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Yunjing Intelligence Technology (Dongguan) Co., Ltd.

TEST REPORT

SCOPE OF WORK
FCC TESTING–YJCC007, YJCC008

REPORT NUMBER
210115045SZN-002

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TEST REPORT

Intertek Report No.: 210115045SZN-002

Yunjing Intelligence Technology (Dongguan) Co., Ltd.

Application
For
Certification

FCC ID: 2ARXZYJCC007

Vacuum Cleaner (Narwal Vacuuming and Mopping Robot T10)

Model: YJCC007, YJCC008

2.4GHz Wi-Fi Transceiver

Report No.: 210115045SZN-002

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-19]

Prepared and Checked by:

Steven Zhou

Steven Zhou
Engineer

Approved by:

Kidd Yang
Technical Supervisor
Date: 26 January 2021

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MEASUREMENT/TECHNICAL REPORT

This report concerns (check one) Original Grant ___X___ Class II Change _____

Equipment Type: DTS - Part 15 Digital Transmission Systems (Wi-Fi transmitter portion)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes _____ No ___X___

If yes, defer until : _____
date

Company Name agrees to notify the Commission by: _____
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes _____ No ___X___

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-01-19] Edition] provision.

Report prepared by:

Steven Zhou
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1.0 Summary of Test results

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Applicant Address: Building 7, No. 4, Xingye Rd., Songshan Lake Park, Dongguan, Guangdong, China
Manufacturer: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Manufacturer Address: Building 7, No. 4, Xingye Rd., Songshan Lake Park, Dongguan, Guangdong, China

Model: YJCC007
FCC ID: 2ARXZYJCC007

TEST ITEM	REFERENCE	RESULTS
Max. Output power	15.247(b)(3)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(e)	Pass
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d), 15.209, FCC 15.205	Pass
AC Conducted Emission	15.207	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a Vacuum Cleaner (Narwal Vacuuming and Mopping Robot T10) with Wi-Fi function operating at 2412-2462MHz for 802.11b/g/n-HT20, 11 channels with 5MHz channel spacing and 2422-2452MHz for 802.11n-HT40, 7 channels with 5MHz channel spacing. The EUT is powered by DC 14.4V rechargeable battery. For more detailed features description, please refer to the user's manual.

Type of Modulation: BPSK, QPSK, 16QAM, 64QAM for OFDM; CCK, DQPSK, DBPSK for DSSS.
Antenna Type: Integral Antenna
Antenna Gain: 2dBi

The Model: YJCC008 is the same as the Model: YJCC007 in hardware and electrical aspect. The difference in model number serves as marketing strategy.

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

2.2 Related Submittal(s) Grants

This is an application for certification of:
DTS- Part 15 Digital Transmission Systems (2.4GHz Wi-Fi transmitter portion).

Remaining portions are subject to the following procedures:
1. Receiver portion of WiFi: exempt from technical requirement of this Part.
2. 915-916MHz transmitter: Subject to report number: 210115045SZN-004.
3. Other Digital Function: Subject to report number: 210115045SZN-001.

2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013) and KDB 558074 D01 v05r02. Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

2.4 Test Facility

The Semi-anechoic chamber and shielded room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Longhua Branch** and located at 101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, Shenzhen, P.R. China. This test facility and site measurement data have been fully placed on file with File Number: CN1188.

3.0 System Test Configuration

3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by a fully DC 14.4V rechargeable battery and charged by AC120V/60Hz during the test.

On 802.11b/g/n-HT20/n-HT40 mode, only one antenna is used, and all data rate were tested and only the worst case data is shown in the report.

The transmitting equipment under test (EUT) is placed on a wooden table which is four feet in diameter, 12mm in height above the ground plane. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000MHz. The resolution is 1 MHz or greater for frequencies above 1000MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

The EUT and transmitting antenna was centered on the turntable.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

The parameters of test software setting:
During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the application and is going to be fixed on the firmware of the end product.
Test Software: adb.exe v1.0.31

3.3 Special Accessories

N/A.

3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

3.5 Equipment Modification

Any modifications installed previous to testing by Yunjing Intelligence Technology (Dongguan) Co., Ltd. will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Longhua Branch.

3.6 Support Equipment List and Description

Description	Manufacturer	Model No.
Vacuum Cleaner (Narwal Vacuuming and Mopping Robot T10)	Yunjing Intelligence Technology (Dongguan) Co., Ltd.	Model: YJCB007

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007

4.0 Measurement Results

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

The antenna power of the EUT was connected to the input of a broadband peak RF power meter. The power meter have a video bandwidth that is greater than DTS bandwidth and utilize a fast-responding diode detector. Power was read directly at the EUT antenna terminals with cable loss added.

For antennas with gains of 6 dBi or less, maximum allowed Transmitter output is 1 watt (+30 dBm).

IEEE 802.11b (Antenna Gain = 2dBi) (CCK, 1Mbps)		
Frequency (MHz)	Output in dBm (Peak Reading)	Output in mWatt
Low Channel: 2412	22.1	162.18
Middle Channel: 2437	20.6	114.81
High Channel: 2462	19.3	85.11

IEEE 802.11g (Antenna Gain = 2dBi) (16QAM, 6Mbps)		
Frequency (MHz)	Output in dBm (Peak Reading)	Output in mWatt
Low Channel: 2412	24.5	281.84
Middle Channel: 2437	25.5	354.81
High Channel: 2462	25.3	338.84

IEEE 802.11n-HT20 (Antenna Gain = 2dBi) (64QAM, 6Mbps)		
Frequency (MHz)	Output in dBm (Peak Reading)	Output in mWatt
Low Channel: 2412	23.4	218.78
Middle Channel: 2437	25.1	323.59
High Channel: 2462	24.3	269.15

IEEE 802.11n-HT40 (Antenna Gain = 2 dBi) (64QAM, 13.5Mbps)		
Frequency (MHz)	Output in dBm (Peak Reading)	Output in mWatt
Low Channel: 2422	23.8	239.88
Middle Channel: 2437	25.2	331.13
High Channel: 2452	25.1	325.59

Cable loss: 0.5 dB External Attenuation: 0 dB

Cable loss, external attenuation has been included in OFFSET function

EUT max. output level = 25.5dBm
EUT max. E.I.R.P = 25.5dBm + 2dBi = 27.5dBm = 562.34mW

For RF Exposure, the information is saved with filename: RF exposure.pdf.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007

4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a) (2):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 KHz according to FCC KDB 558074 D01 v05r02. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

Limit: The 6 dB Bandwidth is at least 500 kHz.

IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	9.090
2437	8.640
2462	8.640

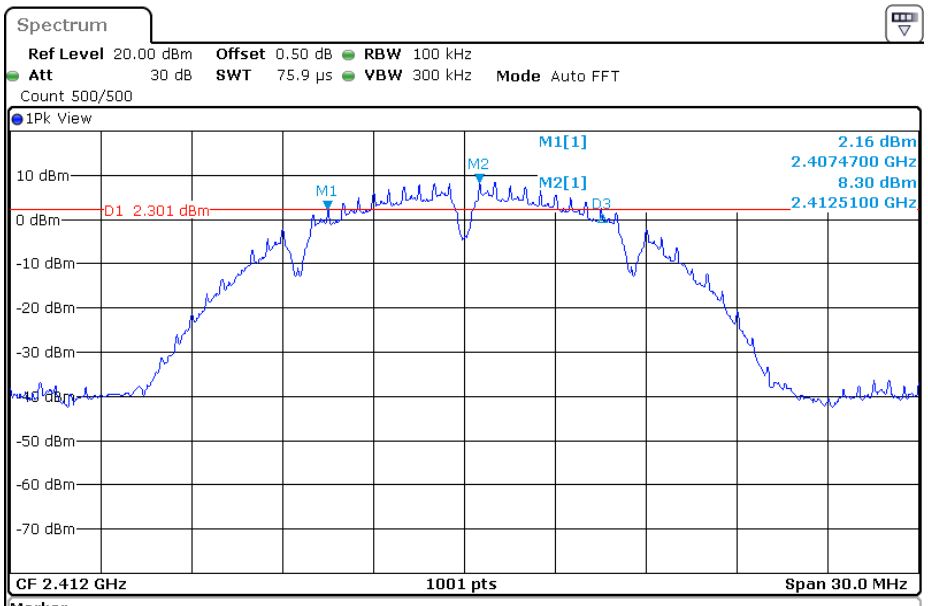
IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	16.410
2437	16.380
2462	16.410

IEEE 802.11n-HT20 (64QAM, 6Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	17.610
2437	17.340
2462	17.370

IEEE 802.11n-HT40 (64QAM, 13.5Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2422	35.460
2437	35.820
2452	35.580

The test plots are attached as below.

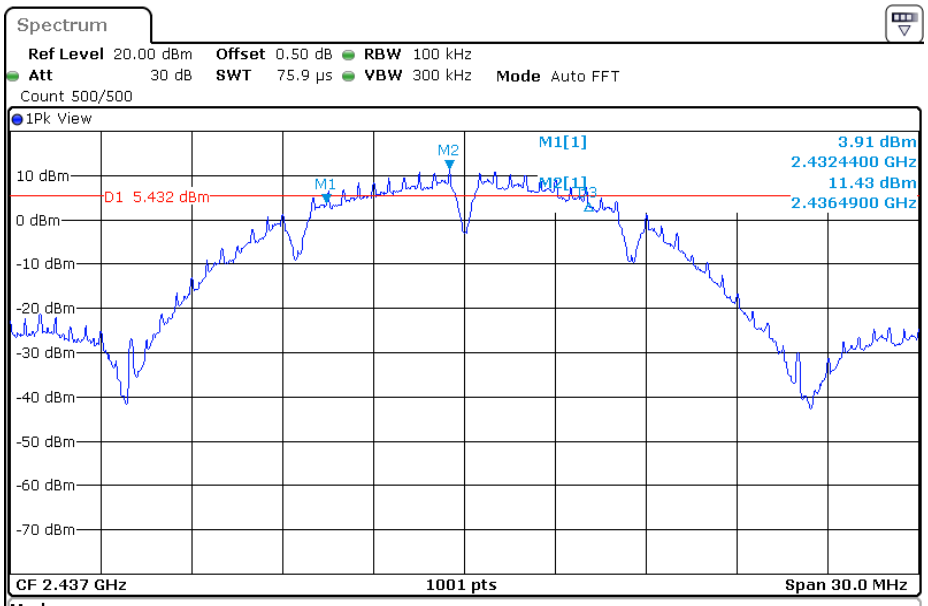
802.11b



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40747 GHz	2.16 dBm		
M2		1	2.41251 GHz	8.30 dBm		
D3	M1	1	9.09 MHz	-0.94 dB		

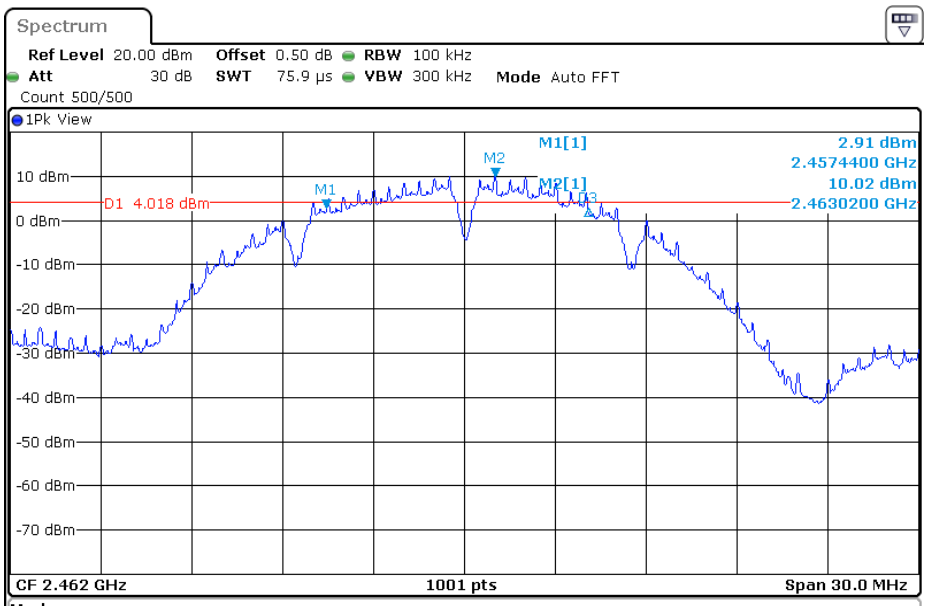
Date: 25.JAN.2021 16:26:05



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.43244 GHz	3.91 dBm		
M2		1	2.43649 GHz	11.43 dBm		
D3	M1	1	8.64 MHz	-0.05 dB		

Date: 25.JAN.2021 16:35:58

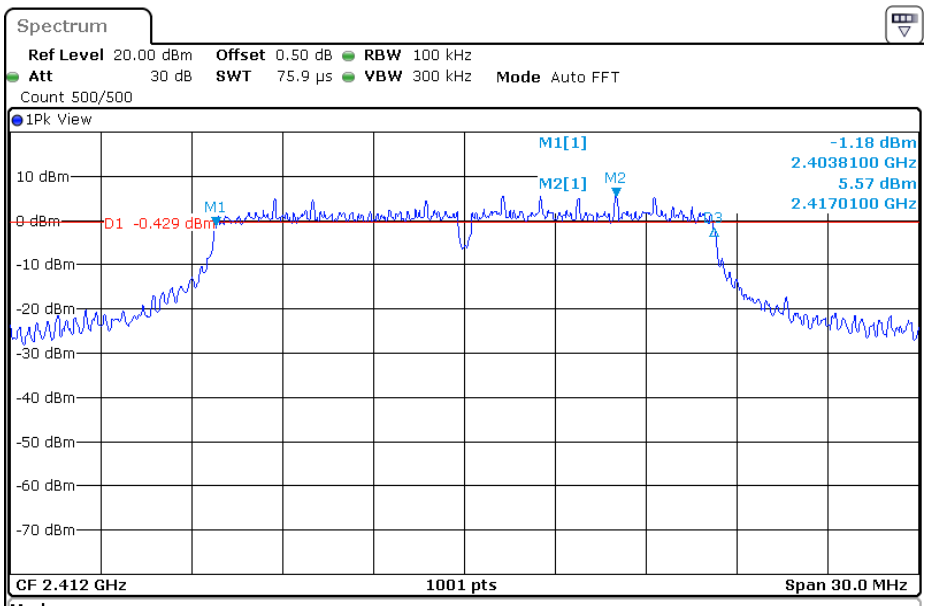


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45744 GHz	2.91 dBm		
M2		1	2.46302 GHz	10.02 dBm		
D3	M1	1	8.64 MHz	-0.21 dB		

Date: 25.JAN.2021 16:37:06

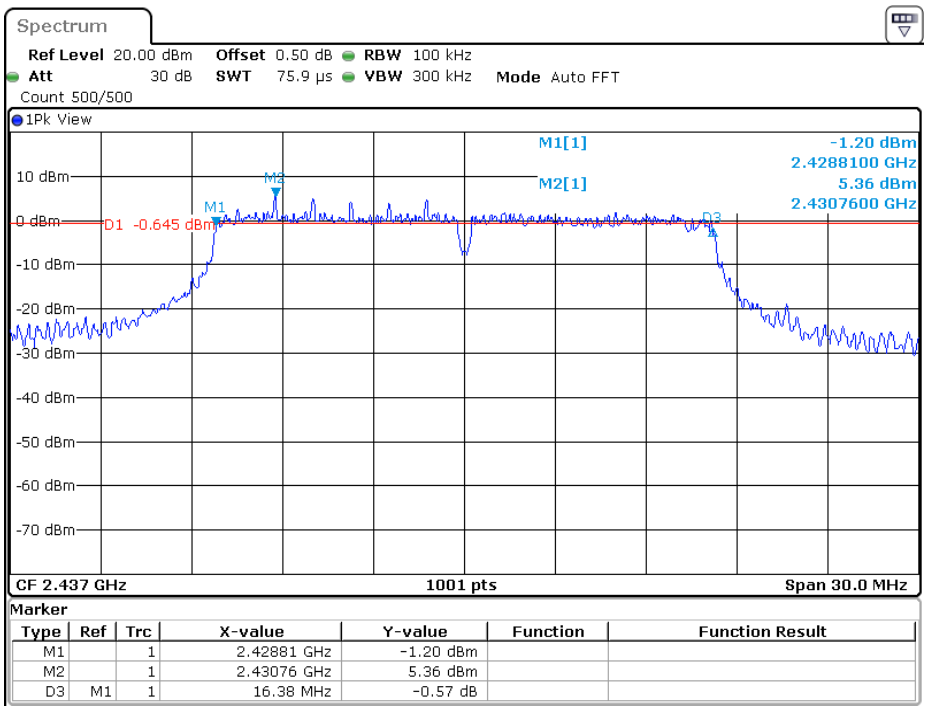
802.11g

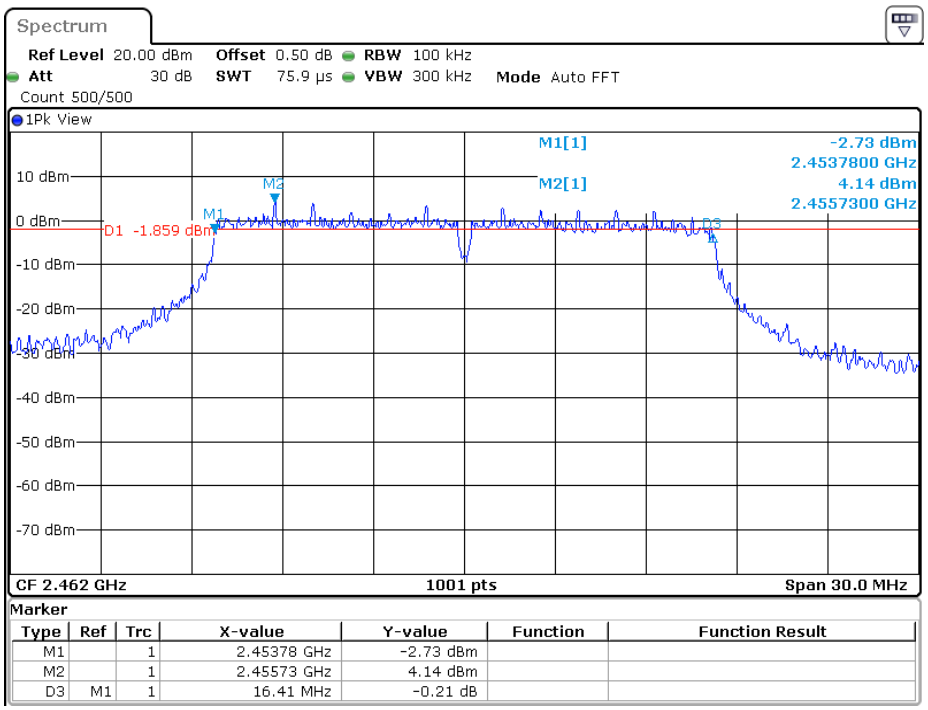


Marker

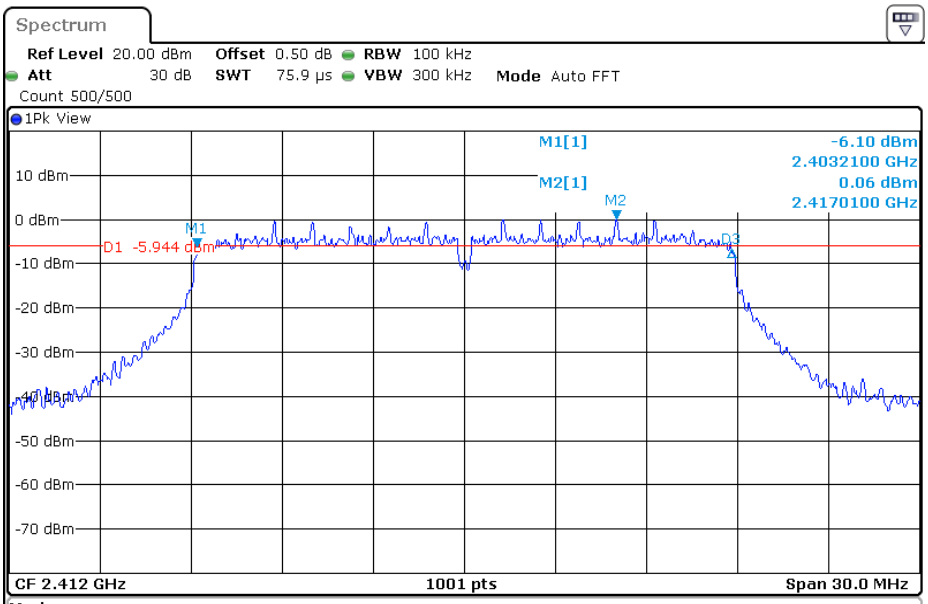
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40381 GHz	-1.18 dBm		
M2		1	2.41701 GHz	5.57 dBm		
D3	M1	1	16.41 MHz	-0.41 dB		

Date: 25.JAN.2021 16:39:36


Spectrum
Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
Count 500/500
1Pk View
M1[1] -1.20 dBm
2.4288100 GHz
M2[1] 5.36 dBm
2.4307600 GHz
D1 -0.645 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
1001 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.42881 GHz -1.20 dBm
M2 1 2.43076 GHz 5.36 dBm
D3 M1 1 16.38 MHz -0.57 dB
Date: 25.JAN.2021 16:41:19


Spectrum
Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
Count 500/500
1Pk View
M1[1] -2.73 dBm
2.4537800 GHz
M2[1] 4.14 dBm
2.4557300 GHz
D1 -1.859 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
1001 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.45378 GHz -2.73 dBm
M2 1 2.45573 GHz 4.14 dBm
D3 M1 1 16.41 MHz -0.21 dB
Date: 25.JAN.2021 16:42:35

