FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

DEI Sales Inc. dba Definitive Technology

JMDD Module

Model Number: JMDD

FCC ID: IPUJMDD

Prepared for:	DEI Sales Inc. dba Definitive Technology
	One Viper Way Vista, California 92081, United States
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

Report Number:	ESTE-R1810003
Date of Test:	September 10 ~ November 13, 2018
Date of Report:	November 15, 2018

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EST Technology Co., Ltd.

Applicant: **Address:**	DEI Sales Inc. dba Definitive Technology One Viper Way Vista, California 92081, United States		
Manufacturer **Address:**	DEI Sales Inc. dba Definitive Technology One Viper Way Vista, California 92081, United States		
E.U.T:	JMDD Module		
Model Number:	JMDD		
Power Supply:	DC 4.0V From base board; base board use DC 12V From adapter input AC 100-240V ~ 50/60Hz.		
Test Voltage:	AC 120V/60Hz AC 240V/60Hz		
Trade Name:	POLK	Serial No.:	------
Date of Receipt:	September 07, 2018	Date of Test:	September 10 ~ November 13, 2018
Test Specification:	FCC Rules and Regulations Part 15 Subpart C:2018 ANSI C63.10:2013		
Test Result:	The device described above is tested by EST Technology Co., Ltd.. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC Rules and Regulations Part 15 Subpart C requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd. Date: November 15, 2018		

Prepared by:	Reviewed by:	Approved by:
Ring / Assistant	Tony / Engineer	Iceman Hu / Manager

Other Aspects:
None.

Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested

This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Product Name	:	JMDD Module
Model Number	:	JMDD
FCC ID	:	IPUJMDD
Modulation	:	IEEE 802.11b mode: DSSS(CCK,QPSK, BPSK) IEEE 802.11g mode: OFDM (BPSK/QPSK/16QAM/64QAM) IEEE 802.11n HT20 mode: OFDM (BPSK/QPSK/16QAM/64QAM) IEEE 802.11n HT40 mode: OFDM (BPSK/QPSK/16QAM/64QAM)
Operation Frequency	:	IEEE 802.11b/g: 2412 ~ 2462 MHz IEEE 802.11n HT20 : 2412 ~ 2462 MHz IEEE 802.11n HT40: 2422 ~ 2452 MHz
Number of channel	:	IEEE 802.11b 2412 ~ 2462 MHz: 11 Channels IEEE 802.11g 2412 ~ 2462 MHz: 11 Channels IEEE 802.11n HT20 2412 ~ 2462 MHz: 11 Channels IEEE 802.11n HT40 2422 ~ 2452 MHz: 7 Channels
Antenna	:	PIFA antenna

Frequency Range	Antenna 0	Antenna 1	Antenna 2
2400~2483.5 MHz	4.03 dBi	4.10 dBi	3.17 dBi
5150~5250 MHz	/	2.39 dBi	2.91 dBi
5250~5350 MHz	/	1.65 dBi	3.12 dBi
5470~5725 MHz	/	2.97 dBi	4.50 dBi
5725~5850 MHz	/	3.90 dBi	3.56 dBi

2.4G Directional gain: 6.66dBi
5G(Band I) Directional gain: 5.64dBi
5G(Band II) Directional gain: 5.43dBi
5G(Band III) Directional gain: 6.78dBi
5G(Band IV) Directional gain: 6.74dBi
Directional gain =$10\log[(10^{G1/20}+10^{G2/20})^2/N_{ANT}]$ dBi
Note: KDB 662911 D01 Multiple Transmitter Output v02r01

Note: Bluetooth uses Antenna 0
11a,b,g,n,ac uses Antenna 1 / Antenna 2
11n,ac uses MIMO

Hardware Version	:	40-JMDDAC-RFF4G
Software Version	:	OIM6
Sample Type	:	Prototype production

2. SUMMARY OF TEST

2.1. Summary of test result

Description of Test Item	Standard	Results
Power Line Conducted Emission	FCC Part 15: 15.207 ANSI C63.10:2013	PASS
Radiated Emission	FCC Part 15: 15.209 ANSI C63.10:2013 KDB 558074	PASS
Band Edge Compliance	FCC Part 15: 15.247 ANSI C63.10:2013 KDB 558074	PASS
Conducted spurious emissions	FCC Part 15: 15.247 ANSI C63.10:2013 KDB 558074	PASS
6dB Bandwidth	FCC Part 15: 15.247 ANSI C63.10:2013 KDB 558074	PASS
Peak Output Power	FCC Part 15: 15.247 ANSI C63.10:2013 KDB 558074	PASS
Power Spectral Density	FCC Part 15: 15.247 ANSI C63.10:2013 KDB 558074	PASS
Antenna requirement	FCC Part 15: 15.203	PASS
Note: KDB 558074 D01 15.247 Meas Guidance v05 KDB 662911 D01 Multiple Transmitter Output v02r01		

2.2. Test Facilities

EMC Lab	:	Certificated by CNAS, CHINA Registration No.: L5288 Date of registration: November 13, 2017 Certificated by FCC, USA Designation Number: CN1215 Test Firm Registration Number: 722932 Date of registration: November 21, 2017 Certificated by A2LA, USA Registration No.: 4366.01 Date of registration: November 07, 2017 Certificated by Industry Canada CAB identifier No.: CN0035 Date of registration: January 04, 2019 Certificated by VCCI, Japan Registration No.: R-13663; C-14103 Date of registration: July 25, 2017 This Certificate is valid until: July 24, 2020 Certificated by TUV Rheinland, Germany Registration No.: UA 50413872 0001 Date of registration: July 31, 2018 Certificated by TUV/PS, Shenzhen Registration No.: SCN1017 Date of registration: January 27, 2011 Certificated by Intertek ETL SEMKO Registration No.: 2011-RTL-L2-64 Date of registration: April 28, 2011 Certificated by Nemko, Hong Kong Registration No.: 175193 Date of registration: May 4, 2011
Name of Firm	:	EST Technology Co., Ltd.
Site Location	:	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China

2.3. Measurement uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	2.54dB
Uncertainty for Radiation Emission test (9Khz-30MHz)	3.11
Uncertainty for Radiation Emission test (30MHz-1GHz)	3.62
Uncertainty for Radiation Emission test (1GHz to 18GHz)	4.86
Uncertainty for spurious emissions test (18GHz to 40GHz)	4.67
Uncertainty for radio frequency	7×10-8
Uncertainty for conducted RF Power	0.20dB
Uncertainty for Power density test	0.26dB
Temperature	±0.6℃
Humidity	±4.0 %
Volatage DC	±1.0%
Volatage (AC, <10KHz)	±1.5%

Note：This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.4. Assistant equipment used for test

2.4.1. Notebook

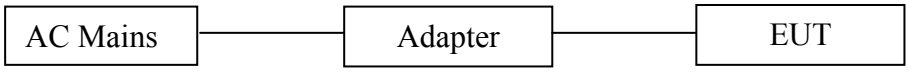
Manufacturer	:	Lenovo
M/N	:	Thinkpad X250
S/N	:	2014AP6082

2.4.2. Adapter

M/N	:	S018BAC1200150
Input	:	AC 100-240V ~ 50/60Hz
Output	:	DC 12V

2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 or 1.5 meter high above ground. EUT was be set into Wi-Fi test mode by software before test.



(EUT: JMDD Module)

2.6. Test mode

A special test software was used to control EUT work in Continuous TX mode(100% duty cycle), and select test channel, wireless mode and data rate.

Test mode	Lower channel	Center channel	Upper channel
IEEE 802.11b;IEEE 802.11g;IEEE 802.11n HT20 Transmitting	2412MHz	2437MHz	2462MHz
IEEE 802.11b;IEEE 802.11g;IEEE 802.11n HT20 Receiving	2412MHz	2437MHz	2462MHz
IEEE 802.11n HT40 Transmitting	2422MHz	2437MHz	2452MHz
IEEE 802.11n HT40 Receiving	2422MHz	2437MHz	2452MHz

2.7. Channel List

IEEE 802.11b;IEEE 802.11g;IEEE 802.11n HT20					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	6	2437	11	2462
2	2417	7	2442		
3	2422	8	2447		
4	2427	9	2452		
5	2432	10	2457		
IEEE 802.11n HT40					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	6	2437	9	2452
4	2427	7	2442		
5	2432	8	2447		

2.8. Test Equipment

2.8.1. For conducted emission test

Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESHS30	832354	CEPREI	June 15,18	1 Year
Artificial Mains Network	Rohde & Schwarz	ENV216	101260	CEPREI	June 15,18	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	101100	CEPREI	June 15,18	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

2.8.2. For radiated emission test(9 kHz-30MHz)

Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR7	101780	CEPREI	June 15,18	1 Year
Active Loop Antenna	SCHWARZBECK	FMZB1519	1519-038	CEPREI	October 08,17	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

2.8.3. For radiated emissions test (30-1000MHz)

Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR7	101780	CEPREI	June 15,18	1 Year
Bilog Antenna	Teseq	CBL 6111D	27090	CEPREI	June 15,18	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

2.8.4. For radiated emission test(above 1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120D1002	CEPREI	June 18,18	1 Year
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170242	CEPREI	June 18,18	1Year
Signal Amplifier	SCHWARZBECK	BBV9718	9718-212	CEPREI	June 18,18	1 Year
Spectrum Analyzer	Rohde &Schwarz	FSV	103173	CEPREI	June 15,18	1 Year
PSA Series Spertrum Analyzer	Agilent	E4447A	MY50180031	CEPREI	June 15,18	1Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

2.8.5. For connect EUT antenna terminal test

Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
Spectrum Analyzer	Rohde &Schwarz	FSV	103173	CEPREI	June 15,18	1 Year
Spectrum Analyzer	Agilent	E4408B	MY44211139	CEPREI	June 15,18	1 Year

3 POWER LINE CONDUCTED EMISSION TEST

3.1. Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.2. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Test.

The bandwidth of test receiver is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked.

3.3. Test Result

PASS.

