

FCC Test Report

Product Name	F2-AVX7MT
Model No.	F2-AVX7MT
FCC ID.	2AO4C-F2AVX7MT

Applicant	UniMax Electronics Inc.
Address	No.18, Sec. 2 , Zhongyang S. Rd., Beitou Dist., Taipei City, Taiwan 112

Date of Receipt	Jan. 25, 2018
Issued Date	Feb. 14, 2018
Report No.	1810363R-RFUSP01V00
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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Test Report

Issued Date: Feb. 14, 2018

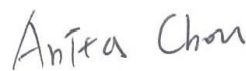
Report No.: 1810363R-RFUSP01V00



Product Name	F2-AVX7MT
Applicant	UniMax Electronics Inc.
Address	No.18, Sec. 2 , Zhongyang S. Rd., Beitou Dist., Taipei City, Taiwan 112
Manufacturer	ASKEY COMPUTER CORP.
Model No.	F2-AVX7MT
FCC ID.	2AO4C-F2AVX7MT
EUT Rated Voltage	DC 12V(Power by battery)
EUT Test Voltage	DC 12V(Power by battery)
Trade Name	UniMax
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2016 ANSI C63.4: 2014, ANSI C63.10: 2013
Test Result	Complied

Documented By

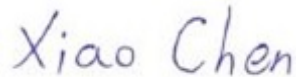
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Tested By

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(Engineer / Xiao Chen)

Approved By

:



(Director / Vincent Lin)

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Attachment 1: EUT Test Photographs
Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	F2-AVX7MT
Trade Name	UniMax
Model No.	F2-AVX7MT
FCC ID.	2AO4C-F2AVX7MT
Frequency Range	2402-2480MHz
Channel Number	79
Type of Modulation	FHSS: GFSK(1Mbps) / π /4DQPSK(2Mbps) / 8DPSK(3Mbps)
Antenna Type	PIFA Antenna
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ASUS	N/A	PIFA Antenna	1.13dBi for 2.4 GHz

Note:

1. The antenna of EUT conforms to FCC 15.203.

Center Frequency of Each Channel:

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

Note:

1. The EUT is a F2-AVX7MT with a built-in Bluetooth V2.1+EDR transceiver.
2. These tests were conducted on a sample for the purpose of demonstrating compliance of Bluetooth transmitter with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test
4. Bluetooth operation was evaluated at both 1Mb/s and 3Mb/s data rates. 2Mb/s data rate was found, through pre-testing, to produce emissions similar to those for 3Mb/s.

Test Mode	Mode 1: Transmit - 1Mbps (GFSK)
	Mode 2: Transmit - 3Mbps (8DPSK)

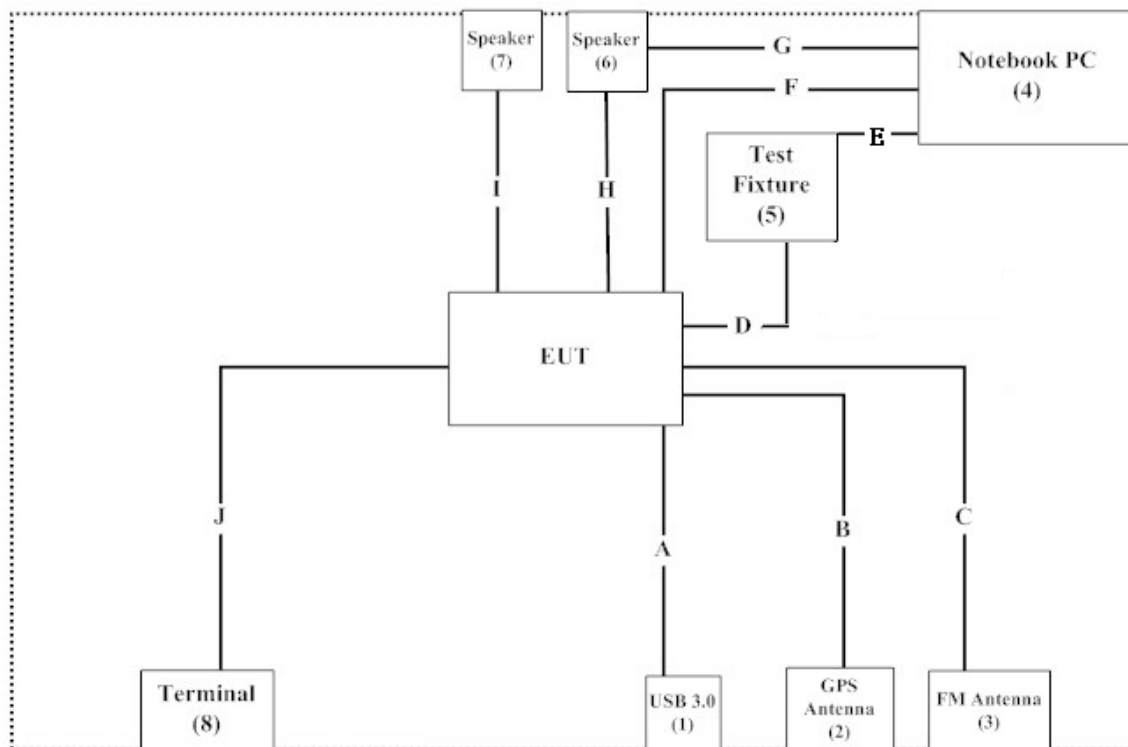
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
1 USB 3.0(1T)	Transcend	TS1TSJ25M3	C13890-3746	N/A
2 GPS Antenna	SIRFSTARV	GR-A013	N/A	N/A
3 FM Antenna	ASUS	N/A	N/A	N/A
4 Notebook PC	DELL	Latitude E5440	74BTK32	Non-Shielded, 0.8m
5 Test Fixture	CSR	N/A	N/A	N/A
6 Speaker	ASUS	N/A	N/A	N/A
7 Speaker	ASUS	N/A	N/A	N/A
8 Terminal	N/A	N/A	N/A	N/A

Signal Cable Type	Signal cable Description
A USB Cable	Non-Shielded, 0.5m
B Antenna Cable	Non-Shielded, 3.5m
C Antenna Cable	Non-Shielded, 3.5m
D Fixture Cable	Non-Shielded, 0.4m
E USB Cable	Non-Shielded, 1.8m
F HDMI Cable	Non-Shielded, 2m
G USB Cable	Non-Shielded, 0.6m, with one ferrite core bonded.
H Signal Cable	Non-Shielded, 0.4m
I Signal Cable	Non-Shielded, 1.1m
J Signal Cable	Non-Shielded, 1.8m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

1. Setup the EUT as shown in Section 1.4.
2. Execute software "CSR v2.6.2" on the Notebook PC.
3. Configure the test mode, the test channel, and the data rate.
4. Press "OK" to start the continuous Transmit.
5. Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	30-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:

<http://www.dekra.com.tw/english/about/certificates.aspx?bval=5>

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw/index_en.aspx

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Accredited Number: 3023

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Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : info.tw@dekra.com

FCC Accreditation Number: TW3023

1.7. List of Test Equipment

For Conducted measurements /CB3/SR8

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
	Temperature Chamber	WIT GROUP	TH-1S-B	EQ-201-00146	2017/11/28	2018/11/27
X	Spectrum Analyzer	Agilent	N9010A	MY48030495	2017/7/22	2018/7/21
X	Power Meter	Anritsu	ML2495A	6K00003357	2017/6/23	2018/6/22
X	Pulse power sensor	Anritsu	MA2411B	0846193	2017/6/23	2018/6/22
X	EMI Test Receiver	R&S	ESCS 30	100369	2017/10/13	2018/10/12
	LISN	R&S	ESH3-Z5	836679/017	2018/1/7	2019/1/6
	LISN	R&S	ENV216	100097	2018/1/7	2019/1/6
	Coaxial Cable	QTK(Arnist)	RG 400	LC018-RG	2017/6/25	2018/6/24

For Radiated measurements /Site3/CB8

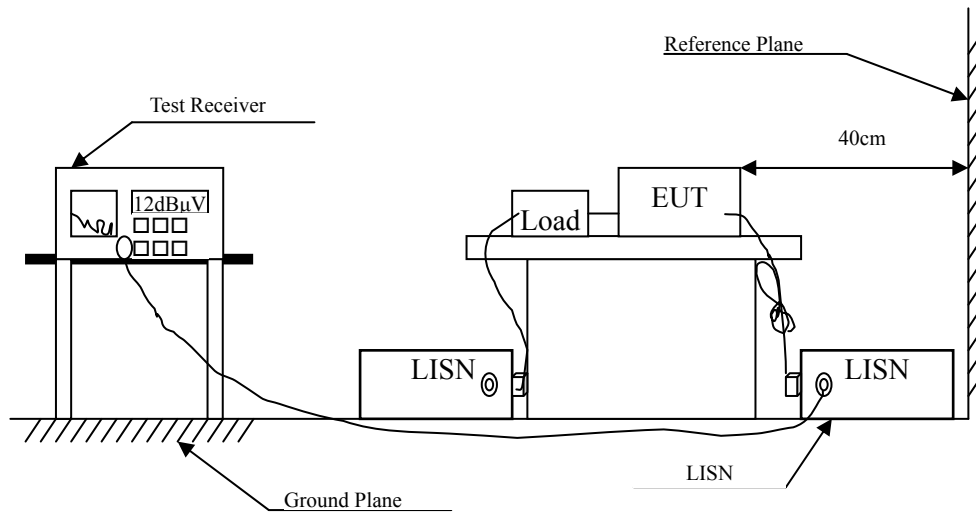
	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Spectrum Analyzer	R&S	FSP40	100170	2018/1/5	2019/1/4
	Loop Antenna	Teseq	HLA6121	37133	2017/3/18	2018/3/17
X	Bi-Log Antenna	Schaffner Chase	CBL6112B	2707	2017/6/11	2018/6/10
X	Horn Antenna	ETS-Lindgren	3117	00135205	2017/4/6	2018/4/5
	Horn Antenna	Schwarzbeck	BBHA9170	9170430	2018/1/11	2019/1/10
X	Pre-Amplifier	QTK	AP/0100A	CHM/0901069	2017/6/23	2018/6/22
X	Pre-Amplifier	EMCI	EMC012630SE	980210	2018/1/26	2019/1/24
	Pre-Amplifier	NARDA WE	DBL-1840N506	013	2017/9/30	2018/9/29
X	Filter	MicroTRON	BRM50701	019	2017/11/2	2018/11/1
	Filter	Microwave Circuits	N0257881	36681	2017/12/7	2018/12/6
X	EMI Test Receiver	R&S	ESR26	101385	2017/9/29	2018/9/28
X	Coaxial Cable	QTK(Arnist)	SUCOFLEX 106	L1606-015C	2017/6/23	2018/6/22
X	EMI Test Receiver	R&S	ESCS 30	838251/001	2017/7/21	2018/7/20
X	Coaxial Cable	QTK(Arnist)	RG 214	LC003-RG	2017/6/16	2018/6/15
X	Coaxial signal switch	Anritsu	MP59B	6201415889	2017/6/16	2018/6/15

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version :QuiTek EMI 2.0 V2.1.113.

2. Conducted Emission

2.1. Test Setup



2.2. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBμV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

2.3. Test Procedure

The EUT and Peripherals are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

The EUT was setup to ANSI C63.4, 2014; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

2.4. Uncertainty

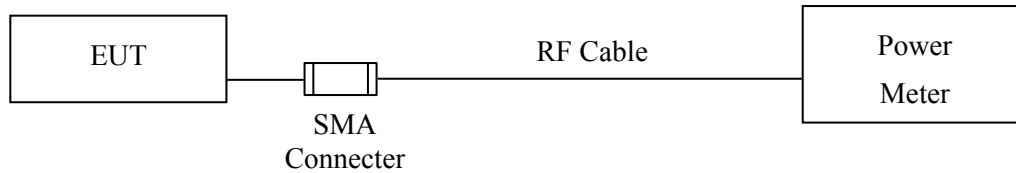
± 2.26 dB

2.5. Test Result of Conducted Emission

Owing to the DC operation of EUT, this test item is not performed.

3. Peak Power Output

3.1. Test Setup



3.2. Limit

The maximum peak power shall be less 1Watt.

3.3. Test Procedure

The EUT was setup to ANSI C63.4, 2014; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

3.4. Uncertainty

± 1.19 dB

3.5. Test Result of Peak Power Output

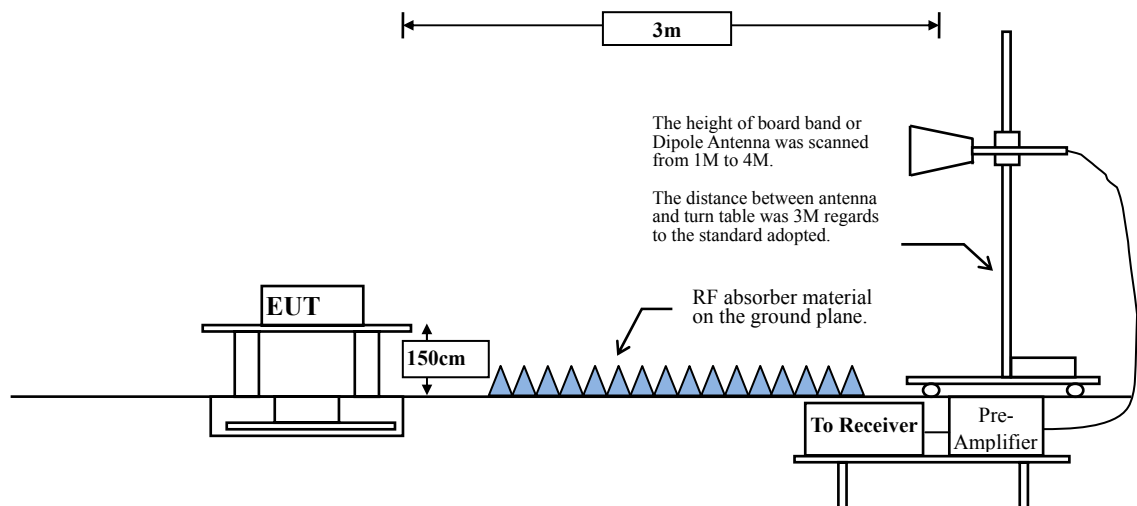
Product : F2-AVX7MT
Test Item : Peak Power Output
Test Site : No.3 OATS
Test date : 2018/02/06
Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit	Result
Channel 00	2402	3.79	1 Watt= 30 dBm	Pass
Channel 39	2441	3.91	1 Watt= 30 dBm	Pass
Channel 78	2480	2.33	1 Watt= 30 dBm	Pass

Product : F2-AVX7MT
Test Item : Peak Power Output
Test Site : No.3 OATS
Test date : 2018/02/06
Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit	Result
Channel 00	2402	1.26	1 Watt= 30 dBm	Pass
Channel 39	2441	1.94	1 Watt= 30 dBm	Pass
Channel 78	2480	0.29	1 Watt= 30 dBm	Pass

Above 1GHz



4.2. Limits

➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

- Remarks:
1. RF Voltage (dBμV) = 20 log RF Voltage (uV)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested compliance to FCC 47CFR 15.247 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground, when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range from 9kHz - 10th Harmonic of fundamental was investigated.