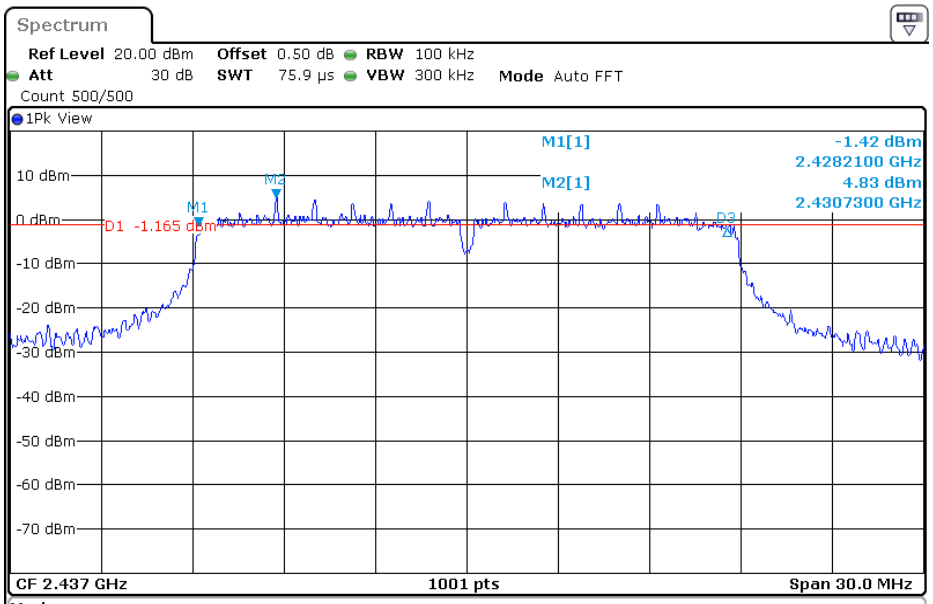
802.11n-HT20



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40321 GHz	-6.10 dBm		
M2		1	2.41701 GHz	0.06 dBm		
D3	M1	1	17.61 MHz	-0.61 dB		

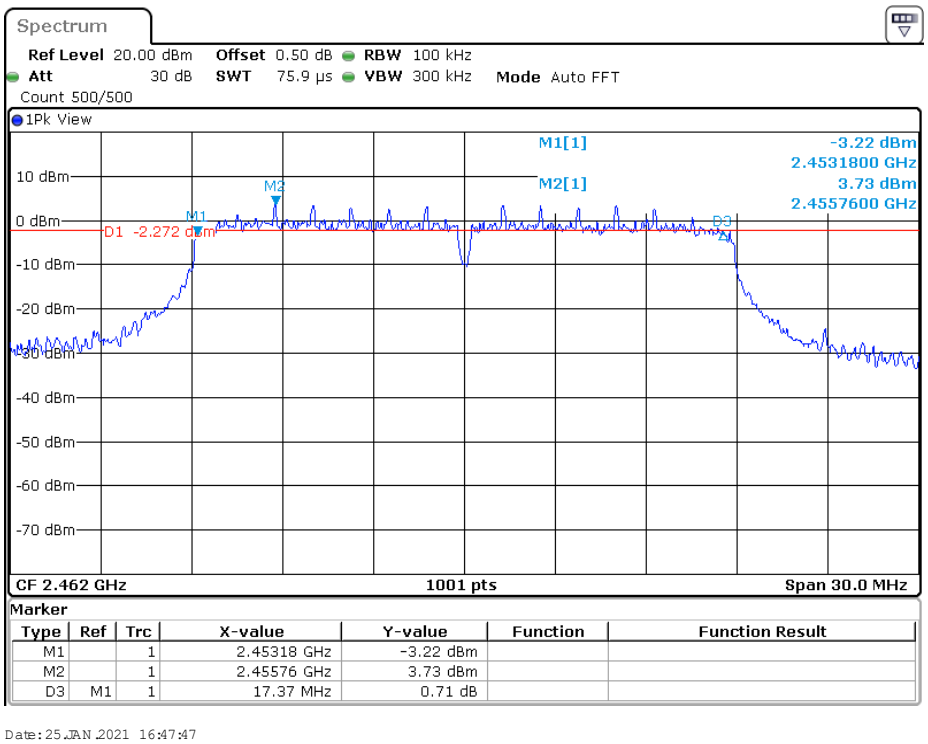
Date: 25.JAN.2021 16:45:09



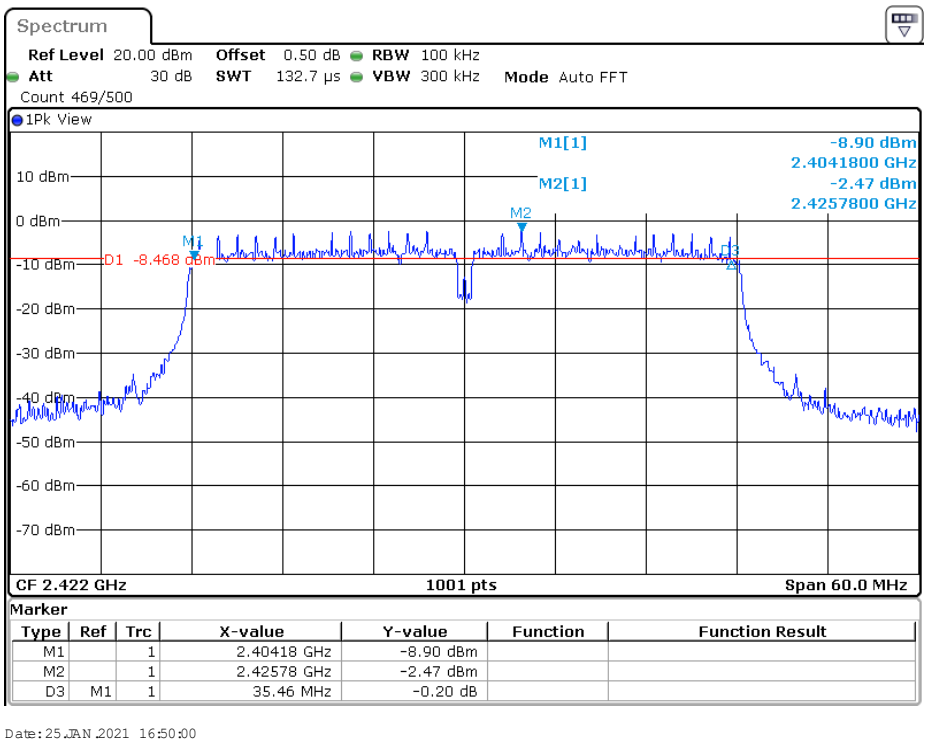
Marker

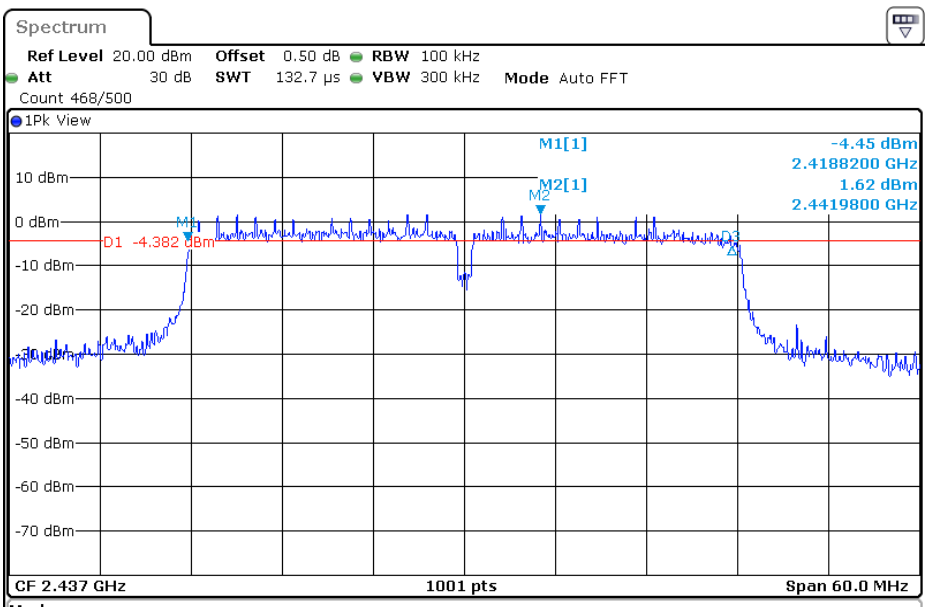
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.42821 GHz	-1.42 dBm		
M2		1	2.43073 GHz	4.83 dBm		
D3	M1	1	17.34 MHz	-0.53 dB		

Date: 25.JAN.2021 16:46:38


Spectrum
Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
Count 500/500
1Pk View
M1[1] -3.22 dBm 2.4531800 GHz
M2[1] 3.73 dBm 2.4557600 GHz
D1 -2.272 dBm
CF 2.462 GHz 1001 pts Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.45318 GHz -3.22 dBm
M2 1 2.45576 GHz 3.73 dBm
D3 M1 1 17.37 MHz 0.71 dB
Date: 25.JAN.2021 16:47:47

802.11n-HT40

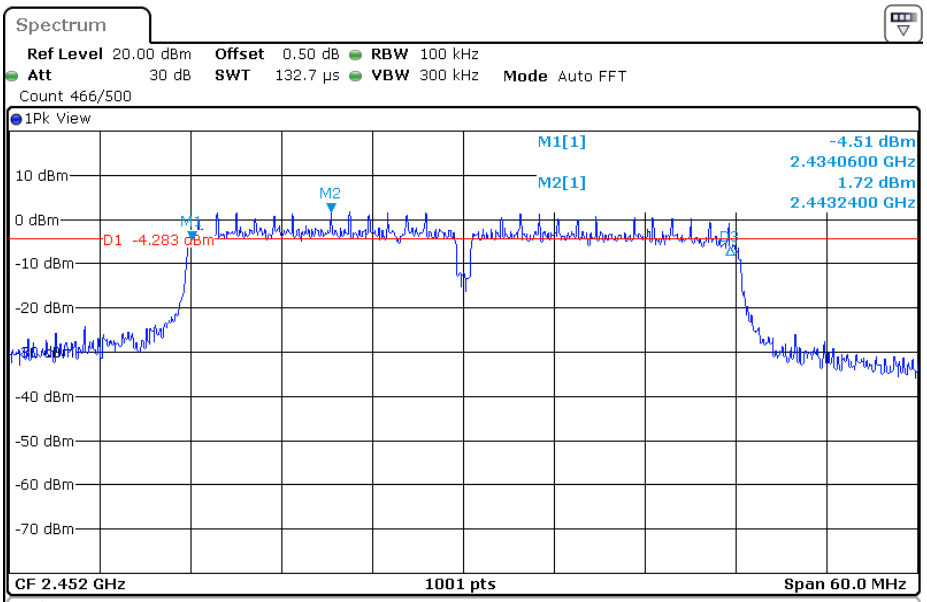

Spectrum
Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 132.7 µs VBW 300 kHz Mode Auto FFT
Count 469/500
1Pk View
M1[1] -8.90 dBm 2.4041800 GHz
M2[1] -2.47 dBm 2.4257800 GHz
D1 -8.468 dBm
CF 2.422 GHz 1001 pts Span 60.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.40418 GHz -8.90 dBm
M2 1 2.42578 GHz -2.47 dBm
D3 M1 1 35.46 MHz -0.20 dB
Date: 25.JAN.2021 16:50:00



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41882 GHz	-4.45 dBm		
M2		1	2.44198 GHz	1.62 dBm		
D3	M1	1	35.82 MHz	-1.25 dB		

Date: 25.JAN.2021 16:51:30



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.43406 GHz	-4.51 dBm		
M2		1	2.44324 GHz	1.72 dBm		
D3	M1	1	35.58 MHz	-1.79 dB		

Date: 25.JAN.2021 16:52:43

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007

4.3 Maximum Power Density Reading, FCC Rule 15.247(e):

The Measurement Procedure PKPSD was set according to the FCC KDB 558074 D01 v05r02.

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

Limit: The Power Density does not exceed 8dBm/3 kHz.

IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	Power Density with RBW 3KHz
2412	-4.74
2437	-2.13
2462	-2.36

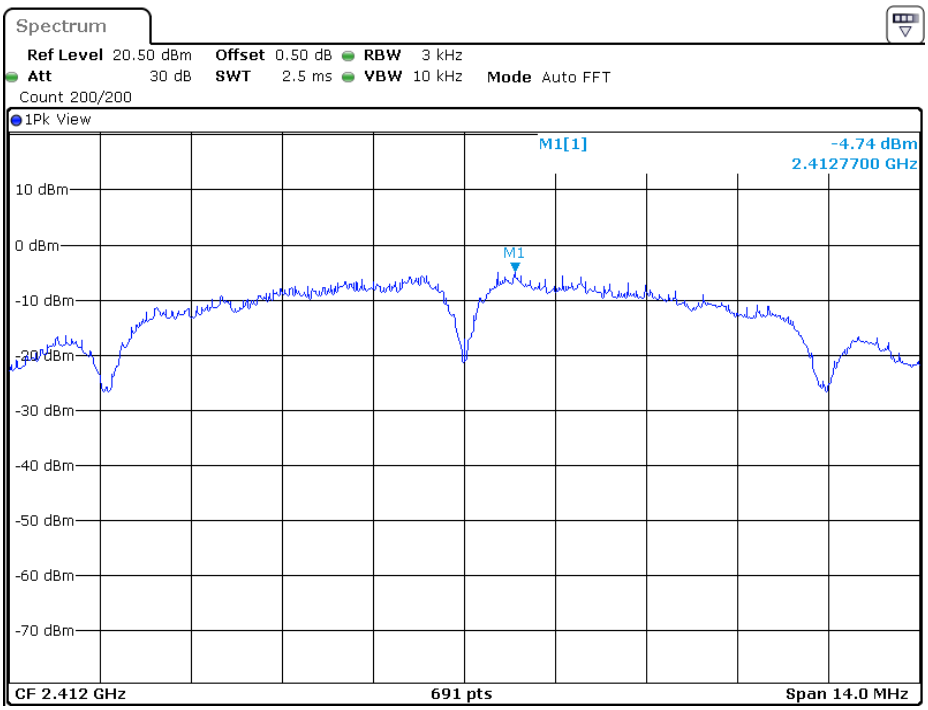
IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	Power Density with RBW 3KHz
2412	-8.87
2437	-9.31
2462	-10.24

IEEE 802.11n-HT20 (64QAM, 6Mbps)	
Frequency (MHz)	Power Density with RBW 3KHz
2412	-14.63
2437	-10.57
2462	-11.09

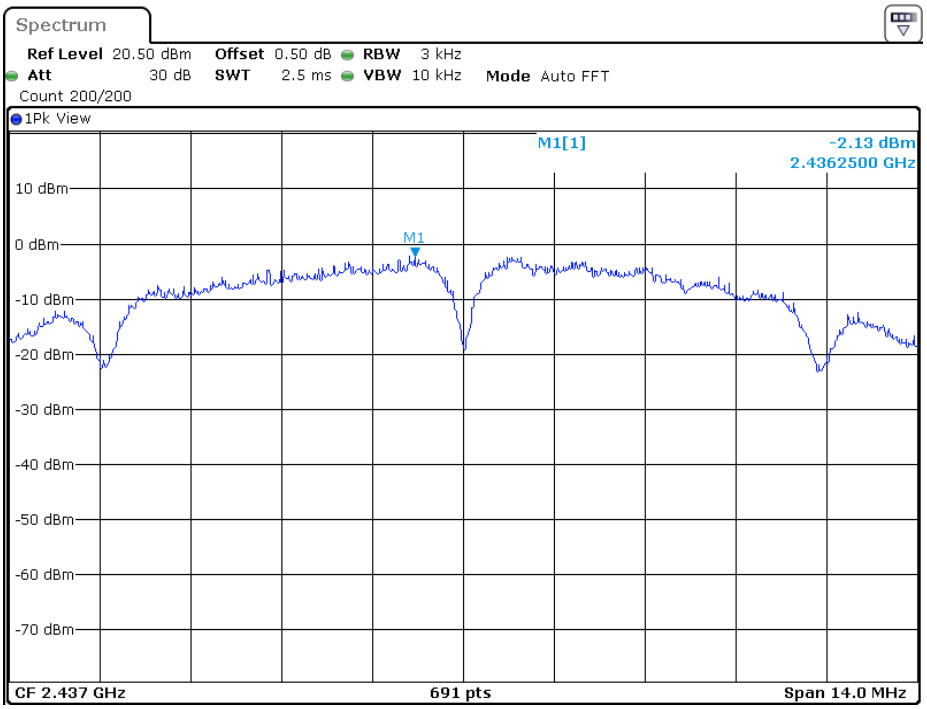
IEEE 802.11n-HT40 (64QAM, 13.5Mbps)	
Frequency (MHz)	Power Density with RBW 3KHz
2422	-25.31
2437	-21.33
2452	-21.62

The test plots are attached as below.

