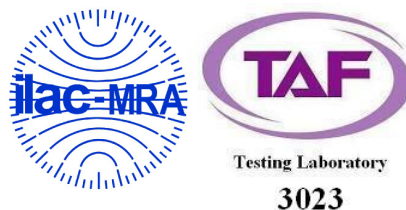


FCC Test Report

Product Name	Delta 3D Printer
Model No	Atom 3.5
FCC ID.	2AWWXATOM3-5

Applicant	LAYER ONE CO., LTD.
Address	No. 84, Sec. 2, Minsheng E. Rd., Zhongshan Dist., Taipei City 104, Taiwan (R.O.C.)

Date of Receipt	Jul. 08, 2020
Issue Date	Jan. 27, 2021
Report No.	2070288R-E3032110113
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.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test Report

Issue Date: Jan. 27, 2021

Report No.: 2070288R-E3032110113



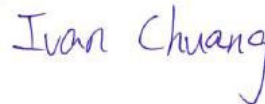
Product Name	Delta 3D Printer
Applicant	LAYER ONE CO., LTD.
Address	No. 84, Sec. 2, Minsheng E. Rd., Zhongshan Dist., Taipei City 104, Taiwan (R.O.C.)
Manufacturer	LAYER ONE CO., LTD.
Model No.	Atom 3.5
FCC ID.	2AWWXATOM3-5
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V / 60Hz
Trade Name	ATOM
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C ANSI C63.4: 2014, ANSI C63.10: 2013
Test Result	Complied

Documented By :



(Senior Adm. Specialist / Joanne Lin)

Tested By :



(Senior Engineer / Ivan Chuang)

Approved By :



(Director / Vincent Lin)

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Revision History

Report No.	Version	Description	Issued Date
2070288R-E3032110113	V1.0	Initial issue of report.	Jan. 27, 2021

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Delta 3D Printer
Trade Name	ATOM
Model No.	Atom 3.5
FCC ID.	2AWWXATOM3-5
Frequency Range	802.11b/g/n-20: 2412-2462MHz
Number of Channels	802.11b/g/n-20: 11CH
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 72.2Mbps
Channel separation	802.11b/g/n: 5 MHz
Type of Modulation	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	Dipole Antenna
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto
Power Adapter (1)	MFR: MW, M/N: GST220A24 Input: AC 100-240V, 50/60Hz, 4.0A Output: 24V=9.2A, 221W MAX. Cable Out: Non-shielded, 1m, with one ferrite core bonded.
Power Adapter (2)	MFR: EDACPOWER, M/N: EA13001N-240 Input: AC 100-240V~50-60Hz, 5-2.5A Output: 24.0V=12.5A, 300.0W Cable Out: Non-shielded, 1.2m, with one ferrite core bonded.

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Aosiya	GX001Z.100006.Z01	Dipole Antenna	2dBi for 2.4 GHz

Note: The antenna of EUT is conforming to FCC 15.203.

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

Note:

1. The EUT is an Delta 3D Printer with built-in Wi-Fi (802.11b/g/n) transceiver, this report for 2.4GHz Wi-Fi.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps 、802.11g is 6Mbps 、802.11n(20M-BW) is 7.2Mbps)
4. These tests are conducted on a sample for the purpose of demonstrating compliance of transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.
5. This is a partial report that only evaluated Conducted test item. The Radiated Spurious Emissions test item refer to TUV test report no.: NN20WV07(P15C-WiFi 2.4GHz) 001.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n-20 7.2Mbps)

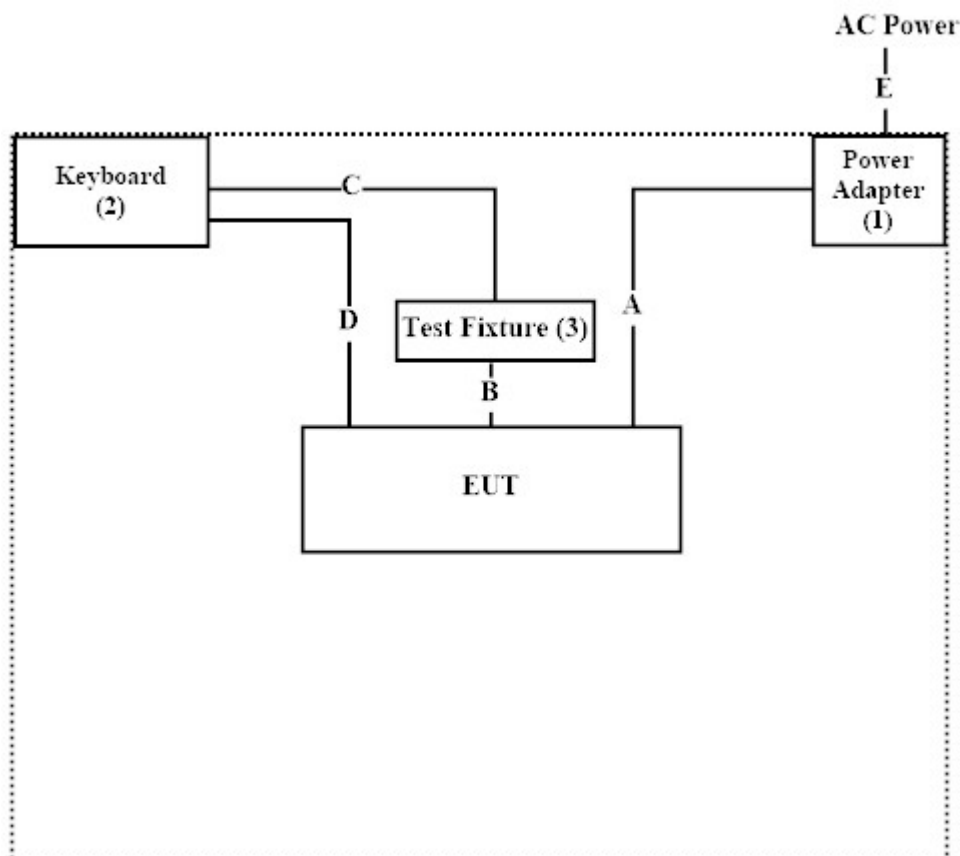
1.2. Tested System Details

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	Power Adapter (1)	MW	GST220A24	N/A
	Power Adapter (2)	EDACPOWER	EA13001N-240	N/A
2	Notebook PC	Lenovo	TP00067C	PF-0EW0C3
3	Test Fixture	TWARM	USB-TTL	N/A

Signal Cable Type	Signal cable Description
A	Power Cable (1)
	Power Cable (2)
B	Signal Cable
C	USB Cable
D	USB Cable
E	Power Cable

1.3. Configuration of Tested System



1.4. EUT Exercise Software

1. Setup the EUT as shown in Section 1.3.
2. Execute software “EspRFtest Tool V2.5” 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.

1.5. Test Facility

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	10~40 °C	22.9 °C
	Humidity (%RH)	10~90 %	54.5 %
Conductive	Temperature (°C)	10~40 °C	22 °C
	Humidity (%RH)	10~90 %	55 %

USA : FCC Registration Number: TW0023

Canada : IC Registration Number: 25880

Site Description : Accredited by TAF
Accredited Number: 3023

Test Laboratory : DEKRA Testing and Certification Co., Ltd
Address : No.159, Sec. 2, Wenhua 1st Rd., Linkou Dist.,
New Taipei City 24457, Taiwan, R.O.C.

Phone number : 886-2-2602-7968
Fax number : 866-2-2602-3286
Email address : info.tw@dekra.com
Website : <http://www.dekra.com.tw>

1.6. List of Test Item and Equipment

For Conduction measurements /ASR1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	EMI Test Receiver	R&S	ESR7	101601	2020.05.28	2021.05.27
X	Two-Line V-Network	R&S	ENV216	101306	2020.03.25	2021.03.24
X	Two-Line V-Network	R&S	ENV216	101307	2020.04.17	2021.04.16
X	Coaxial Cable	DEKRA	RG400_BNC	RF001	2020.05.24	2021.05.23

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 : DEKRA Testing System V2.0

For Conducted measurements /ASR2

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Spectrum Analyzer	R&S	FSV30	103465	2020.03.02	2021.03.01
X	Power Meter	Anritsu	ML2496A	1548002	2020.02.10	2021.02.09
X	Power Sensor	Anritsu	MA2411B	1531022	2020.02.10	2021.02.09
X	Power Sensor	Anritsu	MA2411B	1531023	2020.02.10	2021.02.09

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 : DEKRA Conduction Test System V9.0.5

1.7. Uncertainty

Uncertainties have been calculated according to the DEKRA internal document, and is described in each test chapter of this report.

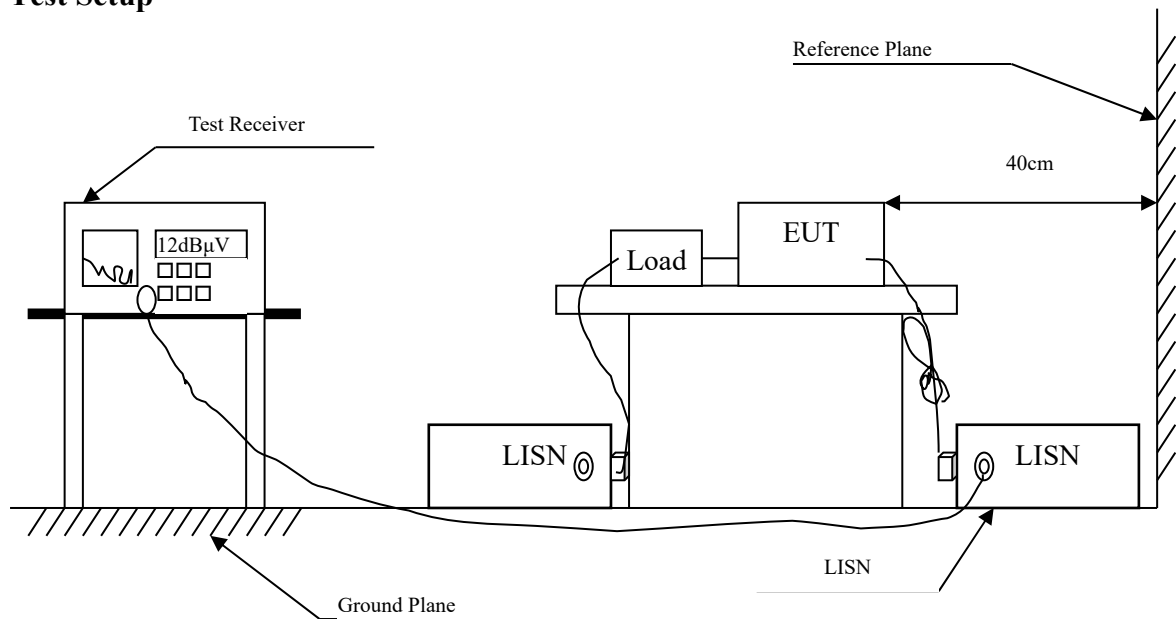
The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test item	Uncertainty
Conducted Emission	± 3.42 dB
Peak Power Output	± 0.91 dB
RF antenna conducted test	± 2.53 dB
Band Edge	± 2.53 dB
6dB Bandwidth	± 682.83 Hz
Power Density	± 2.53 dB

