Nov. 16, 2022 | Nov. 15, 2023 |
| Receiver | R&S | ESR3 | 101657 | Mar. 03, 2023 | Mar. 02, 2024 |
| Spectrum Analyzer | R&S | FSV40 | 101498 | Nov. 21, 2022 | Nov. 20, 2023 |
| Loop Antenna | R&S | HFH2-Z2 | 100330 | Nov. 01, 2022 | Oct. 31, 2023 |
| Bilog Antenna | SCHWARZBECK | VULB9168 | VULB9168-522 | Aug. 03, 2022 | Aug. 02, 2023 |
| Horn Antenna 1G-18G | SCHWARZBECK | BBHA 9120 D | BBHA 9120 D 1096 | Nov. 25, 2022 | Nov. 24, 2023 |
| Horn Antenna 18G-40G | SCHWARZBECK | BBHA 9170 | BBHA 9170517 | Oct. 27, 2022 | Oct. 26, 2023 |
| Preamplifier | EMC | EMC02325 | 980225 | Jun. 28, 2022 | Jun. 27, 2023 |
| Preamplifier | EMC | EMC118A45SE | 980898 | Jul. 16, 2022 | Jul. 15, 2023 |
| Preamplifier | EMC | EMC184045SE | 980903 | Jul. 16, 2022 | Jul. 15, 2023 |
| Loop Antenna Cable | KOAX KABEL | 101354-BW | 101354-BW | Oct. 04, 2022 | Oct. 03, 2023 |
| LF cable 3M | Woken | CFD400NL-LW | CFD400NL-001 | Oct. 04, 2022 | Oct. 03, 2023 |
| LF cable 11M | EMC | EMCCFD400-NW-NW-11000 | 200801 | Oct. 04, 2022 | Oct. 03, 2023 |
| LF cable 1M | EMC | EMCCFD400-NM-NM-1000 | 160502 | Oct. 04, 2022 | Oct. 03, 2023 |
| RF Cable | EMC | EMC104-35M-35M-8000 | 210920 | Oct. 04, 2022 | Oct. 03, 2023 |
| RF Cable | EMC | EMC104-35M-35M-3000 | 210922 | Oct. 04, 2022 | Oct. 03, 2023 |
| HIGHPASS FILTER 3.1-18G | WHK | WHK3.1/18G-10SS | 39 | Oct. 06, 2022 | Oct. 05, 2023 |
| Attenuator | woken | PE7013-10 | 10-1 | Oct. 14, 2022 | Oct. 13, 2023 |
| Measurement S/W | AUDIX | e3 | 6.120210g | NA | NA |
| Note: Calibration Interval of instruments listed above is one year. | | | | | |

| | | | | | |
|---|------------------------|------------------|-------------------|-------------------------|--------------------------|
| Test Item | RF Conducted | | | | |
| Test Site | (TH01-WS) | | | | |
| Tested Date | Apr. 14 ~ May 18, 2023 | | | | |
| Instrument | Brand | Model No. | Serial No. | Calibration Date | Calibration Until |
| Wireless connectivity tester | R&S | CMW270 | 100856 | Nov. 16, 2022 | Nov. 15, 2023 |
| Spectrum Analyzer | R&S | FSV40 | 101498 | Nov. 21, 2022 | Nov. 20, 2023 |
| Power Meter | Anritsu | ML2495A | 1241002 | Nov. 23, 2022 | Nov. 22, 2023 |
| Power Sensor | Anritsu | MA2411B | 1207366 | Nov. 23, 2022 | Nov. 22, 2023 |
| HIGHPASS FILTER 3.1-18G | WHK | WHK3.1/18G-10SS | 39 | Oct. 06, 2022 | Oct. 05, 2023 |
| LOWPASS FILTER | WI | WLKS1100-12SS | 2 | Oct. 06, 2022 | Oct. 05, 2023 |
| Attenuator | woken | PE7013-10 | 10-1 | Oct. 14, 2022 | Oct. 13, 2023 |
| Measurement S/W | Sporton | SENSE-15247_FS | V5.10.8 | NA | NA |
| Note: Calibration Interval of instruments listed above is one year. | | | | | |

1.5 Test Standards

47 CFR FCC Part 15.247
ANSI C63.10-2013

1.6 Reference Guidance

FCC KDB 558074 D01 15.247 Meas Guidance v05r02

1.7 Deviation from Test Standard and Measurement Procedure

None

1.8 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

| Measurement Uncertainty | |
|--------------------------|-------------|
| Parameters | Uncertainty |
| Bandwidth | ±34.130 Hz |
| Conducted power | ±0.808 dB |
| Power density | ±0.583 dB |
| Conducted emission | ±2.715 dB |
| AC conducted emission | ±2.92 dB |
| Unwanted Emission ≤ 1GHz | ±3.41 dB |
| Unwanted Emission > 1GHz | ±4.59 dB |
| Time | ±0.1% |

2 Test Configuration

2.1 Testing Facility

| | |
|-----------------------------|--|
| Test Laboratory | International Certification Corporation |
| Test Site | CO01-WS, 03CH01-WS, TH01-WS |
| Address of Test Site | No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.) |

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- ISED#: 10807A
- CAB identifier: TW2732

2.2 The Worst Test Modes and Channel Details

| Test item | Modulation Mode | Test Frequency (MHz) | Test method | Mode | Test Configuration | Note |
|--|---|--|-------------|------|--------------------|--------|
| Conducted Emissions | 8DPSK(3Mbps) | 2480 | Conducted | TX | 1, 2, 3 | - |
| Radiated Emissions ≤ 1GHz | 8DPSK(3Mbps) | 2480 | Radiated | TX | 1, 2, 3 | Note 2 |
| Radiated Emissions > 1GHz | GFSK(1Mbps) 8DPSK(3Mbps) | 2402, 2441, 2480 2402, 2441, 2480 | Radiated | TX | 1 | Note 2 |
| | 8DPSK(3Mbps) | 2480 | Radiated | TX | 3 | Note 2 |
| Radiated Emissions ≤ 1GHz | GFSK(1Mbps) | 2480 | Conducted | TX | 1 | - |
| | | | | | 3 | - |
| Radiated Emissions > 1GHz | GFSK(1Mbps) 8DPSK(3Mbps) | 2402, 2441, 2480 2402, 2441, 2480 | Conducted | TX | 1 | - |
| | GFSK(1Mbps) | 2480 | Conducted | TX | 3 | - |
| Number of Hopping Channels | GFSK(1Mbps) π/4 DQPSK(2Mbps) 8DPSK(3Mbps) | 2402~2480 2402~2480 2402~2480 | Conducted | TX | 1 | - |
| Conducted Output Power | GFSK(1Mbps) π/4 DQPSK(2Mbps) 8DPSK(3Mbps) | 2402, 2441, 2480 2402, 2441, 2480 2402, 2441, 2480 | Conducted | TX | 1, 3 | - |
| Hopping Channel Separation 20dB and Occupied bandwidth | GFSK(1Mbps) π/4 DQPSK(2Mbps) 8DPSK(3Mbps) | 2402, 2441, 2480 2402, 2441, 2480 2402, 2441, 2480 | Conducted | TX | 1 | - |
| Dwell Time | GFSK(1Mbps) π/4 DQPSK(2Mbps) 8DPSK(3Mbps) | 2402 2402 2402 | Conducted | TX | 1 | - |

NOTE:

- The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-plane** result was found as the worst case and was shown in this report.
- The 50Ω terminator is connected to antenna port of EUT for radiated emission measurement.
- Test configurations are listed as below:
 Configuration 1: Laird part number: 453-00117 (SC module)
 Configuration 2: Laird part number: 453-00119 (ST M.2, SDIO Module)
 Configuration 3: Laird part number: 453-00120 (ST M.2, PCIe Module)

3 Transmitter Test Results

3.1 Unwanted Emissions into Restricted Frequency Bands

3.1.1 Limit of Unwanted Emissions into Restricted Frequency Bands

| Restricted Band Emissions Limit | | | |
|---------------------------------|-----------------------|-------------------------|----------------------|
| Frequency Range (MHz) | Field Strength (uV/m) | Field Strength (dBuV/m) | Measure Distance (m) |
| 0.009~0.490 | 2400/F(kHz) | 48.5 - 13.8 | 300 |
| 0.490~1.705 | 24000/F(kHz) | 33.8 - 23 | 30 |
| 1.705~30.0 | 30 | 29 | 30 |
| 30~88 | 100 | 40 | 3 |
| 88~216 | 150 | 43.5 | 3 |
| 216~960 | 200 | 46 | 3 |
| Above 960 | 500 | 54 | 3 |

Note 1:
Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit

Note 2:
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

3.1.2 Test Procedures

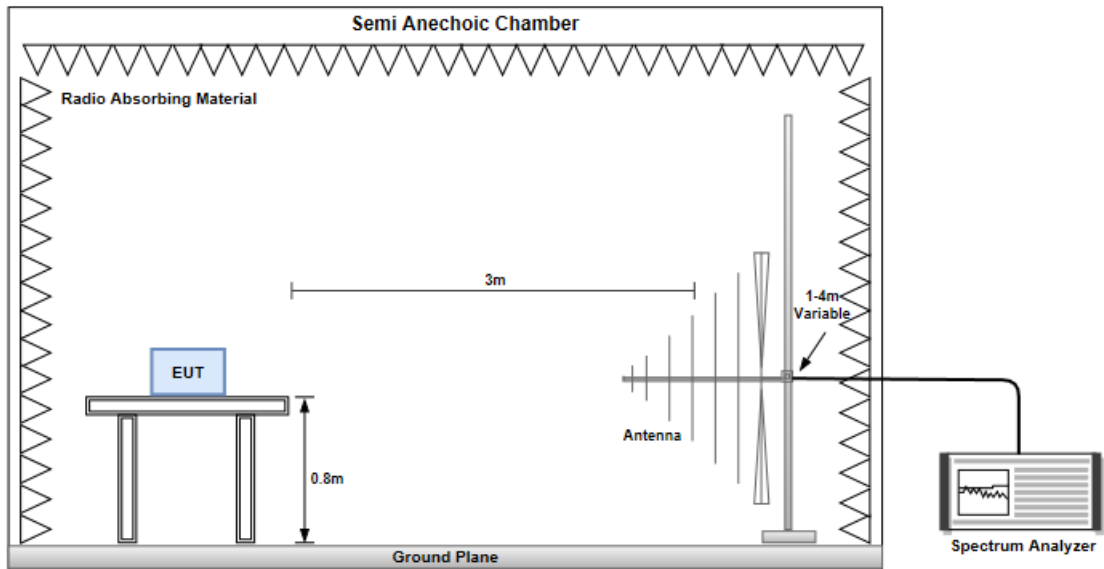
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

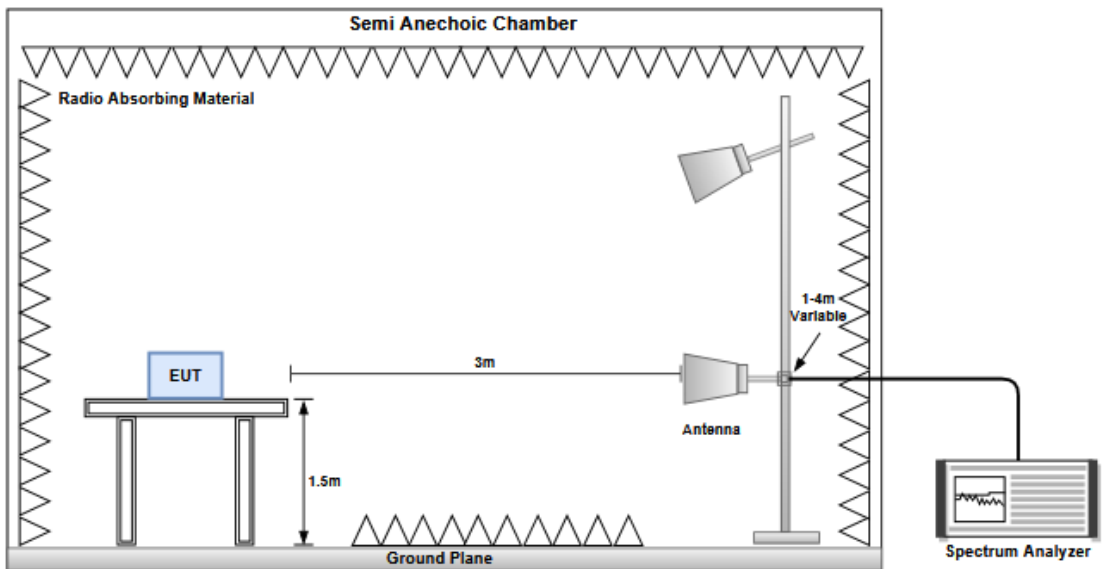
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. Radiated emission above 1GHz / Peak value
RBW=1MHz, VBW=3MHz and Peak detector
Radiated emission above 1GHz / Average value for harmonics
The average value is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula for DH5 packet type which has worst duty factor:
3.
$$20\log(\text{Duty cycle}) = 20\log \frac{1\text{s} / 1600 * 5}{100\text{ ms}} = -30.1\text{dB}$$
4. Radiated emission above 1GHz / Average value for other emissions
RBW=1MHz, VBW=1/T and Peak detector

3.1.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.1.4 Test Results

Refer to Appendix A.

3.2 Unwanted Emissions into Non-Restricted Frequency Bands

3.2.1 Limit of Unwanted Emissions into Non-Restricted Frequency Bands

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz.

3.2.2 Test Procedures

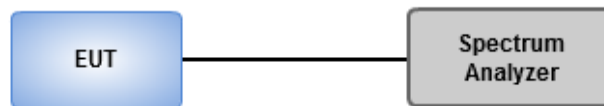
Reference level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Use the peak marker function to determine the maximum PSD level

Emission level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 25GHz
4. Use the peak marker function to determine the maximum amplitude level

3.2.3 Test Setup



3.2.4 Test Results

| | | | |
|--------------------------|------------------|------------------|------------|
| Ambient Condition | 25-26°C / 63-66% | Tested By | Akun Chung |
|--------------------------|------------------|------------------|------------|

Refer to Appendix B.

3.3 Conducted Output Power

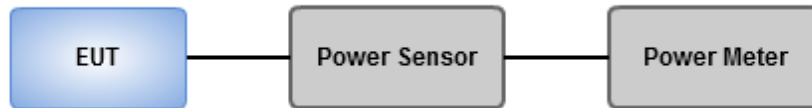
3.3.1 Limit of Conducted Output Power

- 1 Watt
For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band.
- 0.125 Watt
For all other frequency hopping systems in the 2400–2483.5 MHz band.
- 0.125 Watt
For Frequency hopping systems operating in the 2400–2483.5 MHz band have hopping channel carrier frequencies that are separated by two-thirds of the 20 dB bandwidth of the hopping channel.

3.3.2 Test Procedures

1. A wideband power meter is used for power measurement. Bandwidth of power sensor and meter is 50MHz
2. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power

3.3.3 Test Setup



3.3.4 Test Results

| | | | |
|--------------------------|------------------|------------------|------------|
| Ambient Condition | 25-26°C / 63-66% | Tested By | Akun Chung |
|--------------------------|------------------|------------------|------------|

Refer to Appendix C.

3.4 Number of Hopping Frequency

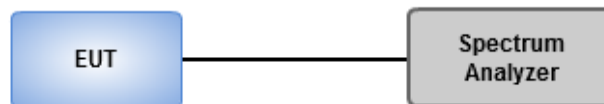
3.4.1 Limit of Number of Hopping Frequency

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

3.4.2 Test Procedures

1. Set RBW = 100kHz, VBW = 300kHz, Sweep time = Auto, Detector = Peak Trace max hold.
2. Allow trace to stabilize.

3.4.3 Test Setup



3.4.4 Test Results

| | | | |
|--------------------------|------------------|------------------|------------|
| Ambient Condition | 25-26°C / 63-66% | Tested By | Akun Chung |
|--------------------------|------------------|------------------|------------|

Refer to Appendix D.

3.5 20dB and Occupied Bandwidth

3.5.1 Test Procedures

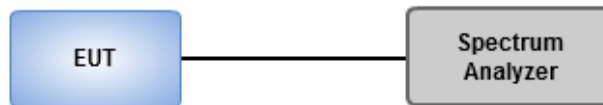
20dB Bandwidth

1. Set RBW=20kHz, VBW=100kHz, Sweep time = Auto, Detector=Peak , Trace max hold
2. Allow trace to stabilize
3. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

Occupied Bandwidth

1. Set RBW=20kHz, VBW=100kHz, Sweep time = Auto, Detector=Sample , Trace max hold
2. Allow trace to stabilize
3. Use Occupied bandwidth function of spectrum analyzer to measuring 99% occupied bandwidth

3.5.2 Test Setup



3.5.3 Test Results

| | | | |
|--------------------------|------------------|------------------|------------|
| Ambient Condition | 25-26°C / 63-66% | Tested By | Akun Chung |
|--------------------------|------------------|------------------|------------|

Refer to Appendix E.

3.6 Channel Separation

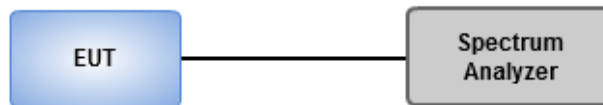
3.6.1 Limit of Channel Separation

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

3.6.2 Test Procedures

1. Set RBW=30kHz, VBW=100kHz, Sweep time = Auto, Detector=Peak Trace max hold
2. Allow trace to stabilize
3. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The EUT shall show compliance with the appropriate regulatory limit

3.6.3 Test Setup



3.6.4 Test Results

| | | | |
|--------------------------|------------------|------------------|------------|
| Ambient Condition | 25-26°C / 63-66% | Tested By | Akun Chung |
|--------------------------|------------------|------------------|------------|

Refer to Appendix F.

3.7 Number of Dwell Time

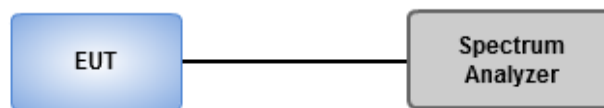
3.7.1 Limit of Dwell time

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

3.7.2 Test Procedures

1. Set RBW=300 kHz, VBW=1 MHz, Sweep time=8 ms, Detector=Peak, Span=0 Hz, Trace max hold.
2. Enable gating and trigger function of spectrum analyzer to measure burst on time.
3. Set RBW=300 kHz, VBW=1 MHz, Sweep time=5 s / 2 s, Detector=Peak, Span=0 Hz, Trace max hold.
4. Enable gating and trigger function of spectrum analyzer to measure burst on number of transmission.
5. Set RBW=300 kHz, VBW=1 MHz, Sweep time=31.6 s / 8 s, Detector=Peak, Span=0 Hz, Trace max hold.
6. Enable gating and trigger function of spectrum analyzer to measure burst on number of transmission of entire time cycle.

3.7.3 Test Setup



3.7.4 Test Results

| | | | |
|--------------------------|------------------|------------------|------------|
| Ambient Condition | 25-26°C / 63-66% | Tested By | Akun Chung |
|--------------------------|------------------|------------------|------------|

Refer to Appendix G.

3.8 AC Power Line Conducted Emissions

3.8.1 Limit of AC Power Line Conducted Emissions

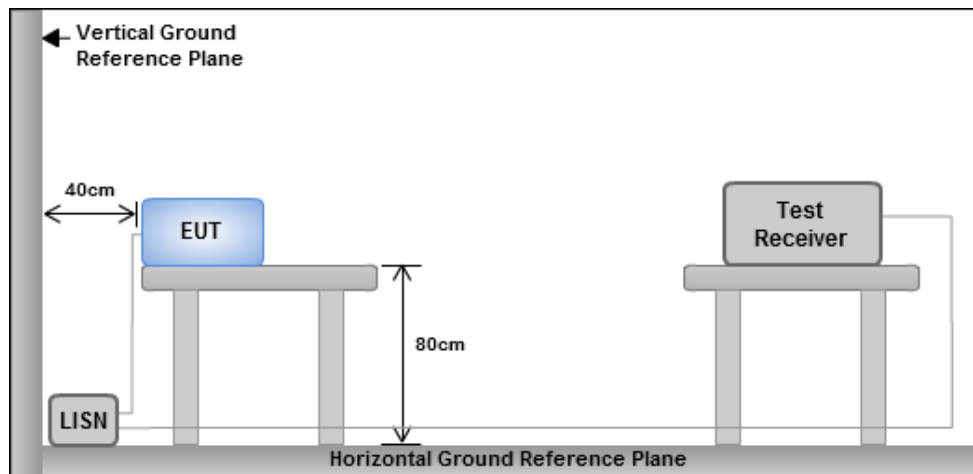
| Conducted Emissions Limit | | |
|---------------------------|------------|-----------|
| Frequency Emission (MHz) | Quasi-Peak | Average |
| 0.15-0.5 | 66 - 56 * | 56 - 46 * |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

Note 1: * Decreases with the logarithm of the frequency.

3.8.2 Test Procedures

1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω LISN port.
3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
4. This measurement was performed with AC 120V/60Hz

3.8.3 Test Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.8.4 Test Results

Refer to Appendix H.

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

Linkou

Tel: 886-2-2601-1640

No.30-2, Ding Fwu Tsuen, Lin Kou
District, New Taipei City, Taiwan
(R.O.C.)

Kwei Shan

Tel: 886-3-271-8666

No.3-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)
No.2-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

Kwei Shan Site II

Tel: 886-3-271-8640

No.14-1, Lane 19, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666

Fax: 886-3-318-0345

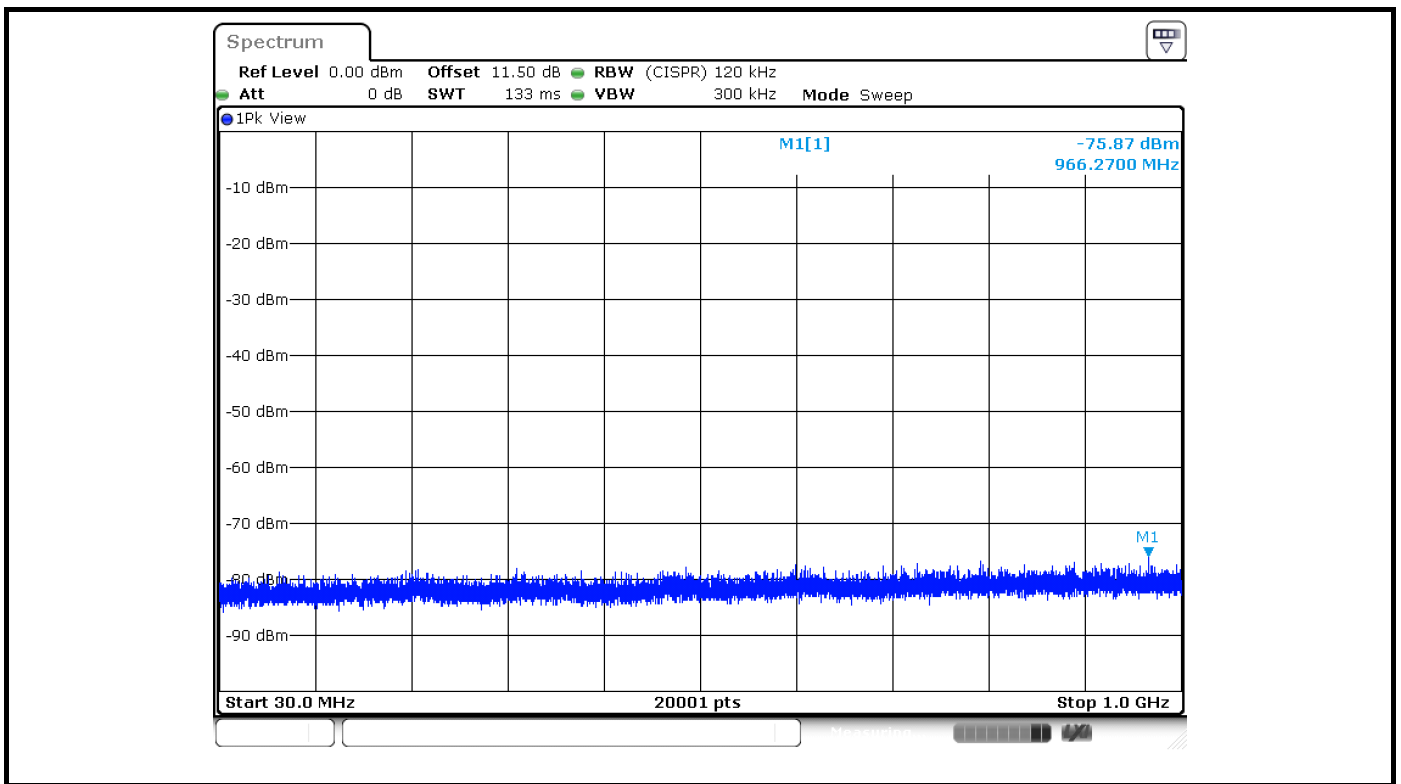
Email: ICC_Service@icertifi.com.tw

==END==



| Restrict bands below 1G | | | | | | | |
|--|-----------------|----------|----------|------------|------------------|----------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2480MHz | | |
| Range (MHz) | Max Value (dBm) | DG (dBi) | GRF (dB) | EIRP (dBm) | E-Field (dBuV/m) | Min E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 30~1000MHz | -75.87 | 2.40 | 4.70 | -68.77 | 26.49 | 40.00 | -13.51 |

DG=directional gain
GRF=ground reflection factor





Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

Appendix A.1

| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2402 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4003.33 | PK | -52.82 | 2.40 | -50.42 | 44.84 | 74.00 | -29.16 |
| 4003.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4804.00 | PK | -49.74 | 2.40 | -47.34 | 47.92 | 74.00 | -26.08 |
| 4804.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2441 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4068.33 | PK | -54.19 | 2.40 | -51.79 | 43.47 | 74.00 | -30.53 |
| 4068.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4882.00 | PK | -45.58 | 2.40 | -43.18 | 52.08 | 74.00 | -21.92 |
| 4882.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2480 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4133.33 | PK | -55.98 | 2.40 | -53.58 | 41.68 | 74.00 | -32.32 |
| 4133.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4960.00 | PK | -44.41 | 2.40 | -42.01 | 53.25 | 74.00 | -20.75 |
| 4960.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

Note: If the PK margin greater than 20 dB, there is no need to get AVG reading.



Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

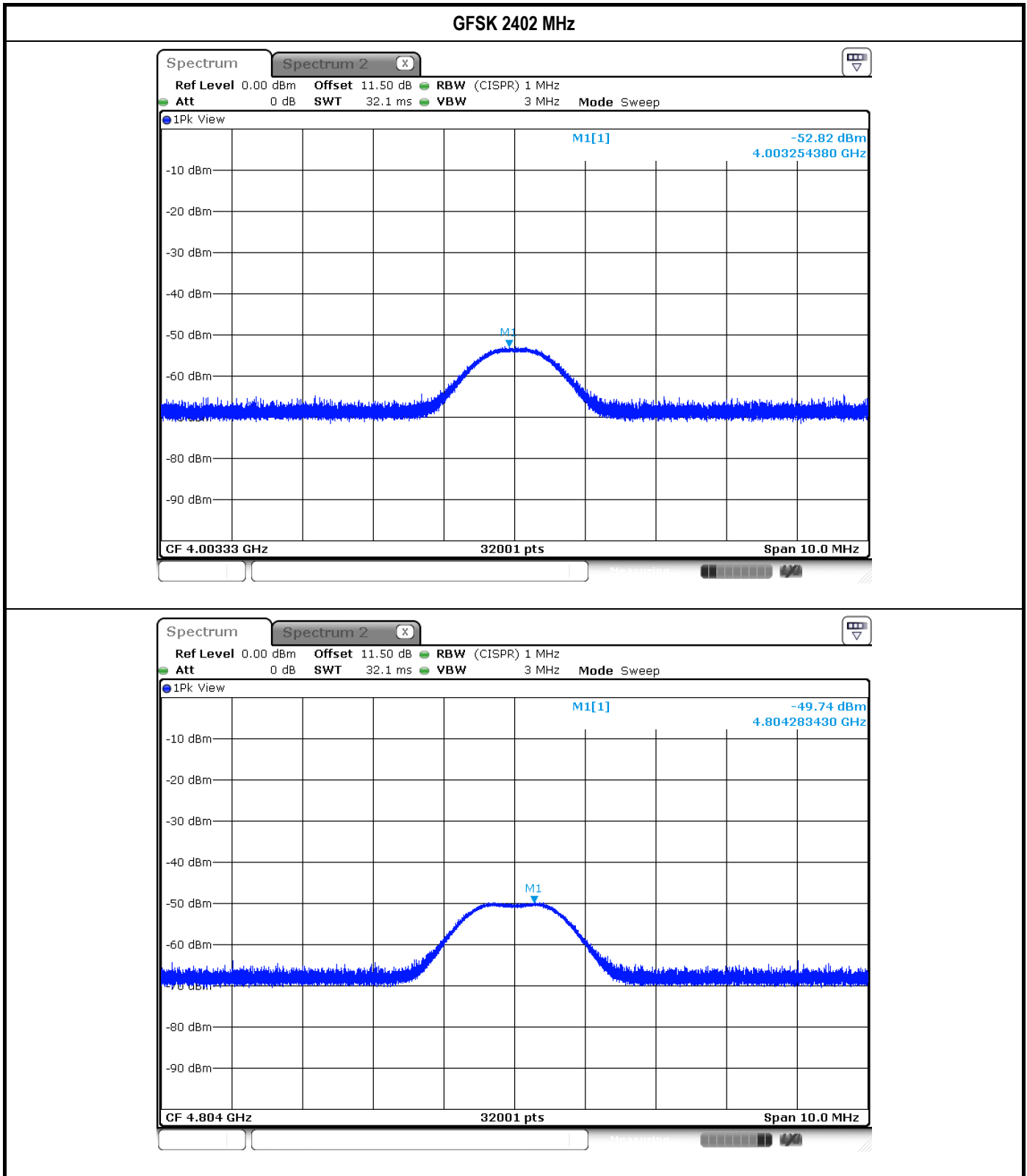
Appendix A.1

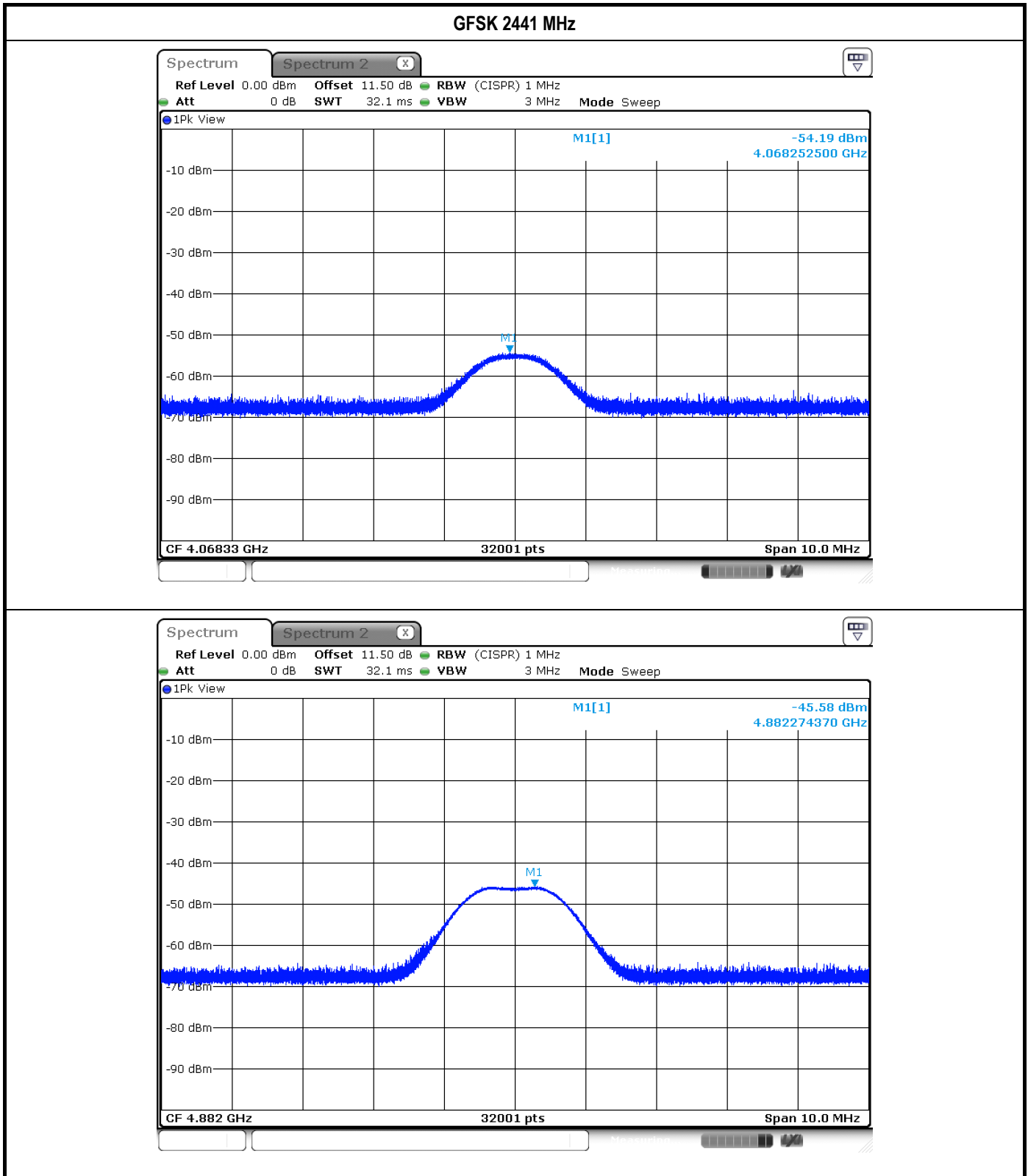
| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | 8DPSK | | | Frequency | 2402 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4003.33 | PK | -55.45 | 2.40 | -53.05 | 42.21 | 74.00 | -31.79 |
| 4003.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4804.00 | PK | -57.25 | 2.40 | -54.85 | 40.41 | 74.00 | -33.59 |
| 4804.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

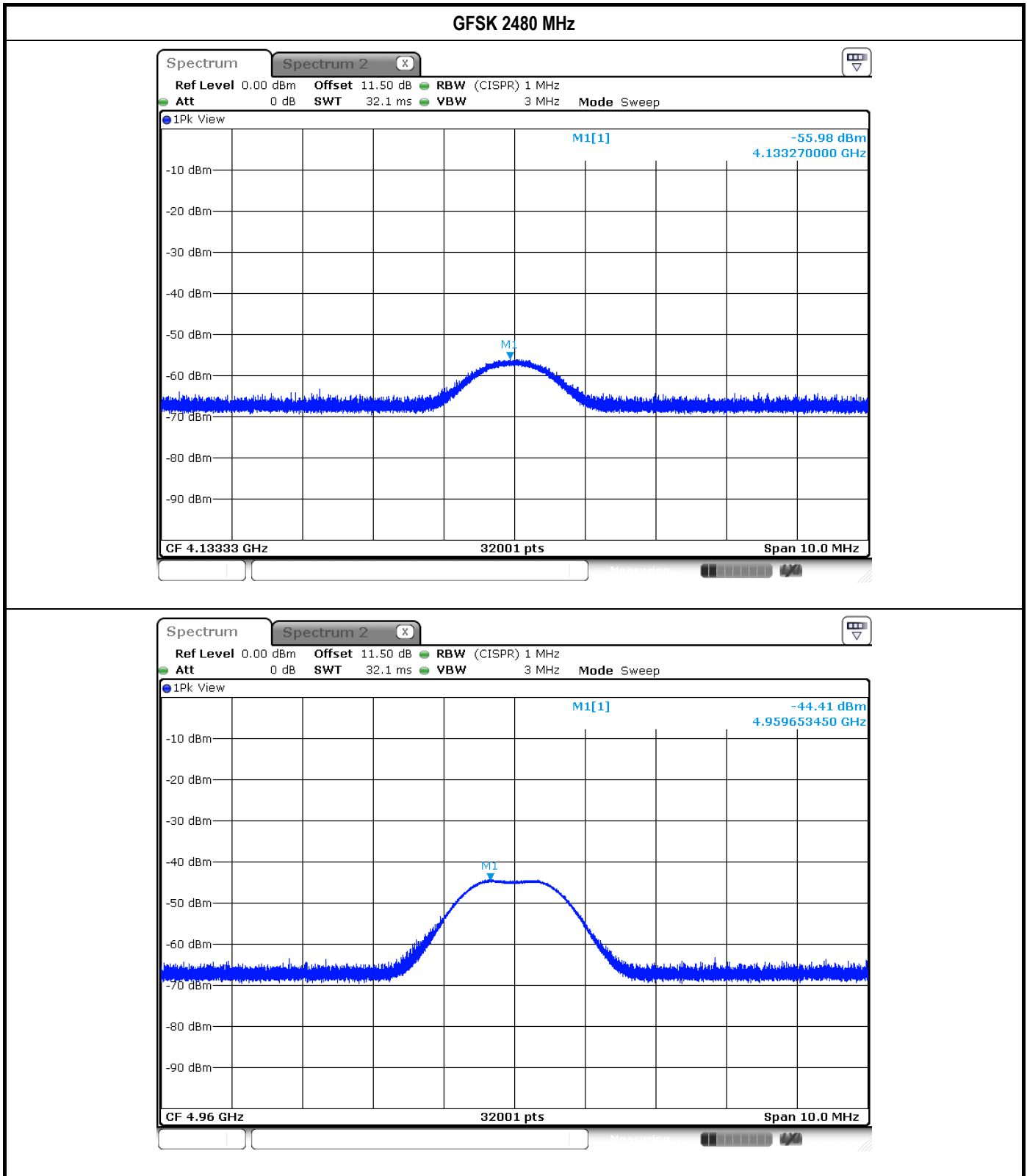
| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | 8DPSK | | | Frequency | 2441 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4068.33 | PK | -56.12 | 2.40 | -53.72 | 41.54 | 74.00 | -32.46 |
| 4068.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4882.00 | PK | -54.83 | 2.40 | -52.43 | 42.83 | 74.00 | -31.17 |
| 4882.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

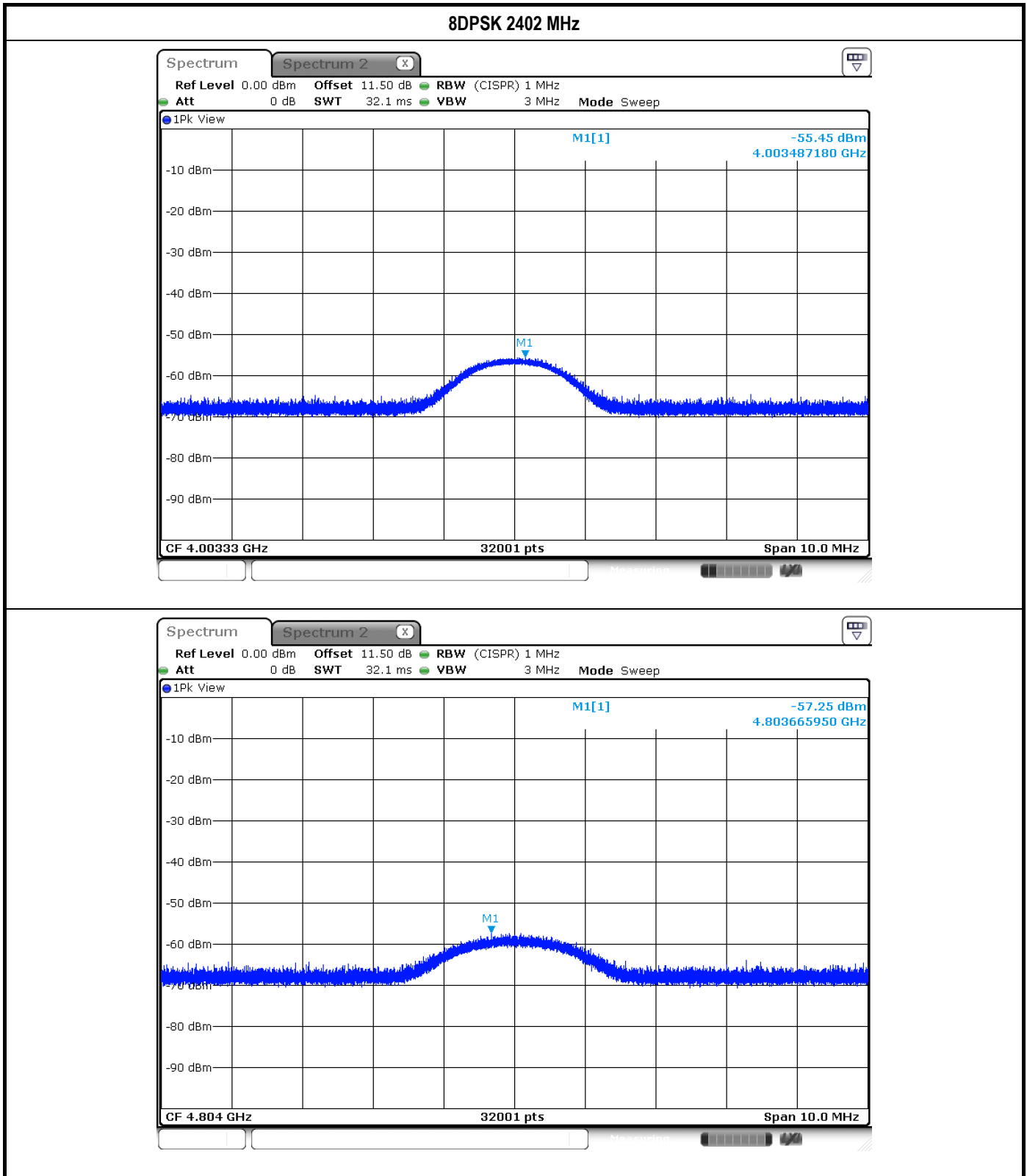
| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | 8DPSK | | | Frequency | 2480 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4133.33 | PK | -57.56 | 2.40 | -55.16 | 40.10 | 74.00 | -33.90 |
| 4133.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4960.00 | PK | -55.01 | 2.40 | -52.61 | 42.65 | 74.00 | -31.35 |
| 4960.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

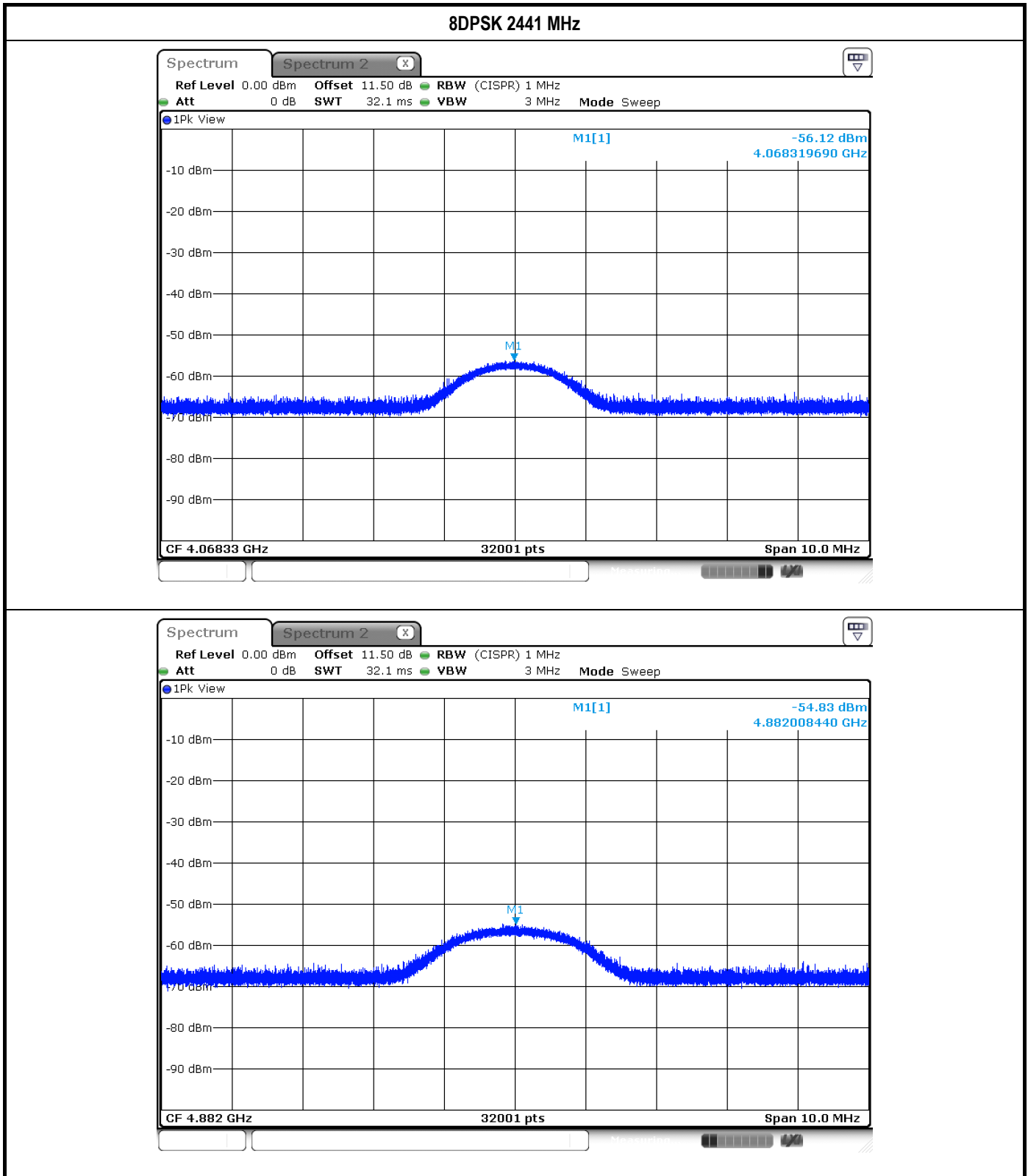
Note : If the PK margin greater than 20 dB, there is no need to get AVG reading.