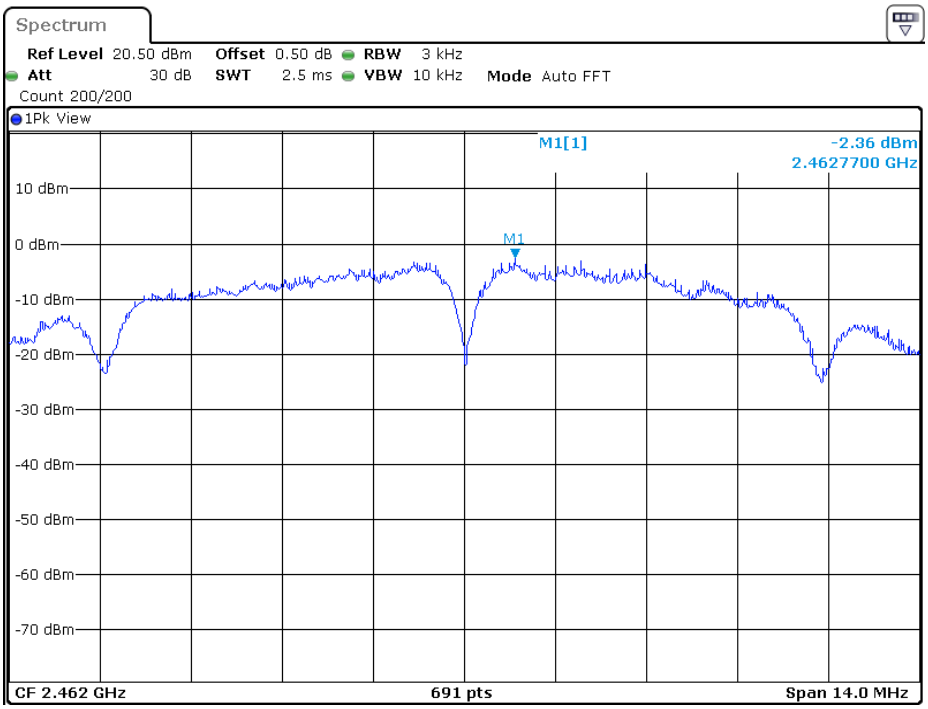
802.11b



Date: 25.JAN.2021 16:35:23

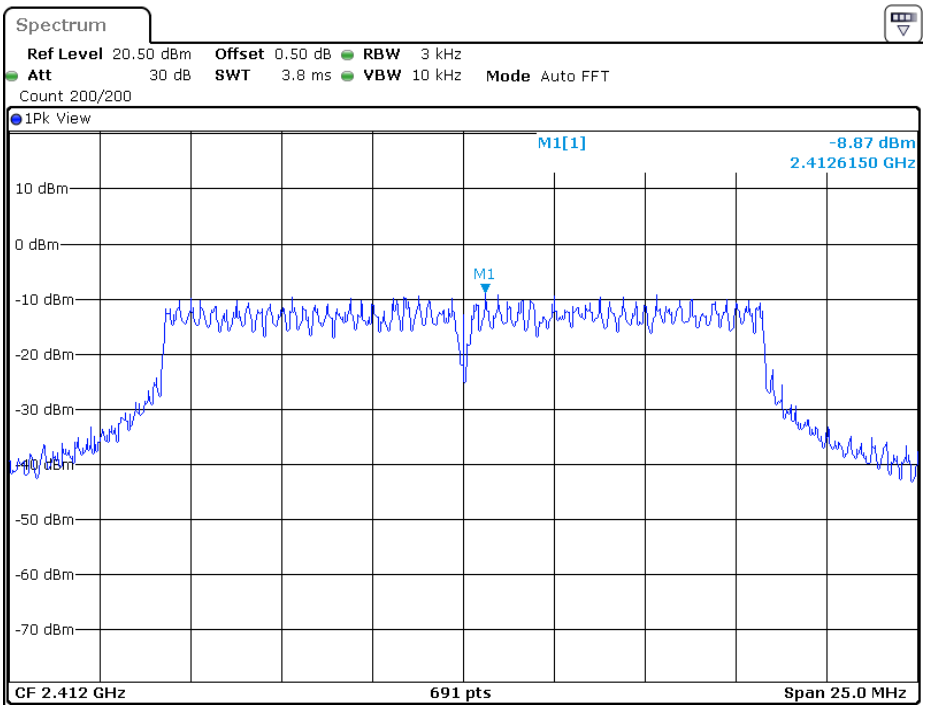


Date: 25.JAN.2021 16:36:25

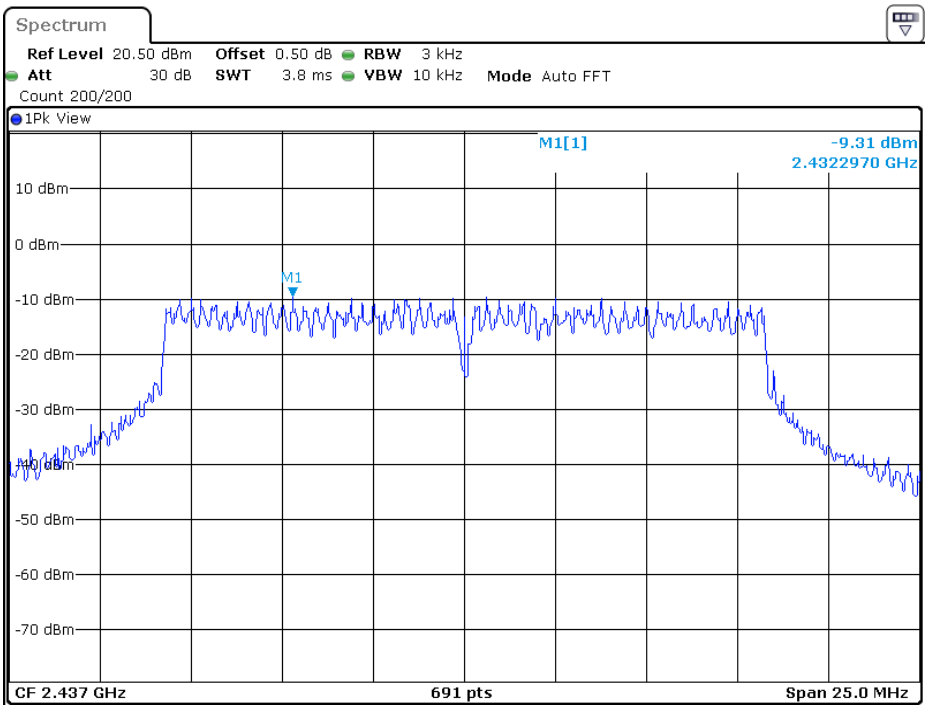


Date: 25.JAN.2021 16:37:33

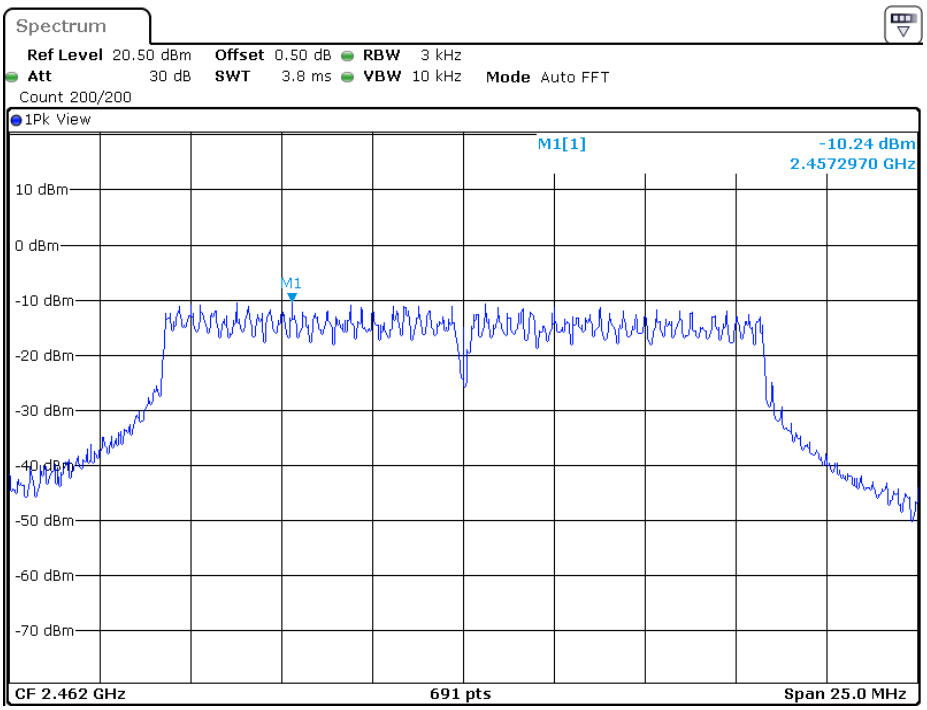
802.11g



Date: 25.JAN.2021 16:40:18

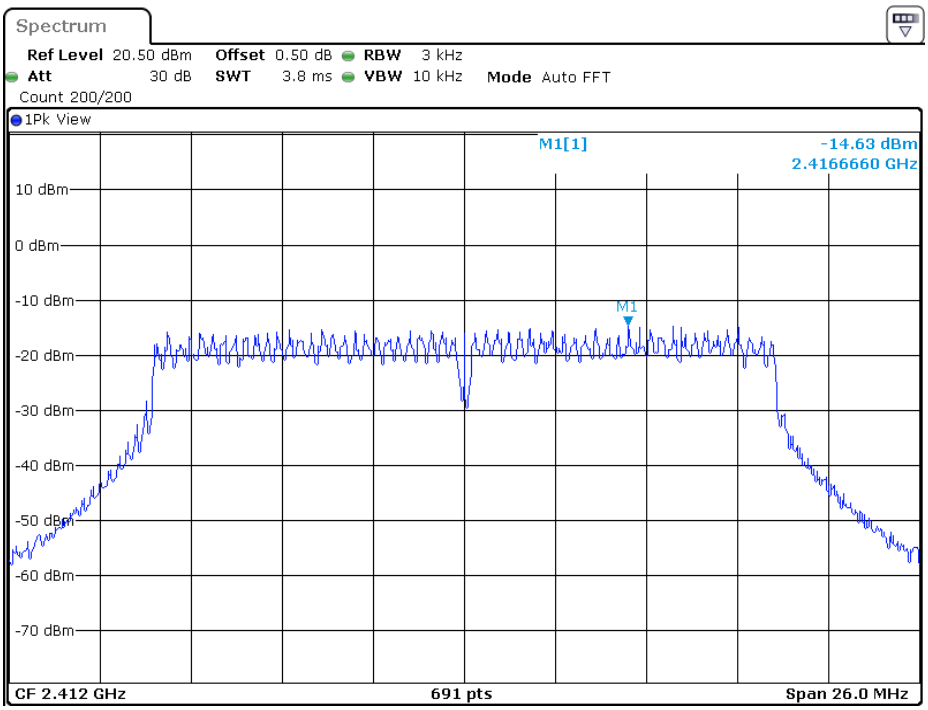


Date: 25.JAN.2021 16:41:45

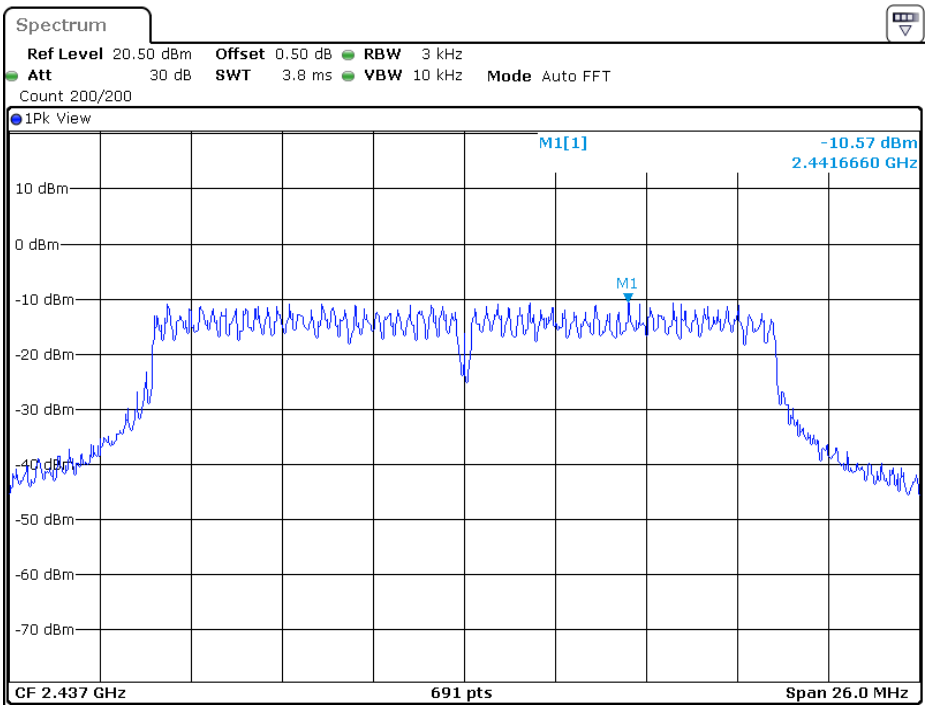


Date: 25.JAN.2021 16:43:01

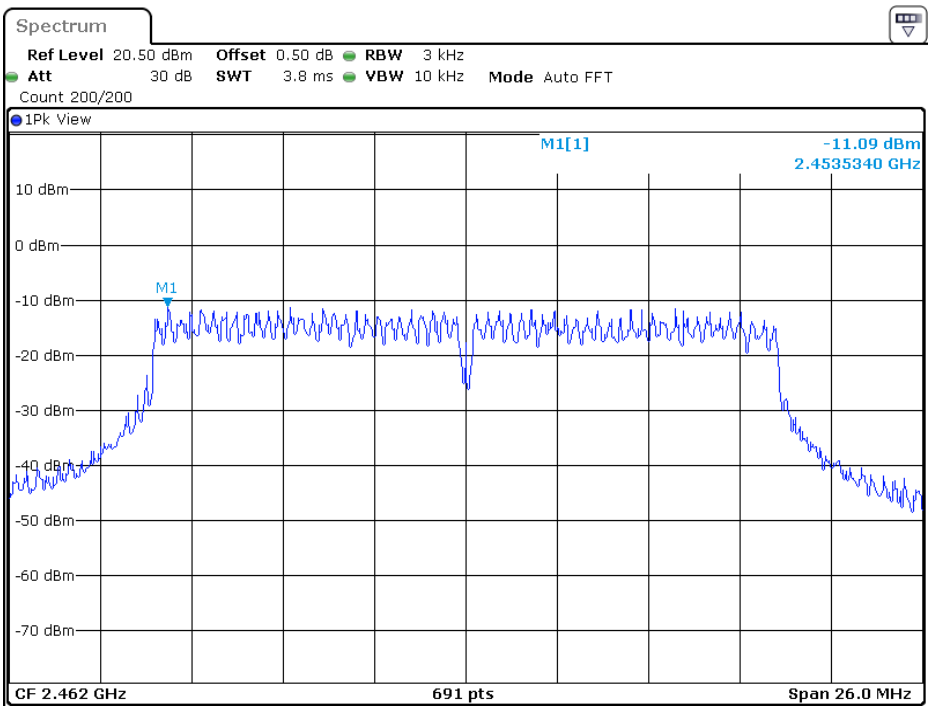
802.11n-HT20



Date: 25.JAN.2021 16:45:36

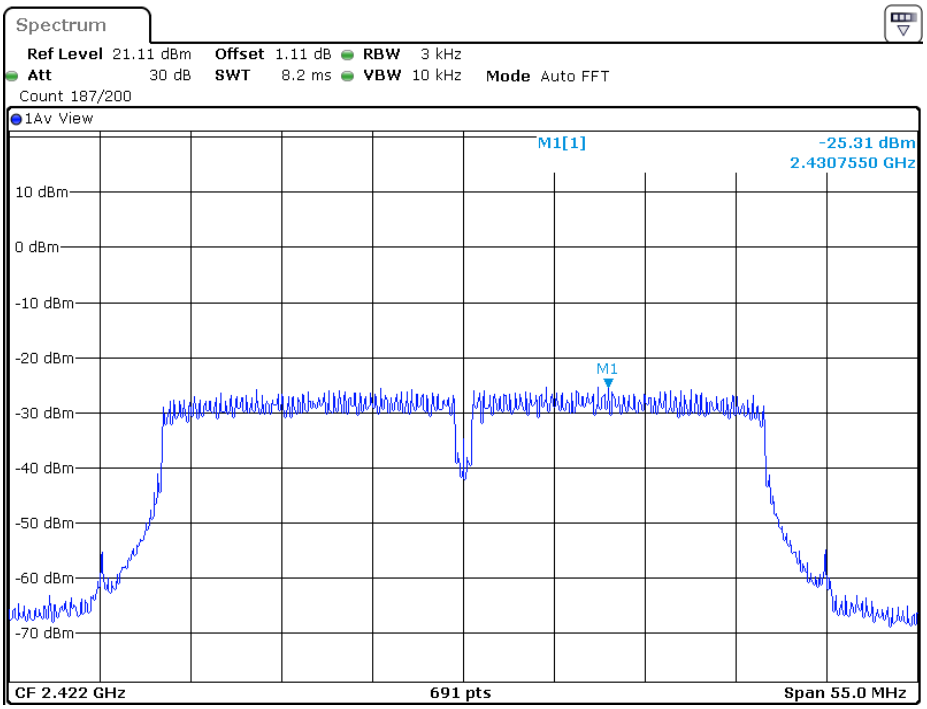


Date: 25.JAN.2021 16:47:05

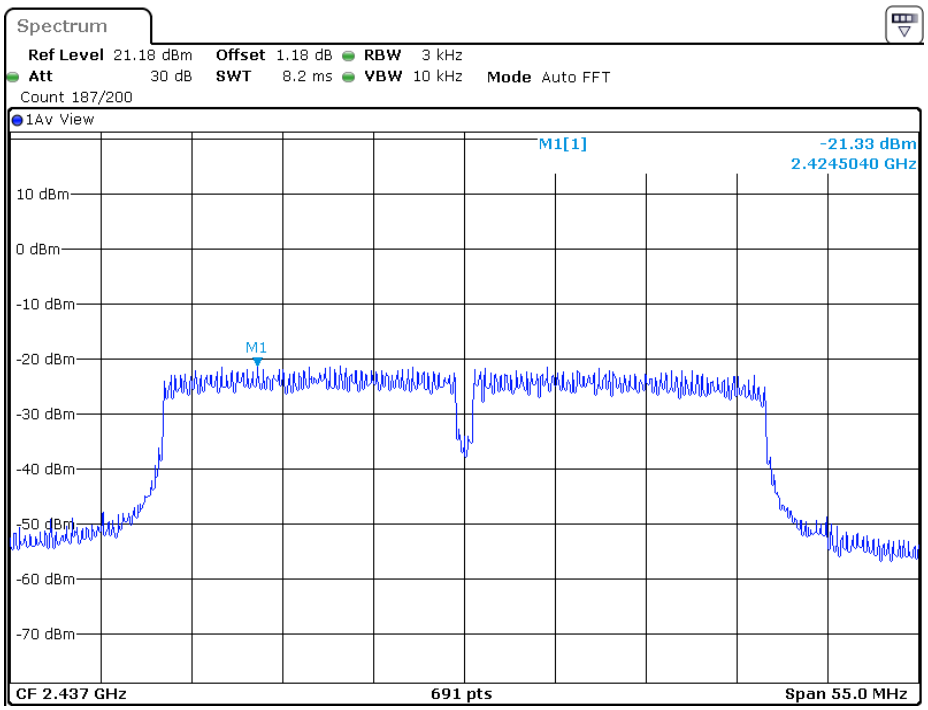


Date: 25.JAN.2021 16:48:14

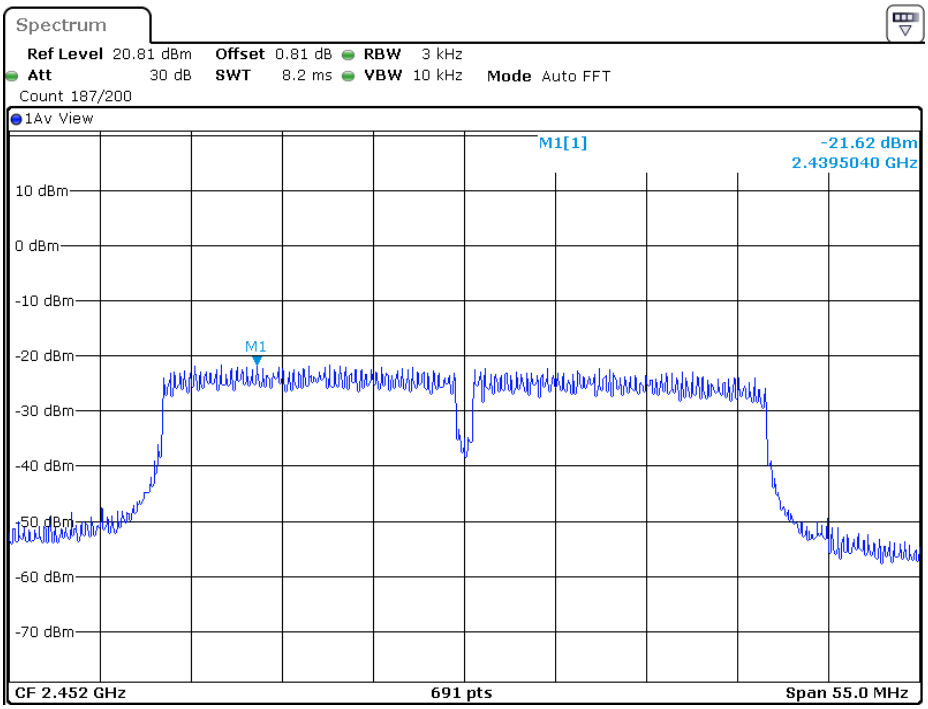
802.11n-HT40



Date: 25.JAN.2021 16:50:34



Date: 25.JAN.2021 16:52:04



Date: 25.JAN.2021 16:53:17

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007

4.4 Out of Band Conducted Emissions, FCC Rule 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 a radiated measurement. The Measurement Procedure was set according to the FCC KDB 558074 D01 v05r02.

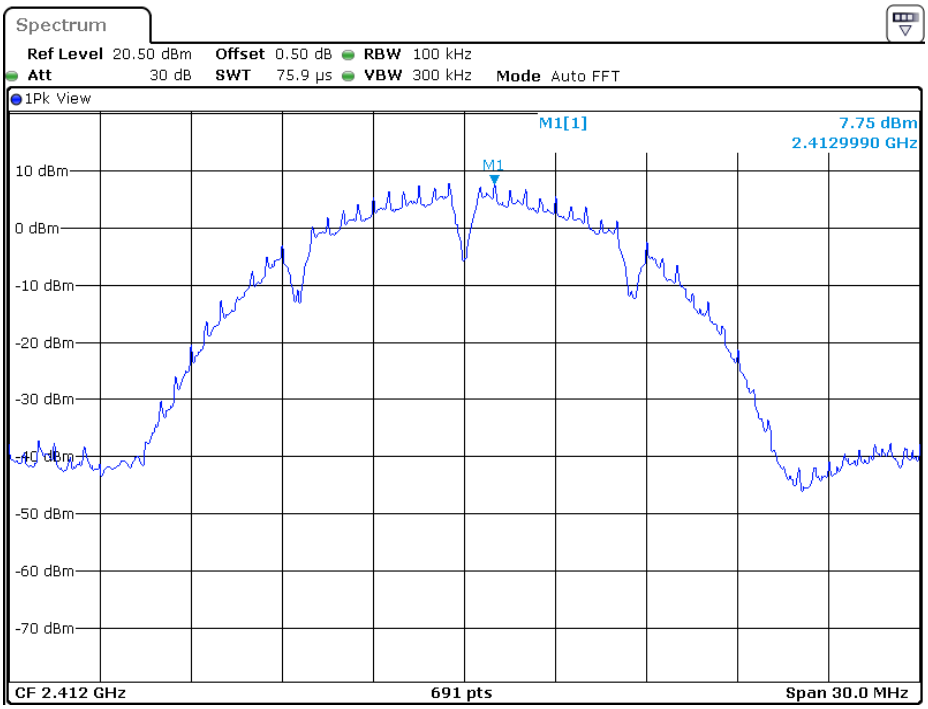
All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

Refer to the attached test plots for out of band conducted emissions data with rate of 1Mbps for 802.11b and 6Mbps for 802.11g and 6Mbps for 802.11n-HT20 and 13.5Mbps for 802.11n-HT40.

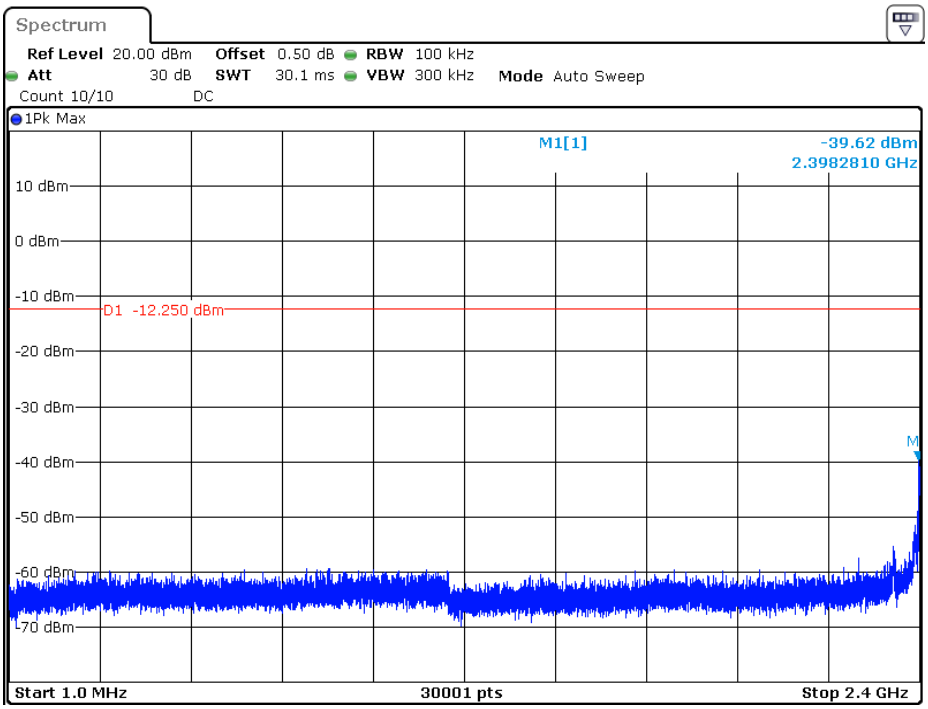
The test plots showed all spurious emission up to the tenth harmonic were measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

The test plots are attached as below.