2. Conducted Emission

2.1. Test Setup



2.2. Limits

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

2.3. Test Procedure

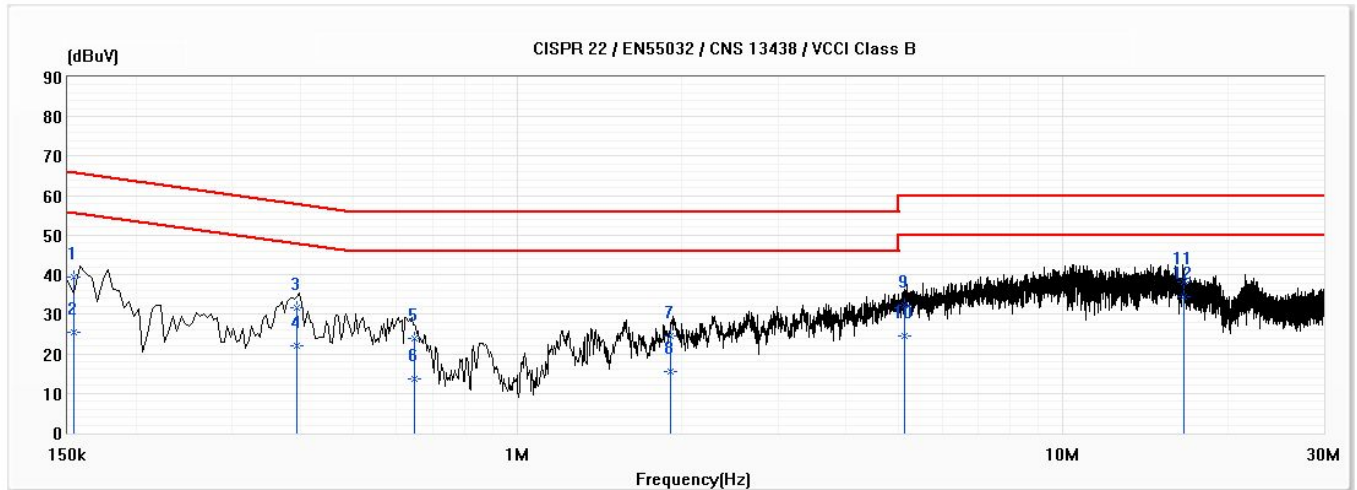
The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling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

2.4. Test Result of Conducted Emission

Product : Delta 3D Printer
 Test Item : Conducted Emission Test
 Power Line : L 1
 Test Mode : Mode 3: Transmit (802.11n-20 7.2Mbps) (2437MHz) (Power Adapter: GST220A24)
 Test Date : 2020/10/30

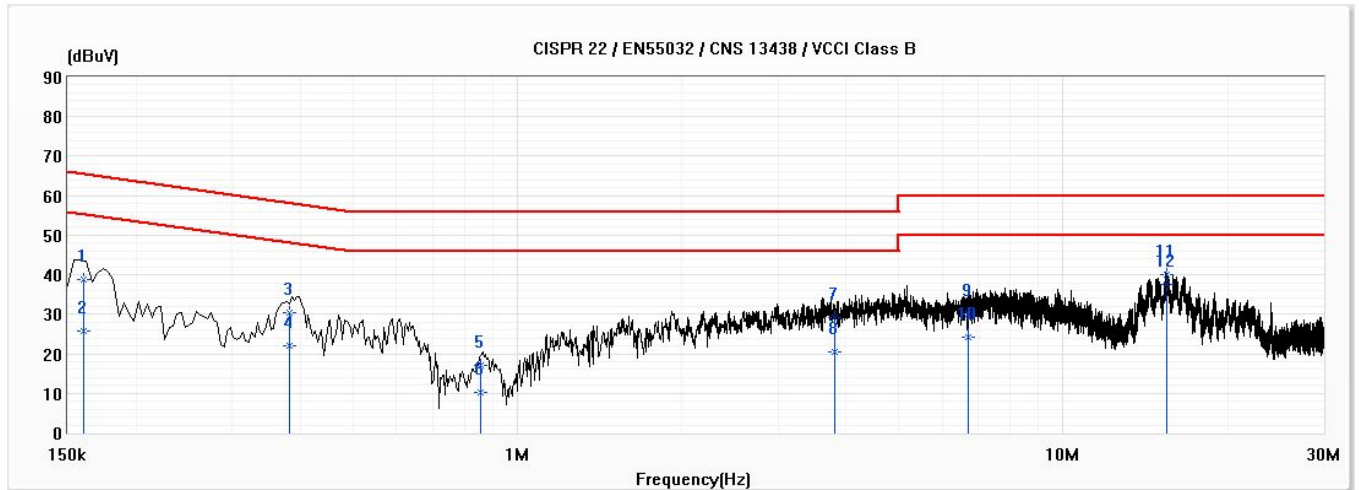


No	Frequency (MHz)	Emission Level (dBμV)	Limit (dBμV)	Margin (dB)	Reading Level (dBμV)	Correct Factor (dB)	Detector Type
1	0.154	39.44	65.77	-26.33	29.78	9.66	QP
2	0.154	25.36	55.77	-30.41	15.70	9.66	AV
3	0.395	31.73	57.96	-26.23	22.07	9.66	QP
4	0.395	21.91	47.96	-26.05	12.26	9.66	AV
5	0.646	23.95	56.00	-32.05	14.28	9.67	QP
6	0.646	13.53	46.00	-32.47	3.86	9.67	AV
7	1.912	24.57	56.00	-31.43	14.86	9.72	QP
8	1.912	15.37	46.00	-30.63	5.65	9.72	AV
9	5.126	32.25	60.00	-27.75	22.45	9.80	QP
10	5.126	24.49	50.00	-25.51	14.69	9.80	AV
11	16.640	38.24	60.00	-21.76	28.29	9.95	QP
*12	16.640	34.54	50.00	-15.46	24.59	9.95	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ * “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Delta 3D Printer
 Test Item : Conducted Emission Test
 Power Line : N
 Test Mode : Mode 3: Transmit (802.11n-20 7.2Mbps) (2437MHz) (Power Adapter: GST220A24)
 Test Date : 2020/10/30

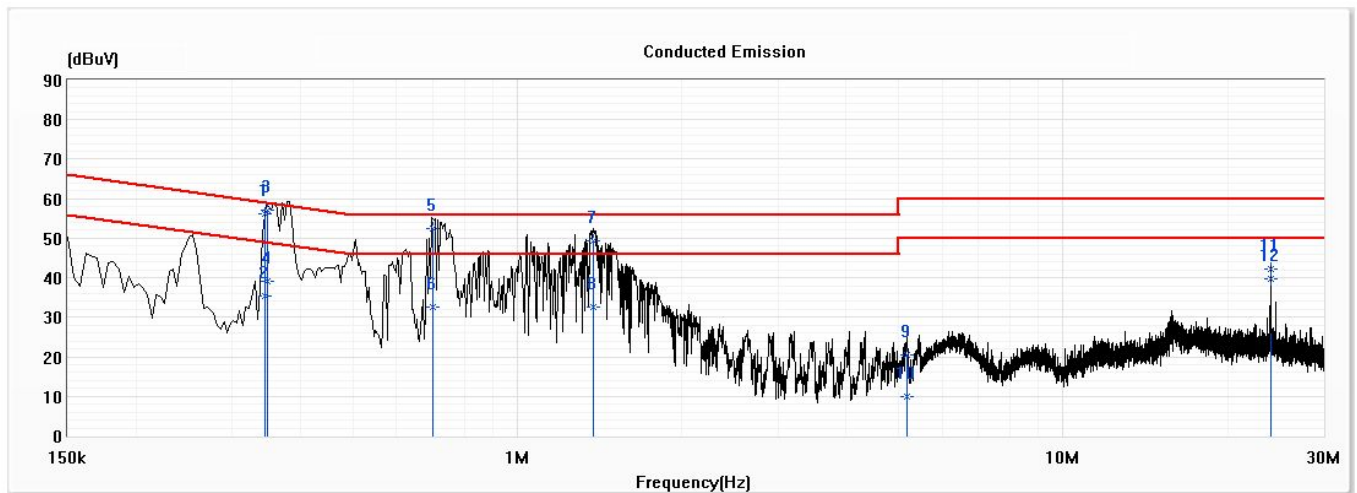


No	Frequency (MHz)	Emission Level (dBμV)	Limit (dBμV)	Margin (dB)	Reading Level (dBμV)	Correct Factor (dB)	Detector Type
1	0.161	38.77	65.43	-26.66	29.10	9.67	QP
2	0.161	25.75	55.43	-29.67	16.08	9.67	AV
3	0.382	30.56	58.24	-27.67	20.89	9.67	QP
4	0.382	21.91	48.24	-26.33	12.24	9.67	AV
5	0.856	16.96	56.00	-39.04	7.28	9.68	QP
6	0.856	10.37	46.00	-35.63	0.69	9.68	AV
7	3.821	29.05	56.00	-26.95	19.28	9.78	QP
8	3.821	20.50	46.00	-25.50	10.73	9.78	AV
9	6.702	29.95	60.00	-30.05	20.11	9.85	QP
10	6.702	24.06	50.00	-25.94	14.22	9.85	AV
11	15.480	40.01	60.00	-19.99	30.01	10.00	QP
*12	15.480	37.63	50.00	-12.37	27.63	10.00	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ * “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Delta 3D Printer
 Test Item : Conducted Emission Test
 Power Line : L 1
 Test Mode : Mode 3: Transmit (802.11n-20 7.2Mbps) (2437MHz) (Power Adapter: EA13001N-240)
 Test Date : 2021/01/11

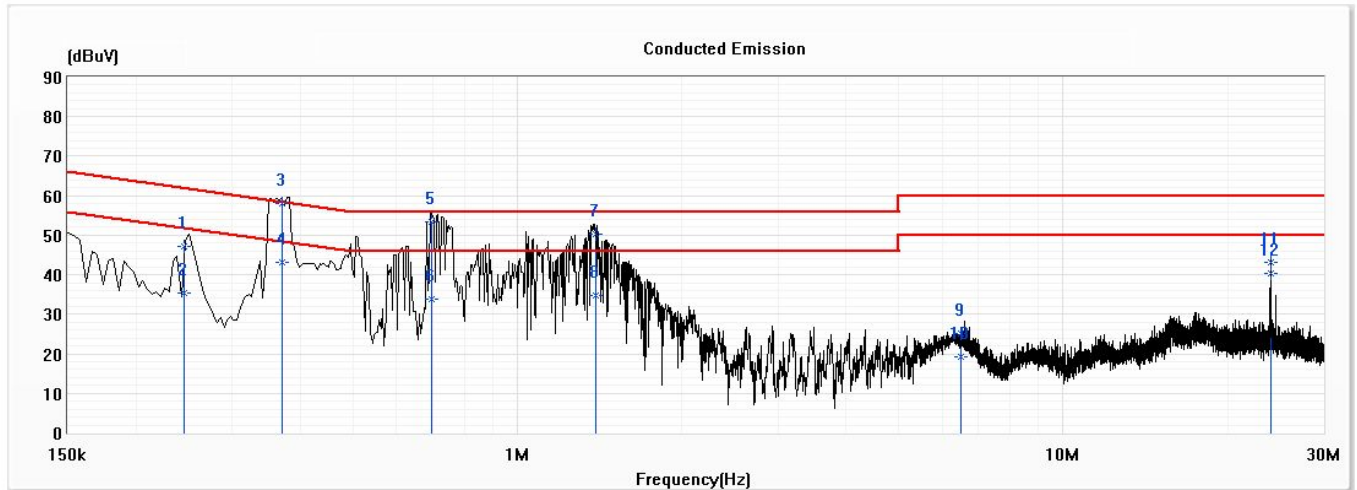


No	Frequency (MHz)	Emission Level (dBμV)	Limit (dBμV)	Margin (dB)	Reading Level (dBμV)	Correct Factor (dB)	Detector Type
1	0.345	56.04	59.09	-3.05	46.39	9.66	QP
2	0.345	35.44	49.09	-13.65	25.79	9.66	AV
*3	0.348	57.12	59.00	-1.88	47.47	9.66	QP
4	0.348	39.06	49.00	-9.95	29.40	9.66	AV
5	0.699	52.50	56.00	-3.50	42.83	9.67	QP
6	0.699	32.53	46.00	-13.47	22.86	9.67	AV
7	1.379	49.49	56.00	-6.51	39.79	9.70	QP
8	1.379	32.50	46.00	-13.50	22.80	9.70	AV
9	5.181	20.34	60.00	-39.66	10.53	9.80	QP
10	5.181	10.07	50.00	-39.93	0.27	9.80	AV
11	24.000	42.24	60.00	-17.76	32.28	9.96	QP
12	24.000	39.58	50.00	-10.42	29.61	9.96	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ * “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Delta 3D Printer
 Test Item : Conducted Emission Test
 Power Line : N
 Test Mode : Mode 3: Transmit (802.11n-20 7.2Mbps) (2437MHz) (Power Adapter: EA13001N-240)
 Test Date : 2021/01/11



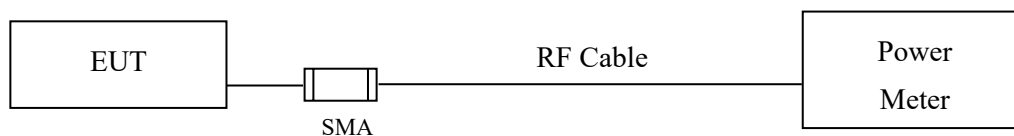
No	Frequency (MHz)	Emission Level (dBμV)	Limit (dBμV)	Margin (dB)	Reading Level (dBμV)	Correct Factor (dB)	Detector Type
1	0.246	47.10	61.90	-14.80	37.43	9.67	QP
2	0.246	35.35	51.90	-16.55	25.68	9.67	AV
*3	0.370	57.99	58.50	-0.50	48.32	9.67	QP
4	0.370	43.06	48.50	-5.43	33.40	9.67	AV
5	0.696	53.27	56.00	-2.73	43.59	9.68	QP
6	0.696	33.68	46.00	-12.32	24.00	9.68	AV
7	1.389	50.34	56.00	-5.66	40.63	9.70	QP
8	1.389	34.80	46.00	-11.20	25.09	9.70	AV
9	6.508	25.12	60.00	-34.88	15.28	9.85	QP
10	6.508	19.26	50.00	-30.74	9.42	9.85	AV
11	24.000	43.16	60.00	-16.84	33.09	10.07	QP
12	24.000	40.33	50.00	-9.67	30.26	10.07	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ * “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

3.1. Test Setup



3.2. Limits

The maximum peak power shall be less 1 Watt.