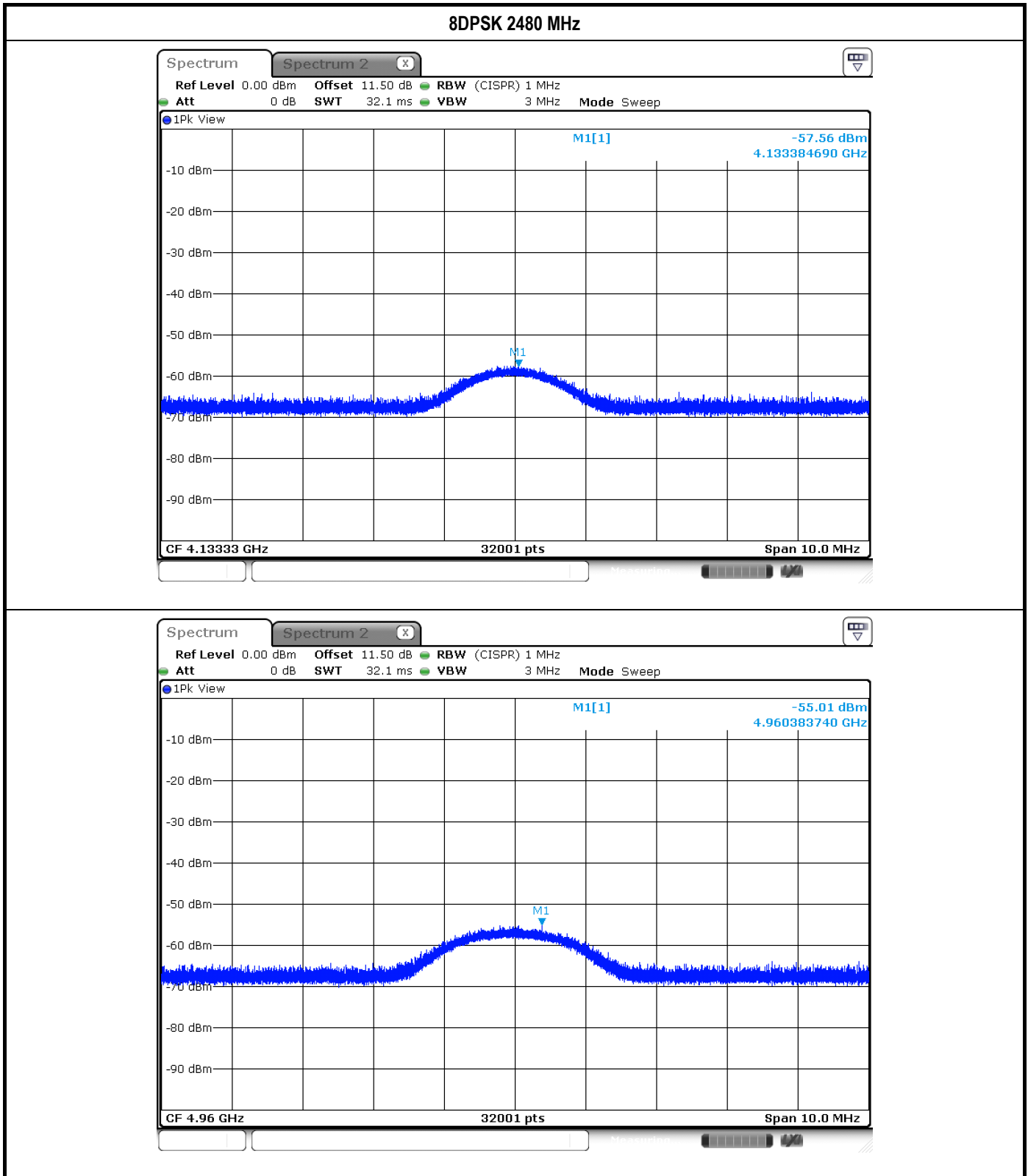












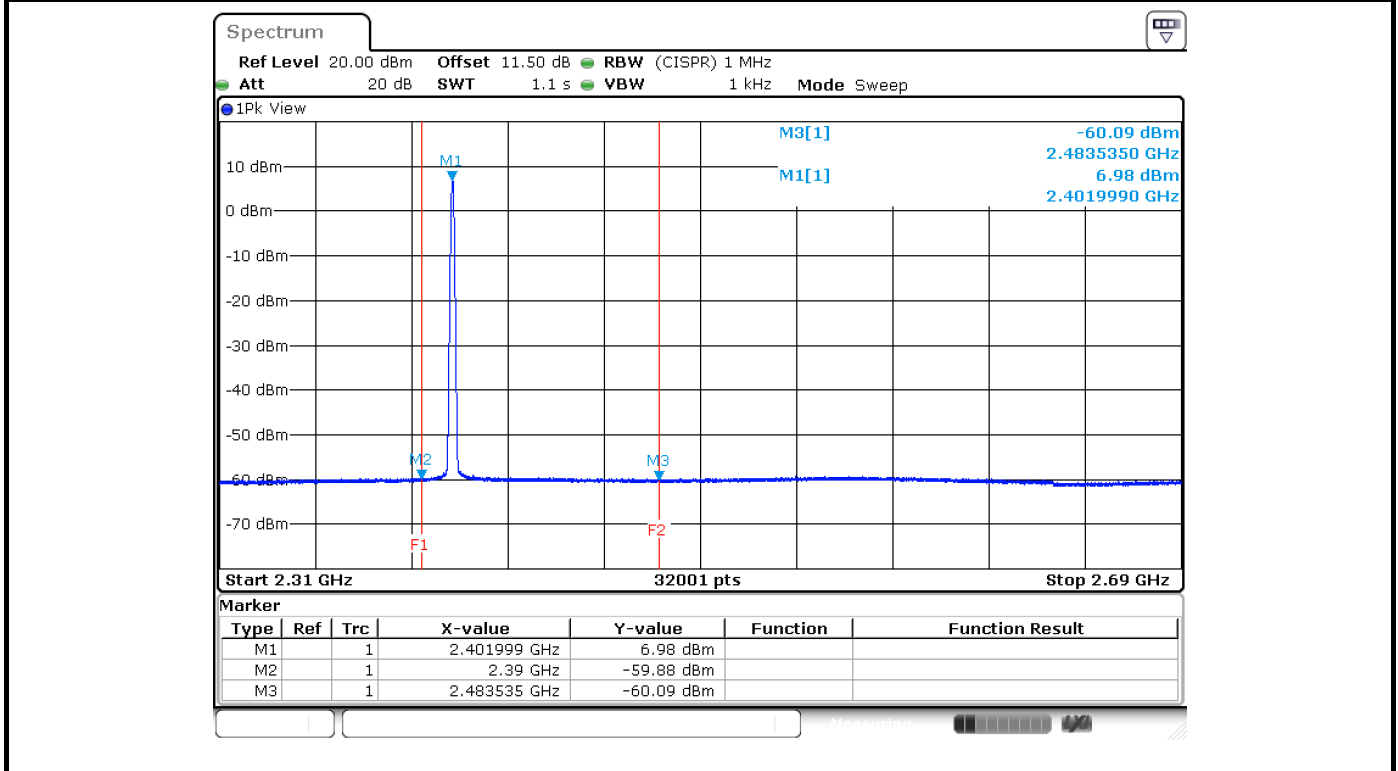
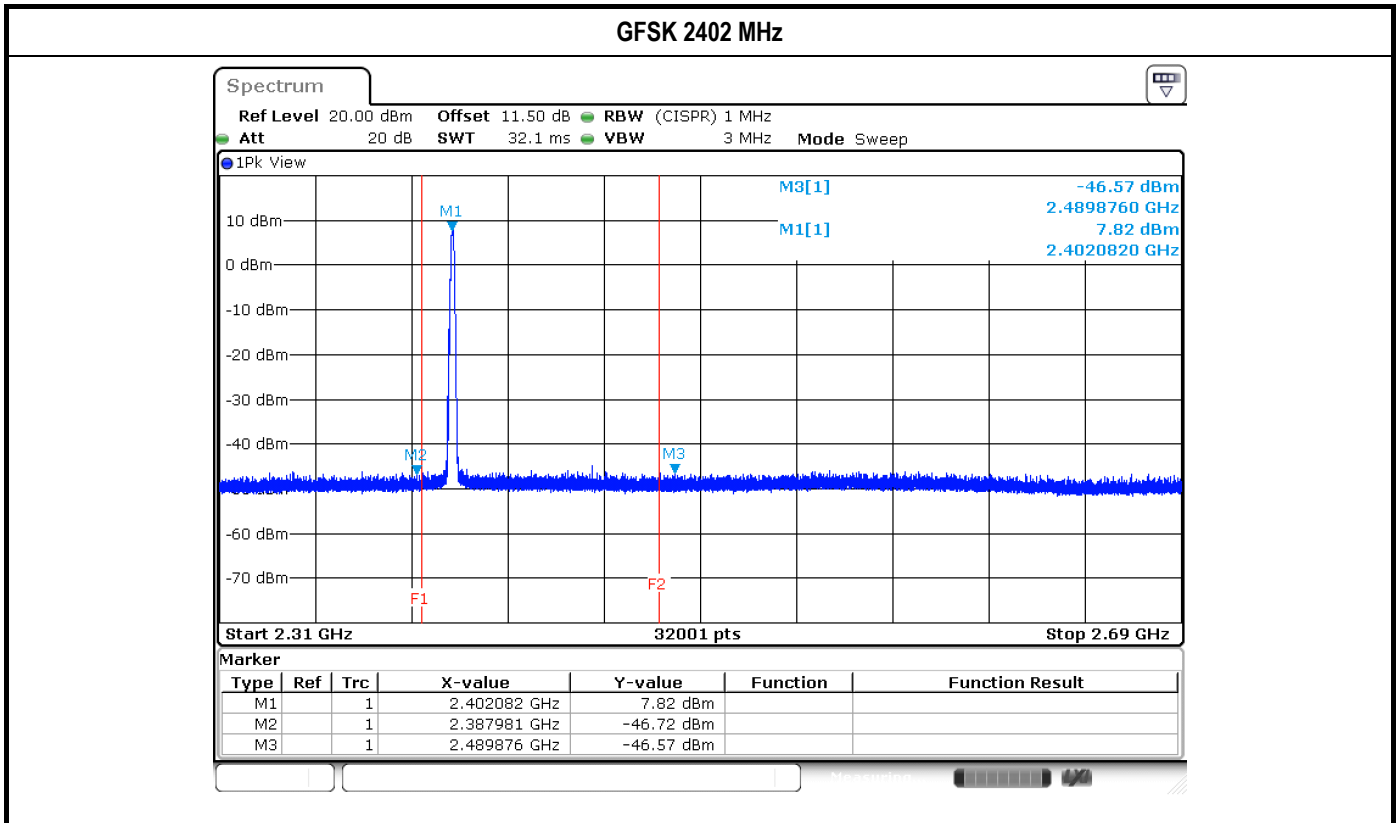


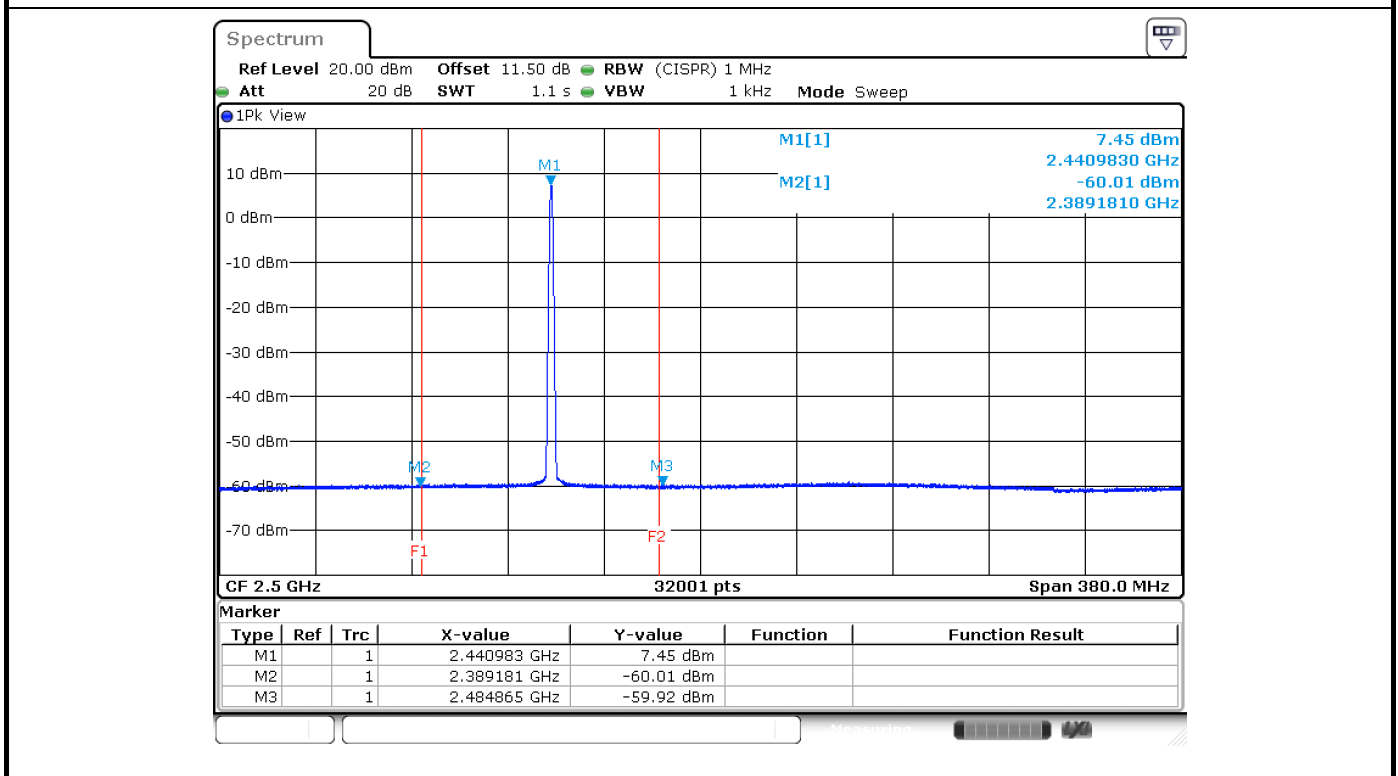
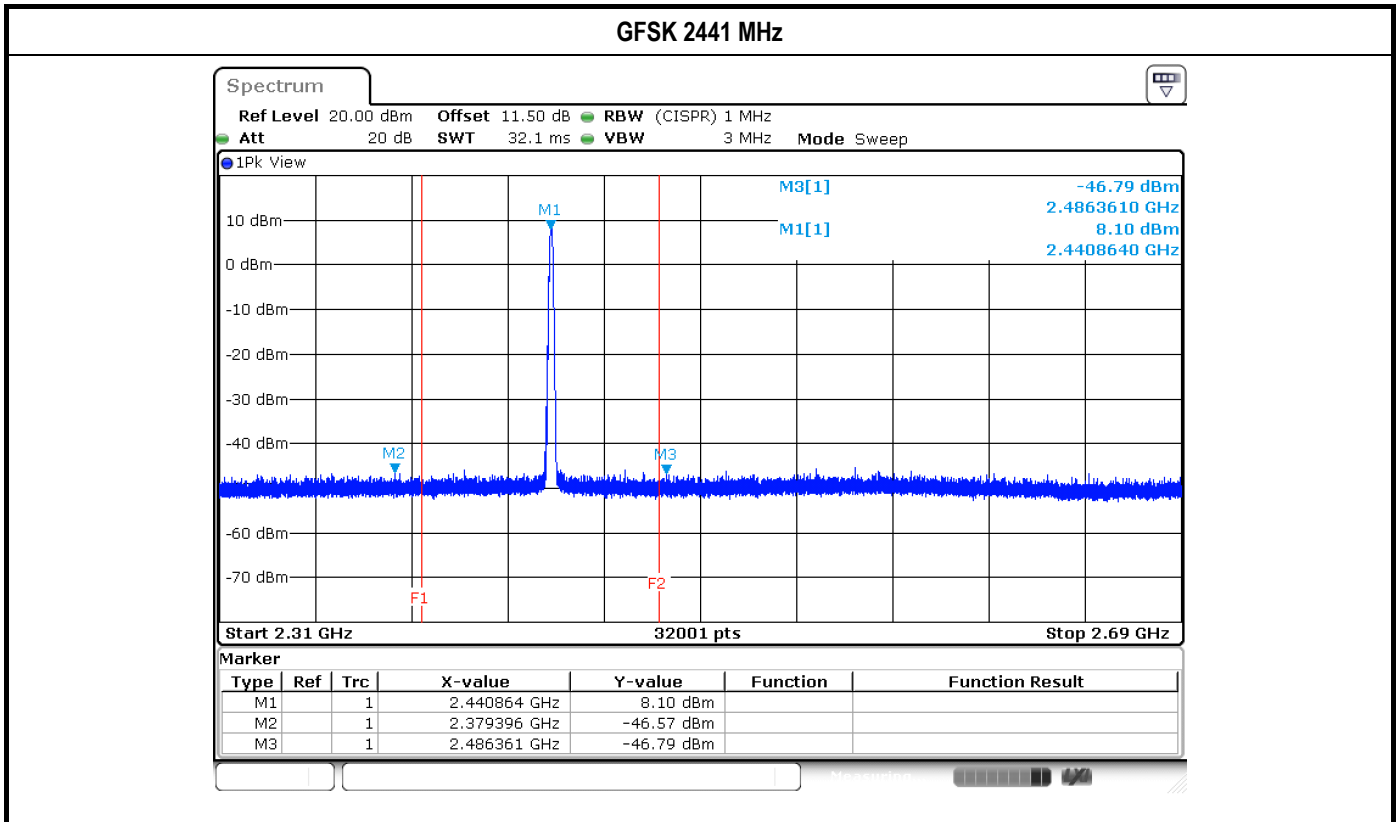
Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

Appendix A.1

| Restrict bands above 1G | | | | | | | | |
|--|--------|-------------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band - Bandedge | | | | | | | | |
| Modulation Mode | GFSK | | | | | | | |
| Test ch. Freq. (MHz) | Remark | Range (MHz) | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 2402 | PK | 2310~2390 | -46.72 | 2.40 | -44.32 | 50.94 | 74.00 | -23.06 |
| | AV | 2310~2390 | -59.88 | 2.40 | -57.48 | 37.78 | 54.00 | -16.22 |
| | PK | 2483.5~2500 | -46.57 | 2.40 | -44.17 | 51.09 | 74.00 | -22.91 |
| | AV | 2483.5~2500 | -60.09 | 2.40 | -57.69 | 37.57 | 54.00 | -16.43 |
| 2441 | PK | 2310~2390 | -46.57 | 2.40 | -44.17 | 51.09 | 74.00 | -22.91 |
| | AV | 2310~2390 | -60.01 | 2.40 | -57.61 | 37.65 | 54.00 | -16.35 |
| | PK | 2483.5~2500 | -46.79 | 2.40 | -44.39 | 50.87 | 74.00 | -23.13 |
| | AV | 2483.5~2500 | -59.92 | 2.40 | -57.52 | 37.74 | 54.00 | -16.26 |
| 2480 | PK | 2310~2390 | -46.37 | 2.40 | -43.97 | 51.29 | 74.00 | -22.71 |
| | AV | 2310~2390 | -58.44 | 2.40 | -56.04 | 39.22 | 54.00 | -14.78 |
| | PK | 2483.5~2500 | -45.72 | 2.40 | -43.32 | 51.94 | 74.00 | -22.06 |
| | AV | 2483.5~2500 | -57.38 | 2.40 | -54.98 | 40.28 | 54.00 | -13.72 |

| Restrict bands above 1G | | | | | | | | |
|--|--------|-------------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band - Bandedge | | | | | | | | |
| Modulation Mode | 8DPSK | | | | | | | |
| Test ch. Freq. (MHz) | Remark | Range (MHz) | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 2402 | PK | 2310~2390 | -46.86 | 2.40 | -44.46 | 50.80 | 74.00 | -23.20 |
| | AV | 2310~2390 | -60.50 | 2.40 | -58.10 | 37.16 | 54.00 | -16.84 |
| | PK | 2483.5~2500 | -46.49 | 2.40 | -44.09 | 51.17 | 74.00 | -22.83 |
| | AV | 2483.5~2500 | -60.09 | 2.40 | -57.69 | 37.57 | 54.00 | -16.43 |
| 2441 | PK | 2310~2390 | -46.24 | 2.40 | -43.84 | 51.42 | 74.00 | -22.58 |
| | AV | 2310~2390 | -60.05 | 2.40 | -57.65 | 37.61 | 54.00 | -16.39 |
| | PK | 2483.5~2500 | -47.65 | 2.40 | -45.25 | 50.01 | 74.00 | -23.99 |
| | AV | 2483.5~2500 | -60.19 | 2.40 | -57.79 | 37.47 | 54.00 | -16.53 |
| 2480 | PK | 2310~2390 | -46.85 | 2.40 | -44.45 | 50.81 | 74.00 | -23.19 |
| | AV | 2310~2390 | -59.65 | 2.40 | -57.25 | 38.01 | 54.00 | -15.99 |
| | PK | 2483.5~2500 | -46.73 | 2.40 | -44.33 | 50.93 | 74.00 | -23.07 |
| | AV | 2483.5~2500 | -59.84 | 2.40 | -57.44 | 37.82 | 54.00 | -16.18 |

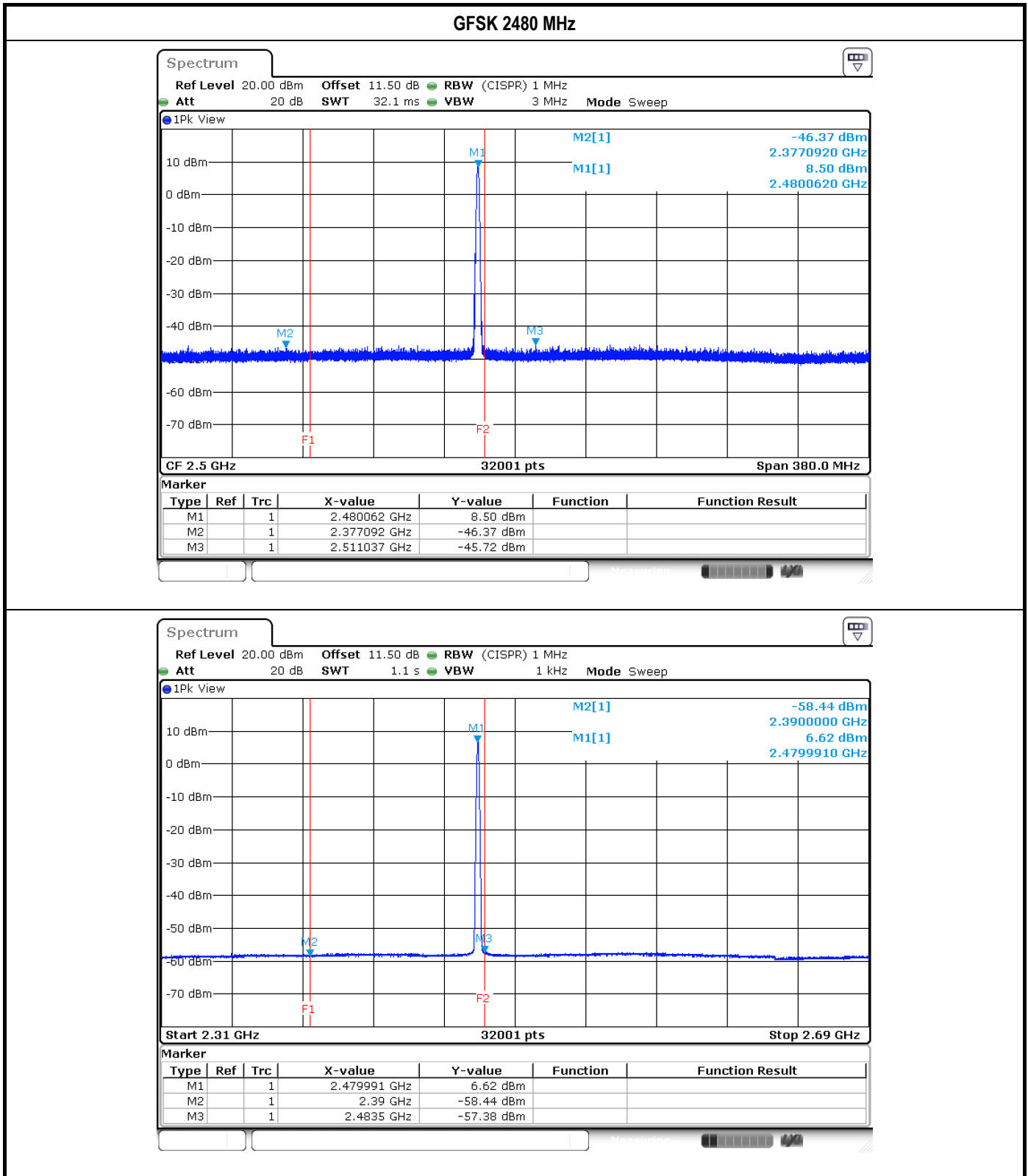






Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

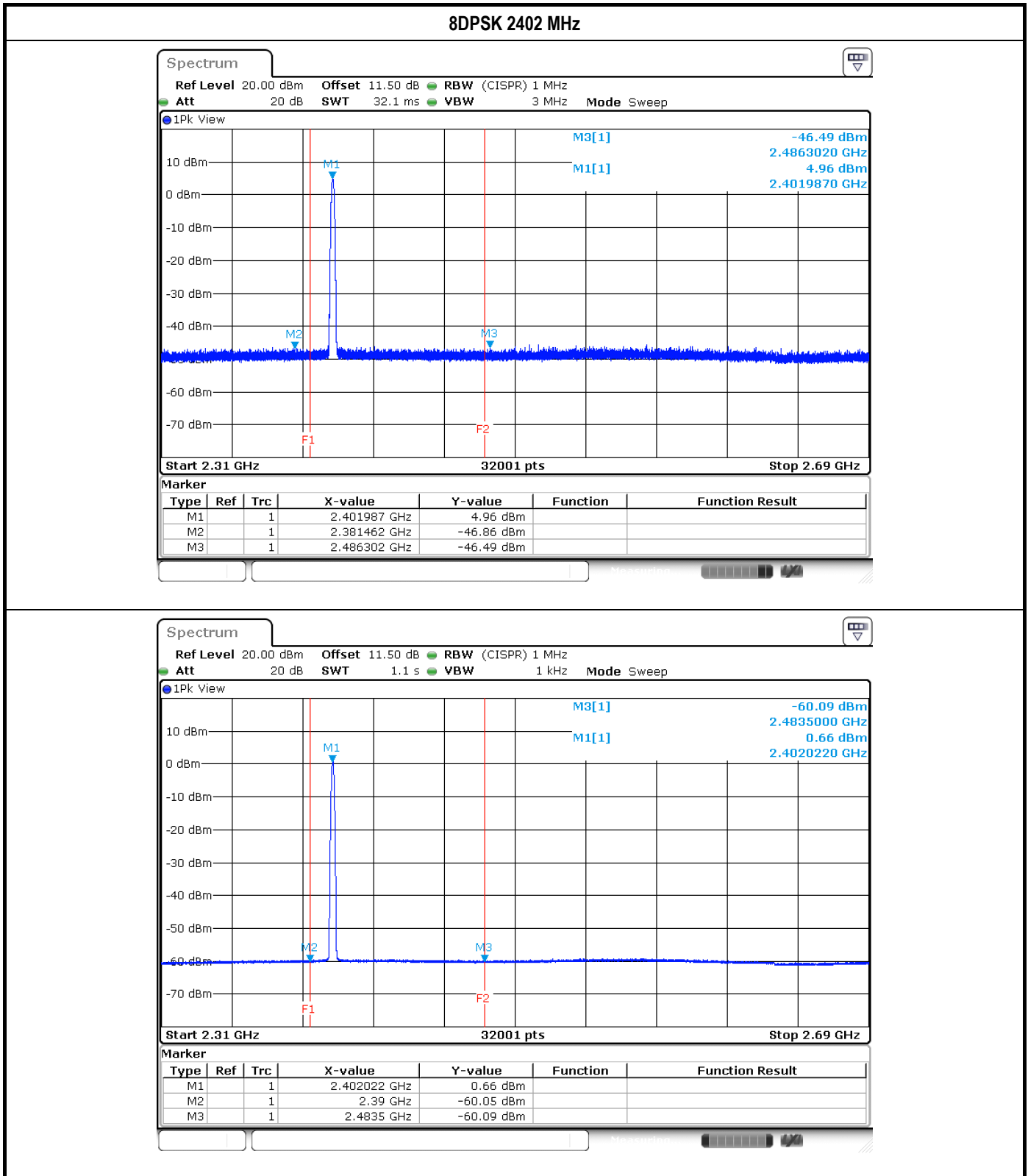
Appendix A.1

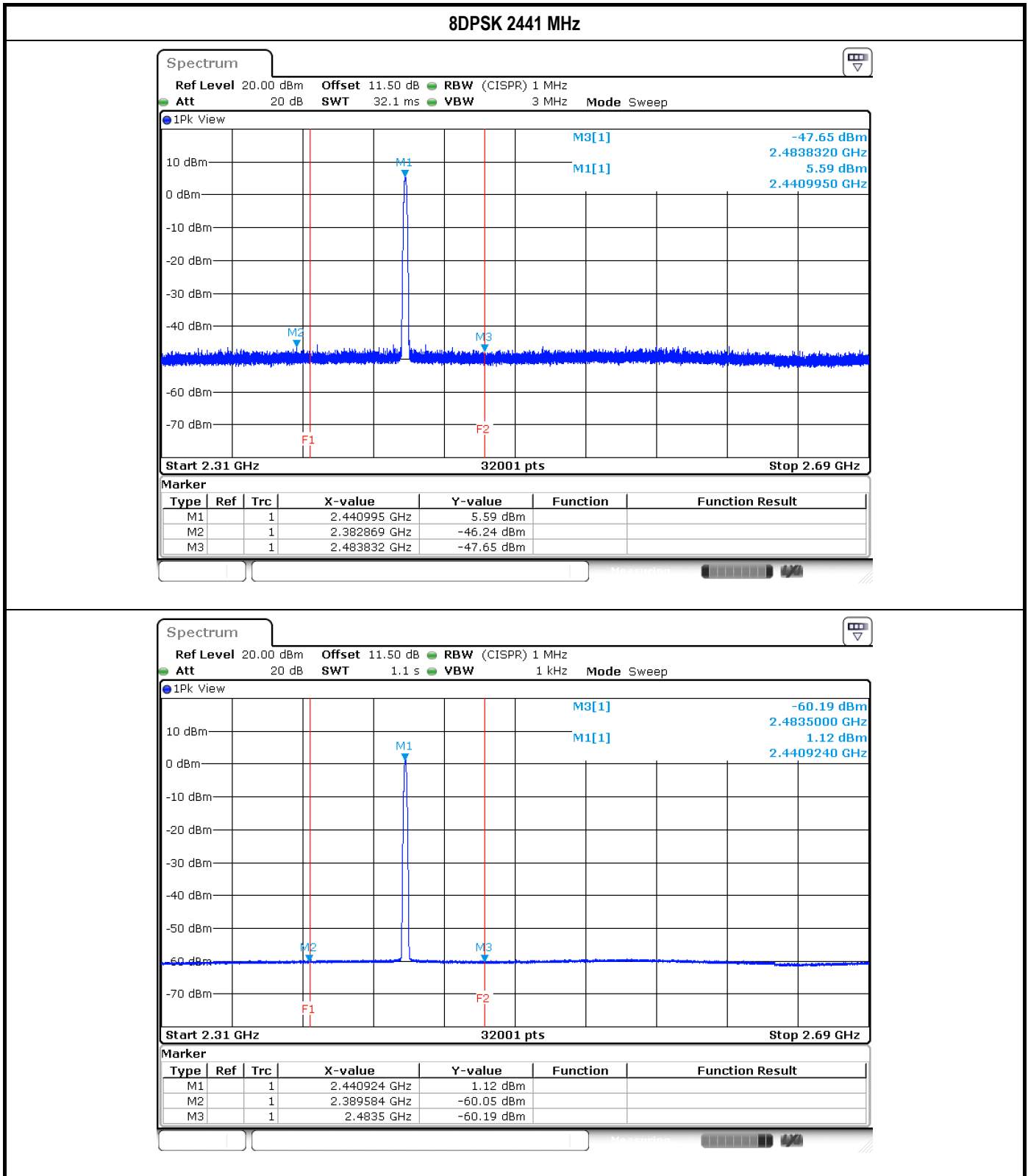


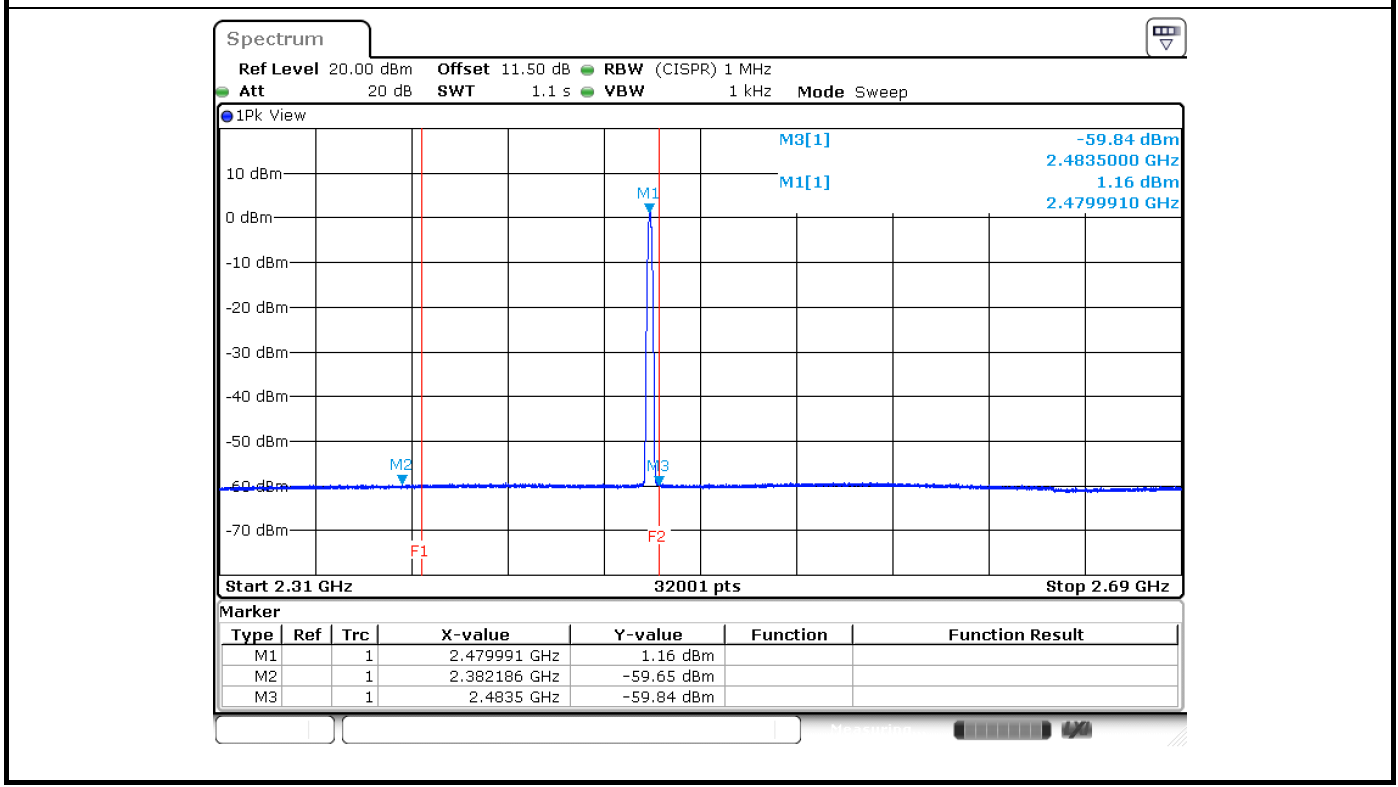
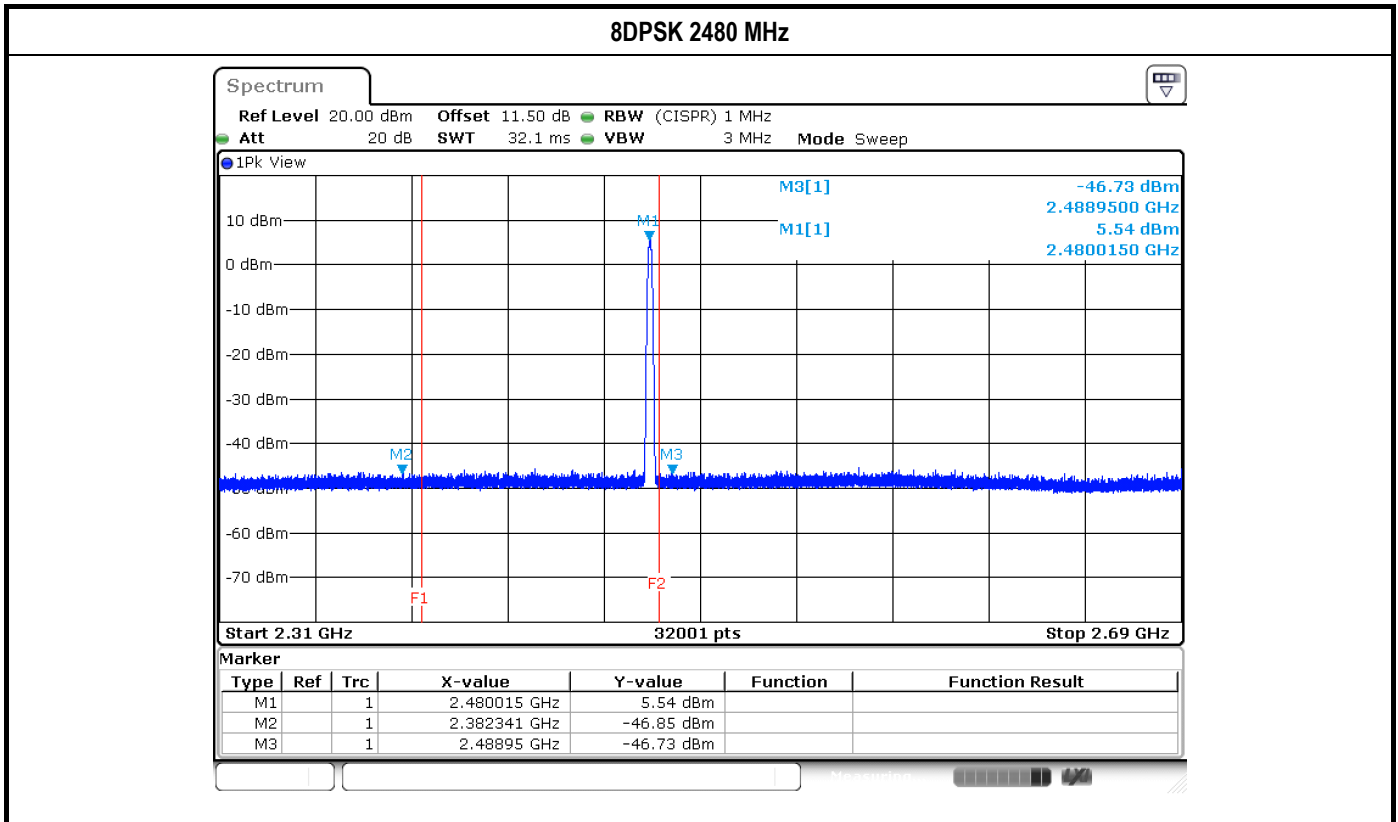


Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

Appendix A.1









| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2402 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4003.33 | PK | -52.82 | 2.40 | -50.42 | 44.84 | 74.00 | -29.16 |
| 4003.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4804.00 | PK | -49.74 | 2.40 | -47.34 | 47.92 | 74.00 | -26.08 |
| 4804.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2441 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4068.33 | PK | -54.19 | 2.40 | -51.79 | 43.47 | 74.00 | -30.53 |
| 4068.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4882.00 | PK | -45.58 | 2.40 | -43.18 | 52.08 | 74.00 | -21.92 |
| 4882.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2480 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4133.33 | PK | -55.98 | 2.40 | -53.58 | 41.68 | 74.00 | -32.32 |
| 4133.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4960.00 | PK | -44.41 | 2.40 | -42.01 | 53.25 | 74.00 | -20.75 |
| 4960.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

Note: If the PK margin greater than 20 dB, there is no need to get AVG reading.

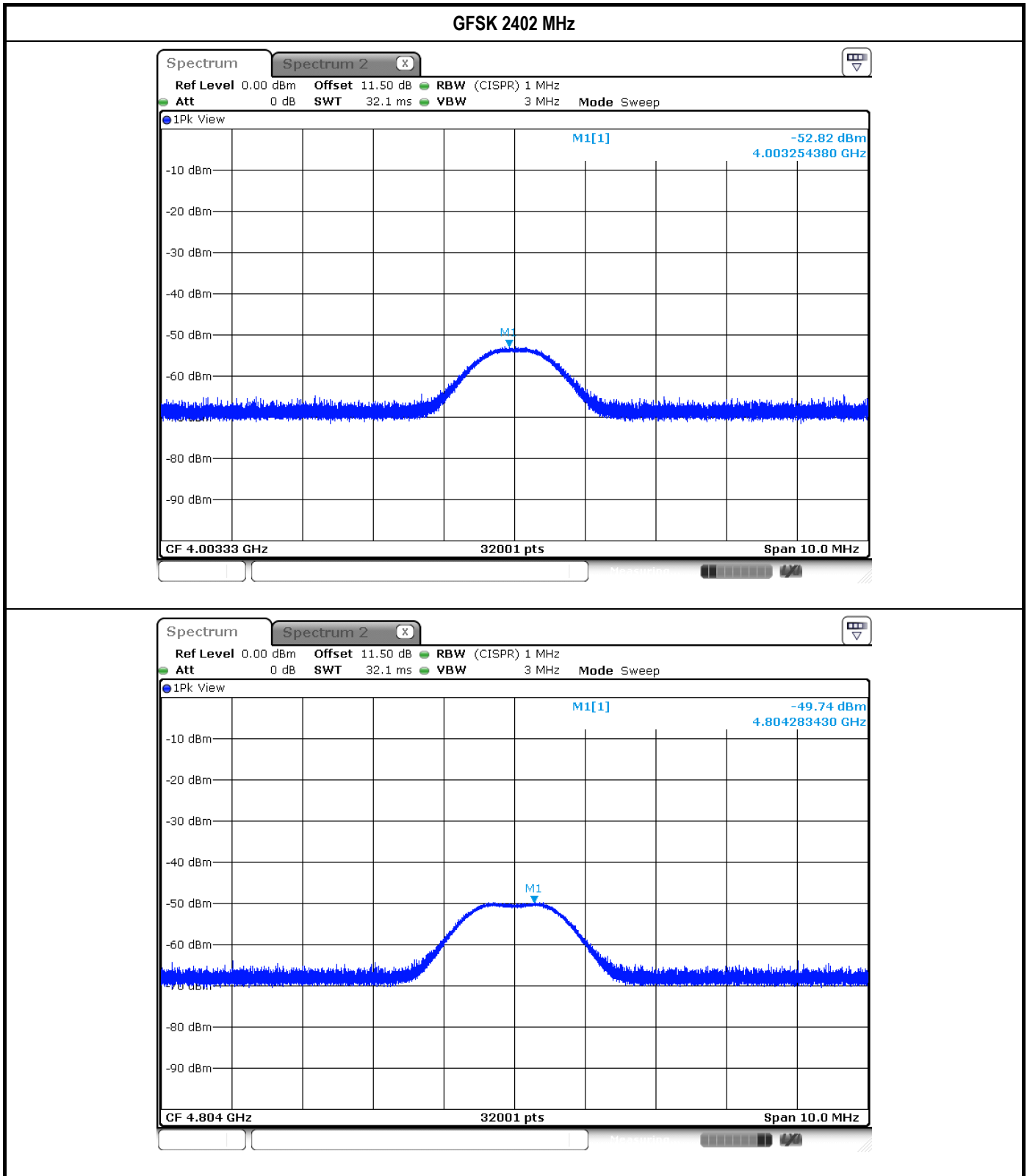


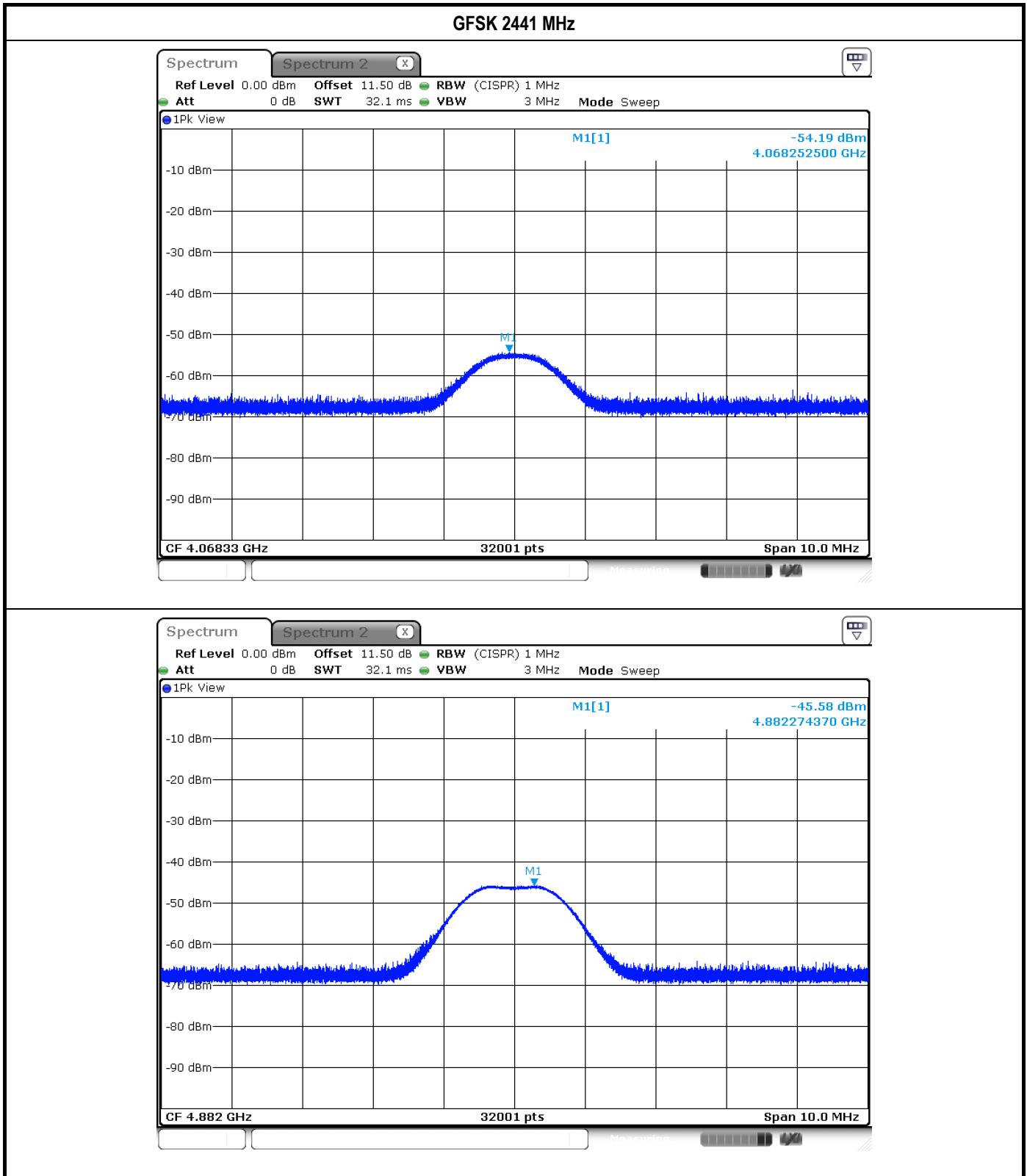
| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | 8DPSK | | | Frequency | 2402 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4003.33 | PK | -55.45 | 2.40 | -53.05 | 42.21 | 74.00 | -31.79 |
| 4003.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4804.00 | PK | -57.25 | 2.40 | -54.85 | 40.41 | 74.00 | -33.59 |
| 4804.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

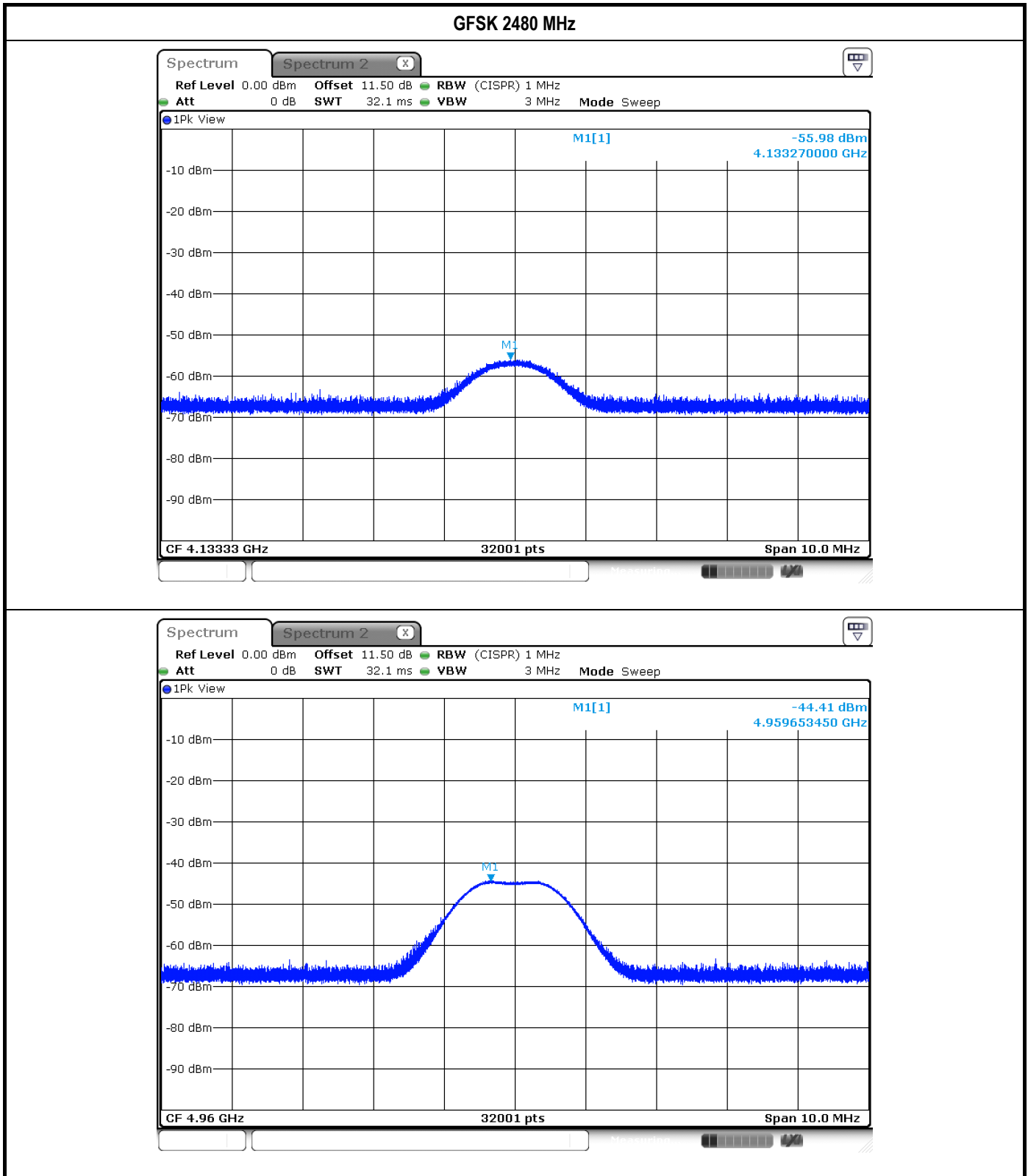
| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | 8DPSK | | | Frequency | 2441 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4068.33 | PK | -56.12 | 2.40 | -53.72 | 41.54 | 74.00 | -32.46 |
| 4068.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4882.00 | PK | -54.83 | 2.40 | -52.43 | 42.83 | 74.00 | -31.17 |
| 4882.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

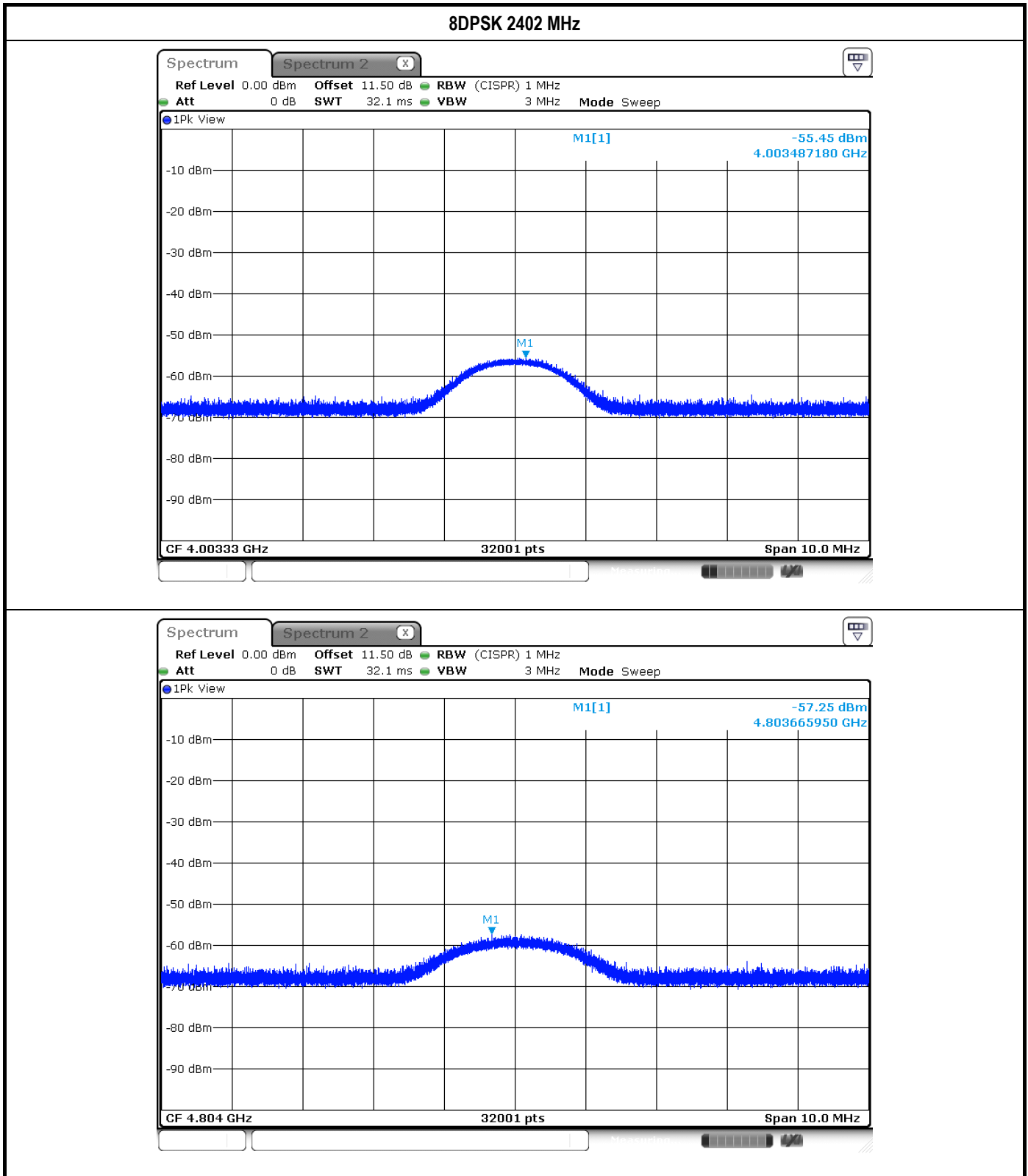
| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | 8DPSK | | | Frequency | 2480 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4133.33 | PK | -57.56 | 2.40 | -55.16 | 40.10 | 74.00 | -33.90 |
| 4133.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4960.00 | PK | -55.01 | 2.40 | -52.61 | 42.65 | 74.00 | -31.35 |
| 4960.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