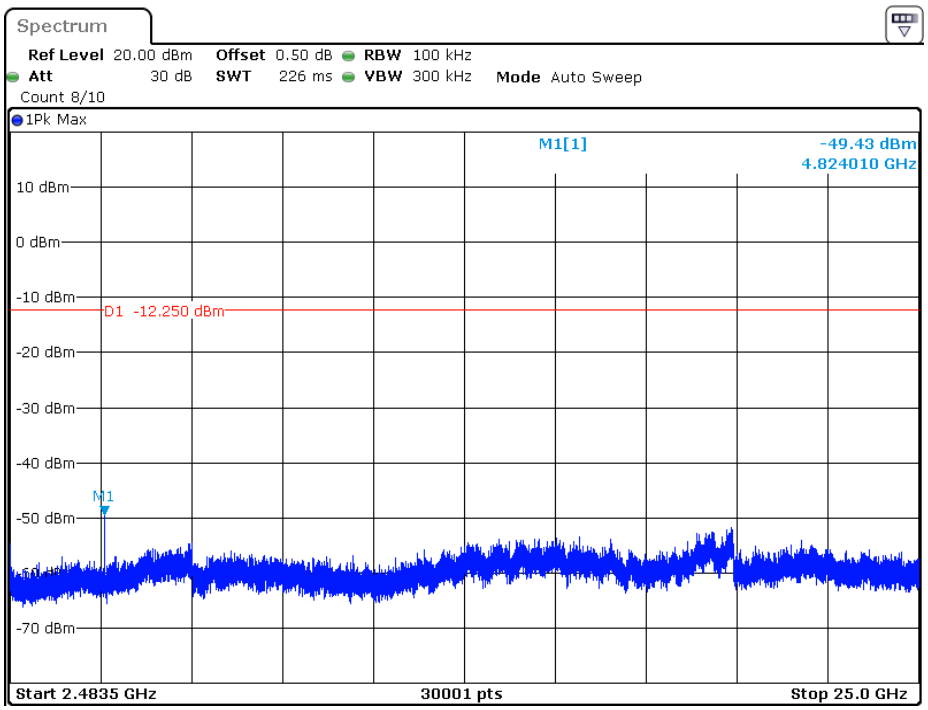
802.11b
Channel 01 (2412MHz) Reference Level: 7.75dBm



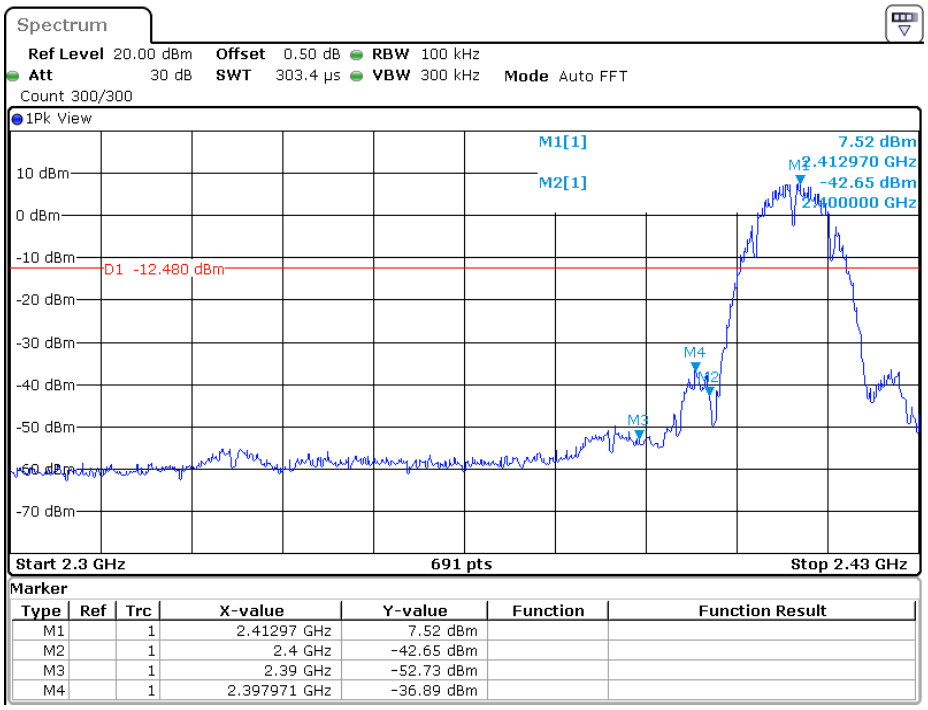
Date: 25.JAN.2021 16:27:00



Date: 25.JAN.2021 16:27:04



Date: 25.JAN.2021 16:27:11

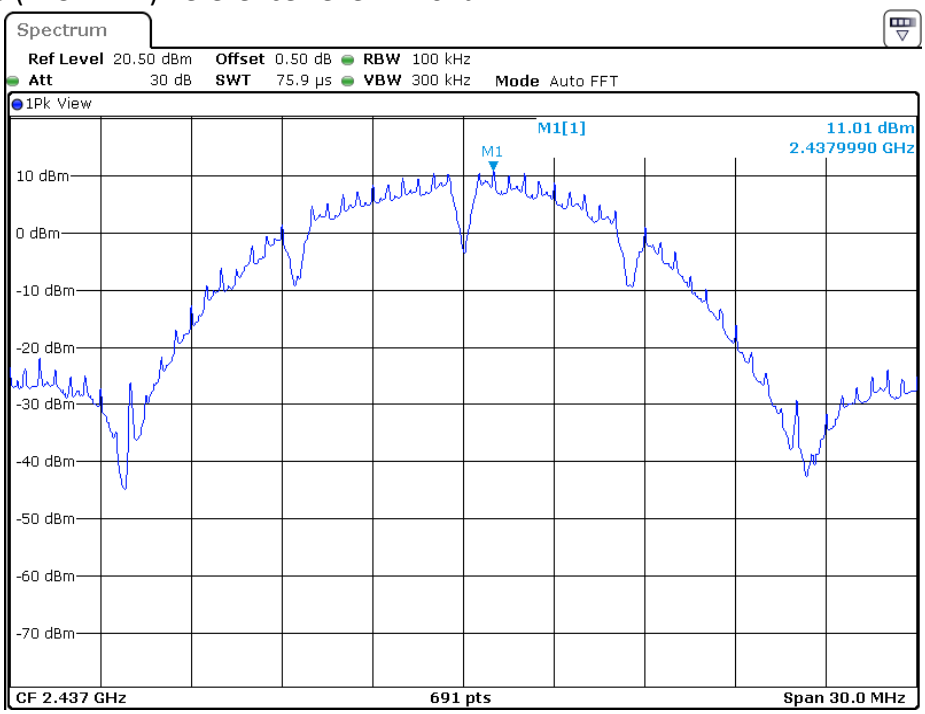


Marker

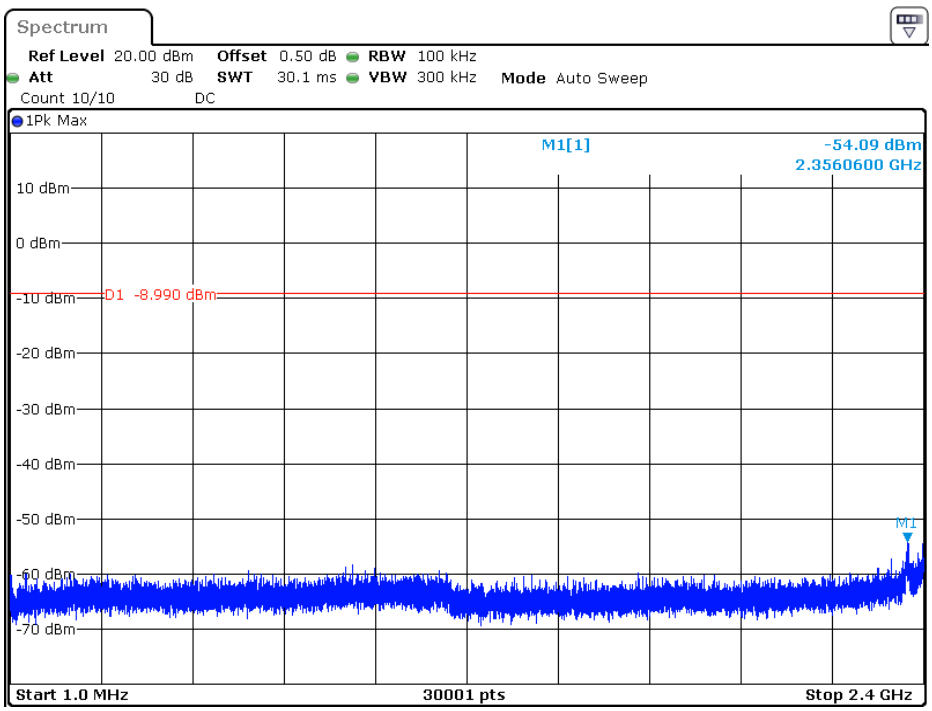
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41297 GHz	7.52 dBm		
M2		1	2.4 GHz	-42.65 dBm		
M3		1	2.39 GHz	-52.73 dBm		
M4		1	2.397971 GHz	-36.89 dBm		

Date: 25.JAN.2021 16:26:49

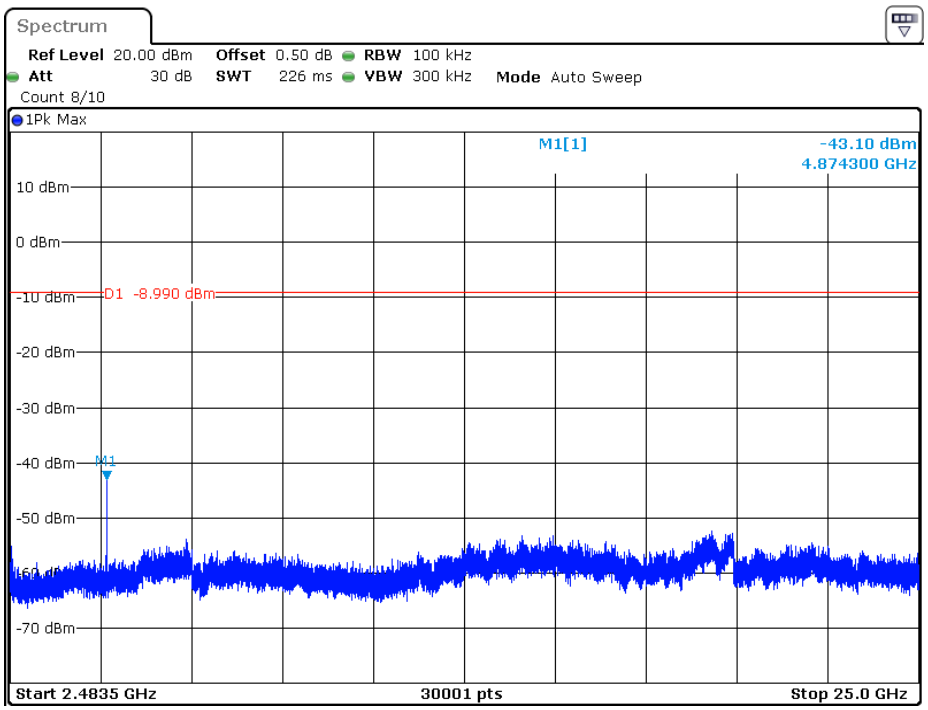
Channel 06 (2437MHz) Reference Level: 11.01dBm



Date: 25.JAN.2021 16:36:36

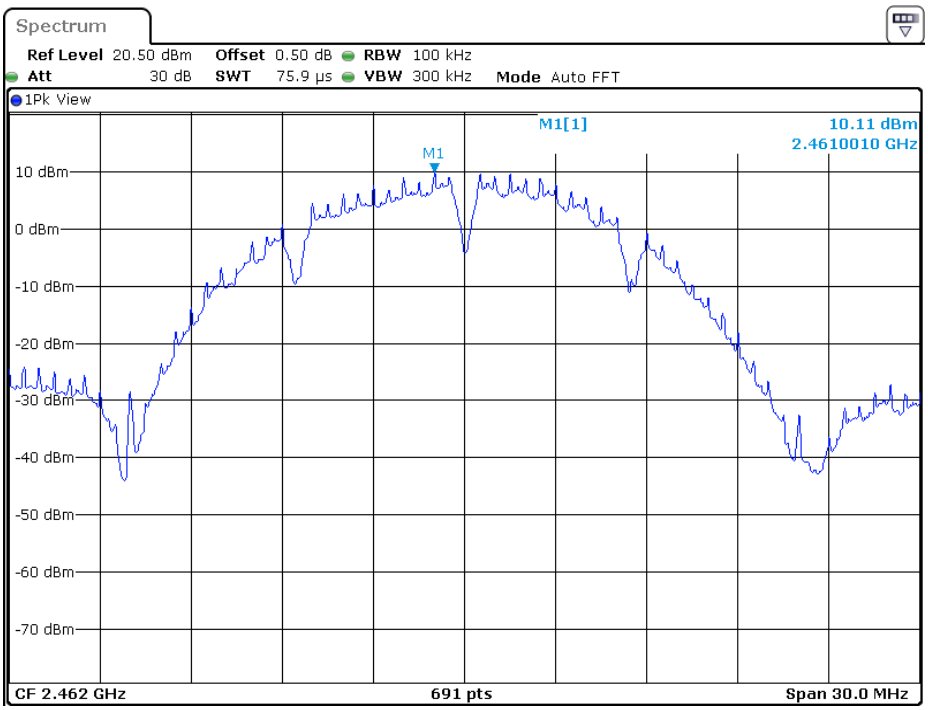


Date: 25.JAN.2021 16:36:40

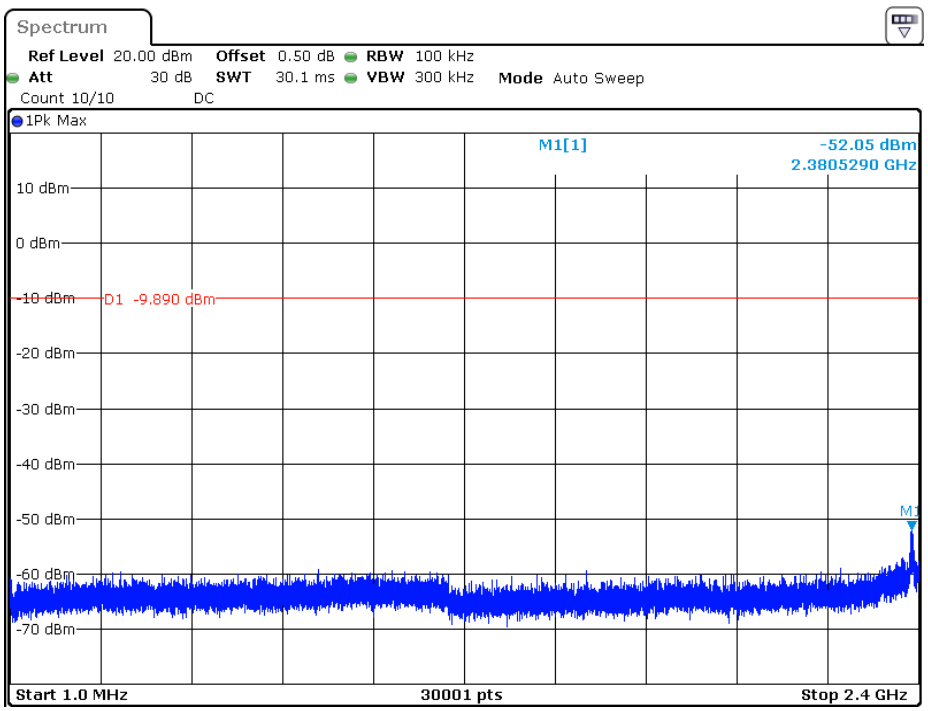


Date: 25.JAN.2021 16:36:47

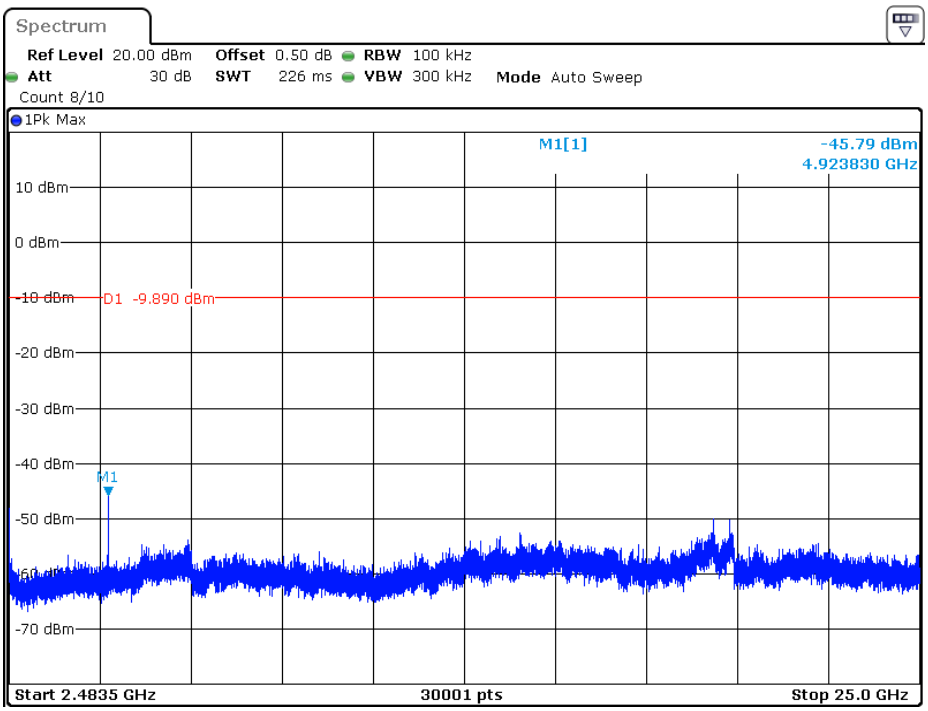
Channel 11 (2462MHz) Reference Level: 10.11dBm



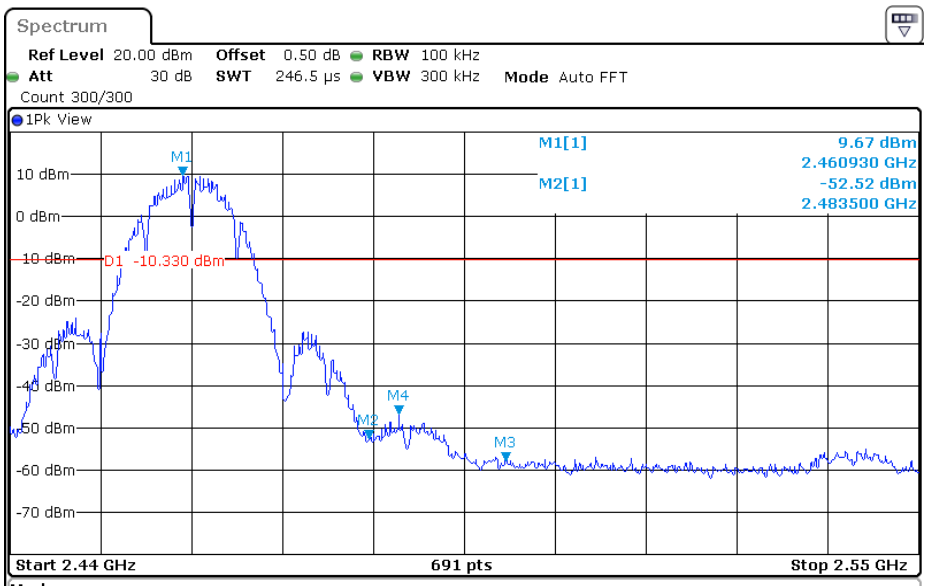
Date: 25.JAN.2021 16:38:00



Date: 25.JAN.2021 16:38:05



Date: 25.JAN.2021 16:38:11

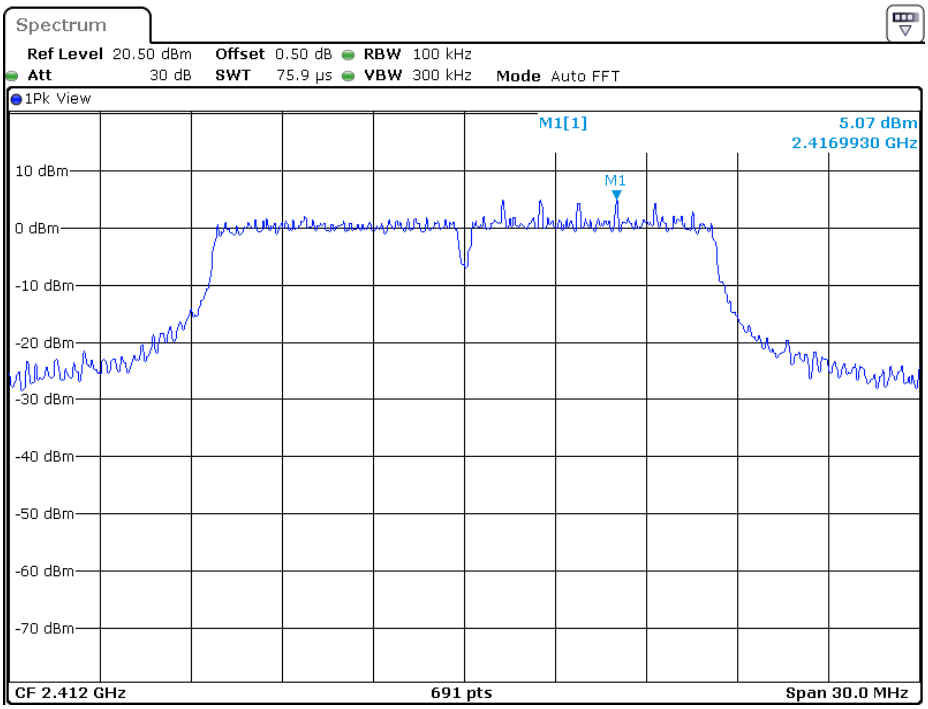


Marker

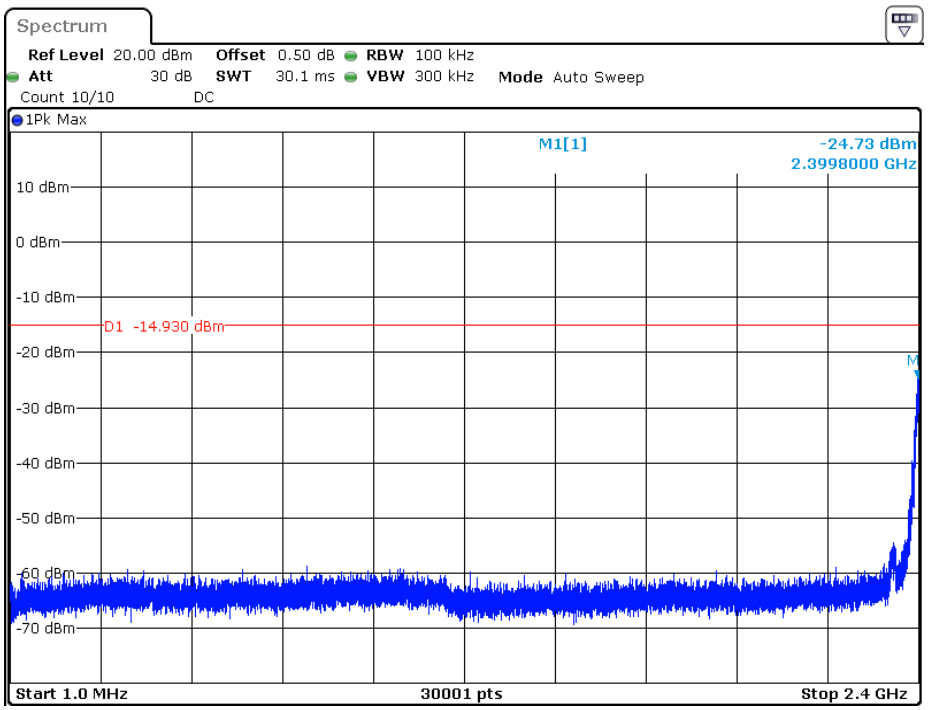
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.46093 GHz	9.67 dBm		
M2		1	2.4835 GHz	-52.52 dBm		
M3		1	2.5 GHz	-57.76 dBm		
M4		1	2.487029 GHz	-46.86 dBm		