4.4. Uncertainty

± 4.08 dB above 1GHz

± 4.22 dB below 1GHz

4.5. Test Result of Radiated Emission

Product : F2-AVX7MT
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(2402MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
4084.000	0.391	50.506	50.896	-23.104	74.000
7206.000	9.511	38.464	47.975	-26.025	74.000
9608.000	10.394	37.267	47.661	-26.339	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4804.000	2.923	55.165	58.087	-15.913	74.000
7206.000	9.988	39.394	49.383	-24.617	74.000
9608.000	10.847	37.316	48.163	-25.837	74.000
Average Detector:					
4804.000	2.923	45.823	48.745	-5.255	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : F2-AVX7MT
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(2441MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4882.000	2.025	54.365	56.390	-17.610	74.000
7323.000	9.762	37.103	46.864	-27.136	74.000
9764.000	9.682	36.899	46.580	-27.420	74.000
Average					
Detector:					
4882.000	2.025	47.312	49.337	-4.663	54.000
Vertical					
Peak Detector:					
4882.000	2.488	56.304	58.792	-15.208	74.000
7323.000	10.375	36.634	47.008	-26.992	74.000
9764.000	10.315	36.639	46.954	-27.046	74.000
Average					
Detector:					
4882.000	2.488	48.907	51.395	-2.605	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : F2-AVX7MT
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(2480MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
Peak Detector:					
4960.000	2.582	50.680	53.262	-20.738	74.000
7440.000	10.555	36.156	46.711	-27.289	74.000
9920.000	10.206	36.212	46.418	-27.582	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4960.000	3.398	52.534	55.933	-18.067	74.000
7440.000	11.214	36.752	47.966	-26.034	74.000
9920.000	11.245	36.512	47.757	-26.243	74.000
Average					
Detector:					
4960.000	3.398	45.931	49.330	-4.670	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : F2-AVX7MT
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)(2402MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level	dB	dB μ V/m
Horizontal					
Peak Detector:					
4804.000	2.511	45.293	47.803	-26.197	74.000
7206.000	9.511	37.364	46.875	-27.125	74.000
9608.000	10.394	36.889	47.283	-26.717	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4804.000	2.923	50.675	53.597	-20.403	74.000
7206.000	9.988	37.887	47.876	-26.124	74.000
9608.000	10.847	37.465	48.312	-25.688	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : F2-AVX7MT
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dB μ V	Measurement Level dB μ V/m	Margin dB	Limit dB μ V/m
Horizontal					
Peak Detector:					
4882.000	2.025	49.773	51.798	-22.202	74.000
7323.000	9.762	37.109	46.870	-27.130	74.000
9764.000	9.682	36.099	45.780	-28.220	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4882.000	2.488	51.505	53.993	-20.007	74.000
7323.000	10.375	37.079	47.453	-26.547	74.000
9764.000	10.315	37.291	47.606	-26.394	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : F2-AVX7MT
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2480MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
Peak Detector:					
4960.000	2.582	46.098	48.680	-25.320	74.000
7440.000	10.555	36.300	46.855	-27.145	74.000
9920.000	10.206	36.874	47.080	-26.920	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4960.000	3.398	48.085	51.484	-22.516	74.000
7440.000	11.214	36.952	48.166	-25.834	74.000
9920.000	11.245	38.160	49.405	-24.595	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : F2-AVX7MT
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test date : 2018/02/05
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dB μ V	Measurement Level dB μ V/m	Margin dB	Limit dB μ V/m
Horizontal					
114.390	-7.414	44.394	36.980	-6.520	43.500
256.010	-5.415	36.545	31.130	-14.870	46.000
459.710	3.729	35.645	39.374	-6.626	46.000
636.250	1.799	31.174	32.973	-13.027	46.000
672.140	2.179	36.901	39.080	-6.920	46.000
813.760	6.296	28.249	34.545	-11.455	46.000
Vertical					
176.470	-1.530	36.525	34.995	-8.505	43.500
257.950	-4.952	36.783	31.831	-14.169	46.000
530.520	1.192	38.857	40.049	-5.951	46.000
601.330	1.463	37.413	38.876	-7.124	46.000
777.870	2.328	34.919	37.247	-8.753	46.000
971.870	1.598	28.413	30.011	-23.989	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : F2-AVX7MT
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test date : 2018/02/05
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2441MHz)

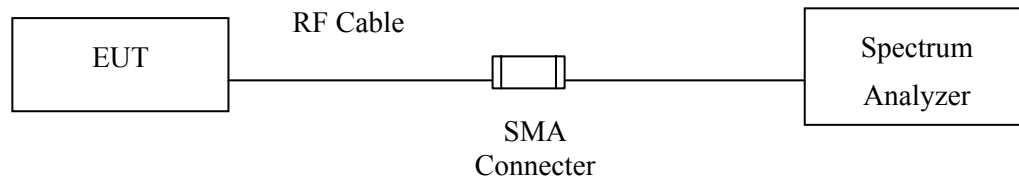
Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
115.360	-7.390	45.131	37.742	-5.758	43.500
320.030	-4.564	32.837	28.273	-17.727	46.000
493.660	1.474	26.323	27.798	-18.202	46.000
655.650	1.894	26.916	28.810	-17.190	46.000
818.610	6.839	22.521	29.360	-16.640	46.000
964.110	7.132	22.326	29.458	-24.542	54.000
Vertical					
162.890	-4.891	29.054	24.163	-19.337	43.500
297.720	-4.356	23.692	19.336	-26.664	46.000
535.370	1.415	26.617	28.031	-17.969	46.000
612.000	1.943	25.561	27.503	-18.497	46.000
779.810	2.745	23.587	26.332	-19.668	46.000
924.340	3.149	23.420	26.569	-19.431	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

5. RF Antenna Conducted Test

5.1. Test Setup



5.2. Limits

According to FCC Section 15.247(d). In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

5.3. Test Procedure

The EUT was setup to ANSI C63.4, 2014; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

5.4. Uncertainty

$\pm 1.20\text{dB}$

5.5. Test Result of RF Antenna Conducted Test

Product : F2-AVX7MT
Test Item : RF Antenna Conducted Test
Test Site : No.3 OATS
Test date : 2018/02/06
Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

Figure Channel 00:

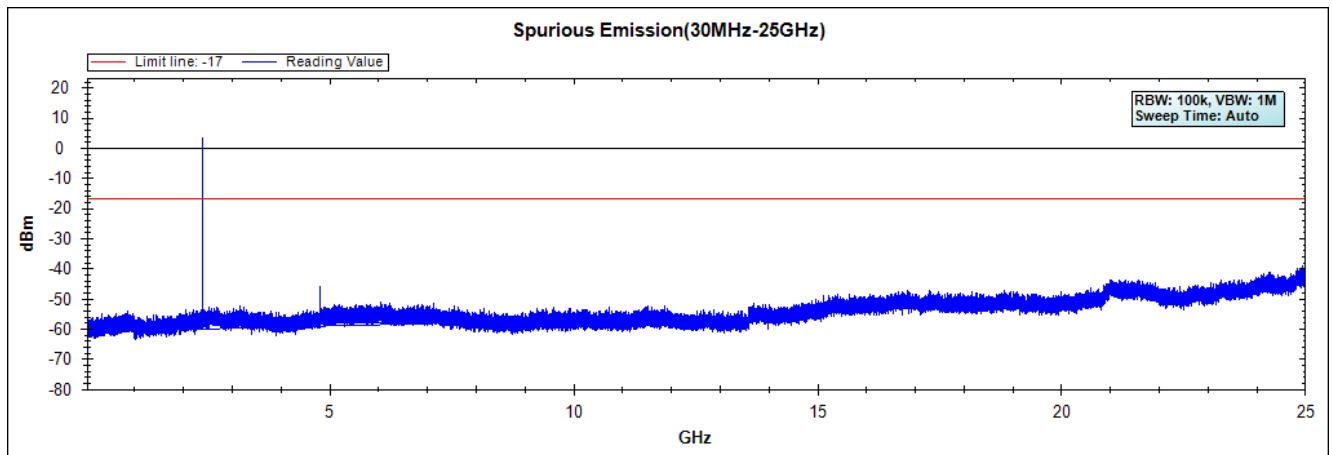


Figure Channel 39:

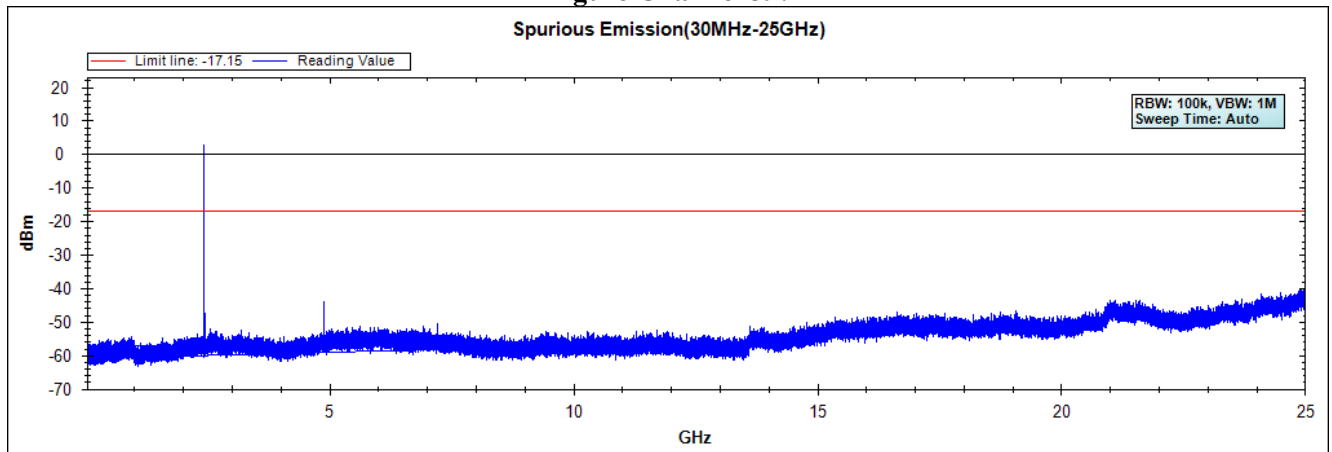
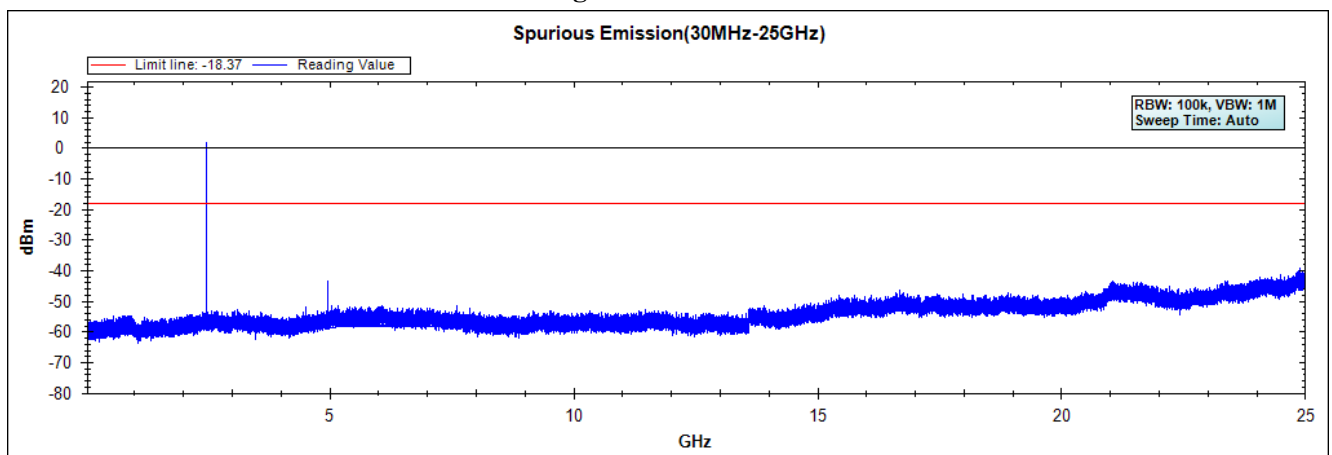
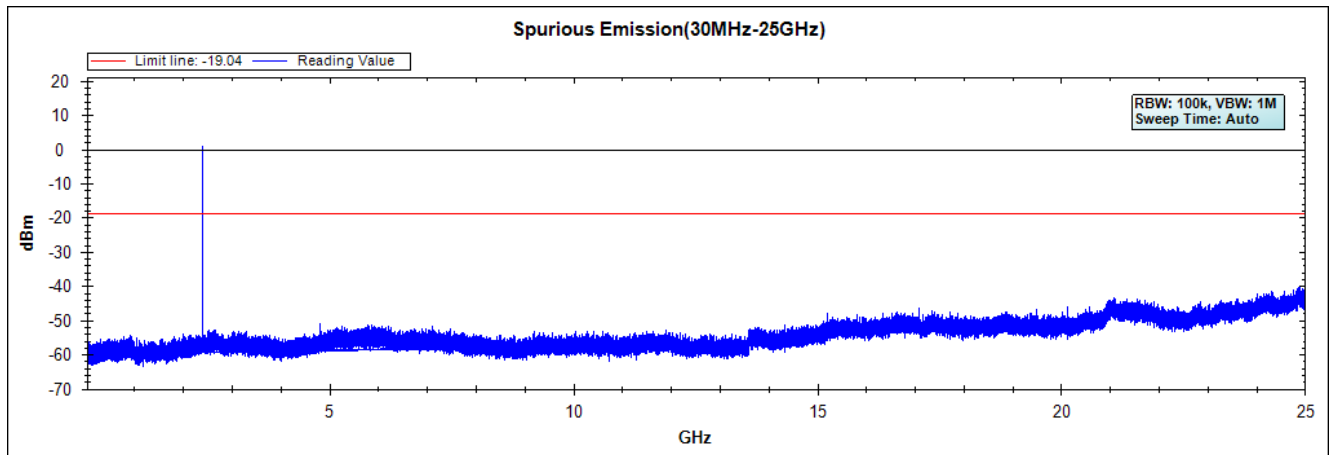
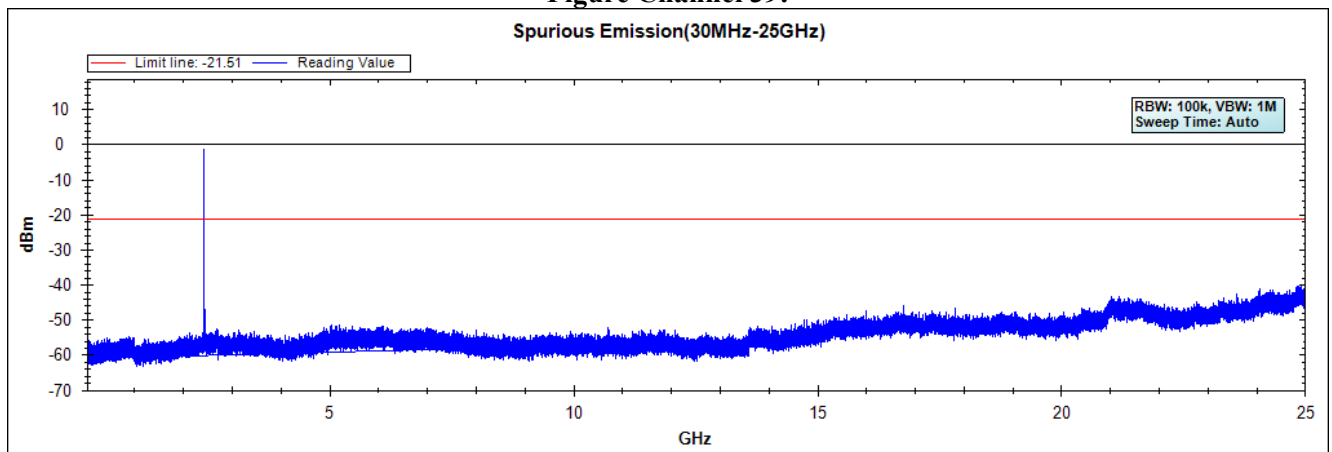
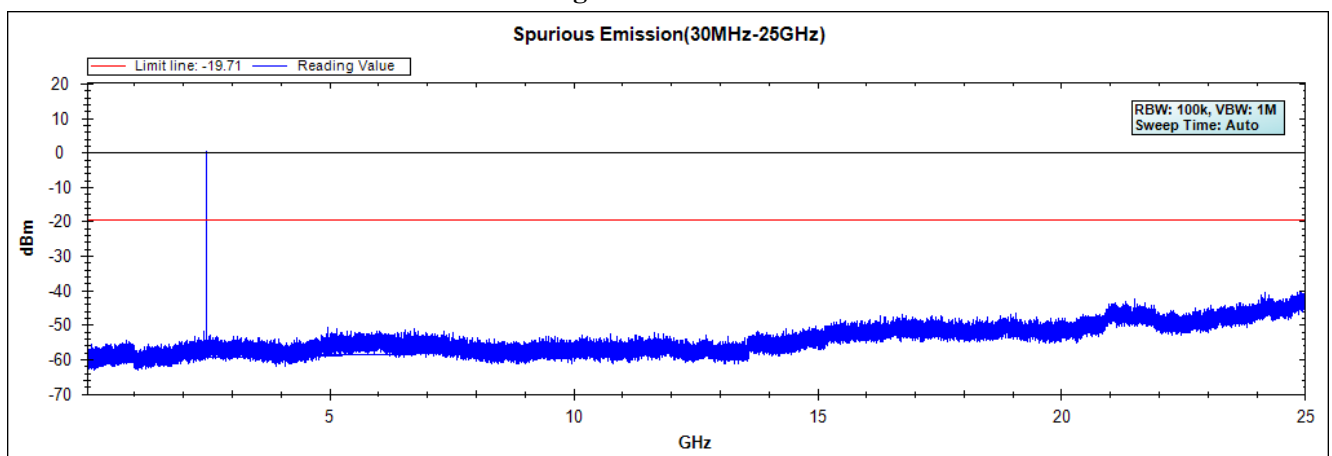


Figure Channel 78:



Note: The above test pattern is synthesized by multiple of the frequency range.

Product : F2-AVX7MT
Test Item : RF Antenna Conducted Test
Test Site : No.3 OATS
Test date : 2018/02/06
Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

Figure Channel 00:**Figure Channel 39:****Figure Channel 78:**

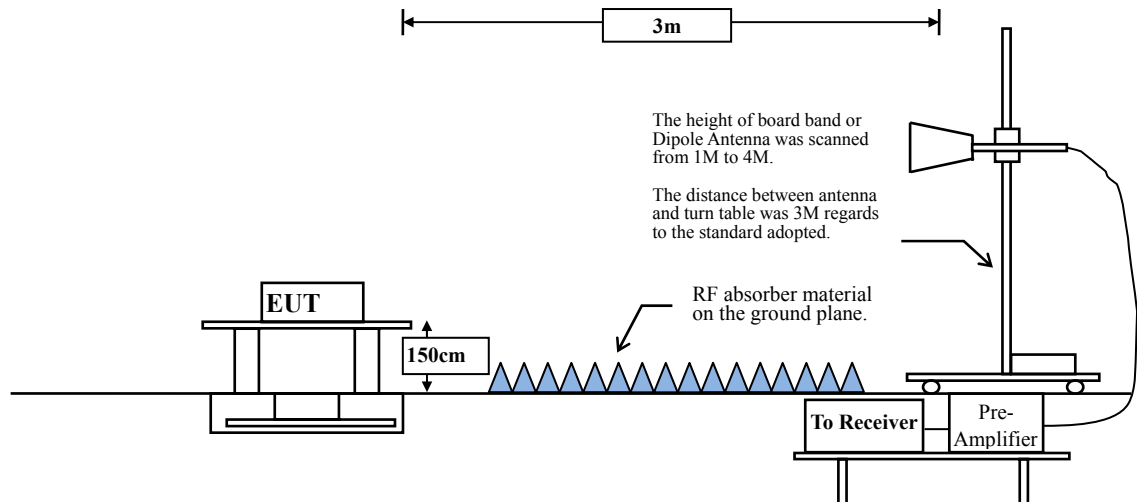
Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

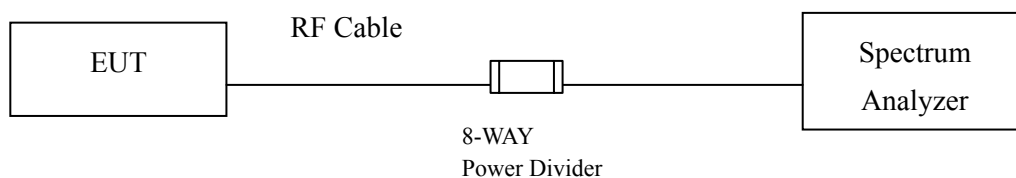
6.1. Test Setup

RF Radiated Measurement:

Above 1GHz



RF Conducted Measurement



6.2. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

6.3. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

The bandwidth setting below 1GHz and above 1GHz on the field strength meter is 120 kHz and 1MHz, respectively.