3.4. Test data

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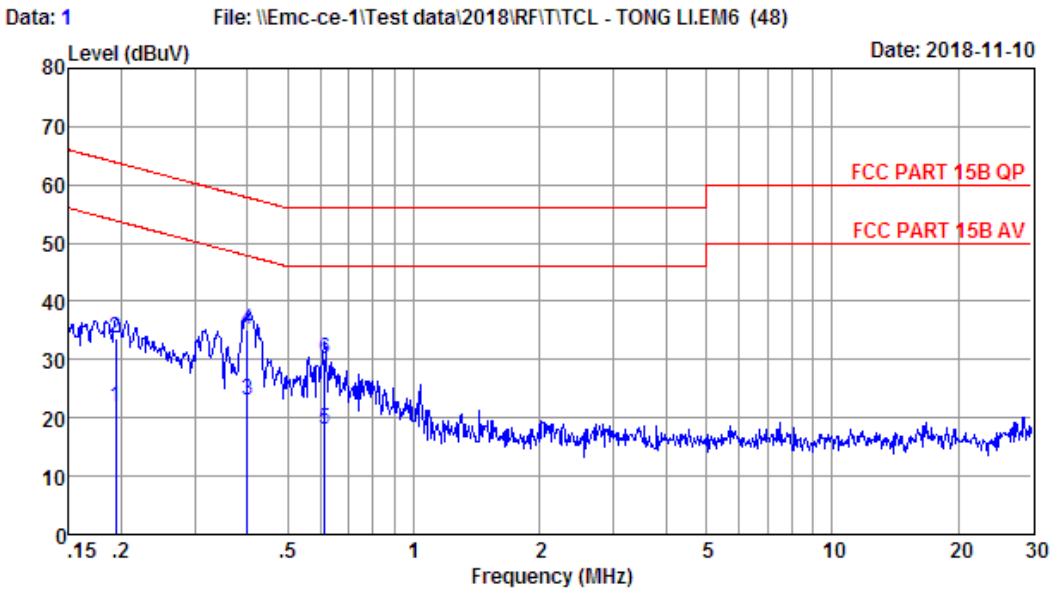

Site no : 844 Shield Room Data no. : 1
Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : NEUTRAL
Limit : FCC PART 15B QP
Engineer : Herman
EUT : JMDD Module
Power : AC 240V/60Hz
M/N : JMDD
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.19	9.62	9.77	2.38	21.77	53.84	32.07	Average
2	0.19	9.62	9.77	14.38	33.77	63.84	30.07	QP
3	0.40	9.64	9.92	3.52	23.08	47.86	24.78	Average
4	0.40	9.64	9.92	15.52	35.08	57.86	22.78	QP
5	0.61	9.67	9.92	-1.54	18.05	46.00	27.95	Average
6	0.61	9.67	9.92	10.46	30.05	56.00	25.95	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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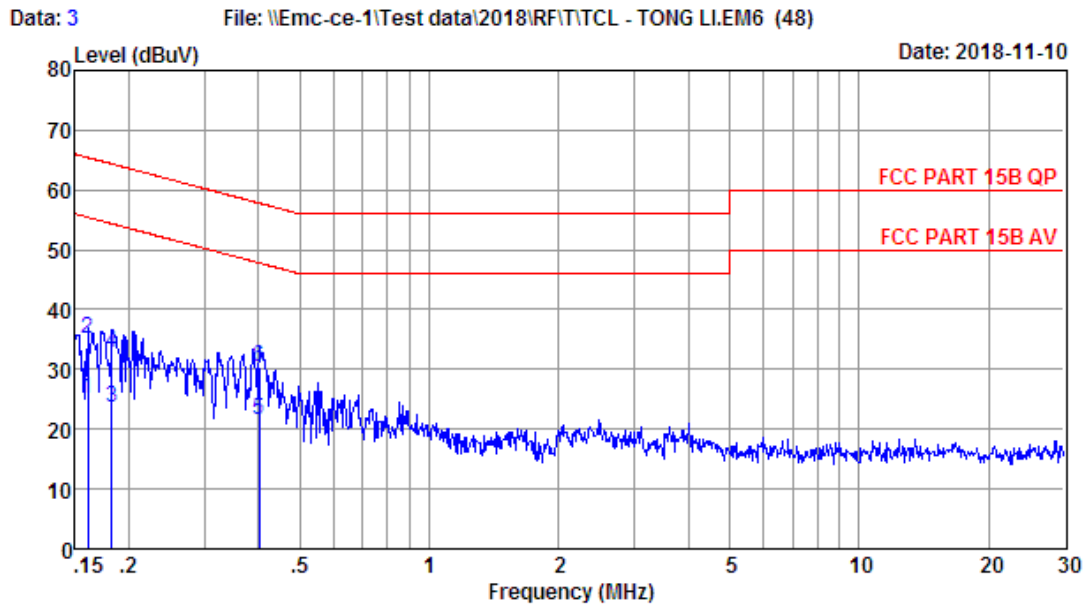

Site no : 844 Shield Room Data no. : 3
Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : LINE
Limit : FCC PART 15B QP
Engineer : Herman
EUT : JMDD Module
Power : AC 240V/60Hz
M/N : JMDD
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.16	9.73	9.69	5.57	24.99	55.43	30.44	Average
2	0.16	9.73	9.69	15.57	34.99	65.43	30.44	QP
3	0.18	9.73	9.77	4.15	23.65	54.37	30.72	Average
4	0.18	9.73	9.77	13.15	32.65	64.37	31.72	QP
5	0.40	9.72	9.92	1.90	21.54	47.81	26.27	Average
6	0.40	9.72	9.92	10.90	30.54	57.81	27.27	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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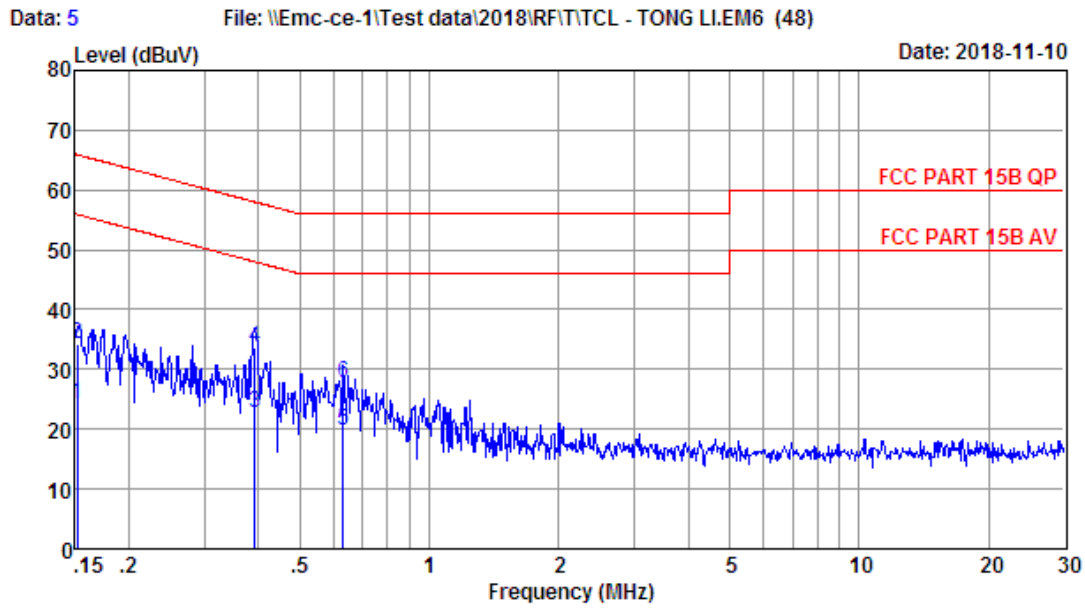

Site no : 844 Shield Room Data no. : 5
Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : LINE
Limit : FCC PART 15B QP
Engineer : Herman
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.15	9.73	9.69	4.77	24.19	55.91	31.72	Average
2	0.15	9.73	9.69	14.77	34.19	65.91	31.72	QP
3	0.39	9.72	9.92	3.12	22.76	47.99	25.23	Average
4	0.39	9.72	9.92	14.12	33.76	57.99	24.23	QP
5	0.63	9.72	9.92	0.19	19.83	46.00	26.17	Average
6	0.63	9.72	9.92	8.19	27.83	56.00	28.17	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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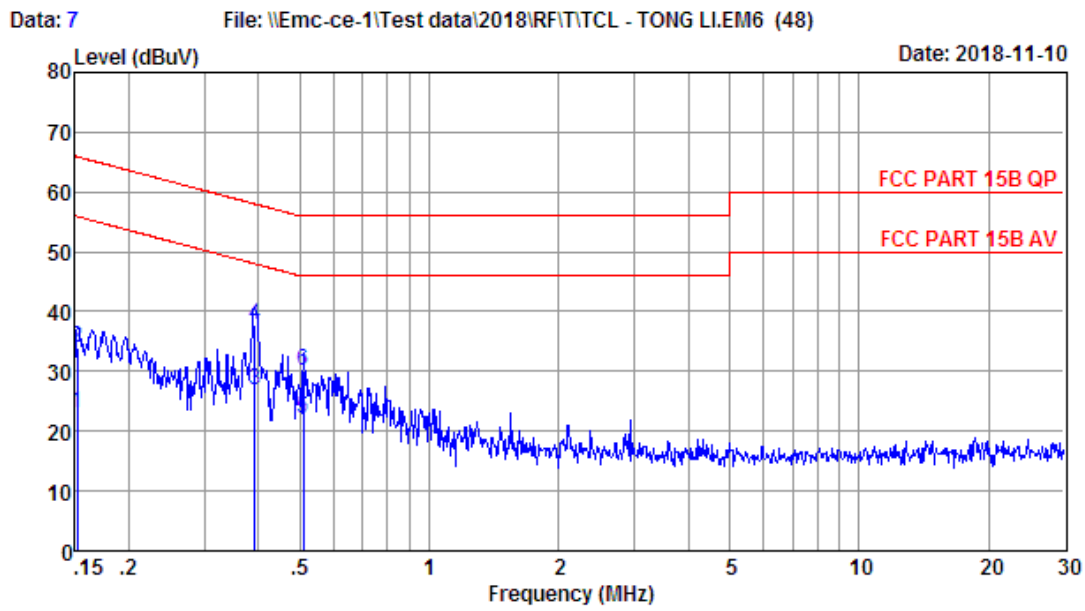


Site no : 844 Shield Room Data no. : 7
Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa LINE Phase : NEUTRAL
Limit : FCC PART 15B QP
Engineer : Herman
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.15	9.61	9.69	3.77	23.07	55.91	32.84	Average
2	0.15	9.61	9.69	14.77	34.07	65.91	31.84	QP
3	0.39	9.64	9.92	7.30	26.86	47.99	21.13	Average
4	0.39	9.64	9.92	18.30	37.86	57.99	20.13	QP
5	0.51	9.65	9.92	2.48	22.05	46.00	23.95	Average
6	0.51	9.65	9.92	10.48	30.05	56.00	25.95	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

4 RADIATED EMISSION TEST

4.1 Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])

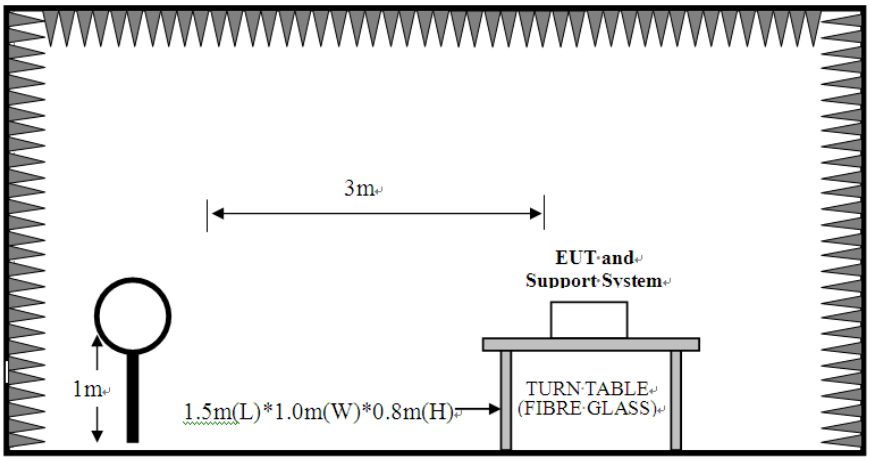
15.209 Limit

Frequency (MHz)	Field Strength(μV/m)	Distance(m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