Date: 25.JAN.2021 16:37:50

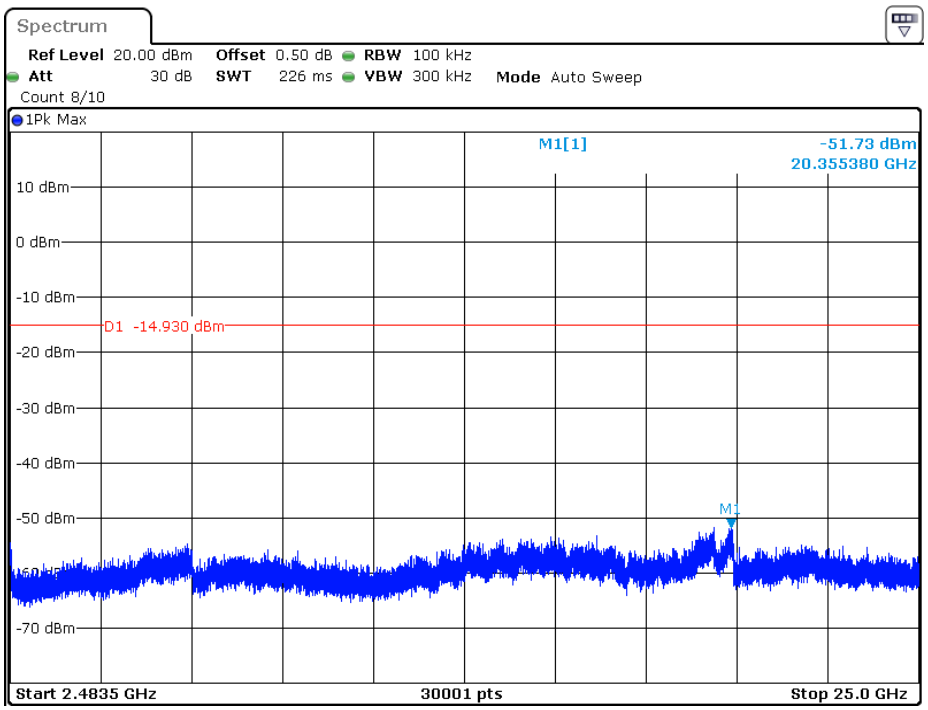
802.11g
Channel 01 (2412MHz) Reference Level: 5.07dBm



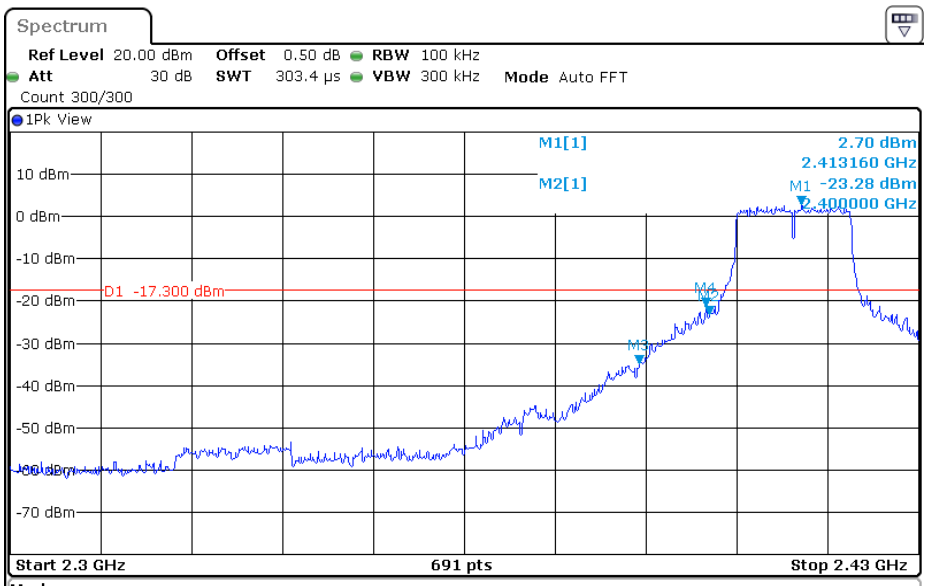
Date: 25.JAN.2021 16:40:48



Date: 25.JAN.2021 16:40:53



Date: 25.JAN.2021 16:40:59

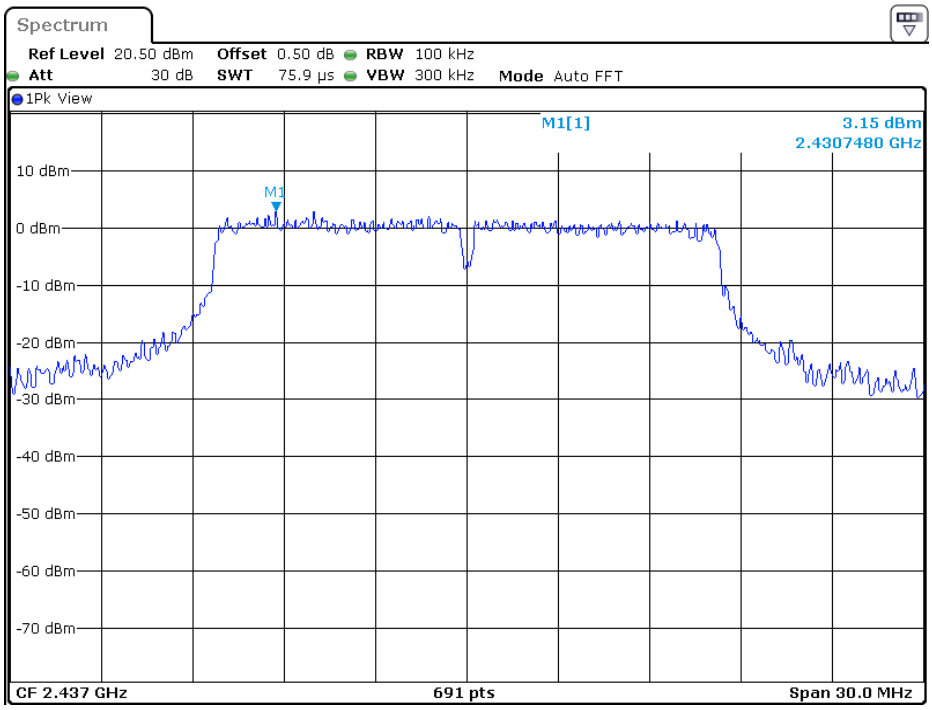


Marker

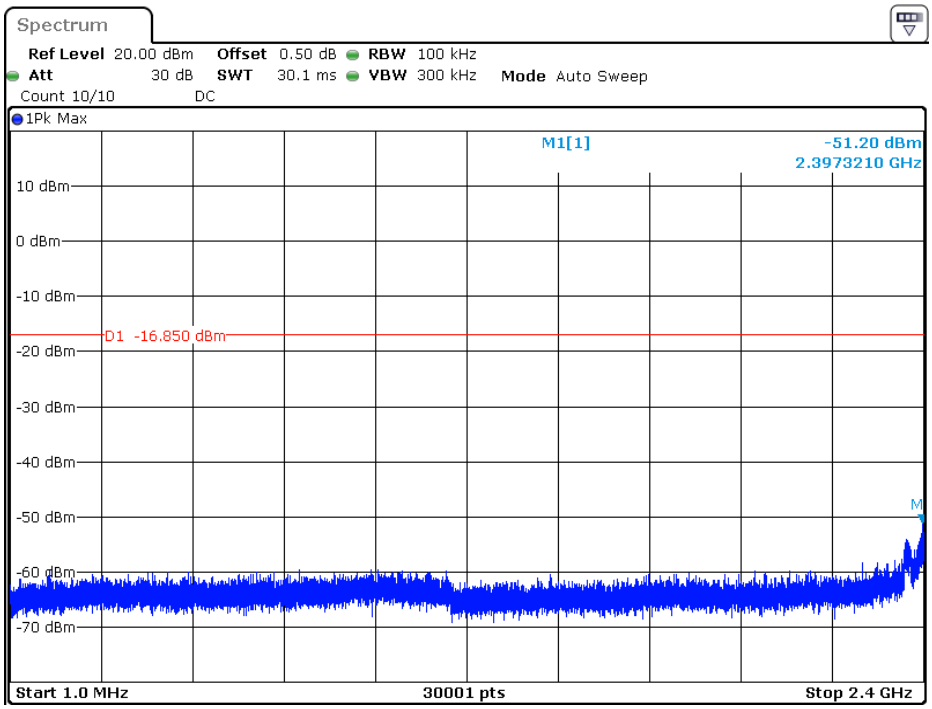
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.41316 GHz	2.70 dBm		
M2		1	2.4 GHz	-23.28 dBm		
M3		1	2.39 GHz	-34.76 dBm		
M4		1	2.399478 GHz	-21.19 dBm		

Date: 25.JAN.2021 16:40:35

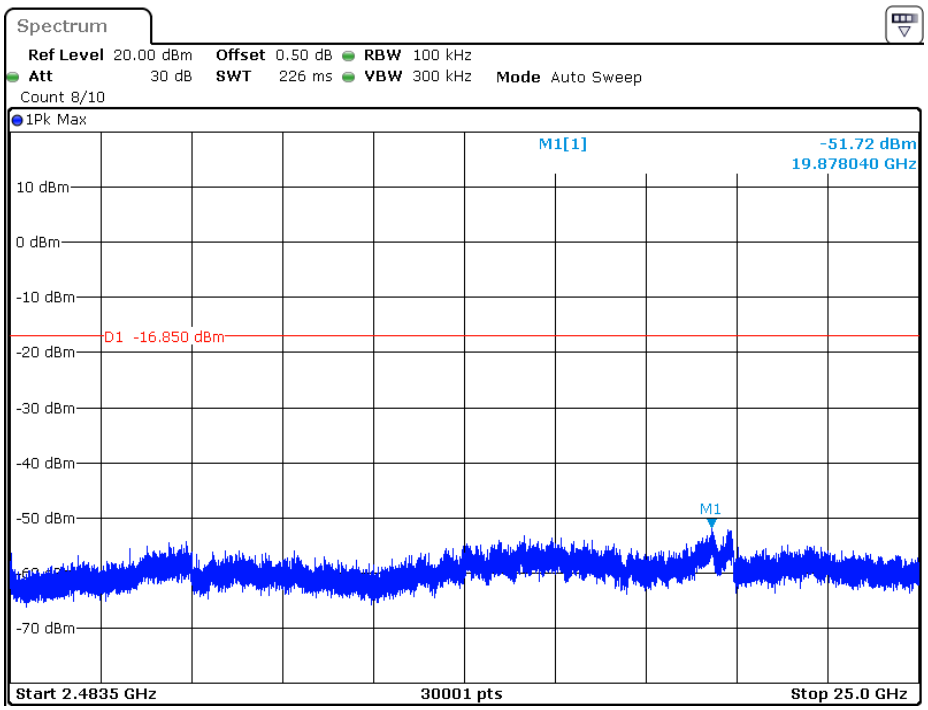
Channel 06 (2437MHz) Reference Level: 3.15dBm



Date: 25.JAN.2021 16:41:56

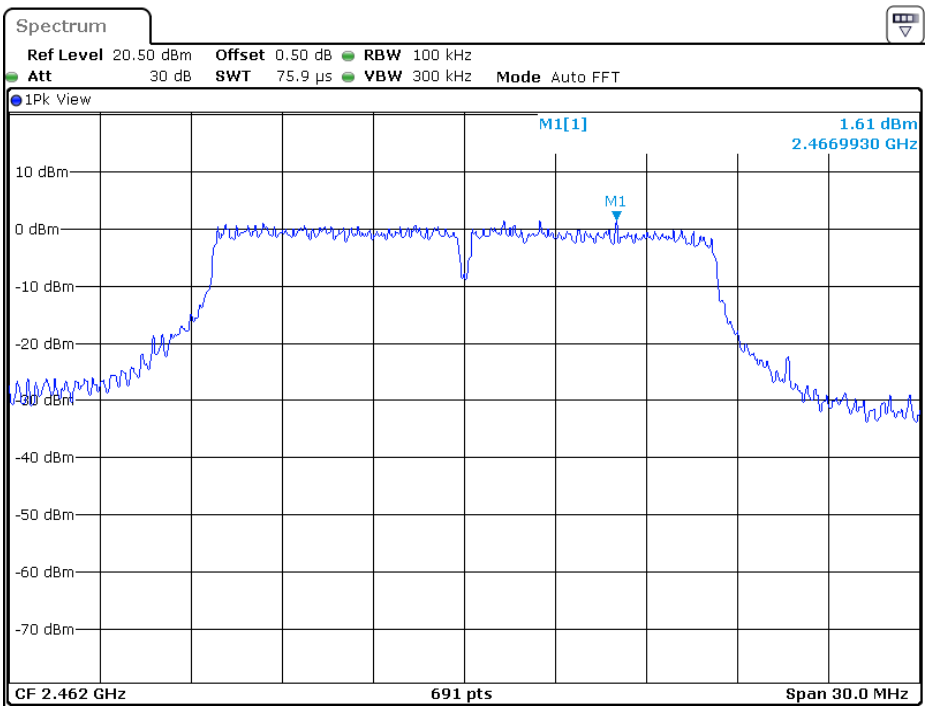


Date: 25.JAN.2021 16:42:00

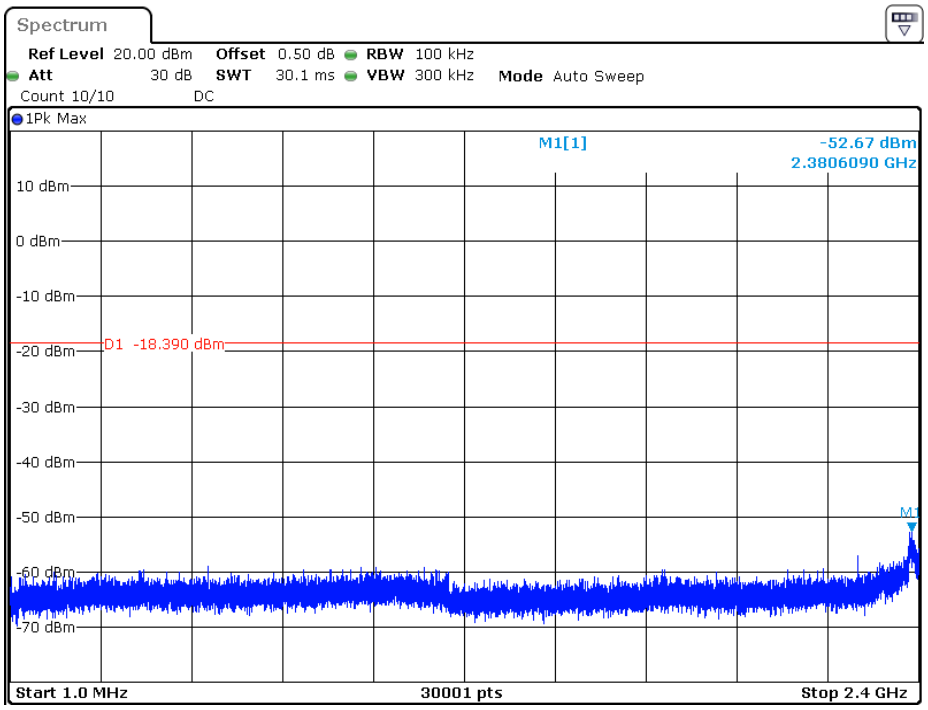


Date: 25.JAN.2021 16:42:07

Channel 11 (2462MHz) Reference Level: 1.61dBm



Date: 25.JAN.2021 16:43:49



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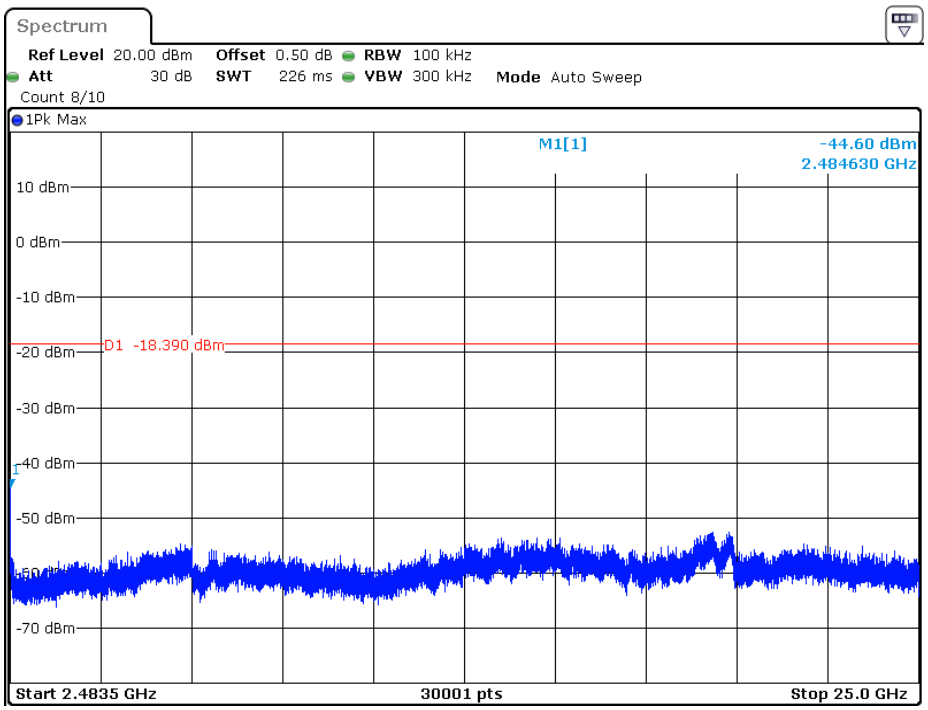
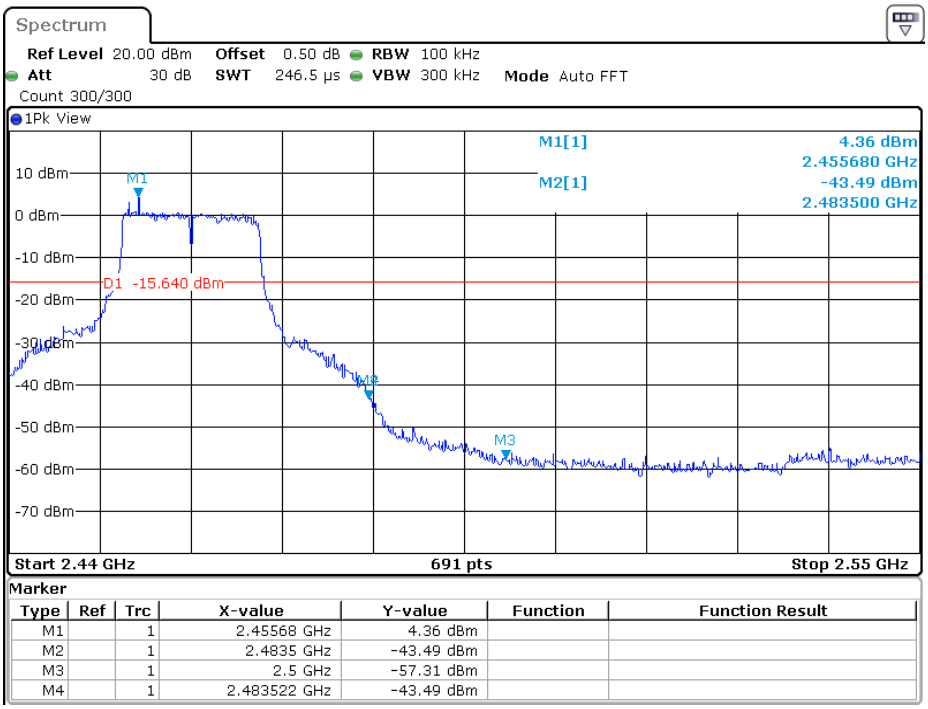