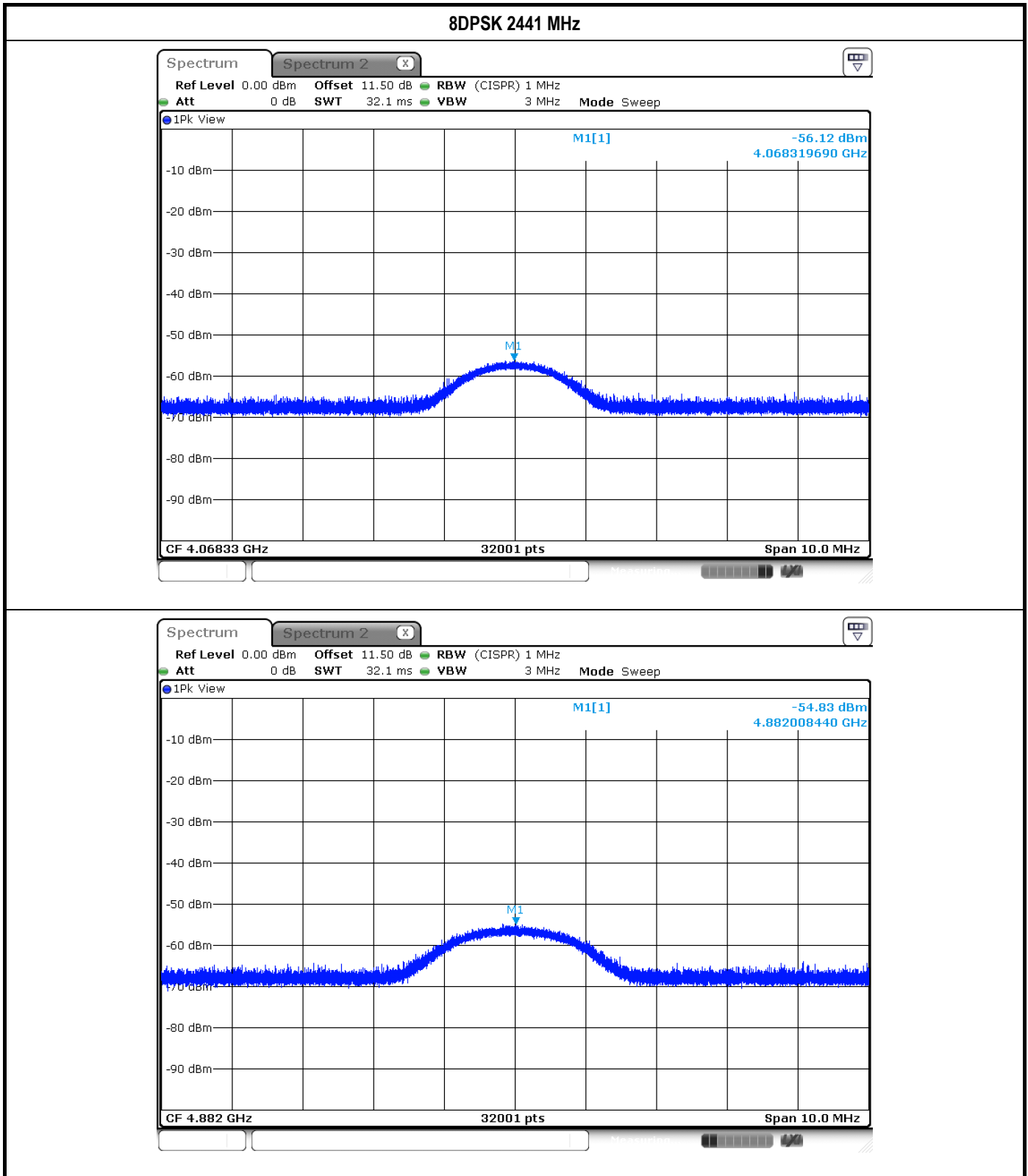
Note: If the PK margin greater than 20 dB, there is no need to get AVG reading.:

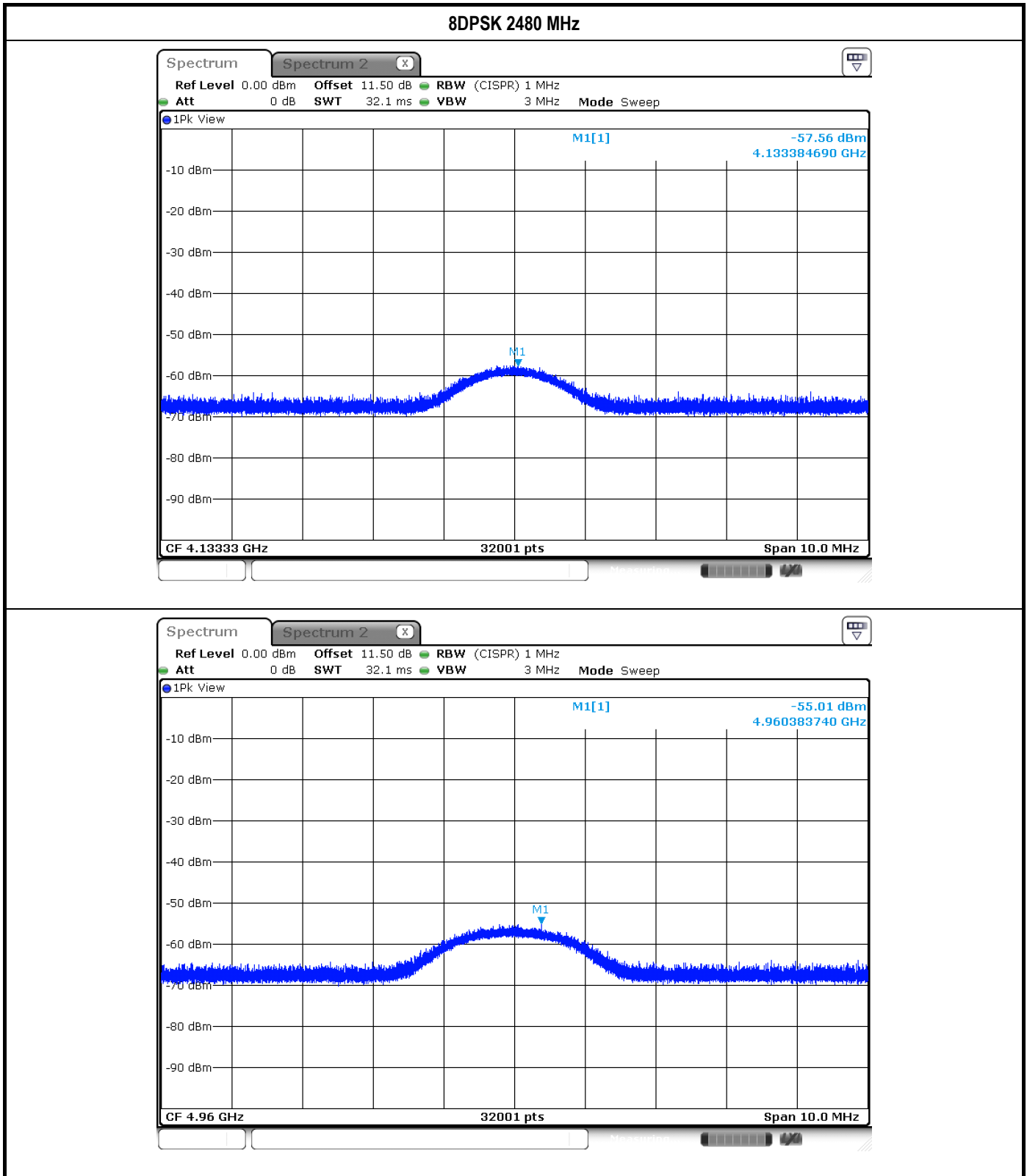












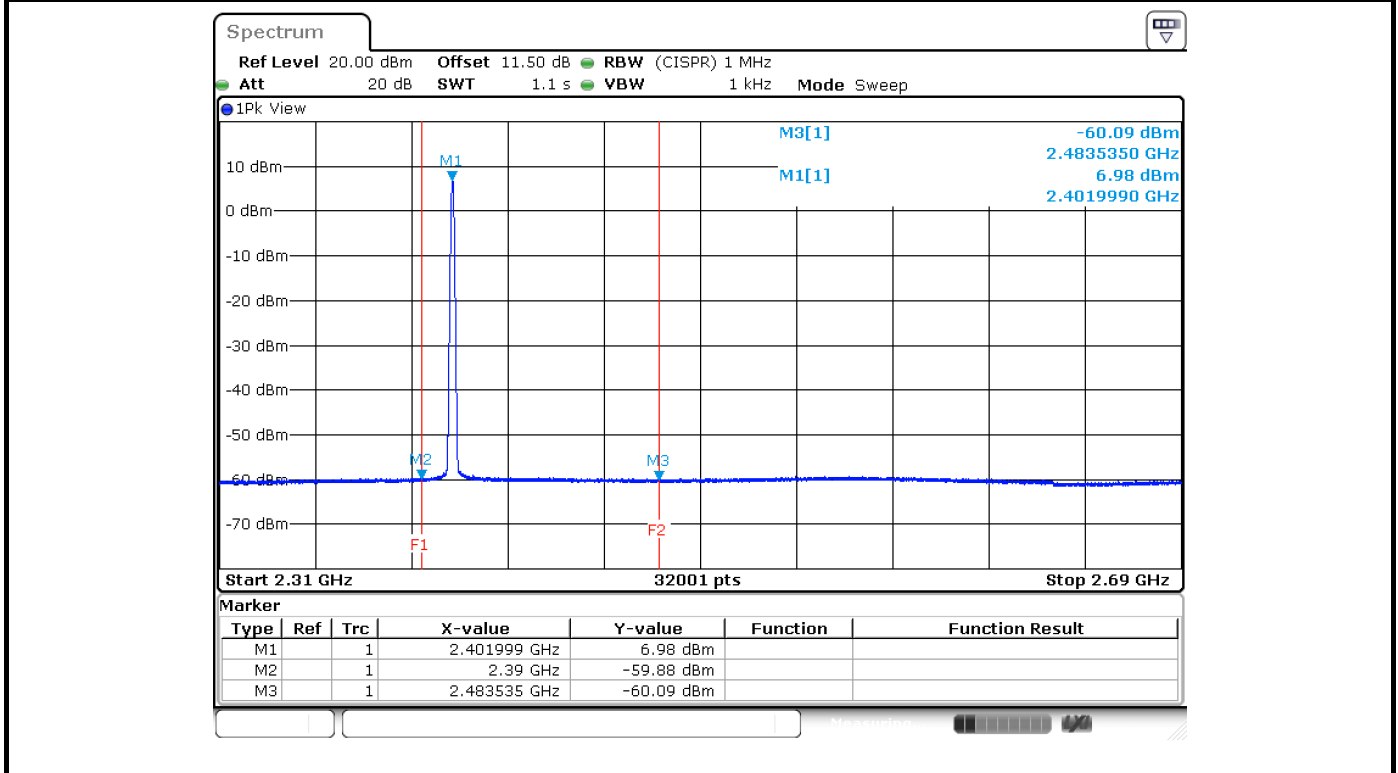
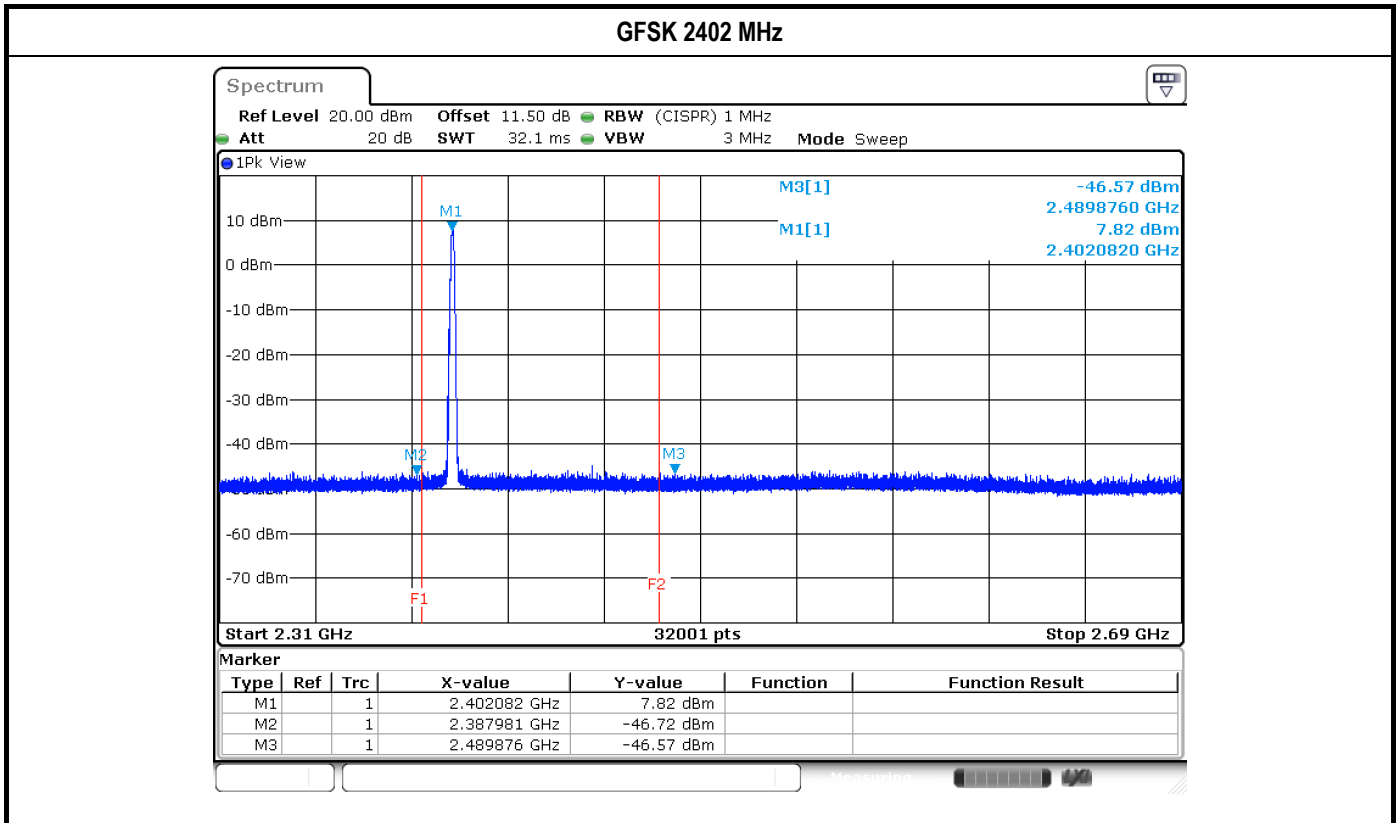


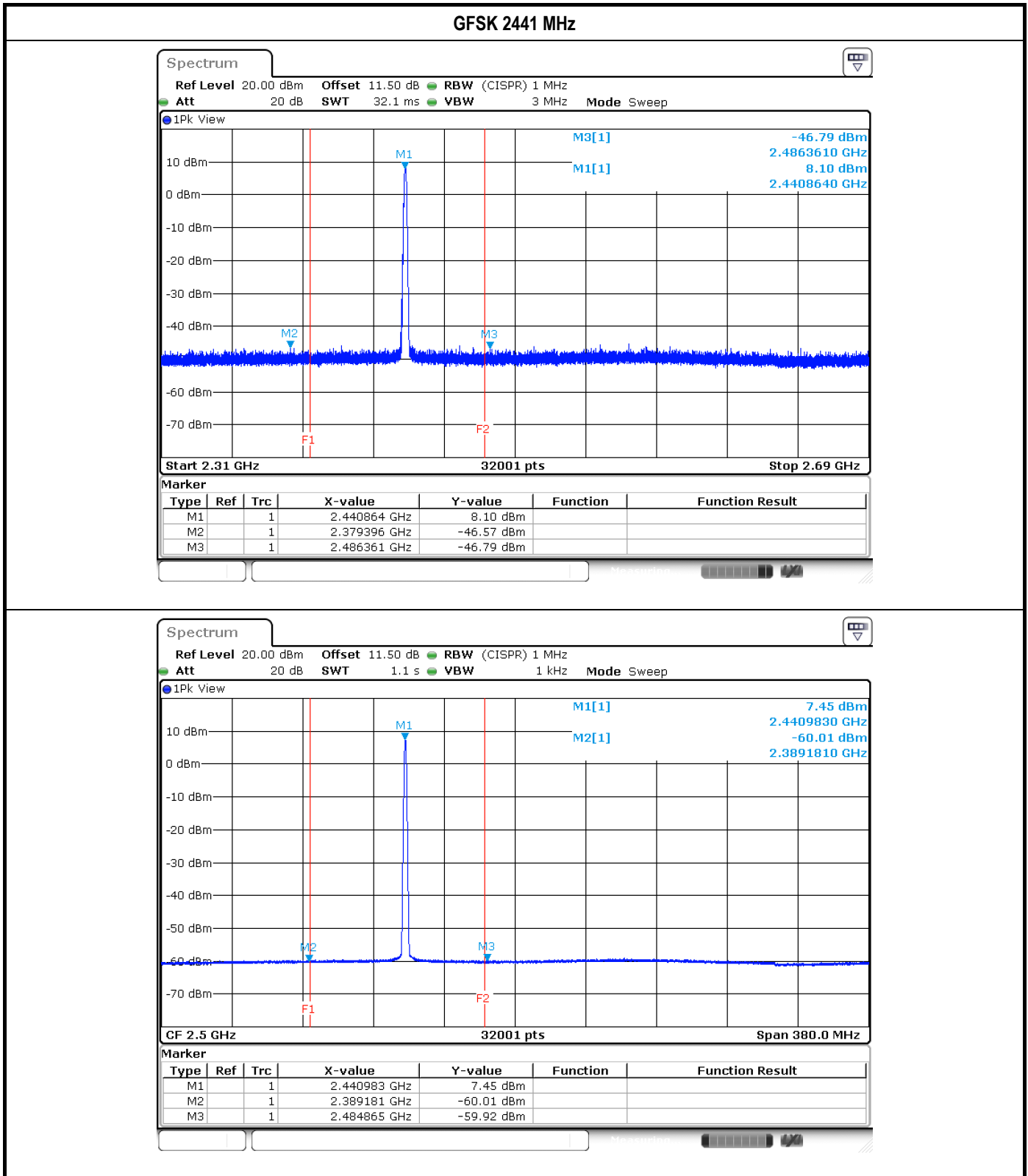
Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

Appendix A.2

| Restrict bands above 1G | | | | | | | | |
|---|--------|-------------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Band Edge | | | | | | | | |
| Modulation Mode | GFSK | | | | | | | |
| Test ch. Freq. (MHz) | Remark | Range (MHz) | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 2402 | PK | 2310~2390 | -46.72 | 2.40 | -44.32 | 50.94 | 74.00 | -23.06 |
| | AV | 2310~2390 | -59.88 | 2.40 | -57.48 | 37.78 | 54.00 | -16.22 |
| | PK | 2483.5~2500 | -46.57 | 2.40 | -44.17 | 51.09 | 74.00 | -22.91 |
| | AV | 2483.5~2500 | -60.09 | 2.40 | -57.69 | 37.57 | 54.00 | -16.43 |
| 2441 | PK | 2310~2390 | -46.57 | 2.40 | -44.17 | 51.09 | 74.00 | -22.91 |
| | AV | 2310~2390 | -60.01 | 2.40 | -57.61 | 37.65 | 54.00 | -16.35 |
| | PK | 2483.5~2500 | -46.79 | 2.40 | -44.39 | 50.87 | 74.00 | -23.13 |
| | AV | 2483.5~2500 | -59.92 | 2.40 | -57.52 | 37.74 | 54.00 | -16.26 |
| 2480 | PK | 2310~2390 | -46.37 | 2.40 | -43.97 | 51.29 | 74.00 | -22.71 |
| | AV | 2310~2390 | -58.44 | 2.40 | -56.04 | 39.22 | 54.00 | -14.78 |
| | PK | 2483.5~2500 | -45.72 | 2.40 | -43.32 | 51.94 | 74.00 | -22.06 |
| | AV | 2483.5~2500 | -57.38 | 2.40 | -54.98 | 40.28 | 54.00 | -13.72 |

| Restrict bands above 1G | | | | | | | | |
|---|--------|-------------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Band Edge | | | | | | | | |
| Modulation Mode | 8DPSK | | | | | | | |
| Test ch. Freq. (MHz) | Remark | Range (MHz) | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 2402 | PK | 2310~2390 | -46.86 | 2.40 | -44.46 | 50.80 | 74.00 | -23.20 |
| | AV | 2310~2390 | -60.50 | 2.40 | -58.10 | 37.16 | 54.00 | -16.84 |
| | PK | 2483.5~2500 | -46.49 | 2.40 | -44.09 | 51.17 | 74.00 | -22.83 |
| | AV | 2483.5~2500 | -60.09 | 2.40 | -57.69 | 37.57 | 54.00 | -16.43 |
| 2441 | PK | 2310~2390 | -46.24 | 2.40 | -43.84 | 51.42 | 74.00 | -22.58 |
| | AV | 2310~2390 | -60.05 | 2.40 | -57.65 | 37.61 | 54.00 | -16.39 |
| | PK | 2483.5~2500 | -47.65 | 2.40 | -45.25 | 50.01 | 74.00 | -23.99 |
| | AV | 2483.5~2500 | -60.19 | 2.40 | -57.79 | 37.47 | 54.00 | -16.53 |
| 2480 | PK | 2310~2390 | -46.85 | 2.40 | -44.45 | 50.81 | 74.00 | -23.19 |
| | AV | 2310~2390 | -59.65 | 2.40 | -57.25 | 38.01 | 54.00 | -15.99 |
| | PK | 2483.5~2500 | -46.73 | 2.40 | -44.33 | 50.93 | 74.00 | -23.07 |
| | AV | 2483.5~2500 | -59.84 | 2.40 | -57.44 | 37.82 | 54.00 | -16.18 |

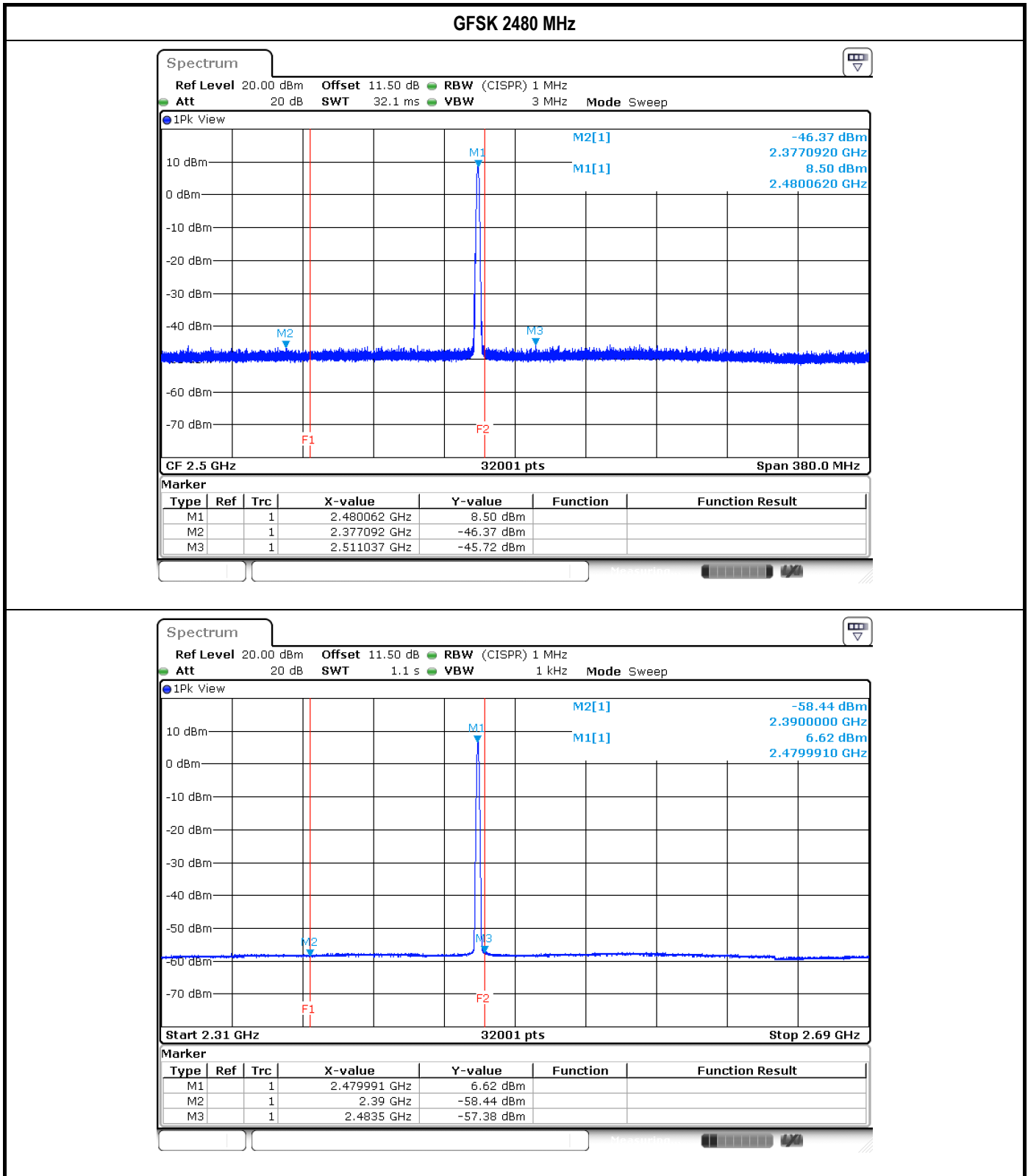






Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

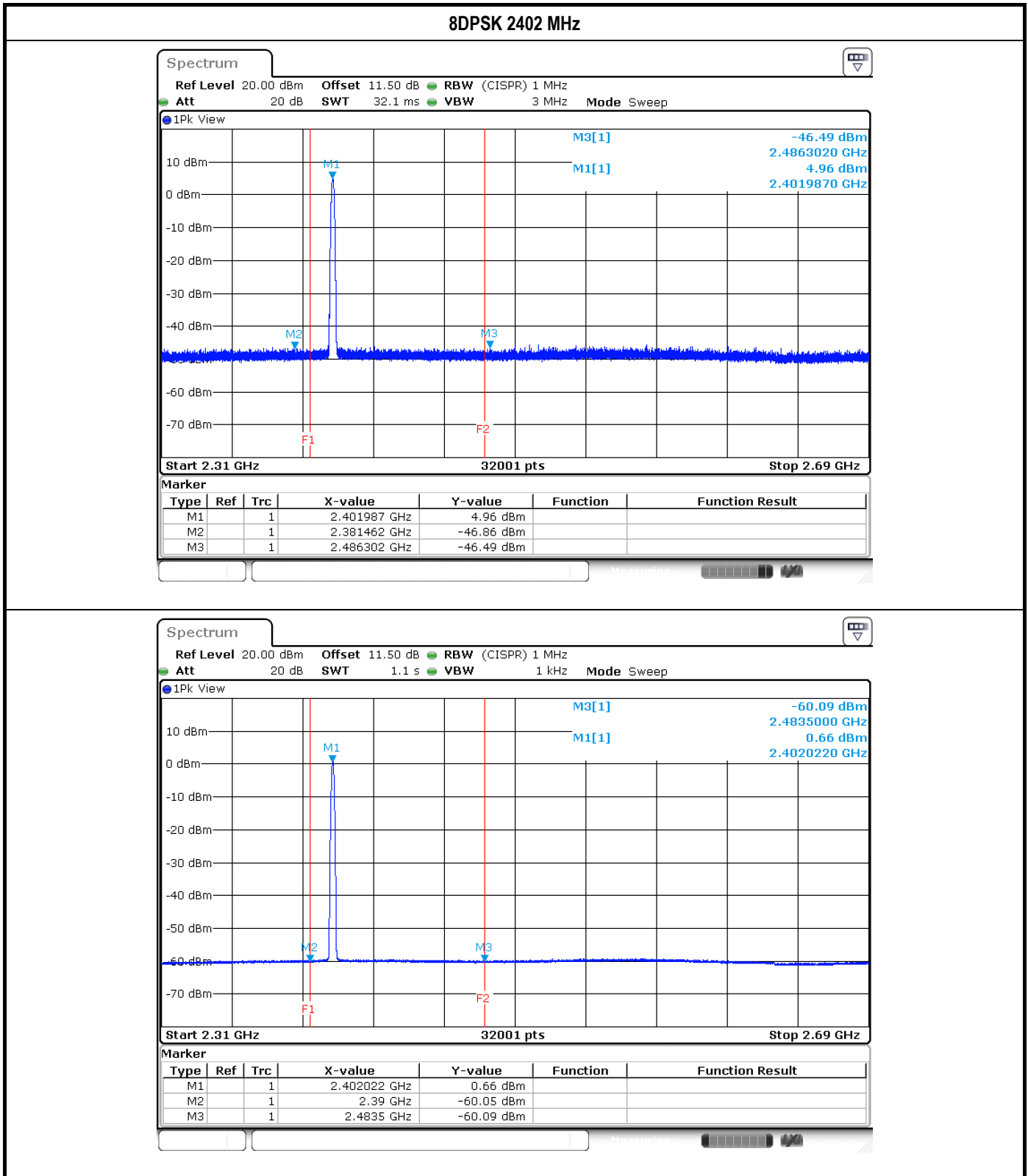
Appendix A.2





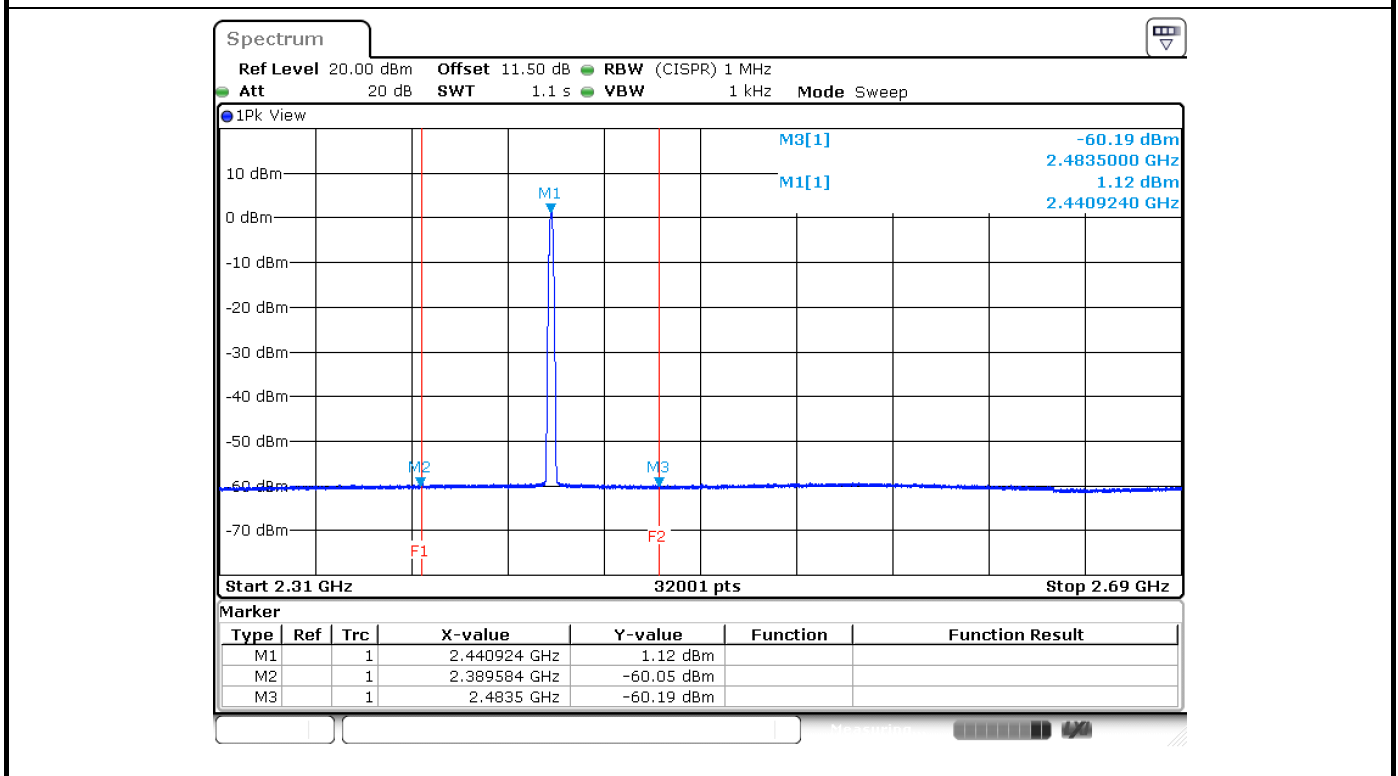
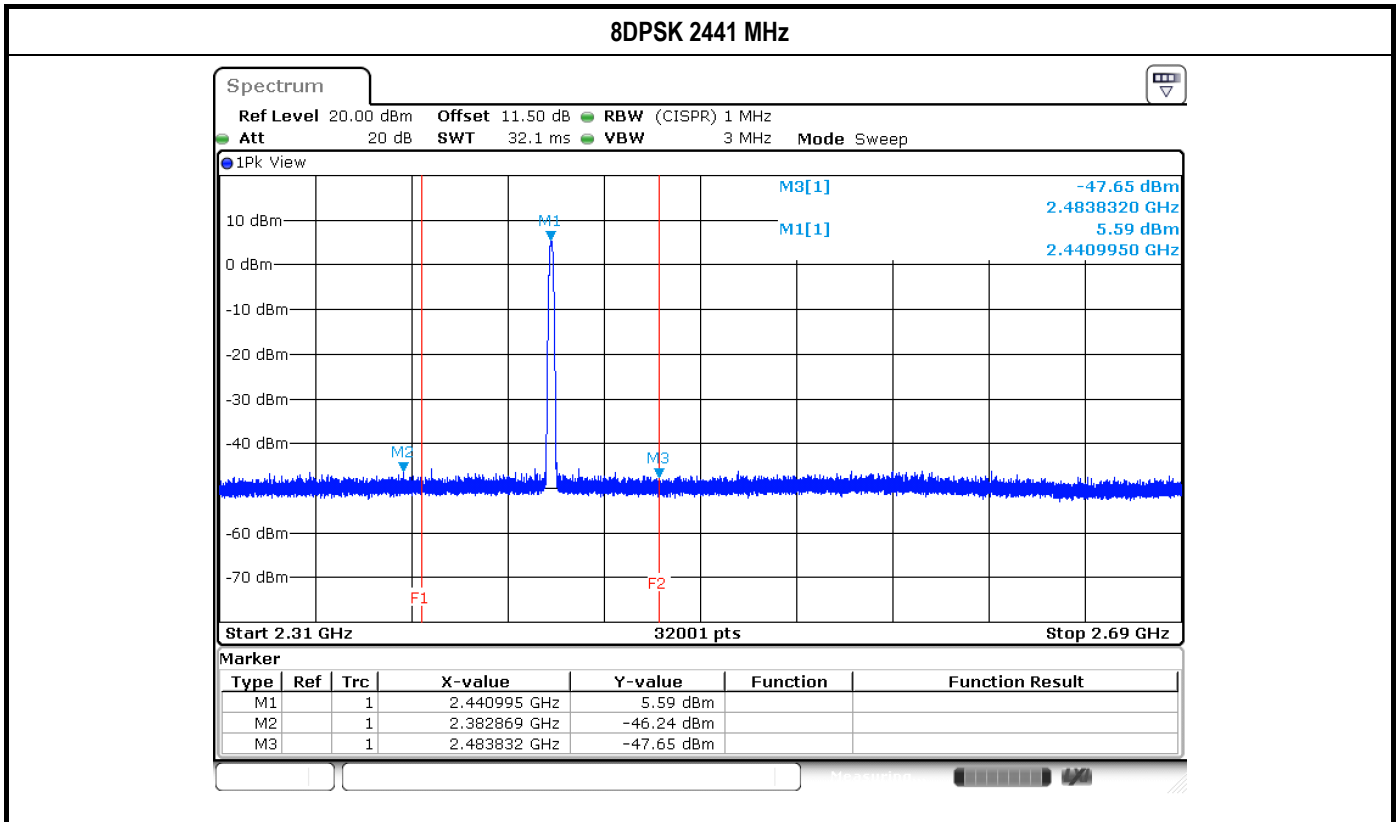
Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

Appendix A.2



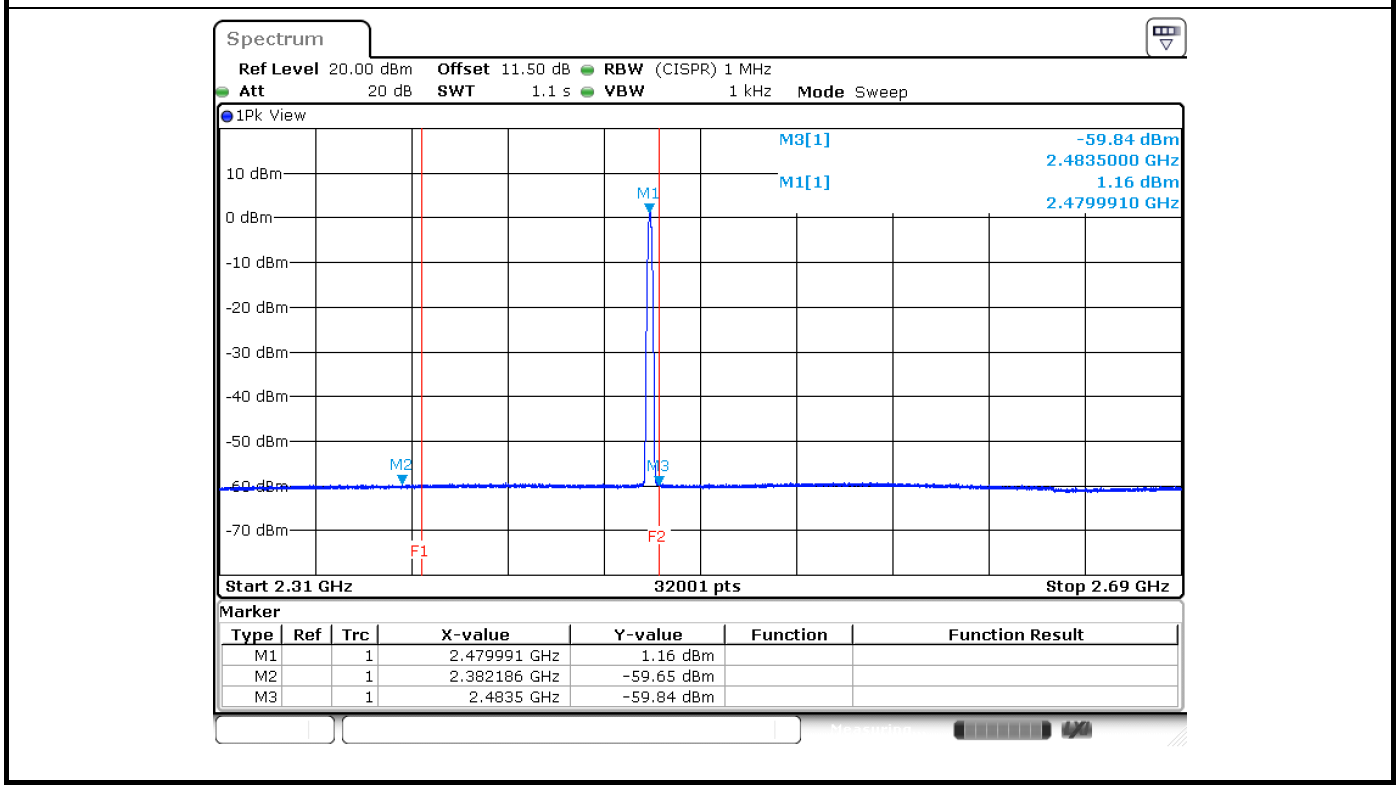
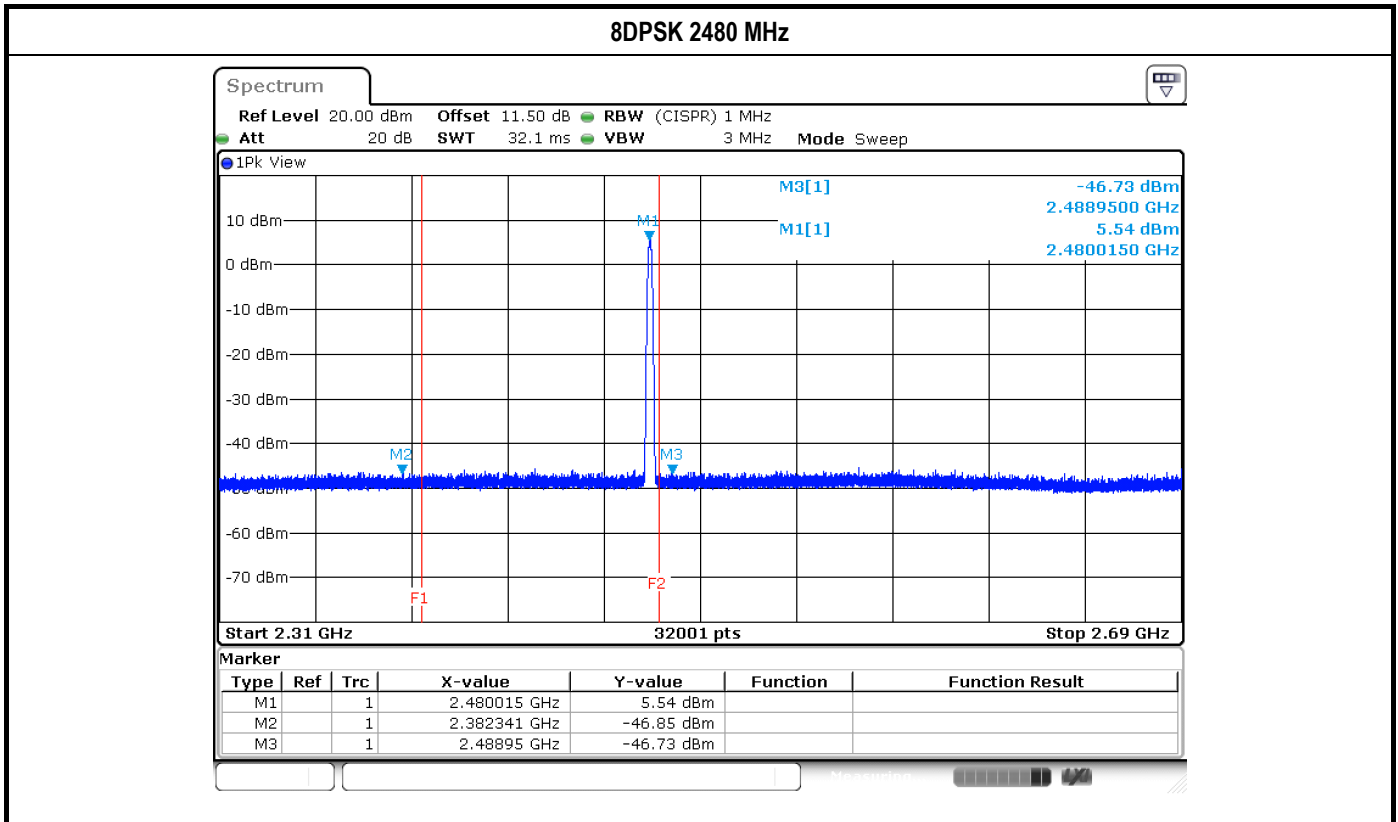


Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module





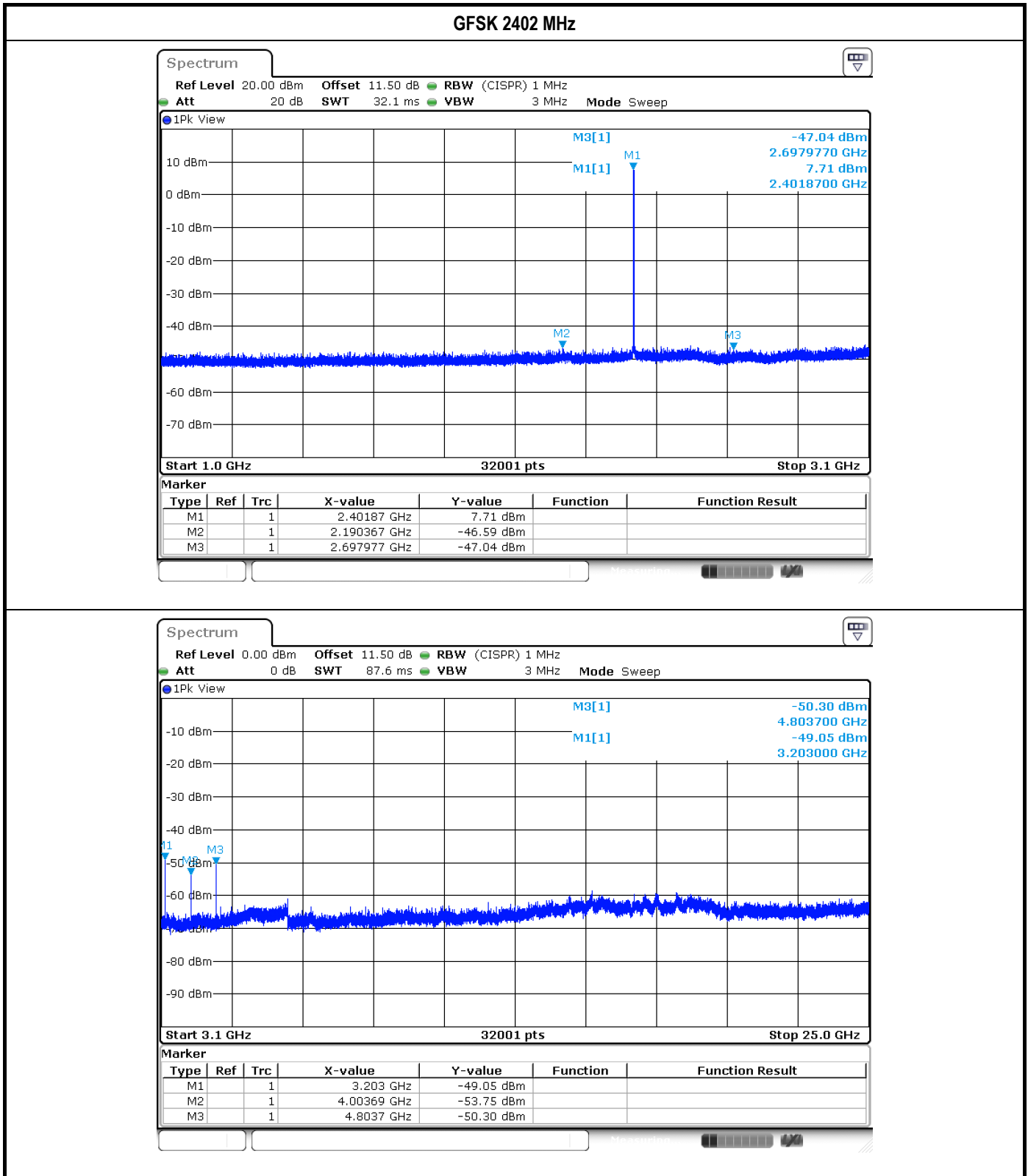
Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