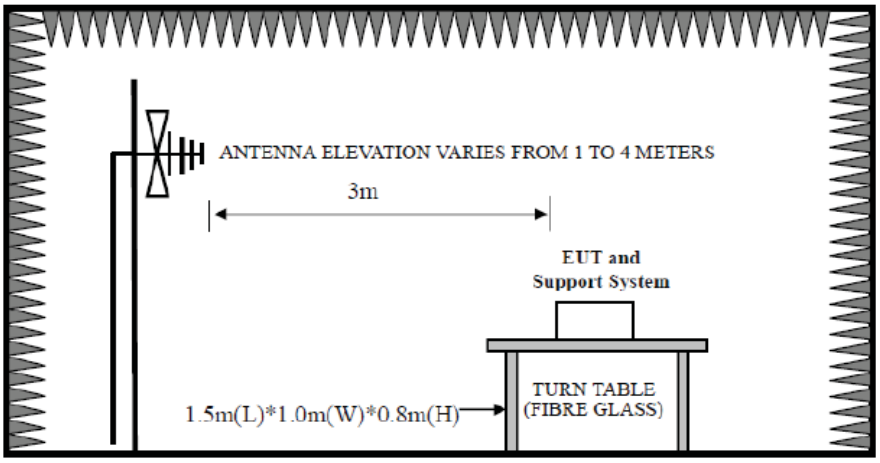
Remark：(1) Emission level dBμV = 20 log Emission level μV/m
(2) The smaller limit shall apply at the cross point between two frequency bands.
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.2. Block Diagram of Test setup

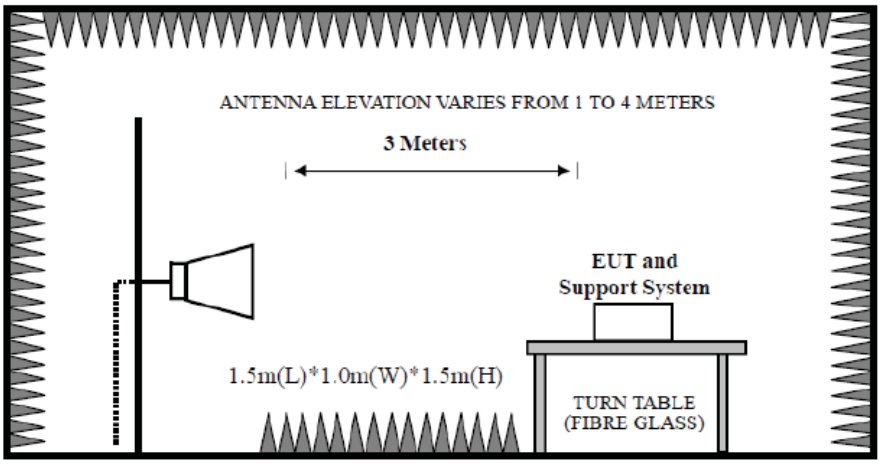
9kHz~30MHz



30~1000MHz



Above 1GHz



4.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground for 9kHz~1000MHz test, and which is 1.5 meter high above ground for above 1GHz test. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

The test frequency analyzer system was set to Peak Detect (300Hz RBW in 9kHz to 150kHz and 10kHz RBW in 150kHz to 30MHz) Function and Specified Bandwidth with Maximum Hold Mode.

The bandwidth of the EMI test receiver is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

PEAK detector, 1MHz/1MHz for PAEK measurement,

PEAK detector, 1MHz/10Hz for Average measurement

The frequency range from 30MHz to 10th harmonic (25GHz) are checked.

4.4. Test Result

PASS.

Note: 1、For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

2、The frequency 2412MHz 、2422MHz、2437 MHz、2452MHz and 2462 MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

4.5. Test Data

9 kHz – 30 MHz
Pass
Note: The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

30-1000 MHz

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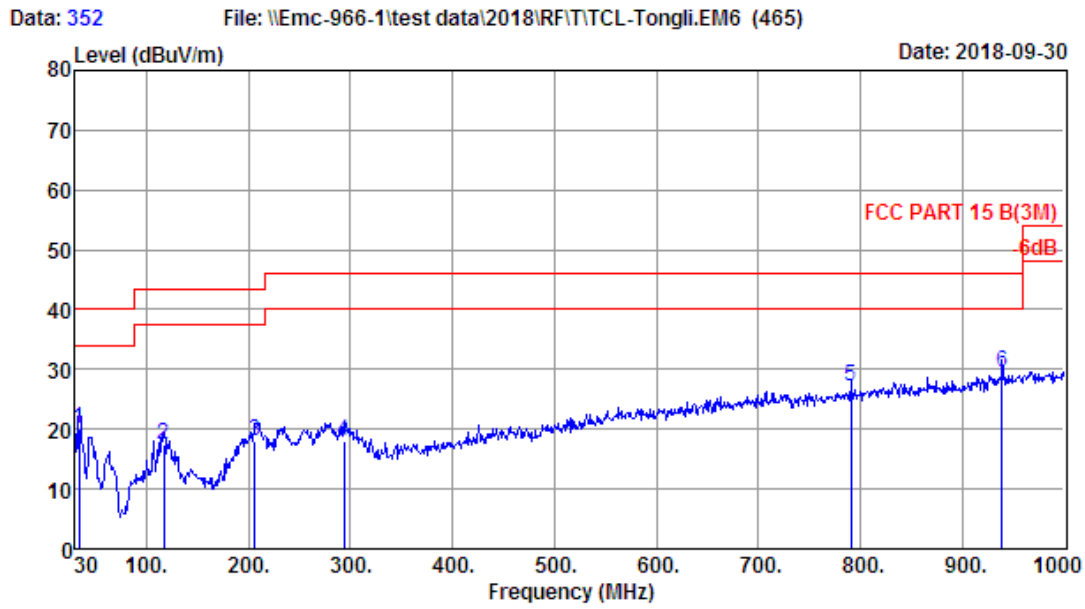

Site no. : site Data no. : 352
Dis. / Ant. : 3m 37062 Ant. pol. : VERTICAL
Limit : FCC PART 15 B(3M)
Env. / Ins. : Temp:26.9';Humi:53.4%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/50Hz
M/N : JMDD
Test Mode : TX Mode

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	33.88	16.00	0.36	3.62	19.98	40.00	20.02	QP
2	117.30	11.42	1.13	4.84	17.39	43.50	26.11	QP
3	206.54	8.57	1.52	7.98	18.07	43.50	25.43	QP
4	293.84	13.54	2.03	2.48	18.05	46.00	27.95	QP
5	790.48	22.80	3.73	0.50	27.03	46.00	18.97	QP
6	938.89	24.38	4.47	0.67	29.52	46.00	16.48	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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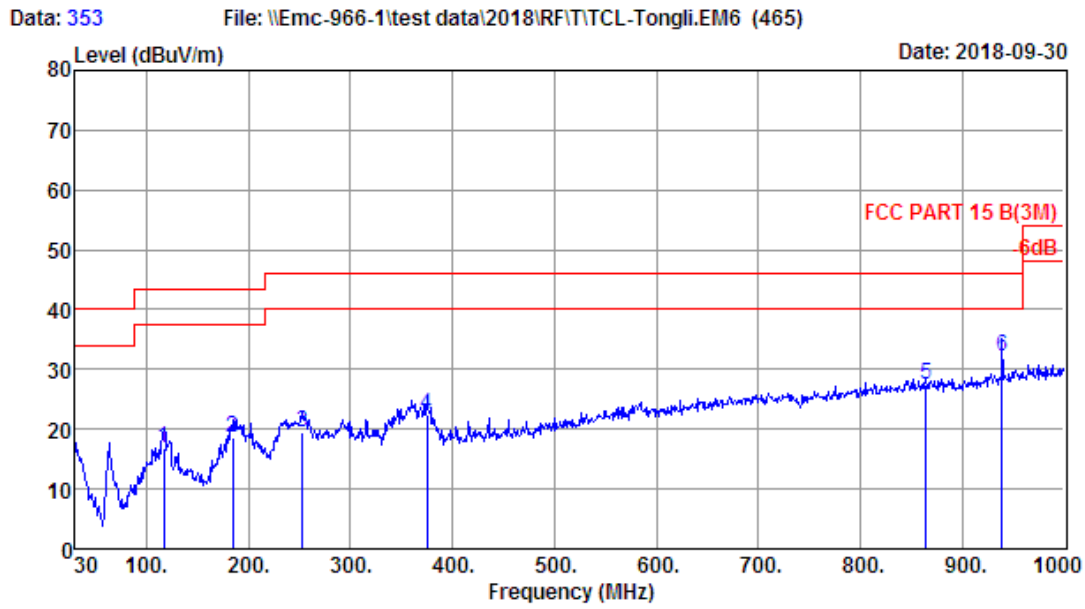


```
Site no.      : 1# 966 Chamber              Data no.  : 353
Dis. / Ant.   : 3m   37062                  Ant. pol. : HORIZONTAL
Limit         : FCC PART 15 B(3M)
Env. / Ins.   : Temp:26.9';Humi:53.4%;Press:101.52kPa
Engineer      : Viking
EUT           : JMDD Module
Power         : AC 120V/50Hz
M/N           : JMDD
Test Mode     : TX Mode
```

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	117.30	11.42	1.13	4.21	16.76	43.50	26.74	QP
2	184.23	9.12	1.42	8.12	18.66	43.50	24.84	QP
3	253.10	12.78	1.85	4.98	19.61	46.00	26.39	QP
4	375.32	15.40	2.37	4.58	22.35	46.00	23.65	QP
5	864.20	23.40	3.94	0.15	27.49	46.00	18.51	QP
6	938.89	24.38	4.47	3.36	32.21	46.00	13.79	QP