Date: 25.JAN.2021 16:44:00

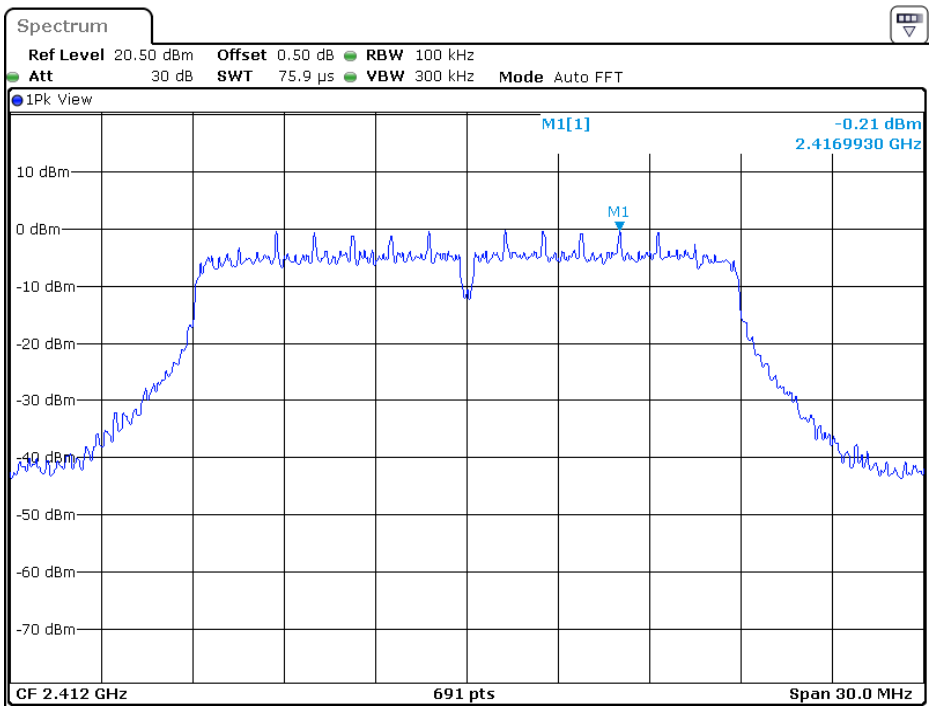


Marker

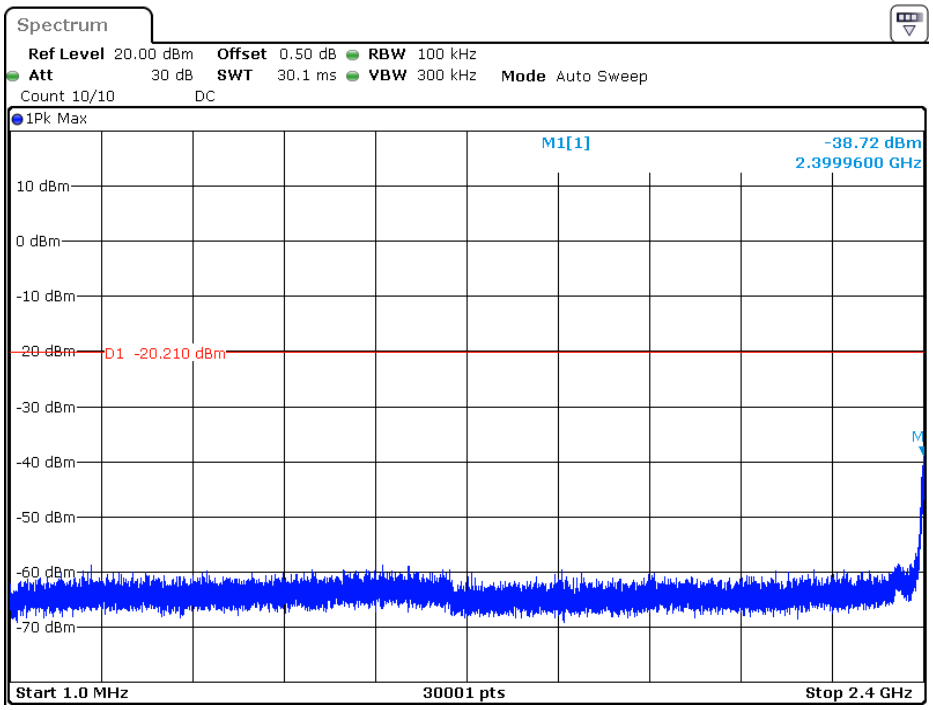
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45568 GHz	4.36 dBm		
M2		1	2.4835 GHz	-43.49 dBm		
M3		1	2.5 GHz	-57.31 dBm		
M4		1	2.483522 GHz	-43.49 dBm		

Date: 25.JAN.2021 16:43:18

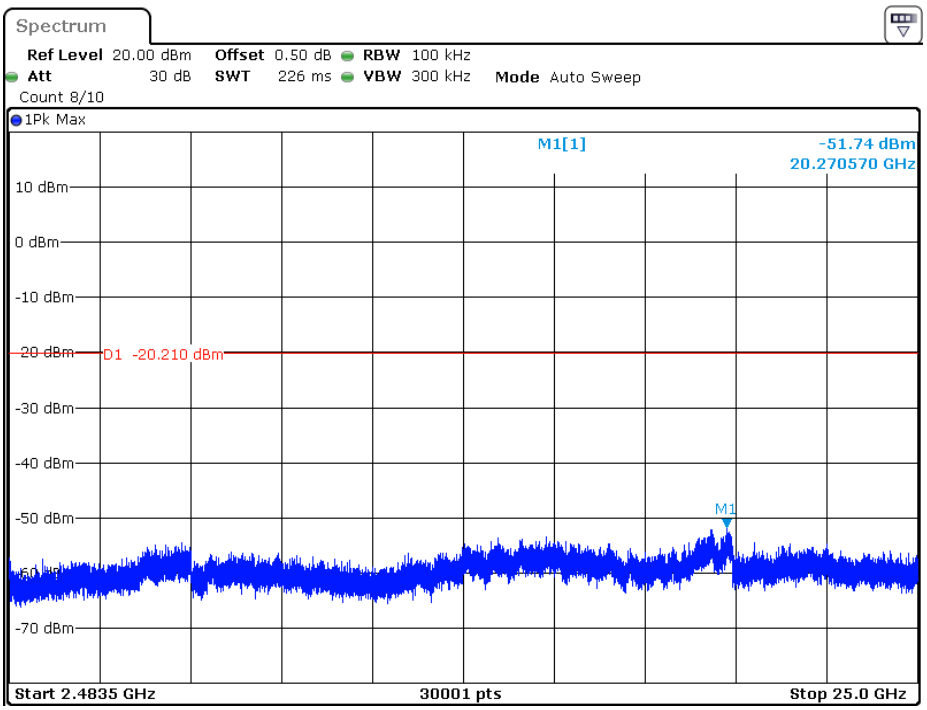
802.11n-HT20
Channel 01 (2412MHz) Reference Level: -0.21dBm



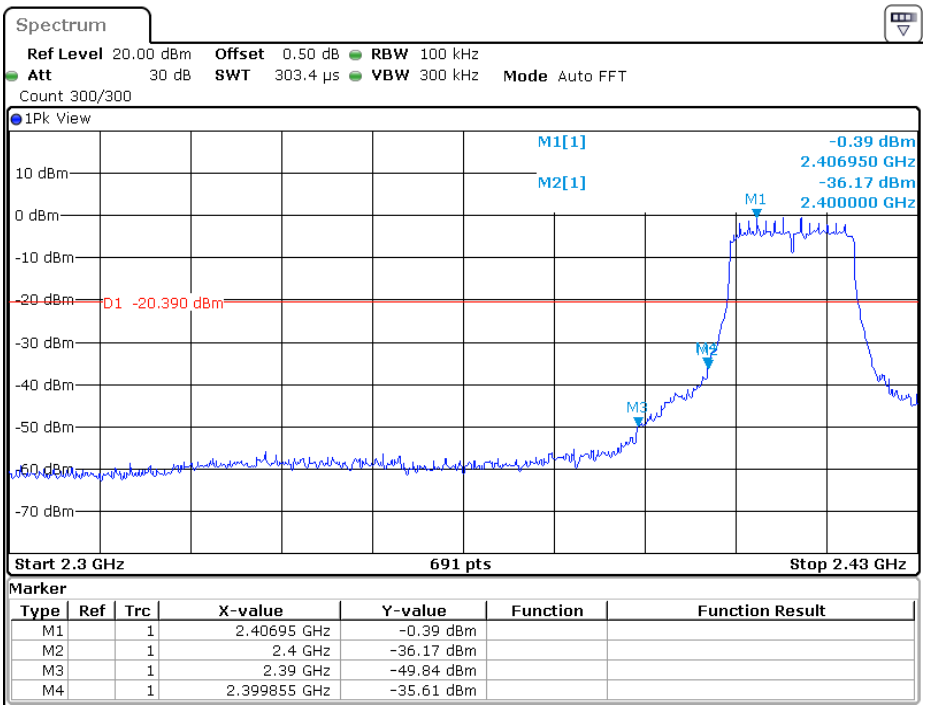
Date: 25.JAN.2021 16:46:08



Date: 25.JAN.2021 16:46:13



Date: 25.JAN.2021 16:46:19

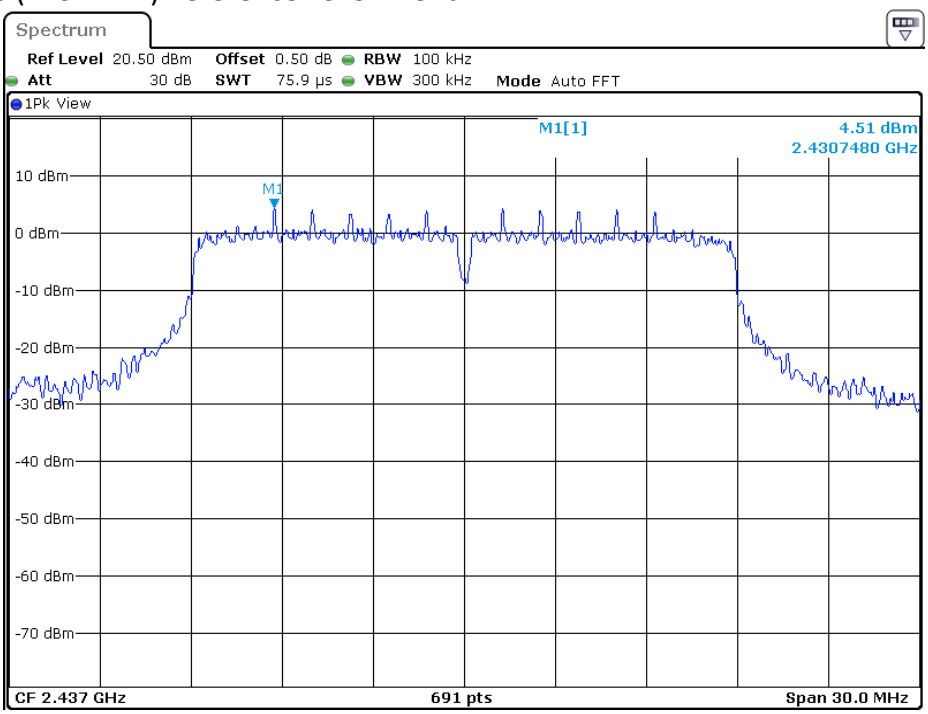


Marker

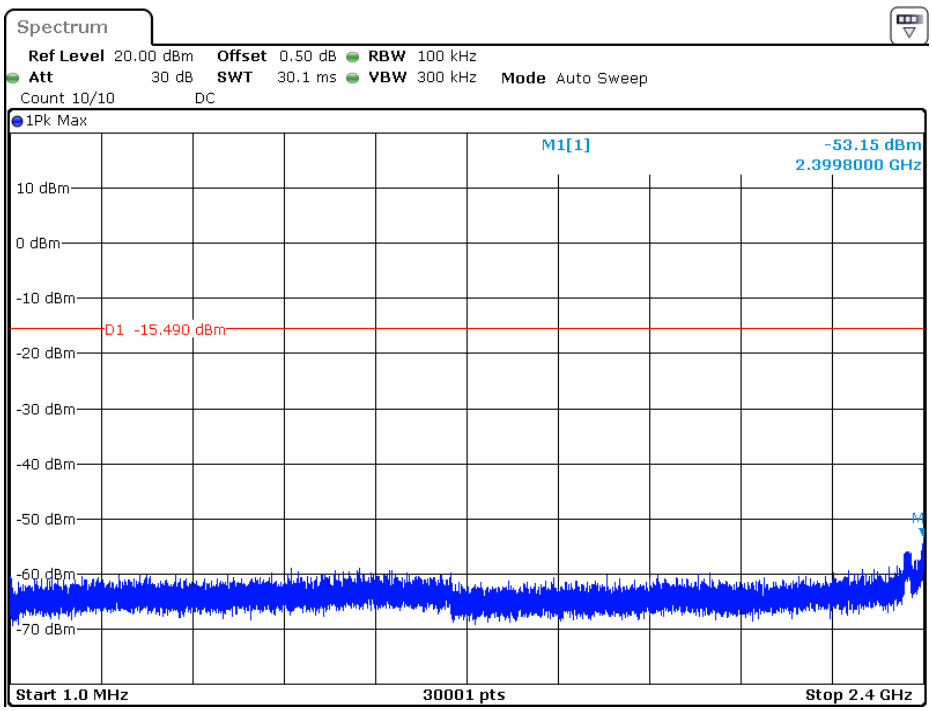
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40695 GHz	-0.39 dBm		
M2		1	2.4 GHz	-36.17 dBm		
M3		1	2.39 GHz	-49.84 dBm		
M4		1	2.399855 GHz	-35.61 dBm		

Date: 25.JAN.2021 16:45:52

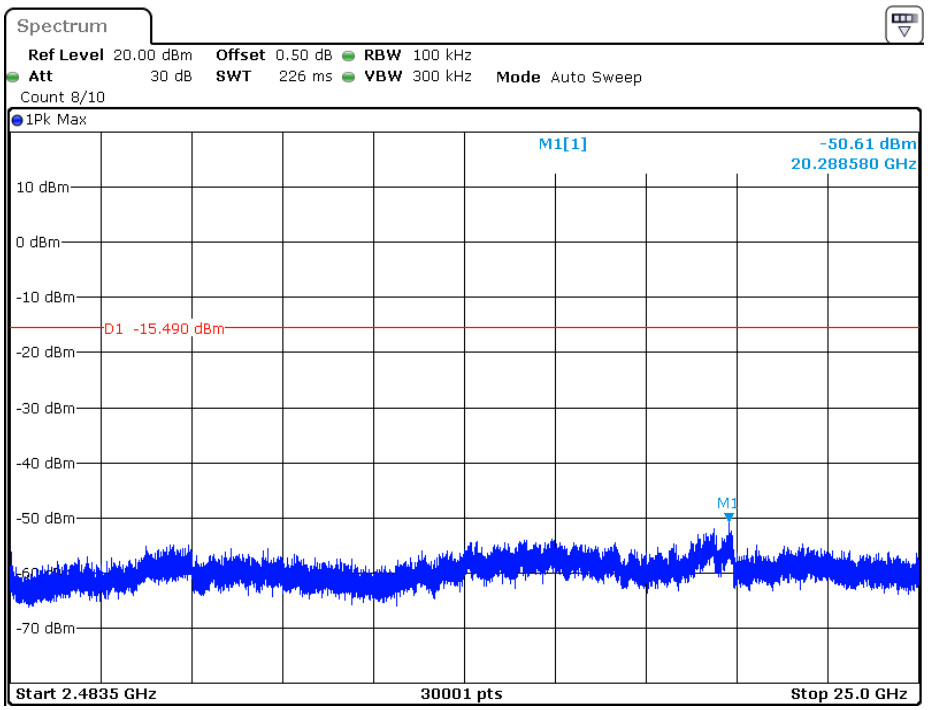
Channel 06 (2437MHz) Reference Level: 4.51dBm



Date: 25.JAN.2021 16:47:15

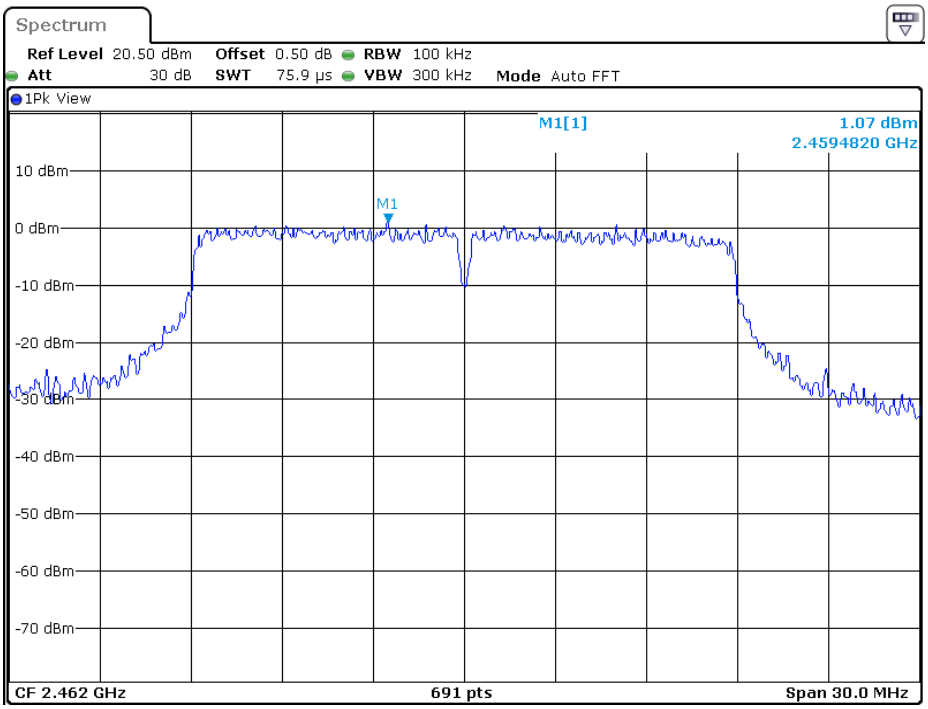


Date: 25.JAN.2021 16:47:20

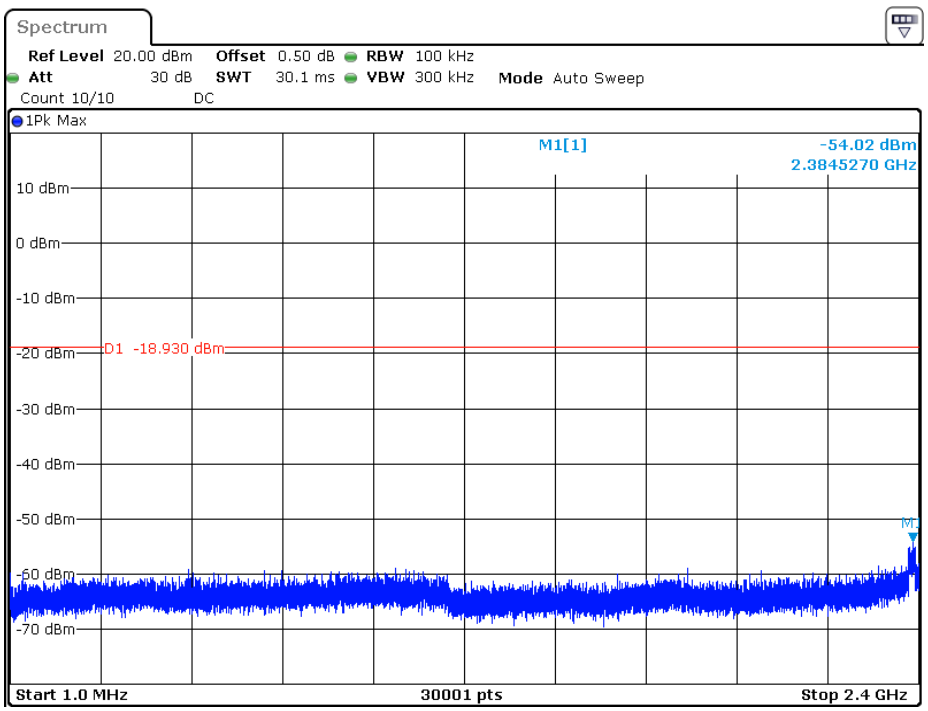


Date: 25.JAN.2021 16:47:26

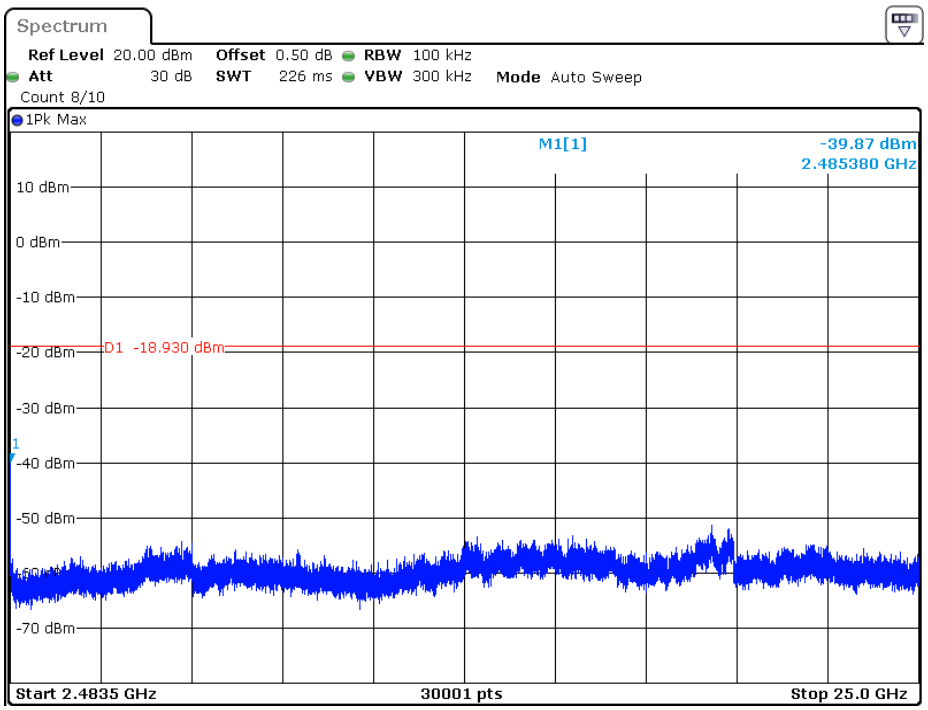
Channel 11 (2462MHz) Reference Level: 1.07dBm