3.3. Test Procedure

The EUT was tested according to C63.10:2013 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using C63.10:2013 Section 11.9.1.3 PKPM1 Peak power meter method. The maximum average conducted output power using C63.10:2013 Section 11.9.2.3 Measurement using a power meter (PM). (Measurement using a gated RF average-reading power meter).

3.4. Test Result of Peak Power Output

Product : Delta 3D Printer
 Test Item : Peak Power Output Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)
 Test Date : 2020/10/30

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	11.12	--	--	--	14.59	<30dBm	Pass
06	2437	11.66	11.62	11.57	11.51	15.13	<30dBm	Pass
11	2462	9.3	--	--	--	12.7	<30dBm	Pass

Product : Delta 3D Printer
 Test Item : Peak Power Output Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)
 Test Date : 2020/10/30

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	14.43	--	--	--	--	--	--	--	21.57	<30dBm	Pass
06	2437	14.56	14.52	14.47	14.41	14.36	14.30	14.26	14.20	21.34	<30dBm	Pass
11	2462	14.3	--	--	--	--	--	--	--	21.04	<30dBm	Pass

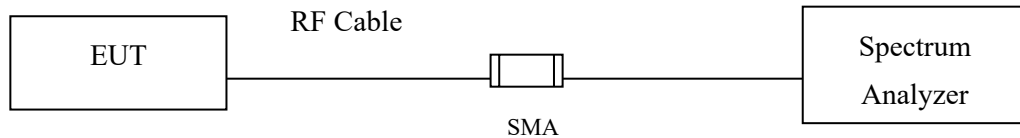
Product : Delta 3D Printer
 Test Item : Peak Power Output Data
 Test Mode : Mode 3: Transmit (802.11n-20 7.2Mbps)
 Test Date : 2020/10/30

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2	7.2		
		Measurement Level (dBm)										
01	2412	14.15	--	--	--	--	--	--	--	21.51	<30dBm	Pass
06	2437	14.34	14.30	14.26	14.19	14.13	14.06	14.03	13.98	21.41	<30dBm	Pass
11	2462	13.79	--	--	--	--	--	--	--	20.91	<30dBm	Pass

4. RF antenna conducted test

4.1. Test Setup

RF antenna Conducted Measurement:



4.2. Limits

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)).

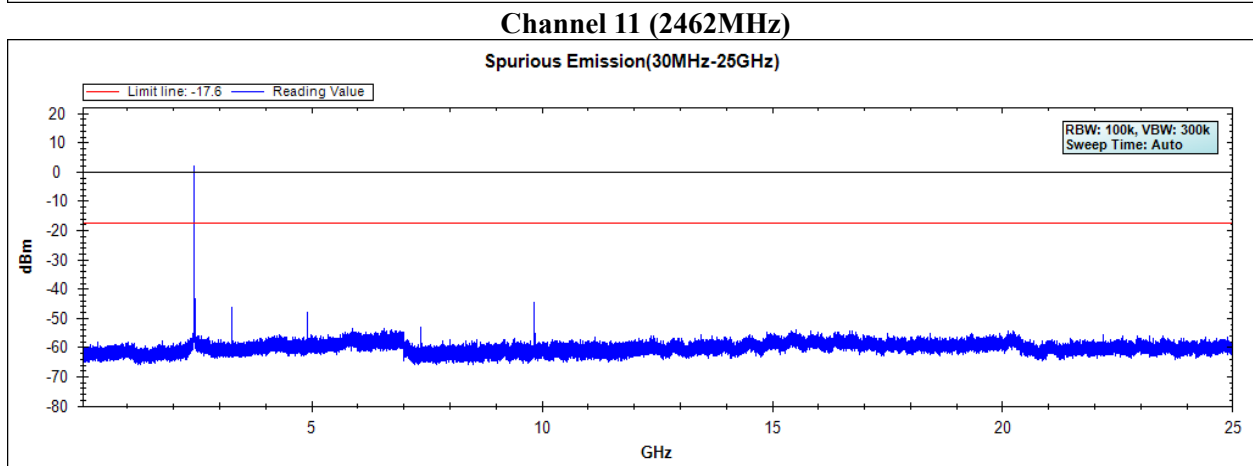
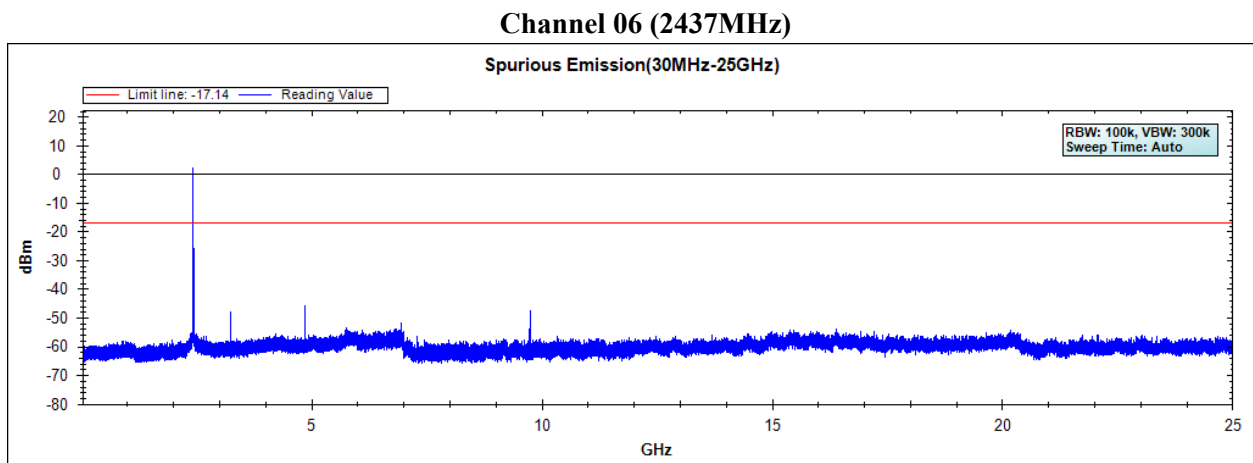
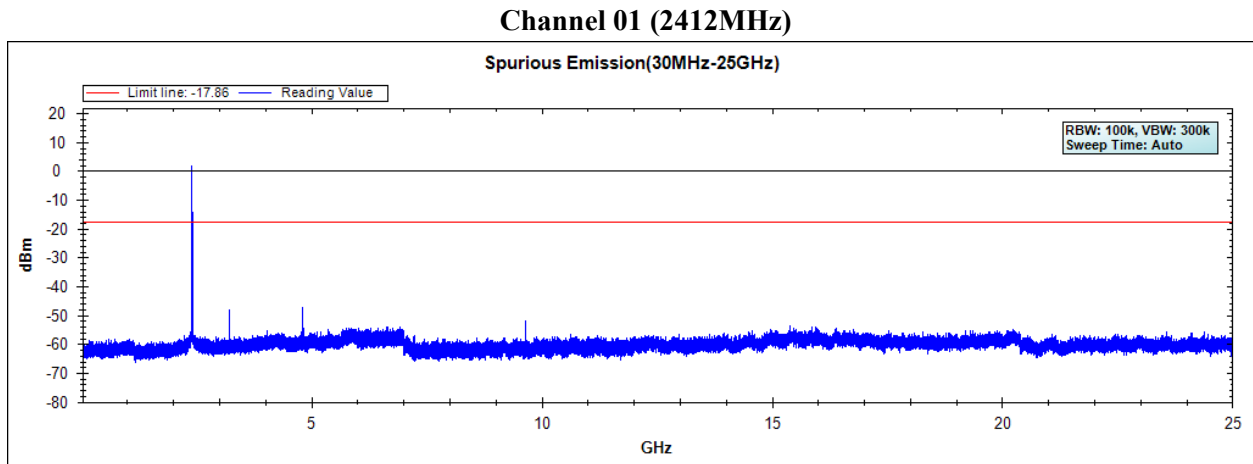
4.3. Test Procedure

The EUT was tested according to C63.10:2013 Section 11.11 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