6.4. Uncertainty

± 4.08 dB above 1GHz

± 4.22 dB below 1GHz

6.5. Test Result of Band Edge

Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (2402MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
00 (Peak)	2378.200	-2.739	50.545	47.806	74.00	54.00	Pass
00 (Peak)	2390.000	-2.687	48.618	45.931	74.00	54.00	Pass
00 (Peak)	2400.000	-2.660	62.050	59.390	--	--	--
00 (Peak)	2402.200	-2.657	94.232	91.575	--	--	--
00 (Average)	2390.000	-2.687	36.960	34.273	74.00	54.00	Pass
00 (Average)	2400.000	-2.660	50.657	47.997	--	--	--
00 (Average)	2402.100	-2.657	82.599	79.942	--	--	--

Figure Channel 00:

Horizontal (Peak)

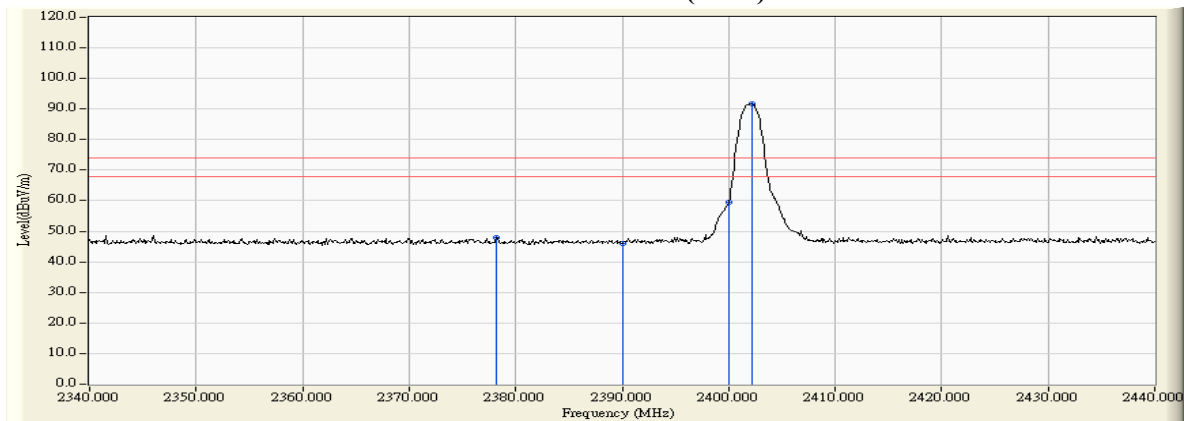
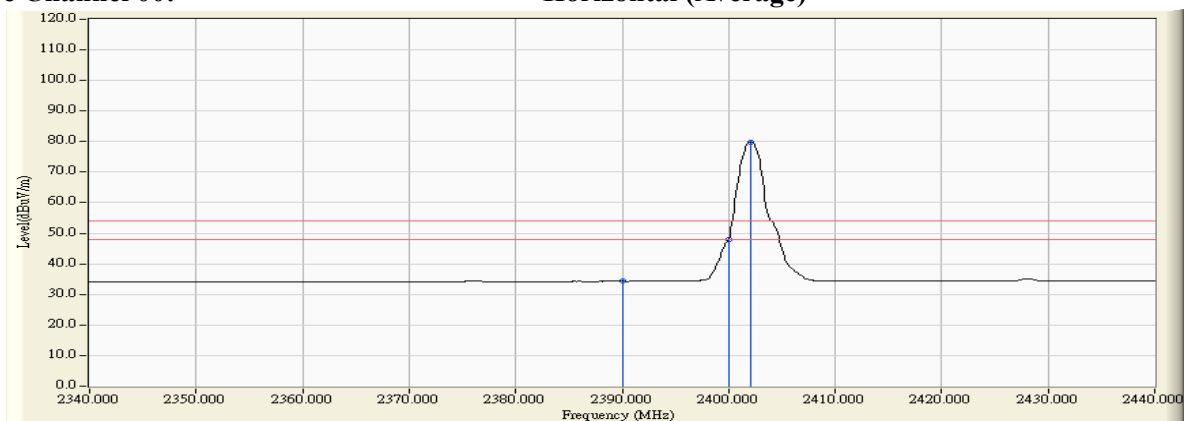


Figure Channel 00:

Horizontal (Average)



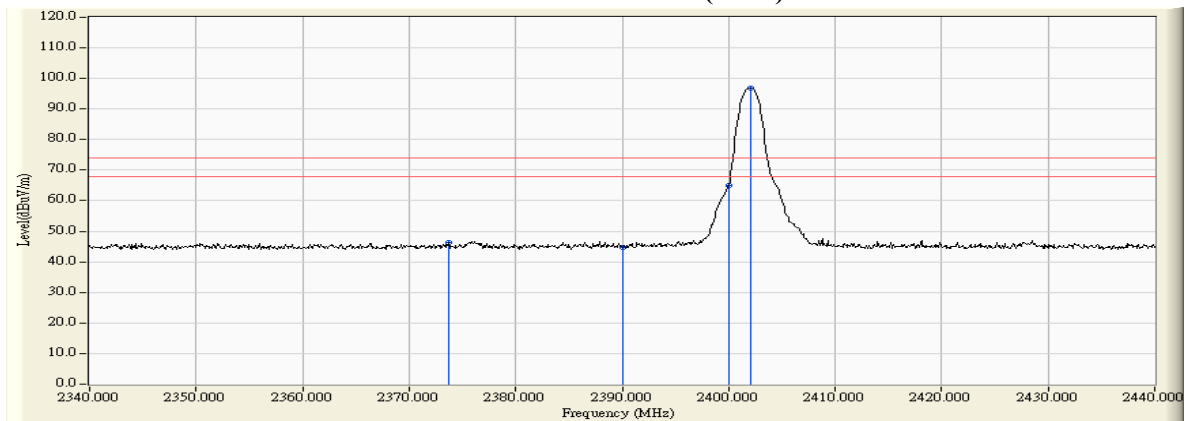
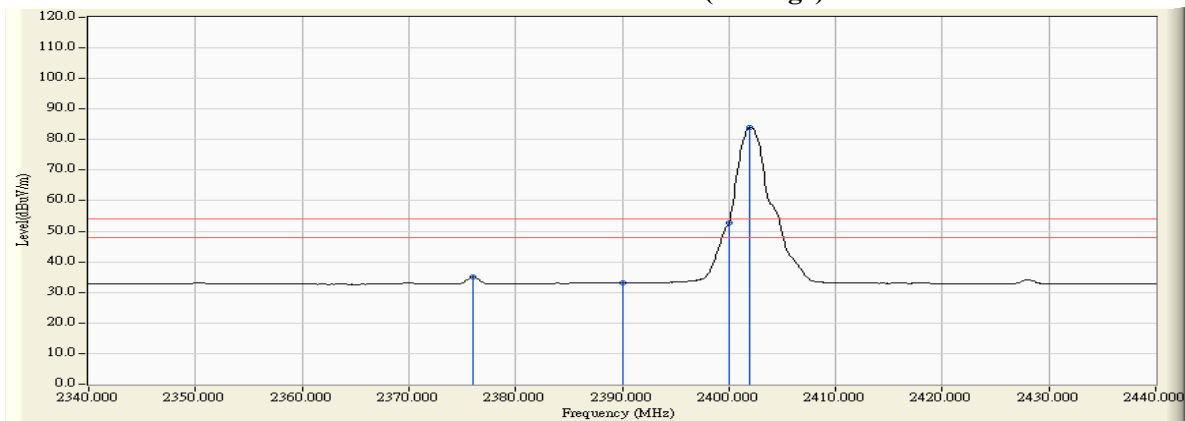
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correction Factor.
6. The average measurement was not performed when the peak measured data is under the limit of average detection.

Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (2402MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
00 (Peak)	2373.700	-4.104	50.391	46.287	74.00	54.00	Pass
00 (Peak)	2390.000	-4.159	48.991	44.832	74.00	54.00	Pass
00 (Peak)	2400.000	-4.171	69.125	64.954	--	--	--
00 (Peak)	2402.100	-4.171	100.899	96.728	--	--	--
00 (Average)	2376.000	-4.112	39.123	35.011	74.00	54.00	Pass
00 (Average)	2390.000	-4.159	37.183	33.024	74.00	54.00	Pass
00 (Average)	2400.000	-4.171	56.784	52.613	--	--	--
00 (Average)	2402.000	-4.171	88.087	83.916	--	--	--

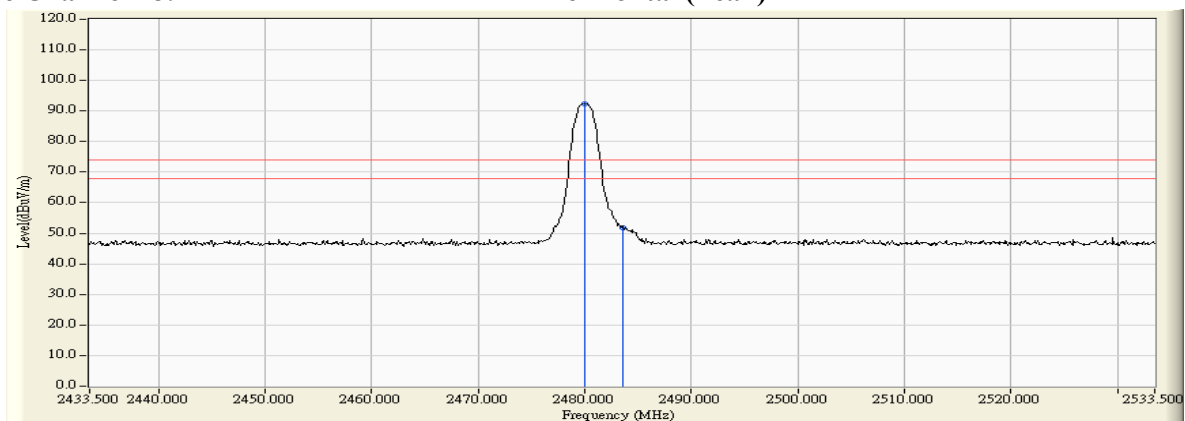
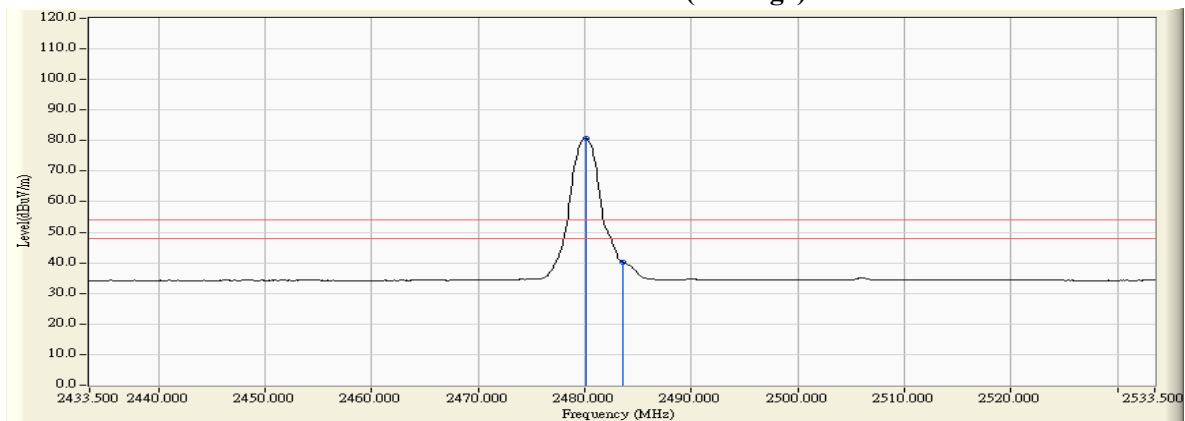
Figure Channel 00:**VERTICAL (Peak)****Figure Channel 00:****VERTICAL (Average)****Note:**

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correction Factor.
6. The average measurement was not performed when the peak measured data is under the limit of average detection.

Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (2480MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
78 (Peak)	2480.000	-2.605	95.031	92.426	--	--	--
78 (Peak)	2483.500	-2.601	54.426	51.824	74.00	54.00	Pass
78 (Average)	2480.100	-2.605	83.292	80.687	--	--	--
78 (Average)	2483.500	-2.601	42.874	40.272	74.00	54.00	Pass

Figure Channel 78:
Horizontal (Peak)

Figure Channel 78:
Horizontal (Average)


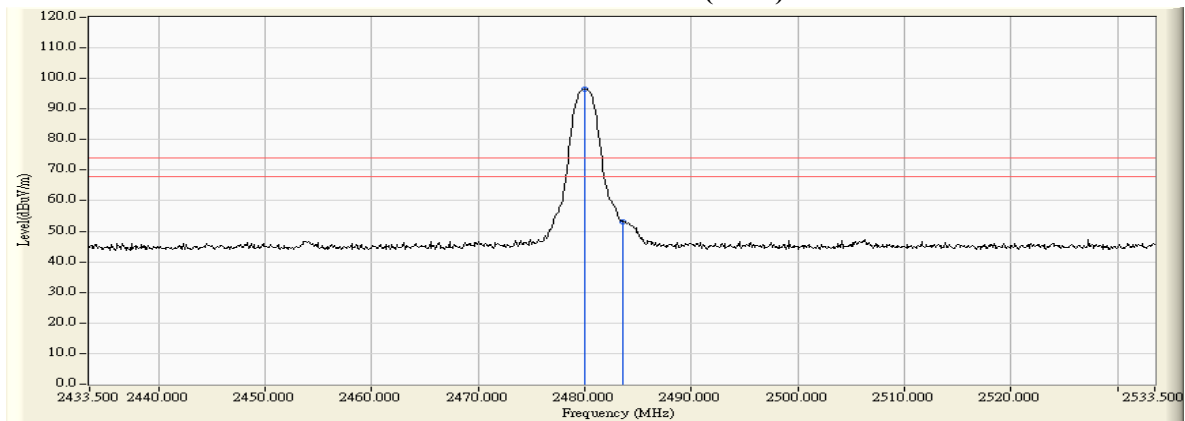
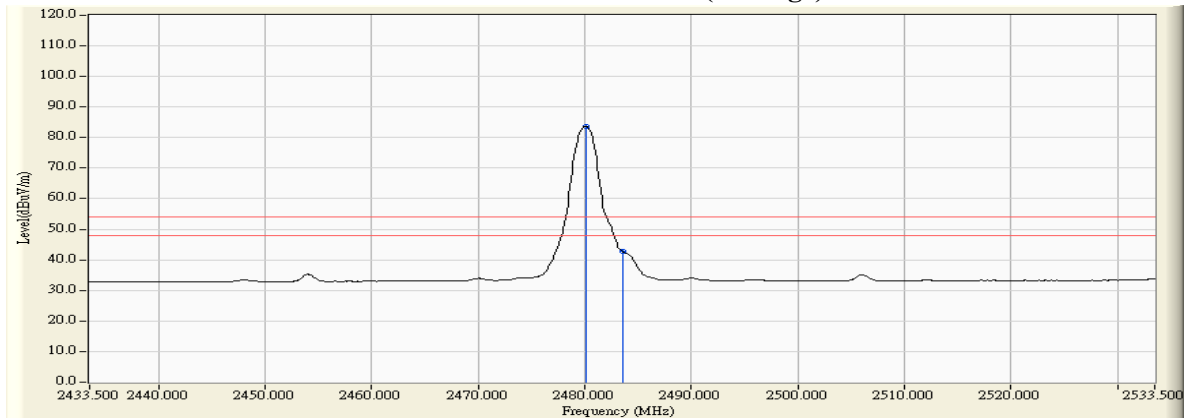
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correction Factor.
6. The average measurement was not performed when the peak measured data is under the limit of average detection.

Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (2480MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
78 (Peak)	2480.000	-3.978	100.457	96.479	--	--	--
78 (Peak)	2483.500	-3.966	56.945	52.978	74.00	54.00	Pass
78 (Average)	2480.100	-3.977	87.773	83.796	--	--	--
78 (Average)	2483.500	-3.966	46.739	42.772	74.00	54.00	Pass

Figure Channel 78:**VERTICAL (Peak)****Figure Channel 78:****VERTICAL (Average)**

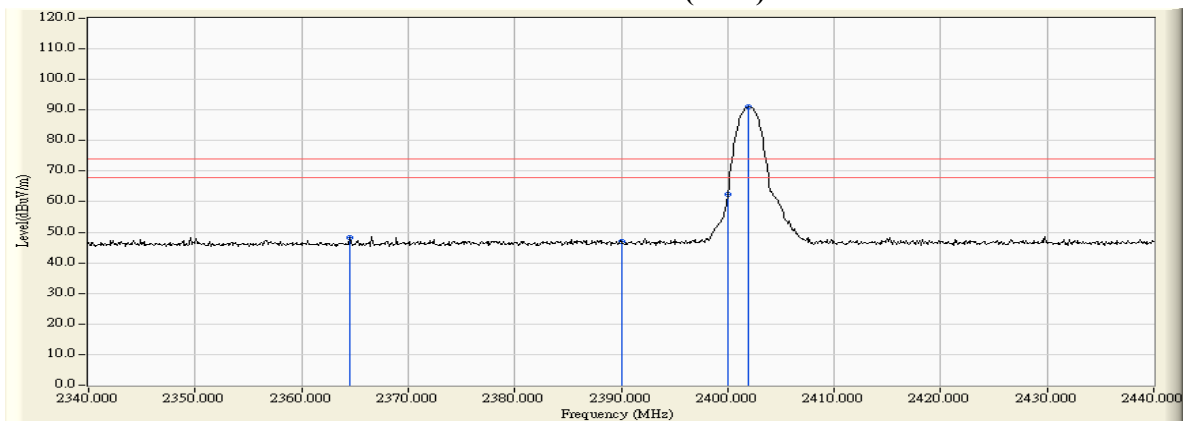
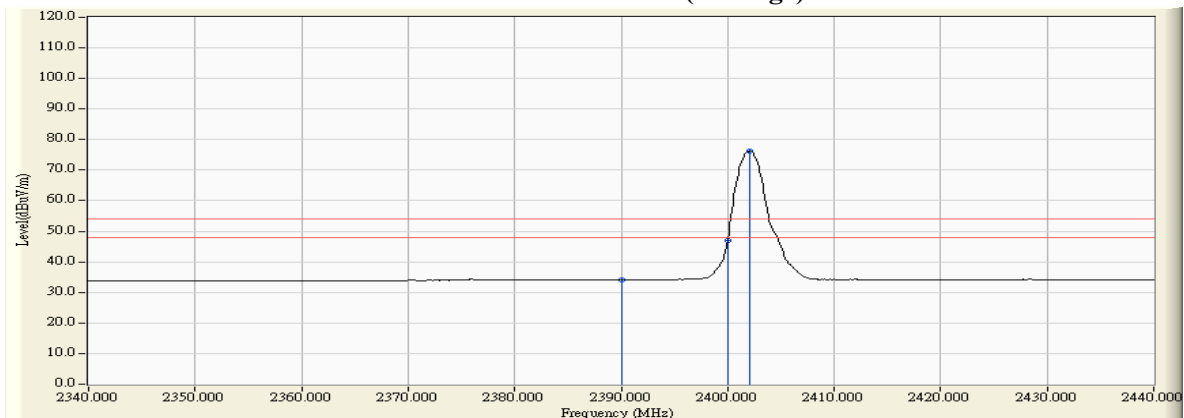
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correction Factor.
6. The average measurement was not performed when the peak measured data is under the limit of average detection.

Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2402MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
00 (Peak)	2364.500	-2.800	51.078	48.279	74.00	54.00	Pass
00 (Peak)	2390.000	-2.687	49.703	47.016	74.00	54.00	Pass
00 (Peak)	2400.000	-2.660	65.000	62.340	--	--	--
00 (Peak)	2402.000	-2.657	93.767	91.110	--	--	--
00 (Average)	2390.000	-2.687	36.841	34.154	74.00	54.00	Pass
00 (Average)	2400.000	-2.660	49.748	47.088	--	--	--
00 (Average)	2402.100	-2.657	78.832	76.175	--	--	--

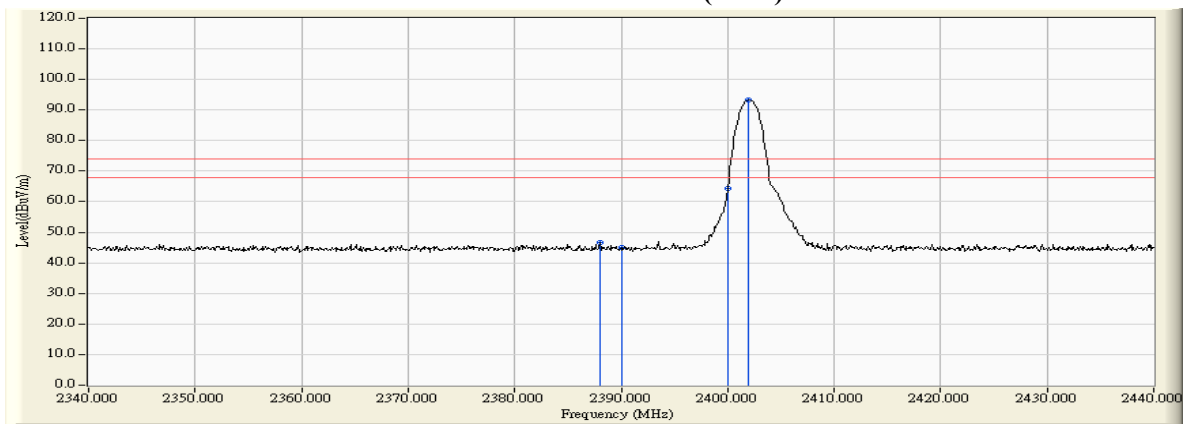
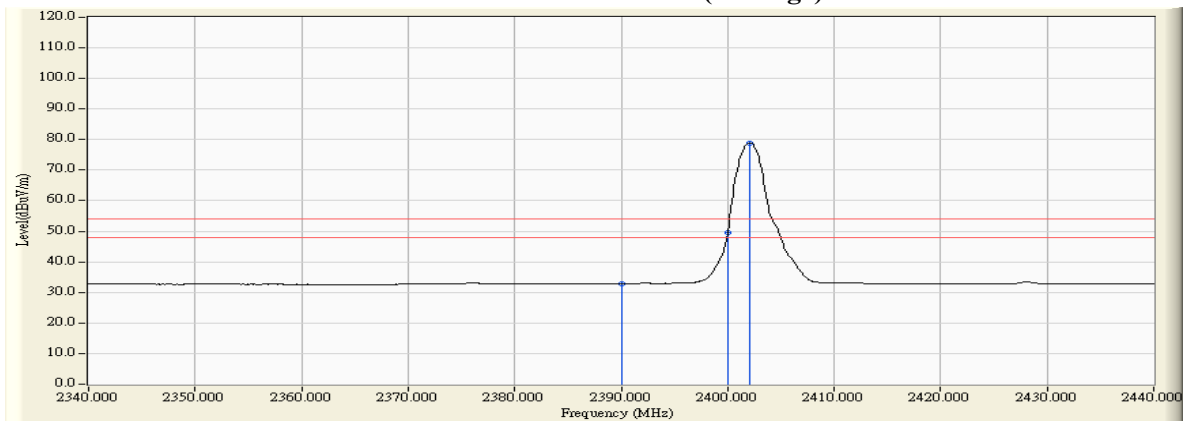
Figure Channel 00:
Horizontal (Peak)

Figure Channel 00:
Horizontal (Average)

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correction Factor.
6. The average measurement was not performed when the peak measured data is under the limit of average detection.

Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2402MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
00 (Peak)	2388.000	-4.152	50.727	46.575	74.00	54.00	Pass
00 (Peak)	2390.000	-4.159	49.337	45.178	74.00	54.00	Pass
00 (Peak)	2400.000	-4.171	68.512	64.341	--	--	--
00 (Peak)	2402.000	-4.171	97.446	93.275	--	--	--
00 (Average)	2390.000	-4.159	36.985	32.826	74.00	54.00	Pass
00 (Average)	2400.000	-4.171	53.747	49.576	--	--	--
00 (Average)	2402.100	-4.171	83.106	78.935	--	--	--

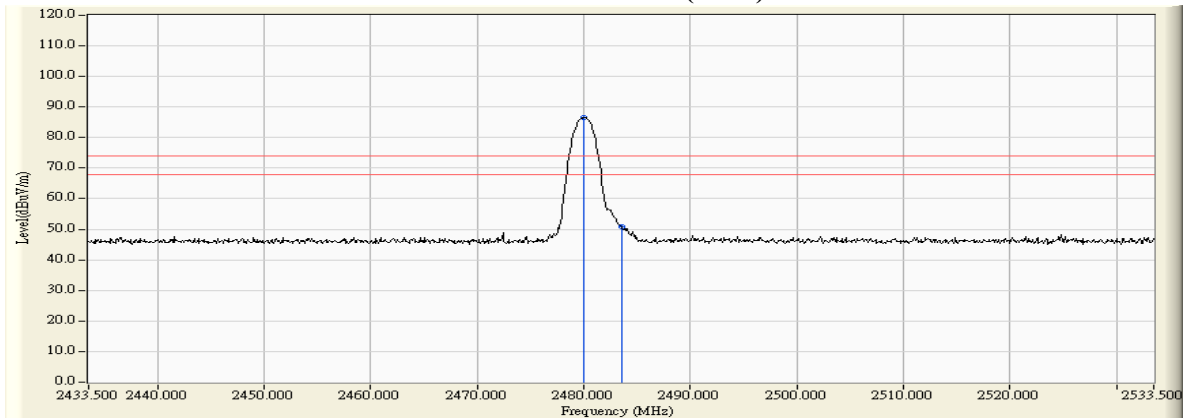
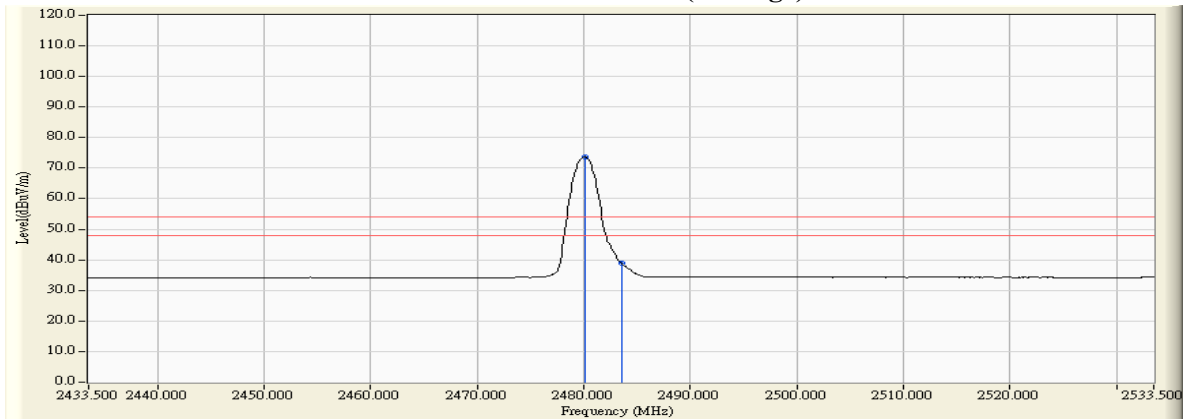
Figure Channel 00:**VERTICAL (Peak)****Figure Channel 00:****VERTICAL (Average)****Note:**

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correction Factor.
6. The average measurement was not performed when the peak measured data is under the limit of average detection.

Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2480MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
78 (Peak)	2480.000	-2.605	89.234	86.629	--	--	--
78 (Peak)	2483.500	-2.601	53.371	50.769	74.00	54.00	Pass
78 (Average)	2480.100	-2.605	76.232	73.627	--	--	--
78 (Average)	2483.500	-2.601	41.424	38.822	74.00	54.00	Pass

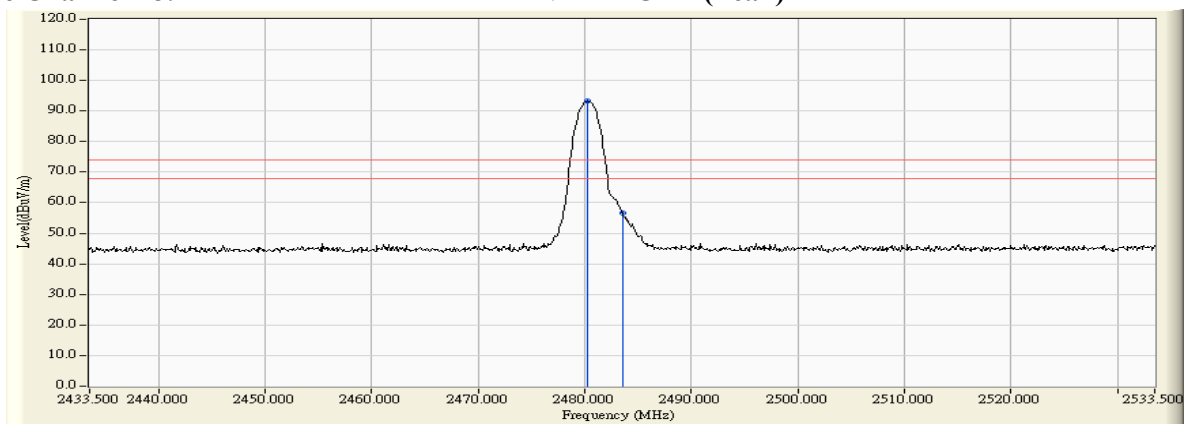
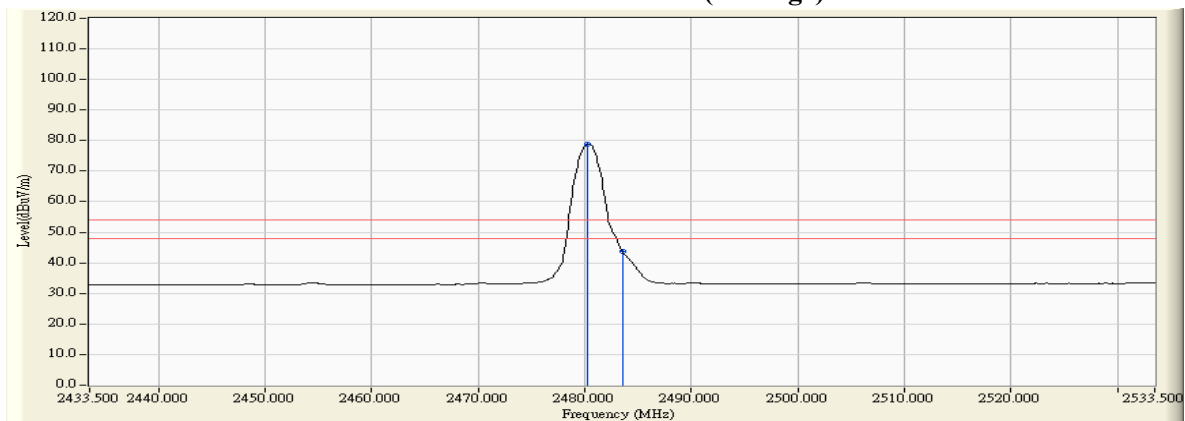
Figure Channel 00:**Horizontal (Peak)****Figure Channel 00:****Horizontal (Average)****Note:**

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correction Factor.
6. The average measurement was not performed when the peak measured data is under the limit of average detection.

Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2018/02/06
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2480MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
78 (Peak)	2480.300	-3.977	97.172	93.195	--	--	--
78 (Peak)	2483.500	-3.966	60.498	56.531	74.00	54.00	Pass
78 (Average)	2480.300	-3.977	82.780	78.803	--	--	--
78 (Average)	2483.500	-3.966	47.767	43.800	74.00	54.00	Pass

Figure Channel 78:**VERTICAL (Peak)****Figure Channel 78:****VERTICAL (Average)****Note:**

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correction Factor.
6. The average measurement was not performed when the peak measured data is under the limit of average detection.

Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(Hopping off)

Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 00:

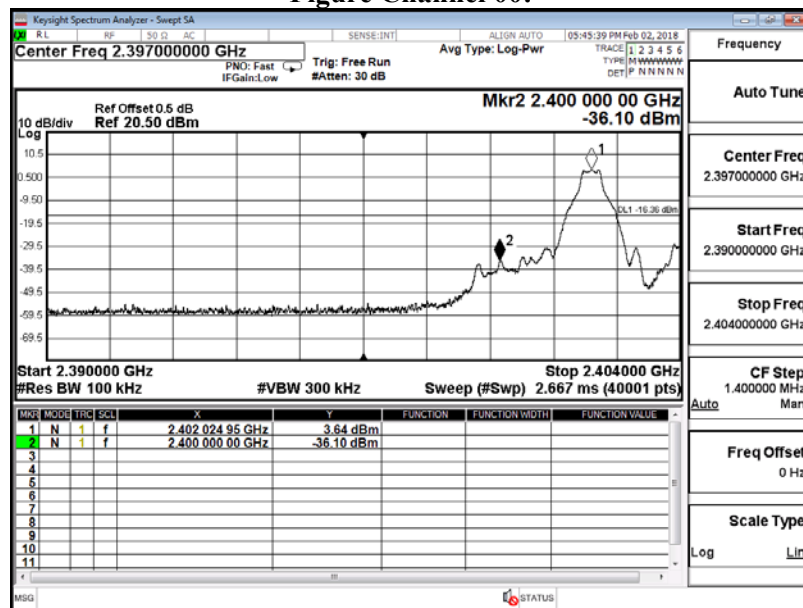
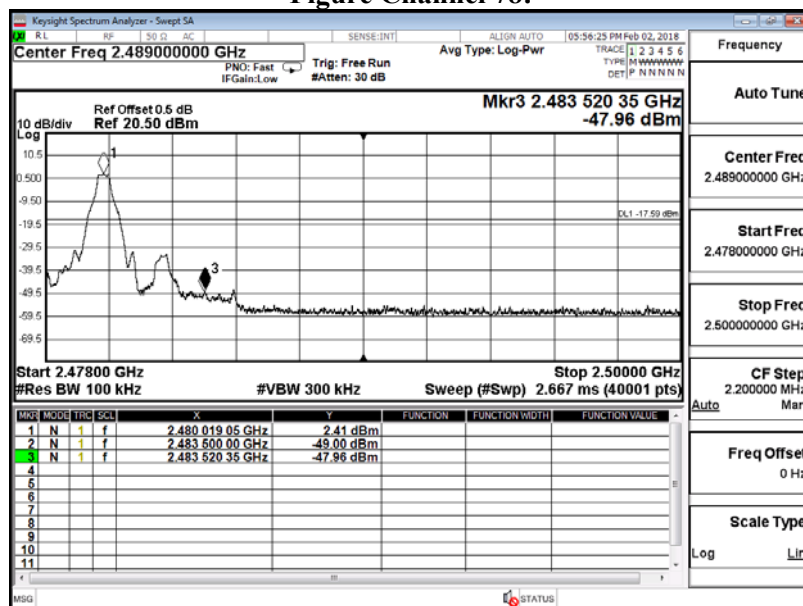


Figure Channel 78:



Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (Hopping off)

Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 00:

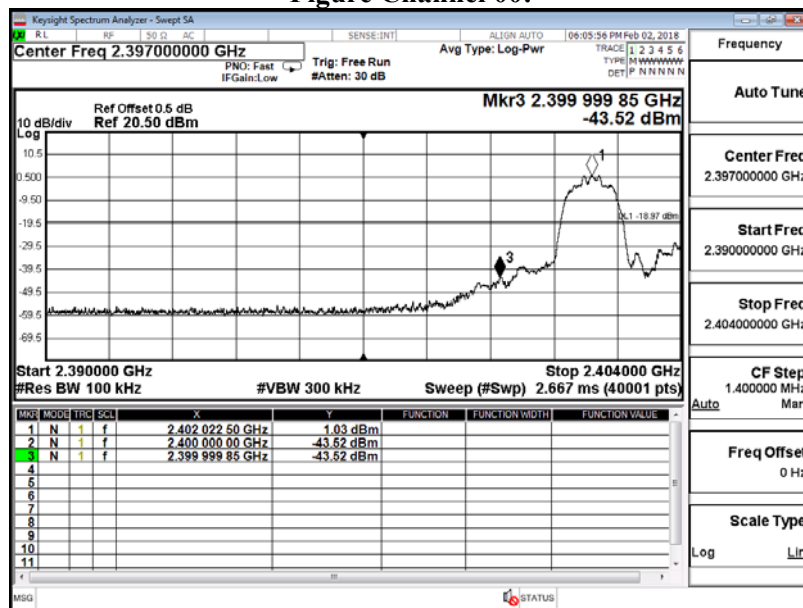
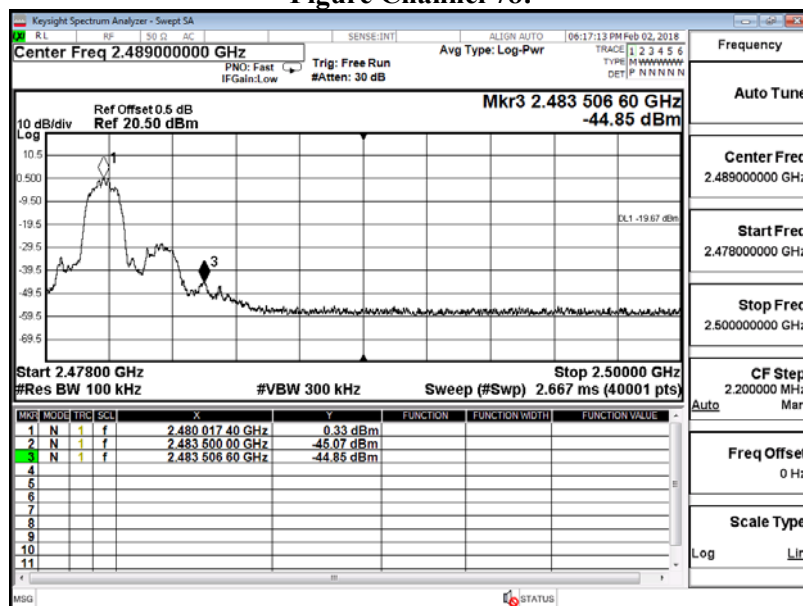


Figure Channel 78:



Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)(Hopping on)

Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 00 Hopping:

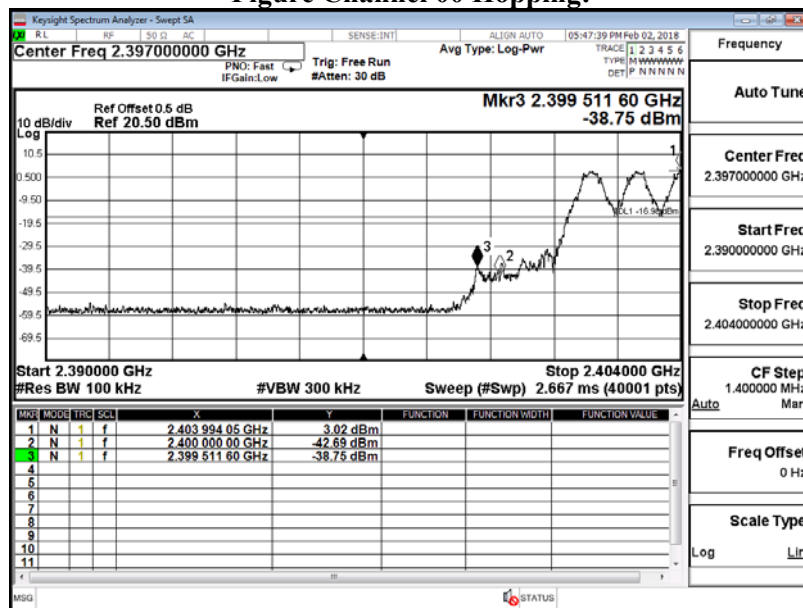
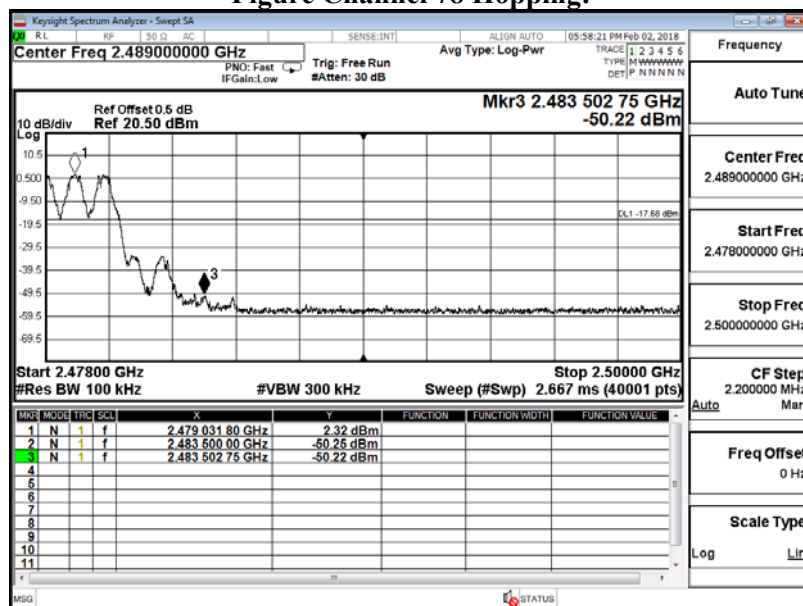


Figure Channel 78 Hopping:



Product : F2-AVX7MT
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (Hopping on)

Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 00 Hopping:

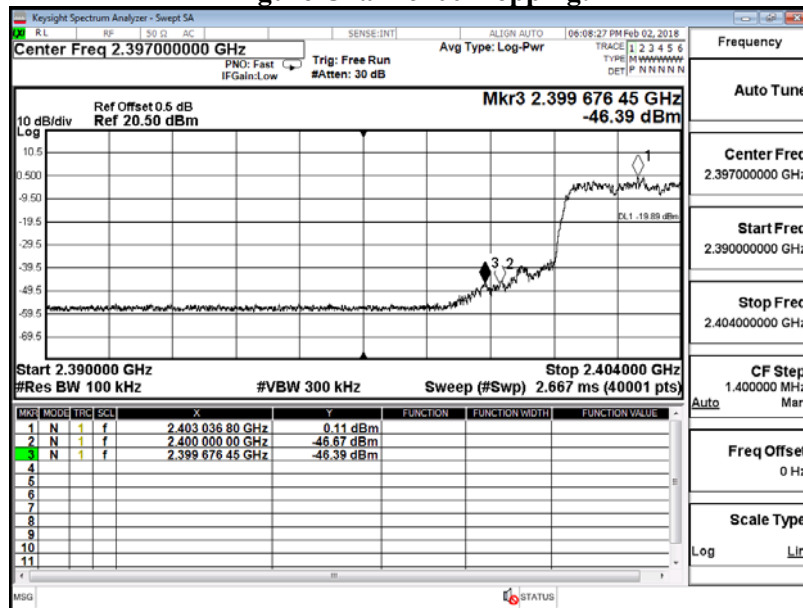
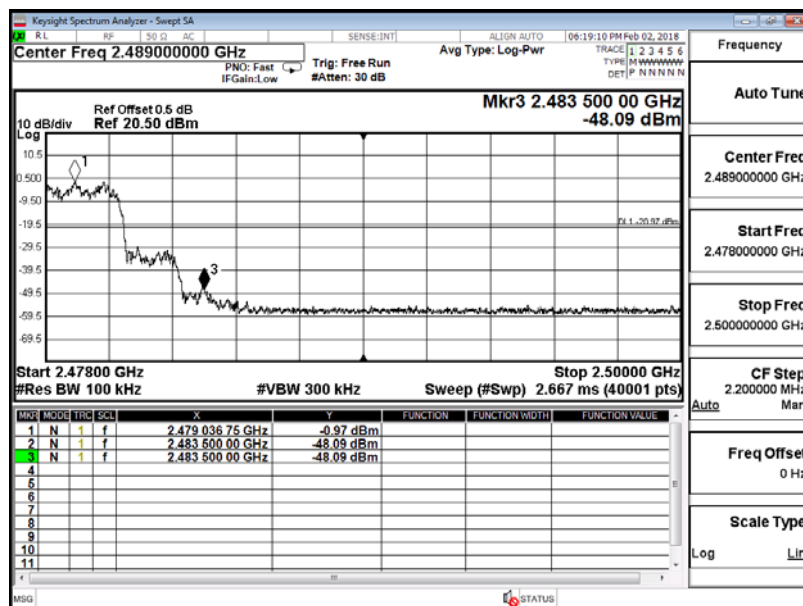
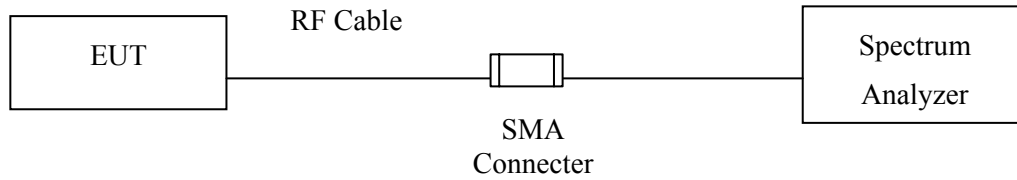


Figure Channel 78 Hopping:



7. Channel Number

7.1. Test Setup



7.2. Limit

Frequency hopping systems operating in the 2400-2483.5 MHz bands shall use at least 75 hopping frequencies.

7.3. Test Procedure

The EUT was setup to ANSI C63.4, 2014; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

7.4. Uncertainty

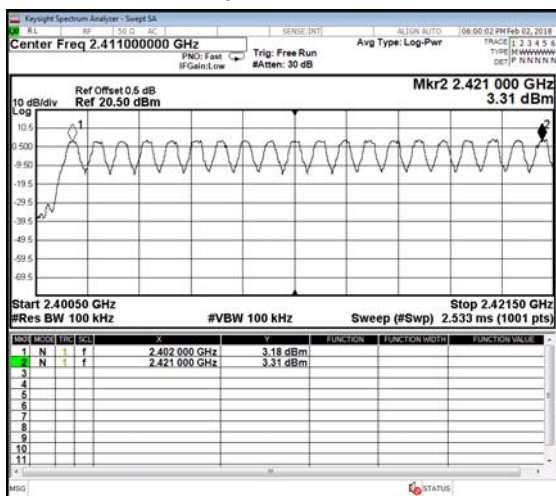
N/A

7.5. Test Result of Channel Number

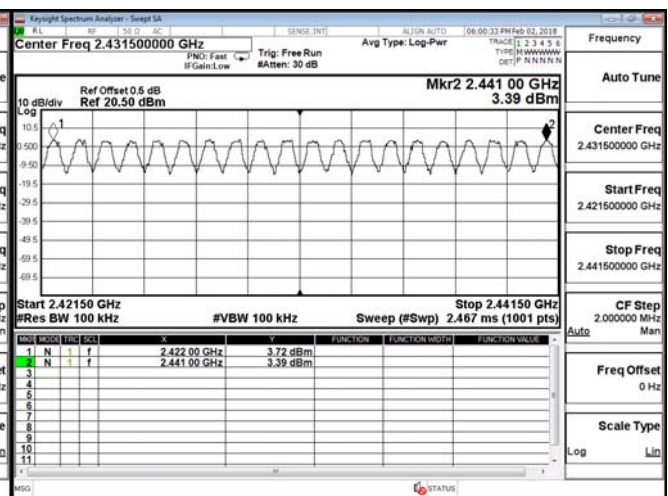
Product : F2-AVX7MT
 Test Item : Channel Number
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass

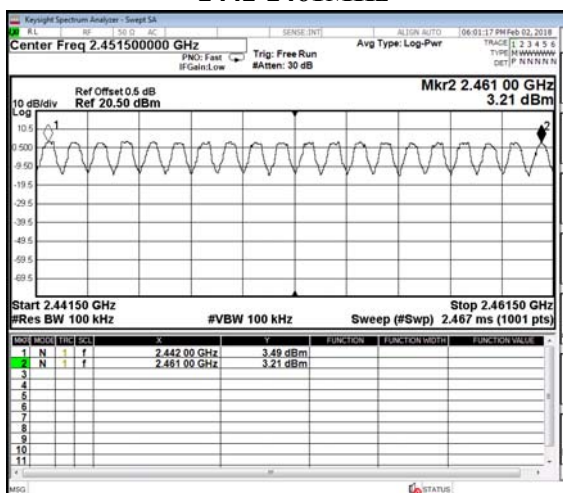
2402-2421MHz



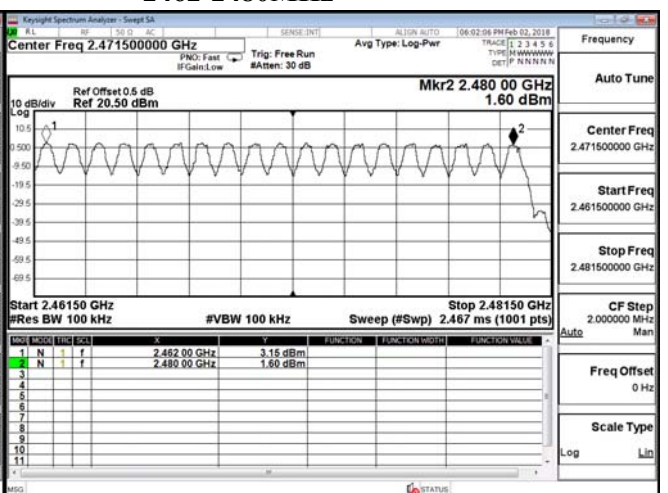
2422-2441MHz



2442-2461MHz



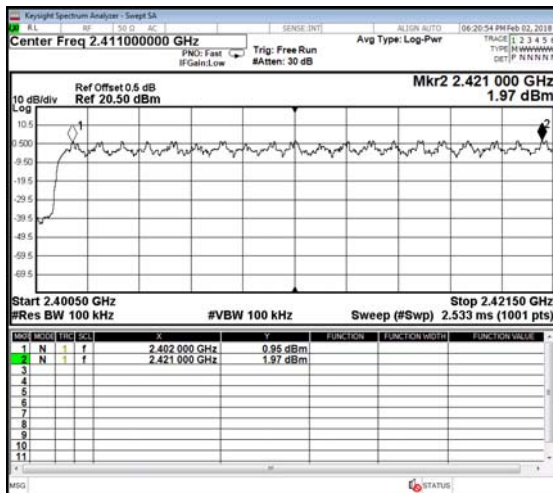
2462-2480MHz



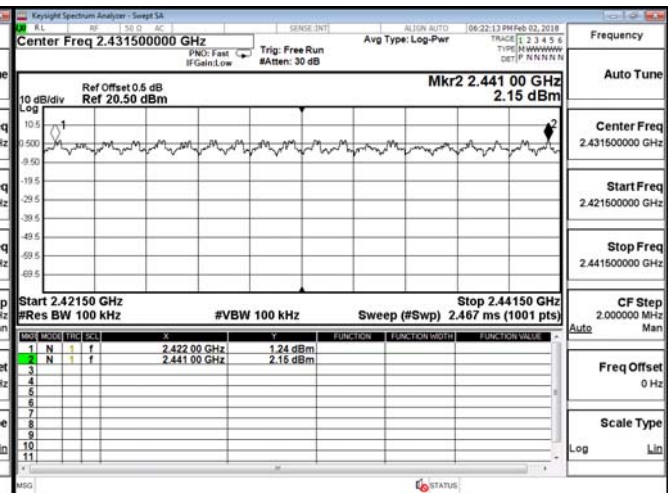
Product : F2-AVX7MT
 Test Item : Channel Number
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass

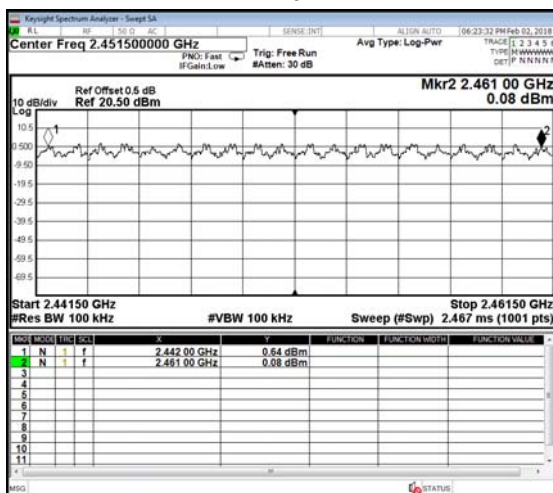
2402-2421MHz



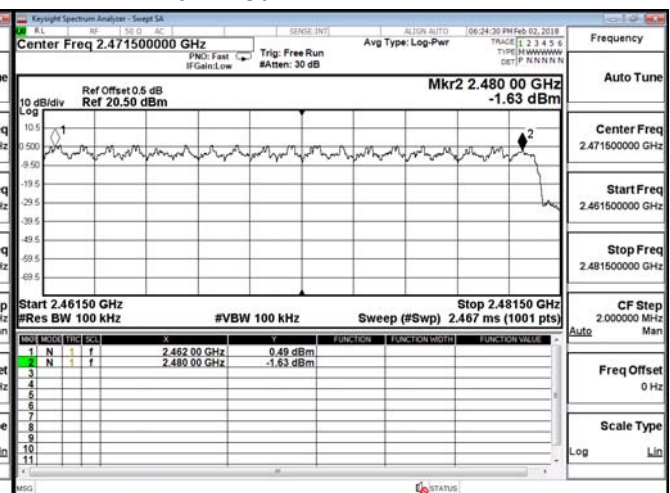
2422-2441MHz



2442-2461MHz

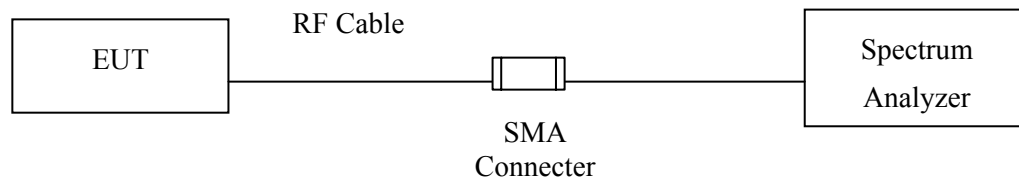


2462-2480MHz



8. Channel Separation

8.1. Test Setup



8.2. Limit

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

8.3. Test Procedure

The EUT was setup to ANSI C63.4, 2014; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

8.4. Uncertainty

$\pm 283\text{Hz}$

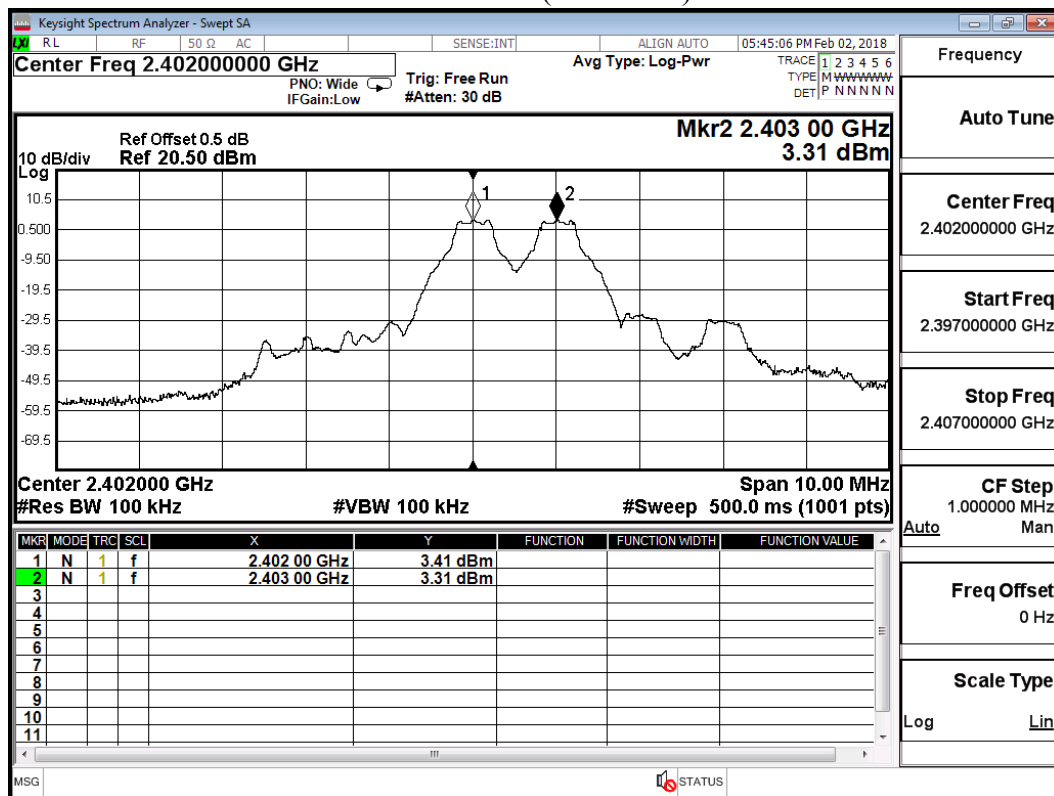
8.5. Test Result of Channel Separation

Product : F2-AVX7MT
 Test Item : Channel Separation
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK)

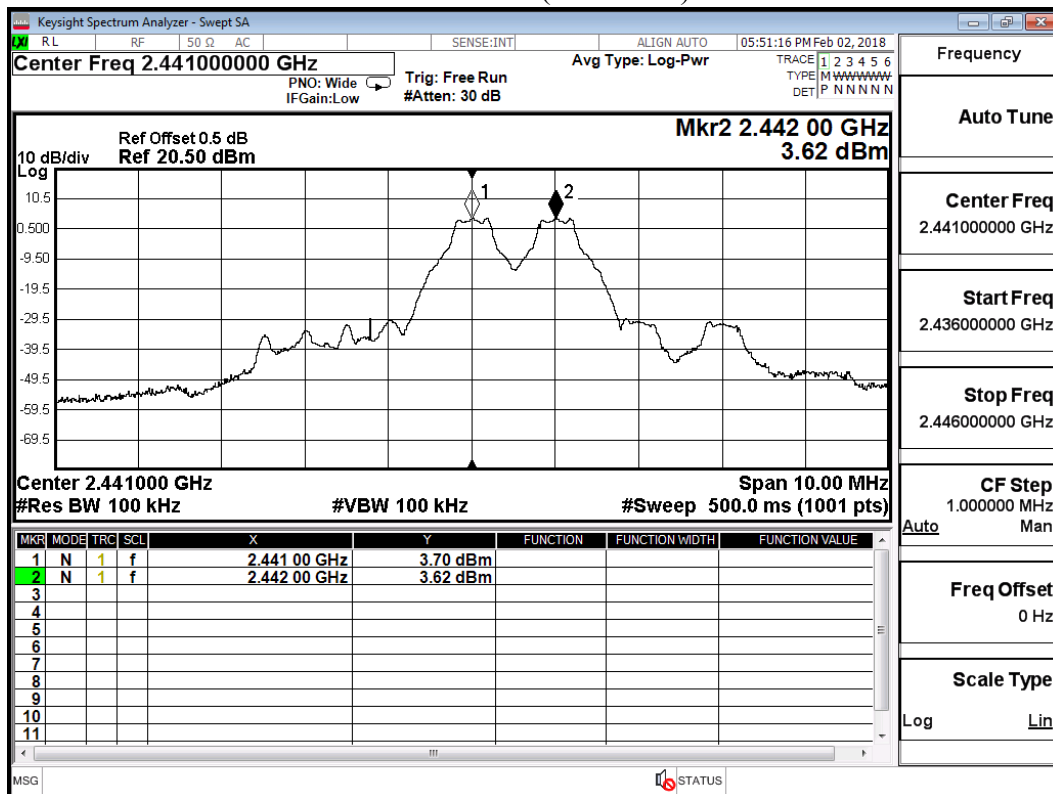
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit	Limit of (2/3)*20dB	Result
			(kHz)	Bandwidth (kHz)	
00	2402	1000	>25 kHz	620.0	Pass
39	2441	1000	>25 kHz	618.0	Pass
78	2480	1000	>25 kHz	622.0	Pass

NOTE: The 20dB Bandwidth is refer to section 10.

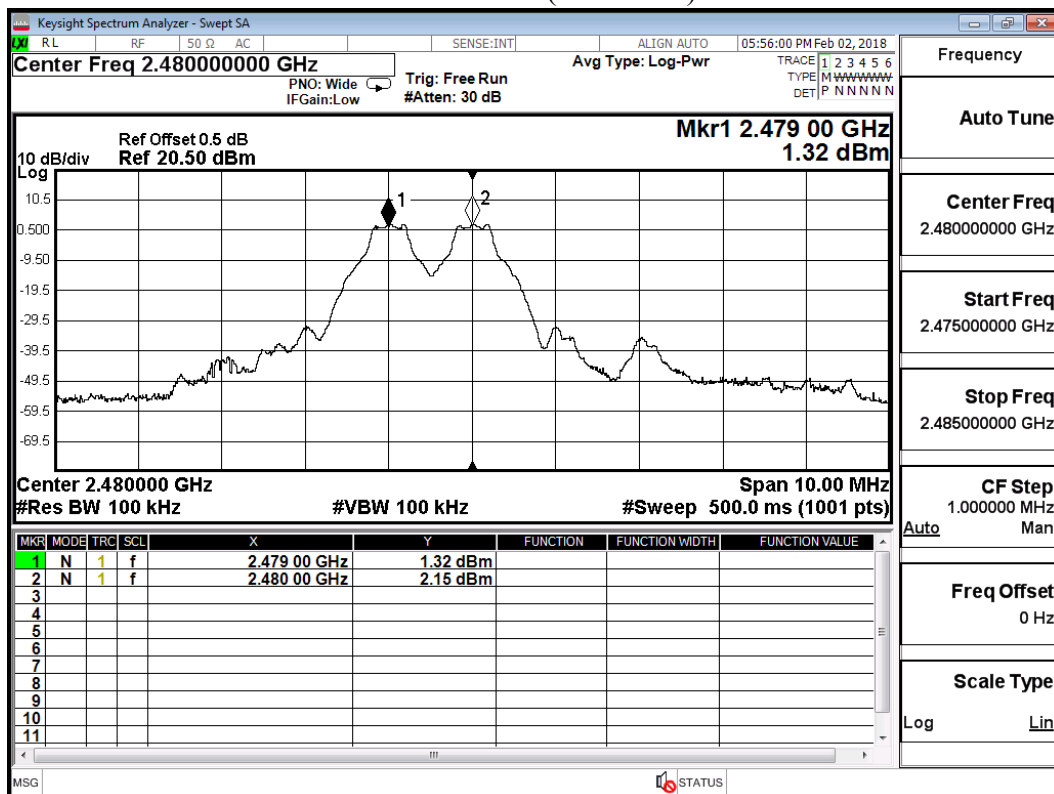
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)

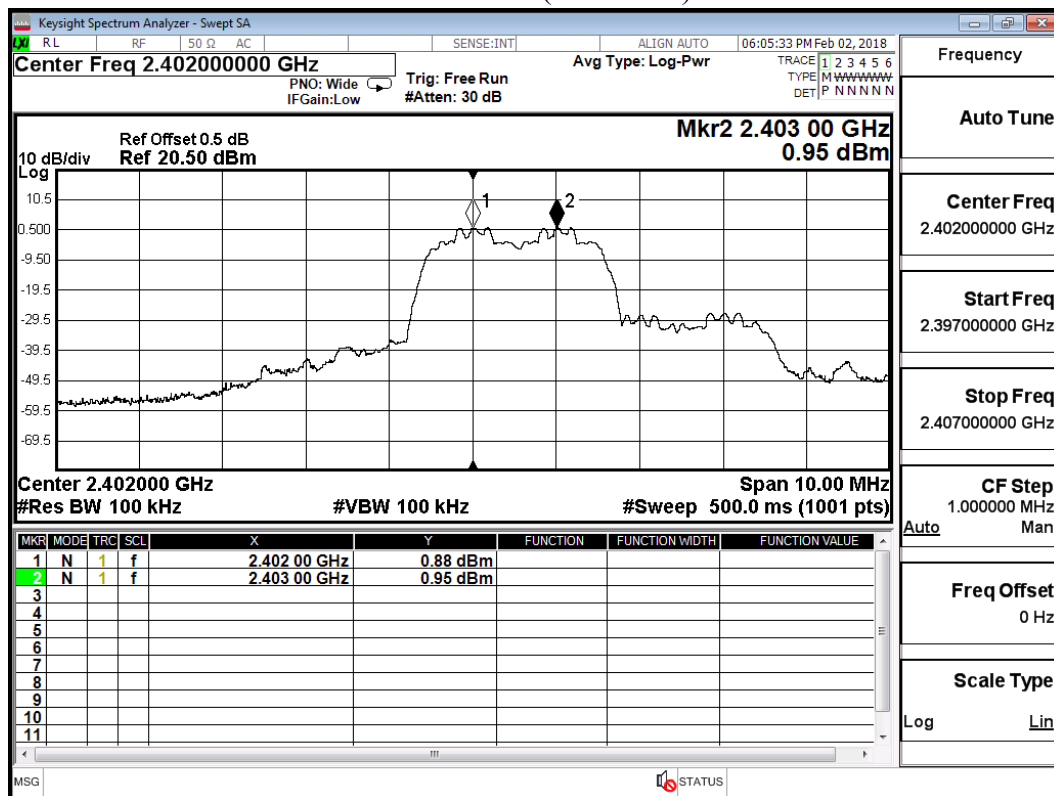


Product : F2-AVX7MT
 Test Item : Channel Separation
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK)

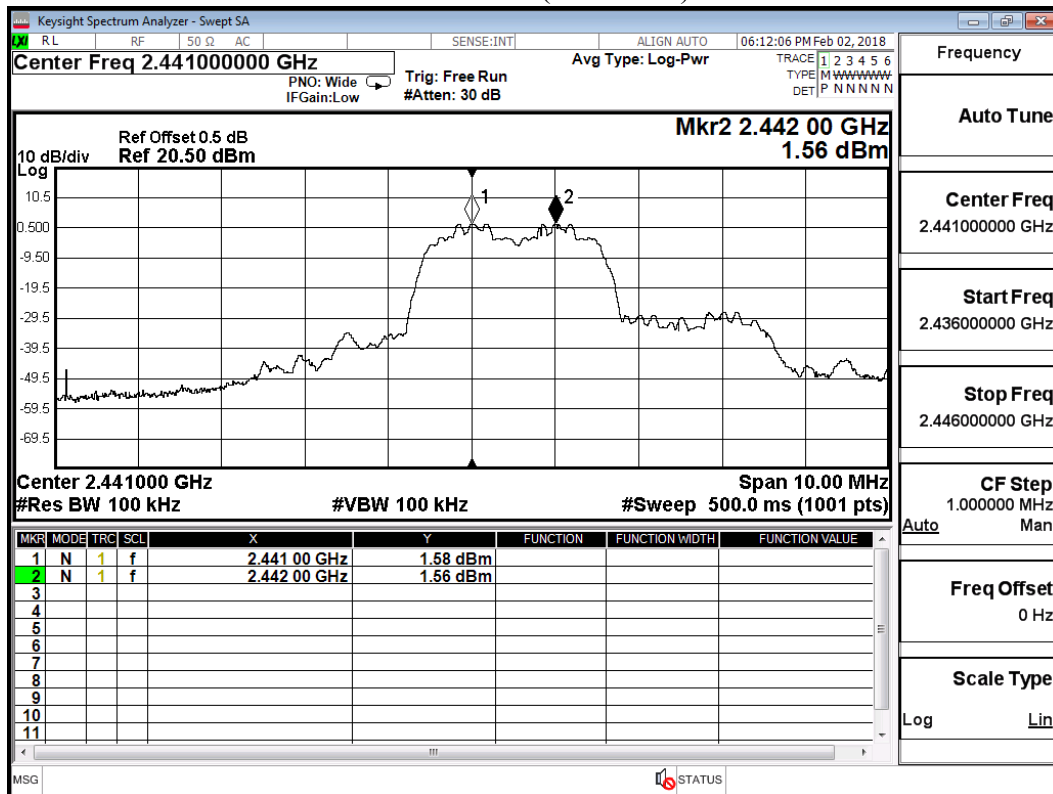
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit	Limit of (2/3)*20dB	Result
			(kHz)	Bandwidth (kHz)	
00	2402	1000	>25 kHz	842.0	Pass
39	2441	1000	>25 kHz	844.0	Pass
78	2480	1000	>25 kHz	850.0	Pass

NOTE: The 20dB Bandwidth is refer to section 10.