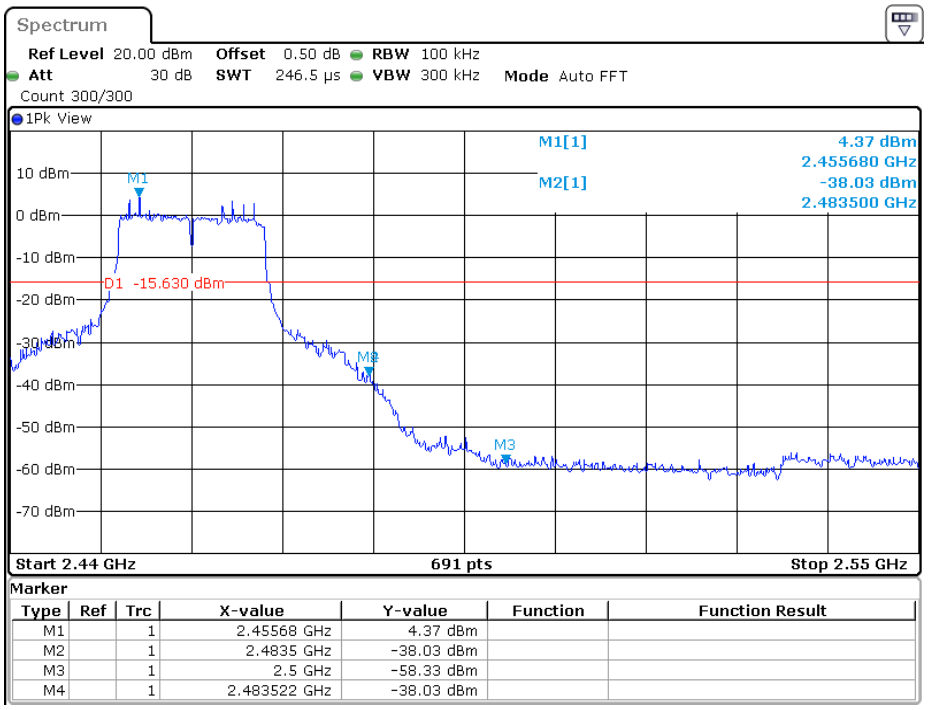
Date: 25.JAN.2021 16:48:41



Date: 25.JAN.2021 16:48:46



Date: 25.JAN.2021 16:48:52

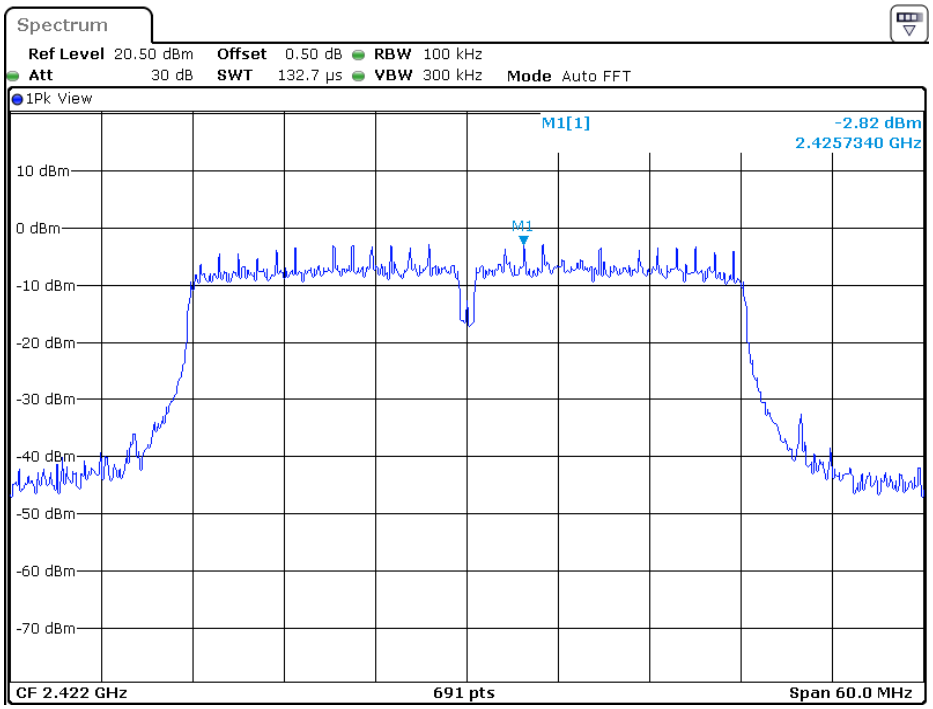


Marker

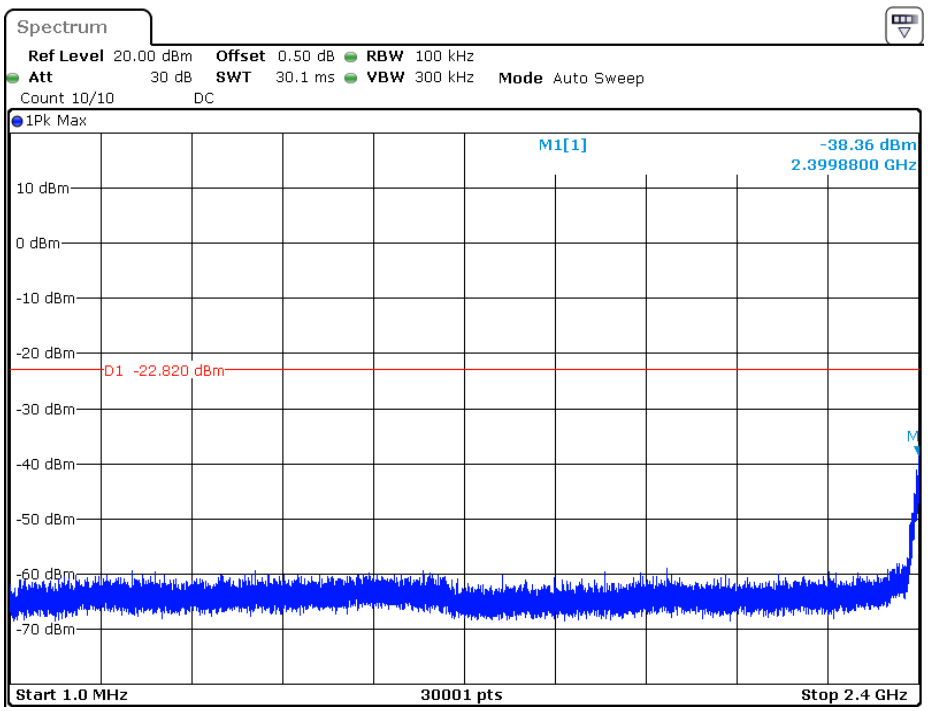
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45568 GHz	4.37 dBm		
M2		1	2.4835 GHz	-38.03 dBm		
M3		1	2.5 GHz	-58.33 dBm		
M4		1	2.483522 GHz	-38.03 dBm		

Date: 25.JAN.2021 16:48:31

802.11n-HT40
Channel 01 (2422MHz) Reference Level: -2.82dBm



Date: 25.JAN.2021 16:51:02



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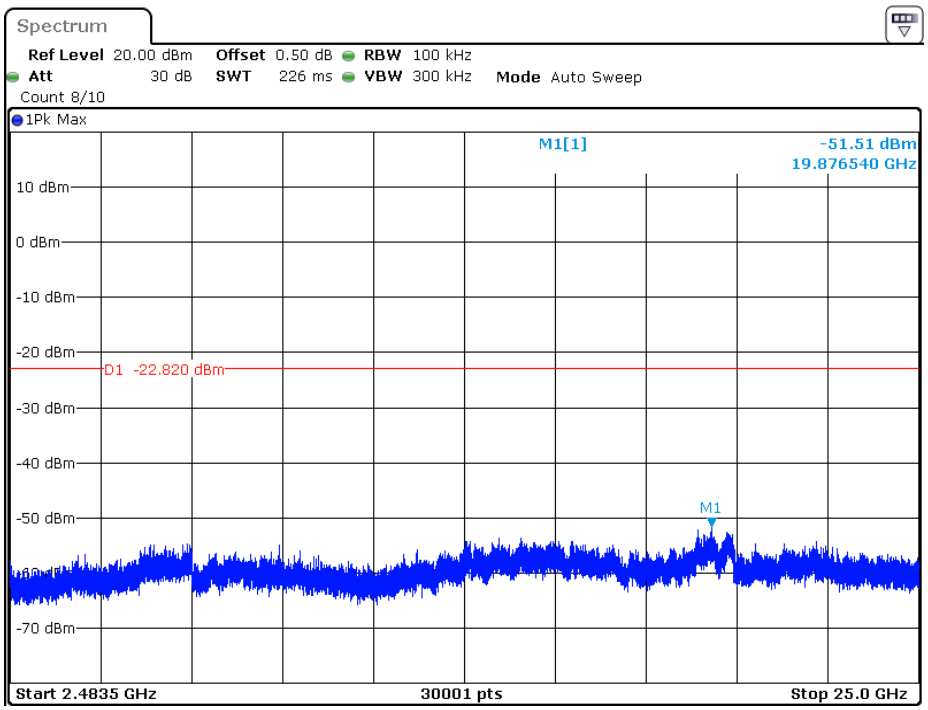

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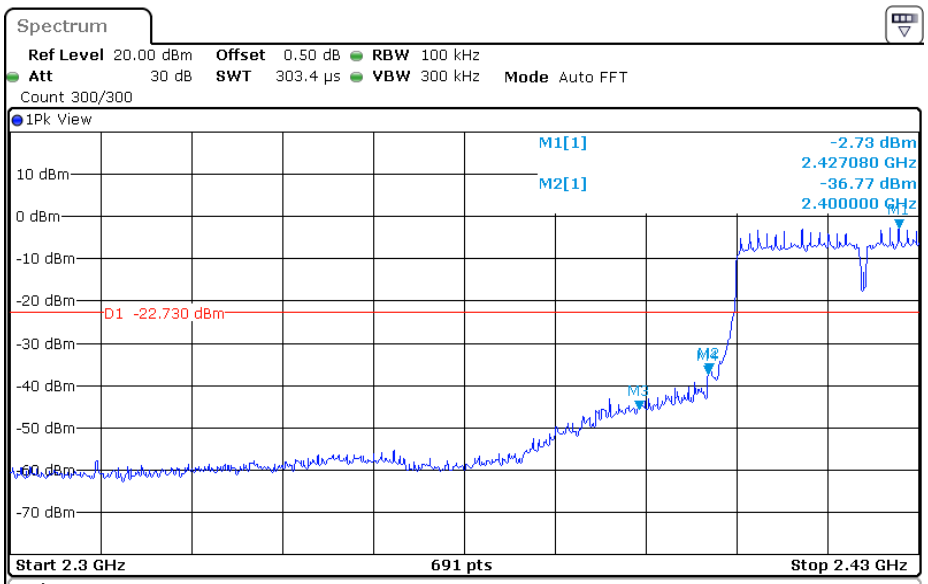
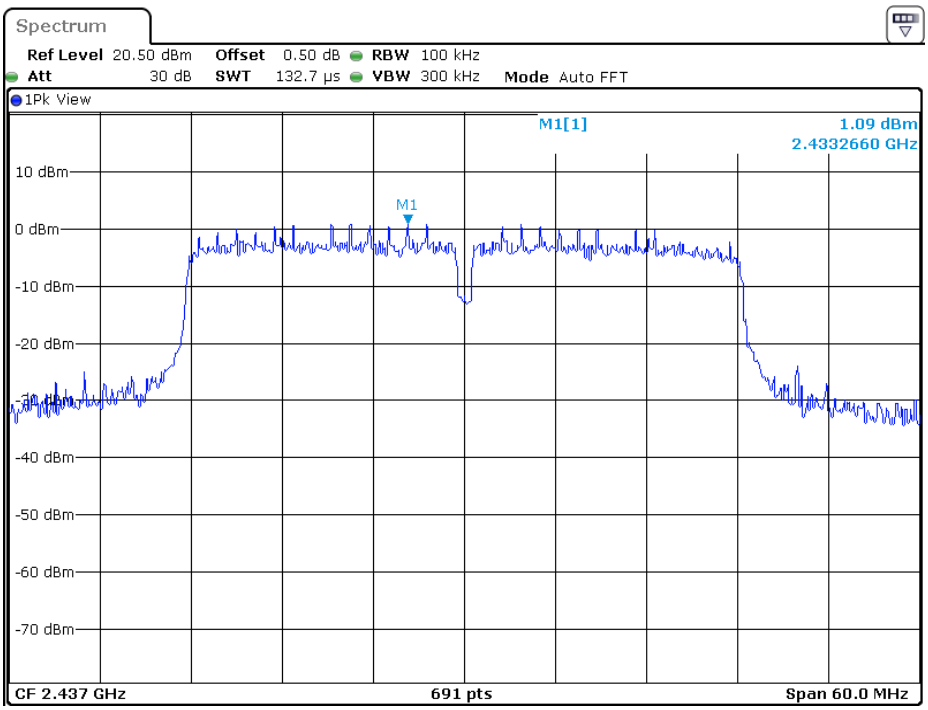


Marker

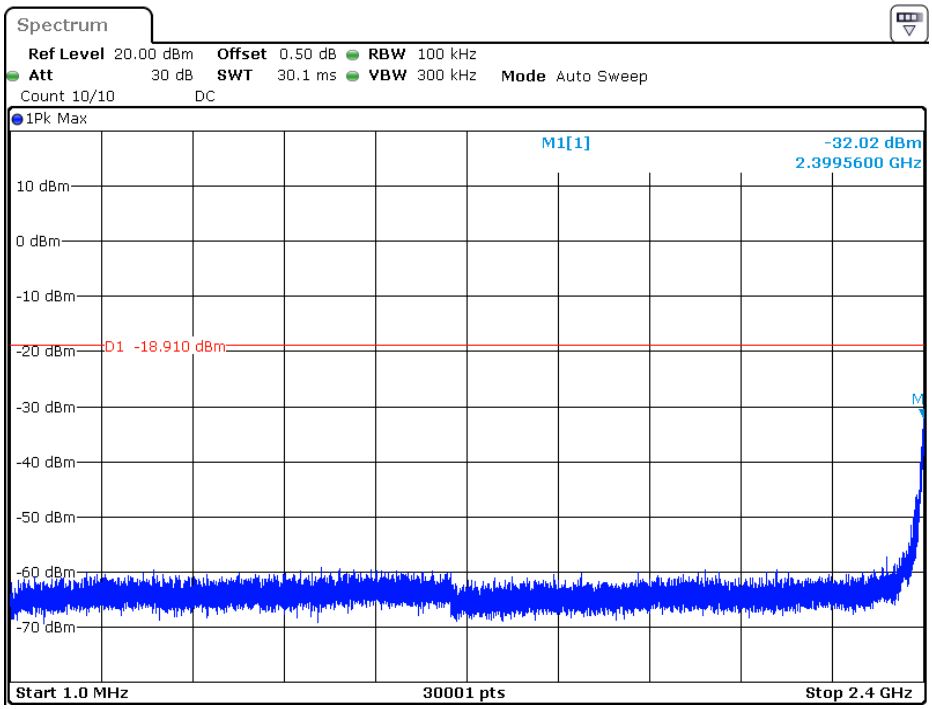
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.42708 GHz	-2.73 dBm		
M2		1	2.4 GHz	-36.77 dBm		
M3		1	2.39 GHz	-45.60 dBm		
M4		1	2.399855 GHz	-37.47 dBm		

Date: 25.JAN.2021 16:50:51

Channel 06 (2437MHz) Reference Level: 1.09dBm



Date: 25.JAN.2021 16:52:14



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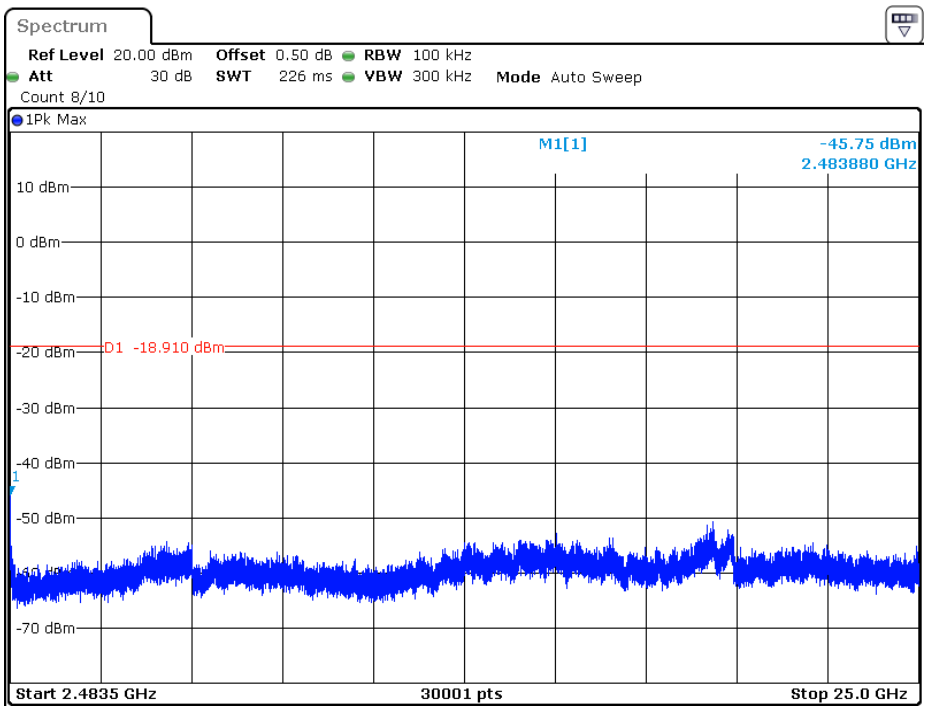
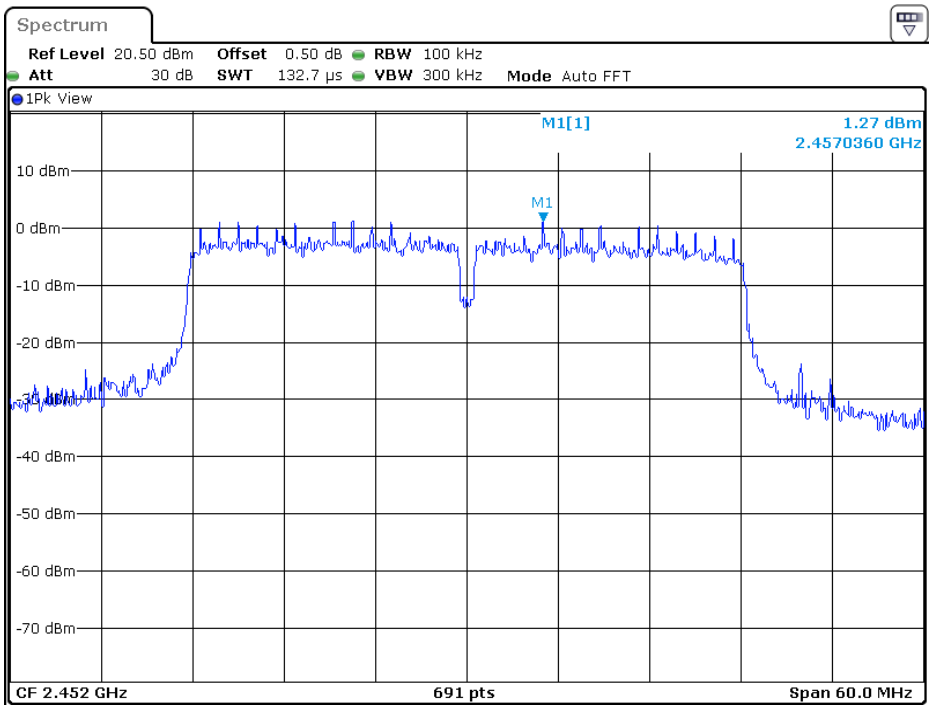


Date: 25.JAN.2021 16:52:25

Channel 11 (2452MHz) Reference Level: 1.27dBm



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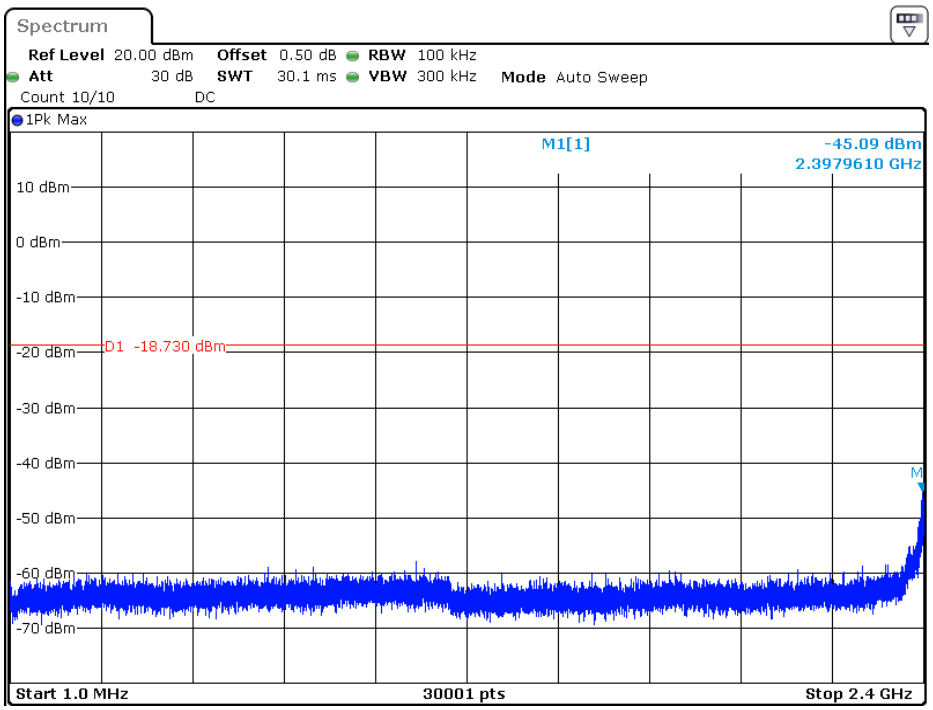

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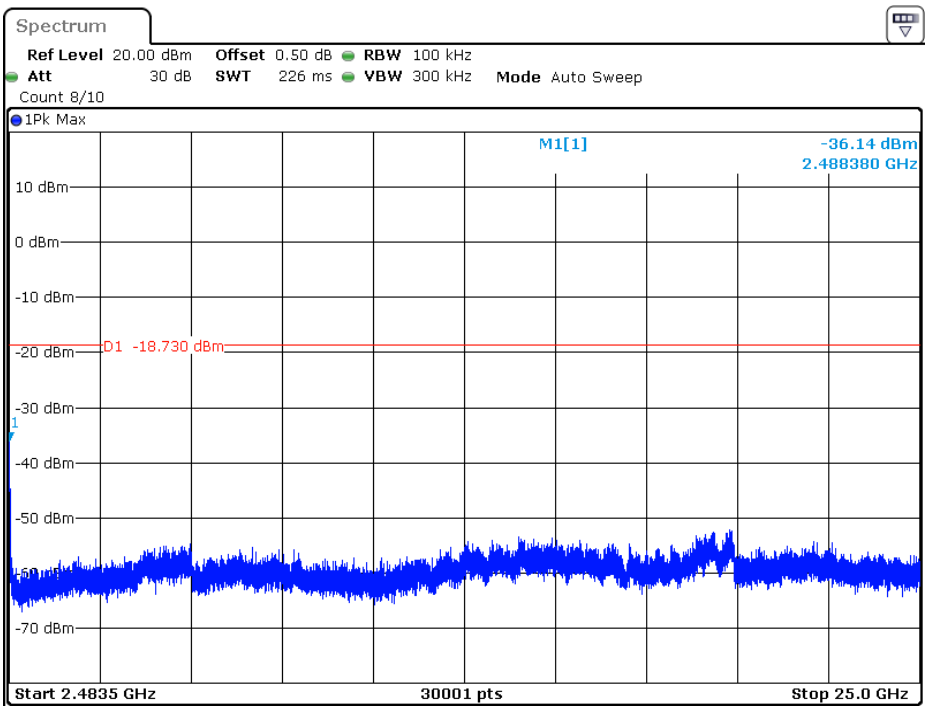
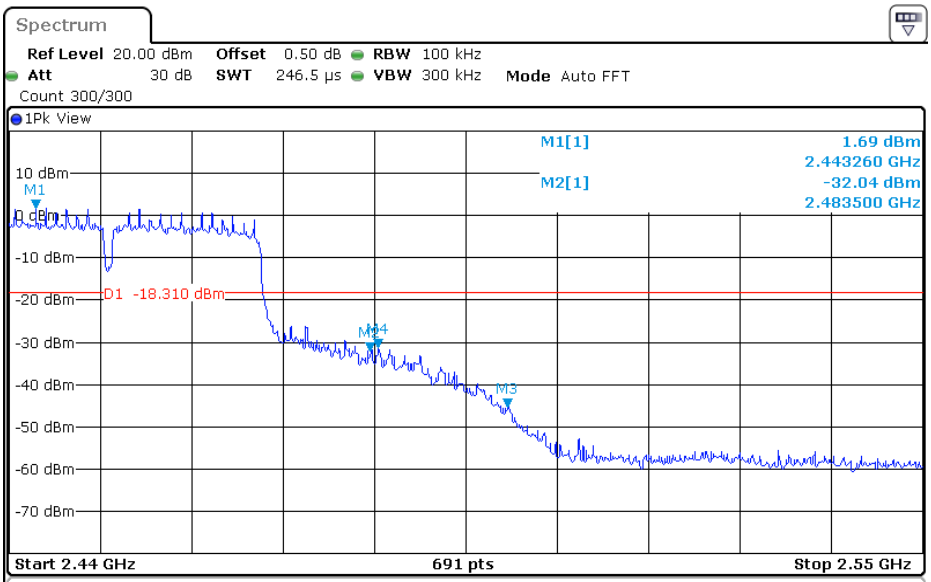