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
         2. Margin= Limit - Emission Level.
         3. The emission levels that are 20dB below the official limit are not reported.
```

1000-18000 MHz

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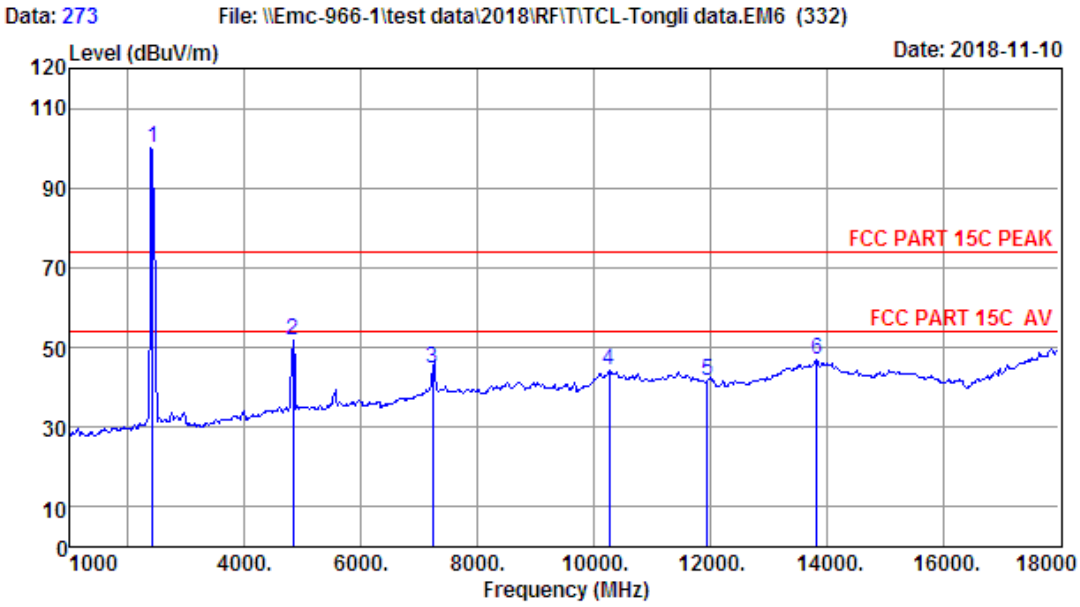

Site no. : 1# 966 Chamber Data no. : 273
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH1 2412TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.39	3.23	34.94	104.32	100.00	74.00	-26.00	Peak
2	4824.00	32.09	4.69	35.08	50.08	51.78	74.00	22.22	Peak
3	7236.00	36.63	6.03	33.42	35.48	44.72	74.00	29.28	Peak
4	10265.00	39.21	9.98	34.39	29.65	44.45	74.00	29.55	Peak
5	11948.00	39.47	8.21	32.50	26.61	41.79	74.00	32.21	Peak
6	13835.00	41.57	10.10	32.76	28.04	46.95	74.00	27.05	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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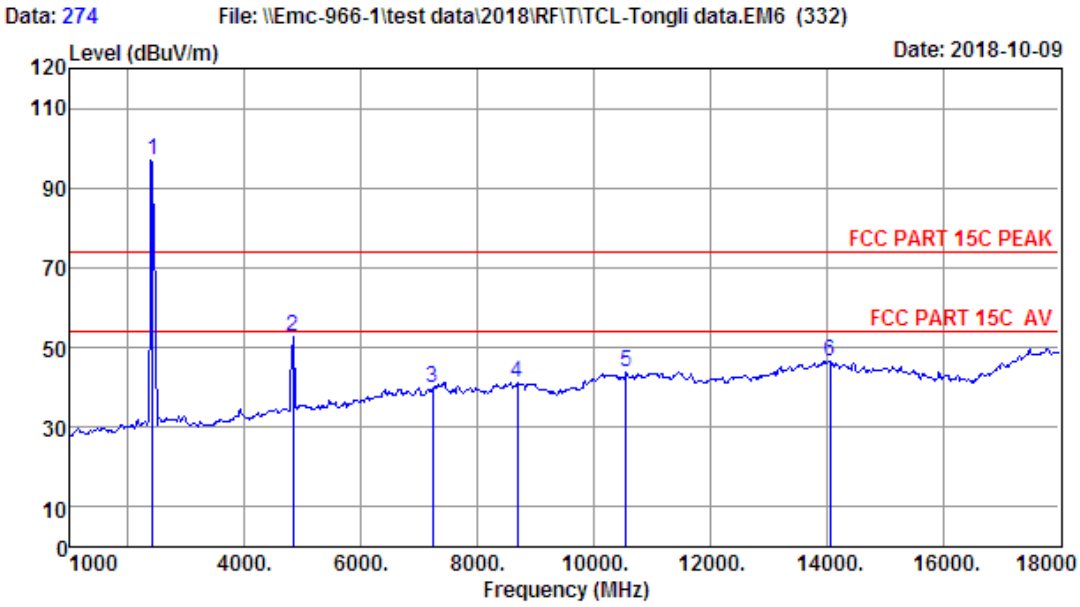

Site no. : 1# 966 Chamber Data no. : 274
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH1 2412TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.39	3.23	34.94	101.23	96.91	74.00	-22.91	Peak
2	4824.00	32.09	4.69	35.08	51.13	52.83	74.00	21.17	Peak
3	7236.00	36.63	6.03	33.42	30.72	39.96	74.00	34.04	Peak
4	8684.00	37.46	6.90	33.06	29.76	41.06	74.00	32.94	Peak
5	10554.00	39.36	9.50	34.05	29.08	43.89	74.00	30.11	Peak
6	14056.00	41.65	10.13	32.95	27.75	46.58	74.00	27.42	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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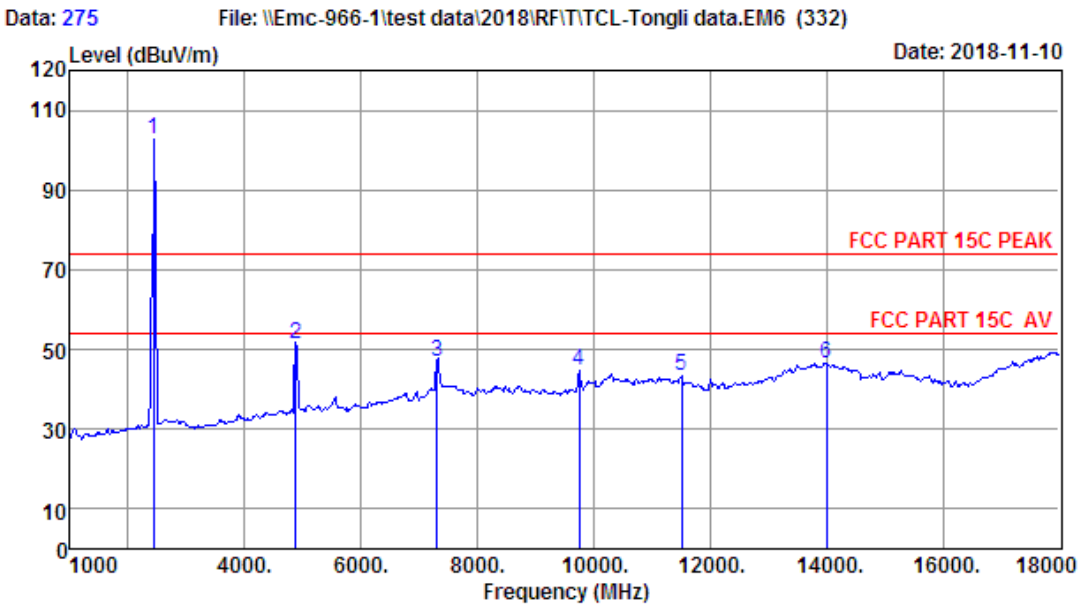

Site no. : 1# 966 Chamber Data no. : 275
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH6 2437TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	107.03	102.70	74.00	-28.70	Peak
2	4874.00	32.18	4.73	35.14	49.67	51.44	74.00	22.56	Peak
3	7311.00	36.78	6.09	33.31	37.27	46.83	74.00	27.17	Peak
4	9755.00	38.96	7.96	35.14	32.92	44.70	74.00	29.30	Peak
5	11506.00	40.10	8.28	32.55	27.46	43.29	74.00	30.71	Peak
6	14005.00	41.70	10.13	32.88	27.57	46.52	74.00	27.48	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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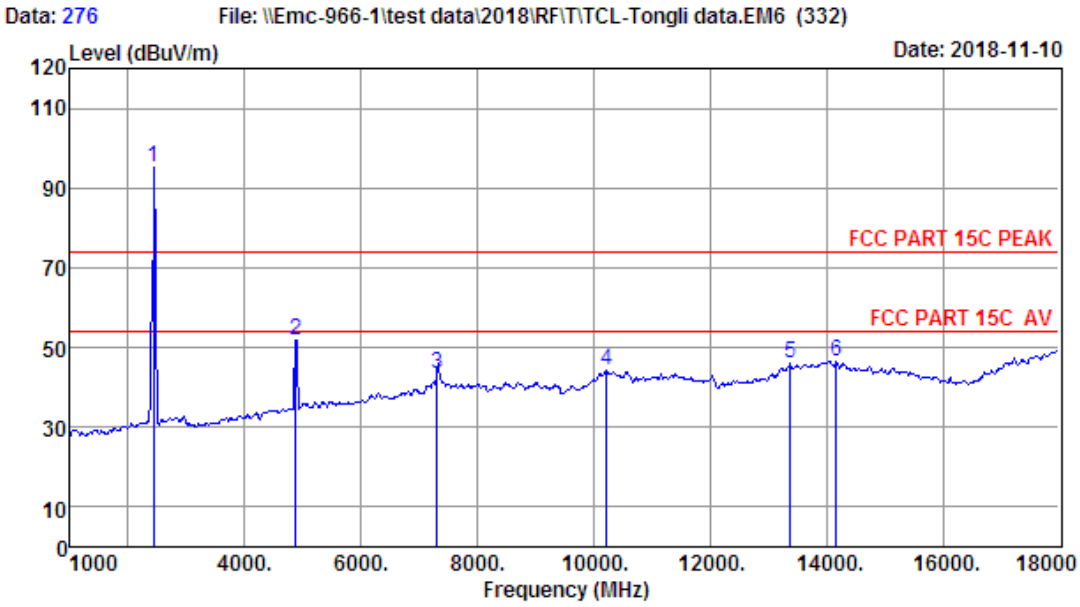

Site no. : 1# 966 Chamber Data no. : 276
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH6 2437TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	99.57	95.24	74.00	-21.24	Peak
2	4874.00	32.18	4.73	35.14	49.87	51.64	74.00	22.36	Peak
3	7311.00	36.78	6.09	33.31	33.70	43.26	74.00	30.74	Peak
4	10214.00	39.19	9.77	34.43	29.72	44.25	74.00	29.75	Peak
5	13376.00	41.01	9.50	32.62	27.94	45.83	74.00	28.17	Peak
6	14175.00	41.53	10.15	33.11	28.07	46.64	74.00	27.36	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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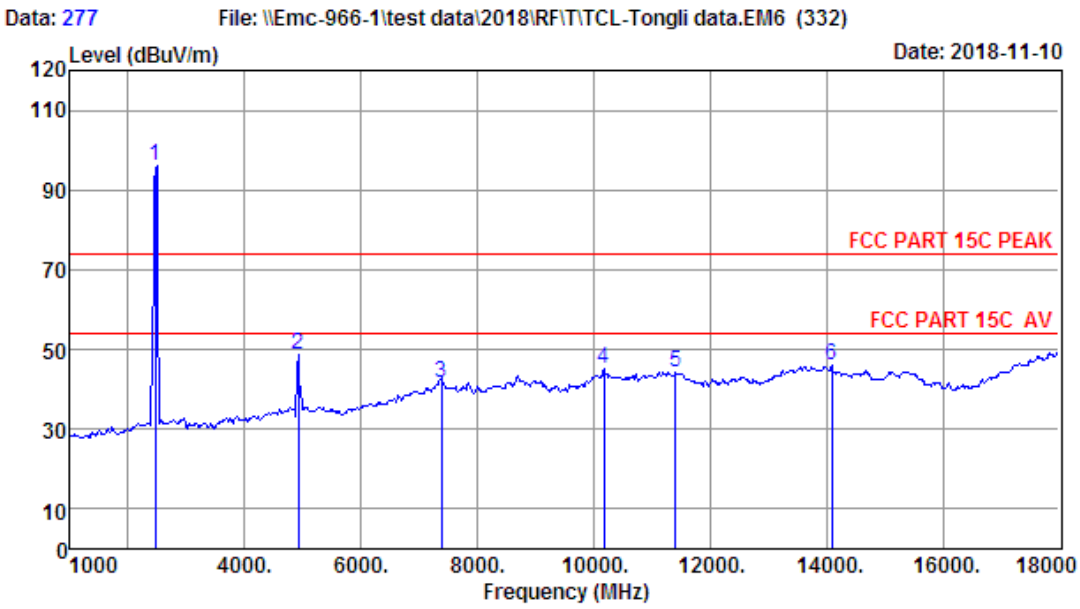

Site no. : 1# 966 Chamber Data no. : 277
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH11 2462TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.52	3.27	35.14	100.29	95.94	74.00	-21.94	Peak
2	4924.00	32.28	4.77	35.20	46.83	48.68	74.00	25.32	Peak
3	7386.00	36.97	6.12	33.17	31.86	41.78	74.00	32.22	Peak
4	10180.00	39.17	9.62	34.47	30.76	45.08	74.00	28.92	Peak
5	11404.00	40.06	8.29	32.71	28.61	44.25	74.00	29.75	Peak
6	14090.00	41.61	10.14	32.99	27.24	46.00	74.00	28.00	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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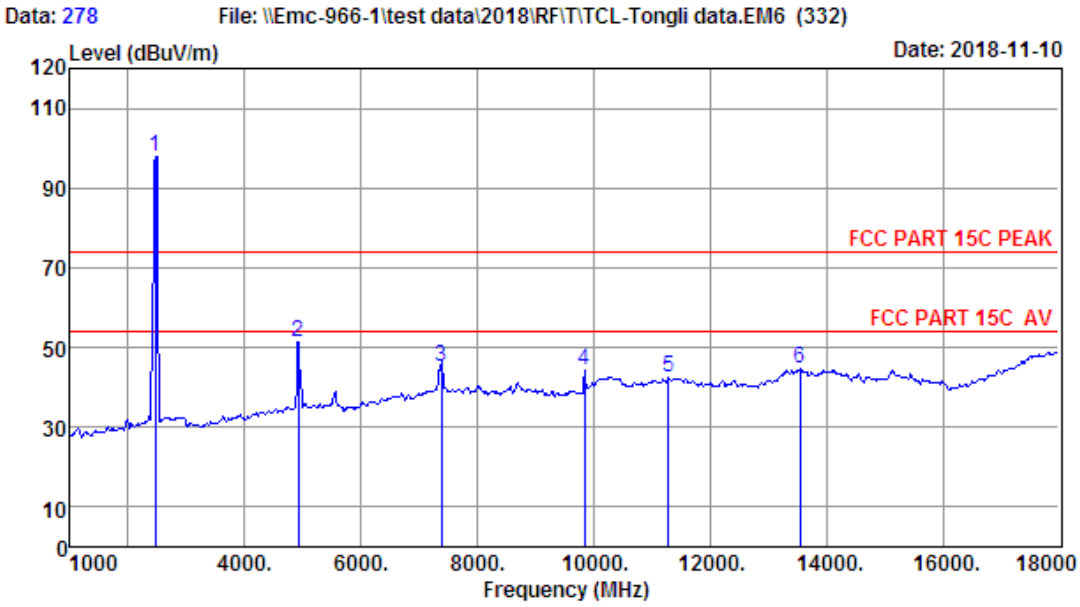

Site no. : 1# 966 Chamber Data no. : 278
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH11 2462TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.52	3.27	35.14	102.38	98.03	74.00	-24.03	Peak
2	4924.00	32.28	4.77	35.20	49.58	51.43	74.00	22.57	Peak
3	7386.00	36.97	6.12	33.17	35.37	45.29	74.00	28.71	Peak
4	9840.00	39.01	8.17	34.97	31.87	44.08	74.00	29.92	Peak
5	11285.00	40.01	8.36	32.94	27.09	42.52	74.00	31.48	Peak
6	13546.00	41.34	9.73	32.54	26.11	44.64	74.00	29.36	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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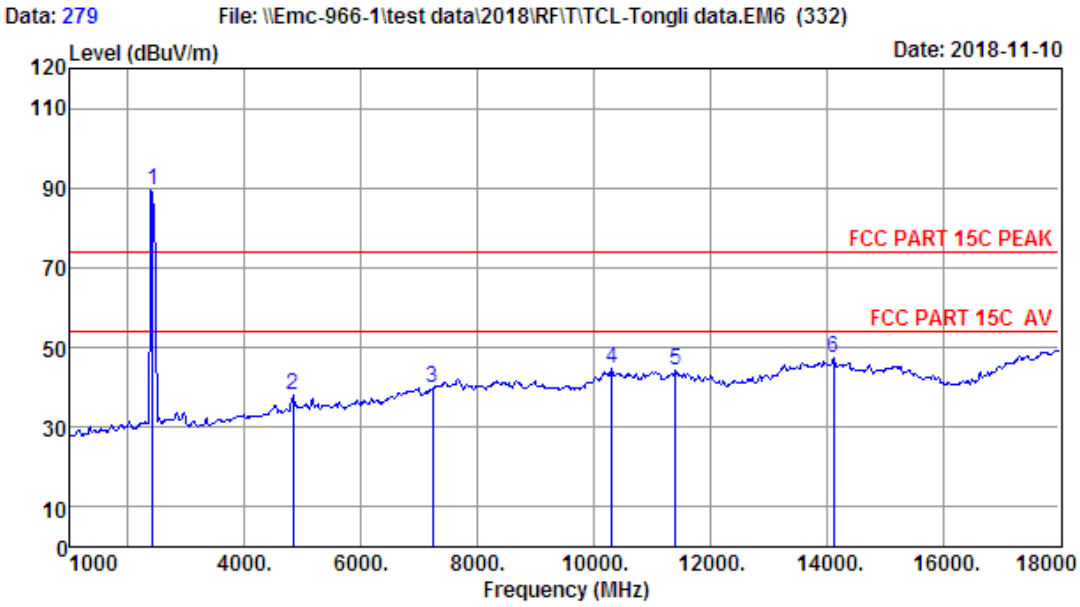