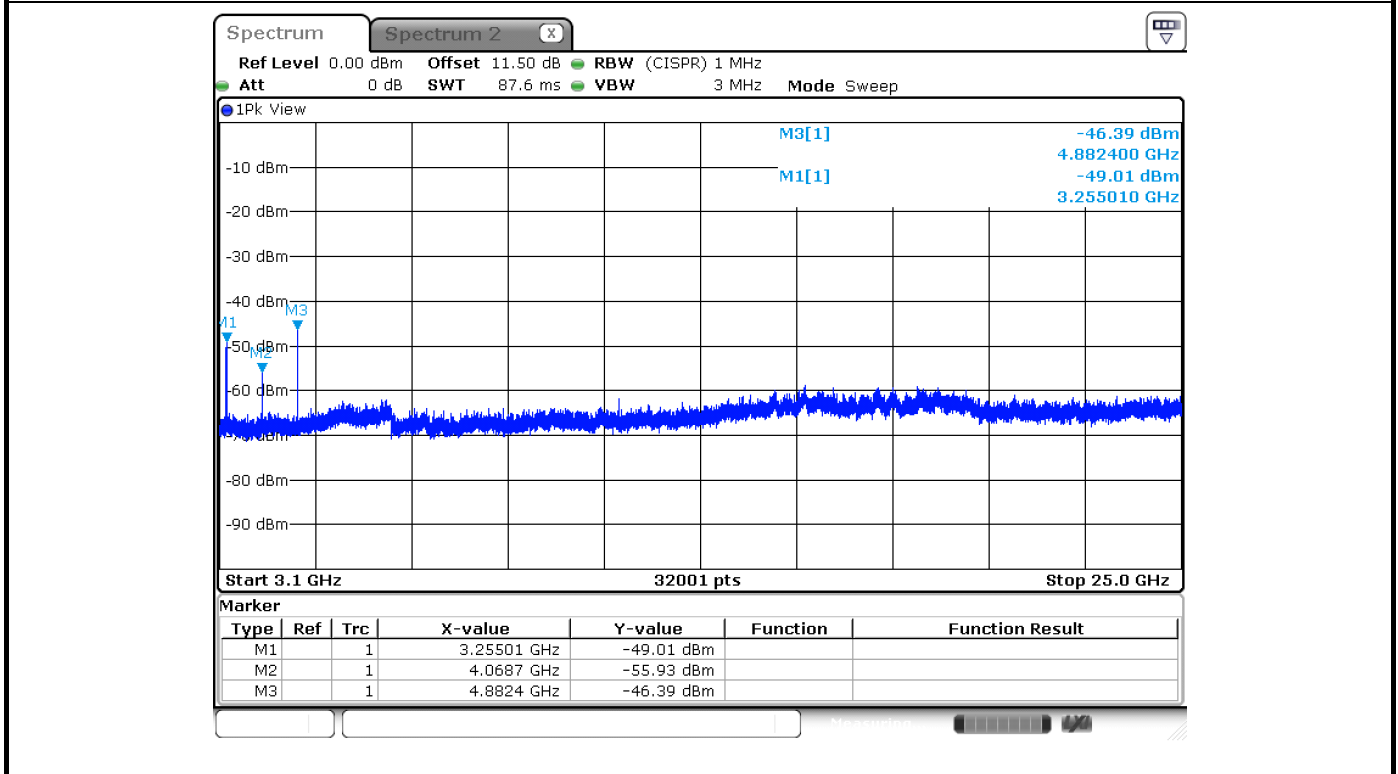
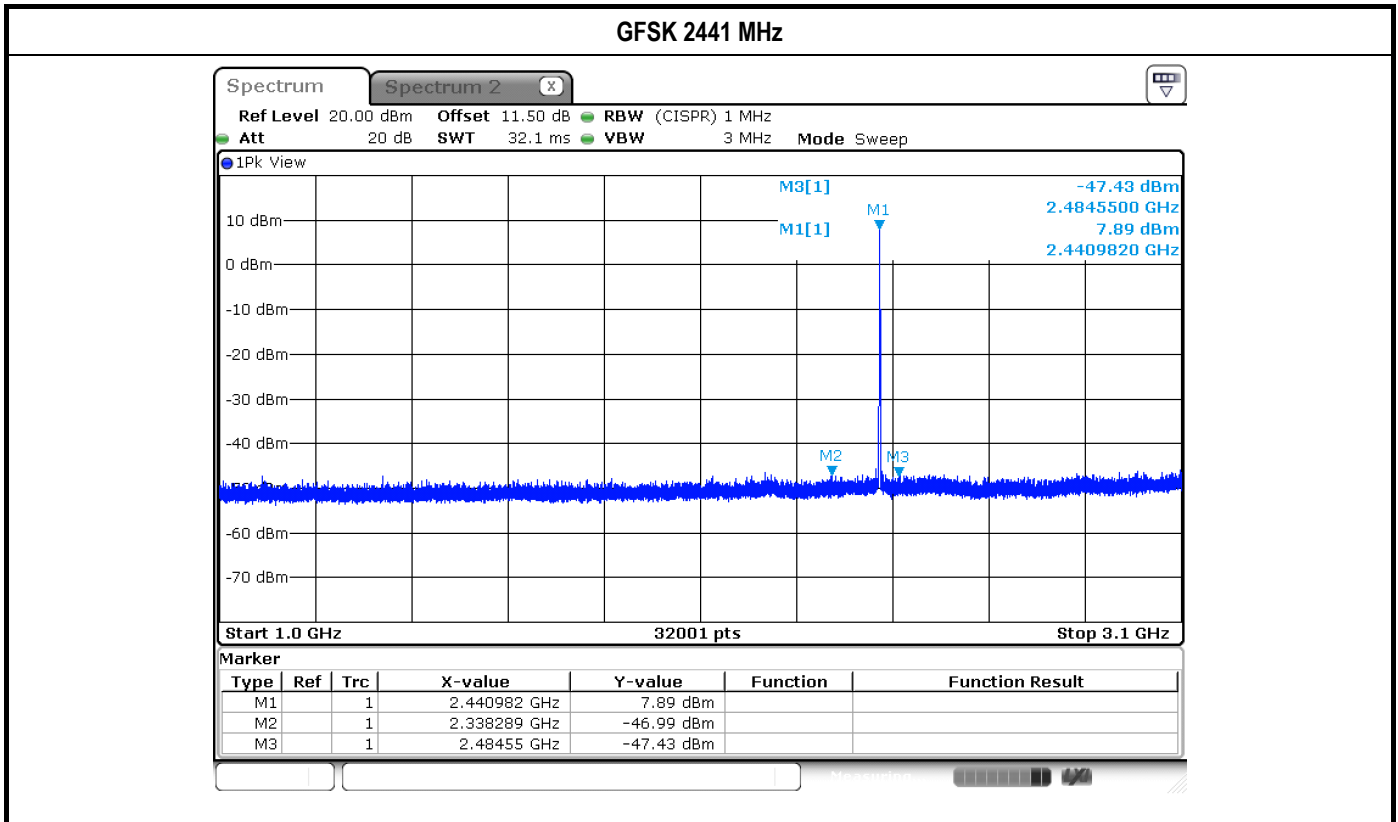


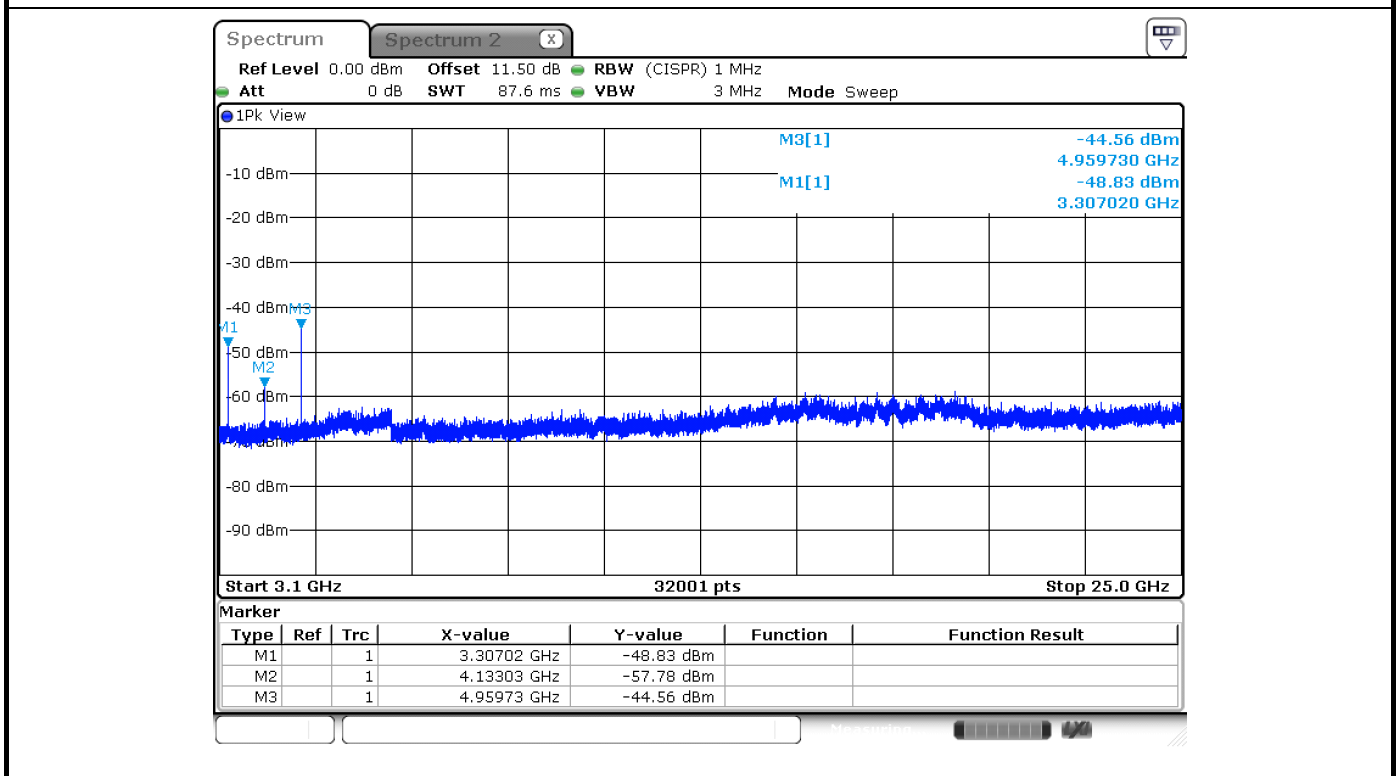
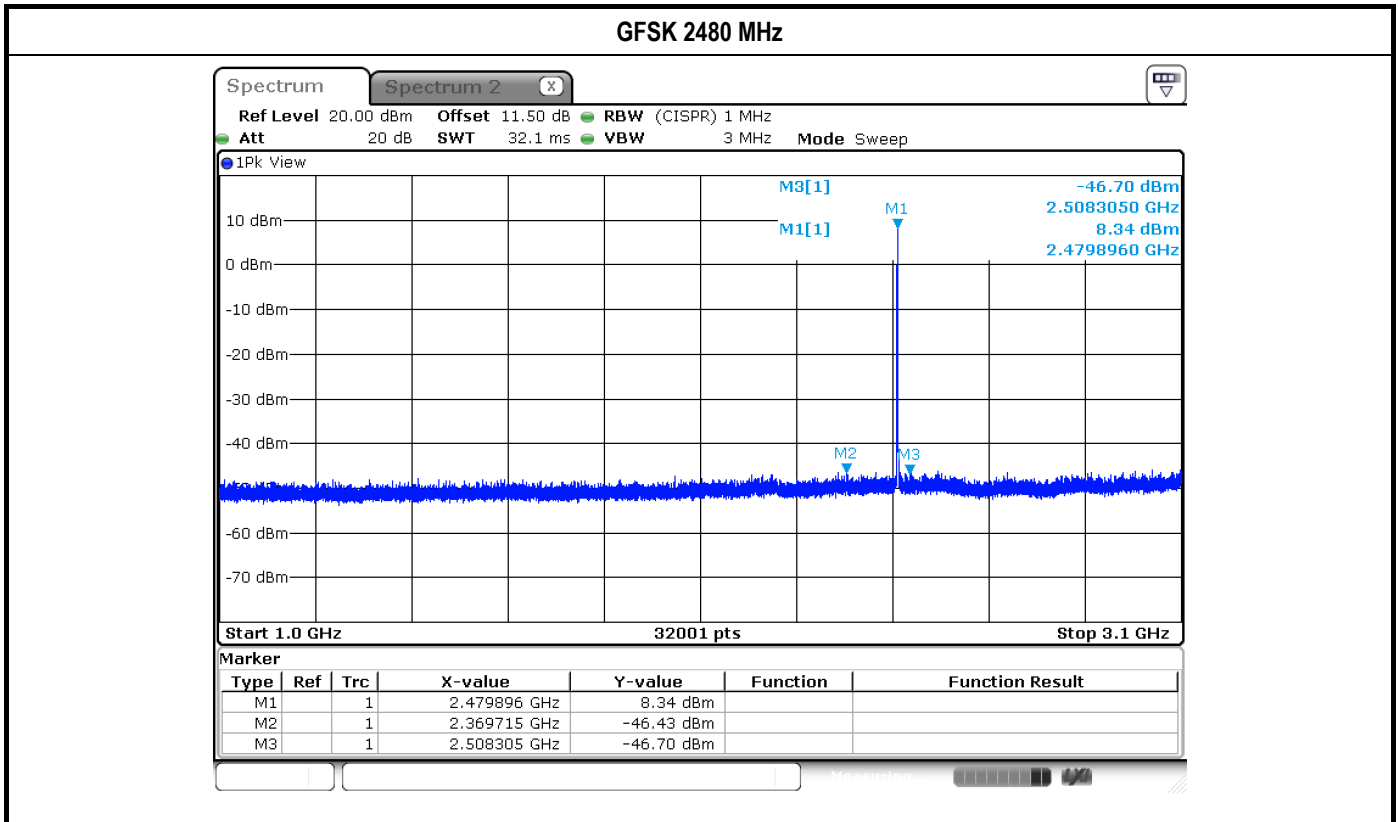


Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

Appendix A.2

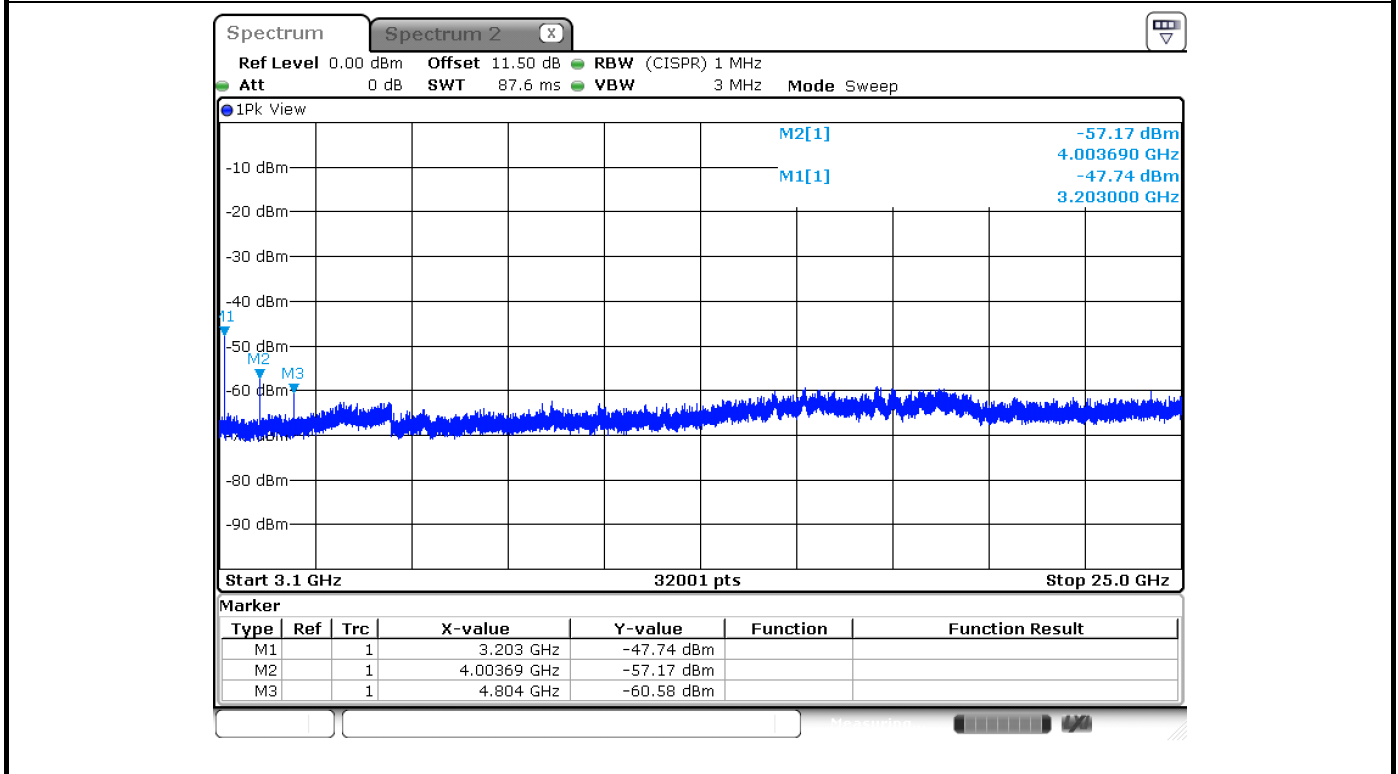
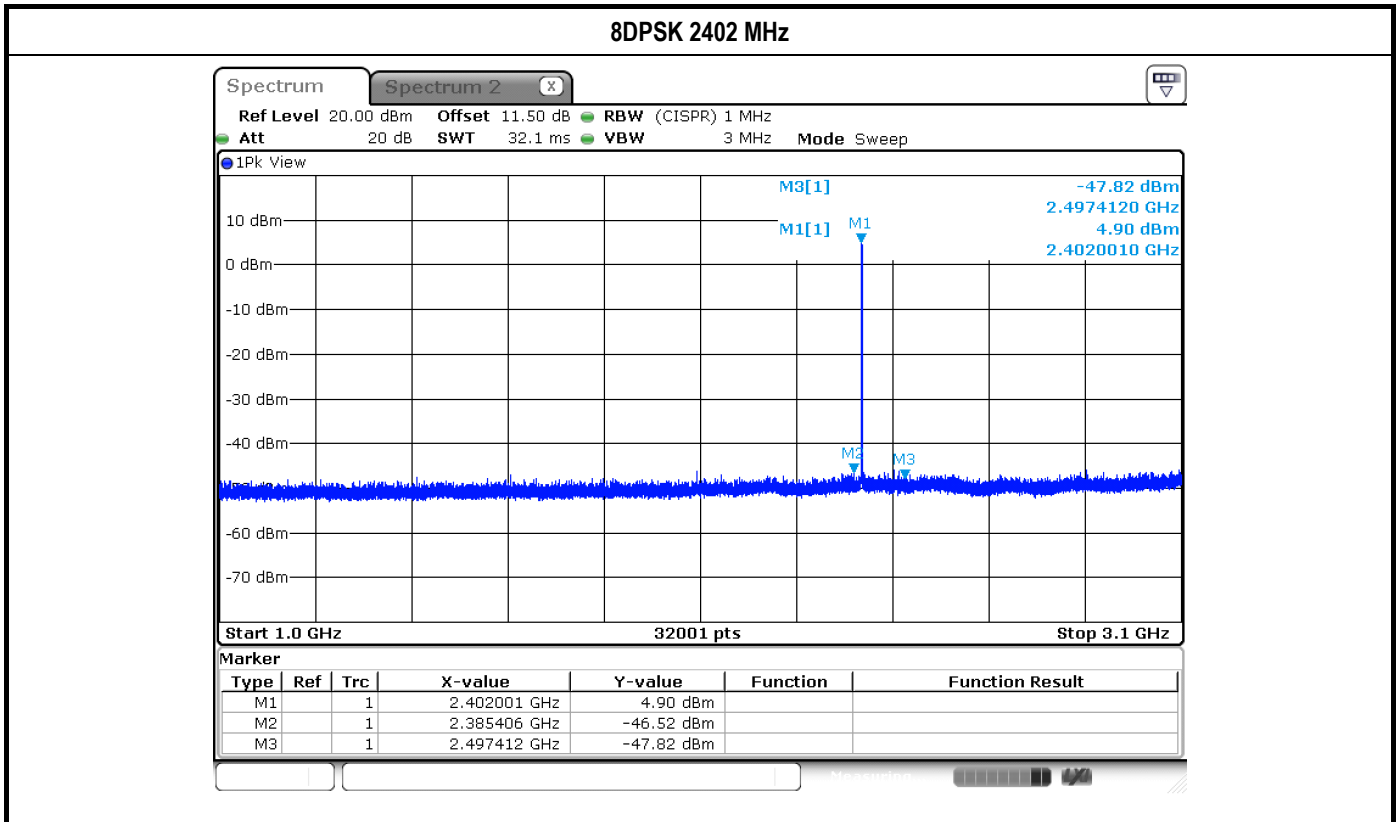








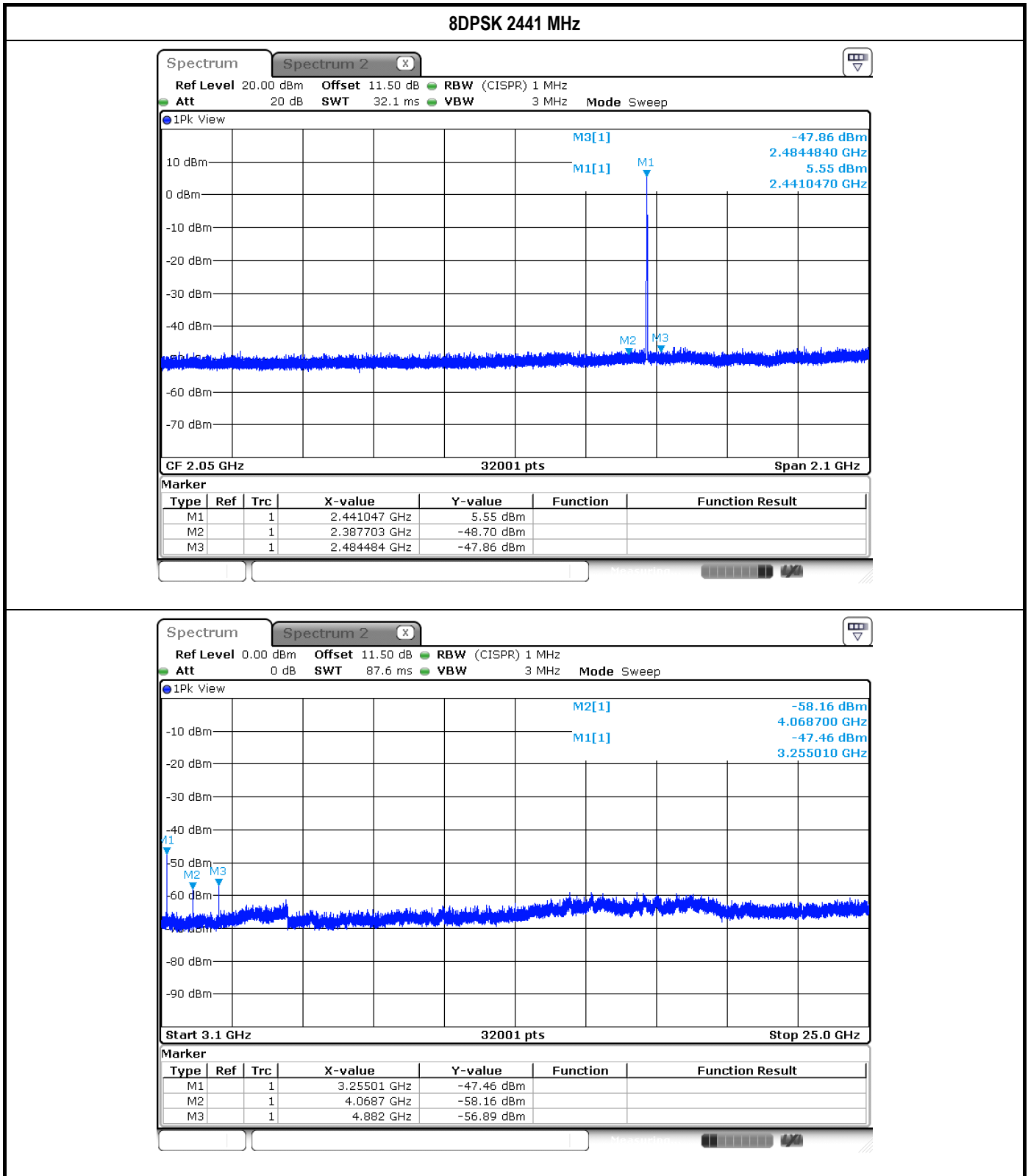
Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module





Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

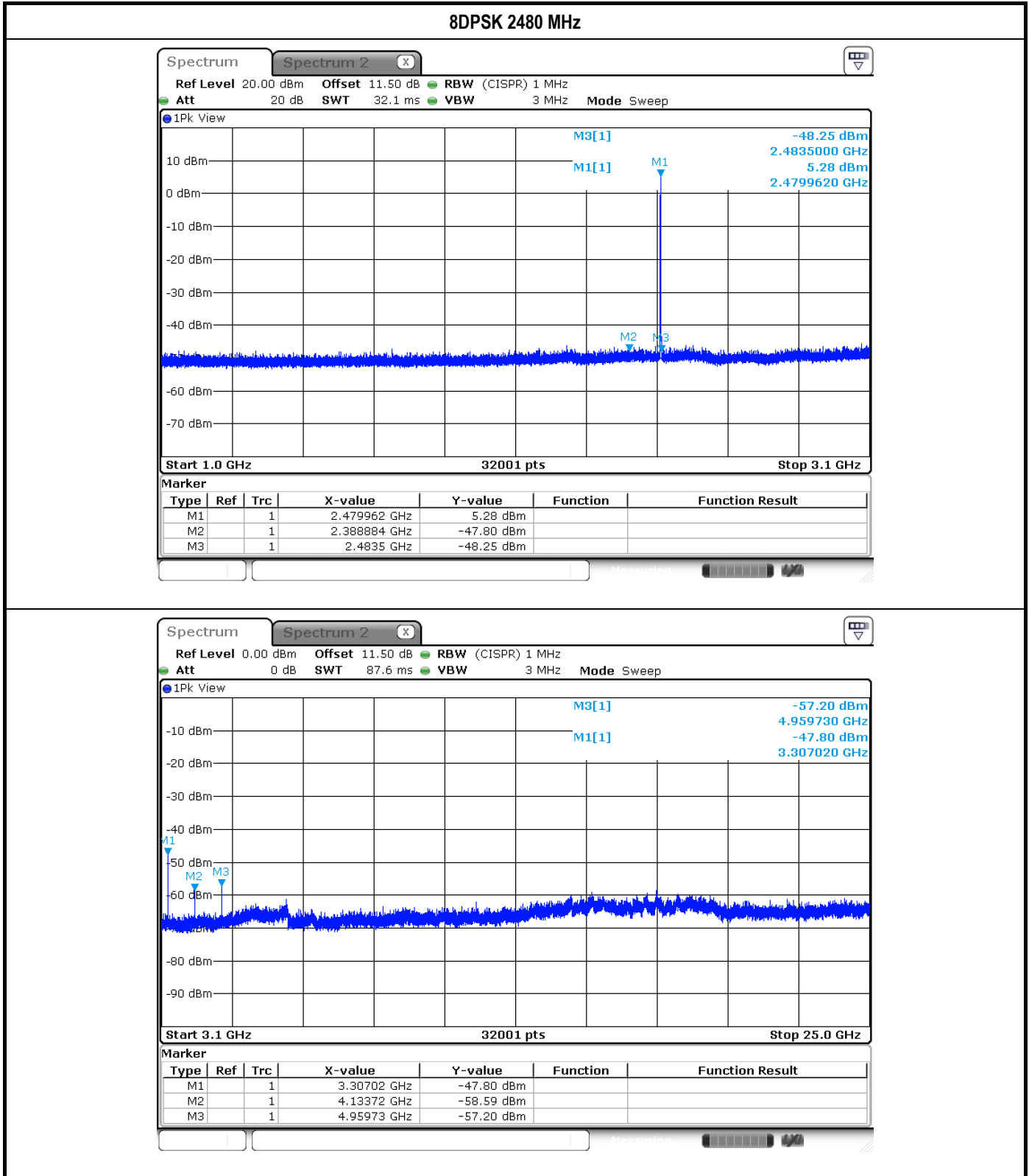
Appendix A.2





Unwanted Conducted Emissions into Restricted Frequency Bands - SC Module

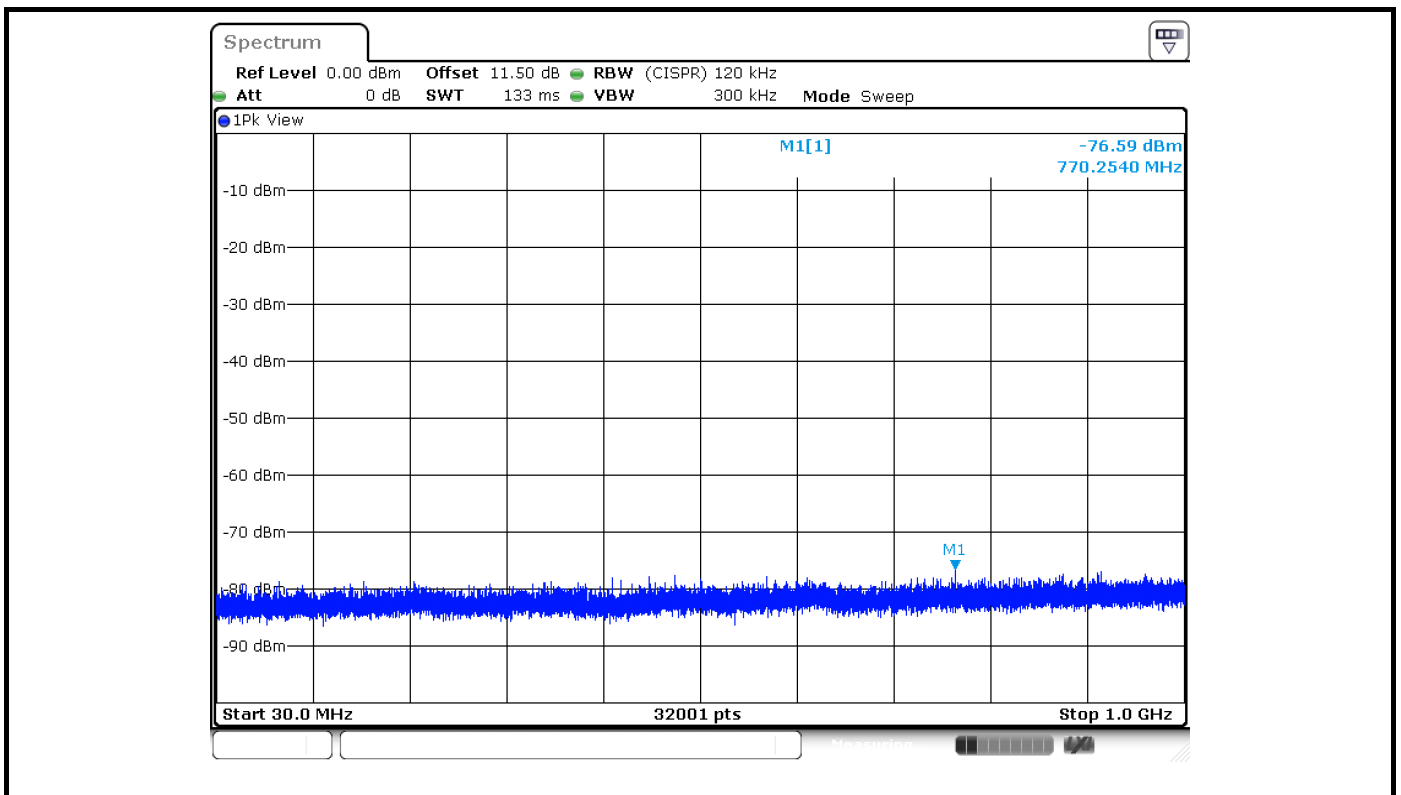
Appendix A.2





| Restrict bands below 1G | | | | | | | |
|--|-----------------|----------|----------|------------|------------------|----------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2480MHz | | |
| Range (MHz) | Max Value (dBm) | DG (dBi) | GRF (dB) | EIRP (dBm) | E-Field (dBuV/m) | Min E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 30~1000MHz | -76.59 | 2.40 | 4.70 | -69.49 | 25.77 | 40.00 | -14.23 |

DG=directional gain
GRF=ground reflection factor





Unwanted Conducted Emissions into Restricted Frequency Bands - ST M.2, PCIe Module

| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2402 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4003.33 | PK | -52.82 | 2.40 | -50.42 | 44.84 | 74.00 | -29.16 |
| 4003.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4804.00 | PK | -49.74 | 2.40 | -47.34 | 47.92 | 74.00 | -26.08 |
| 4804.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2441 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4068.33 | PK | -54.19 | 2.40 | -51.79 | 43.47 | 74.00 | -30.53 |
| 4068.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4882.00 | PK | -45.58 | 2.40 | -43.18 | 52.08 | 74.00 | -21.92 |
| 4882.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2480 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4133.33 | PK | -55.98 | 2.40 | -53.58 | 41.68 | 74.00 | -32.32 |
| 4133.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4960.00 | PK | -44.41 | 2.40 | -42.01 | 53.25 | 74.00 | -20.75 |
| 4960.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

Note: If the PK margin greater than 20 dB, there is no need to get AVG reading.

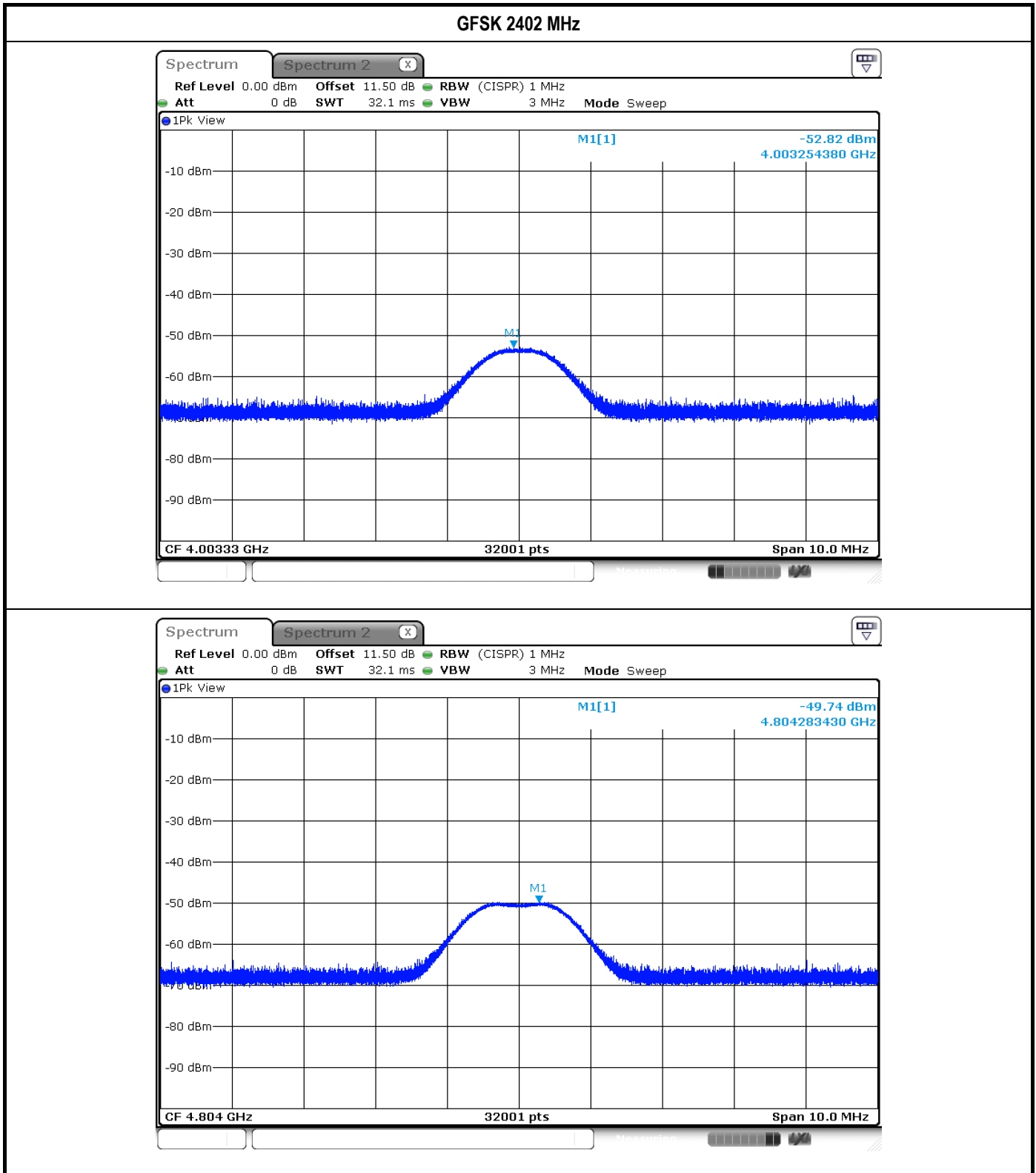


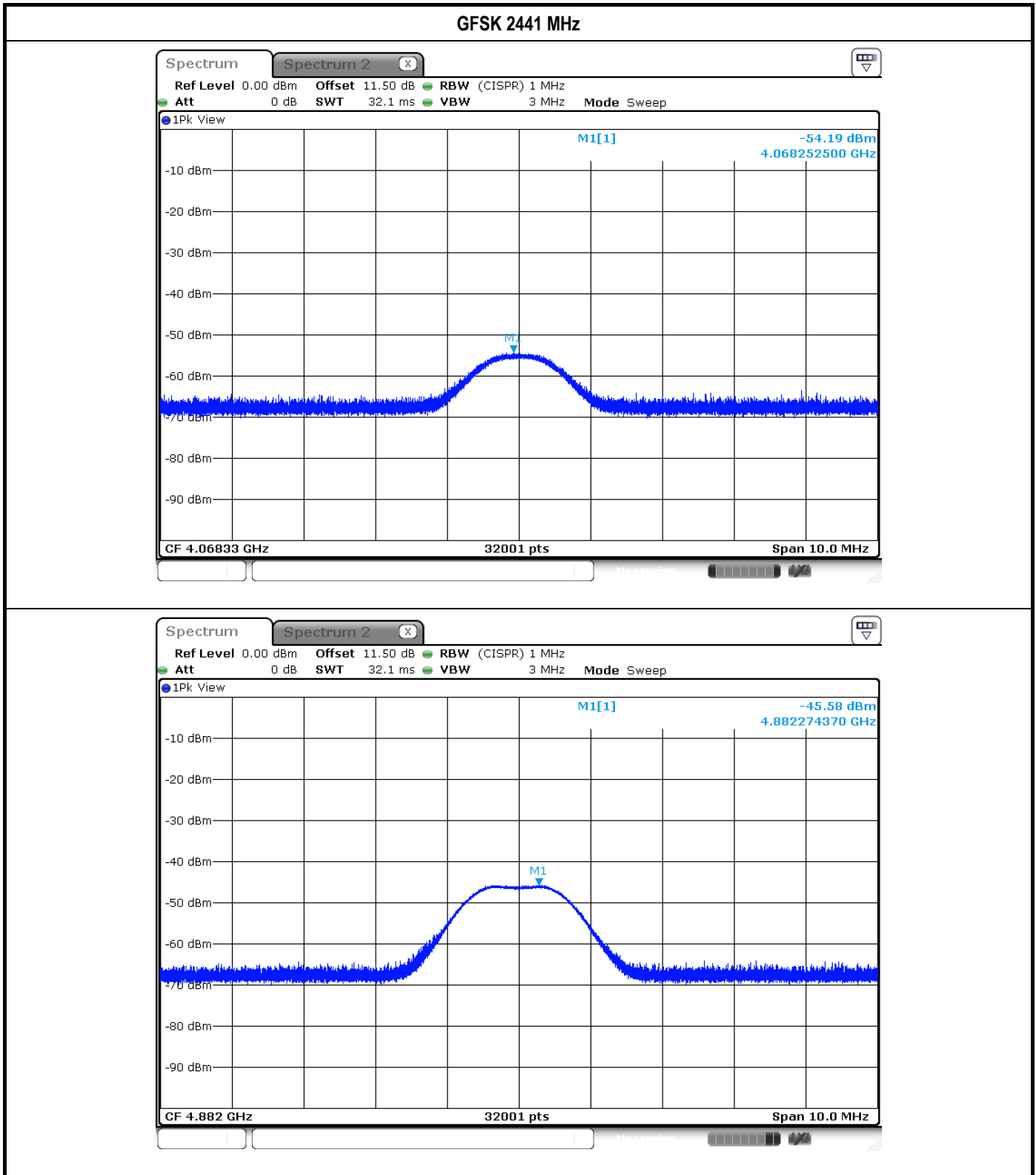
| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | 8DPSK | | | Frequency | 2402 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4003.33 | PK | -55.45 | 2.40 | -53.05 | 42.21 | 74.00 | -31.79 |
| 4003.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4804.00 | PK | -57.25 | 2.40 | -54.85 | 40.41 | 74.00 | -33.59 |
| 4804.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

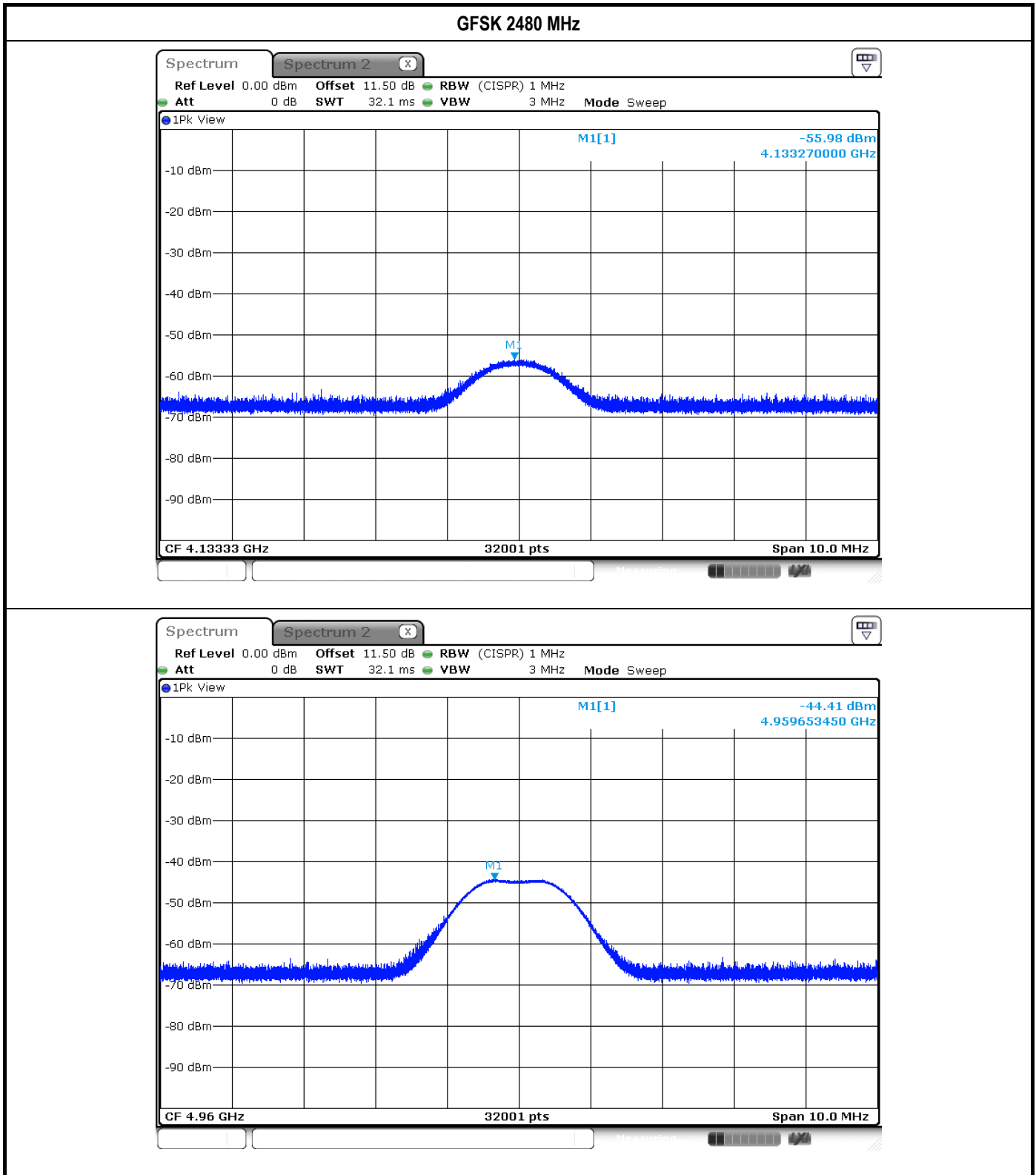
| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | 8DPSK | | | Frequency | 2441 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4068.33 | PK | -56.12 | 2.40 | -53.72 | 41.54 | 74.00 | -32.46 |
| 4068.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4882.00 | PK | -54.83 | 2.40 | -52.43 | 42.83 | 74.00 | -31.17 |
| 4882.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

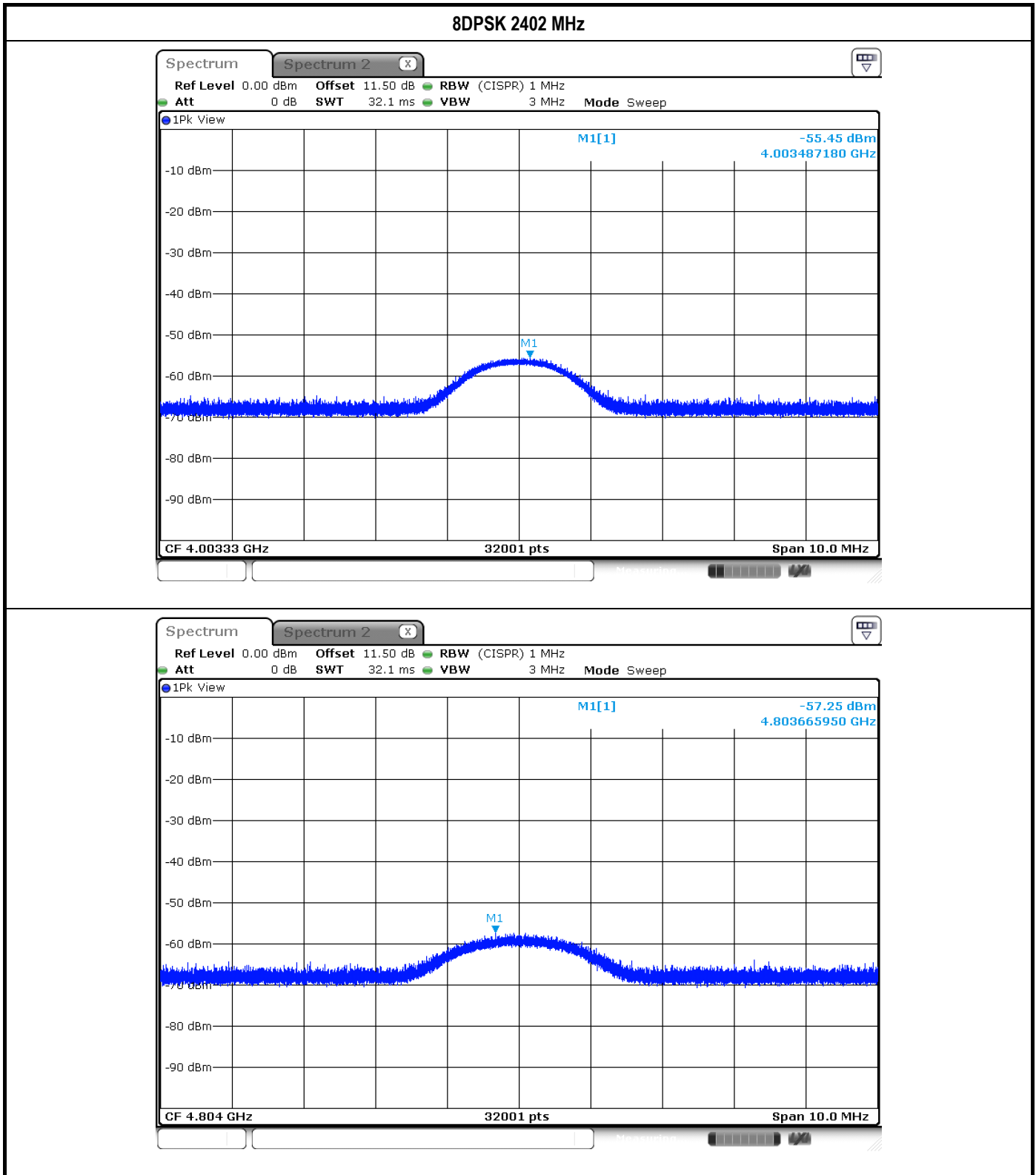
| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | 8DPSK | | | Frequency | 2480 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4133.33 | PK | -57.56 | 2.40 | -55.16 | 40.10 | 74.00 | -33.90 |
| 4133.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4960.00 | PK | -55.01 | 2.40 | -52.61 | 42.65 | 74.00 | -31.35 |
| 4960.00 | AV note1 | - | 2.40 | - | - | 54.00 | - |

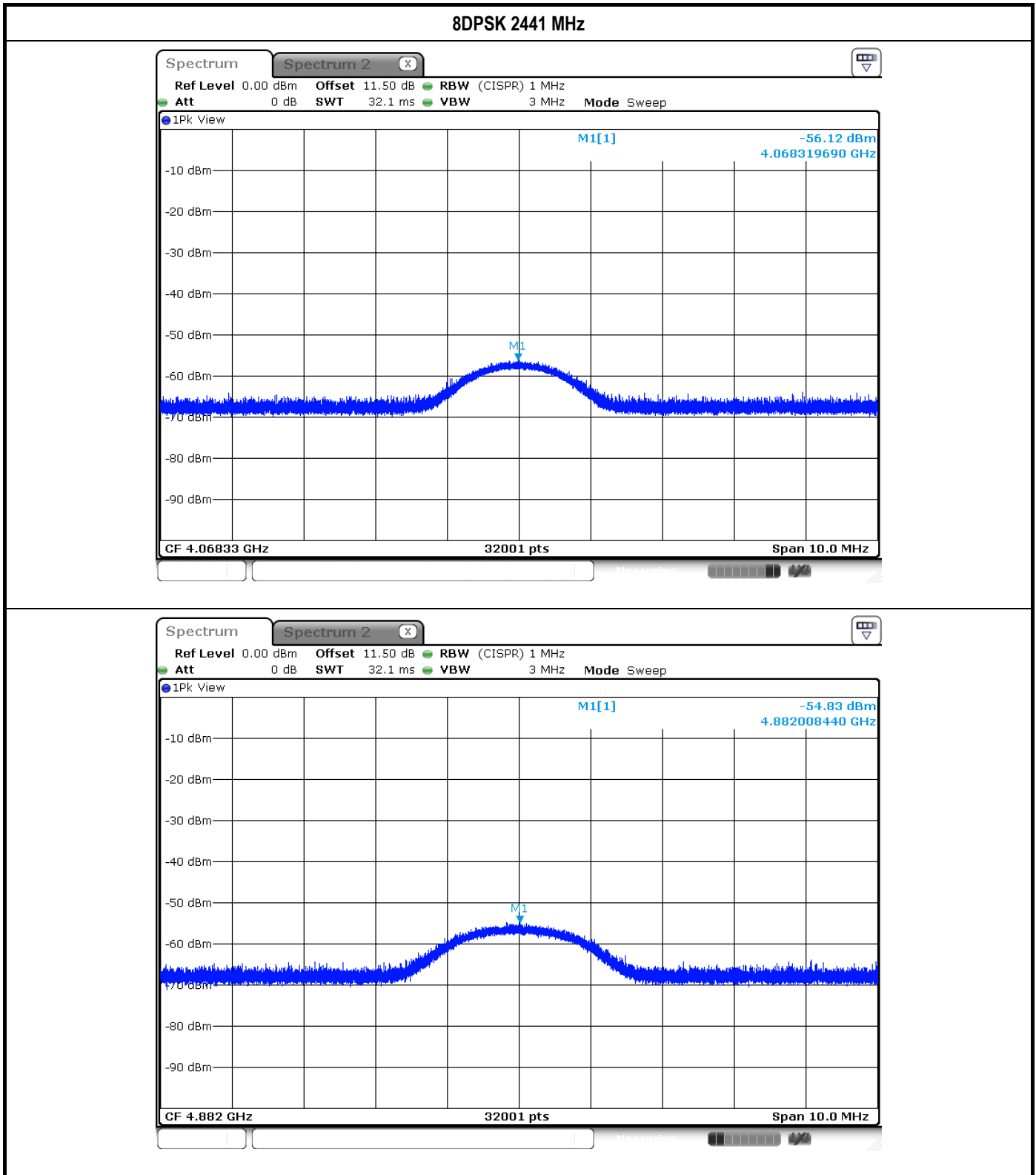
Note: If the PK margin greater than 20 dB, there is no need to get AVG reading.