Date: 25.JAN.2021 16:53:56



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.44326 GHz	1.69 dBm		
M2		1	2.4835 GHz	-32.04 dBm		
M3		1	2.5 GHz	-46.34 dBm		
M4		1	2.484478 GHz	-30.91 dBm		

Date: 25.JAN.2021 16:53:34

4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

[×] Not required, since all emissions are more than 20dB below fundamental
[ ] See attached data sheet

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b) (c):

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

4.7 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

FS = RA + AF + CF - AG + PD

Where FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

FS = RA + AF + CF - AG + PD

<u>Example</u>
Assume a receiver reading of 62.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 42 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 62.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0 dB
FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 dBμV/m

Level in mV/m = Common Antilogarithm [(42 dBμV/m)/20] = 125.9 μV/m

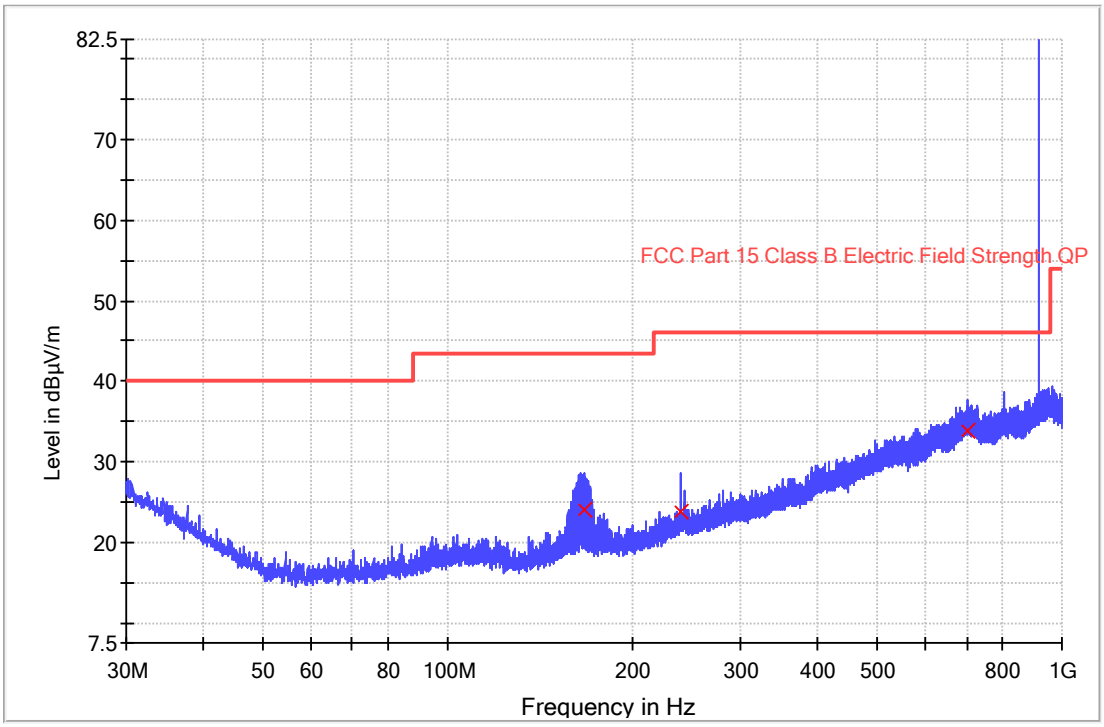
4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission
at 7311.000MHz
is passed by 10.6dB margin.

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf. Simultaneous transmission was considered during the test, only the worst case data is recorded in this report.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Simultaneous Transmission

ANT Polarity: Horizontal

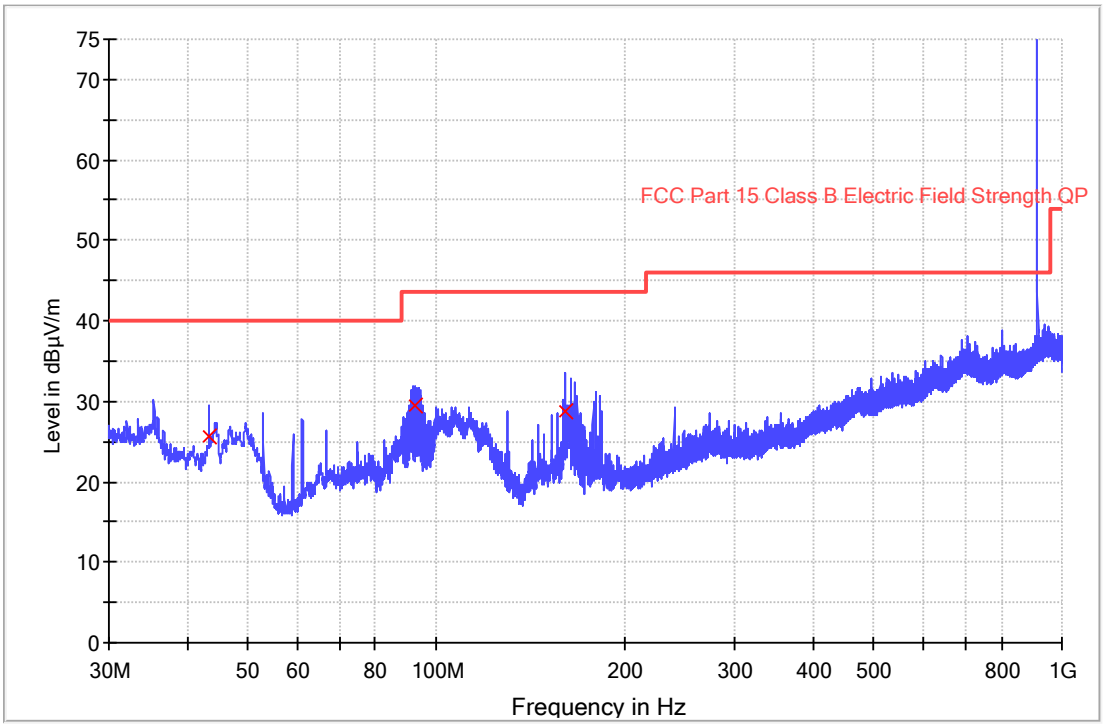


Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
167.120000	24.0	1000.0	120.000	0.0	H	10.9	19.5	43.5
239.972667	23.7	1000.0	120.000	0.0	H	13.6	22.3	46.0
704.344000	33.9	1000.0	120.000	0.0	H	25.4	12.1	46.0

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBµV/m)= Corr. (dB/m)+ Read Level (dBµV)
3. Margin (dB) = Limit Line(dBµV/m) – Level (dBµV/m)
4. The emissions in frequency range of transmitter carriers may exceed the spurious emission limits in the plot and should be excluded.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Simultaneous Transmission

ANT Polarity: Vertical



Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
43.280000	25.6	1000.0	120.000	0.0	V	11.6	14.4	40.0
92.468000	29.5	1000.0	120.000	0.0	V	9.5	14.0	43.5
160.432667	28.7	1000.0	120.000	0.0	V	11.3	14.8	43.5

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBµV/m)= Corr. (dB/m)+ Read Level (dBµV)
3. Margin (dB) = Limit Line(dBµV/m) – Level (dBµV/m)
4. The emissions in frequency range of transmitter carriers may exceed the spurious emission limits in the plot and should be excluded.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11b-Channel 01)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	47.7	36.8	33.5	44.4	74.0	-29.6
Horizontal	*2390.000	41.5	36.4	29.1	34.2	74.0	-39.8

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	43.4	36.8	33.5	40.1	54.0	-13.9
Horizontal	*2390.000	36.4	36.4	29.1	29.1	54.0	-24.9

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz/VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11b-Channel 06)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	45.4	36.7	33.4	42.1	74.0	-31.9
Horizontal	*7311.000	48.9	36.6	35.8	48.1	74.0	-25.9

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	37.4	36.7	33.4	34.1	54.0	-19.9
Horizontal	*7311.000	43.1	36.6	35.8	42.3	54.0	-11.7

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11b-Channel 11)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	48.4	36.8	33.3	44.9	74.0	-29.1
Horizontal	*7386.000	55.4	36.5	29.3	48.2	74.0	-25.8

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	43.8	36.8	33.3	40.3	54.0	-13.7
Horizontal	*7386.000	49.3	36.5	29.3	42.1	54.0	-11.9

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11g-Channel 01)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	43.4	36.8	33.5	40.1	74.0	-33.9
Horizontal	*2390.000	42.5	36.4	29.1	35.2	74.0	-38.8

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	38.8	36.8	33.5	35.5	54.0	-18.5
Horizontal	*2390.000	32.6	36.4	29.1	25.3	54.0	-28.7

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz/VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11g-Channel 06)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	44.4	36.7	33.4	41.1	74.0	-32.9
Horizontal	*7311.000	37.4	36.6	35.8	36.6	74.0	-37.4

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	38.9	36.7	33.4	35.6	54.0	-18.4
Horizontal	*7311.000	25.3	36.6	35.8	24.5	54.0	-29.5

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11g-Channel 11)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	44.8	36.8	33.3	41.3	74.0	-32.7
Horizontal	*7386.000	54.6	36.5	29.3	47.4	74.0	-26.6

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	40.3	36.8	33.3	36.8	54.0	-17.2
Horizontal	*7386.000	50.0	36.5	29.3	42.8	54.0	-11.2

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11n20-Channel 01)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	44.5	36.8	33.5	41.2	74.0	-32.8
Horizontal	*2390.000	39.7	36.4	29.1	32.4	74.0	-41.6

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	40.5	36.8	33.5	37.2	54.0	-16.8
Horizontal	*2390.000	34.6	36.4	29.1	27.3	54.0	-26.7

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz/VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11n20-Channel 06)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	46.5	36.7	33.4	43.2	74.0	-30.8
Horizontal	*7311.000	48.4	36.6	35.8	47.6	74.0	-26.4

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	44.5	36.7	33.4	41.2	54.0	-12.8
Horizontal	*7311.000	44.2	36.6	35.8	43.4	54.0	-10.6

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11n20-Channel 11)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	45.4	36.8	33.3	41.9	74.0	-32.1
Horizontal	*7386.000	54.0	36.5	29.3	46.8	74.0	-27.2

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	38.7	36.8	33.3	35.2	54.0	-18.8
Horizontal	*7386.000	50.1	36.5	29.3	42.9	54.0	-11.1

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11n40-Channel 03)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4844.000	44.7	36.8	33.5	41.4	74.0	-32.6
Horizontal	*2390.000	42.5	36.4	29.1	35.2	74.0	-38.8

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4844.000	38.7	36.8	33.5	35.4	54.0	-18.6
Horizontal	*2390.000	32.4	36.4	29.1	25.1	54.0	-28.9

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz/VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11n40-Channel 06)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	44.8	36.7	33.4	41.5	74.0	-32.5
Horizontal	*7311.000	47.0	36.6	35.8	46.2	74.0	-27.8

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	38.7	36.7	33.4	35.4	54.0	-18.6
Horizontal	*7311.000	42.4	36.6	35.8	41.6	54.0	-12.4

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021 Model: YJCC007
Worst Case Operating Mode: Transmitting (802.11n40-Channel 09)

Radiated Emissions (above 1GHz)

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4904.000	45.0	36.8	33.3	41.5	74.0	-32.5
Horizontal	*7356.000	54.6	36.5	29.3	47.4	74.0	-26.6

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4904.000	39.9	36.8	33.3	36.4	54.0	-17.6
Horizontal	*7356.000	49.6	36.5	29.3	42.4	54.0	-11.6

NOTES:

1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 20, 2021
Model: YJCC007

4.9 Conducted Emission

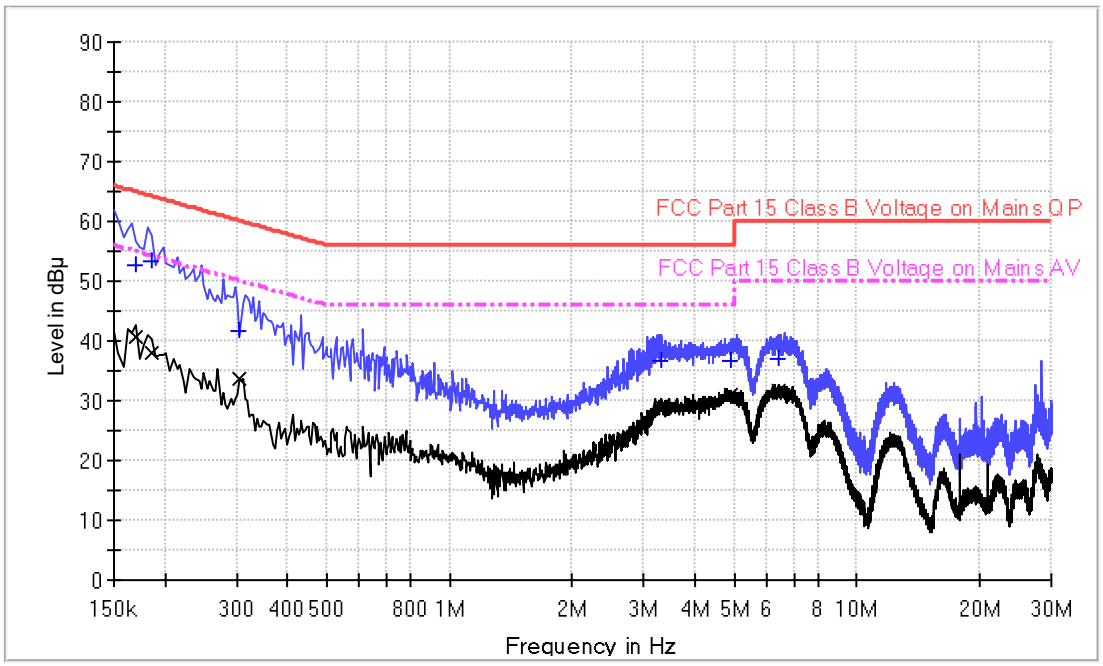
Worst Case Conducted Emission
at 0.15MHz
is passed by 5.5dB margin.

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: conducted photos.pdf.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 20, 2021
Model: YJCC007
Worst Case Operating Mode: Simultaneous Transmission
Phase: Live

Graphic / Data Table

Conducted Emissions
Pursuant to FCC 15.207: Emissions Requirement



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.170000	52.8	9.000	L1	9.6	12.2	65.0
0.186000	53.4	9.000	L1	9.6	10.8	64.2
0.306000	41.6	9.000	L1	9.6	18.5	60.1
3.294000	36.7	9.000	L1	9.7	19.3	56.0
4.902000	36.8	9.000	L1	9.7	19.2	56.0
6.434000	37.1	9.000	L1	9.7	22.9	60.0

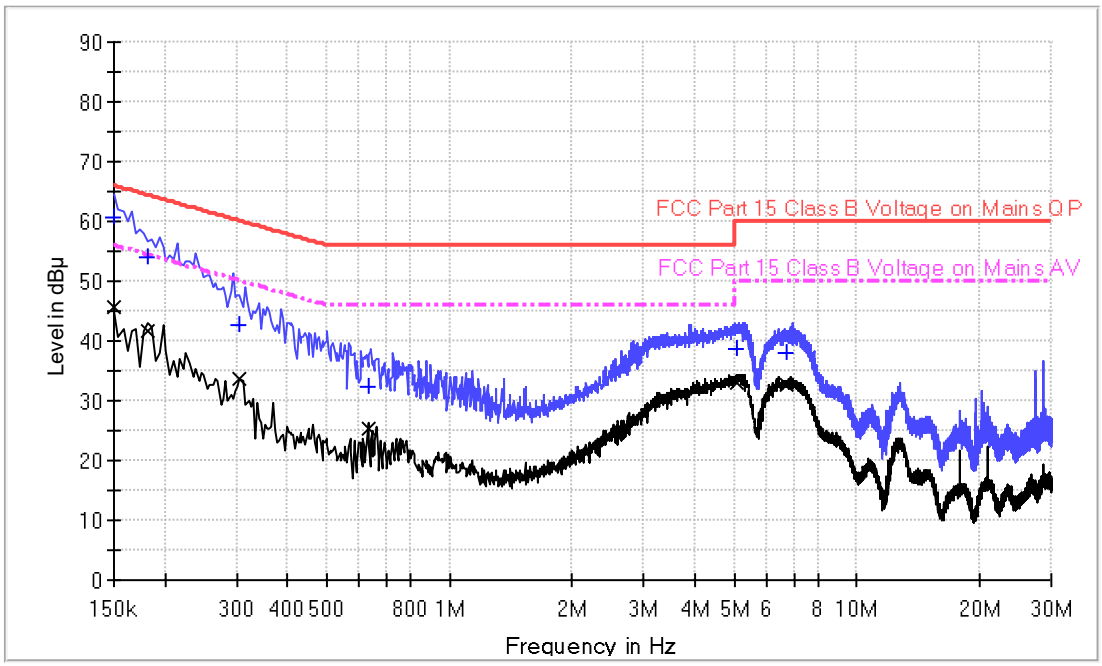
Limit and Margin AV

Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.170000	40.8	9.000	L1	9.6	14.2	55.0
0.186000	38.0	9.000	L1	9.6	16.2	54.2
0.306000	33.6	9.000	L1	9.6	16.5	50.1
3.294000	29.1	9.000	L1	9.7	16.9	46.0
4.902000	30.8	9.000	L1	9.7	15.2	46.0
6.434000	31.6	9.000	L1	9.7	18.4	50.0

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 20, 2021
Model: YJCC007
Worst Case Operating Mode: Simultaneous Transmission
Phase: Neutral

Graphic / Data Table

Conducted Emissions
Pursuant to FCC 15.207: Emissions Requirement



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	60.5	9.000	N	9.5	5.5	66.0
0.182000	54.1	9.000	N	9.5	10.3	64.4
0.306000	42.6	9.000	N	9.5	17.5	60.1
0.630000	32.5	9.000	N	9.5	23.5	56.0
5.078000	38.8	9.000	N	9.5	21.2	60.0
6.750000	37.9	9.000	N	9.6	22.1	60.0

Limit and Margin AV

Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	45.8	9.000	N	9.5	13.2	59.0
0.182000	41.6	9.000	N	9.5	15.3	56.9
0.306000	33.7	9.000	N	9.5	17.6	51.3
0.630000	25.3	9.000	N	9.5	20.7	46.0
5.078000	33.1	9.000	N	9.5	16.9	50.0
6.750000	32.7	9.000	N	9.6	17.3	50.0

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021
Model: YJCC007

4.10 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

[ ] Not required - No digital part

[ ] Test results are attached

[x] Included in the separated report.

Applicant: Yunjing Intelligence Technology (Dongguan) Co., Ltd.
Date of Test: January 25, 2021
Model: YJCC007

4.11 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The Transmitter ON time was determined from the resultant time-amplitude display:

	See attached spectrum analyzer chart (s) for Transmitter timing
	See Transmitter timing diagram provided by manufacturer
x	Not applicable, duty cycle was not used.

5.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.pdf & internal photos.pdf.

6.0 Product Labeling

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf.

7.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

9.0 Confidentiality Request

For electronic filing, the confidentiality request of the tested EUT is saved with filename: request.pdf.

10.0 Discussion of Pulse Desensitization

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF.*

Pulse desensitivity is not applicable for this device since the transmitter transmits the RF signal continuously.

11.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	Biconilog Antenna	ETS	3142C	00078828	24-May-2019	24-May-2021
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	24-May-2019	24-May-2021
SZ061-08	Horn Antenna	ETS	3115	00092346	07-Sep-2019	07-Sep-2021
SZ061-07	Pyramidal Horn Antenna	ETS	3160-09	00083067	13-Aug-2019	13-Aug-2021
SZ056-03	Spectrum Analyzer	R&S	FSP30	101148	27-May-2020	27-May-2021
SZ185-01	EMI Receiver	R & S	ESCI	100547	22-Dec-2020	22-Dec-2021
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	27-May-2020	27-May-2021
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	15-Dec-2018	15-Dec-2021
SZ062-02	RF Cable	RADIALL	RG 213U	--	12-Dec-2020	12-Jun-2021
SZ062-05	RF Cable	RADIALL	0.04-26.5GHz	--	24-Aug-2020	24-Feb-2021
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	24-Aug-2020	24-Feb-2021
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	27-May-2020	27-May-2021
SZ185-02	EMI Receiver	R & S	ESCI	100692	27-Oct-2020	27-Oct-2021
SZ187-01	Two-Line V-Network	R & S	ENV216	100072	27-Oct-2020	27-Oct-2021
SZ188-03	Shielding Room	ETS	RFD-100	4100	07-Jan-2020	07-Jan-2023

********** End of Report**********