```
Site no.      : 1# 966 Chamber              Data no.  : 279
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer      : Viking
EUT           : JMDD Module
Power         : AC 120V/60Hz
M/N           : JMDD
Test Mode     : IEEE 802.11g CH1 2412TX
                Antenna 1
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.39	3.23	34.94	93.80	89.48	74.00	-15.48	Peak
2	4824.00	32.09	4.69	35.08	36.30	38.00	74.00	36.00	Peak
3	7236.00	36.63	6.03	33.42	30.44	39.68	74.00	34.32	Peak
4	10316.00	39.23	10.20	34.34	29.53	44.62	74.00	29.38	Peak
5	11404.00	40.06	8.29	32.71	28.56	44.20	74.00	29.80	Peak
6	14124.00	41.58	10.14	33.04	28.55	47.23	74.00	26.77	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
         2. Margin= Limit - Emission Level.
         3. The emission levels that are 20dB below the official
            limit are not reported.
```

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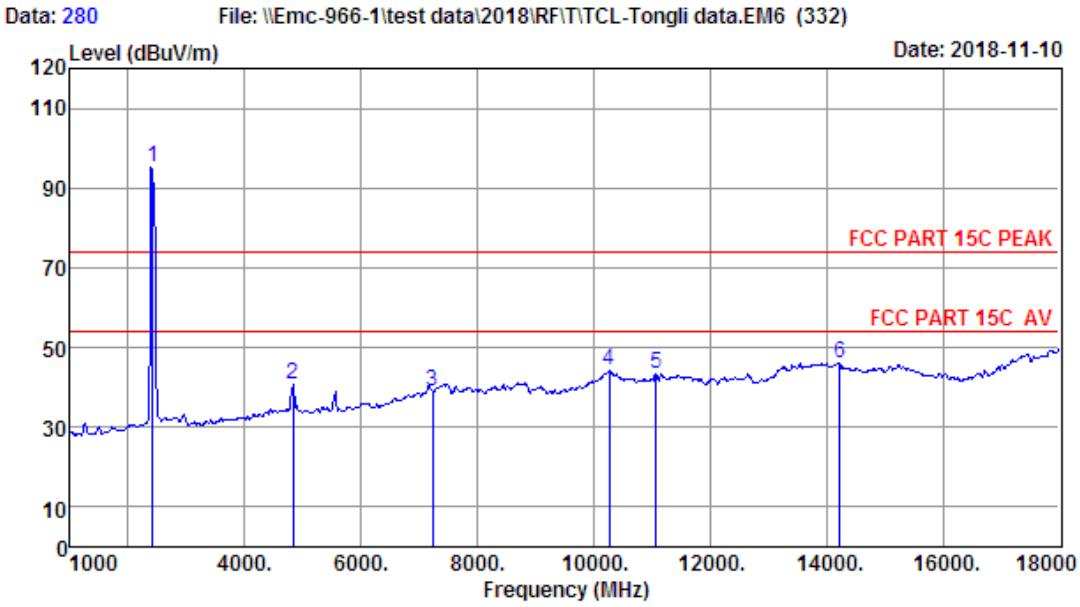

Site no. : 1# 966 Chamber Data no. : 280
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH1 2412TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.39	3.23	34.94	99.41	95.09	74.00	-21.09	Peak
2	4824.00	32.09	4.69	35.08	39.20	40.90	74.00	33.10	Peak
3	7236.00	36.63	6.03	33.42	29.88	39.12	74.00	34.88	Peak
4	10265.00	39.21	9.98	34.39	29.28	44.08	74.00	29.92	Peak
5	11064.00	39.93	8.52	33.32	28.31	43.44	74.00	30.56	Peak
6	14226.00	41.48	10.16	33.18	27.60	46.06	74.00	27.94	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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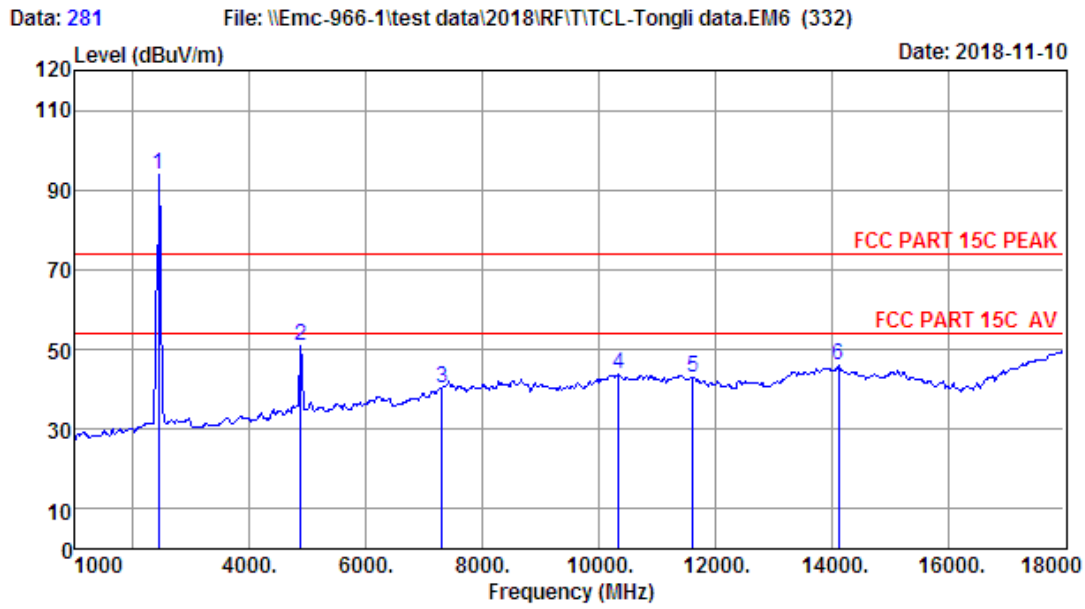