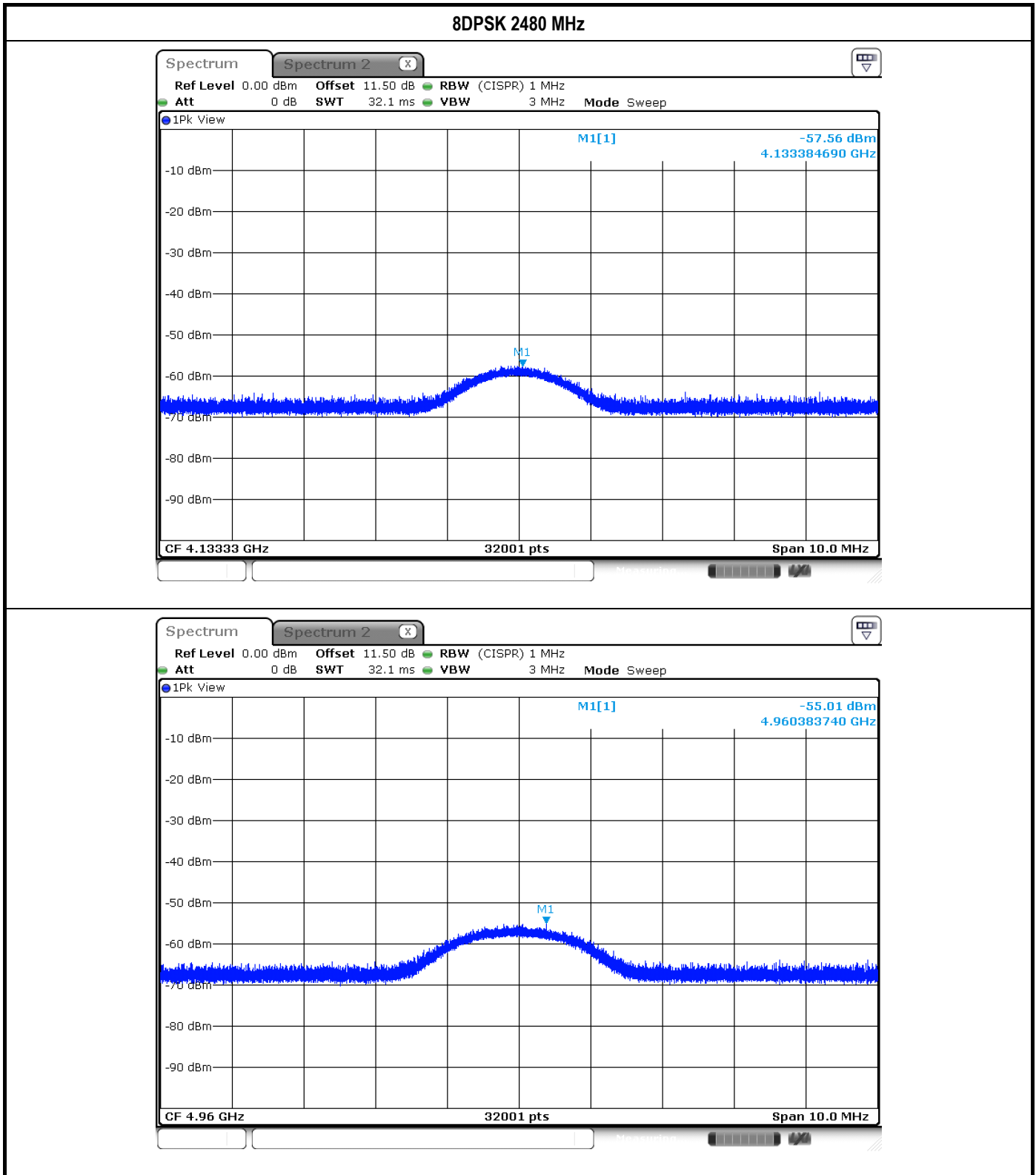














Unwanted Conducted Emissions into Restricted Frequency Bands - ST M.2, PCIe Module

Appendix A.3

| Restrict bands above 1G | | | | | | | | |
|--|--------|-------------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band - Bandedge | | | | | | | | |
| Modulation Mode | GFSK | | | | | | | |
| Test ch. Freq. (MHz) | Remark | Range (MHz) | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 2402 | PK | 2310~2390 | -46.72 | 2.40 | -44.32 | 50.94 | 74.00 | -23.06 |
| | AV | 2310~2390 | -59.88 | 2.40 | -57.48 | 37.78 | 54.00 | -16.22 |
| | PK | 2483.5~2500 | -46.57 | 2.40 | -44.17 | 51.09 | 74.00 | -22.91 |
| | AV | 2483.5~2500 | -60.09 | 2.40 | -57.69 | 37.57 | 54.00 | -16.43 |
| 2441 | PK | 2310~2390 | -46.57 | 2.40 | -44.17 | 51.09 | 74.00 | -22.91 |
| | AV | 2310~2390 | -60.01 | 2.40 | -57.61 | 37.65 | 54.00 | -16.35 |
| | PK | 2483.5~2500 | -46.79 | 2.40 | -44.39 | 50.87 | 74.00 | -23.13 |
| | AV | 2483.5~2500 | -59.92 | 2.40 | -57.52 | 37.74 | 54.00 | -16.26 |
| 2480 | PK | 2310~2390 | -46.37 | 2.40 | -43.97 | 51.29 | 74.00 | -22.71 |
| | AV | 2310~2390 | -58.44 | 2.40 | -56.04 | 39.22 | 54.00 | -14.78 |
| | PK | 2483.5~2500 | -45.72 | 2.40 | -43.32 | 51.94 | 74.00 | -22.06 |
| | AV | 2483.5~2500 | -57.38 | 2.40 | -54.98 | 40.28 | 54.00 | -13.72 |

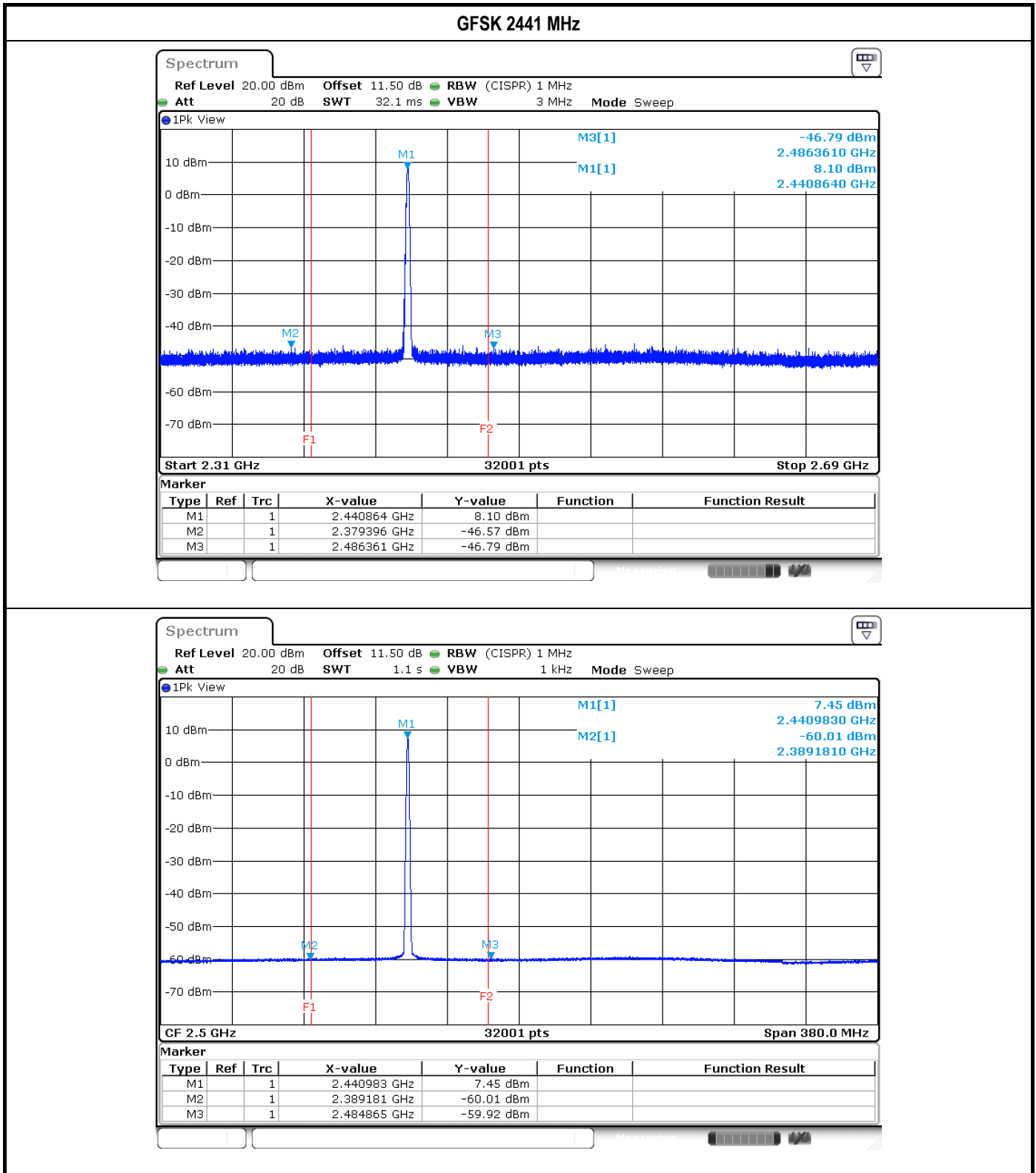
| Restrict bands above 1G | | | | | | | | |
|--|--------|-------------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band - Bandedge | | | | | | | | |
| Modulation Mode | 8DPSK | | | | | | | |
| Test ch. Freq. (MHz) | Remark | Range (MHz) | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 2402 | PK | 2310~2390 | -46.86 | 2.40 | -44.46 | 50.80 | 74.00 | -23.20 |
| | AV | 2310~2390 | -60.50 | 2.40 | -58.10 | 37.16 | 54.00 | -16.84 |
| | PK | 2483.5~2500 | -46.49 | 2.40 | -44.09 | 51.17 | 74.00 | -22.83 |
| | AV | 2483.5~2500 | -60.09 | 2.40 | -57.69 | 37.57 | 54.00 | -16.43 |
| 2441 | PK | 2310~2390 | -46.24 | 2.40 | -43.84 | 51.42 | 74.00 | -22.58 |
| | AV | 2310~2390 | -60.05 | 2.40 | -57.65 | 37.61 | 54.00 | -16.39 |
| | PK | 2483.5~2500 | -47.65 | 2.40 | -45.25 | 50.01 | 74.00 | -23.99 |
| | AV | 2483.5~2500 | -60.19 | 2.40 | -57.79 | 37.47 | 54.00 | -16.53 |
| 2480 | PK | 2310~2390 | -46.85 | 2.40 | -44.45 | 50.81 | 74.00 | -23.19 |
| | AV | 2310~2390 | -59.65 | 2.40 | -57.25 | 38.01 | 54.00 | -15.99 |
| | PK | 2483.5~2500 | -46.73 | 2.40 | -44.33 | 50.93 | 74.00 | -23.07 |
| | AV | 2483.5~2500 | -59.84 | 2.40 | -57.44 | 37.82 | 54.00 | -16.18 |





Unwanted Conducted Emissions into Restricted Frequency Bands - ST M.2, PCIe Module

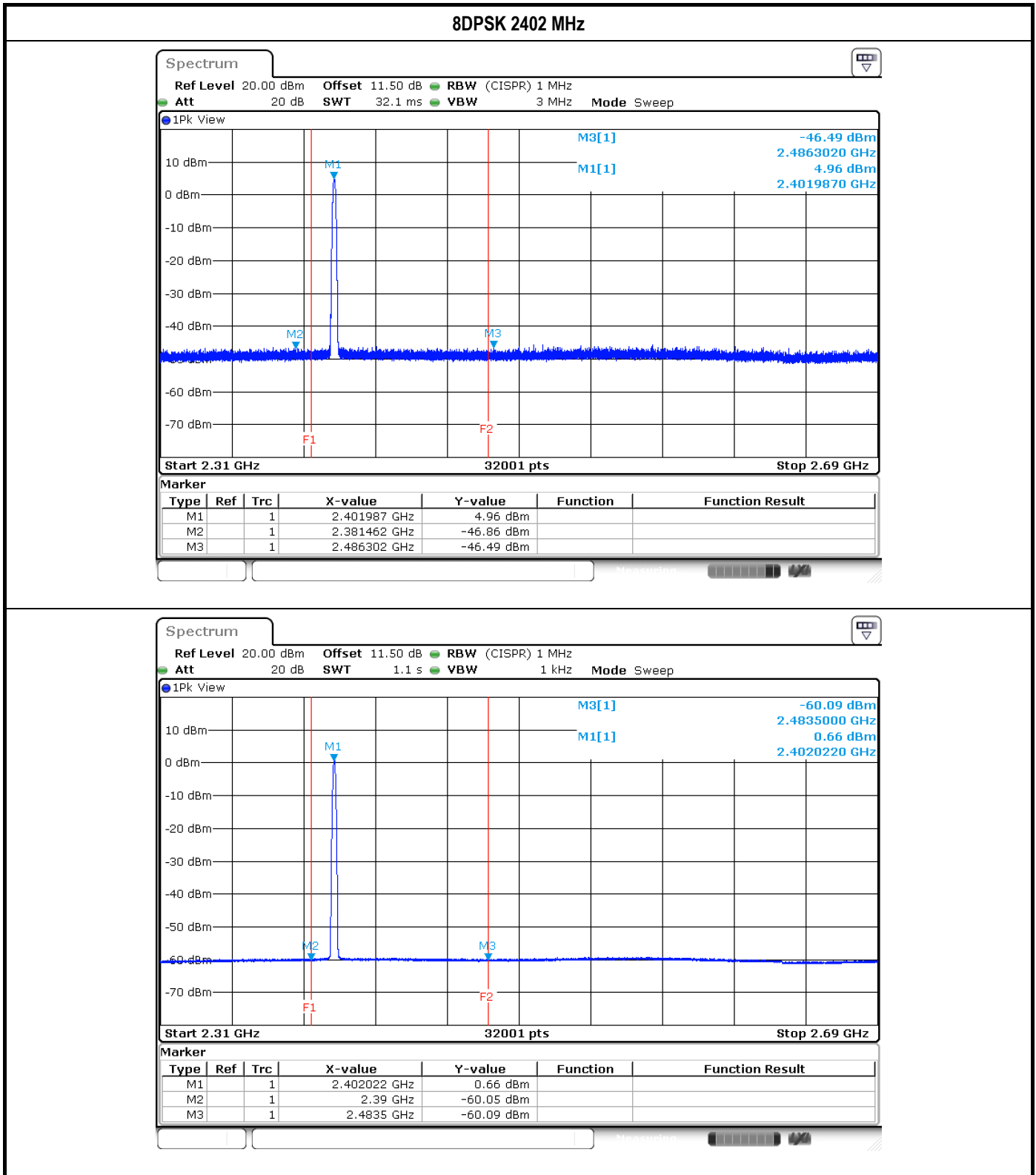
Appendix A.3





Unwanted Conducted Emissions into Restricted Frequency Bands - ST M.2, PCIe Module

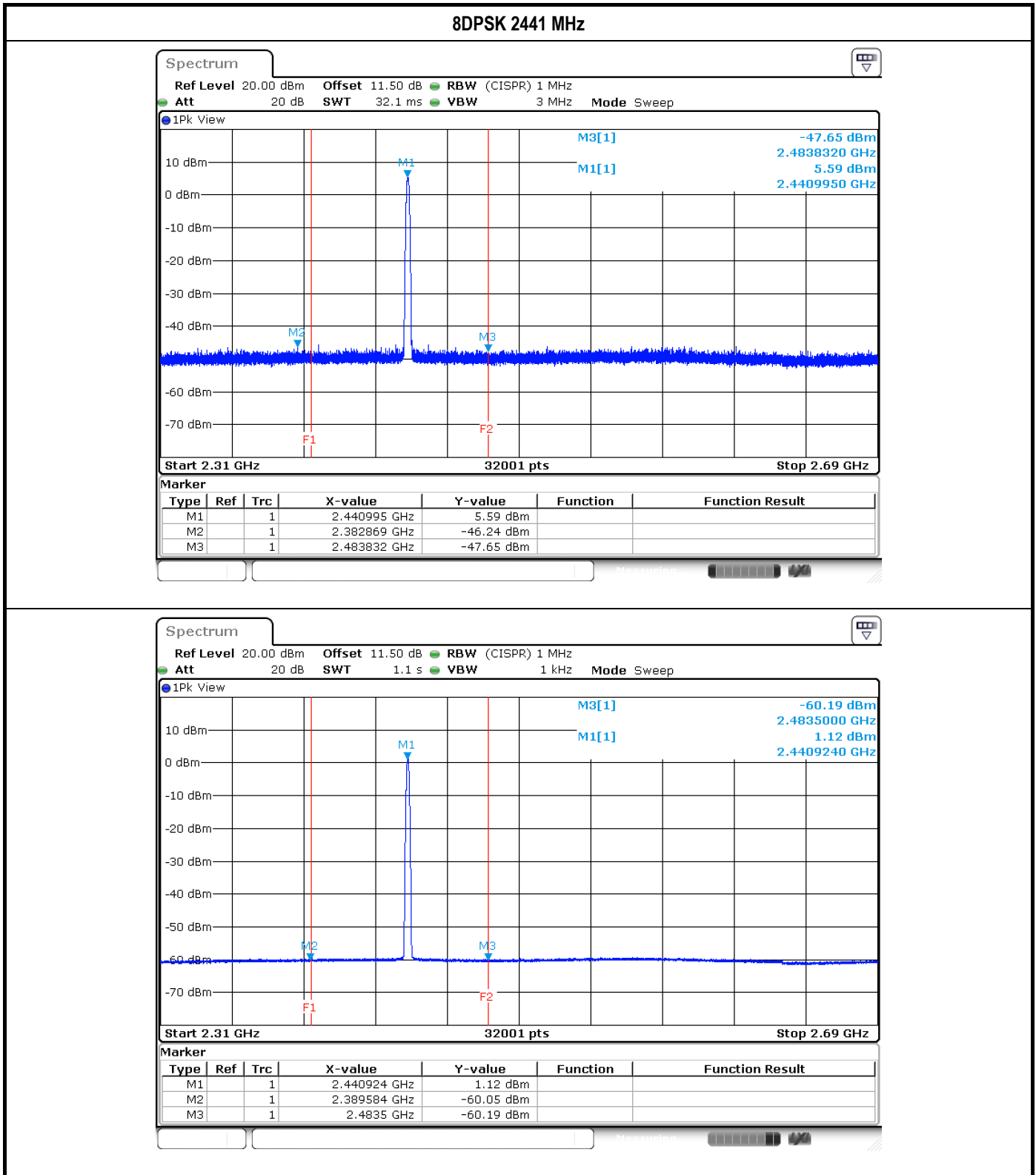
Appendix A.3





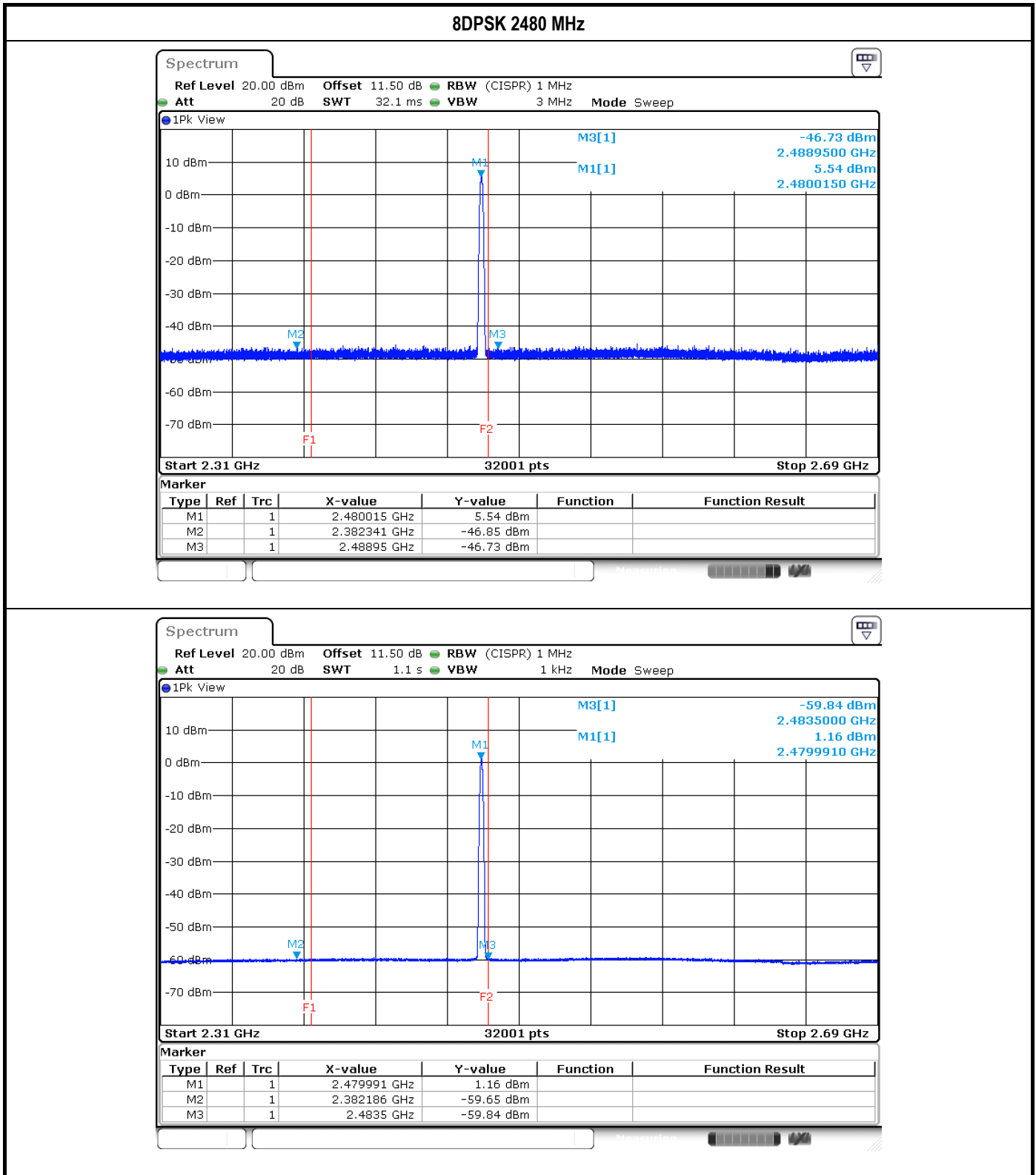
Unwanted Conducted Emissions into Restricted Frequency Bands - ST M.2, PCIe Module

Appendix A.3





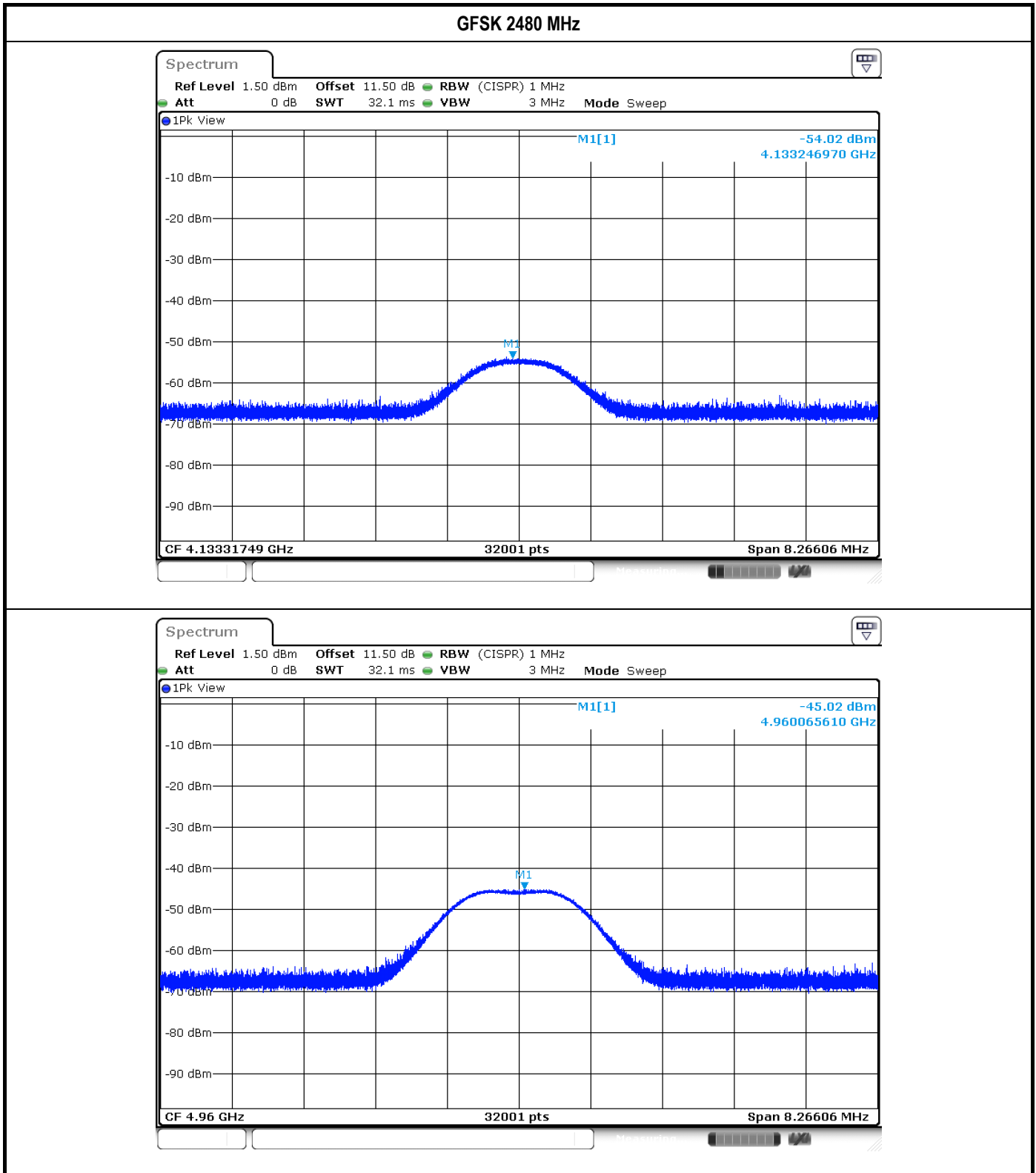
Unwanted Conducted Emissions into Restricted Frequency Bands - ST M.2, PCIe Module





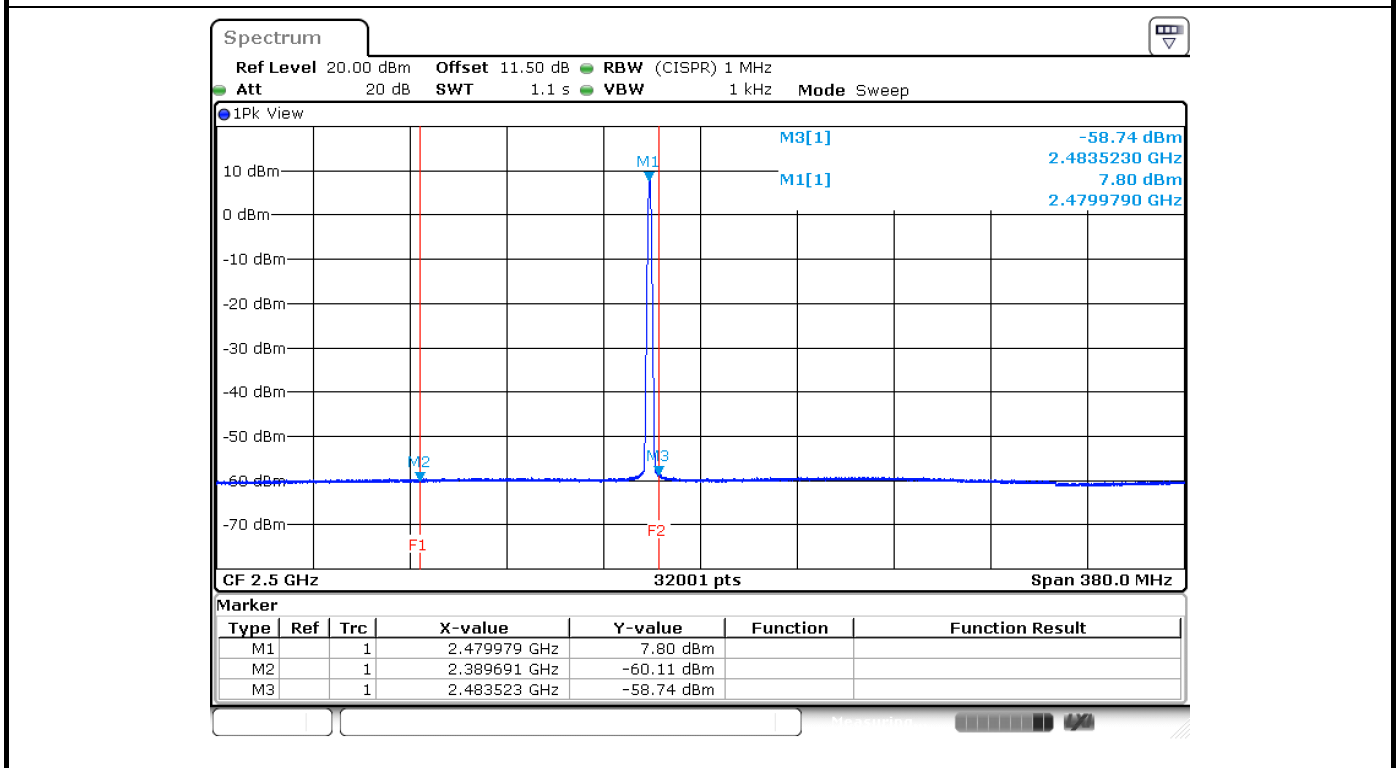
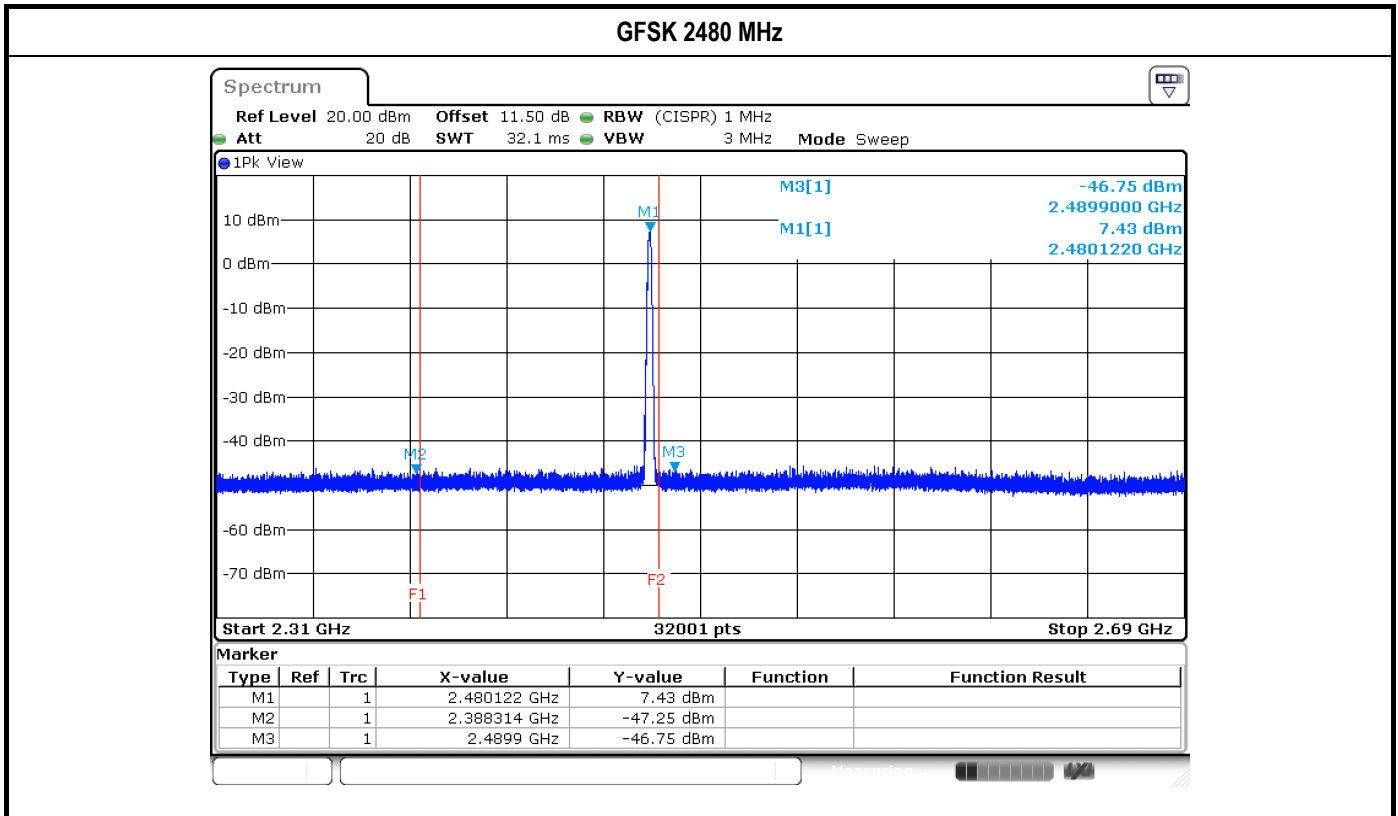
| Restrict bands above 1G | | | | | | | |
|---|----------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Restricted Frequency Band | | | | | | | |
| Modulation Mode | GFSK | | | Frequency | 2480 MHz | | |
| Freq (MHz) | Remark | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 4133.33 | PK | -54.02 | 2.40 | -51.62 | 43.64 | 74.00 | -30.36 |
| 4133.33 | AV note1 | - | 2.40 | - | - | 54.00 | - |
| 4960.00 | PK | -45.02 | 2.40 | -42.62 | 52.64 | 74.00 | -21.36 |
| 4960.00 | AV note2 | - | 2.40 | - | - | 54.00 | - |

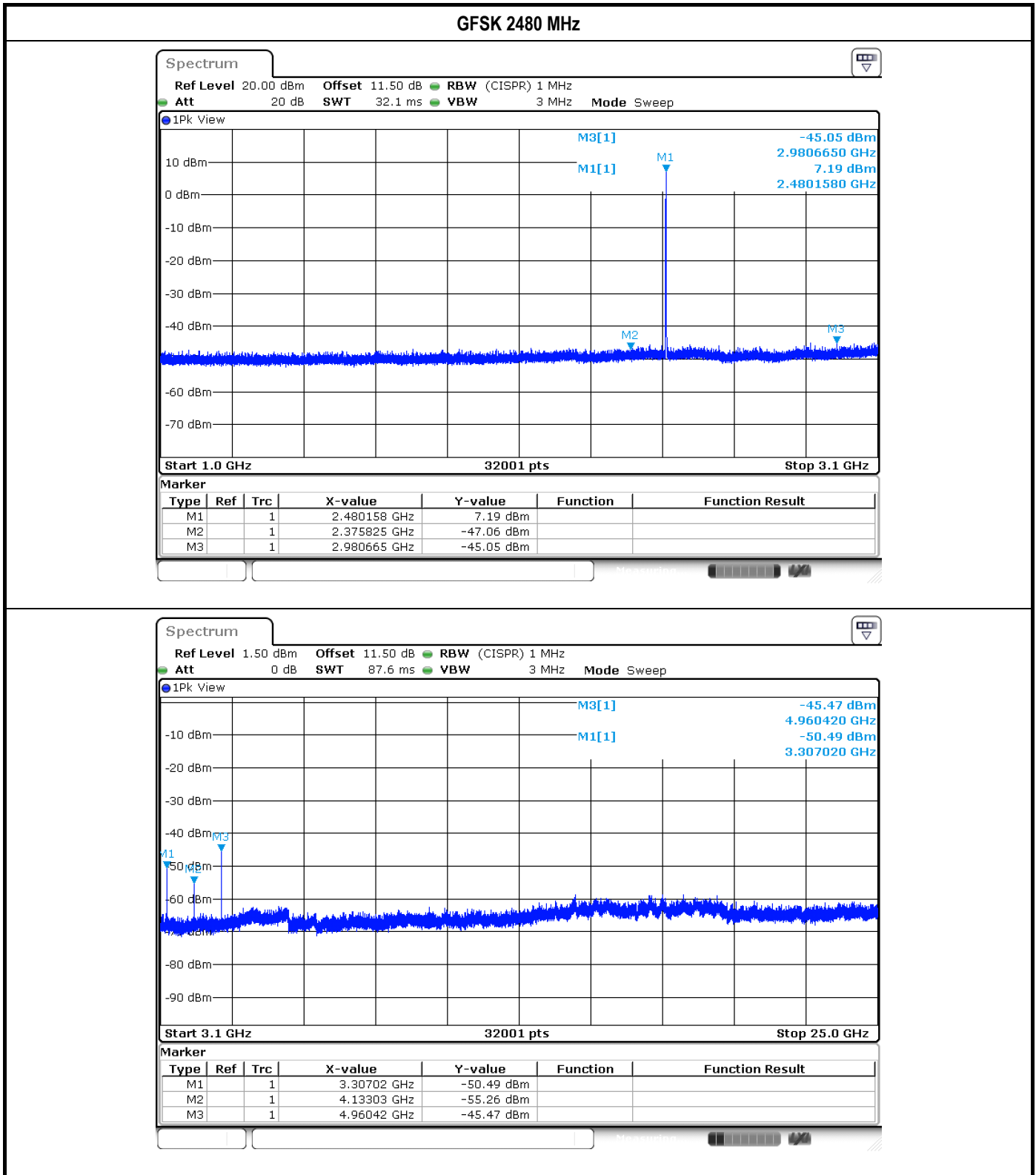
Note: If the PK margin greater than 20 dB, there is no need to get AVG reading.





| Restrict bands above 1G | | | | | | | | |
|---|--------|-------------|-----------------|----------|------------|------------------|------------------------|---------------------|
| Transmitter Conducted Unwanted Emissions Results in Band Edge | | | | | | | | |
| Modulation Mode | GFSK | | | | | | | |
| Test ch. Freq. (MHz) | Remark | Range (MHz) | Max Value (dBm) | DG (dBi) | EIRP (dBm) | E-Field (dBuV/m) | E-Field Limit (dBuV/m) | E-Field Margin (dB) |
| 2480 | PK | 2310~2390 | -47.25 | 2.40 | -44.85 | 50.41 | 74.00 | -23.59 |
| | AV | 2310~2390 | -60.11 | 2.40 | -57.71 | 37.55 | 54.00 | -16.45 |
| | PK | 2483.5~2500 | -46.75 | 2.40 | -44.35 | 50.91 | 74.00 | -23.09 |
| | AV | 2483.5~2500 | -58.74 | 2.40 | -56.34 | 38.92 | 54.00 | -15.08 |





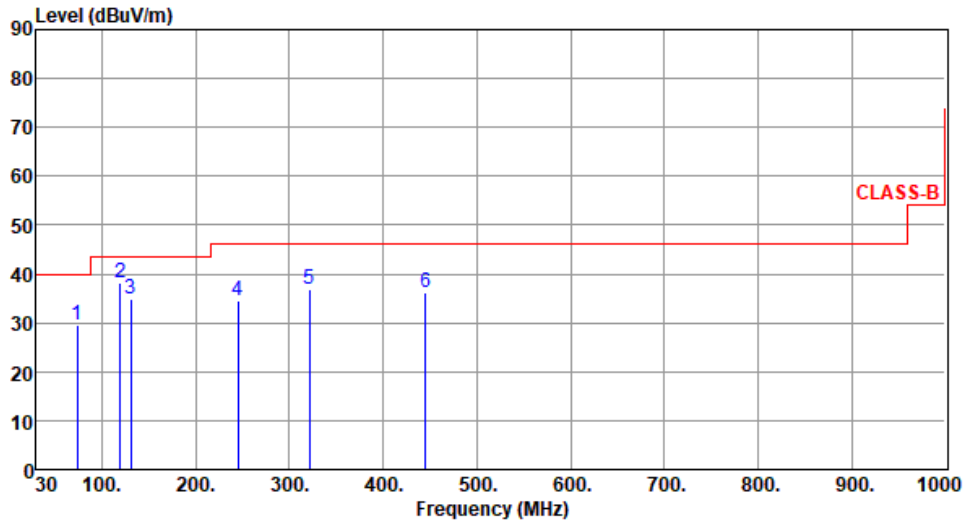


SC Module

Emissions (Below 1GHz)

| | | | |
|--------------|------------|------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Polarization | Horizontal | | |

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|--------|-------------|----------------|
| 1 | 73.65 | 29.54 | 40.00 | -10.46 | 41.65 | -12.11 | Peak | --- | --- |
| 2 | 119.77 | 38.26 | 43.50 | -5.24 | 49.34 | -11.08 | Peak | --- | --- |
| 3 | 130.88 | 34.89 | 43.50 | -8.61 | 45.00 | -10.11 | Peak | --- | --- |
| 4 | 245.34 | 34.44 | 46.00 | -11.56 | 44.61 | -10.17 | Peak | --- | --- |
| 5 | 321.00 | 36.82 | 46.00 | -9.18 | 44.34 | -7.52 | Peak | --- | --- |
| 6 | 445.23 | 36.18 | 46.00 | -9.82 | 40.52 | -4.34 | Peak | --- | --- |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

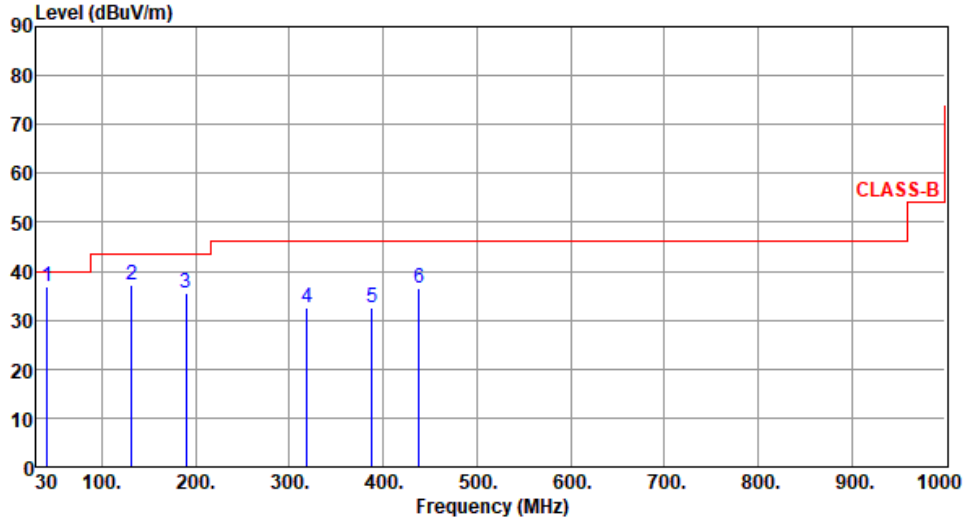


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|----------|-------------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Polarization | Vertical | | |

Test By : Sean Yu Temperature(°C): 25 Humidity(%): 61



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|--------|-------------|----------------|
| 1 | 41.64 | 36.83 | 40.00 | -3.17 | 45.49 | -8.66 | QP | 100 | 171 |
| 2 | 131.85 | 37.10 | 43.50 | -6.40 | 47.37 | -10.27 | Peak | --- | --- |
| 3 | 190.05 | 35.44 | 43.50 | -8.06 | 46.96 | -11.52 | Peak | --- | --- |
| 4 | 319.06 | 32.67 | 46.00 | -13.33 | 40.23 | -7.56 | Peak | --- | --- |
| 5 | 387.93 | 32.66 | 46.00 | -13.34 | 38.49 | -5.83 | Peak | --- | --- |
| 6 | 438.37 | 36.49 | 46.00 | -9.51 | 40.97 | -4.48 | Peak | --- | --- |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

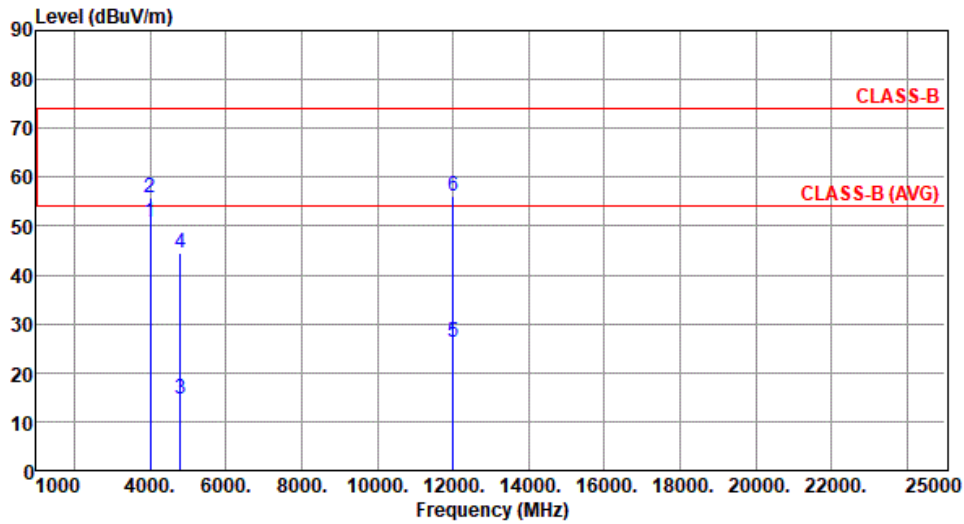
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.



Emissions (Above 1GHz) for GFSK

| | | | |
|--------------|------------|------------------|------|
| Modulation | GFSK | Test Freq. (MHz) | 2402 |
| Polarization | Horizontal | | |

Test By :Paul Lin Temperature(°C):26 Humidity(%):64



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| 1 | 4000.00 | 50.83 | 54.00 | -3.17 | 53.07 | -2.24 | Average | 289 | 134 |
| 2 | 4000.00 | 55.73 | 74.00 | -18.27 | 57.97 | -2.24 | Peak | 289 | 134 |
| 3 | 4804.00 | 14.56 | 54.00 | -39.44 | | | Average | 100 | 304 |
| 4 | 4804.00 | 44.66 | 74.00 | -29.34 | 45.18 | -0.52 | Peak | 100 | 304 |
| 5 | 12010.00 | 26.09 | 54.00 | -27.91 | | | Average | 100 | 182 |
| 6 | 12010.00 | 56.19 | 74.00 | -17.81 | 50.06 | 6.13 | Peak | 100 | 182 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: When average value is calculated not measured, no SA reading and factor value are listed.

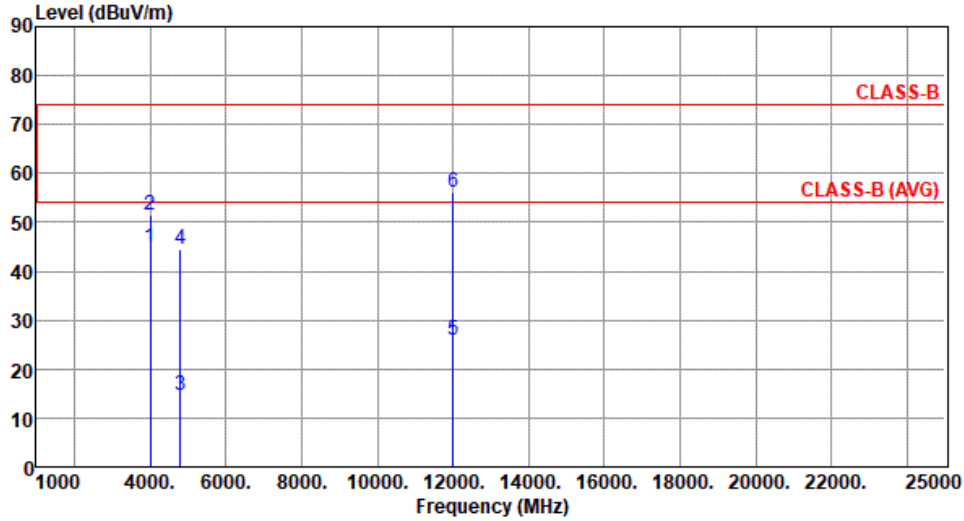


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|----------|-------------------------|------|
| Modulation | GFSK | Test Freq. (MHz) | 2402 |
| Polarization | Vertical | | |

Test By : Paul Lin Temperature(°C): 26 Humidity(%): 64



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| 1 | 4000.00 | 44.81 | 54.00 | -9.19 | 47.05 | -2.24 | Average | 309 | 202 |
| 2 | 4000.00 | 51.48 | 74.00 | -22.52 | 53.72 | -2.24 | Peak | 309 | 202 |
| 3 | 4804.00 | 14.50 | 54.00 | -39.50 | | | Average | 100 | 165 |
| 4 | 4804.00 | 44.60 | 74.00 | -29.40 | 45.12 | -0.52 | Peak | 100 | 165 |
| 5 | 12010.00 | 26.00 | 54.00 | -28.00 | | | Average | 100 | 106 |
| 6 | 12010.00 | 56.10 | 74.00 | -17.90 | 49.97 | 6.13 | Peak | 100 | 106 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: When average value is calculated not measured, no SA reading and factor value are listed.



Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | | |
|---------------------|------------|-------------------------|------|-----------------|
| Modulation | GFSK | Test Freq. (MHz) | 2441 | |
| Polarization | Horizontal | | | |
| Test By : Paul Lin | | Temperature(°C): 26 | | Humidity(%): 64 |

The graph plots Level (dBuV/m) on the y-axis (0 to 90) against Frequency (MHz) on the x-axis (1000 to 25000). Two horizontal red lines represent limits: CLASS-B at approximately 75 dBuV/m and CLASS-B (AVG) at approximately 55 dBuV/m. Five vertical blue lines indicate measured peaks at various frequencies, labeled 2, 3, 4, 5, and 6. Peak 2 is at 4000 MHz, peak 3 at 4882 MHz, peak 4 at 4882 MHz, peak 5 at 7323 MHz, and peak 6 at 7323 MHz.

| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| 1 | 4000.00 | 50.76 | 54.00 | -3.24 | 53.00 | -2.24 | Average | 286 | 137 |
| 2 | 4000.00 | 55.81 | 74.00 | -18.19 | 58.05 | -2.24 | Peak | 286 | 137 |
| 3 | 4882.00 | 15.24 | 54.00 | -38.76 | | | Average | 100 | 251 |
| 4 | 4882.00 | 45.34 | 74.00 | -28.66 | 45.88 | -0.54 | Peak | 100 | 251 |
| 5 | 7323.00 | 20.94 | 54.00 | -33.06 | | | Average | 100 | 126 |
| 6 | 7323.00 | 51.04 | 74.00 | -22.96 | 45.86 | 5.18 | Peak | 100 | 126 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: When average value is calculated not measured, no SA reading and factor value are listed.

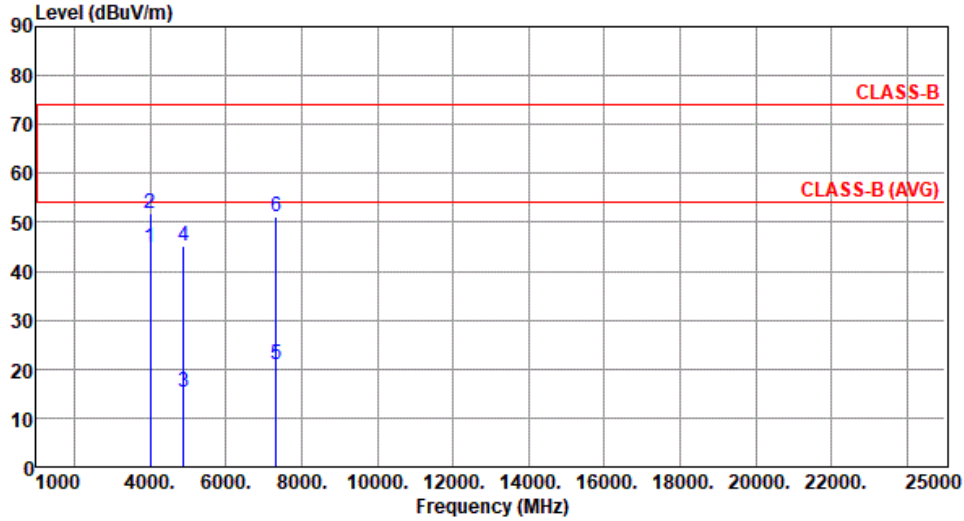


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|----------|-------------------------|------|
| Modulation | GFSK | Test Freq. (MHz) | 2441 |
| Polarization | Vertical | | |

Test By : Paul Lin Temperature(°C): 26 Humidity(%): 64



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| 1 | 4000.00 | 44.67 | 54.00 | -9.33 | 46.91 | -2.24 | Average | 305 | 207 |
| 2 | 4000.00 | 51.72 | 74.00 | -22.28 | 53.96 | -2.24 | Peak | 305 | 207 |
| 3 | 4882.00 | 15.19 | 54.00 | -38.81 | | | Average | 100 | 319 |
| 4 | 4882.00 | 45.29 | 74.00 | -28.71 | 45.83 | -0.54 | Peak | 100 | 319 |
| 5 | 7323.00 | 20.96 | 54.00 | -33.04 | | | Average | 100 | 112 |
| 6 | 7323.00 | 51.06 | 74.00 | -22.94 | 45.88 | 5.18 | Peak | 100 | 112 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: When average value is calculated not measured, no SA reading and factor value are listed.

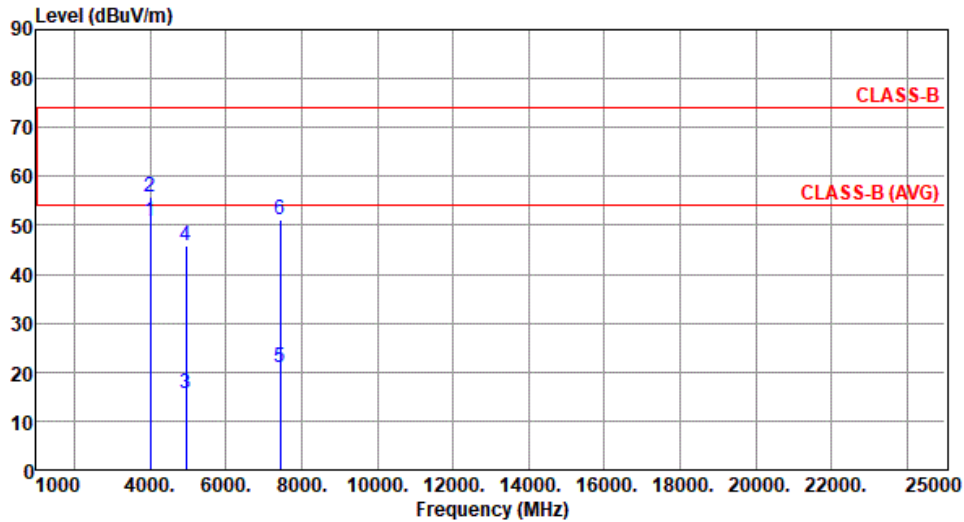


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|------------|-------------------------|------|
| Modulation | GFSK | Test Freq. (MHz) | 2480 |
| Polarization | Horizontal | | |

Test By : Paul Lin Temperature(°C): 26 Humidity(%): 64



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| 1 | 4000.00 | 50.87 | 54.00 | -3.13 | 53.11 | -2.24 | Average | 285 | 133 |
| 2 | 4000.00 | 55.67 | 74.00 | -18.33 | 57.91 | -2.24 | Peak | 285 | 133 |
| 3 | 4960.00 | 15.58 | 54.00 | -38.42 | | | Average | 100 | 310 |
| 4 | 4960.00 | 45.68 | 74.00 | -28.32 | 46.12 | -0.44 | Peak | 100 | 310 |
| 5 | 7440.00 | 20.93 | 54.00 | -33.07 | | | Average | 100 | 112 |
| 6 | 7440.00 | 51.03 | 74.00 | -22.97 | 45.92 | 5.11 | Peak | 100 | 112 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: When average value is calculated not measured, no SA reading and factor value are listed.

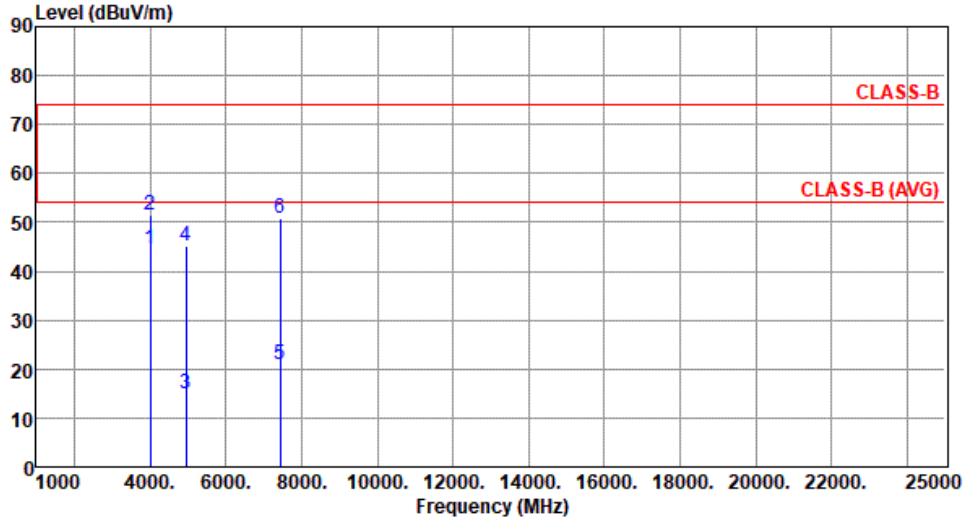


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|----------|-------------------------|------|
| Modulation | GFSK | Test Freq. (MHz) | 2480 |
| Polarization | Vertical | | |

Test By : Paul Lin Temperature(°C): 26 Humidity(%): 64



| | Freq. MHz | Emission level dBUV/m | Limit dBUV/m | Margin dB | SA reading dBUV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| 1 | 4000.00 | 44.59 | 54.00 | -9.41 | 46.83 | -2.24 | Average | 308 | 205 |
| 2 | 4000.00 | 51.57 | 74.00 | -22.43 | 53.81 | -2.24 | Peak | 308 | 205 |
| 3 | 4960.00 | 15.03 | 54.00 | -38.97 | | | Average | 100 | 176 |
| 4 | 4960.00 | 45.13 | 74.00 | -28.87 | 45.57 | -0.44 | Peak | 100 | 176 |
| 5 | 7440.00 | 20.86 | 54.00 | -33.14 | | | Average | 100 | 127 |
| 6 | 7440.00 | 50.96 | 74.00 | -23.04 | 45.85 | 5.11 | Peak | 100 | 127 |

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).
 Note 3: When average value is calculated not measured, no SA reading and factor value are listed.



Emissions (Above 1GHz) for 8DPSK

| | | | | | | | | | |
|---|------------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2402 | | | | | | |
| Polarization | Horizontal | | | | | | | | |
| Test By :Paul Lin Temperature(°C):26 Humidity(%):64 | | | | | | | | | |
| | | | | | | | | | |
| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
| 1 | 4000.00 | 50.79 | 54.00 | -3.21 | 53.03 | -2.24 | Average | 285 | 131 |
| 2 | 4000.00 | 55.49 | 74.00 | -18.51 | 57.73 | -2.24 | Peak | 285 | 131 |
| 3 | 4804.00 | 14.64 | 54.00 | -39.36 | | | Average | 100 | 308 |
| 4 | 4804.00 | 44.74 | 74.00 | -29.26 | 45.26 | -0.52 | Peak | 100 | 308 |
| 5 | 12010.00 | 26.15 | 54.00 | -27.85 | | | Average | 100 | 194 |
| 6 | 12010.00 | 56.25 | 74.00 | -17.75 | 50.12 | 6.13 | Peak | 100 | 194 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: When average value is calculated not measured, no SA reading and factor value are listed.

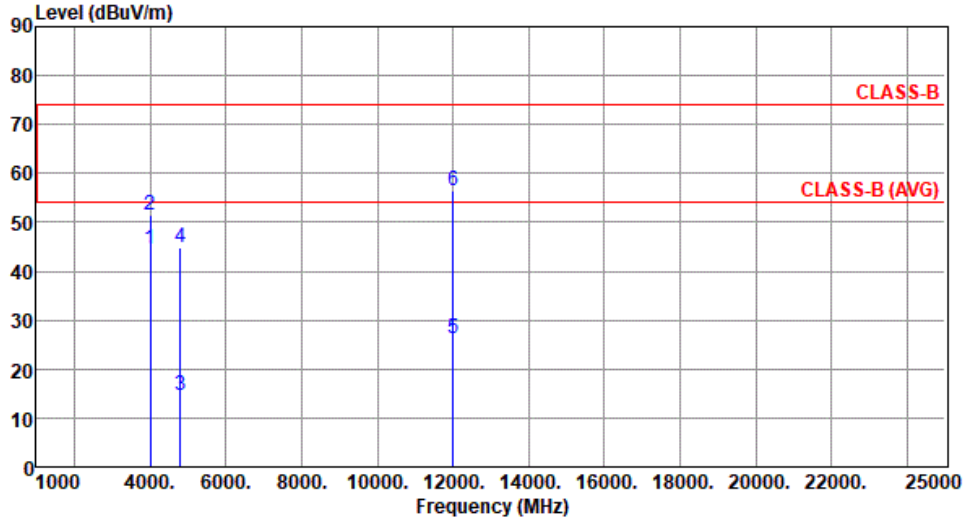


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|----------|-------------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2402 |
| Polarization | Vertical | | |

Test By : Paul Lin Temperature(°C): 26 Humidity(%): 64



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| 1 | 4000.00 | 44.55 | 54.00 | -9.45 | 46.79 | -2.24 | Average | 306 | 205 |
| 2 | 4000.00 | 51.31 | 74.00 | -22.69 | 53.55 | -2.24 | Peak | 306 | 205 |
| 3 | 4804.00 | 14.72 | 54.00 | -39.28 | | | Average | 100 | 176 |
| 4 | 4804.00 | 44.82 | 74.00 | -29.18 | 45.34 | -0.52 | Peak | 100 | 176 |
| 5 | 12010.00 | 26.26 | 54.00 | -27.74 | | | Average | 100 | 97 |
| 6 | 12010.00 | 56.36 | 74.00 | -17.64 | 50.23 | 6.13 | Peak | 100 | 97 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: When average value is calculated not measured, no SA reading and factor value are listed.



Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| Modulation | 8DPSK | Test Freq. (MHz) | 2441 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-------------------------|---------|------------|---------|---------|----------|------------|---------|---------|---------|---------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|--|-------|--|-------|-------|-------|--|-------|--|------|---------|------|---------|------|---------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-------|----------------|-------|--------|------------|--------|--------|----------|------------|-----|--------|--------|----|------|------|--|----|-----|---------|-------|-------|-------|-------|-------|---------|-----|-----|---------|-------|-------|--------|-------|-------|------|-----|-----|---------|-------|-------|--------|--|--|---------|-----|-----|---------|-------|-------|--------|-------|-------|------|-----|-----|---------|-------|-------|--------|--|--|---------|-----|-----|---------|-------|-------|--------|-------|------|------|-----|-----|
| Polarization | Horizontal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Test By : Paul Lin Temperature(°C): 26 Humidity(%): 64 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> </tr> </thead> <tbody> <tr> <td>4000.00</td> <td>4000.00</td> <td>4882.00</td> <td>4882.00</td> <td>7323.00</td> <td>7323.00</td> </tr> <tr> <td>50.84</td> <td>55.92</td> <td>15.38</td> <td>45.48</td> <td>21.05</td> <td>51.15</td> </tr> <tr> <td>54.00</td> <td>74.00</td> <td>54.00</td> <td>74.00</td> <td>54.00</td> <td>74.00</td> </tr> <tr> <td>-3.16</td> <td>-18.08</td> <td>-38.62</td> <td>-28.52</td> <td>-32.95</td> <td>-22.85</td> </tr> <tr> <td>53.08</td> <td>58.16</td> <td></td> <td>46.02</td> <td></td> <td>45.97</td> </tr> <tr> <td>-2.24</td> <td>-2.24</td> <td></td> <td>-0.54</td> <td></td> <td>5.18</td> </tr> <tr> <td>Average</td> <td>Peak</td> <td>Average</td> <td>Peak</td> <td>Average</td> <td>Peak</td> </tr> <tr> <td>288</td> <td>288</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> </tr> <tr> <td>133</td> <td>133</td> <td>255</td> <td>255</td> <td>129</td> <td>129</td> </tr> </tbody> </table> | 1 | 2 | 3 | 4 | 5 | 6 | 4000.00 | 4000.00 | 4882.00 | 4882.00 | 7323.00 | 7323.00 | 50.84 | 55.92 | 15.38 | 45.48 | 21.05 | 51.15 | 54.00 | 74.00 | 54.00 | 74.00 | 54.00 | 74.00 | -3.16 | -18.08 | -38.62 | -28.52 | -32.95 | -22.85 | 53.08 | 58.16 | | 46.02 | | 45.97 | -2.24 | -2.24 | | -0.54 | | 5.18 | Average | Peak | Average | Peak | Average | Peak | 288 | 288 | 100 | 100 | 100 | 100 | 133 | 133 | 255 | 255 | 129 | 129 | <table border="1"> <thead> <tr> <th>Freq.</th> <th>Emission level</th> <th>Limit</th> <th>Margin</th> <th>SA reading</th> <th>Factor</th> <th>Remark</th> <th>ANT High</th> <th>Turn Table</th> </tr> <tr> <th>MHz</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV</th> <th>dB/m</th> <th></th> <th>cm</th> <th>deg</th> </tr> </thead> <tbody> <tr> <td>4000.00</td> <td>50.84</td> <td>54.00</td> <td>-3.16</td> <td>53.08</td> <td>-2.24</td> <td>Average</td> <td>288</td> <td>133</td> </tr> <tr> <td>4000.00</td> <td>55.92</td> <td>74.00</td> <td>-18.08</td> <td>58.16</td> <td>-2.24</td> <td>Peak</td> <td>288</td> <td>133</td> </tr> <tr> <td>4882.00</td> <td>15.38</td> <td>54.00</td> <td>-38.62</td> <td></td> <td></td> <td>Average</td> <td>100</td> <td>255</td> </tr> <tr> <td>4882.00</td> <td>45.48</td> <td>74.00</td> <td>-28.52</td> <td>46.02</td> <td>-0.54</td> <td>Peak</td> <td>100</td> <td>255</td> </tr> <tr> <td>7323.00</td> <td>21.05</td> <td>54.00</td> <td>-32.95</td> <td></td> <td></td> <td>Average</td> <td>100</td> <td>129</td> </tr> <tr> <td>7323.00</td> <td>51.15</td> <td>74.00</td> <td>-22.85</td> <td>45.97</td> <td>5.18</td> <td>Peak</td> <td>100</td> <td>129</td> </tr> </tbody> </table> | Freq. | Emission level | Limit | Margin | SA reading | Factor | Remark | ANT High | Turn Table | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | | cm | deg | 4000.00 | 50.84 | 54.00 | -3.16 | 53.08 | -2.24 | Average | 288 | 133 | 4000.00 | 55.92 | 74.00 | -18.08 | 58.16 | -2.24 | Peak | 288 | 133 | 4882.00 | 15.38 | 54.00 | -38.62 | | | Average | 100 | 255 | 4882.00 | 45.48 | 74.00 | -28.52 | 46.02 | -0.54 | Peak | 100 | 255 | 7323.00 | 21.05 | 54.00 | -32.95 | | | Average | 100 | 129 | 7323.00 | 51.15 | 74.00 | -22.85 | 45.97 | 5.18 | Peak | 100 | 129 |
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4000.00 | 4000.00 | 4882.00 | 4882.00 | 7323.00 | 7323.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50.84 | 55.92 | 15.38 | 45.48 | 21.05 | 51.15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54.00 | 74.00 | 54.00 | 74.00 | 54.00 | 74.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -3.16 | -18.08 | -38.62 | -28.52 | -32.95 | -22.85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 53.08 | 58.16 | | 46.02 | | 45.97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -2.24 | -2.24 | | -0.54 | | 5.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | Peak | Average | Peak | Average | Peak | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 288 | 288 | 100 | 100 | 100 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 133 | 133 | 255 | 255 | 129 | 129 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Freq. | Emission level | Limit | Margin | SA reading | Factor | Remark | ANT High | Turn Table | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | | cm | deg | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4000.00 | 50.84 | 54.00 | -3.16 | 53.08 | -2.24 | Average | 288 | 133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4000.00 | 55.92 | 74.00 | -18.08 | 58.16 | -2.24 | Peak | 288 | 133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4882.00 | 15.38 | 54.00 | -38.62 | | | Average | 100 | 255 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4882.00 | 45.48 | 74.00 | -28.52 | 46.02 | -0.54 | Peak | 100 | 255 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7323.00 | 21.05 | 54.00 | -32.95 | | | Average | 100 | 129 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7323.00 | 51.15 | 74.00 | -22.85 | 45.97 | 5.18 | Peak | 100 | 129 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m). Note 3: When average value is calculated not measured, no SA reading and factor value are listed. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

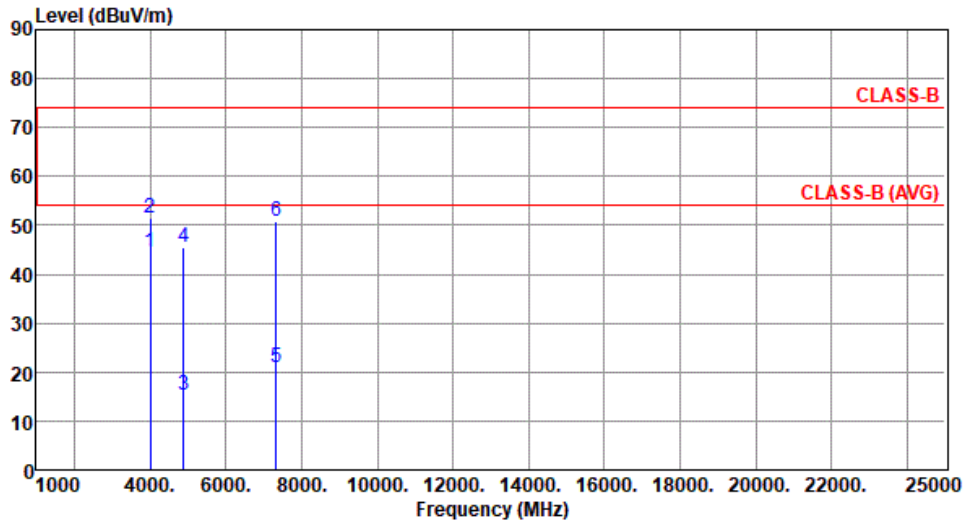


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|----------|-------------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2441 |
| Polarization | Vertical | | |

Test By : Paul Lin Temperature(°C): 26 Humidity(%): 64



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| 1 | 4000.00 | 44.43 | 54.00 | -9.57 | 46.67 | -2.24 | Average | 301 | 202 |
| 2 | 4000.00 | 51.46 | 74.00 | -22.54 | 53.70 | -2.24 | Peak | 301 | 202 |
| 3 | 4882.00 | 15.32 | 54.00 | -38.68 | | | Average | 100 | 322 |
| 4 | 4882.00 | 45.42 | 74.00 | -28.58 | 45.96 | -0.54 | Peak | 100 | 322 |
| 5 | 7323.00 | 20.87 | 54.00 | -33.13 | | | Average | 100 | 137 |
| 6 | 7323.00 | 50.97 | 74.00 | -23.03 | 45.79 | 5.18 | Peak | 100 | 137 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: When average value is calculated not measured, no SA reading and factor value are listed.

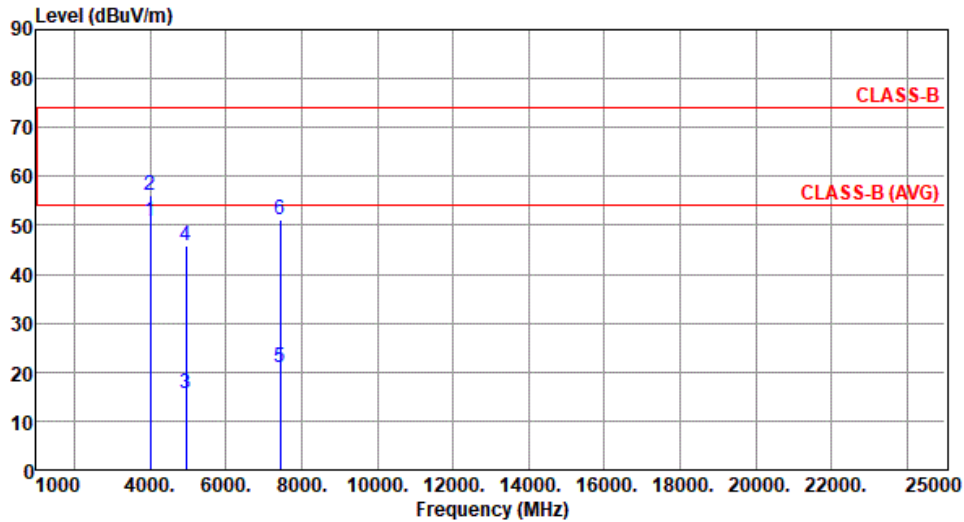


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|------------|-------------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Polarization | Horizontal | | |

Test By : Paul Lin Temperature(°C): 26 Humidity(%): 64



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| 1 | 4000.00 | 50.92 | 54.00 | -3.08 | 53.16 | -2.24 | Average | 287 | 136 |
| 2 | 4000.00 | 56.08 | 74.00 | -17.92 | 58.32 | -2.24 | Peak | 287 | 136 |
| 3 | 4960.00 | 15.70 | 54.00 | -38.30 | | | Average | 100 | 313 |
| 4 | 4960.00 | 45.80 | 74.00 | -28.20 | 46.24 | -0.44 | Peak | 100 | 313 |
| 5 | 7440.00 | 21.05 | 54.00 | -32.95 | | | Average | 100 | 108 |
| 6 | 7440.00 | 51.15 | 74.00 | -22.85 | 46.04 | 5.11 | Peak | 100 | 108 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: When average value is calculated not measured, no SA reading and factor value are listed.

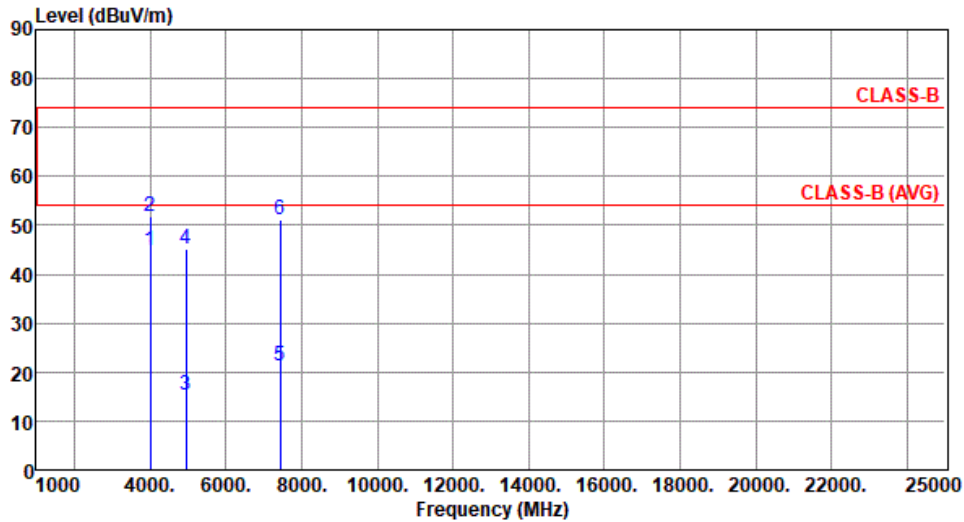


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|----------|-------------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Polarization | Vertical | | |

Test By : Paul Lin Temperature(°C): 26 Humidity(%): 64



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| 1 | 4000.00 | 44.75 | 54.00 | -9.25 | 46.99 | -2.24 | Average | 305 | 210 |
| 2 | 4000.00 | 51.82 | 74.00 | -22.18 | 54.06 | -2.24 | Peak | 305 | 210 |
| 3 | 4960.00 | 15.22 | 54.00 | -38.78 | | | Average | 100 | 189 |
| 4 | 4960.00 | 45.32 | 74.00 | -28.68 | 45.76 | -0.44 | Peak | 100 | 189 |
| 5 | 7440.00 | 21.20 | 54.00 | -32.80 | | | Average | 100 | 117 |
| 6 | 7440.00 | 51.30 | 74.00 | -22.70 | 46.19 | 5.11 | Peak | 100 | 117 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: When average value is calculated not measured, no SA reading and factor value are listed.

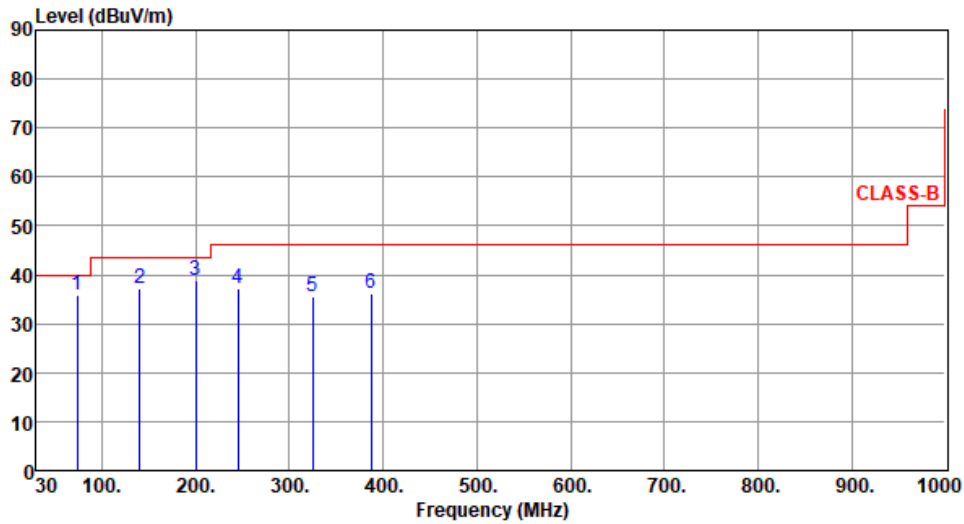


ST M.2, PCIe Module

Emissions (Below 1GHz)

| | | | |
|--------------|------------|------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Polarization | Horizontal | | |

Test By :Paul Lin Temperature(°C):24 Humidity(%):66



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|--------|-------------|----------------|
| 1 | 73.58 | 35.72 | 40.00 | -4.28 | 47.80 | -12.08 | Peak | --- | --- |
| 2 | 140.06 | 37.23 | 43.50 | -6.27 | 46.70 | -9.47 | Peak | --- | --- |
| 3 | 200.05 | 38.81 | 43.50 | -4.69 | 50.67 | -11.86 | Peak | --- | --- |
| 4 | 245.38 | 37.12 | 46.00 | -8.88 | 47.29 | -10.17 | Peak | --- | --- |
| 5 | 325.18 | 35.59 | 46.00 | -10.41 | 43.10 | -7.51 | Peak | --- | --- |
| 6 | 387.28 | 36.06 | 46.00 | -9.94 | 41.91 | -5.85 | Peak | --- | --- |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

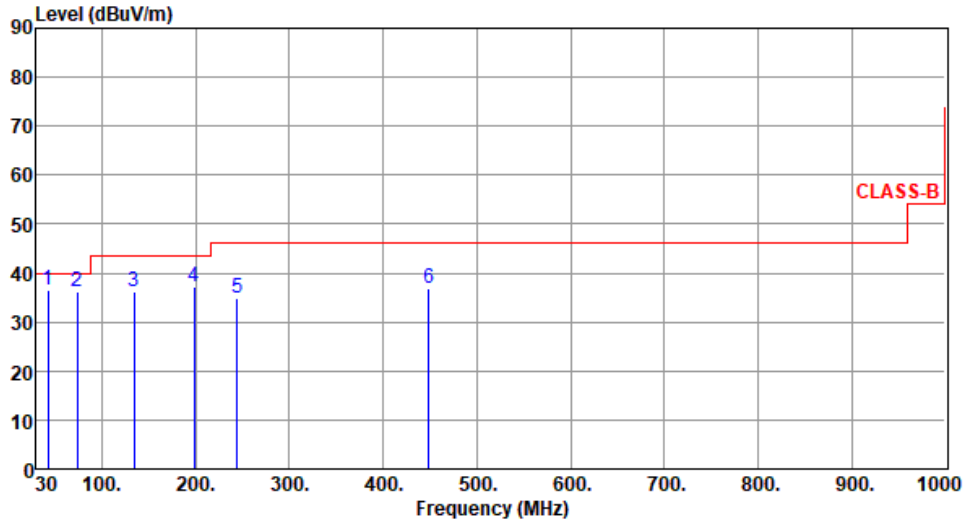


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|----------|-------------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Polarization | Vertical | | |

Test By : Paul Lin Temperature(°C): 24 Humidity(%): 66



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|--------|-------------|----------------|
| 1 | 42.61 | 36.68 | 40.00 | -3.32 | 45.02 | -8.34 | QP | 100 | 136 |
| 2 | 73.65 | 36.11 | 40.00 | -3.89 | 48.21 | -12.10 | Peak | --- | --- |
| 3 | 134.22 | 36.18 | 43.50 | -7.32 | 46.07 | -9.89 | Peak | --- | --- |
| 4 | 198.35 | 37.36 | 43.50 | -6.14 | 49.13 | -11.77 | Peak | --- | --- |
| 5 | 244.14 | 35.02 | 46.00 | -10.98 | 45.25 | -10.23 | Peak | --- | --- |
| 6 | 448.34 | 36.75 | 46.00 | -9.25 | 41.00 | -4.25 | Peak | --- | --- |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.



Emissions (Above 1GHz) for GFSK

| | | | | | | | | | |
|---|------------|-------------------------|--------|--------|------------|--------|---------|----------|------------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 | | | | | | |
| Polarization | Horizontal | | | | | | | | |
| Test By :Paul Lin Temperature(°C):26 Humidity(%):64 | | | | | | | | | |
| | | | | | | | | | |
| | Freq. | Emission level | Limit | Margin | SA reading | Factor | Remark | ANT High | Turn Table |
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | | cm | deg |
| 1 | 4000.00 | 50.80 | 54.00 | -3.20 | 53.04 | -2.24 | Average | 286 | 133 |
| 2 | 4000.00 | 55.78 | 74.00 | -18.22 | 58.02 | -2.24 | Peak | 286 | 133 |
| 3 | 4960.00 | 15.54 | 54.00 | -38.46 | | | Average | 100 | 322 |
| 4 | 4960.00 | 45.64 | 74.00 | -28.36 | 46.08 | -0.44 | Peak | 100 | 322 |
| 5 | 7440.00 | 20.92 | 54.00 | -33.08 | | | Average | 100 | 112 |
| 6 | 7440.00 | 51.02 | 74.00 | -22.98 | 45.91 | 5.11 | Peak | 100 | 112 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: When average value is calculated not measured, no SA reading and factor value are listed.

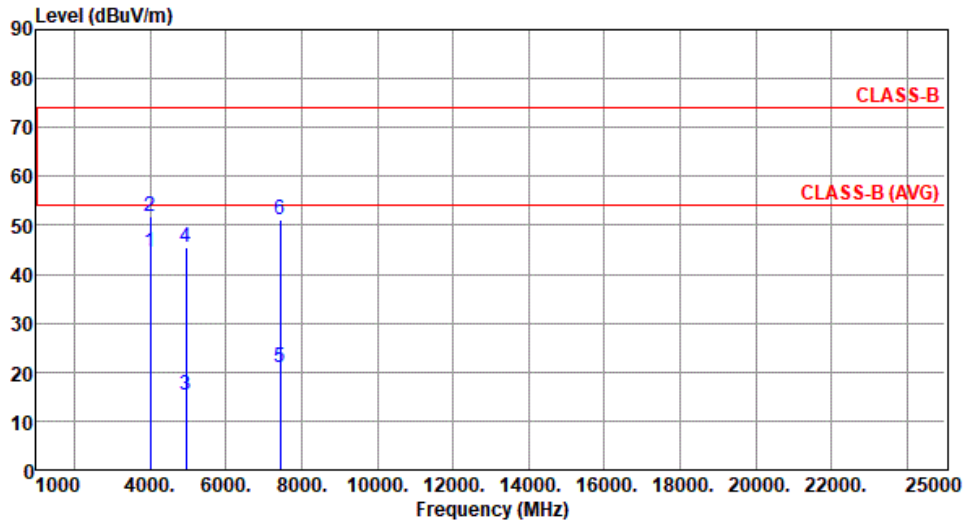


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|----------|-------------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Polarization | Vertical | | |

Test By : Paul Lin Temperature(°C): 26 Humidity(%): 64



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|---------|-------------|----------------|
| 1 | 4000.00 | 44.59 | 54.00 | -9.41 | 46.83 | -2.24 | Average | 302 | 211 |
| 2 | 4000.00 | 51.68 | 74.00 | -22.32 | 53.92 | -2.24 | Peak | 302 | 211 |
| 3 | 4960.00 | 15.25 | 54.00 | -38.75 | | | Average | 100 | 193 |
| 4 | 4960.00 | 45.35 | 74.00 | -28.65 | 45.79 | -0.44 | Peak | 100 | 193 |
| 5 | 7440.00 | 21.08 | 54.00 | -32.92 | | | Average | 100 | 121 |
| 6 | 7440.00 | 51.18 | 74.00 | -22.82 | 46.07 | 5.11 | Peak | 100 | 121 |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

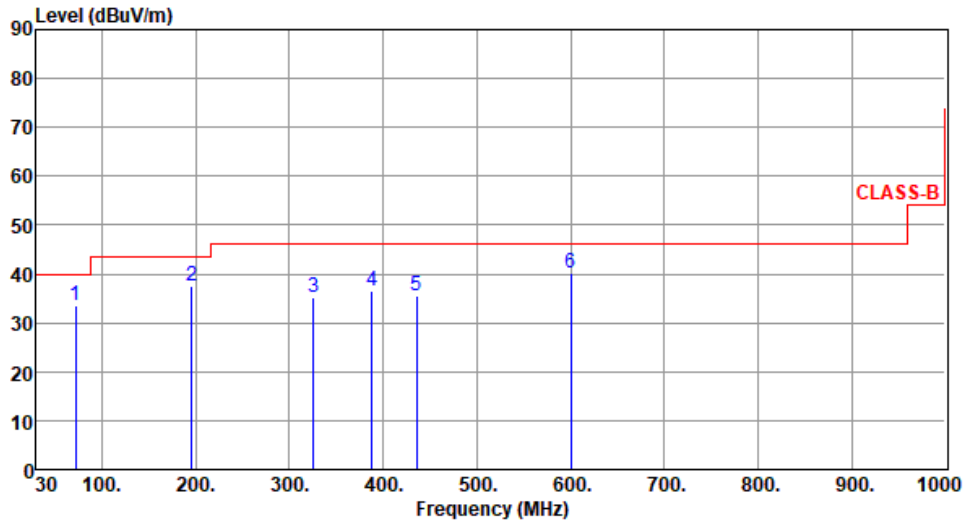
Note 3: When average value is calculated not measured, no SA reading and factor value are listed.



ST M.2, SDIO Module
Emissions (Below 1GHz)

| | | | |
|---------------------|------------|-------------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Polarization | Horizontal | | |

Test By :Paul Lin Temperature(°C):24 Humidity(%):66



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|--------|-------------|----------------|
| 1 | 72.17 | 33.46 | 40.00 | -6.54 | 45.05 | -11.59 | Peak | --- | --- |
| 2 | 196.18 | 37.52 | 43.50 | -5.98 | 49.24 | -11.72 | Peak | --- | --- |
| 3 | 325.41 | 35.19 | 46.00 | -10.81 | 42.69 | -7.50 | Peak | --- | --- |
| 4 | 388.11 | 36.57 | 46.00 | -9.43 | 42.40 | -5.83 | Peak | --- | --- |
| 5 | 436.15 | 35.49 | 46.00 | -10.51 | 40.03 | -4.54 | Peak | --- | --- |
| 6 | 600.36 | 40.28 | 46.00 | -5.72 | 41.20 | -0.92 | Peak | --- | --- |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

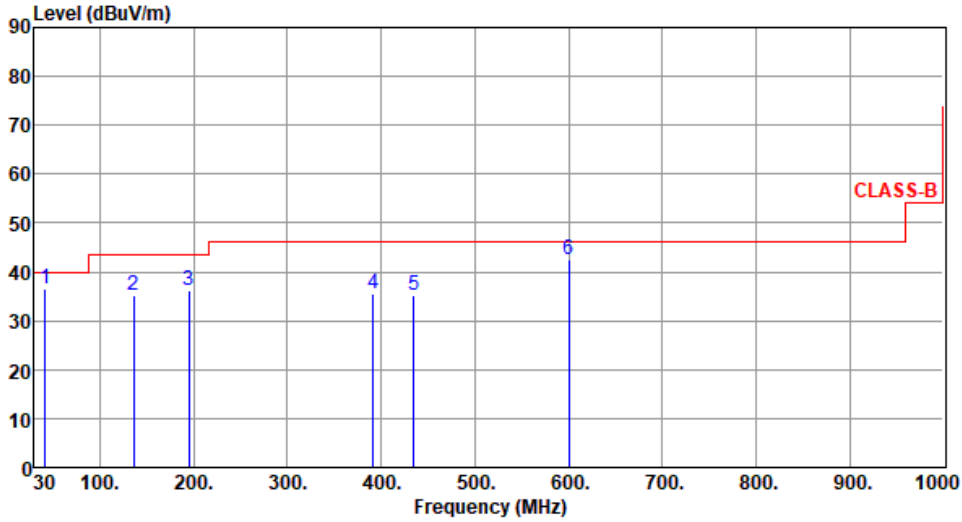


Unwanted Radiated Emissions into Restricted Frequency Bands

Appendix A.5

| | | | |
|---------------------|----------|-------------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Polarization | Vertical | | |

Test By :Paul Lin Temperature(°C):24 Humidity(%):66



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB/m | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-------------|--------|-------------|----------------|
| 1 | 41.92 | 36.54 | 40.00 | -3.46 | 45.15 | -8.61 | QP | 100 | 175 |
| 2 | 135.68 | 35.18 | 43.50 | -8.32 | 44.93 | -9.75 | Peak | --- | --- |
| 3 | 195.22 | 36.08 | 43.50 | -7.42 | 47.76 | -11.68 | Peak | --- | --- |
| 4 | 391.34 | 35.62 | 46.00 | -10.38 | 41.37 | -5.75 | Peak | --- | --- |
| 5 | 435.28 | 35.29 | 46.00 | -10.71 | 39.84 | -4.55 | Peak | --- | --- |
| 6 | 600.36 | 42.62 | 46.00 | -3.38 | 43.54 | -0.92 | Peak | --- | --- |

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

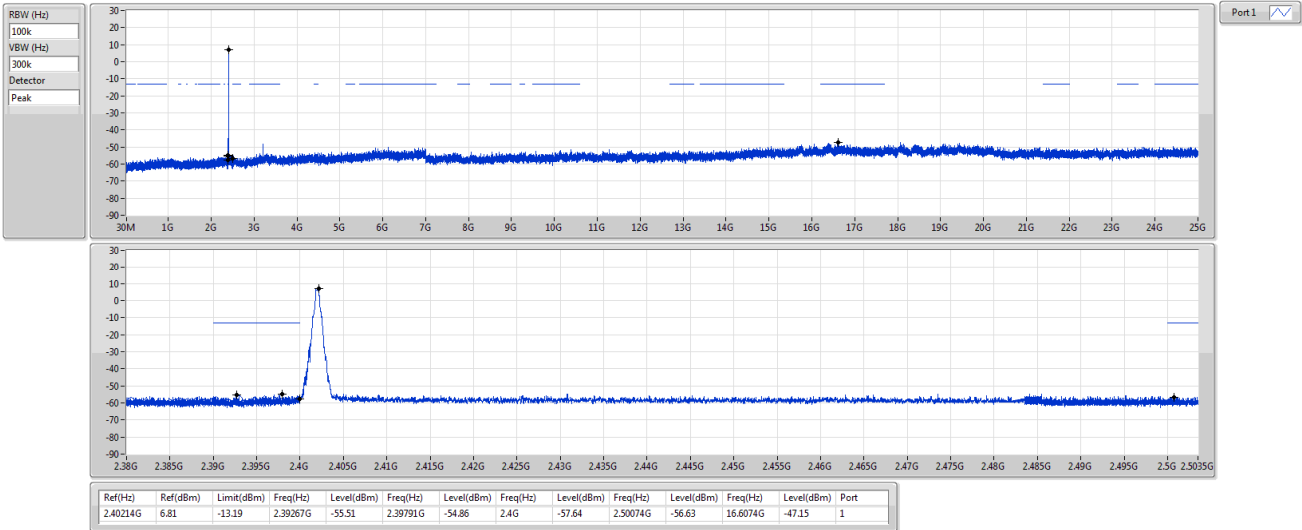
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.