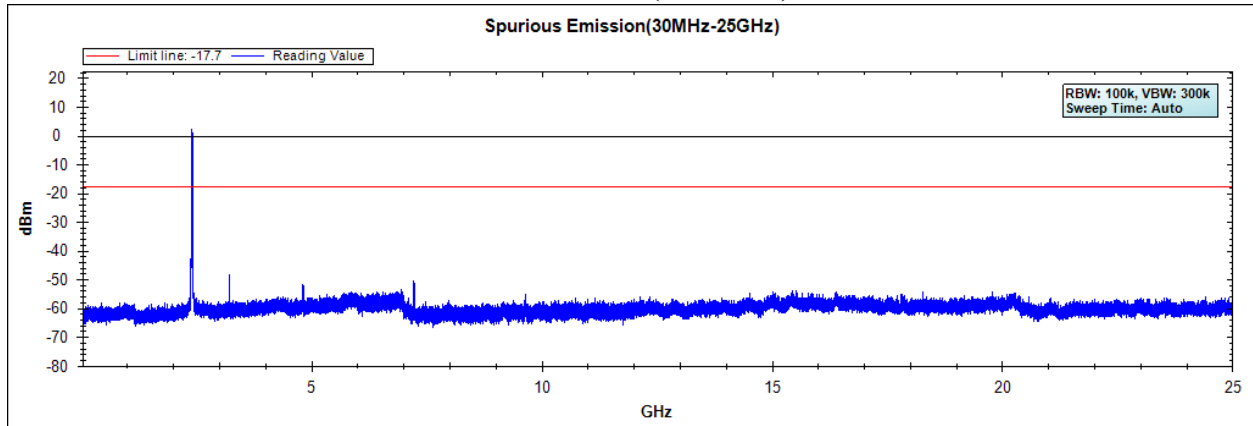
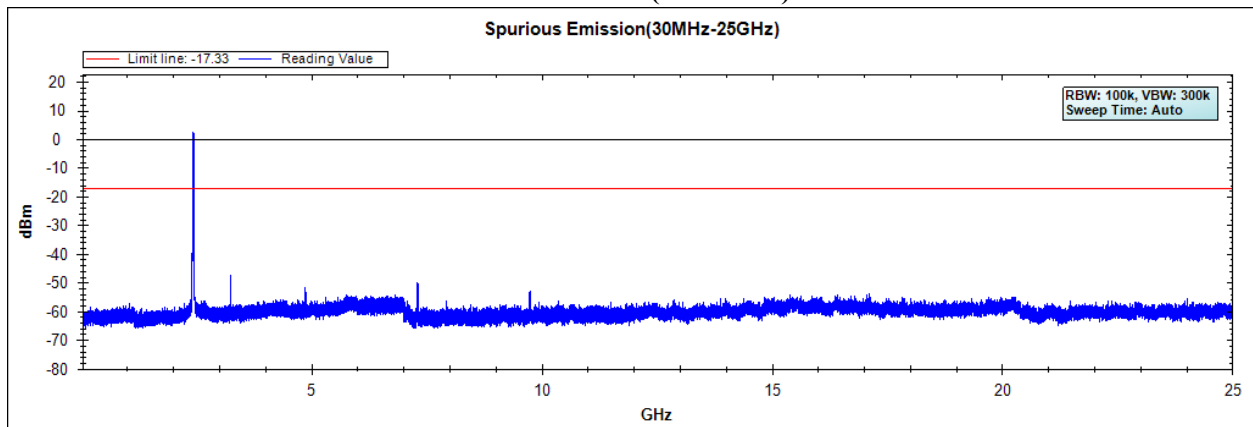
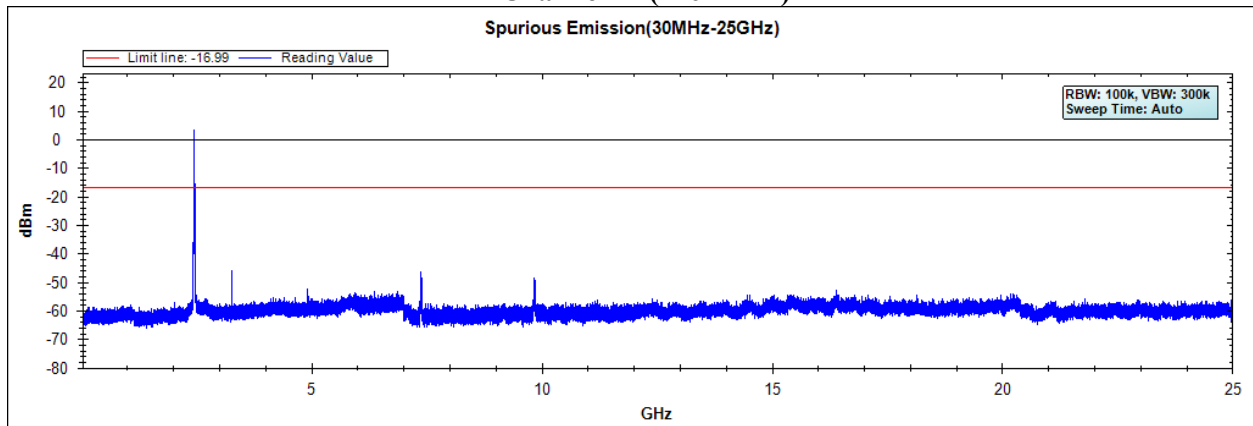
4.4. Test Result of RF antenna conducted test

Product : Delta 3D Printer
Test Item : RF antenna conducted test
Test Mode : Mode 1: Transmit (802.11b 1Mbps)
Test Date : 2020/10/30



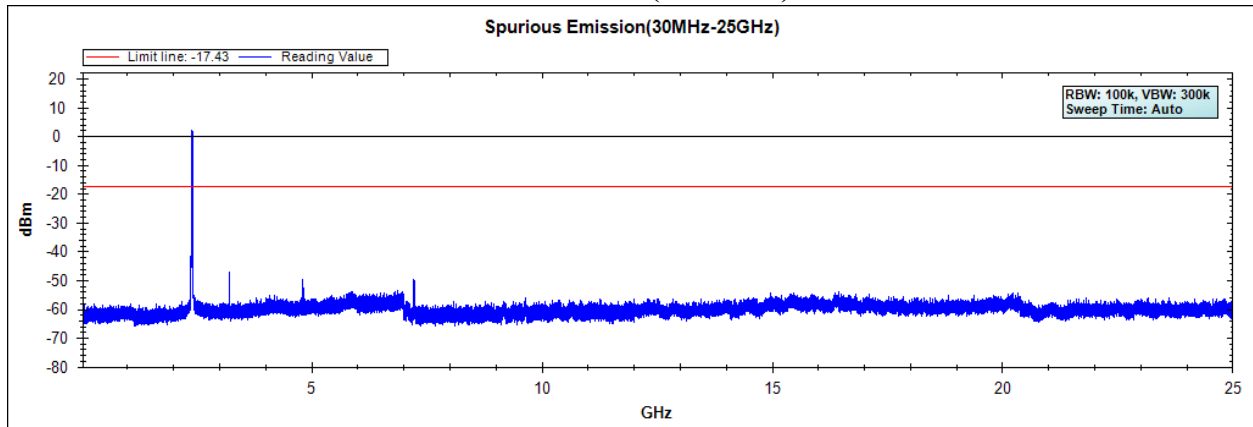
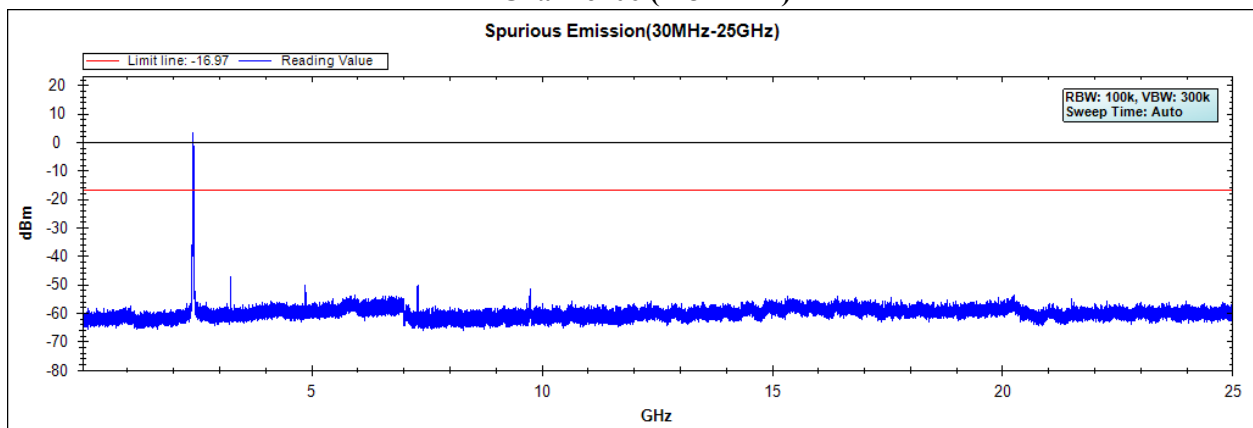
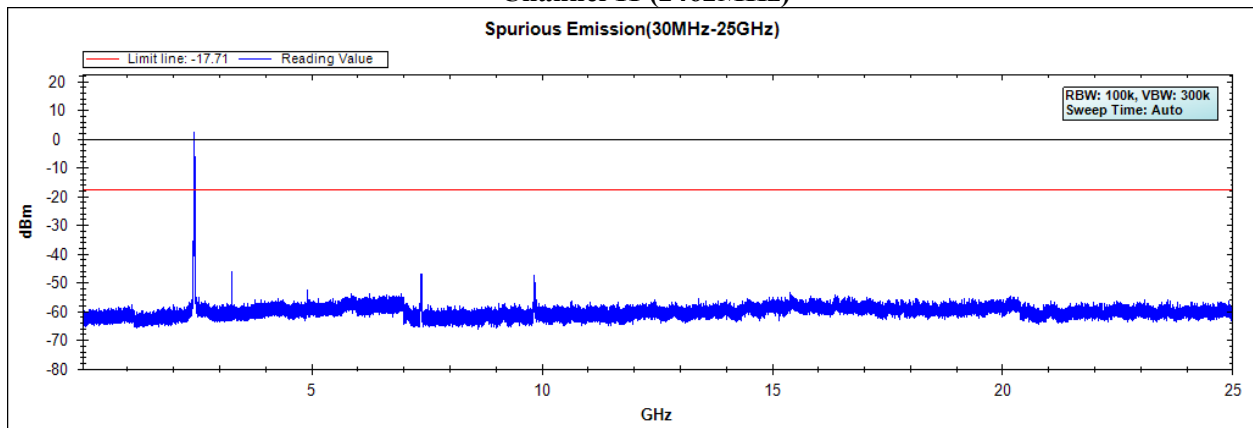
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : Delta 3D Printer
Test Item : RF Antenna Conducted Spurious
Test Mode : Mode 2: Transmit (802.11g 6Mbps)
Test Date : 2020/10/30

Channel 01 (2412MHz)**Channel 06 (2437MHz)****Channel 11 (2462MHz)**

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

Product : Delta 3D Printer
Test Item : RF Antenna Conducted Spurious
Test Mode : Mode 3: Transmit (802.11n-20 7.2Mbps)
Test Date : 2020/10/30

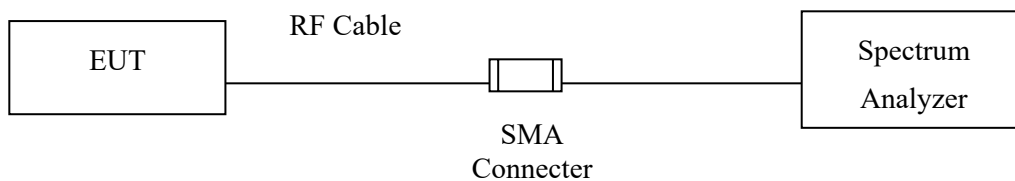
Channel 01 (2412MHz)**Channel 06 (2437MHz)****Channel 11 (2462MHz)**

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

5. Band Edge

5.1. Test Setup

RF Conducted Measurement



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. 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)).

5.3. Test Procedure

The EUT was tested according to C63.10:2013 Section 11.11 for compliance to FCC 47CFR 15.247 requirements.

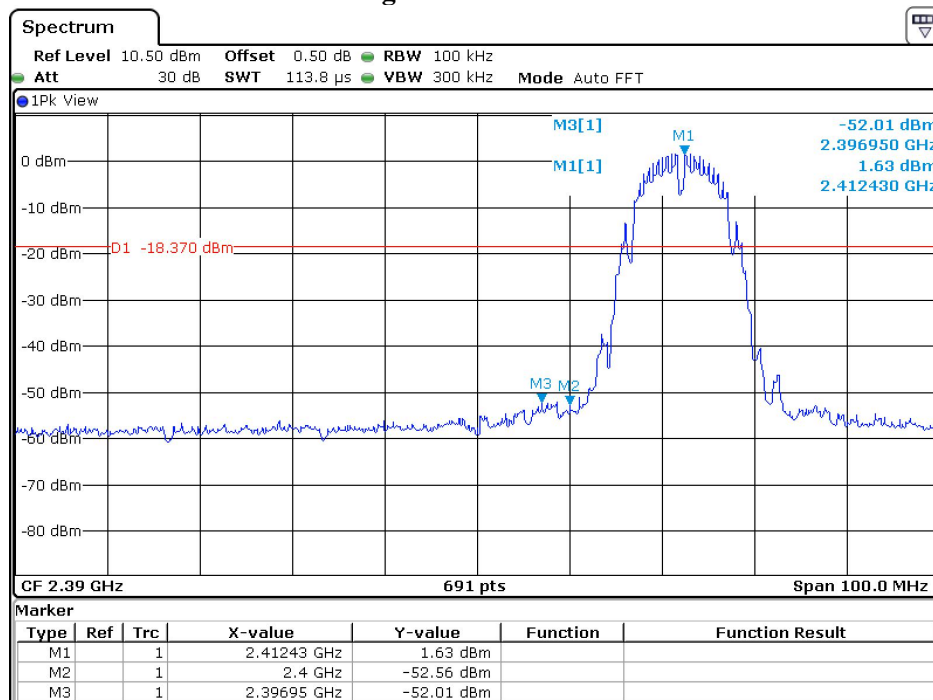
Set RBW = 100 kHz, Set VBW > RBW.