```
Site no.      : 1# 966 Chamber              Data no.  : 281
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer      : Viking
EUT           : JMDD Module
Power         : AC 120V/60Hz
M/N           : JMDD
Test Mode     : IEEE 802.11g CH6 2437TX
                Antenna 1
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	98.21	93.88	74.00	-19.88	Peak
2	4874.00	32.18	4.73	35.14	49.12	50.89	74.00	23.11	Peak
3	7311.00	36.78	6.09	33.31	30.86	40.42	74.00	33.58	Peak
4	10350.00	39.24	10.10	34.30	28.63	43.67	74.00	30.33	Peak
5	11625.00	39.93	8.25	32.37	27.36	43.17	74.00	30.83	Peak
6	14124.00	41.58	10.14	33.04	27.27	45.95	74.00	28.05	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
         2. Margin= Limit - Emission Level.
         3. The emission levels that are 20dB below the official
            limit are not reported.
```

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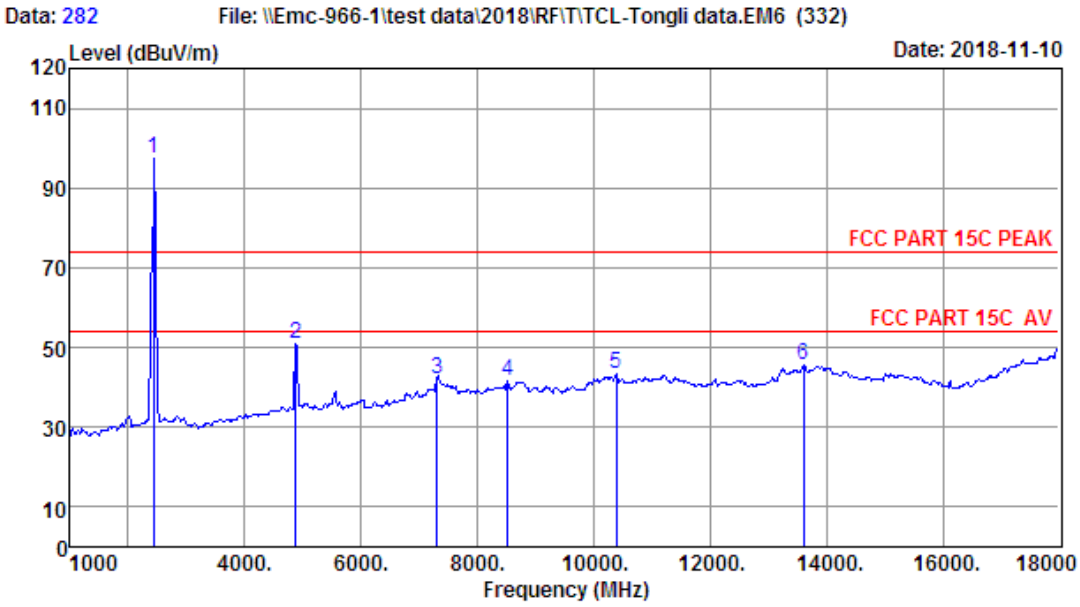