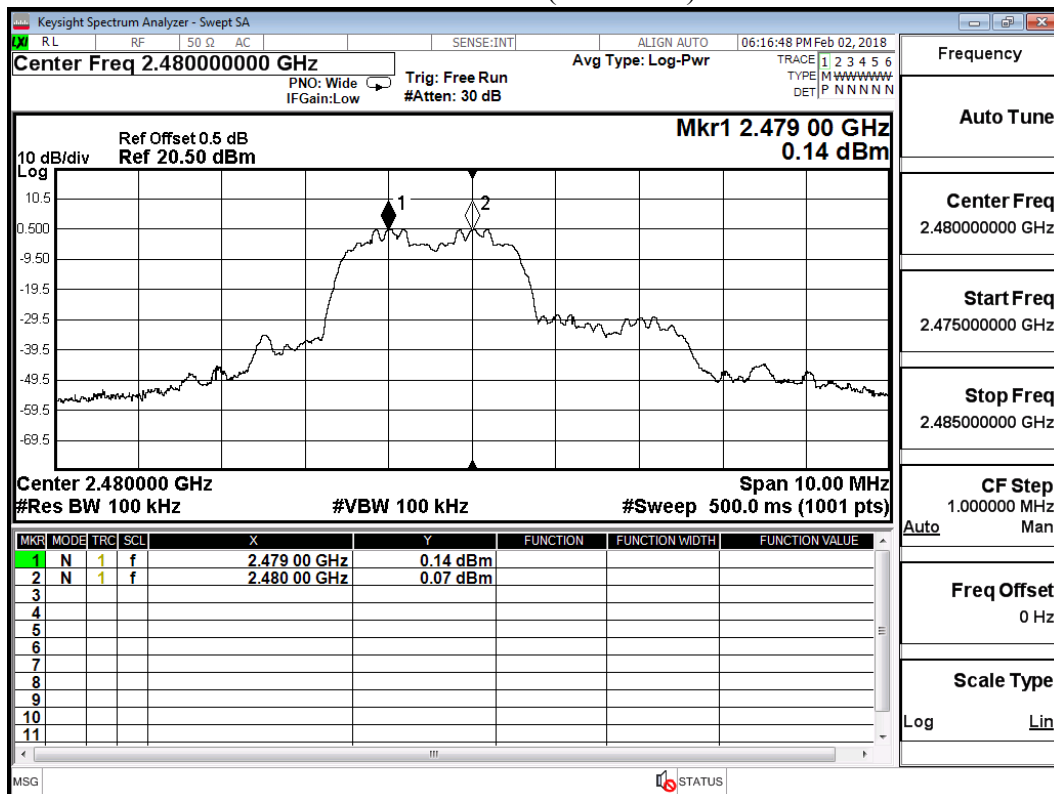
Channel 00 (2402MHz)



Channel 39 (2441MHz)

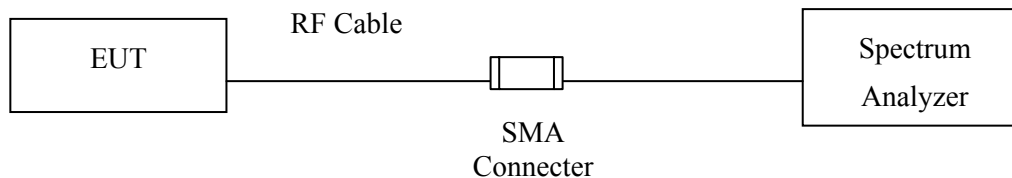


Channel 78 (2480MHz)



9. Dwell Time

9.1. Test Setup



9.2. Limit

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

9.3. Test Procedure

The EUT was setup to ANSI C63.4, 2014; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

9.4. Uncertainty

$\pm 25\text{msec}$

9.5. Test Result of Dwell Time

Product : F2-AVX7MT
 Test Item : Dwell Time
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit - 1Mbps (GFSK) (Channel 00,39,78 –DH5)

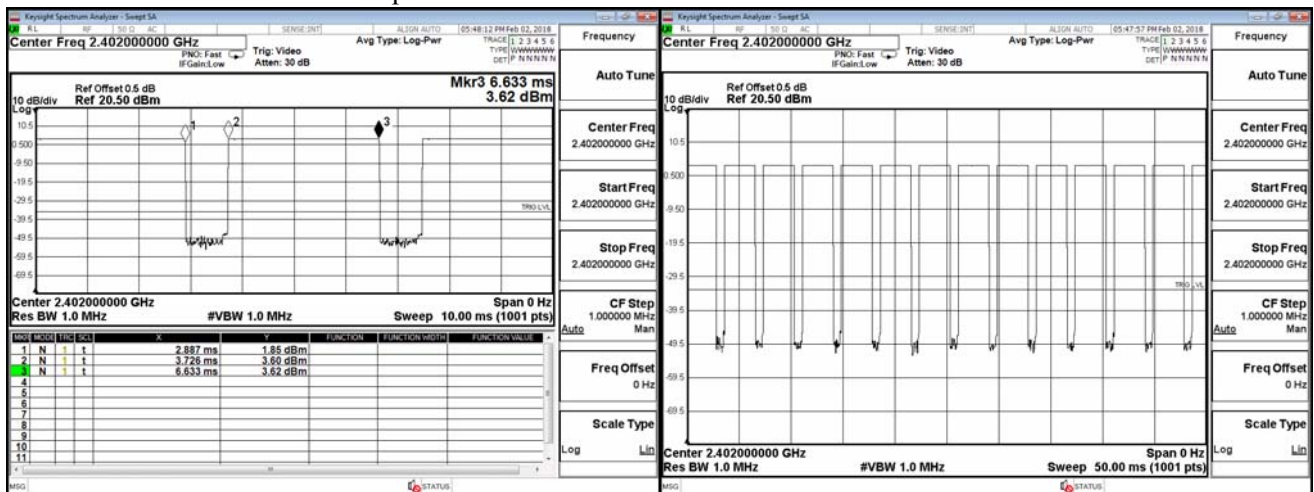
Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Duty cycle	Dwell Time (Sec)	Limit (Sec)	Result
2402	2.907	13	50	0.76	0.302	0.4	Pass
2441	2.907	13	50	0.76	0.302	0.4	Pass
2480	2.907	13	50	0.76	0.302	0.4	Pass

Duty cycle = ((Time slot length(ms)*Hopping of Number) / Sweep time (ms)

Dwell time = (Duty cycle /79) * (79*0.4)

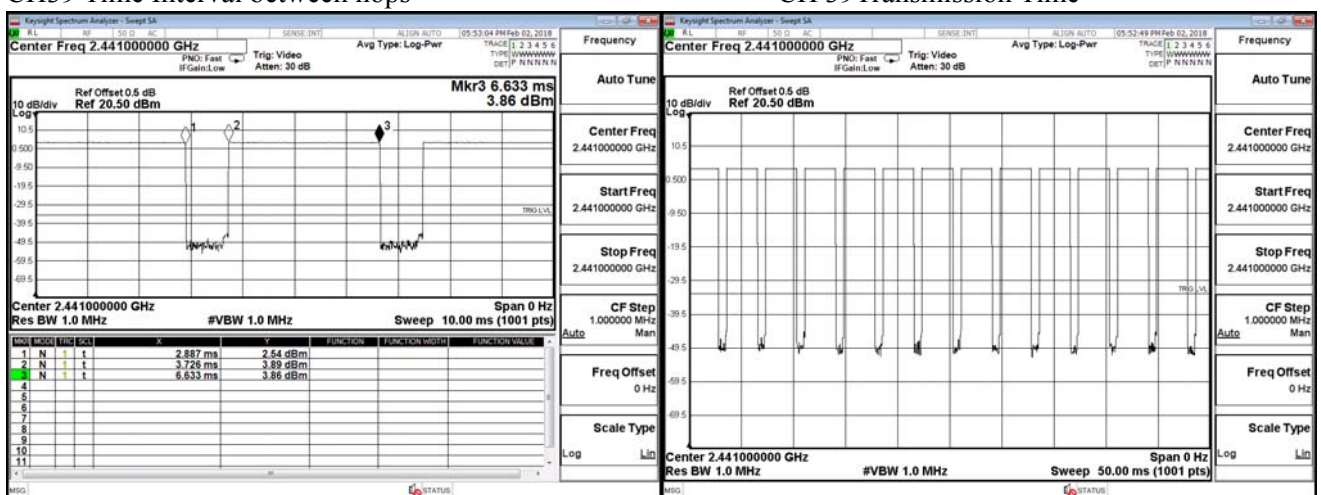
CH 00 Time Interval between hops

CH 00 Transmission Time

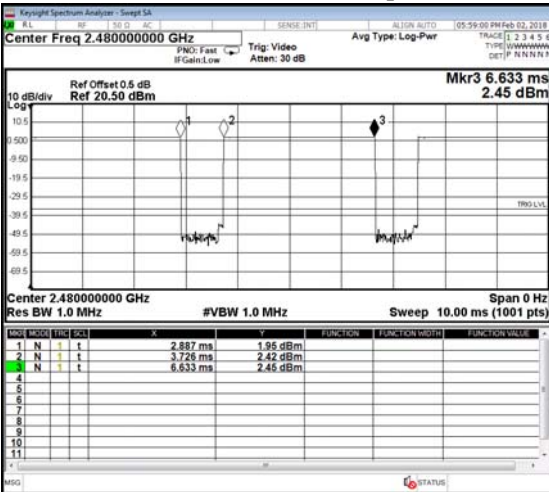


CH39 Time Interval between hops

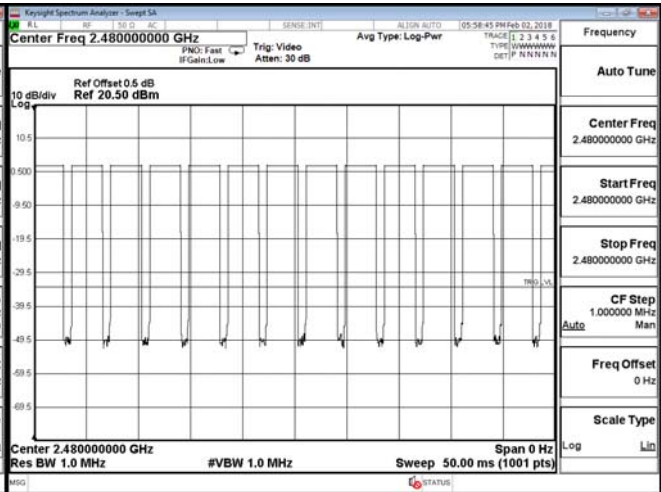
CH 39 Transmission Time



CH 78 Time Interval between hops



CH 78 Transmission Time



Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

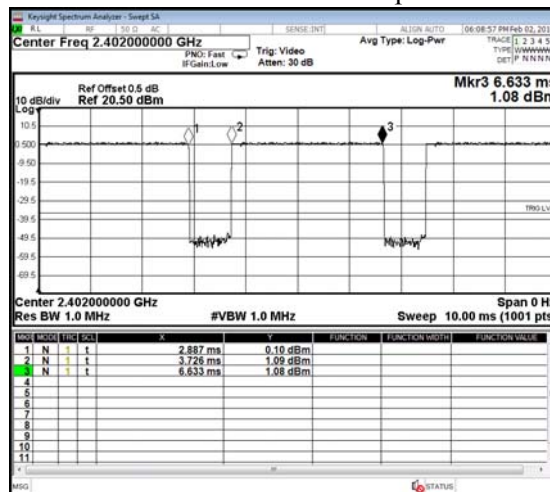
Product : F2-AVX7MT
 Test Item : Dwell Time
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (Channel 00,39,78 –DH5)

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Duty cycle	Dwell Time (Sec)	Limit (Sec)	Result
2402	2.907	13	50	0.76	0.302	0.4	Pass
2441	2.917	13	50	0.76	0.303	0.4	Pass
2480	2.917	13	50	0.76	0.303	0.4	Pass

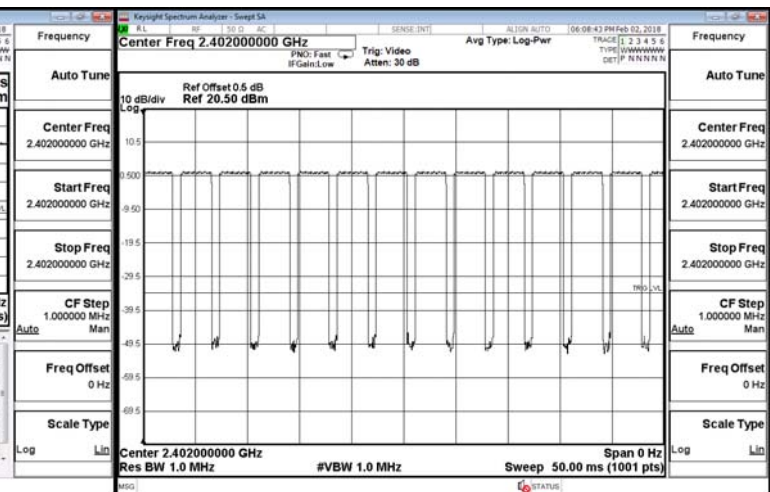
Duty cycle = (Time slot length(ms)*Hopping of Number) / Sweep time (ms)

Dwell time = (Duty cycle / 79) * (79*0.4)

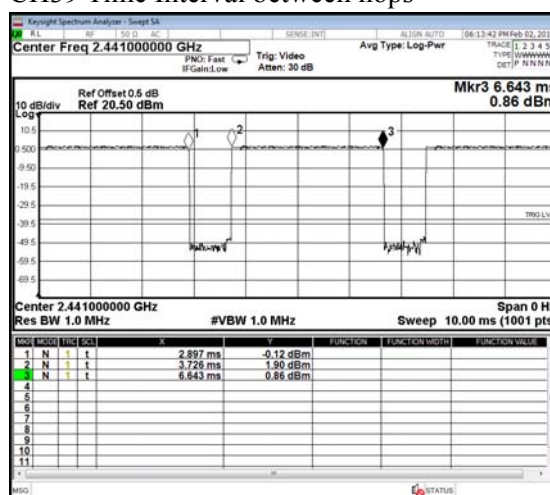
CH 00 Time Interval between hops



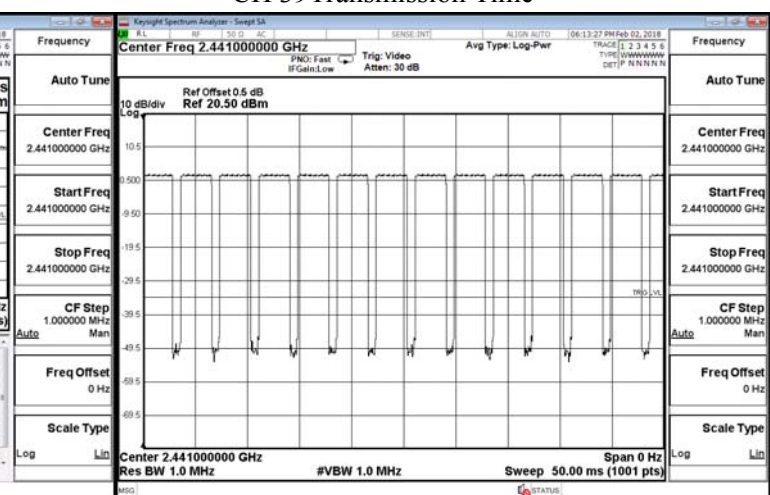
CH 00 Transmission Time



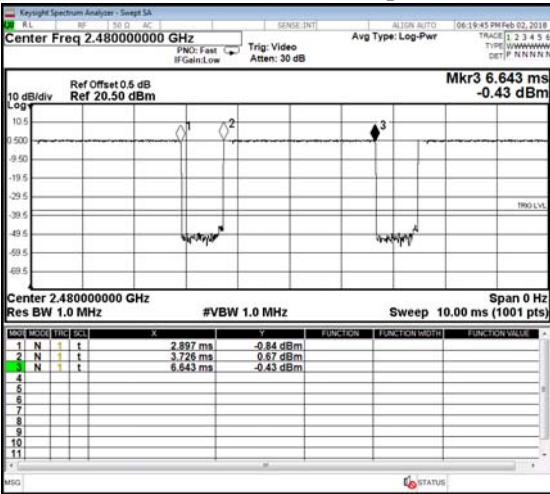
CH39 Time Interval between hops



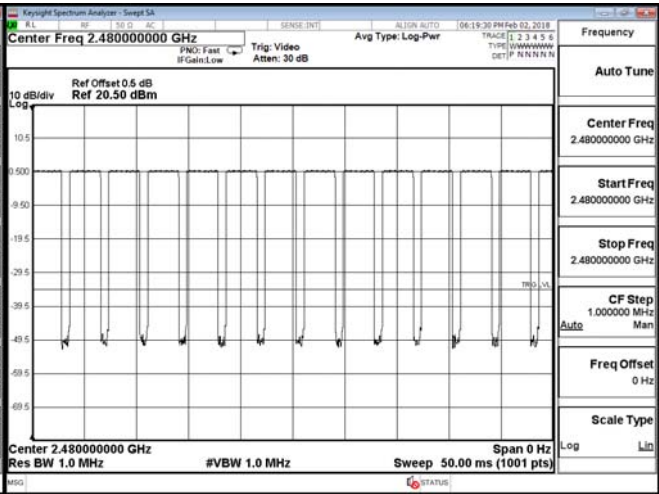
CH 39 Transmission Time



CH 78 Time Interval between hops



CH 78 Transmission Time

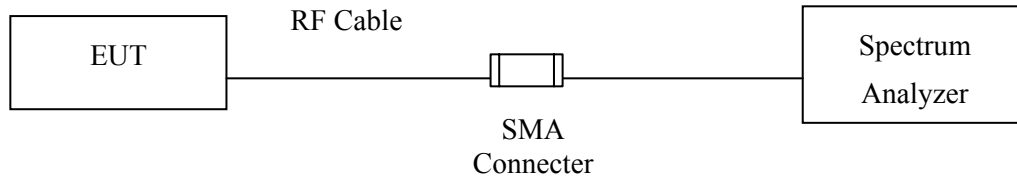


Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

10. Occupied Bandwidth

10.1. Test Setup



10.2. Limits

N/A

10.3. Test Procedure

The EUT was setup to ANSI C63.4, 2014; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