5.4. Test Result of Band Edge

Product : Delta 3D Printer
 Test Item : Band Edge Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)
 Test Date : 2020/12/19

Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 01:

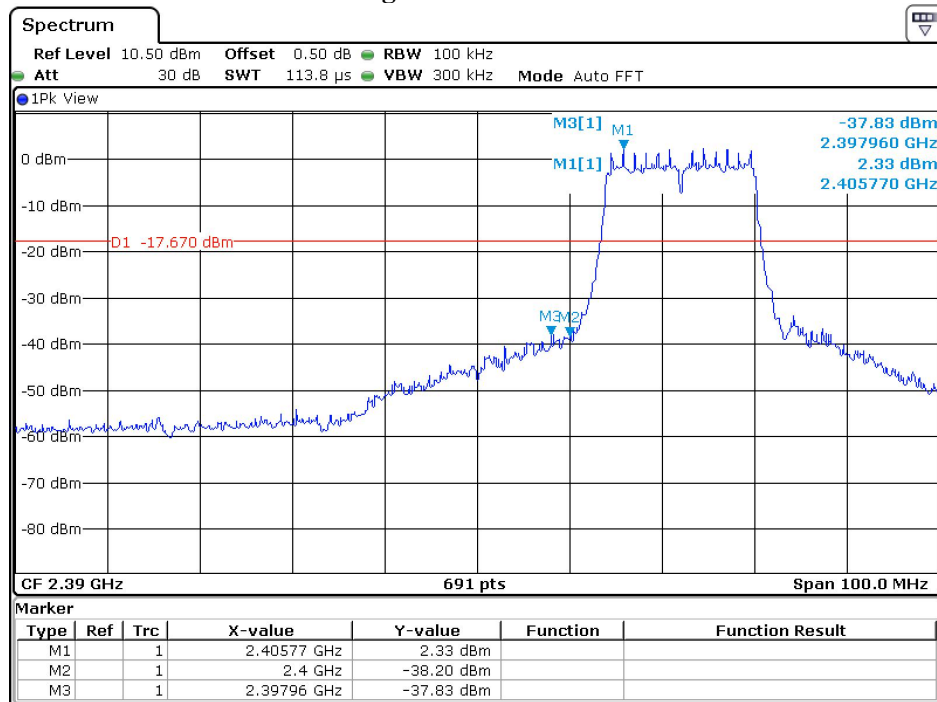


Date: 19.DEC.2020 13:31:43

Product : Delta 3D Printer
 Test Item : Band Edge Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)
 Test Date : 2020/12/19

Measurement Level	Result
Δ (dB)	
> 20	PASS

Figure Channel 01:

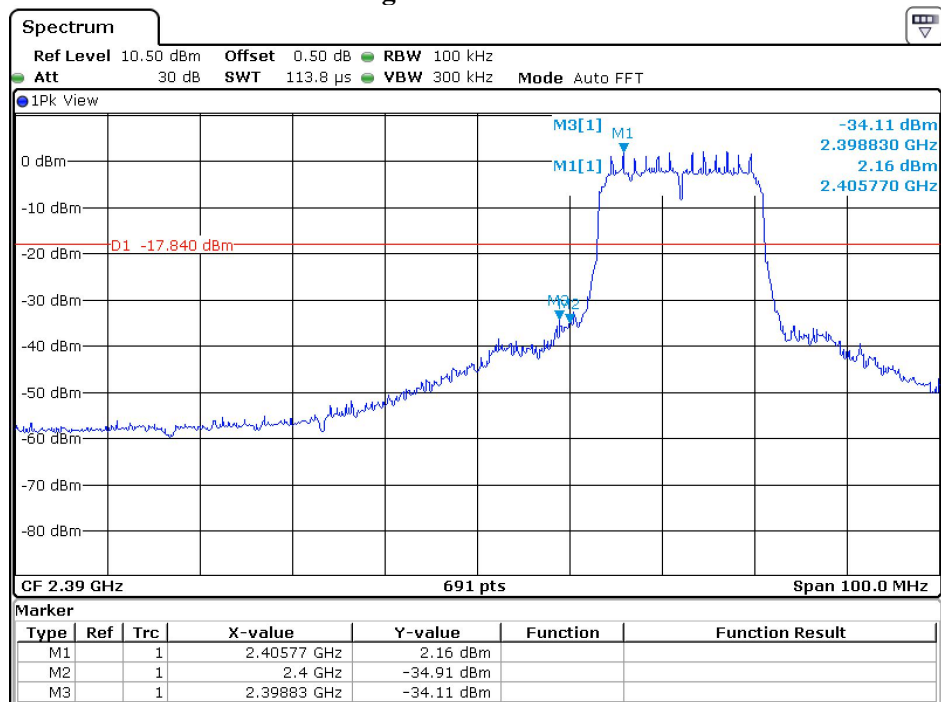


Date: 19.DEC.2020 13:33:57

Product : Delta 3D Printer
 Test Item : Band Edge Data
 Test Mode : Mode 3: Transmit (802.11n-20 7.2Mbps)
 Test Date : 2020/12/19

Measurement Level	Result
Δ (dB)	
> 20	PASS

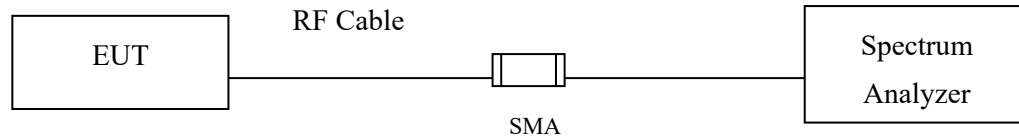
Figure Channel 01:



Date: 19.DEC.2020 13:36:41

6. 6dB Bandwidth

6.1. Test Setup



6.2. Limits

The minimum bandwidth shall be at least 500 kHz.

6.3. Test Procedure

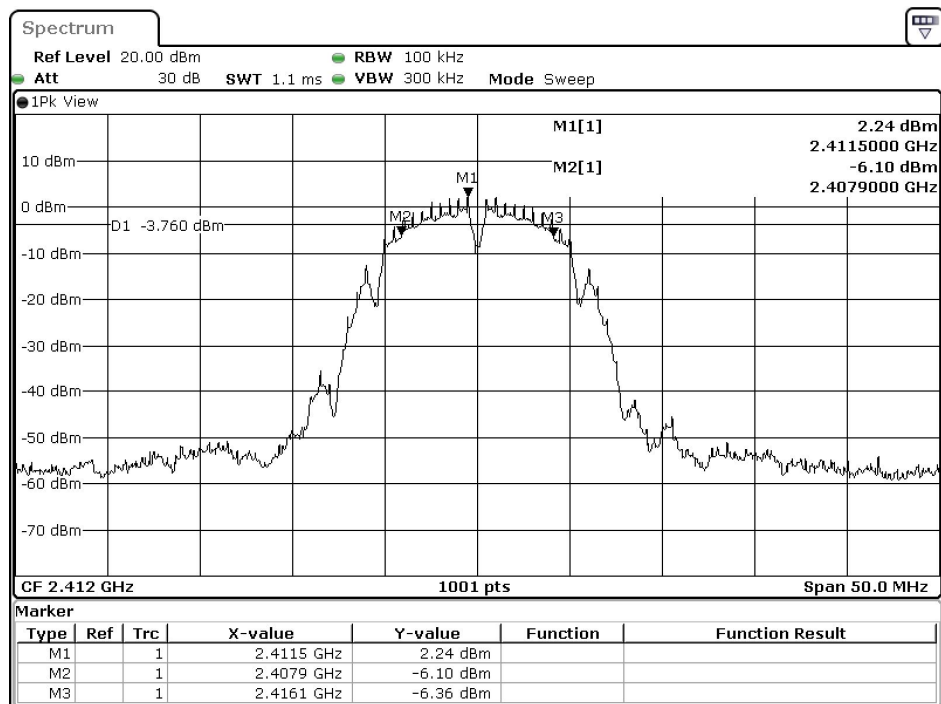
The EUT was setup according to ANSI C63.4, 2014; tested according to ANSI C63.10 Section 11.8 for compliance to FCC 47CFR 15.247 requirements.

6.4. Test Result of 6dB Bandwidth

Product : Delta 3D Printer
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

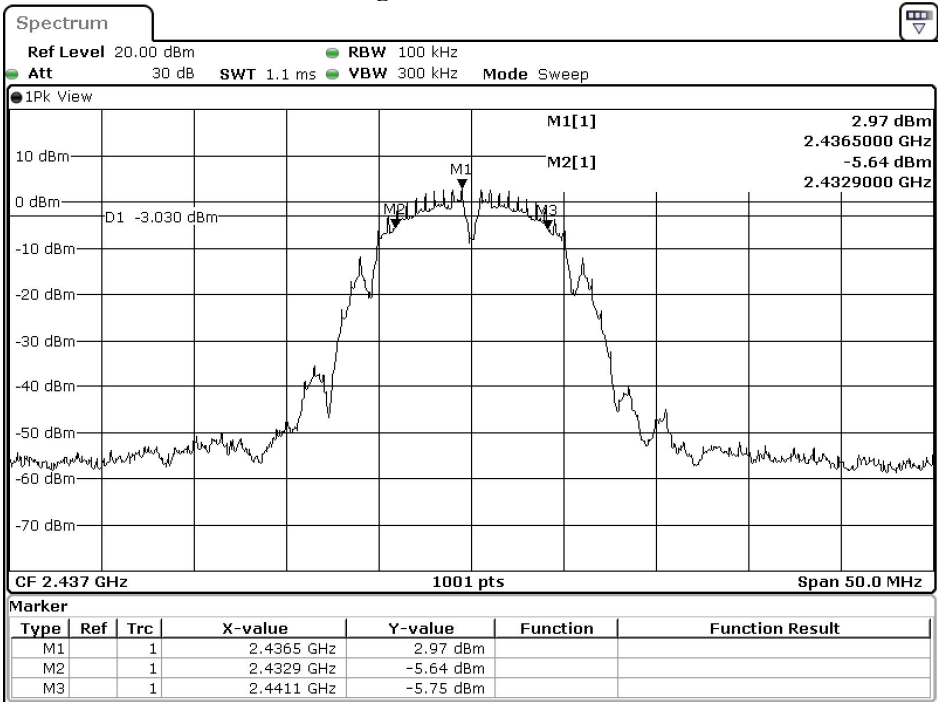
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	8200	>500	Pass
06	2437	8200	>500	Pass
11	2462	8200	>500	Pass

Figure Channel 01:



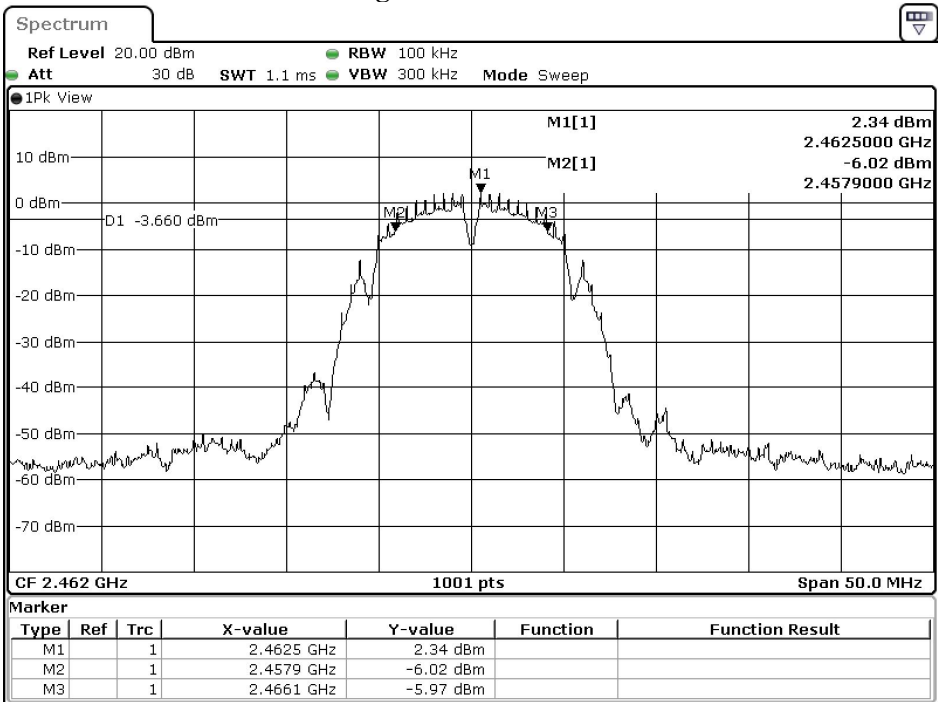
Date: 30.OCT.2020 03:41:04

Figure Channel 06:



Date: 30.OCT.2020 03:45:01

Figure Channel 11:

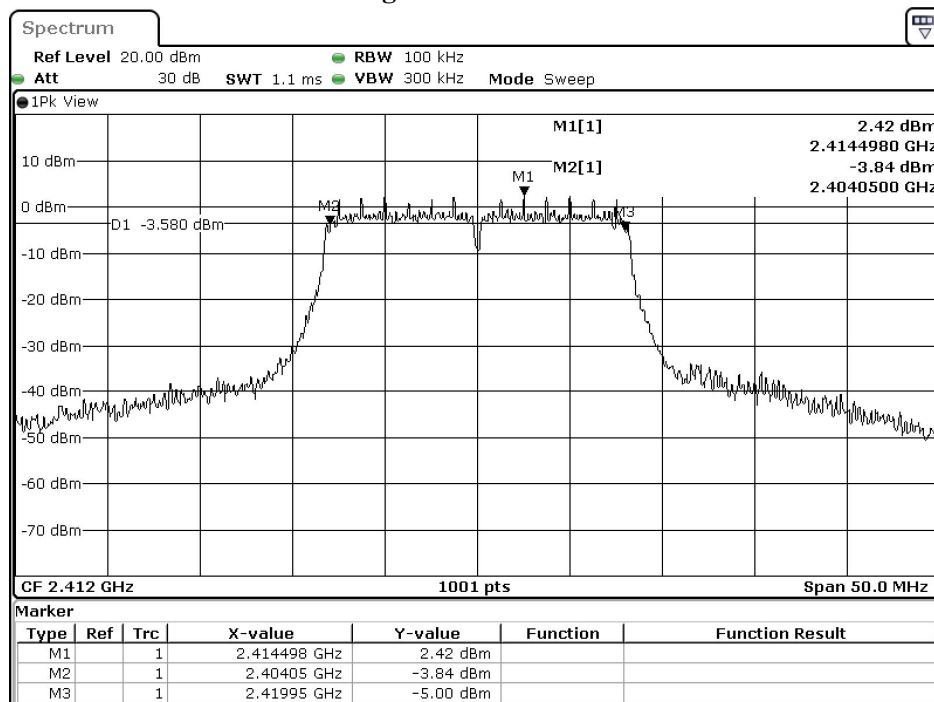


Date: 30.OCT.2020 03:49:44

Product : Delta 3D Printer
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

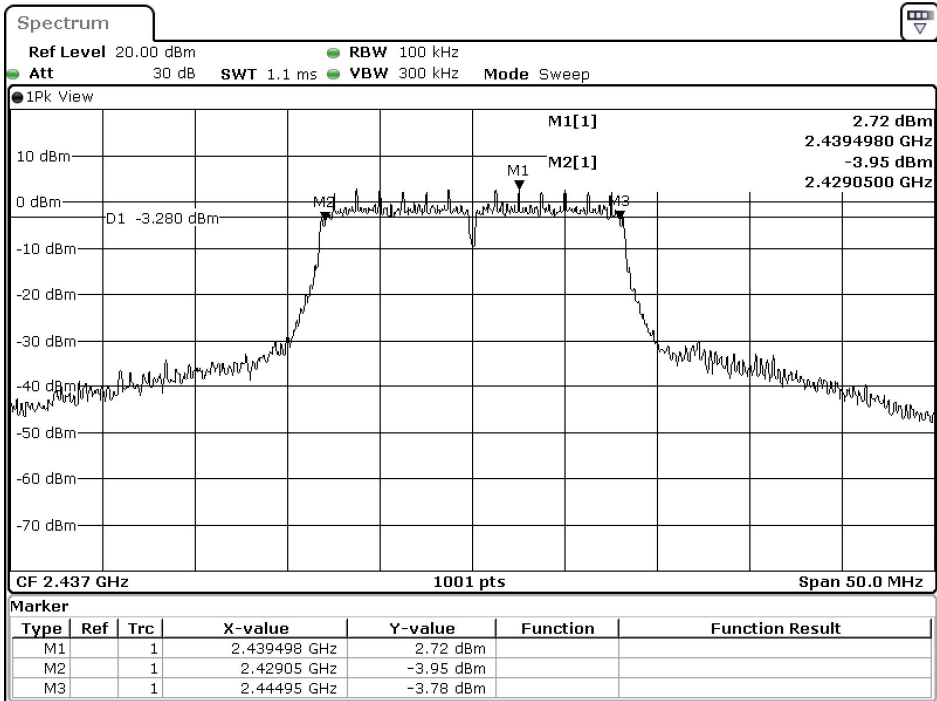
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	15900	>500	Pass
06	2437	15900	>500	Pass
11	2462	15950	>500	Pass

Figure Channel 01:



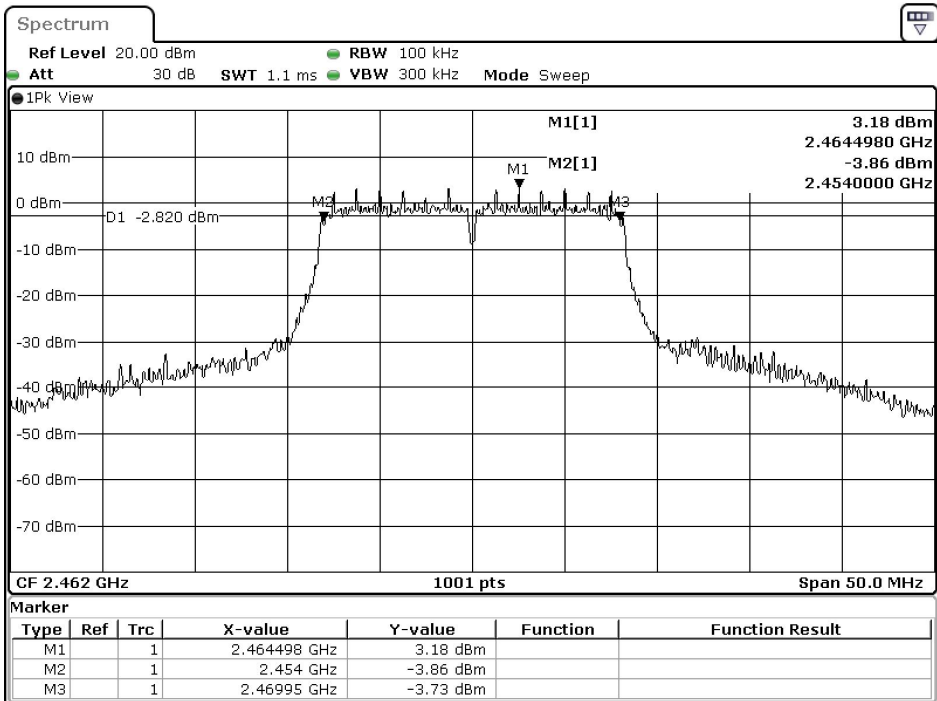
Date: 30.OCT.2020 03:53:44

Figure Channel 06:



Date: 30.OCT.2020 03:57:38

Figure Channel 11:

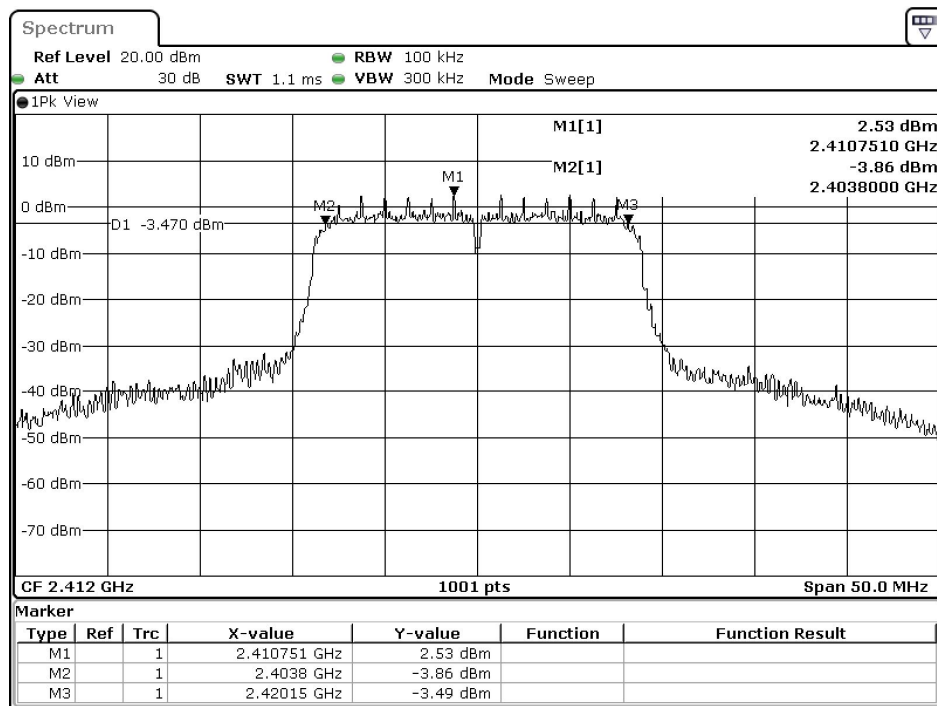


Date: 30.OCT.2020 05:16:58

Product : Delta 3D Printer
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 3: Transmit (802.11n-20 7.2Mbps)

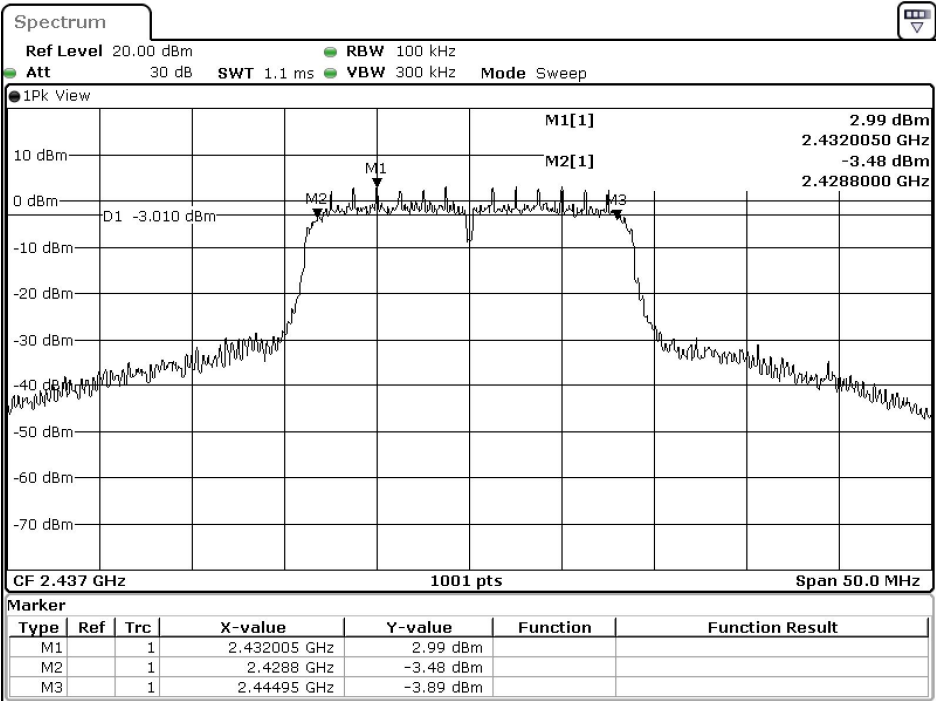
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	16350	>500	Pass
06	2437	16150	>500	Pass
11	2462	16350	>500	Pass

Figure Channel 01:



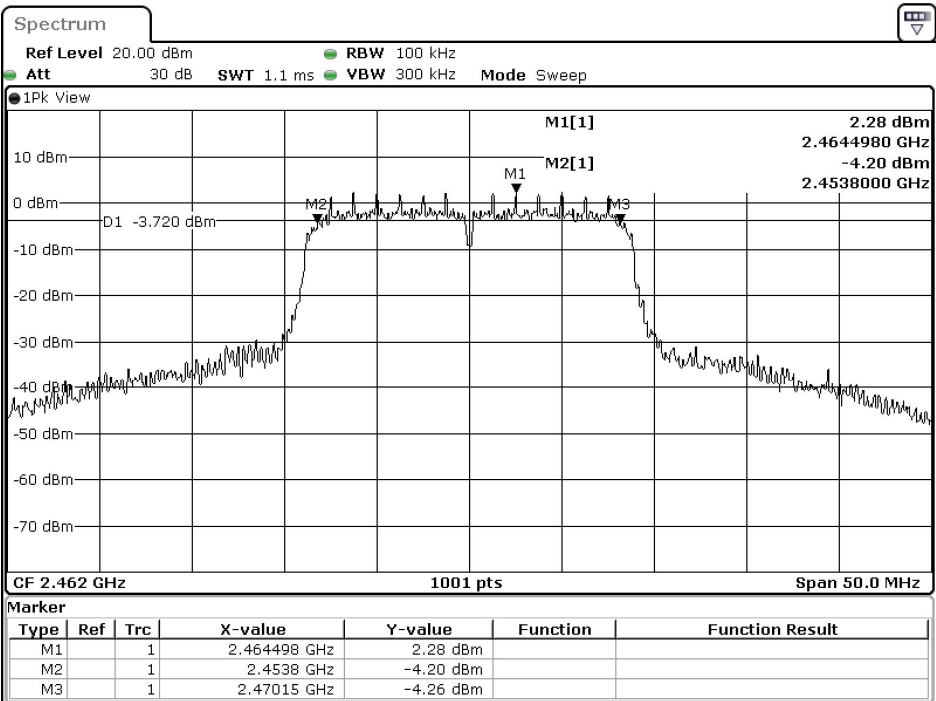
Date: 30.OCT.2020 05:21:11

Figure Channel 06:



Date: 30.OCT.2020 05:25:25

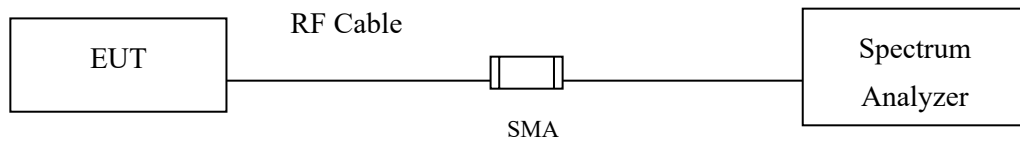
Figure Channel 11:



Date: 30.OCT.2020 05:29:20

7. Power Density

7.1. Test Setup



7.2. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

7.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

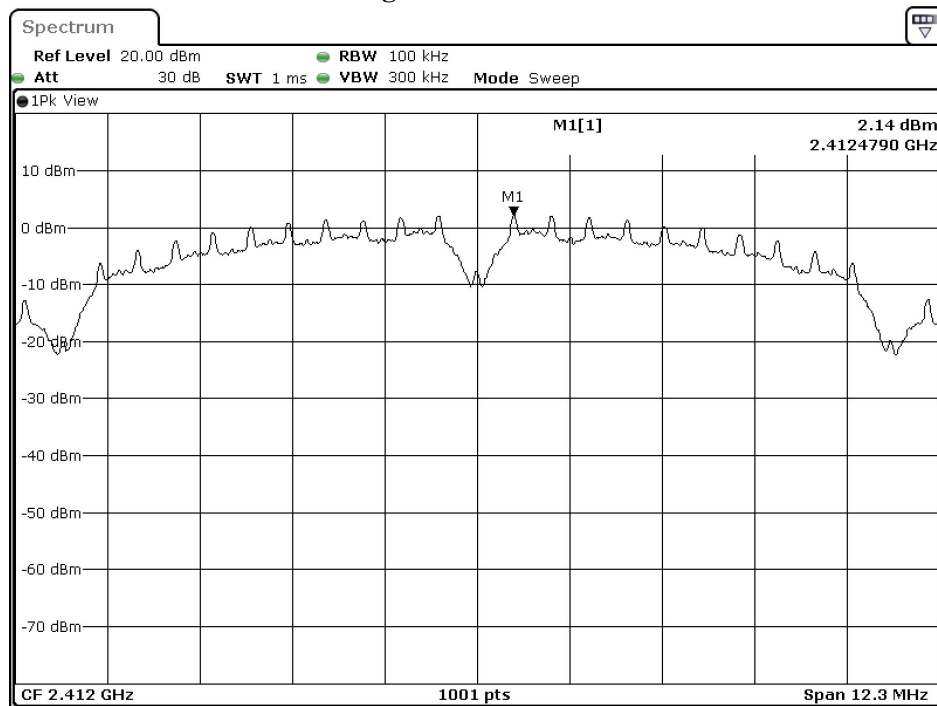
The maximum power spectral density using C63.10 Section 11.10.2 Method PKPSD (peak PSD)

7.4. Test Result of Power Density

Product : Delta 3D Printer
 Test Item : Power Density Data
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

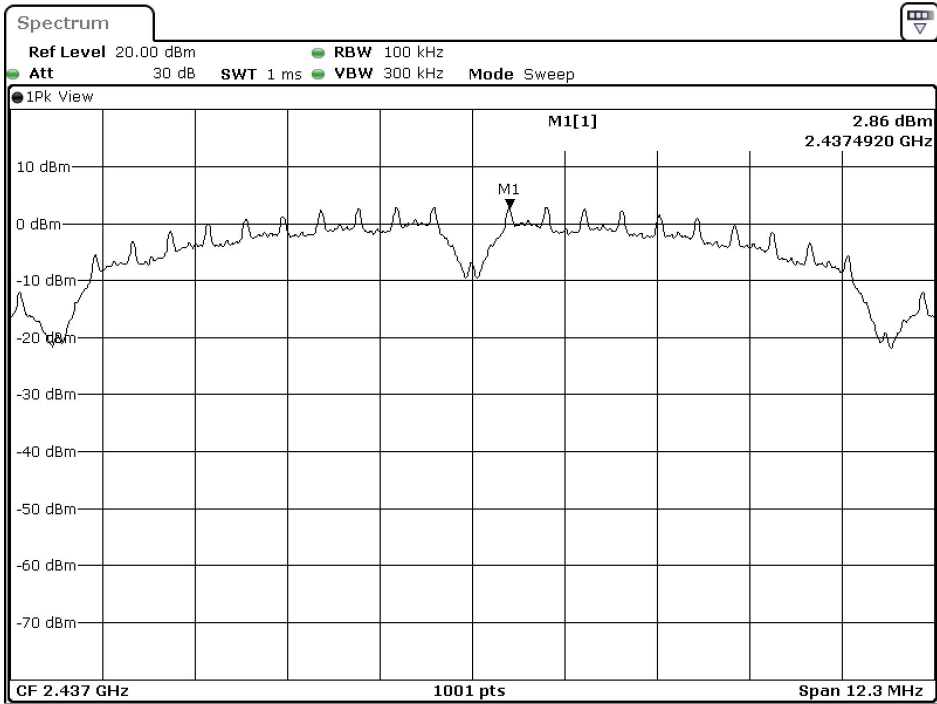
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	2.14	$\leq 8\text{dBm}$	Pass
06	2437	2.86	$\leq 8\text{dBm}$	Pass
11	2462	2.40	$\leq 8\text{dBm}$	Pass

Figure Channel 01:



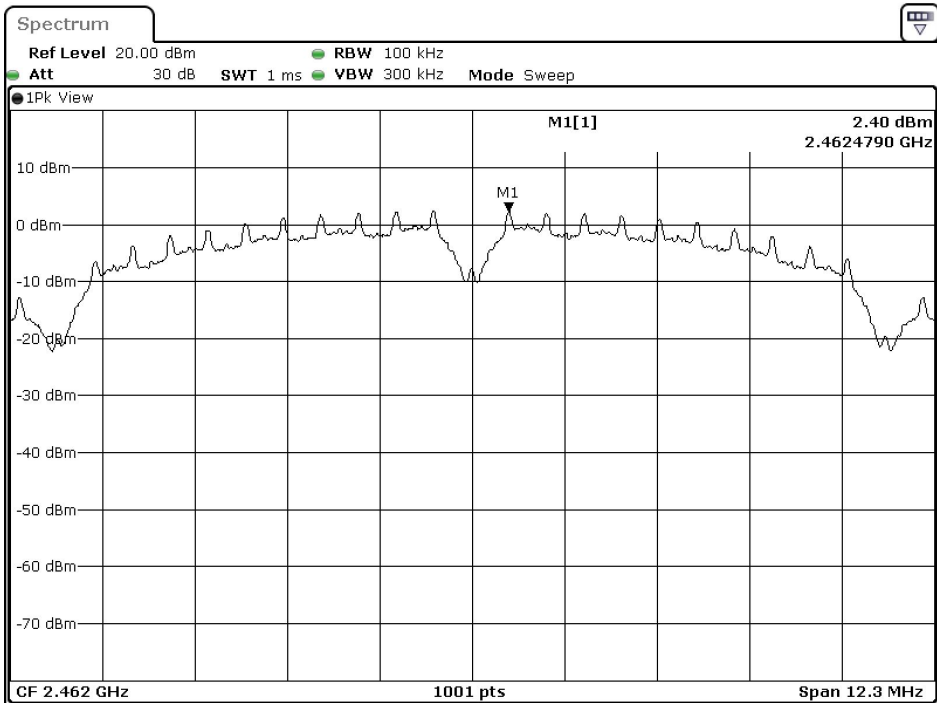
Date: 30.OCT.2020 03:41:25

Figure Channel 06:



Date: 30.OCT.2020 03:45:23

Figure Channel 11:

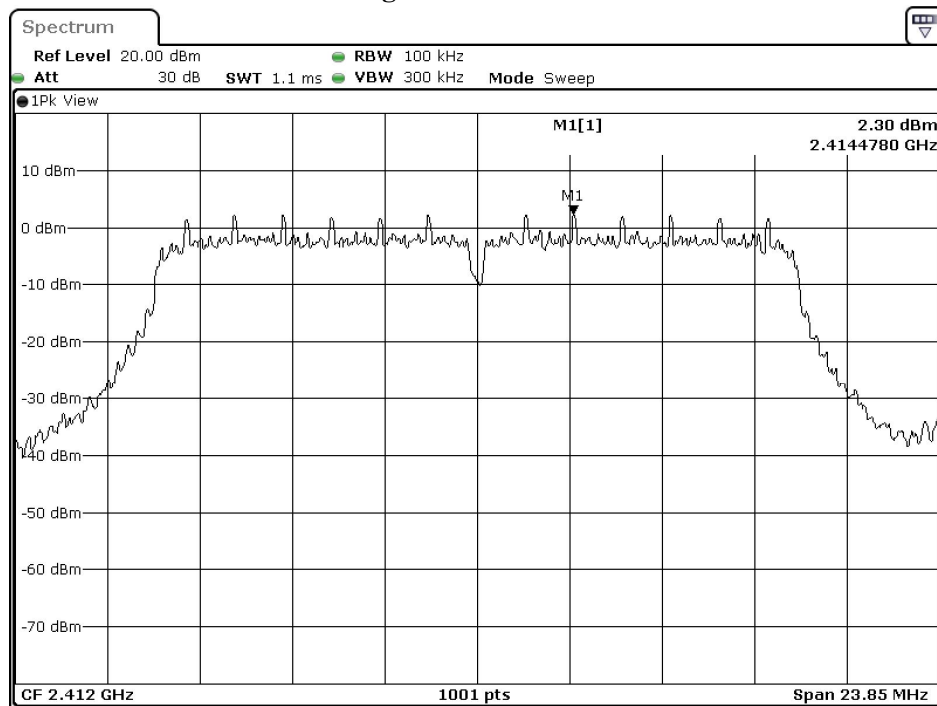


Date: 30.OCT.2020 03:50:05

Product : Delta 3D Printer
 Test Item : Power Density Data
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