```
Site no.      : 1# 966 Chamber              Data no.  : 282
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer      : Viking
EUT           : JMDD Module
Power         : AC 120V/60Hz
M/N           : JMDD
Test Mode     : IEEE 802.11g CH6 2437TX
                Antenna 1
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	101.72	97.39	74.00	-23.39	Peak
2	4874.00	32.18	4.73	35.14	49.02	50.79	74.00	23.21	Peak
3	7311.00	36.78	6.09	33.31	32.61	42.17	74.00	31.83	Peak
4	8514.00	37.22	6.90	33.67	31.19	41.64	74.00	32.36	Peak
5	10384.00	39.25	10.00	34.26	28.45	43.44	74.00	30.56	Peak
6	13614.00	41.39	9.82	32.59	26.94	45.56	74.00	28.44	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
         2. Margin= Limit - Emission Level.
         3. The emission levels that are 20dB below the official
            limit are not reported.
```

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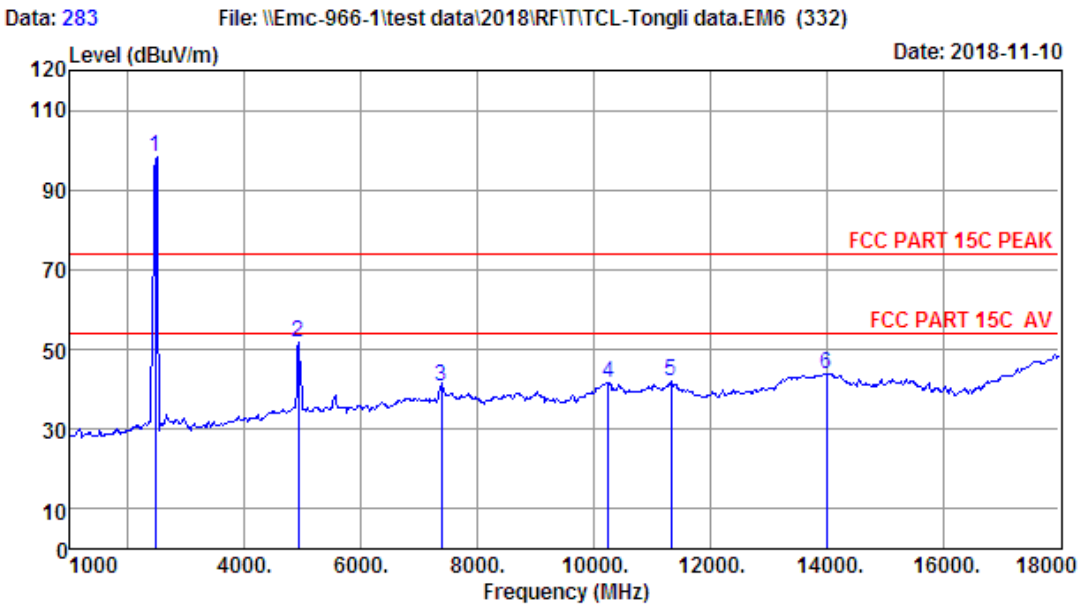

Site no. : 1# 966 Chamber Data no. : 283
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH11 2462TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.52	3.27	35.14	102.56	98.21	74.00	-24.21	Peak
2	4924.00	32.28	4.77	35.20	49.94	51.79	74.00	22.21	Peak
3	7386.00	36.97	6.12	33.17	30.98	40.90	74.00	33.10	Peak
4	10248.00	39.20	9.91	34.39	26.74	41.46	74.00	32.54	Peak
5	11336.00	40.03	8.32	32.84	26.61	42.12	74.00	31.88	Peak
6	14005.00	41.70	10.13	32.88	24.97	43.92	74.00	30.08	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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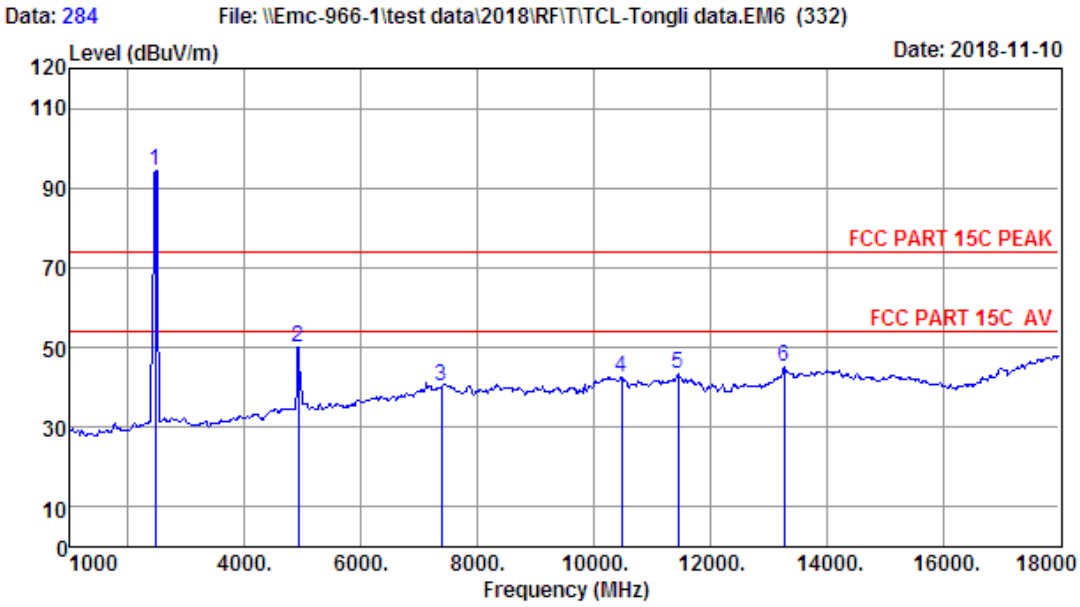

Site no. : 1# 966 Chamber Data no. : 284
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH11 2462TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.52	3.27	35.14	98.77	94.42	74.00	-20.42	Peak
2	4924.00	32.28	4.77	35.20	48.07	49.92	74.00	24.08	Peak
3	7386.00	36.97	6.12	33.17	30.42	40.34	74.00	33.66	Peak
4	10486.00	39.29	9.70	34.14	27.87	42.72	74.00	31.28	Peak
5	11455.00	40.08	8.28	32.62	27.58	43.32	74.00	30.68	Peak
6	13274.00	40.76	9.36	32.66	27.51	44.97	74.00	29.03	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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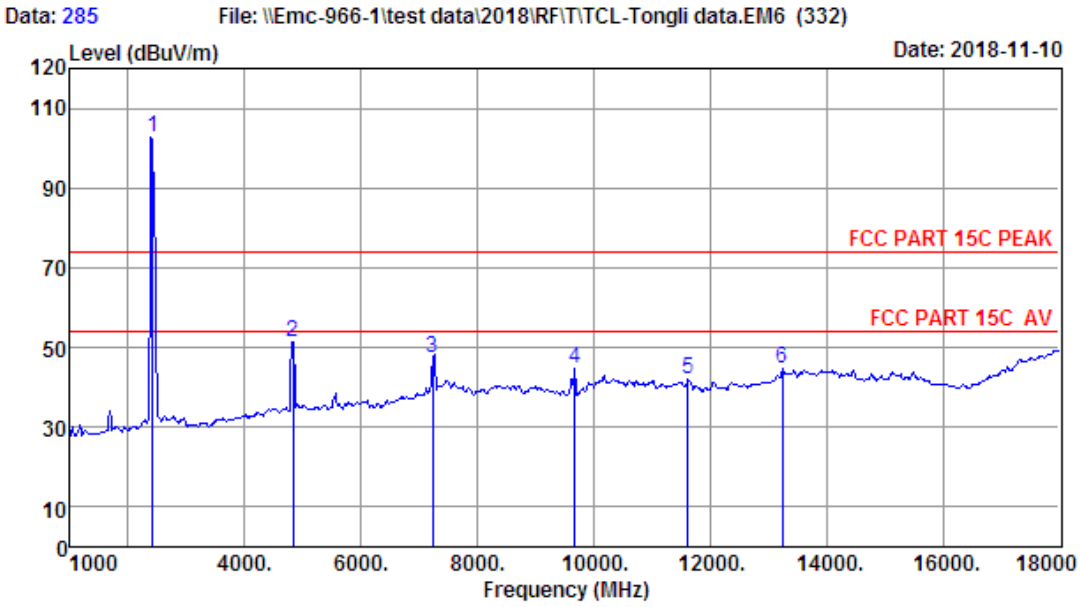

Site no. : 1# 966 Chamber Data no. : 285
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH1 2412TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.39	3.23	34.94	107.23	102.91	74.00	-28.91	Peak
2	4824.00	32.09	4.69	35.08	49.84	51.54	74.00	22.46	Peak
3	7236.00	36.63	6.03	33.42	37.98	47.22	74.00	26.78	Peak
4	9670.00	38.90	7.78	35.31	33.52	44.89	74.00	29.11	Peak
5	11625.00	39.93	8.25	32.37	26.04	41.85	74.00	32.15	Peak
6	13240.00	40.68	9.32	32.68	27.41	44.73	74.00	29.27	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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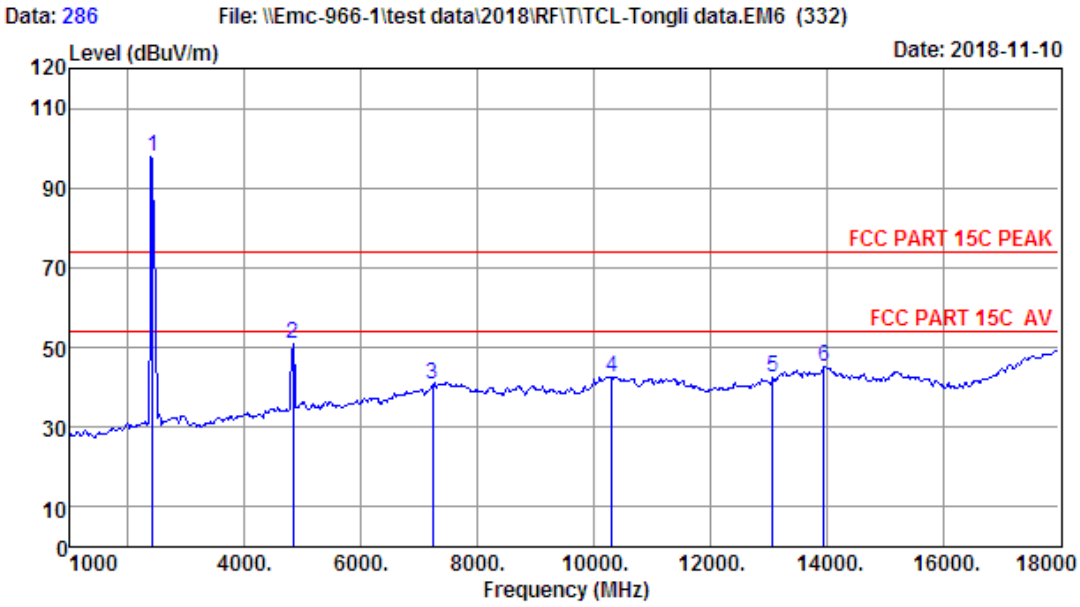

Site no. : 1# 966 Chamber Data no. : 286
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH1 2412TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.39	3.23	34.94	102.39	98.07	74.00	-24.07	Peak
2	4824.00	32.09	4.69	35.08	49.17	50.87	74.00	23.13	Peak
3	7236.00	36.63	6.03	33.42	31.53	40.77	74.00	33.23	Peak
4	10316.00	39.23	10.20	34.34	27.58	42.67	74.00	31.33	Peak
5	13070.00	40.27	9.12	32.70	25.78	42.47	74.00	31.53	Peak
6	13954.00	41.66	10.12	32.84	26.16	45.10	74.00	28.90	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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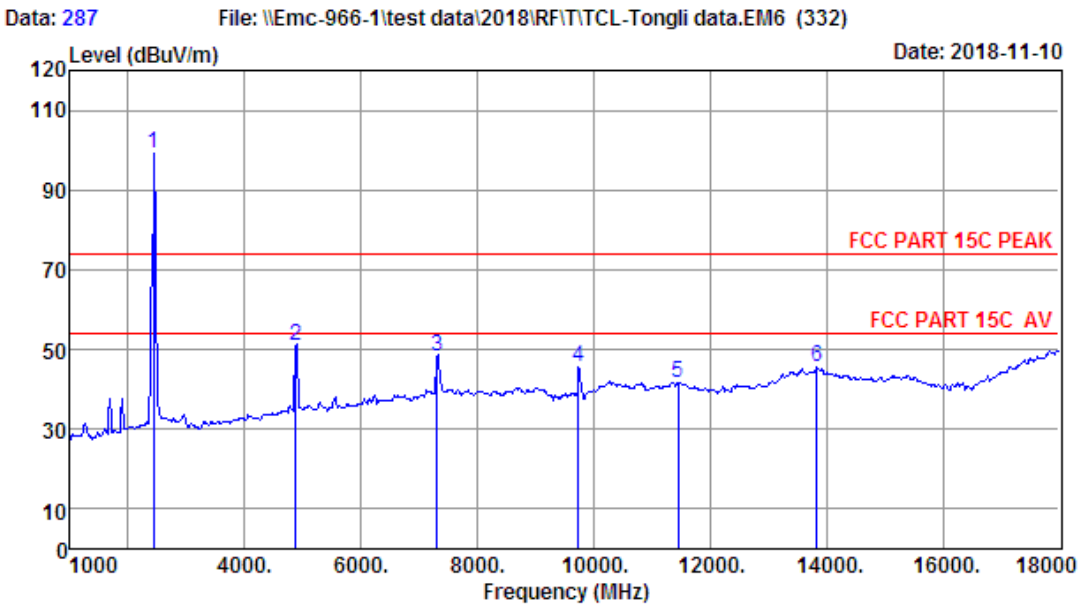

Site no. : 1# 966 Chamber Data no. : 287
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH6 2437TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	103.53	99.20	74.00	-25.20	Peak
2	4874.00	32.18	4.73	35.14	49.35	51.12	74.00	22.88	Peak
3	7311.00	36.78	6.09	33.31	38.79	48.35	74.00	25.65	Peak
4	9738.00	38.94	7.92	35.17	33.81	45.50	74.00	28.50	Peak
5	11455.00	40.08	8.28	32.62	26.01	41.75	74.00	32.25	Peak
6	13835.00	41.57	10.10	32.76	26.64	45.55	74.00	28.45	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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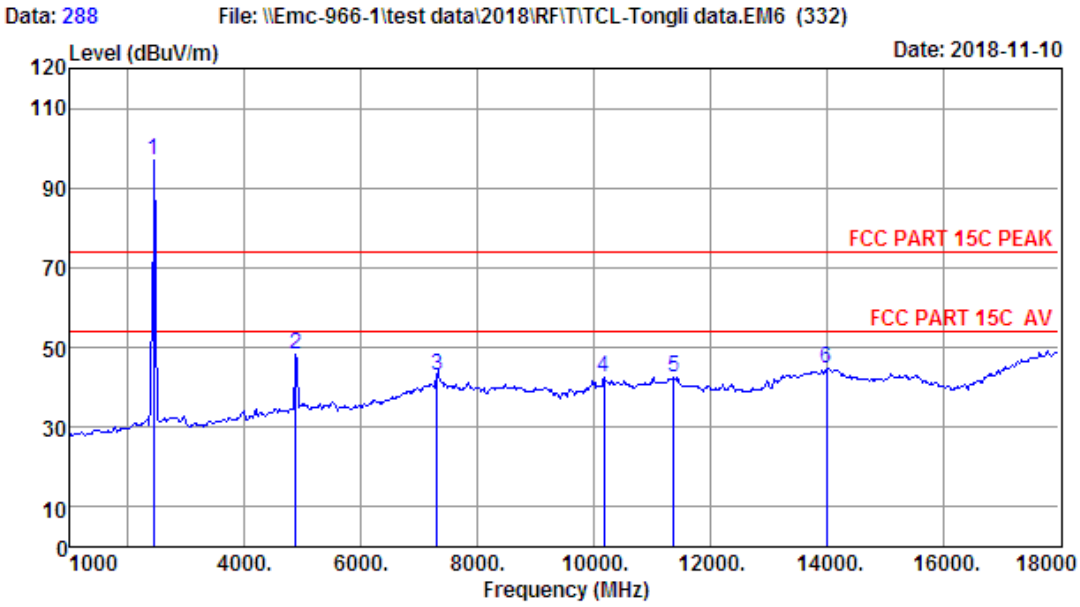

Site no. : 1# 966 Chamber Data no. : 288
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH6 2437TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	101.33	97.00	74.00	-23.00	Peak
2	4874.00	32.18	4.73	35.14	46.69	48.46	74.00	25.54	Peak
3	7311.00	36.78	6.09	33.31	33.47	43.03	74.00	30.97	Peak
4	10180.00	39.17	9.62	34.47	28.17	42.49	74.00	31.51	Peak
5	11370.00	40.05	8.30	32.78	26.90	42.47	74.00	31.53	Peak
6	14005.00	41.70	10.13	32.88	25.79	44.74	74.00	29.26	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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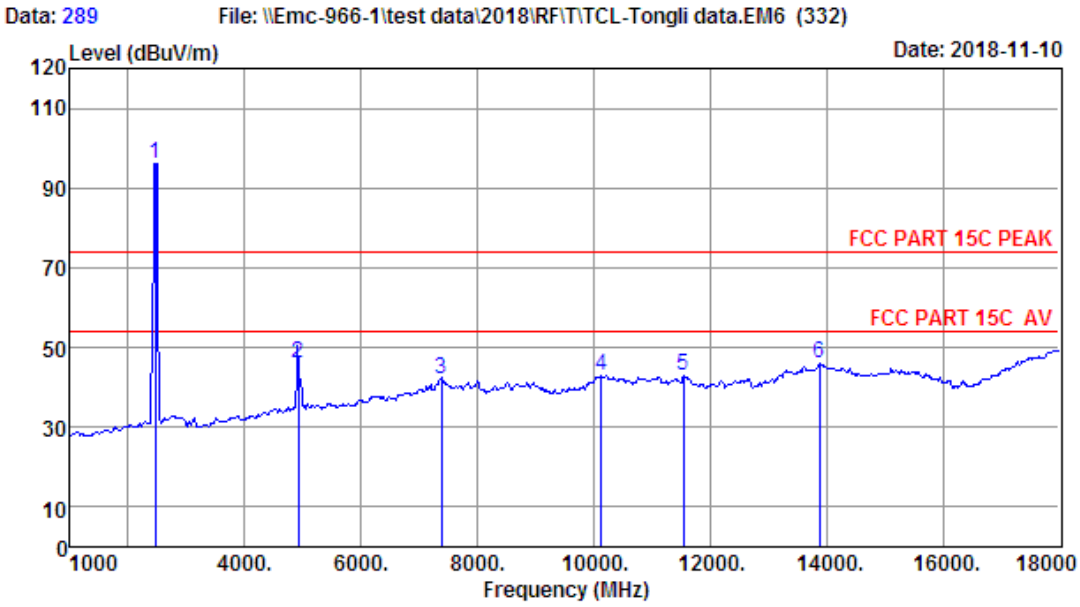

Site no. : 1# 966 Chamber Data no. : 289
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH11 2462TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.52	3.27	35.14	100.55	96.20	74.00	-22.20	Peak
2	4924.00	32.28	4.77	35.20	44.33	46.18	74.00	27.82	Peak
3	7386.00	36.97	6.12	33.17	32.11	42.03	74.00	31.97	Peak
4	10129.00	39.15	9.40	34.53	29.04	43.06	74.00	30.94	Peak
5	11540.00	40.05	8.27	32.49	26.96	42.79	74.00	31.21	Peak
6	13886.00	41.61	10.11	32.80	26.98	45.90	74.00	28.10	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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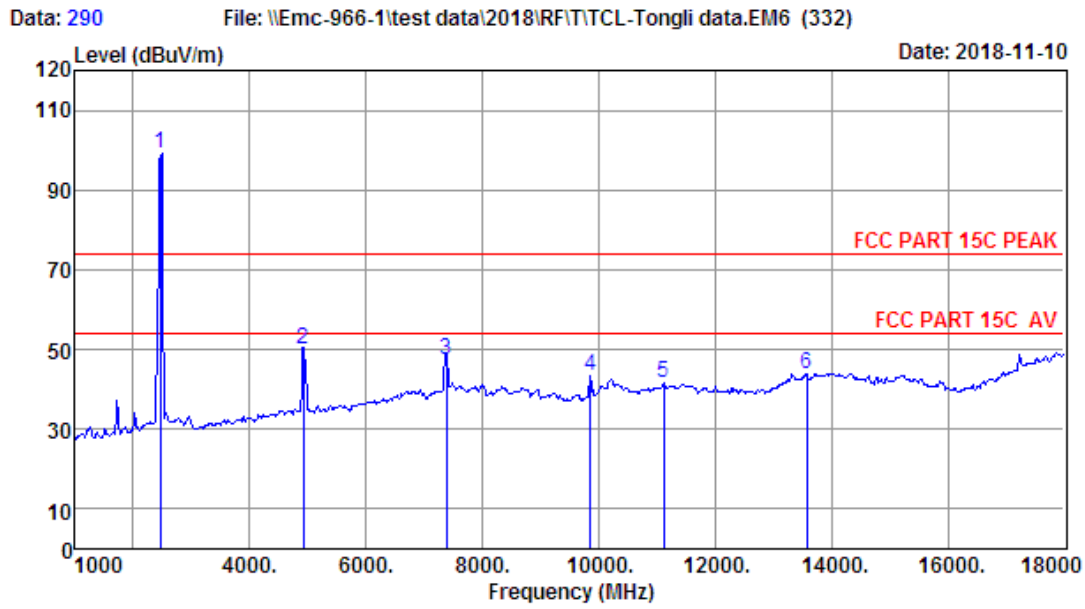

Site no. : 1# 966 Chamber Data no. : 290
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH11 2462TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.52	3.27	35.14	103.48	99.13	74.00	-25.13	Peak
2	4924.00	32.28	4.77	35.20	48.23	50.08	74.00	23.92	Peak
3	7386.00	36.97	6.12	33.17	37.60	47.52	74.00	26.48	Peak
4	9857.00	39.02	8.24	34.94	31.11	43.43	74.00	30.57	Peak
5	11115.00	39.95	8.49	33.23	26.50	41.71	74.00	32.29	Peak
6	13580.00	41.37	9.78	32.57	25.34	43.92	74.00	30.08	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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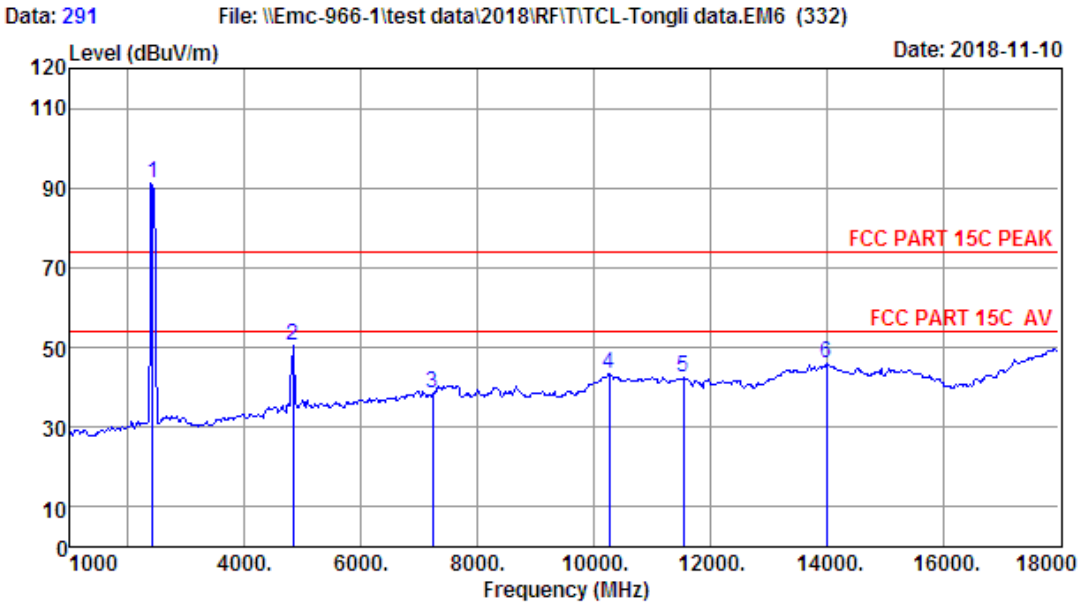