10.4. Uncertainty

$\pm 283\text{Hz}$

Product	:	F2-AVX7MT
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	930	--	NA
39	2441	927	--	NA
78	2480	933	--	NA

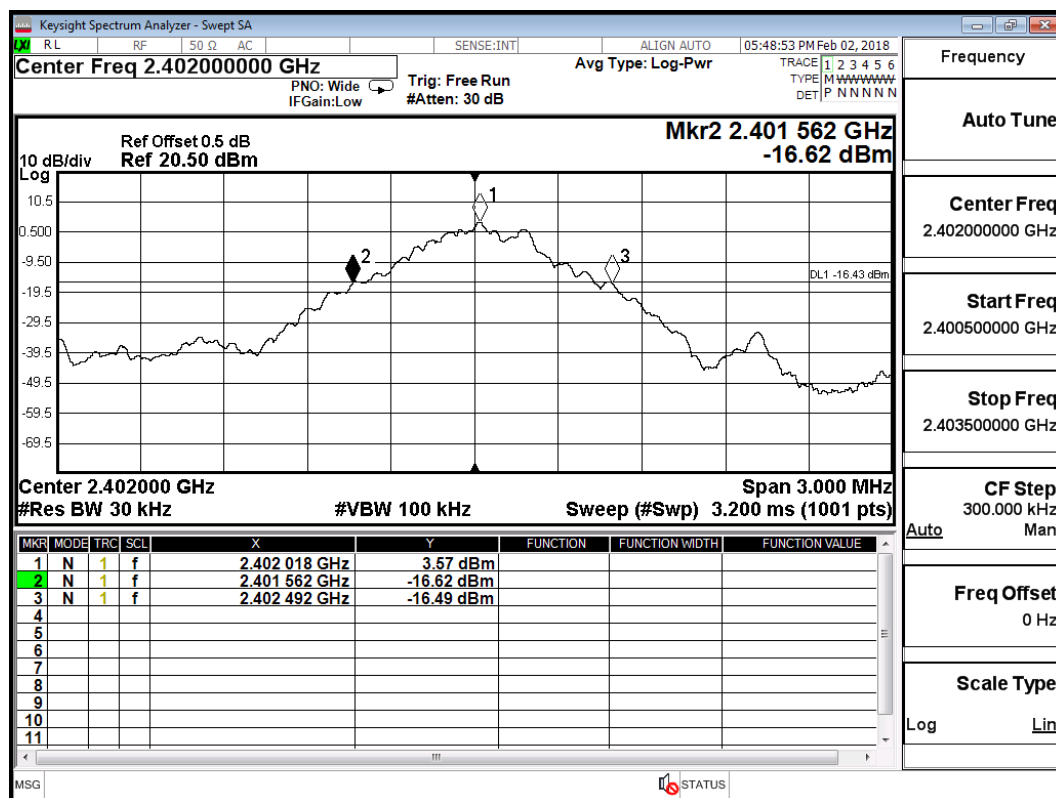


Figure Channel 39:

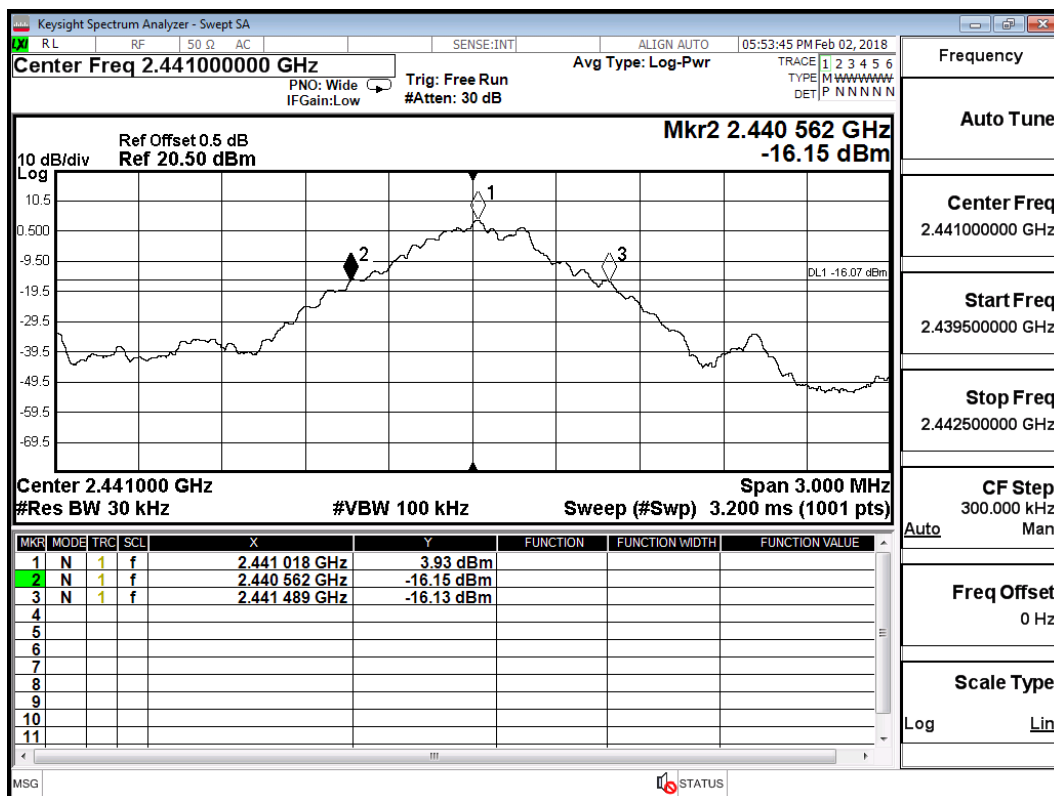
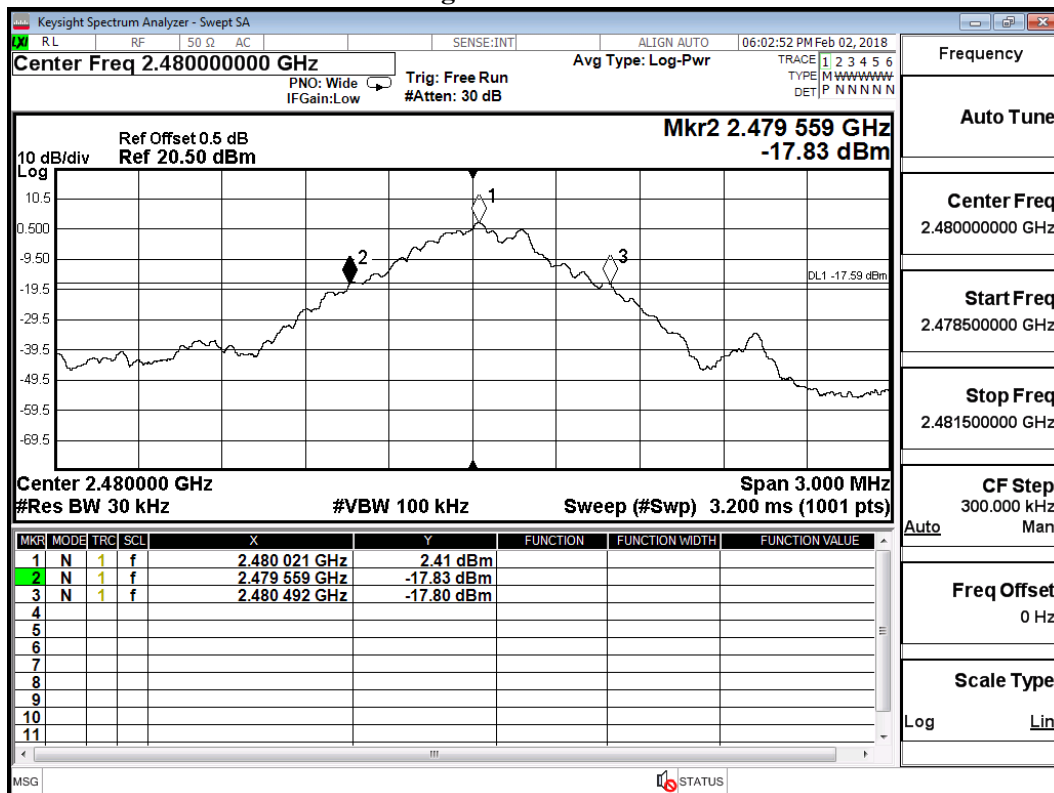


Figure Channel 78:



Product : F2-AVX7MT
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit - 3Mbps (8DPSK) (2402MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1263	--	NA
39	2441	1266	--	NA
78	2480	1275	--	NA

Figure Channel 00:

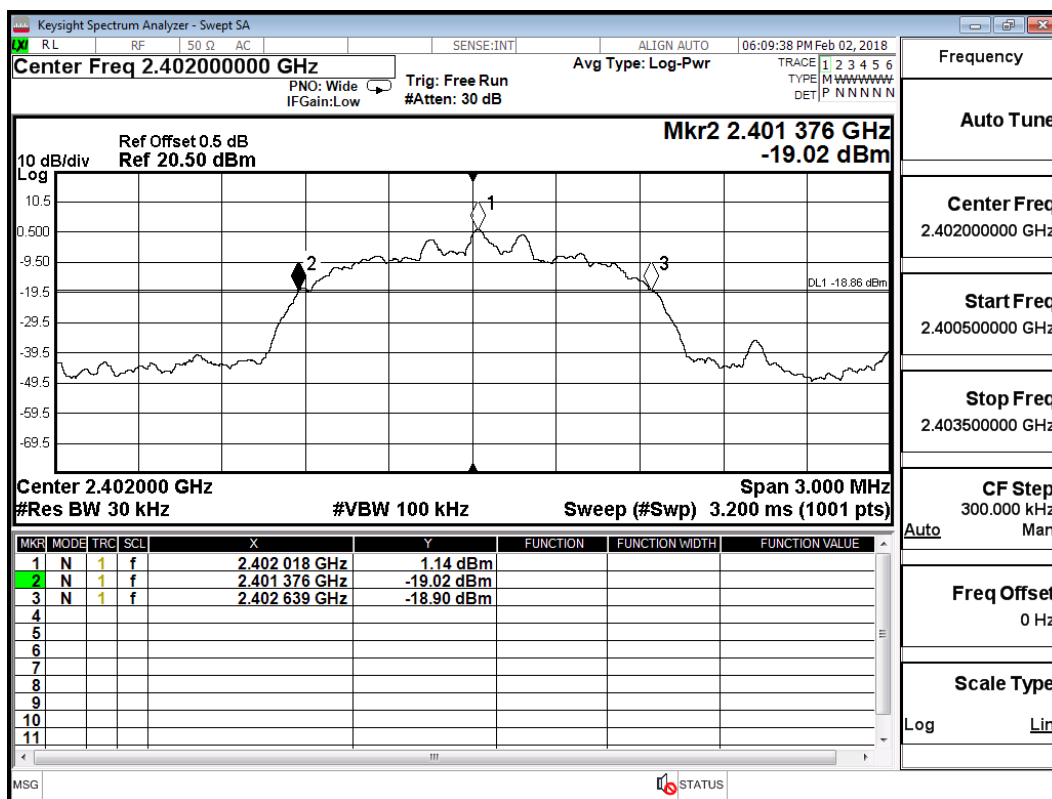


Figure Channel 39:

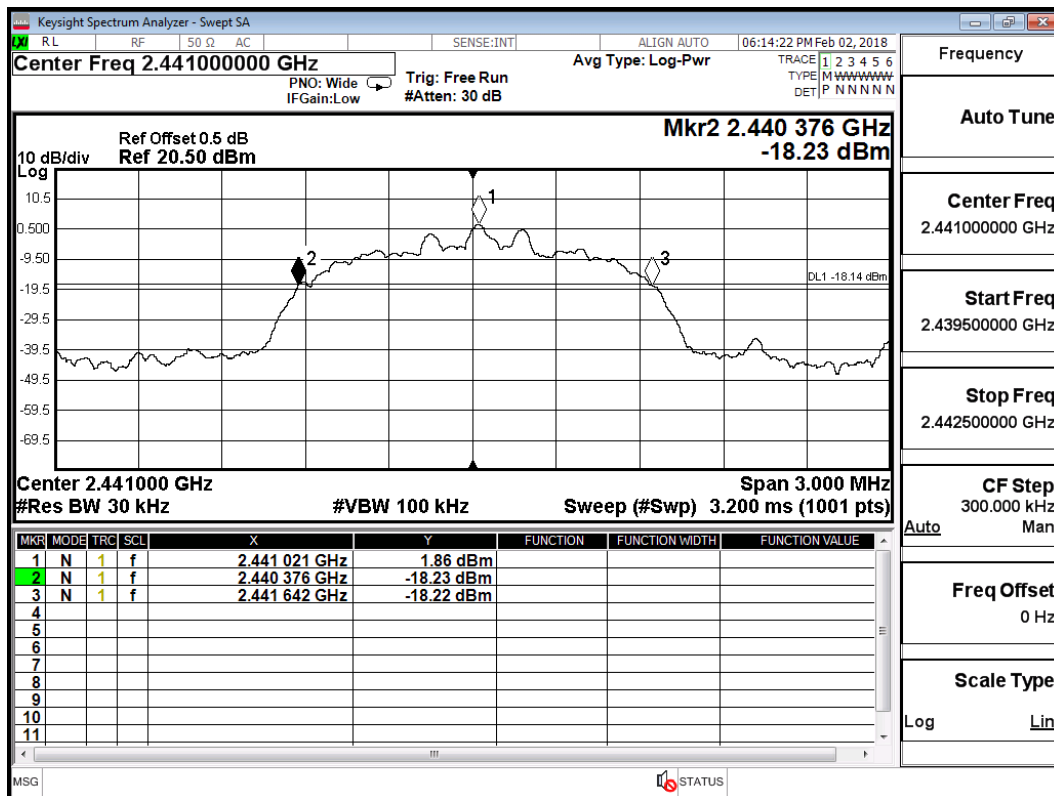
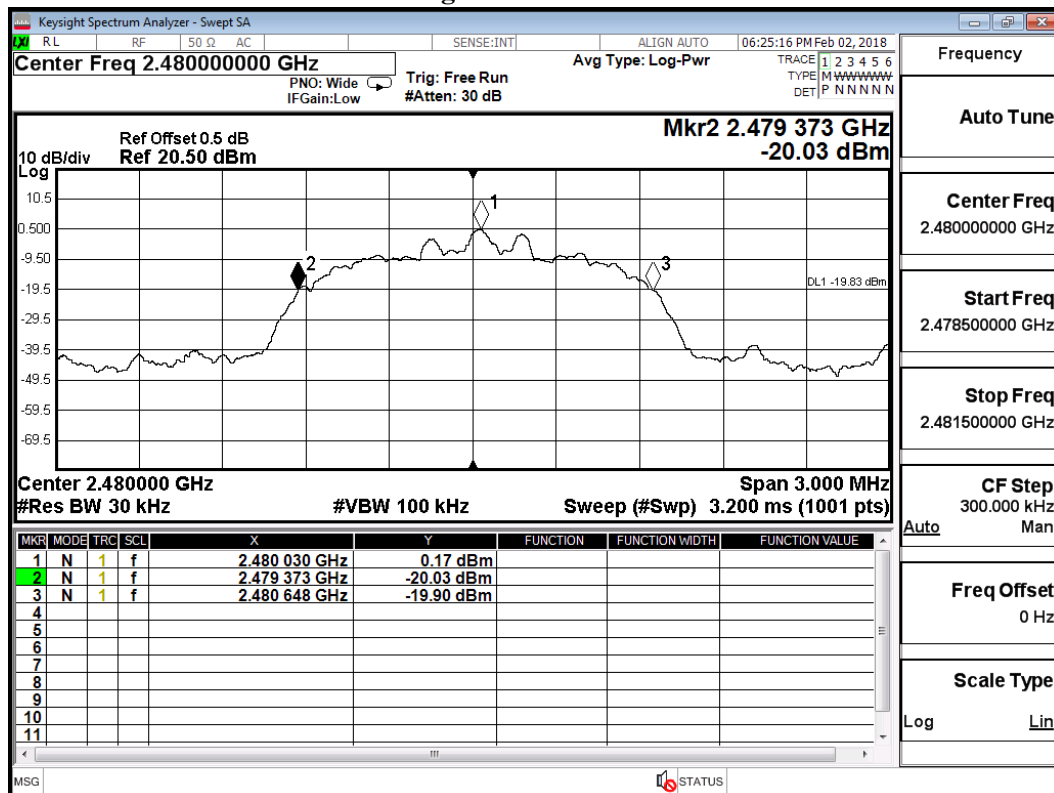


Figure Channel 78:



11. EMI Reduction Method During Compliance Testing

No modification was made during testing.