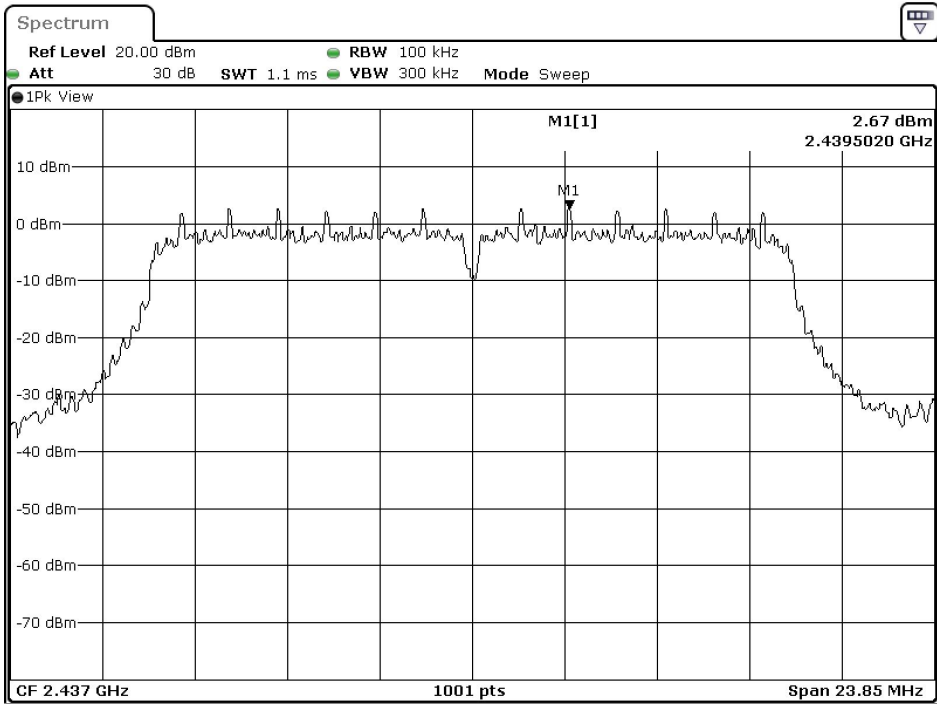
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	2.30	$\leq 8\text{dBm}$	Pass
06	2437	2.67	$\leq 8\text{dBm}$	Pass
11	2462	3.01	$\leq 8\text{dBm}$	Pass

Figure Channel 01:



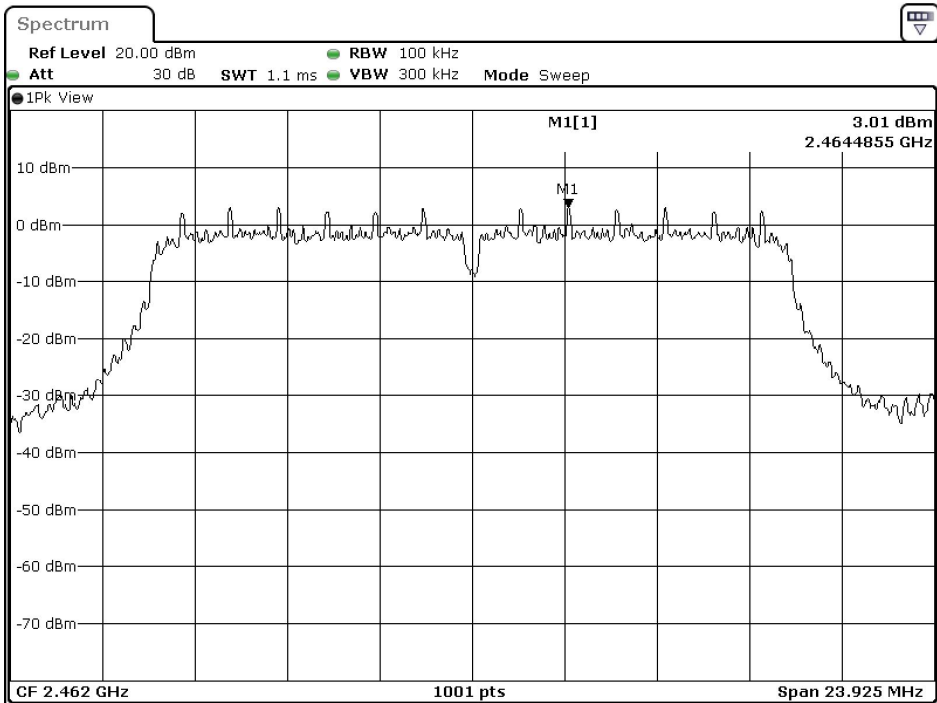
Date: 30.OCT.2020 03:54:05

Figure Channel 06:



Date: 30.OCT.2020 03:57:59

Figure Channel 11:

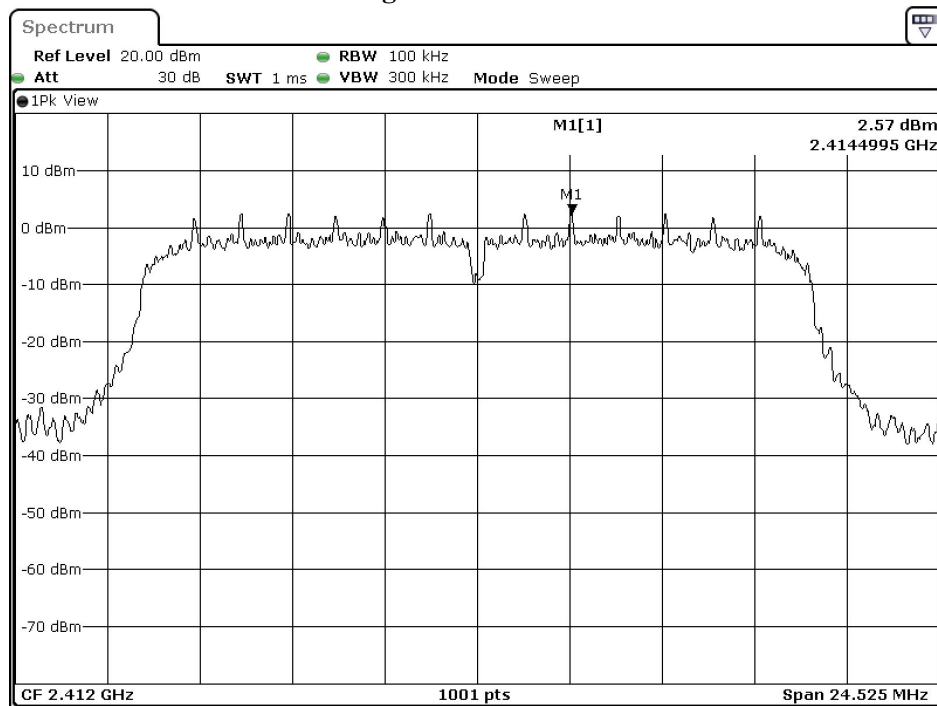


Date: 30.OCT.2020 05:17:20

Product : Delta 3D Printer
 Test Item : Power Density Data
 Test Mode : Mode 3: Transmit (802.11n-20 7.2Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	2.57	$\leq 8\text{dBm}$	Pass
06	2437	3.03	$\leq 8\text{dBm}$	Pass
11	2462	2.29	$\leq 8\text{dBm}$	Pass

Figure Channel 01:



Date: 30.OCT.2020 05:21:32

Figure Channel 06:

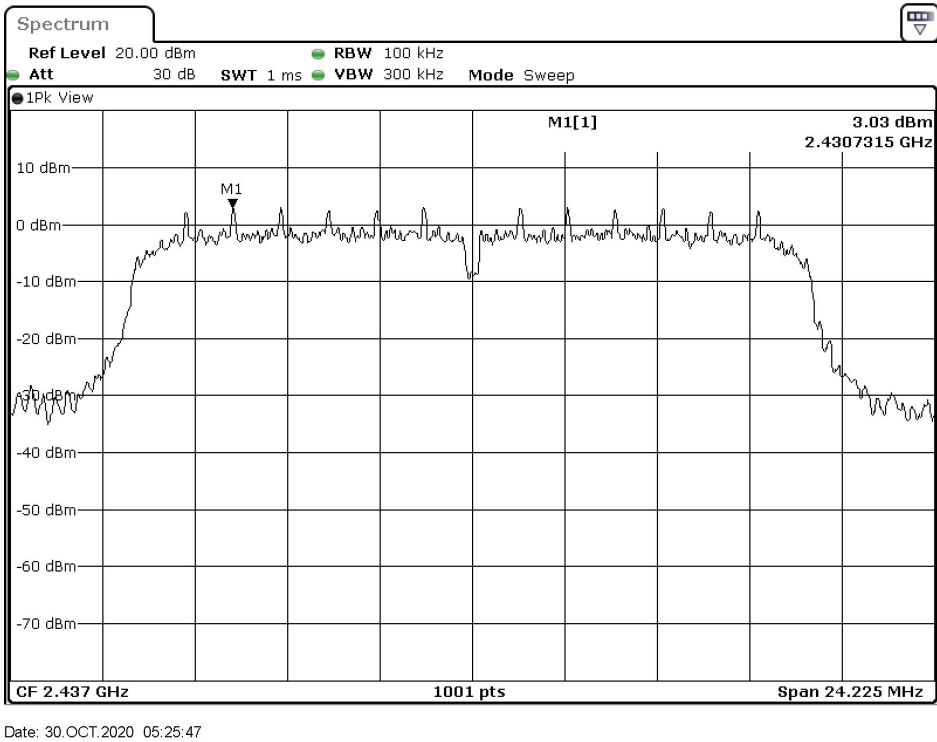
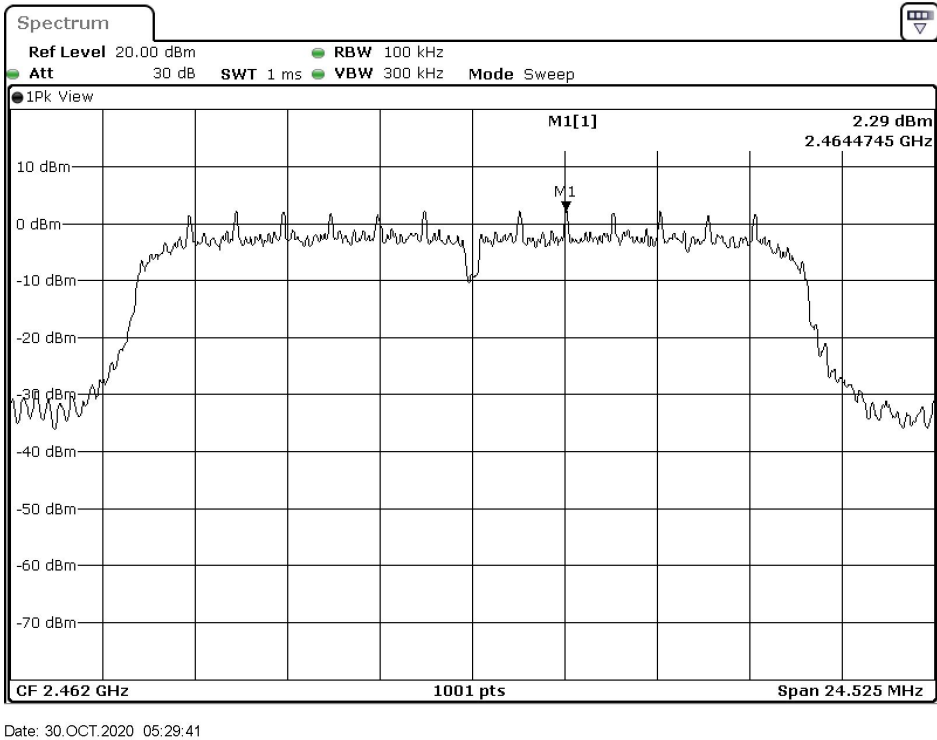


Figure Channel 11:



8. EMI Reduction Method During Compliance Testing

No modification was made during testing.