2.4-2.4835GHz BT-BR(1Mbps)

CSEndB-FS

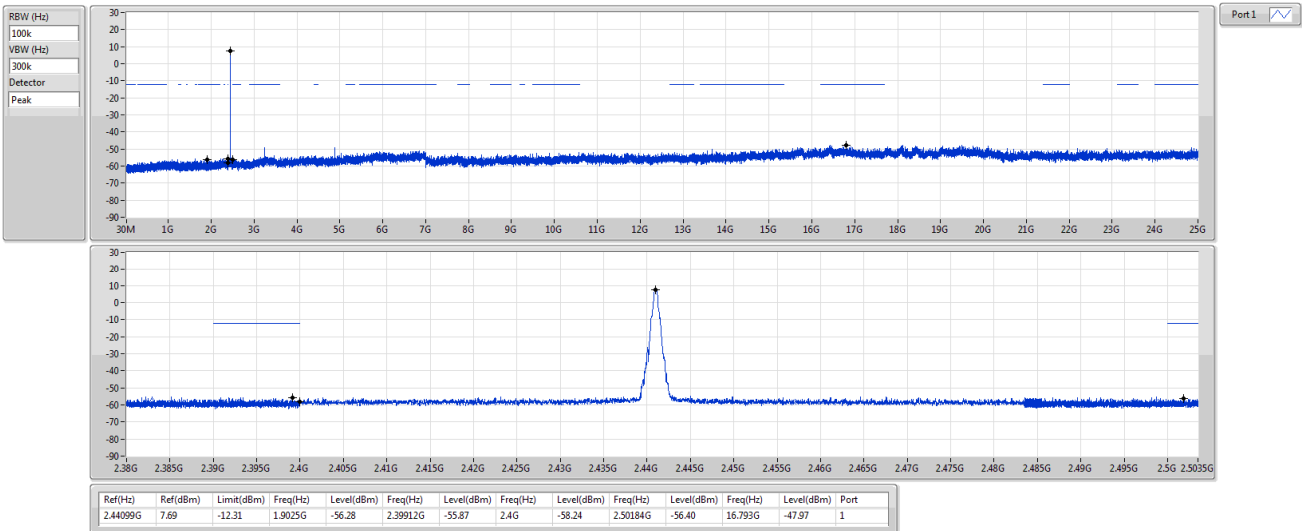
2402MHz



2.4-2.4835GHz BT-BR(1Mbps)

CSEndB-FS

2441MHz

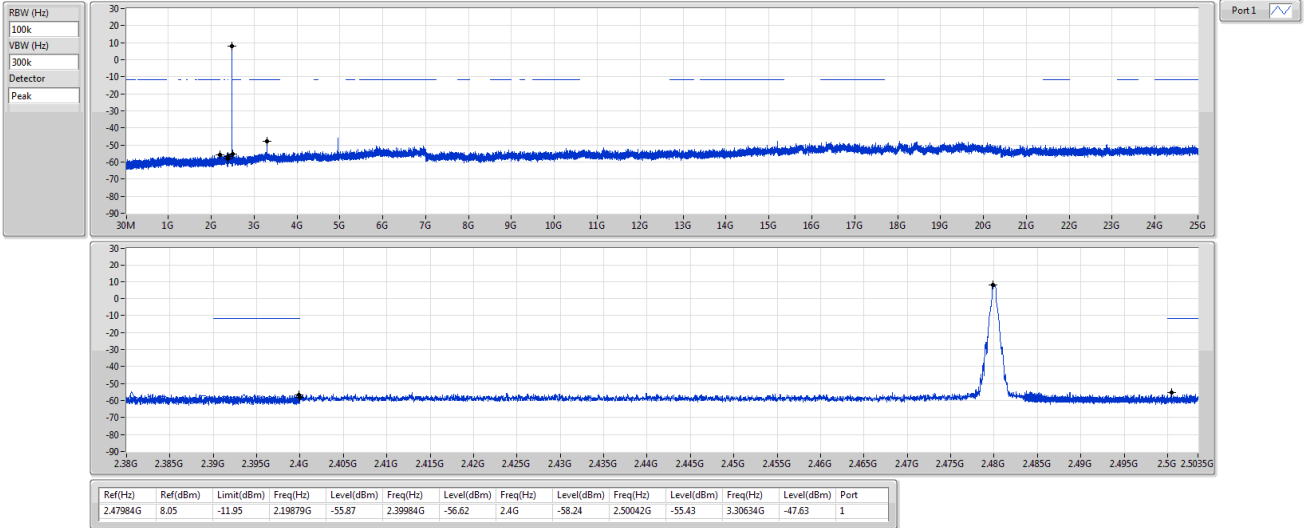




2.4-2.4835GHz_BT-BR(1Mbps)

CSEndB-FS

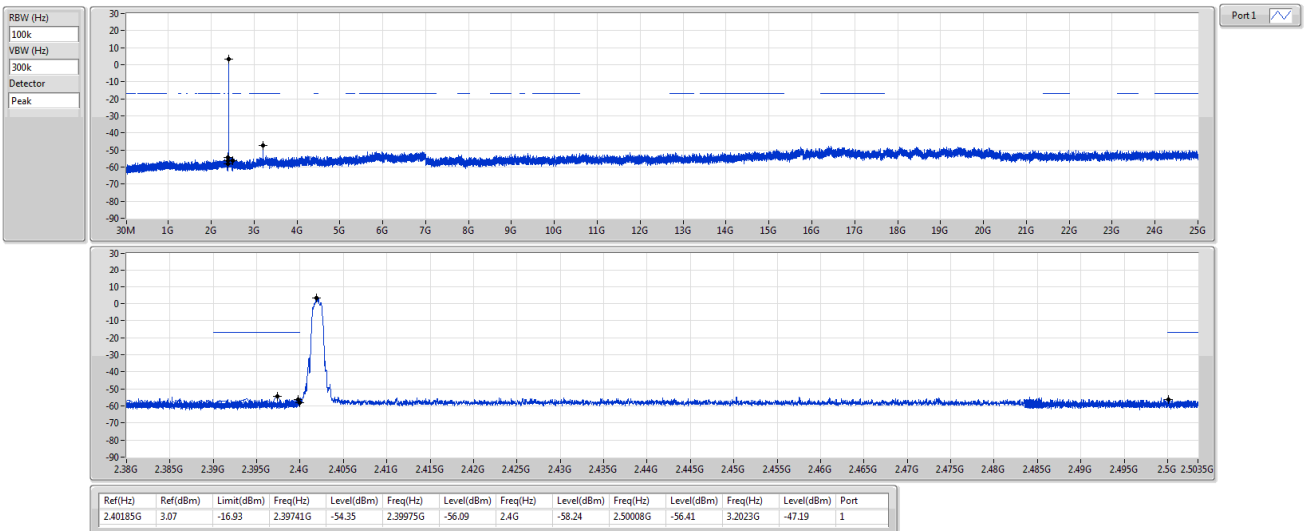
2480MHz



2.4-2.4835GHz_BT-EDR(2Mbps)

CSEndB-FS

2402MHz

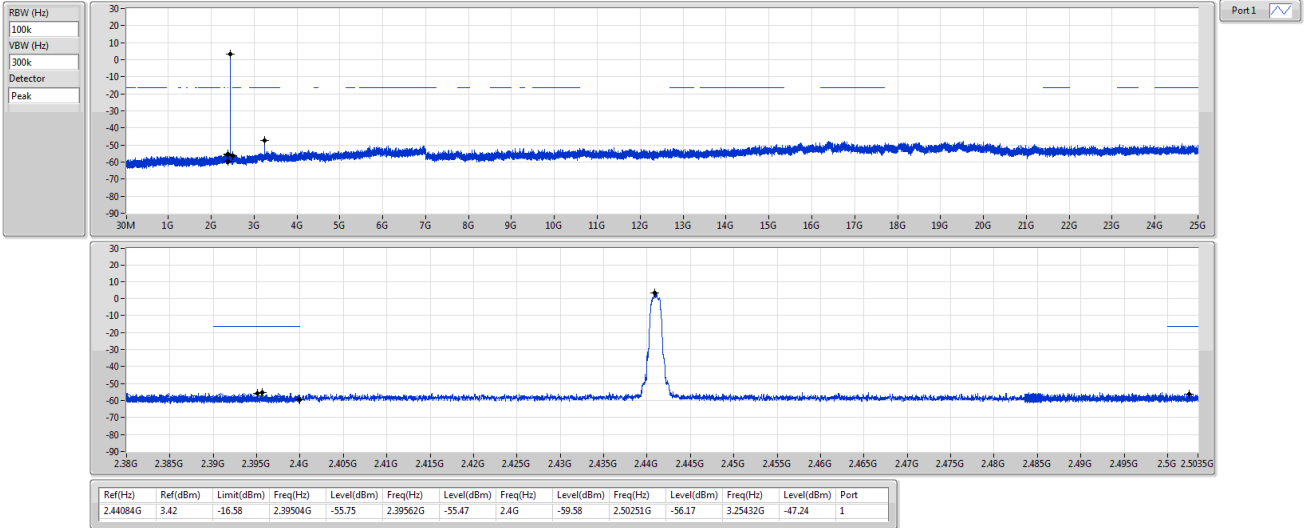




2.4-2.4835GHz_BT-EDR(2Mbps)

CSEndB-FS

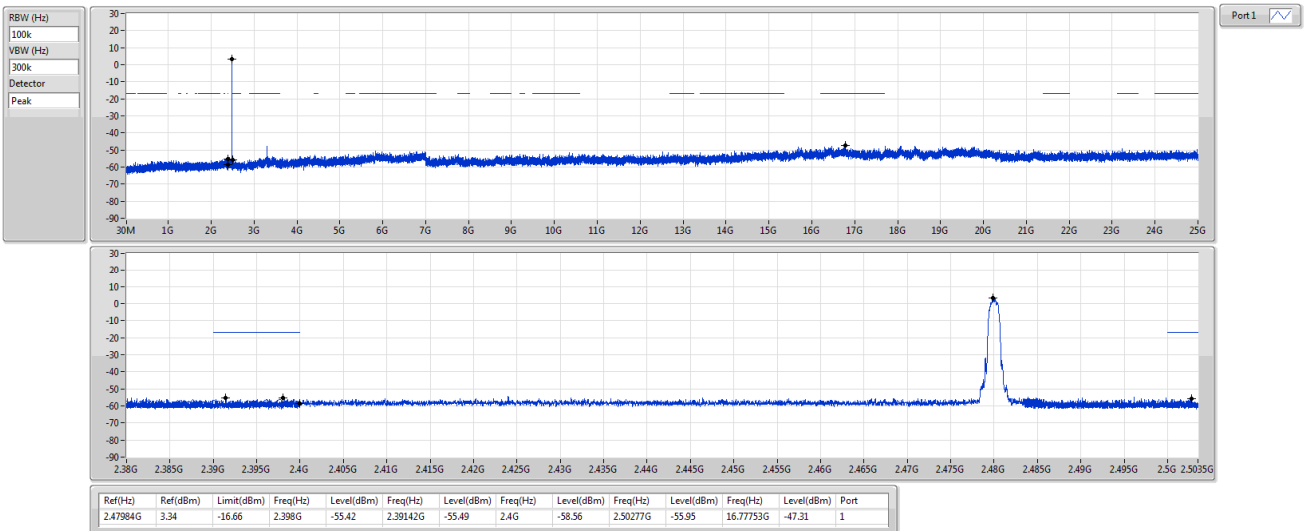
2441MHz



2.4-2.4835GHz_BT-EDR(2Mbps)

CSEndB-FS

2480MHz

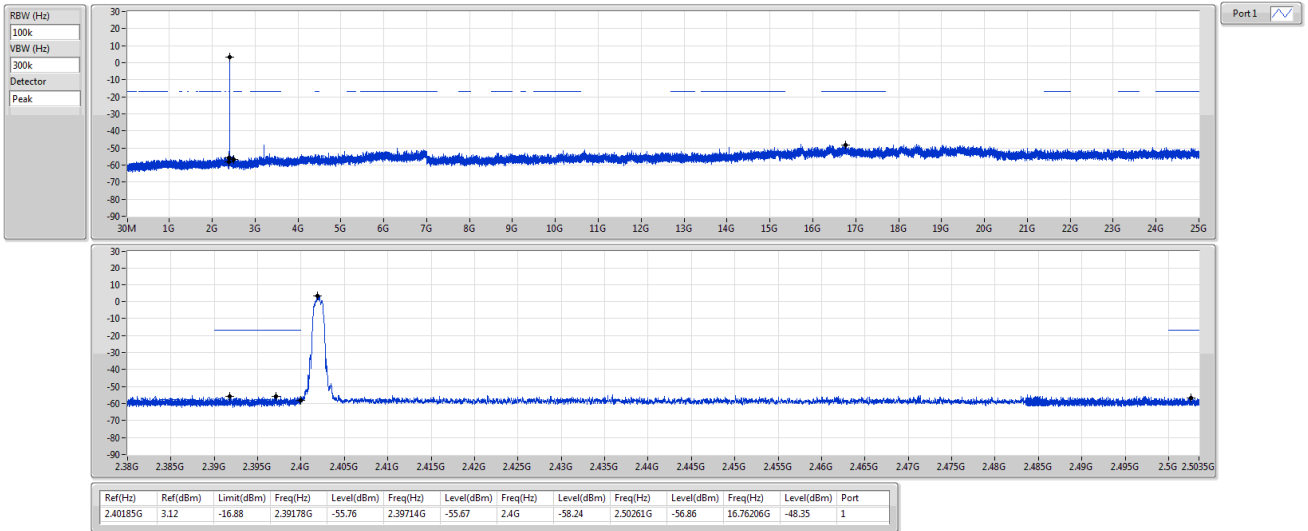




2.4-2.4835GHz_BT-EDR(3Mbps)

CSEndB-FS

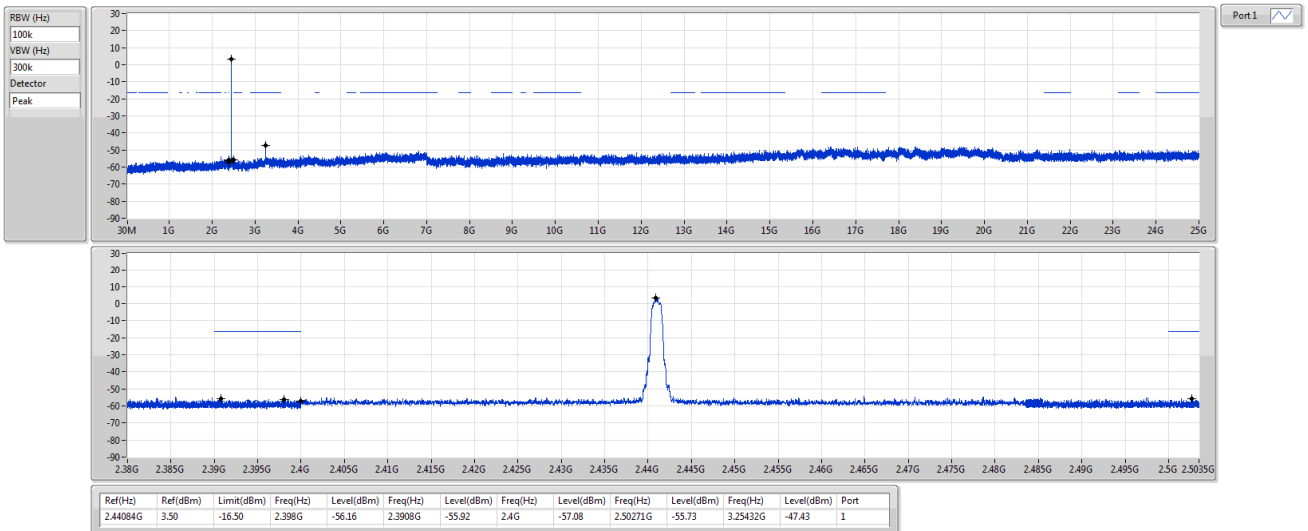
2402MHz



2.4-2.4835GHz_BT-EDR(3Mbps)

CSEndB-FS

2441MHz

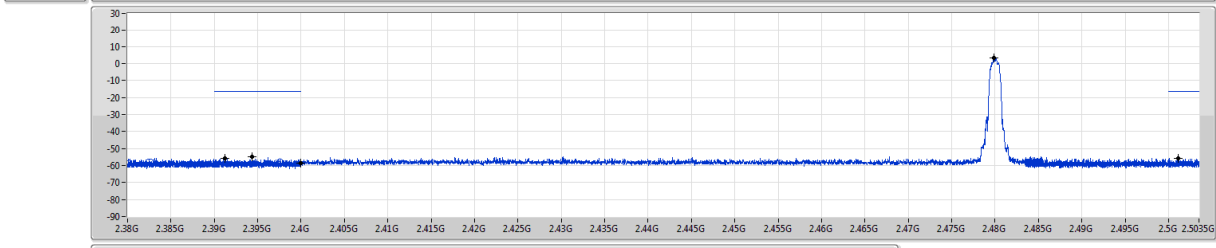
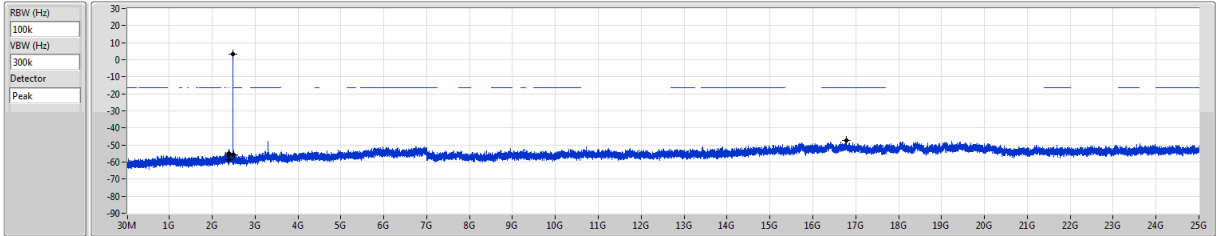




2.4-2.4835GHz_BT-EDR(3Mbps)

CSEndB-FS

2480MHz

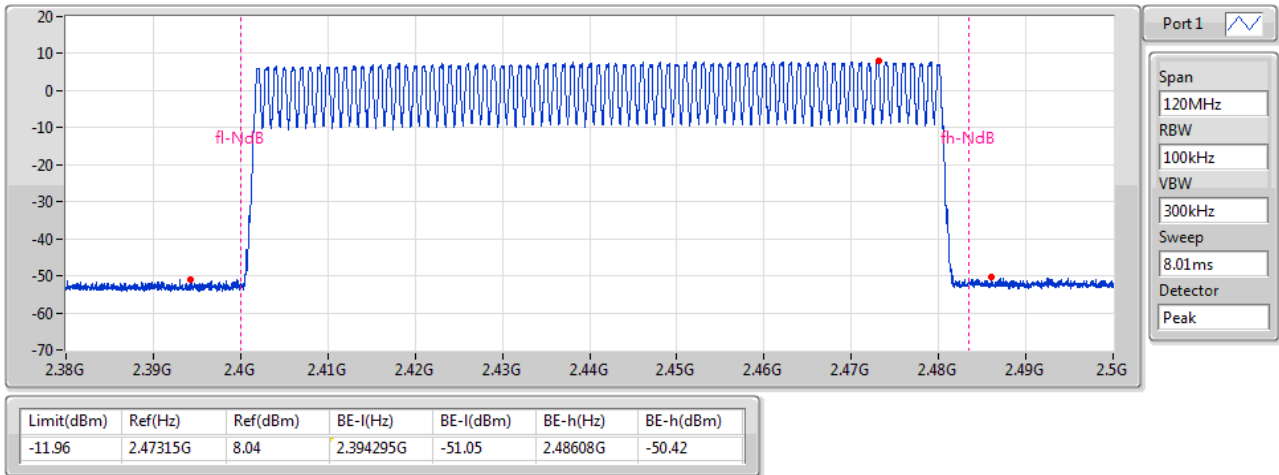


| Ref(Hz) | Ref(dBm) | Limit(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Freq(Hz) | Level(dBm) | Port |
|----------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|-----------|------------|------|
| 2.47984G | 3.47 | -16.53 | 2.39119G | -55.83 | 2.39438G | -54.88 | 2.4G | -58.56 | 2.50111G | -55.74 | 16.77612G | -47.54 | 1 |

2.4-2.4835GHz_BT-BR(1Mbps)

2402MHz

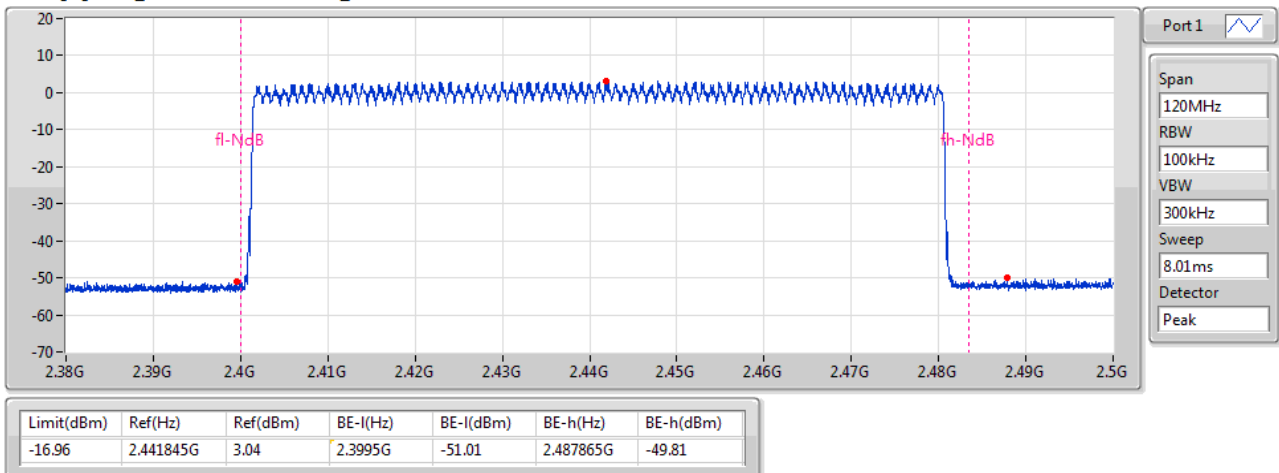
Hopping Ch Bandedge (Non-restricted Band)



2.4-2.4835GHz_BT-EDR(2Mbps)

2402MHz

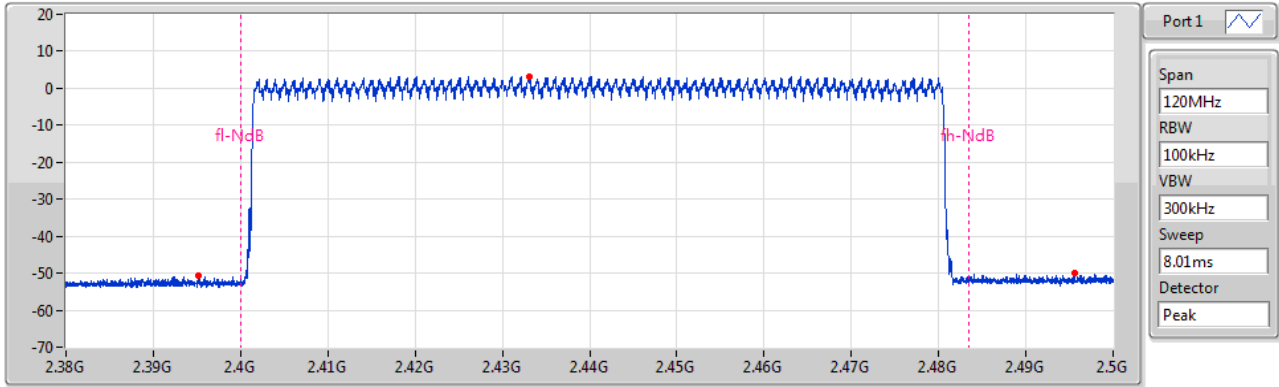
Hopping Ch Bandedge (Non-restricted Band)



2.4-2.4835GHz_BT-EDR(3Mbps)

2402MHz

Hopping Ch Bandedge (Non-restricted Band)



| Limit(dBm) | Ref(Hz) | Ref(dBm) | BE-l(Hz) | BE-l(dBm) | BE-h(Hz) | BE-h(dBm) |
|------------|----------|----------|----------|-----------|-----------|-----------|
| -16.77 | 2.43316G | 3.23 | 2.39524G | -50.6 | 2.495545G | -49.93 |



Summary

| Mode | Total Power (dBm) | Power (W) |
|---------------|-------------------|-----------|
| 2.4-2.4835GHz | - | - |
| BT-BR(1Mbps) | 8.35 | 0.00684 |
| BT-EDR(2Mbps) | 6.22 | 0.00419 |
| BT-EDR(3Mbps) | 6.72 | 0.00470 |

Result

| Mode | Result | Antenna Gain (dBi) | Total Power (dBm) | Power Limit (dBm) | EIRP (dBm) | EIRP Limit (dBm) |
|---------------|--------|--------------------|-------------------|-------------------|------------|------------------|
| BT-BR(1Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 7.59 | 21.00 | 9.99 | 36.00 |
| 2441MHz | Pass | 2.40 | 8.06 | 21.00 | 10.46 | 36.00 |
| 2480MHz | Pass | 2.40 | 8.35 | 21.00 | 10.75 | 36.00 |
| BT-EDR(2Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 5.58 | 21.00 | 7.98 | 36.00 |
| 2441MHz | Pass | 2.40 | 6.17 | 21.00 | 8.57 | 36.00 |
| 2480MHz | Pass | 2.40 | 6.22 | 21.00 | 8.62 | 36.00 |
| BT-EDR(3Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 6.12 | 21.00 | 8.52 | 36.00 |
| 2441MHz | Pass | 2.40 | 6.65 | 21.00 | 9.05 | 36.00 |
| 2480MHz | Pass | 2.40 | 6.72 | 21.00 | 9.12 | 36.00 |

DG = Directional Gain; Port X = Port X output power

**Summary**

| Mode | Total Power (dBm) | Power (W) |
|---------------|-------------------|-----------|
| 2.4-2.4835GHz | - | - |
| BT-BR(1Mbps) | 8.20 | 0.00661 |
| BT-EDR(2Mbps) | 3.67 | 0.00233 |
| BT-EDR(3Mbps) | 3.68 | 0.00233 |

Result

| Mode | Result | Antenna Gain (dBi) | Total Power (dBm) | Power Limit (dBm) | EIRP (dBm) | EIRP Limit (dBm) |
|---------------|--------|--------------------|-------------------|-------------------|------------|------------------|
| BT-BR(1Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 7.32 | - | 9.72 | - |
| 2441MHz | Pass | 2.40 | 7.81 | - | 10.21 | - |
| 2480MHz | Pass | 2.40 | 8.20 | - | 10.60 | - |
| BT-EDR(2Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 3.06 | - | 5.46 | - |
| 2441MHz | Pass | 2.40 | 3.64 | - | 6.04 | - |
| 2480MHz | Pass | 2.40 | 3.67 | - | 6.07 | - |
| BT-EDR(3Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 3.08 | - | 5.48 | - |
| 2441MHz | Pass | 2.40 | 3.65 | - | 6.05 | - |
| 2480MHz | Pass | 2.40 | 3.68 | - | 6.08 | - |

Note: Average power is for reference only



Summary

| Mode | Total Power (dBm) | Power (W) |
|---------------|-------------------|-----------|
| 2.4-2.4835GHz | - | - |
| BT-BR(1Mbps) | 7.99 | 0.00630 |
| BT-EDR(2Mbps) | 6.31 | 0.00428 |
| BT-EDR(3Mbps) | 6.71 | 0.00469 |

Result

| Mode | Result | Antenna Gain (dBi) | Total Power (dBm) | Power Limit (dBm) | EIRP (dBm) | EIRP Limit (dBm) |
|---------------|--------|--------------------|-------------------|-------------------|------------|------------------|
| BT-BR(1Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 7.35 | 21.00 | 9.75 | 36.00 |
| 2441MHz | Pass | 2.40 | 7.95 | 21.00 | 10.35 | 36.00 |
| 2480MHz | Pass | 2.40 | 7.99 | 21.00 | 10.39 | 36.00 |
| BT-EDR(2Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 5.41 | 21.00 | 7.81 | 36.00 |
| 2441MHz | Pass | 2.40 | 6.31 | 21.00 | 8.71 | 36.00 |
| 2480MHz | Pass | 2.40 | 6.02 | 21.00 | 8.42 | 36.00 |
| BT-EDR(3Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 5.73 | 21.00 | 8.13 | 36.00 |
| 2441MHz | Pass | 2.40 | 6.71 | 21.00 | 9.11 | 36.00 |
| 2480MHz | Pass | 2.40 | 6.44 | 21.00 | 8.84 | 36.00 |

DG = Directional Gain; Port X = Port X output power



Summary

| Mode | Total Power (dBm) | Power (W) |
|---------------|-------------------|-----------|
| 2.4-2.4835GHz | - | - |
| BT-BR(1Mbps) | 7.72 | 0.00592 |
| BT-EDR(2Mbps) | 3.65 | 0.00232 |
| BT-EDR(3Mbps) | 3.66 | 0.00232 |

Result

| Mode | Result | Antenna Gain (dBi) | Total Power (dBm) | Power Limit (dBm) | EIRP (dBm) | EIRP Limit (dBm) |
|---------------|--------|--------------------|-------------------|-------------------|------------|------------------|
| BT-BR(1Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 7.11 | - | 9.51 | - |
| 2441MHz | Pass | 2.40 | 7.72 | - | 10.12 | - |
| 2480MHz | Pass | 2.40 | 7.71 | - | 10.11 | - |
| BT-EDR(2Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 2.76 | - | 5.16 | - |
| 2441MHz | Pass | 2.40 | 3.65 | - | 6.05 | - |
| 2480MHz | Pass | 2.40 | 3.39 | - | 5.79 | - |
| BT-EDR(3Mbps) | - | - | - | - | - | - |
| 2402MHz | Pass | 2.40 | 2.76 | - | 5.16 | - |
| 2441MHz | Pass | 2.40 | 3.66 | - | 6.06 | - |
| 2480MHz | Pass | 2.40 | 3.41 | - | 5.81 | - |

Note: Average power is for reference only



Summary

| Mode | Max-Hop No |
|---------------|------------|
| 2.4-2.4835GHz | - |
| BT-BR(1Mbps) | 79 |
| BT-EDR(2Mbps) | 79 |
| BT-EDR(3Mbps) | 79 |

Result

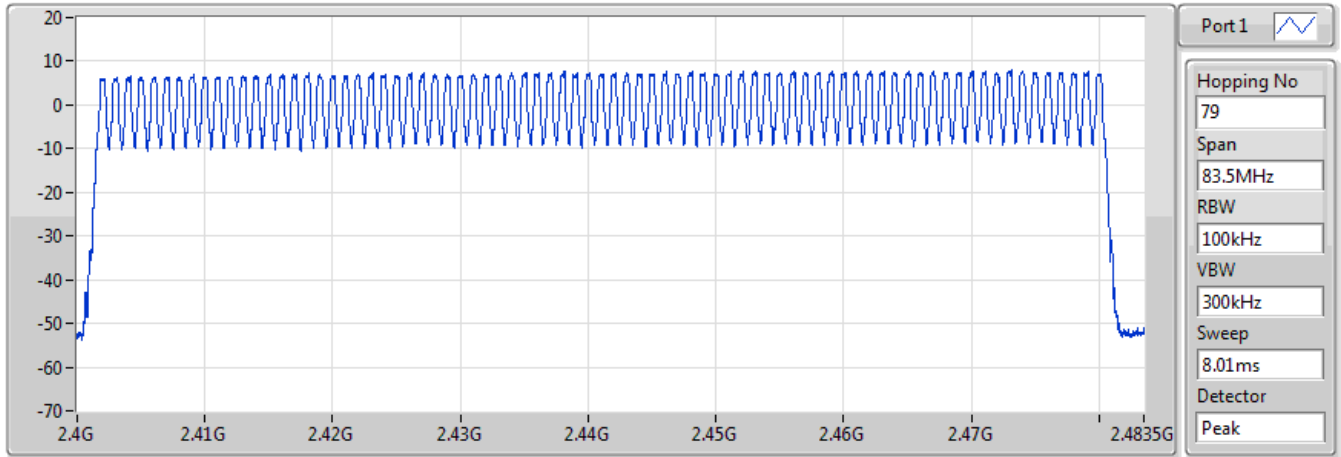
| Mode | Result | Hopping No | Limit |
|---------------|--------|------------|-------|
| BT-BR(1Mbps) | - | - | - |
| 2402MHz | Pass | 79 | 15 |
| BT-EDR(2Mbps) | - | - | - |
| 2402MHz | Pass | 79 | 15 |
| BT-EDR(3Mbps) | - | - | - |
| 2402MHz | Pass | 79 | 15 |



2.4-2.4835GHz_BT-BR(1Mbps)

Hopping-FS

2402MHz

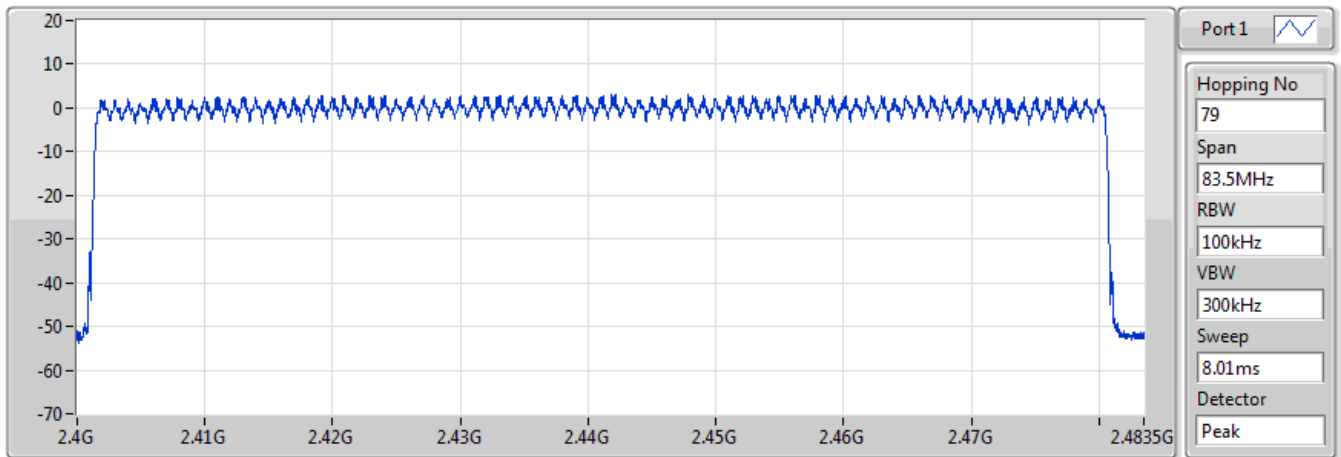


| Hopping No | Limit |
|------------|-------|
| 79 | 15 |

2.4-2.4835GHz_BT-EDR(2Mbps)

Hopping-FS

2402MHz



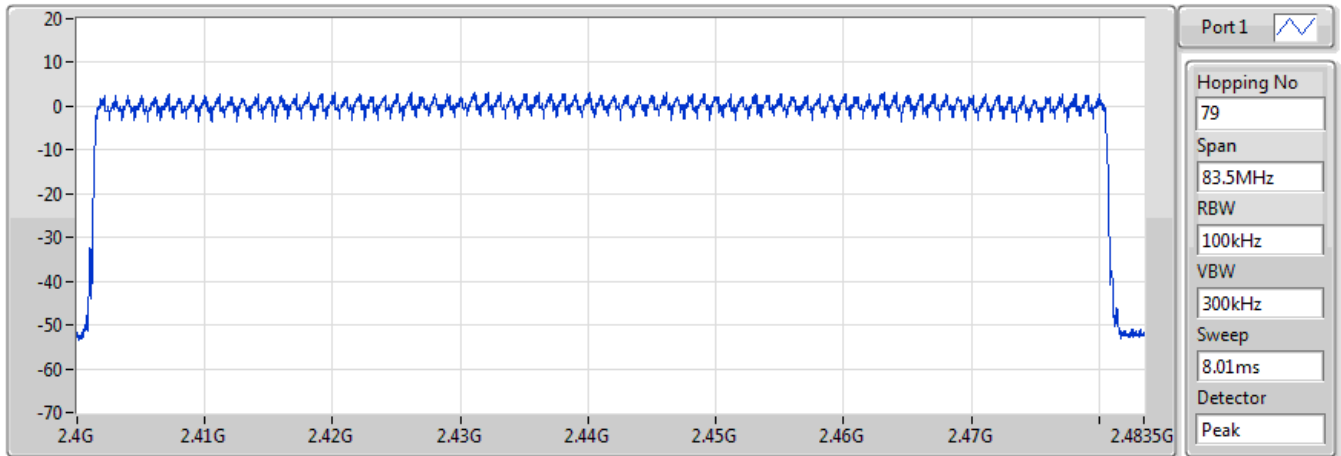
| Hopping No | Limit |
|------------|-------|
| 79 | 15 |



2.4-2.4835GHz_BT-EDR(3Mbps)

Hopping-FS

2402MHz



| Hopping No | Limit |
|------------|-------|
| 79 | 15 |



Summary

| Mode | Max-N dB (Hz) | Max-OBW (Hz) | ITU-Code | Min-N dB (Hz) | Min-OBW (Hz) |
|---------------|---------------|--------------|----------|---------------|--------------|
| 2.4-2.4835GHz | - | - | - | - | - |
| BT-BR(1Mbps) | 1.009M | 870.815k | 871KF1D | 979k | 867.066k |
| BT-EDR(2Mbps) | 1.339M | 1.193M | 1M19G1D | 1.337M | 1.192M |
| BT-EDR(3Mbps) | 1.334M | 1.203M | 1M20G1D | 1.331M | 1.201M |

Max-N dB = Maximum 20dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 20dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

Result

| Mode | Result | Limit (Hz) | Port 1-N dB (Hz) | Port 1-OBW (Hz) |
|---------------|--------|------------|------------------|-----------------|
| BT-BR(1Mbps) | - | - | - | - |
| 2402MHz | Pass | Inf | 1.009M | 867.066k |
| 2441MHz | Pass | Inf | 979k | 868.316k |
| 2480MHz | Pass | Inf | 1.004M | 870.815k |
| BT-EDR(2Mbps) | - | - | - | - |
| 2402MHz | Pass | Inf | 1.337M | 1.192M |
| 2441MHz | Pass | Inf | 1.339M | 1.193M |
| 2480MHz | Pass | Inf | 1.337M | 1.192M |
| BT-EDR(3Mbps) | - | - | - | - |
| 2402MHz | Pass | Inf | 1.331M | 1.201M |
| 2441MHz | Pass | Inf | 1.334M | 1.202M |
| 2480MHz | Pass | Inf | 1.331M | 1.203M |

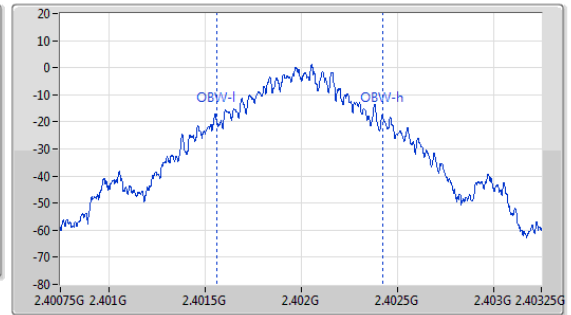
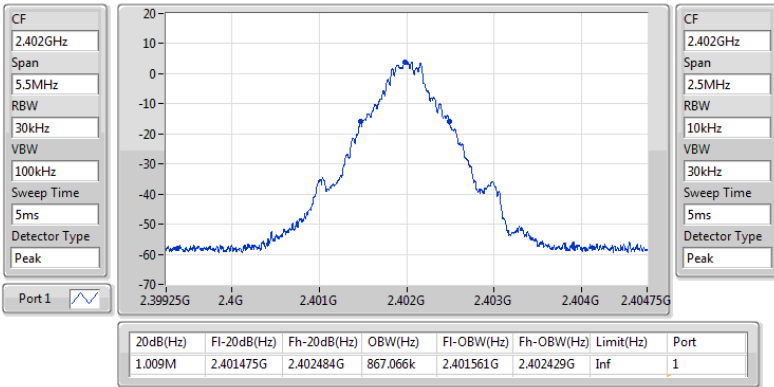
Port X-N dB = Port X 20dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth



2.4-2.4835GHz_BT-BR(1Mbps)

EBW-FS

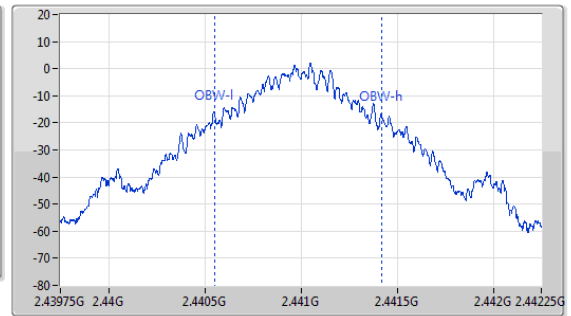
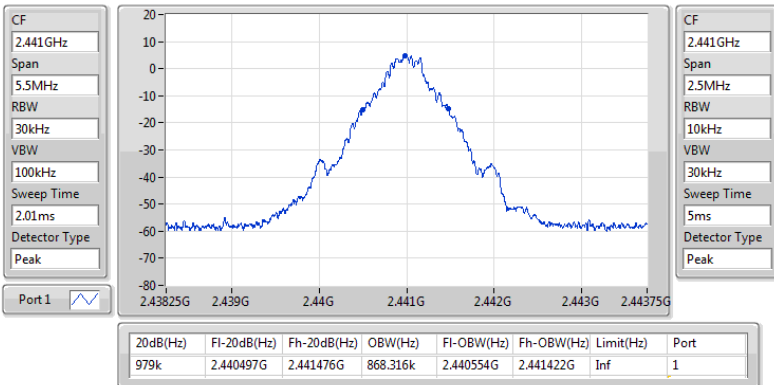
2402MHz



2.4-2.4835GHz_BT-BR(1Mbps)

EBW-FS

2441MHz



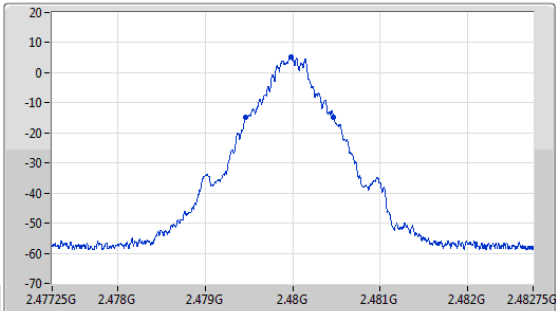


2.4-2.4835GHz_BT-BR(1Mbps)

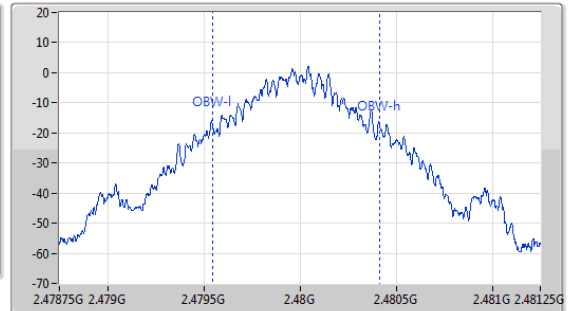
EBW-FS

2480MHz

CF: 2.48GHz
 Span: 5.5MHz
 RBW: 30kHz
 VBW: 100kHz
 Sweep Time: 2.01ms
 Detector Type: Peak



CF: 2.48GHz
 Span: 2.5MHz
 RBW: 10kHz
 VBW: 30kHz
 Sweep Time: 5ms
 Detector Type: Peak



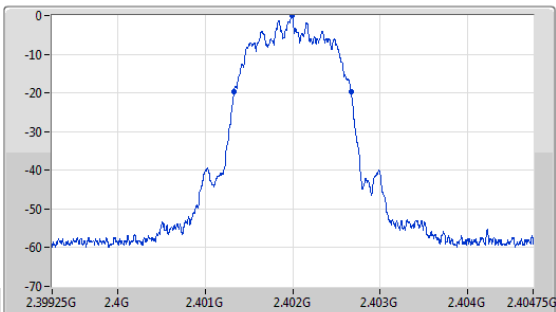
| 20dB(Hz) | FI-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | FI-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|----------|-------------|-------------|----------|------------|------------|-----------|------|
| 1.004M | 2.479467G | 2.48047G | 870.815k | 2.479545G | 2.480416G | Inf | 1 |

2.4-2.4835GHz_BT-EDR(2Mbps)

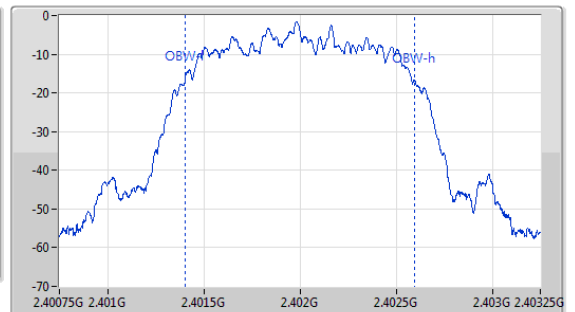
EBW-FS

2402MHz

CF: 2.402GHz
 Span: 5.5MHz
 RBW: 30kHz
 VBW: 100kHz
 Sweep Time: 2.01ms
 Detector Type: Peak



CF: 2.402GHz
 Span: 2.5MHz
 RBW: 20kHz
 VBW: 100kHz
 Sweep Time: 5ms
 Detector Type: Peak



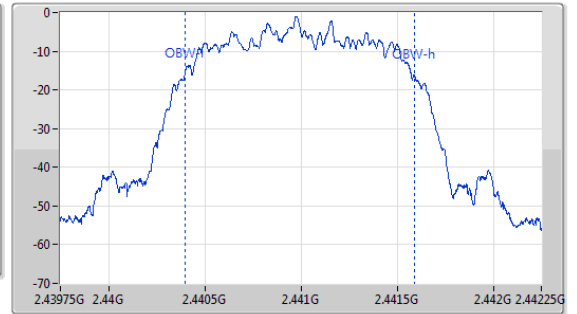
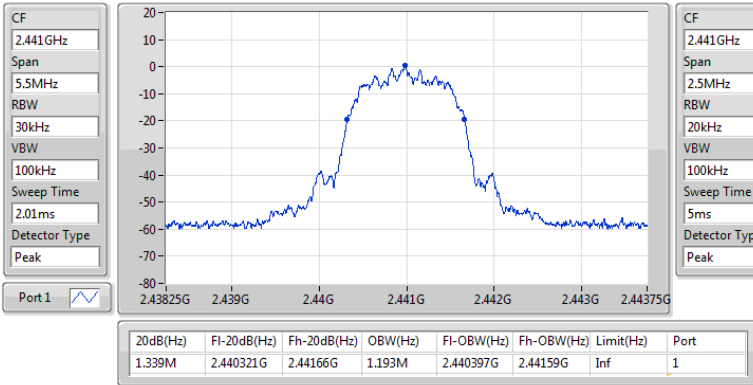
| 20dB(Hz) | FI-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | FI-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|----------|-------------|-------------|---------|------------|------------|-----------|------|
| 1.337M | 2.401329G | 2.402666G | 1.192M | 2.401404G | 2.402596G | Inf | 1 |



2.4-2.4835GHz_BT-EDR(2Mbps)

EBW-FS

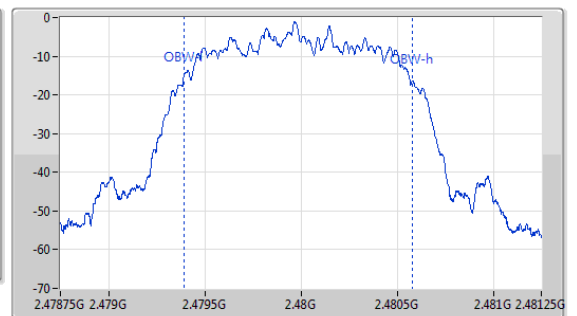
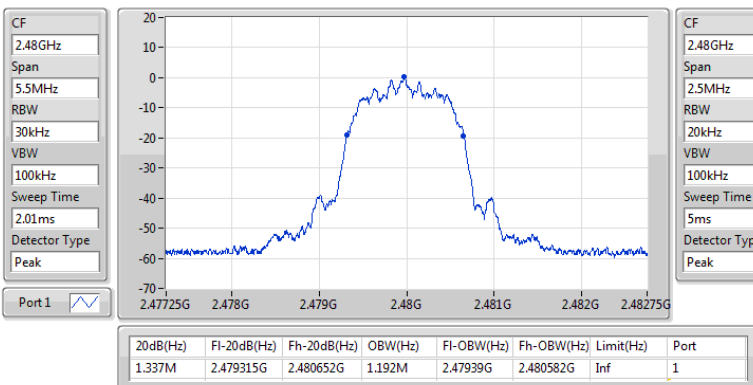
2441MHz



2.4-2.4835GHz_BT-EDR(2Mbps)

EBW-FS

2480MHz



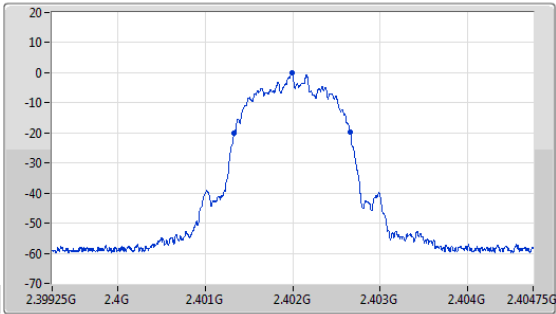


2.4-2.4835GHz_BT-EDR(3Mbps)

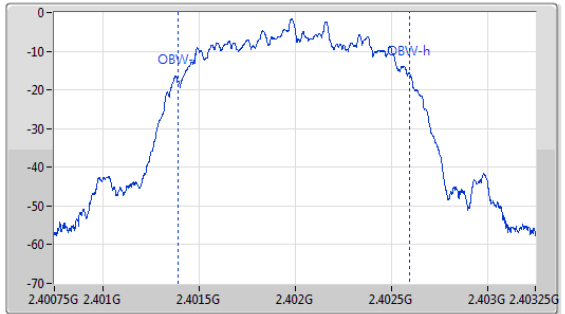
EBW-FS

2402MHz

CF: 2.402GHz
 Span: 5.5MHz
 RBW: 30kHz
 VBW: 100kHz
 Sweep Time: 2.01ms
 Detector Type: Peak



CF: 2.402GHz
 Span: 2.5MHz
 RBW: 20kHz
 VBW: 100kHz
 Sweep Time: 5ms
 Detector Type: Peak



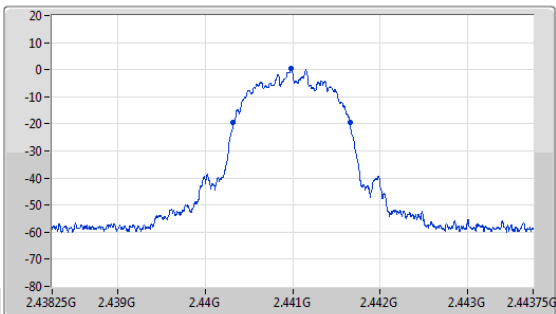
| 20dB(Hz) | Fl-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | Fl-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|----------|-------------|-------------|---------|------------|------------|-----------|------|
| 1.331M | 2.401329G | 2.40266G | 1.201M | 2.401393G | 2.402593G | Inf | 1 |

2.4-2.4835GHz_BT-EDR(3Mbps)

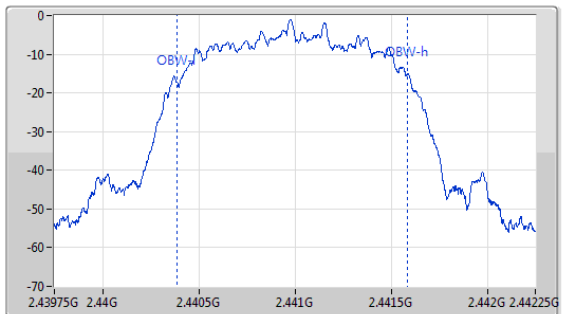
EBW-FS

2441MHz

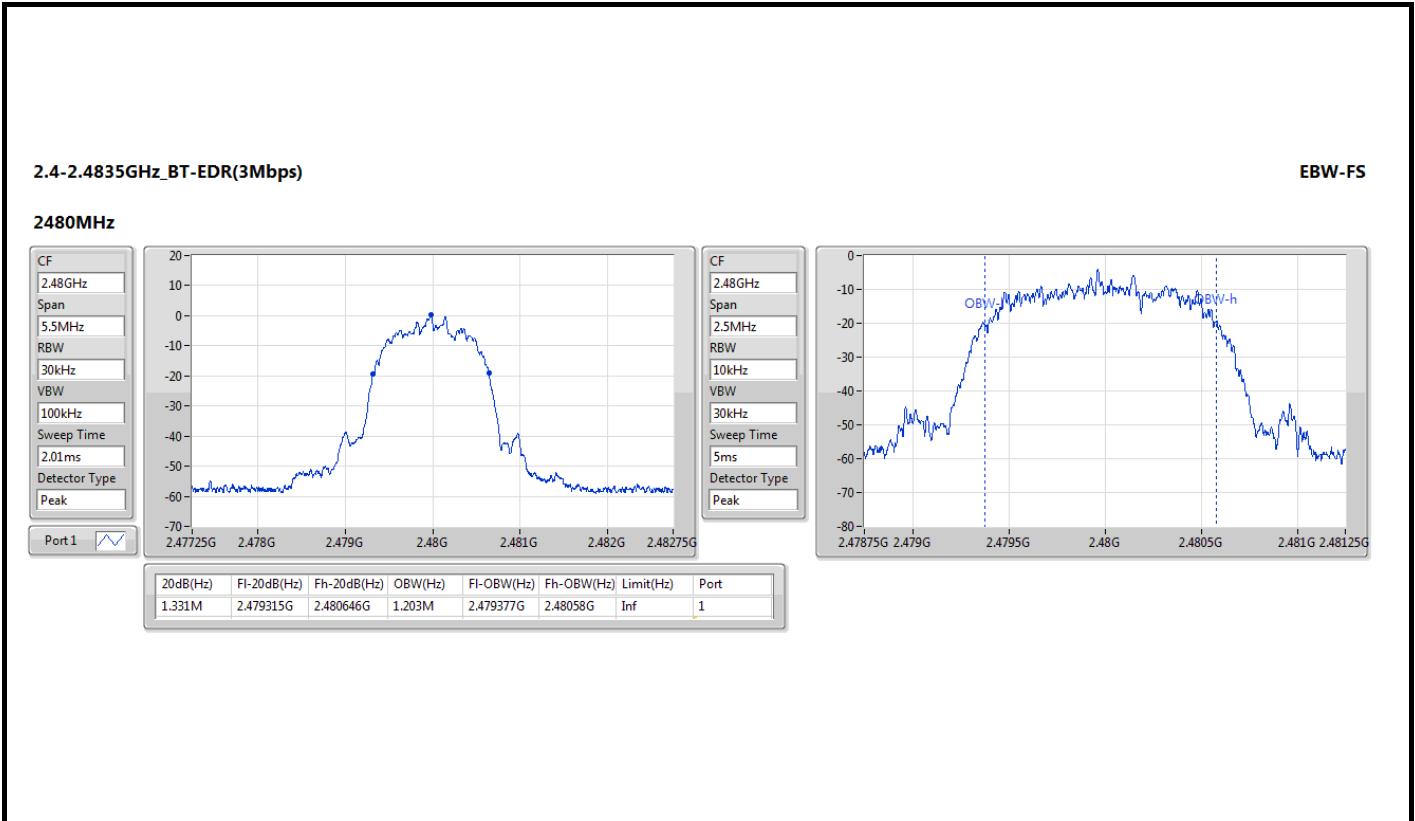
CF: 2.441GHz
 Span: 5.5MHz
 RBW: 30kHz
 VBW: 100kHz
 Sweep Time: 2.01ms
 Detector Type: Peak



CF: 2.441GHz
 Span: 2.5MHz
 RBW: 20kHz
 VBW: 100kHz
 Sweep Time: 5ms
 Detector Type: Peak



| 20dB(Hz) | Fl-20dB(Hz) | Fh-20dB(Hz) | OBW(Hz) | Fl-OBW(Hz) | Fh-OBW(Hz) | Limit(Hz) | Port |
|----------|-------------|-------------|---------|------------|------------|-----------|------|
| 1.334M | 2.440321G | 2.441655G | 1.202M | 2.440385G | 2.441587G | Inf | 1 |





Summary

| Mode | Max-Space (Hz) | Min-Space (Hz) |
|---------------|----------------|----------------|
| 2.4-2.4835GHz | - | - |
| BT-BR(1Mbps) | 1.002M | 1.0005M |
| BT-EDR(2Mbps) | 1.002M | 1.0005M |
| BT-EDR(3Mbps) | 1.0005M | 1.0005M |

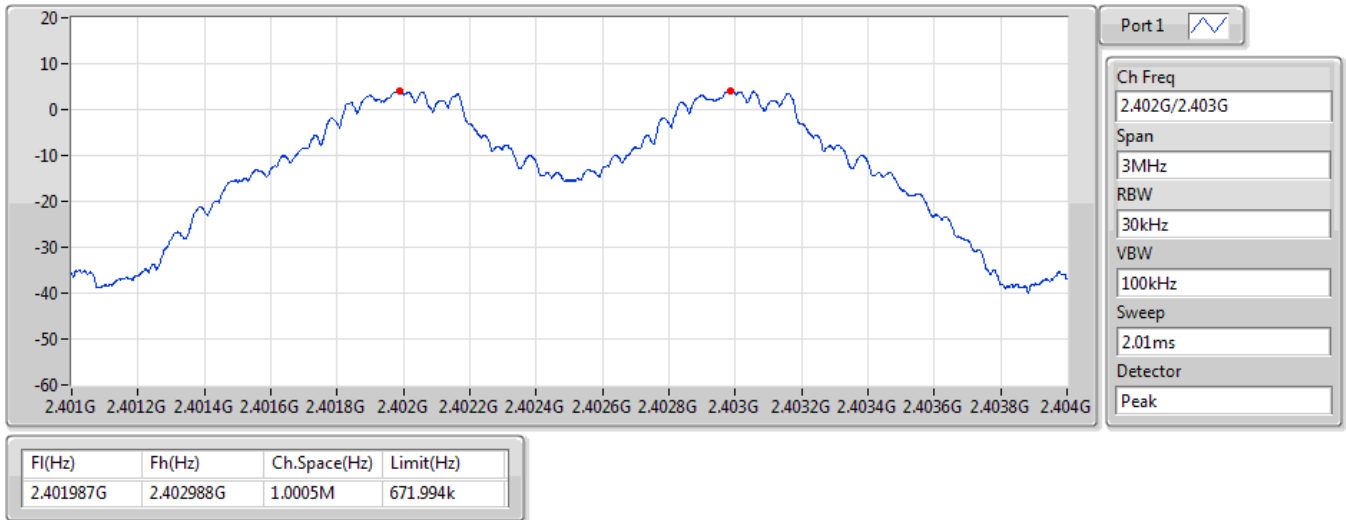
Result

| Mode | Result | Fl (Hz) | Fh (Hz) | Ch.Space (Hz) | Limit (Hz) |
|---------------|--------|-----------|-----------|---------------|------------|
| BT-BR(1Mbps) | - | - | - | - | - |
| 2402MHz | Pass | 2.401987G | 2.402988G | 1.0005M | 671.994k |
| 2441MHz | Pass | 2.440981G | 2.441982G | 1.0005M | 652.014k |
| 2480MHz | Pass | 2.478974G | 2.479976G | 1.002M | 668.664k |
| BT-EDR(2Mbps) | - | - | - | - | - |
| 2402MHz | Pass | 2.401987G | 2.402989G | 1.002M | 890.442k |
| 2441MHz | Pass | 2.440981G | 2.441982G | 1.0005M | 891.774k |
| 2480MHz | Pass | 2.478975G | 2.479976G | 1.0005M | 890.442k |
| BT-EDR(3Mbps) | - | - | - | - | - |
| 2402MHz | Pass | 2.401989G | 2.402989G | 1.0005M | 886.446k |
| 2441MHz | Pass | 2.440983G | 2.441983G | 1.0005M | 888.444k |
| 2480MHz | Pass | 2.478975G | 2.479976G | 1.0005M | 886.446k |

2.4-2.4835GHz_BT-BR(1Mbps)

Channel Separation-FS

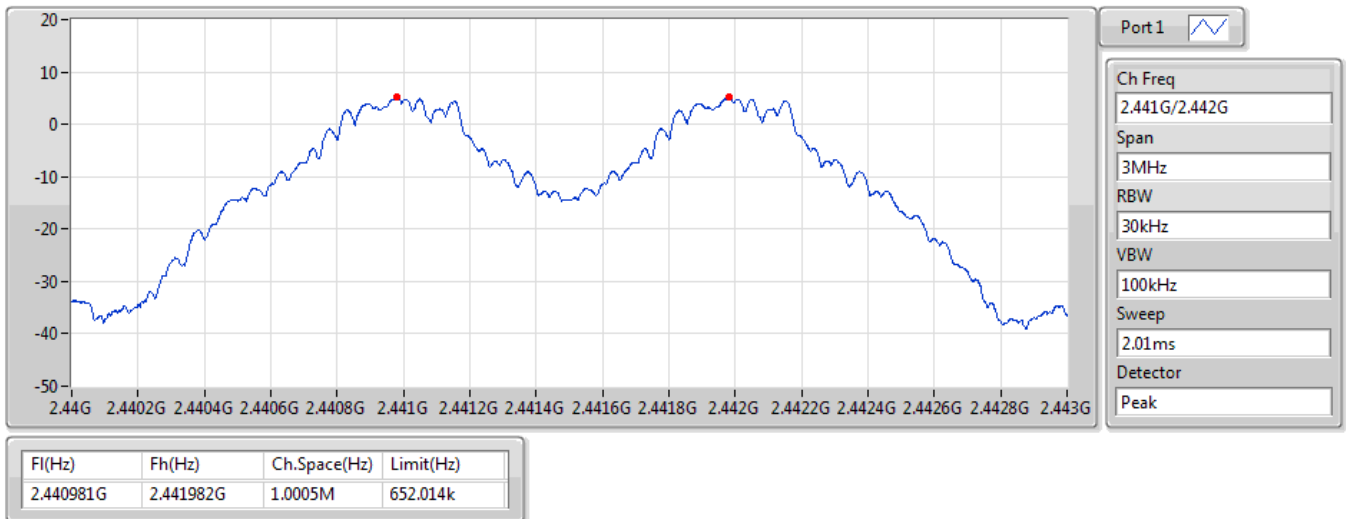
2.402G/2.403GHz



2.4-2.4835GHz_BT-BR(1Mbps)

Channel Separation-FS

2.441G/2.442GHz





2.4-2.4835GHz_BT-BR(1Mbps)

Channel Separation-FS

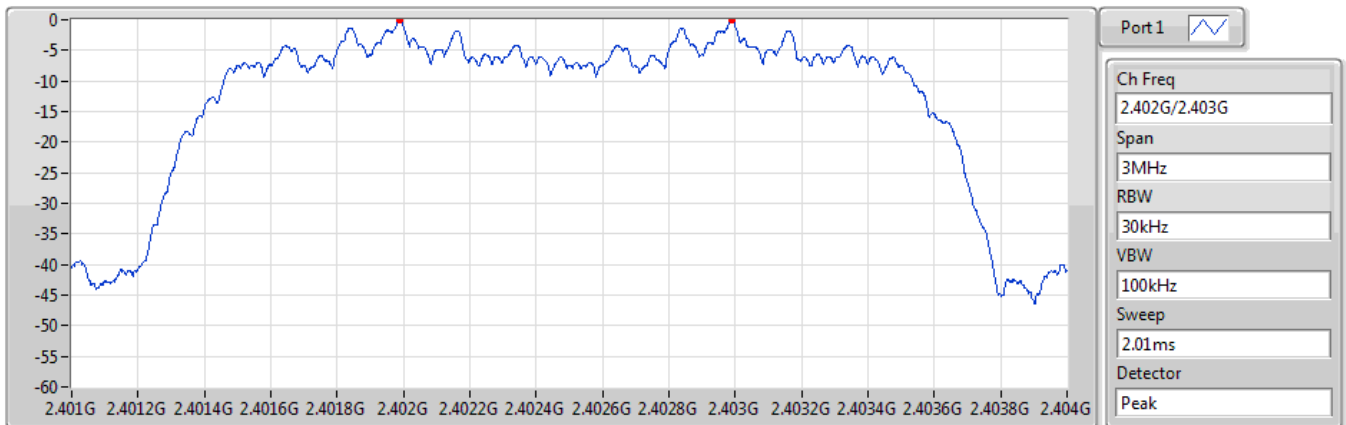
2.48G/2.479GHz



2.4-2.4835GHz_BT-EDR(2Mbps)

Channel Separation-FS

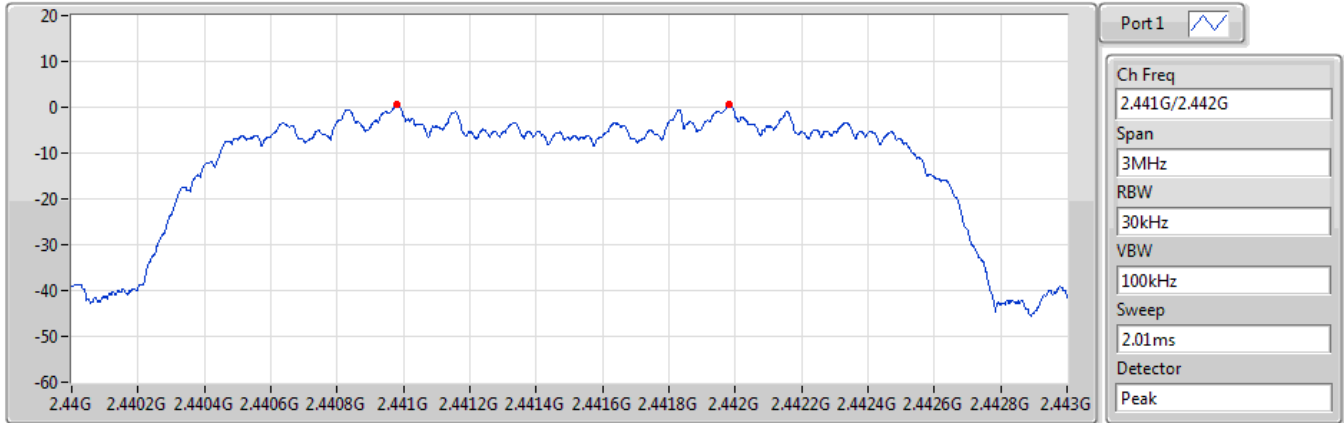
2.402G/2.403GHz



2.4-2.4835GHz_BT-EDR(2Mbps)

Channel Separation-FS

2.441G/2.442GHz

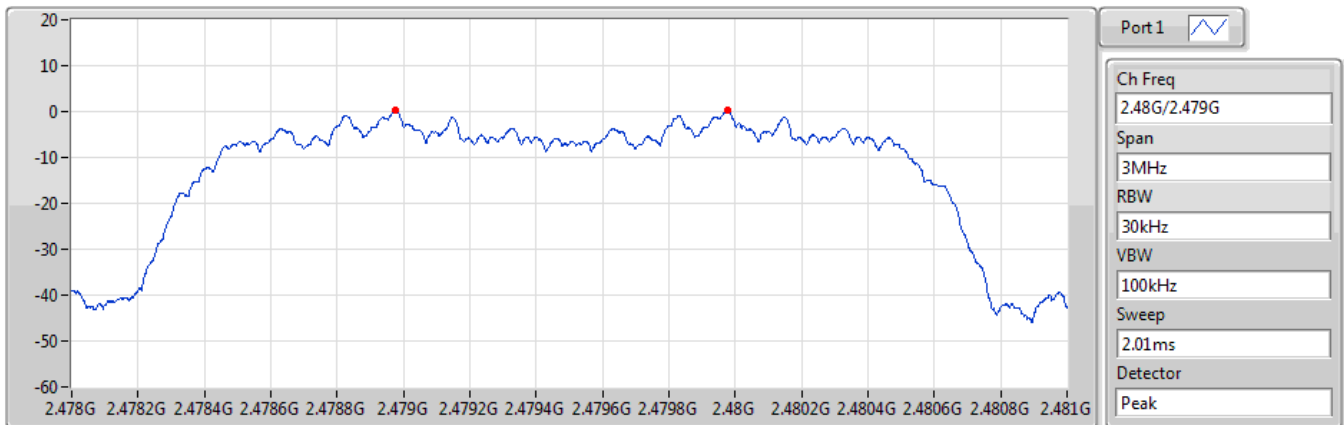


| F1(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|-----------|-----------|--------------|-----------|
| 2.440981G | 2.441982G | 1.0005M | 891.774k |

2.4-2.4835GHz_BT-EDR(2Mbps)

Channel Separation-FS

2.48G/2.479GHz

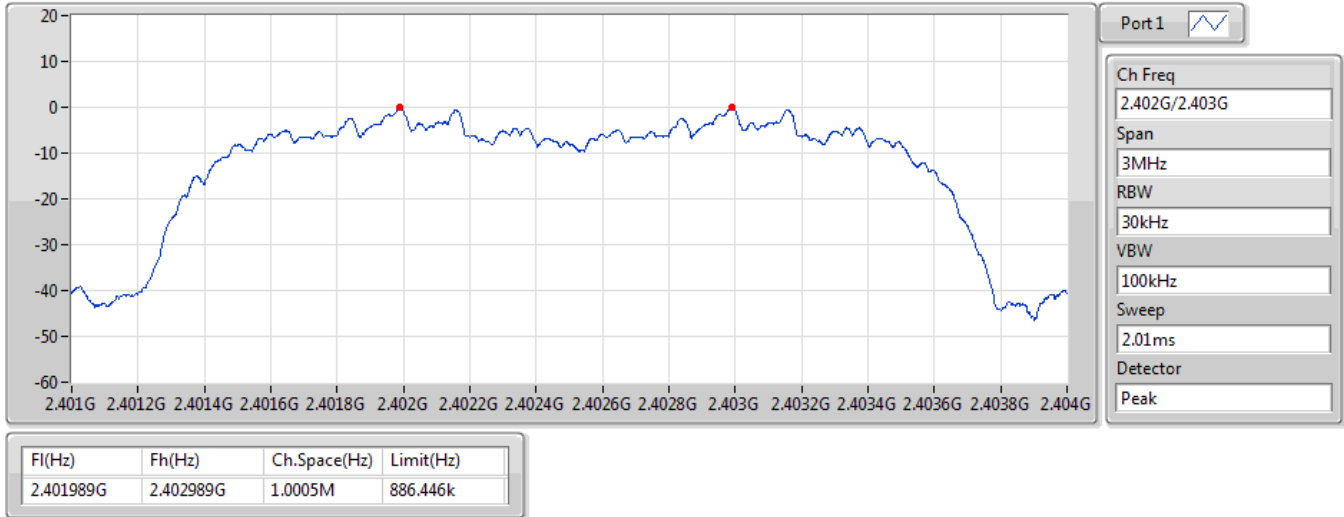


| F1(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|-----------|-----------|--------------|-----------|
| 2.478975G | 2.479976G | 1.0005M | 890.442k |

2.4-2.4835GHz_BT-EDR(3Mbps)

Channel Separation-FS

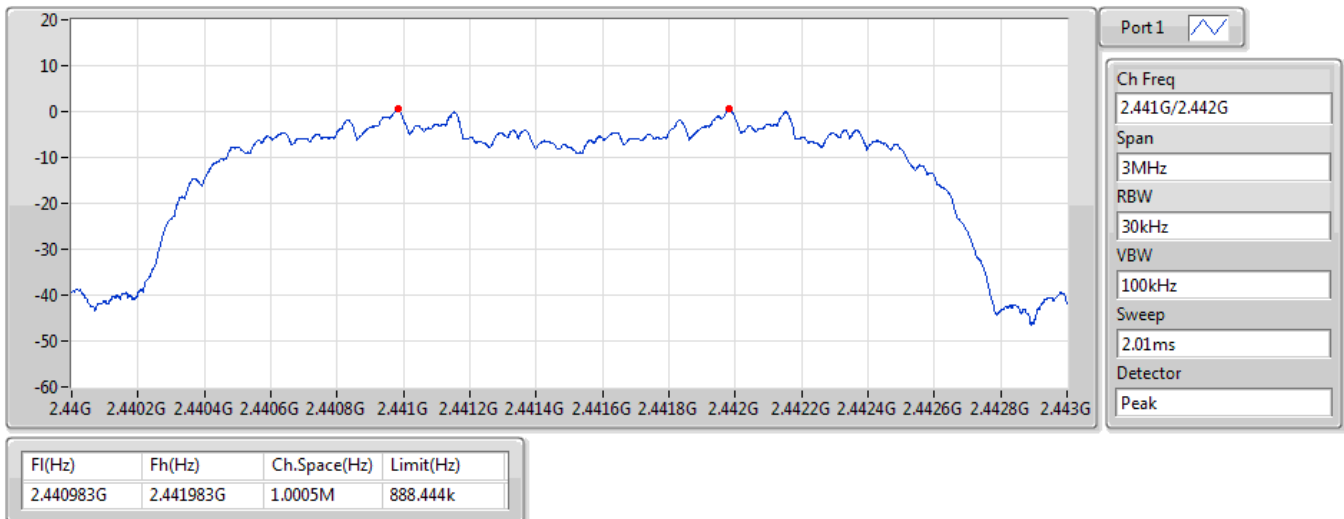
2.402G/2.403GHz



2.4-2.4835GHz_BT-EDR(3Mbps)

Channel Separation-FS

2.441G/2.442GHz





2.4-2.4835GHz_BT-EDR(3Mbps)

Channel Separation-FS

2.48G/2.479GHz



| F1(Hz) | Fh(Hz) | Ch.Space(Hz) | Limit(Hz) |
|-----------|-----------|--------------|-----------|
| 2.478975G | 2.479976G | 1.0005M | 886.446k |



Summary

| Mode | Max-Dwell (s) |
|-------------------|------------------|
| 2.4-2.4835GHz | - |
| BT-BR(1Mbps) | 328.11228m_DH5 |
| BT-BR-AFH(1Mbps) | 288.475m_DH5-AFH |
| BT-EDR(2Mbps) | 347.12126m_DH5 |
| BT-EDR-AFH(2Mbps) | 288.6m_DH5-AFH |
| BT-EDR(3Mbps) | 310.31358m_DH5 |
| BT-EDR-AFH(3Mbps) | 311.877m_DH5-AFH |



Result/ Non AFH mode

| Mode | Result | Period (s) | Dwell (s) | Limit (s) | Tx On (ms) | Number of transmission in a 5 s |
|---------------|--------|------------|-----------|-----------|------------|---------------------------------|
| BT-BR(1Mbps) | - | - | - | - | - | - |
| 2402MHz_DH5 | PASS | 31.6 | 0.32811 | 0.4 | 2.88425 | 18 |
| BT-EDR(2Mbps) | - | - | - | - | - | - |
| 2402MHz_DH5 | PASS | 31.6 | 0.34712 | 0.4 | 2.89075 | 19 |
| BT-EDR(3Mbps) | - | - | - | - | - | - |
| 2402MHz_DH5 | PASS | 31.6 | 0.31031 | 0.4 | 2.88825 | 17 |

Note 1: Dwell time =Number of transmission in a 5 second x Tx On Time x 6.32

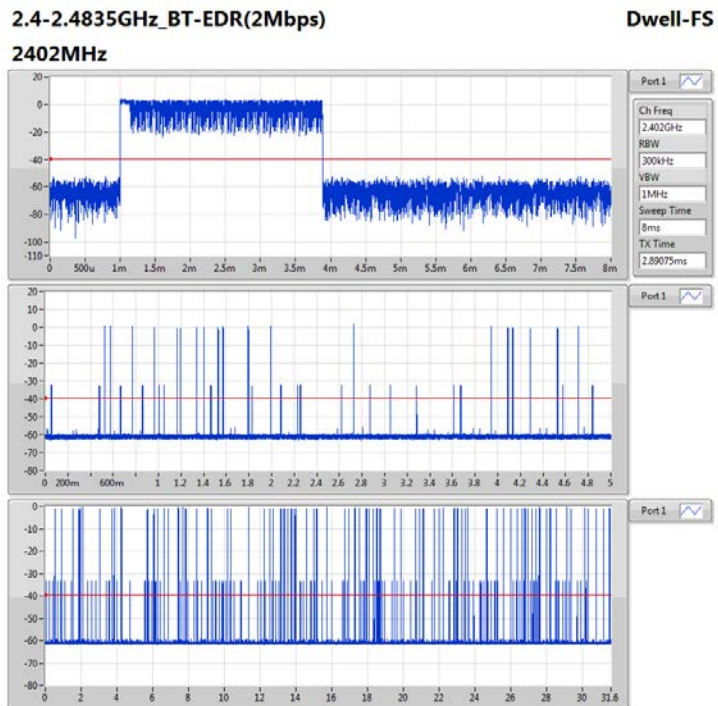
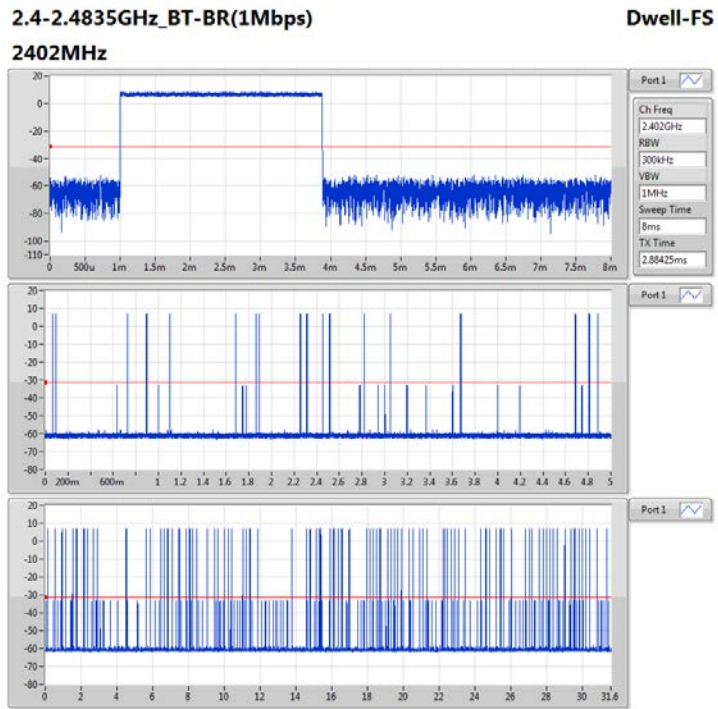
Note 2: DH5 was the worst mode.

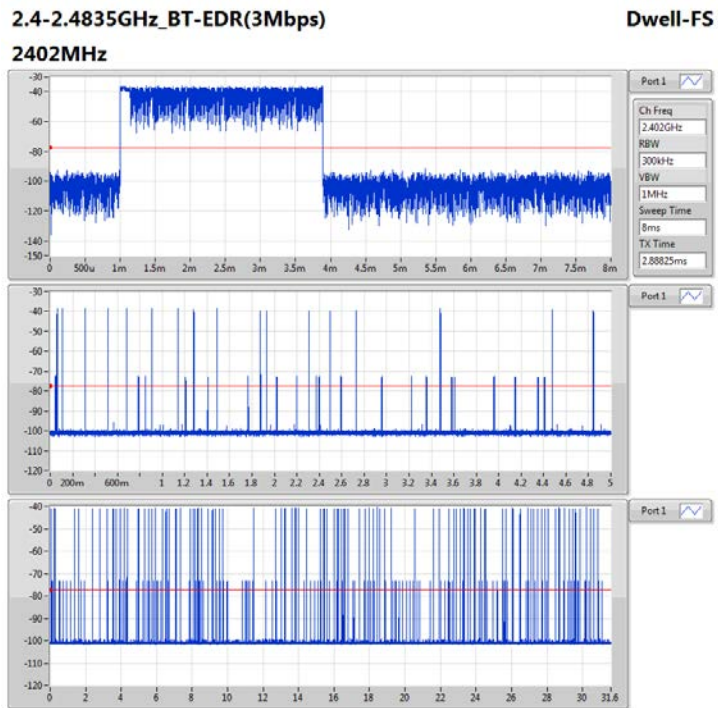
Result/ AFH mode

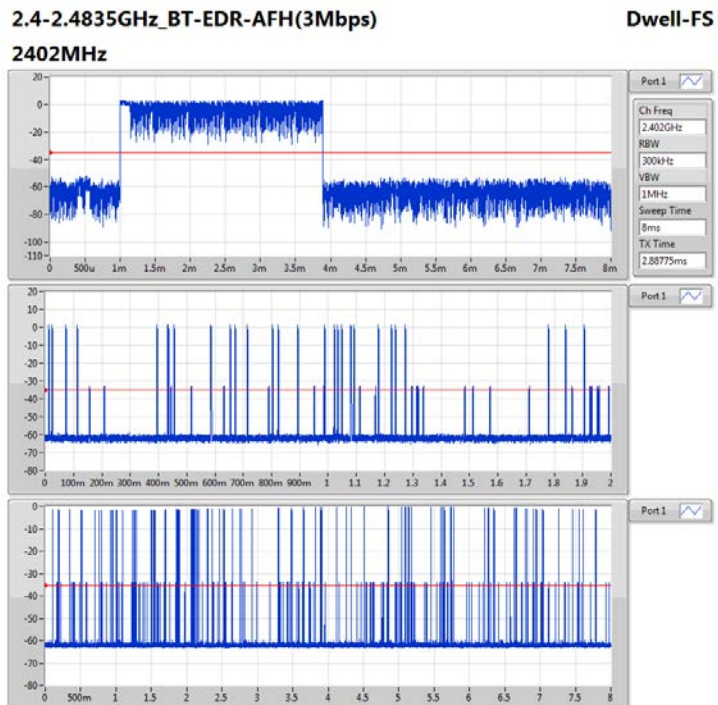
| Mode | Result | Period (s) | Dwell (s) | Limit (s) | Tx On (ms) | Number of transmission in a 2 s |
|-------------------|--------|------------|-----------|-----------|------------|---------------------------------|
| BT-BR-AFH(1Mbps) | - | - | - | - | - | - |
| 2402MHz_DH5 | PASS | 8 | 0.28848 | 0.4 | 2.88475 | 25 |
| BT-EDR-AFH(2Mbps) | - | - | - | - | - | - |
| 2402MHz_DH5 | PASS | 8 | 0.28860 | 0.4 | 2.88600 | 25 |
| BT-EDR-AFH(3Mbps) | - | - | - | - | - | - |
| 2402MHz_DH5 | PASS | 8 | 0.31188 | 0.4 | 2.88775 | 27 |

Note 1: Dwell time =Number of transmission in a 2 second x Tx On Time x 4

Note 2: DH5 was the worst mode.





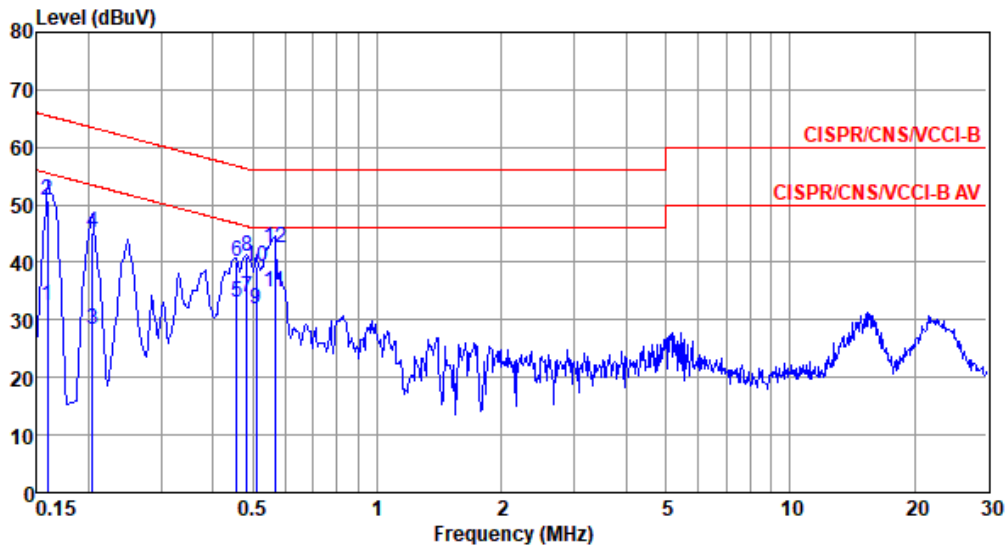




SC Module with PCB Dipole antenna

| | | | |
|-------------|-------|------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Power Phase | Line | | |

Test by : Joe Liao Temperature: 22°C Humidity: 68%



| | Freq MHz | Level dBuV | Limit Line dBuV | Over Limit dB | Read Level dBuV | Factor dB | Cable loss dB | Aux dB | Remark |
|-----|-------------|---------------|-----------------------|---------------------|-----------------------|--------------|---------------------|-----------|---------|
| 1 | 0.159 | 32.47 | 55.52 | -23.05 | 22.60 | 9.63 | 0.06 | 0.18 | Average |
| 2 | 0.159 | 50.91 | 65.52 | -14.61 | 41.04 | 9.63 | 0.06 | 0.18 | QP |
| 3 | 0.204 | 28.46 | 53.45 | -24.99 | 18.59 | 9.62 | 0.06 | 0.19 | Average |
| 4 | 0.204 | 45.18 | 63.45 | -18.27 | 35.31 | 9.62 | 0.06 | 0.19 | QP |
| 5 | 0.456 | 32.97 | 46.76 | -13.79 | 22.98 | 9.62 | 0.07 | 0.30 | Average |
| 6 | 0.456 | 40.22 | 56.76 | -16.54 | 30.23 | 9.62 | 0.07 | 0.30 | QP |
| 7 | 0.484 | 34.01 | 46.27 | -12.26 | 24.01 | 9.62 | 0.07 | 0.31 | Average |
| 8 | 0.484 | 41.16 | 56.27 | -15.11 | 31.16 | 9.62 | 0.07 | 0.31 | QP |
| 9 | 0.510 | 31.99 | 46.00 | -14.01 | 21.99 | 9.62 | 0.07 | 0.31 | Average |
| 10 | 0.510 | 39.30 | 56.00 | -16.70 | 29.30 | 9.62 | 0.07 | 0.31 | QP |
| 11* | 0.564 | 34.89 | 46.00 | -11.11 | 24.88 | 9.62 | 0.08 | 0.31 | Average |
| 12 | 0.564 | 42.40 | 56.00 | -13.60 | 32.39 | 9.62 | 0.08 | 0.31 | QP |

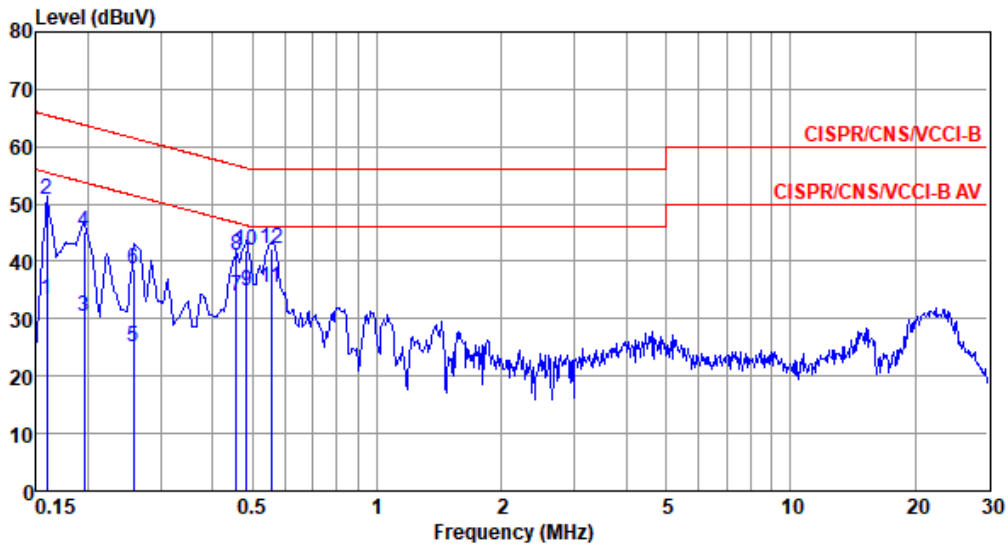
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).

Note 2: Over Limit (dB) = Level (dBuV) - Limit Line (dBuV).



| | | | |
|-------------|---------|------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Power Phase | Neutral | | |

Test by : Joe Liao Temperature: 22°C Humidity: 68%



| | Freq MHz | Level dBuV | Limit Line dBuV | Over Limit dB | Read Level dBuV | Factor dB | Cable loss dB | Aux dB | Remark |
|-----|-------------|---------------|-----------------------|---------------------|-----------------------|--------------|---------------------|-----------|---------|
| 1 | 0.159 | 33.35 | 55.52 | -22.17 | 23.48 | 9.63 | 0.06 | 0.18 | Average |
| 2 | 0.159 | 50.63 | 65.52 | -14.89 | 40.76 | 9.63 | 0.06 | 0.18 | QP |
| 3 | 0.195 | 30.41 | 53.80 | -23.39 | 20.53 | 9.63 | 0.06 | 0.19 | Average |
| 4 | 0.195 | 45.26 | 63.80 | -18.54 | 35.38 | 9.63 | 0.06 | 0.19 | QP |
| 5 | 0.258 | 25.07 | 51.51 | -26.44 | 15.15 | 9.63 | 0.06 | 0.23 | Average |
| 6 | 0.258 | 38.76 | 61.51 | -22.75 | 28.84 | 9.63 | 0.06 | 0.23 | QP |
| 7 | 0.456 | 33.82 | 46.76 | -12.94 | 23.83 | 9.62 | 0.07 | 0.30 | Average |
| 8 | 0.456 | 41.06 | 56.76 | -15.70 | 31.07 | 9.62 | 0.07 | 0.30 | QP |
| 9 | 0.484 | 34.70 | 46.27 | -11.57 | 24.70 | 9.62 | 0.07 | 0.31 | Average |
| 10 | 0.484 | 41.93 | 56.27 | -14.34 | 31.93 | 9.62 | 0.07 | 0.31 | QP |
| 11* | 0.555 | 35.32 | 46.00 | -10.68 | 25.31 | 9.62 | 0.08 | 0.31 | Average |
| 12 | 0.555 | 42.29 | 56.00 | -13.71 | 32.28 | 9.62 | 0.08 | 0.31 | QP |

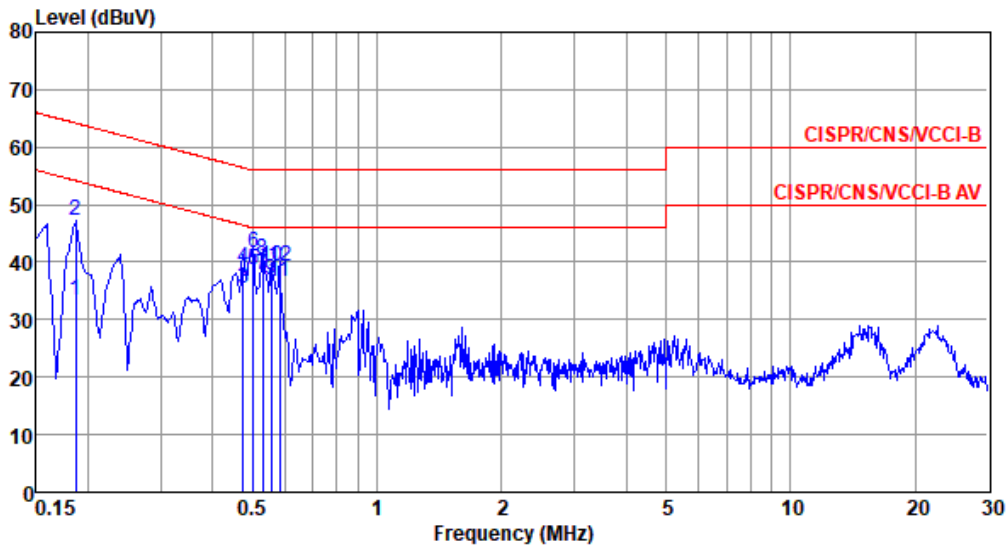
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 Note 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).



ST M.2, SDIO Module with PCB Dipole antenna

| | | | |
|-------------|-------|------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Power Phase | Line | | |

Test by : Joe Liao Temperature: 22°C Humidity: 68%



| | Freq | Level | Limit | Over | Read | Factor | Cable | Aux | Remark |
|----|-------|-------|-------|--------|-------|--------|-------|------|---------|
| | MHz | dBuV | Line | Limit | Level | dB | loss | dB | |
| | | | dBuV | dB | dBuV | | dB | | |
| 1 | 0.186 | 33.48 | 54.20 | -20.72 | 23.61 | 9.62 | 0.06 | 0.19 | Average |
| 2 | 0.186 | 47.21 | 64.20 | -16.99 | 37.34 | 9.62 | 0.06 | 0.19 | QP |
| 3 | 0.474 | 35.53 | 46.45 | -10.92 | 25.53 | 9.62 | 0.07 | 0.31 | Average |
| 4 | 0.474 | 39.04 | 56.45 | -17.41 | 29.04 | 9.62 | 0.07 | 0.31 | QP |
| 5* | 0.502 | 38.64 | 46.00 | -7.36 | 28.64 | 9.62 | 0.07 | 0.31 | Average |
| 6 | 0.502 | 41.63 | 56.00 | -14.37 | 31.63 | 9.62 | 0.07 | 0.31 | QP |
| 7 | 0.529 | 37.73 | 46.00 | -8.27 | 27.72 | 9.62 | 0.08 | 0.31 | Average |
| 8 | 0.529 | 40.59 | 56.00 | -15.41 | 30.58 | 9.62 | 0.08 | 0.31 | QP |
| 9 | 0.555 | 36.75 | 46.00 | -9.25 | 26.74 | 9.62 | 0.08 | 0.31 | Average |
| 10 | 0.555 | 39.34 | 56.00 | -16.66 | 29.33 | 9.62 | 0.08 | 0.31 | QP |
| 11 | 0.582 | 36.64 | 46.00 | -9.36 | 26.63 | 9.62 | 0.08 | 0.31 | Average |
| 12 | 0.582 | 39.20 | 56.00 | -16.80 | 29.19 | 9.62 | 0.08 | 0.31 | QP |

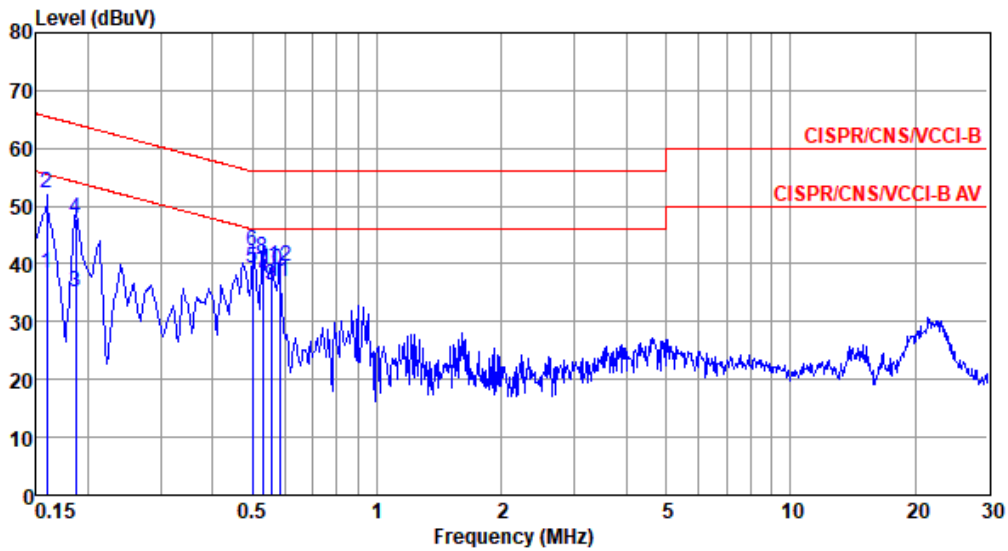
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).

2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).



| | | | |
|-------------|---------|------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Power Phase | Neutral | | |

Test by : Joe Liao Temperature: 22°C Humidity: 68%



| | Freq MHz | Level dBuV | Limit Line dBuV | Over Limit dB | Read Level dBuV | Factor dB | Cable loss dB | Aux dB | Remark |
|----|-------------|---------------|-----------------------|---------------------|-----------------------|--------------|---------------------|-----------|---------|
| 1 | 0.159 | 38.36 | 55.52 | -17.16 | 28.49 | 9.63 | 0.06 | 0.18 | Average |
| 2 | 0.159 | 52.30 | 65.52 | -13.22 | 42.43 | 9.63 | 0.06 | 0.18 | QP |
| 3 | 0.186 | 35.10 | 54.20 | -19.10 | 25.22 | 9.63 | 0.06 | 0.19 | Average |
| 4 | 0.186 | 47.74 | 64.20 | -16.46 | 37.86 | 9.63 | 0.06 | 0.19 | QP |
| 5* | 0.500 | 39.27 | 46.00 | -6.73 | 29.27 | 9.62 | 0.07 | 0.31 | Average |
| 6 | 0.500 | 42.35 | 56.00 | -13.65 | 32.35 | 9.62 | 0.07 | 0.31 | QP |
| 7 | 0.529 | 38.46 | 46.00 | -7.54 | 28.45 | 9.62 | 0.08 | 0.31 | Average |
| 8 | 0.529 | 41.15 | 56.00 | -14.85 | 31.14 | 9.62 | 0.08 | 0.31 | QP |
| 9 | 0.555 | 36.36 | 46.00 | -9.64 | 26.35 | 9.62 | 0.08 | 0.31 | Average |
| 10 | 0.555 | 39.05 | 56.00 | -16.95 | 29.04 | 9.62 | 0.08 | 0.31 | QP |
| 11 | 0.582 | 36.98 | 46.00 | -9.02 | 26.97 | 9.62 | 0.08 | 0.31 | Average |
| 12 | 0.582 | 39.56 | 56.00 | -16.44 | 29.55 | 9.62 | 0.08 | 0.31 | QP |

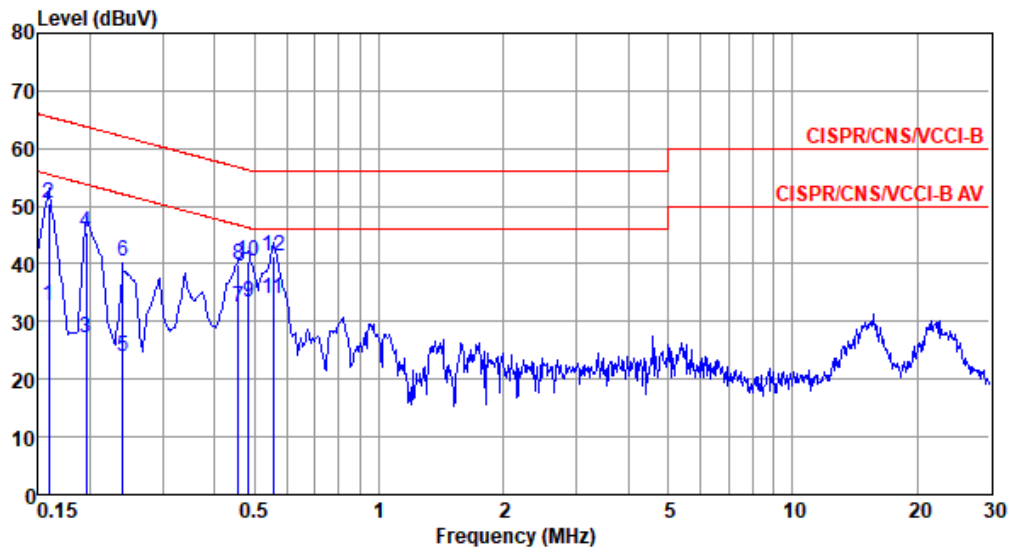
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 Note 2: Over Limit (dB) = Level (dBuV) - Limit Line (dBuV).



ST M.2, PCIe Module with PCB Dipole antenna

| | | | |
|-------------|-------|------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Power Phase | Line | | |

Test by : Joe Liao Temperature: 22°C Humidity: 68%



| | Freq MHz | Level dBuV | Limit Line dBuV | Over Limit dB | Read Level dBuV | Factor dB | Cable loss dB | Aux dB | Remark |
|-----|-------------|---------------|-----------------------|---------------------|-----------------------|--------------|---------------------|-----------|---------|
| 1 | 0.159 | 32.70 | 55.52 | -22.82 | 22.83 | 9.63 | 0.06 | 0.18 | Average |
| 2 | 0.159 | 50.46 | 65.52 | -15.06 | 40.59 | 9.63 | 0.06 | 0.18 | QP |
| 3 | 0.195 | 27.29 | 53.80 | -26.51 | 17.42 | 9.62 | 0.06 | 0.19 | Average |
| 4 | 0.195 | 45.52 | 63.80 | -18.28 | 35.65 | 9.62 | 0.06 | 0.19 | QP |
| 5 | 0.240 | 24.00 | 52.08 | -28.08 | 14.10 | 9.62 | 0.06 | 0.22 | Average |
| 6 | 0.240 | 40.44 | 62.08 | -21.64 | 30.54 | 9.62 | 0.06 | 0.22 | QP |
| 7 | 0.456 | 32.51 | 46.76 | -14.25 | 22.52 | 9.62 | 0.07 | 0.30 | Average |
| 8 | 0.456 | 39.74 | 56.76 | -17.02 | 29.75 | 9.62 | 0.07 | 0.30 | QP |
| 9 | 0.484 | 33.26 | 46.27 | -13.01 | 23.26 | 9.62 | 0.07 | 0.31 | Average |
| 10 | 0.484 | 40.48 | 56.27 | -15.79 | 30.48 | 9.62 | 0.07 | 0.31 | QP |
| 11* | 0.555 | 34.08 | 46.00 | -11.92 | 24.07 | 9.62 | 0.08 | 0.31 | Average |
| 12 | 0.555 | 41.19 | 56.00 | -14.81 | 31.18 | 9.62 | 0.08 | 0.31 | QP |

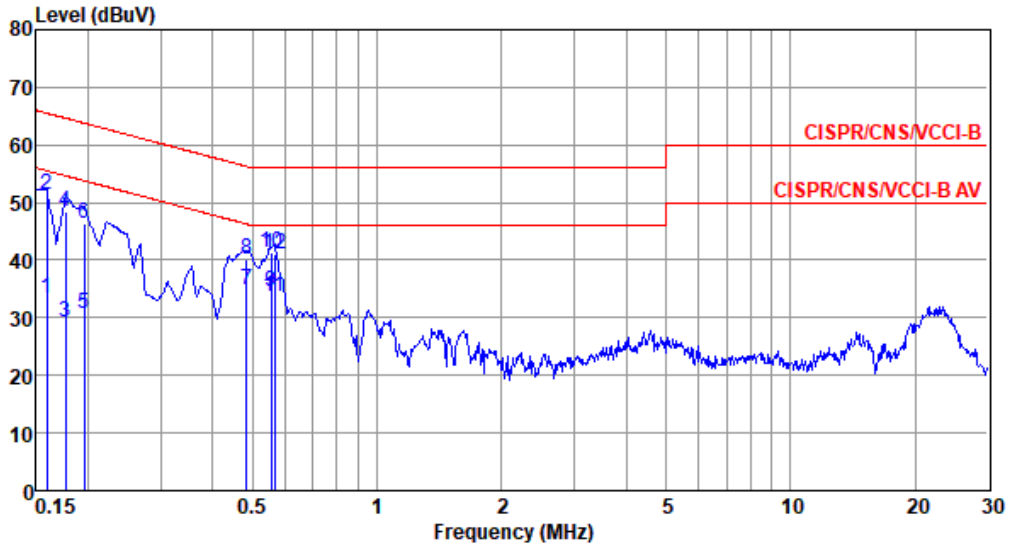
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).

2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).



| | | | |
|-------------|---------|------------------|------|
| Modulation | 8DPSK | Test Freq. (MHz) | 2480 |
| Power Phase | Neutral | | |

Test by : Joe Liao Temperature: 22°C Humidity: 68%



| | Freq MHz | Level dBUV | Limit Line dBUV | Over Limit dB | Read Level dBUV | Factor dB | Cable loss dB | Aux dB | Remark |
|----|-------------|---------------|-----------------------|---------------------|-----------------------|--------------|---------------------|-----------|---------|
| 1 | 0.159 | 33.31 | 55.52 | -22.21 | 23.44 | 9.63 | 0.06 | 0.18 | Average |
| 2 | 0.159 | 51.42 | 65.52 | -14.10 | 41.55 | 9.63 | 0.06 | 0.18 | QP |
| 3 | 0.177 | 29.30 | 54.64 | -25.34 | 19.42 | 9.63 | 0.06 | 0.19 | Average |
| 4 | 0.177 | 48.55 | 64.64 | -16.09 | 38.67 | 9.63 | 0.06 | 0.19 | QP |
| 5 | 0.195 | 30.78 | 53.80 | -23.02 | 20.90 | 9.63 | 0.06 | 0.19 | Average |
| 6 | 0.195 | 46.37 | 63.80 | -17.43 | 36.49 | 9.63 | 0.06 | 0.19 | QP |
| 7 | 0.484 | 34.89 | 46.27 | -11.38 | 24.89 | 9.62 | 0.07 | 0.31 | Average |
| 8 | 0.484 | 40.07 | 56.27 | -16.20 | 30.07 | 9.62 | 0.07 | 0.31 | QP |
| 9* | 0.555 | 34.62 | 46.00 | -11.38 | 24.61 | 9.62 | 0.08 | 0.31 | Average |
| 10 | 0.555 | 41.46 | 56.00 | -14.54 | 31.45 | 9.62 | 0.08 | 0.31 | QP |
| 11 | 0.564 | 33.57 | 46.00 | -12.43 | 23.56 | 9.62 | 0.08 | 0.31 | Average |
| 12 | 0.564 | 41.09 | 56.00 | -14.91 | 31.08 | 9.62 | 0.08 | 0.31 | QP |

Note 1: Level (dBUV) = Read Level (dBUV) + LISN Factor (dB) + Cable Loss (dB) + Aux (dB).
 2: Over Limit (dB) = Level (dBUV) – Limit Line (dBUV).