```
Site no.      : 1# 966 Chamber              Data no.  : 291
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer      : Viking
EUT           : JMDD Module
Power         : AC 120V/60Hz
M/N           : JMDD
Test Mode     : IEEE 802.11g CH1 2412TX
                Antenna 2
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.39	3.23	34.94	95.40	91.08	74.00	-17.08	Peak
2	4824.00	32.09	4.69	35.08	48.76	50.46	74.00	23.54	Peak
3	7236.00	36.63	6.03	33.42	29.08	38.32	74.00	35.68	Peak
4	10265.00	39.21	9.98	34.39	28.81	43.61	74.00	30.39	Peak
5	11540.00	40.05	8.27	32.49	26.55	42.38	74.00	31.62	Peak
6	14005.00	41.70	10.13	32.88	26.90	45.85	74.00	28.15	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
         2. Margin= Limit - Emission Level.
         3. The emission levels that are 20dB below the official
            limit are not reported.
```

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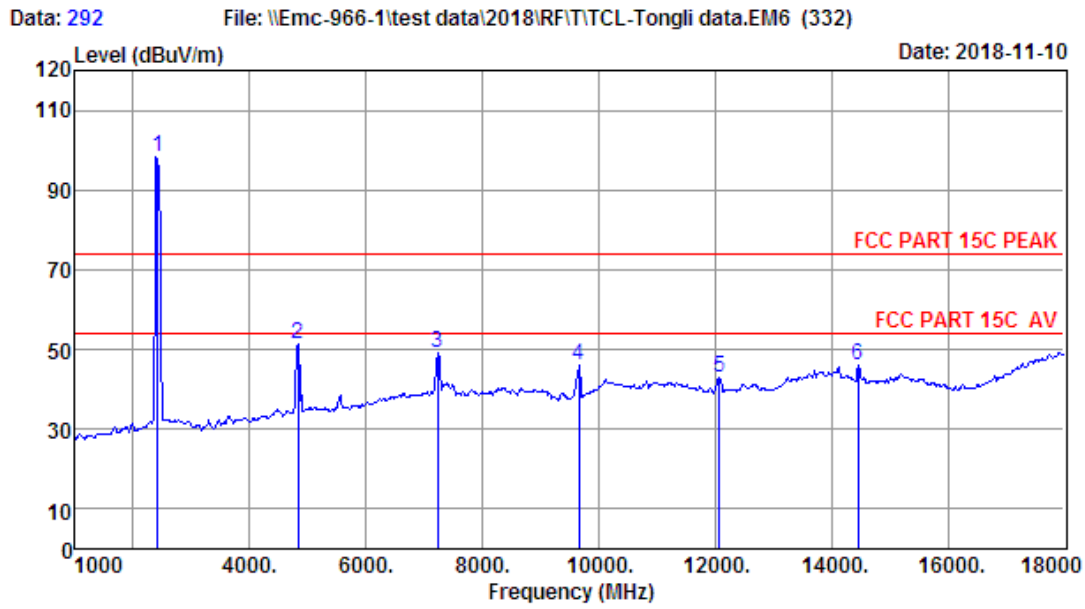


```
Site no.      : 1# 966 Chamber              Data no.  : 292
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer      : Viking
EUT           : JMDD Module
Power         : AC 120V/60Hz
M/N           : JMDD
Test Mode     : IEEE 802.11g CH1 2412TX
                Antenna 2
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.39	3.23	34.94	102.78	98.46	74.00	-24.46	Peak
2	4824.00	32.09	4.69	35.08	49.47	51.17	74.00	22.83	Peak
3	7236.00	36.63	6.03	33.42	40.00	49.24	74.00	24.76	Peak
4	9653.00	38.89	7.74	35.34	34.58	45.87	74.00	28.13	Peak
5	12067.00	39.39	8.29	32.55	27.98	43.11	74.00	30.89	Peak
6	14464.00	41.23	10.19	33.47	28.01	45.96	74.00	28.04	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
         2. Margin= Limit - Emission Level.
         3. The emission levels that are 20dB below the official
            limit are not reported.
```

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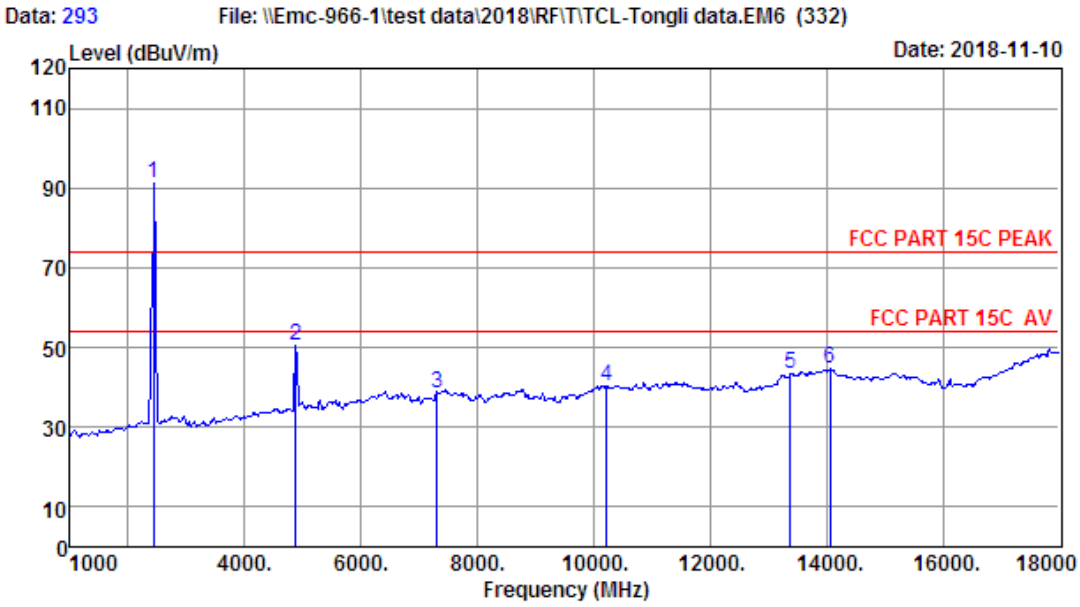


```
Site no.      : 1# 966 Chamber              Data no.  : 293
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer      : Viking
EUT           : JMDD Module
Power         : AC 120V/60Hz
M/N           : JMDD
Test Mode     : IEEE 802.11g CH6 2437TX
                Antenna 2
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	95.35	91.02	74.00	-17.02	Peak
2	4874.00	32.18	4.73	35.14	48.50	50.27	74.00	23.73	Peak
3	7311.00	36.78	6.09	33.31	29.12	38.68	74.00	35.32	Peak
4	10214.00	39.19	9.77	34.43	25.82	40.35	74.00	33.65	Peak
5	13376.00	41.01	9.50	32.62	25.59	43.48	74.00	30.52	Peak
6	14056.00	41.65	10.13	32.95	25.69	44.52	74.00	29.48	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
         2. Margin= Limit - Emission Level.
         3. The emission levels that are 20dB below the official
            limit are not reported.
```

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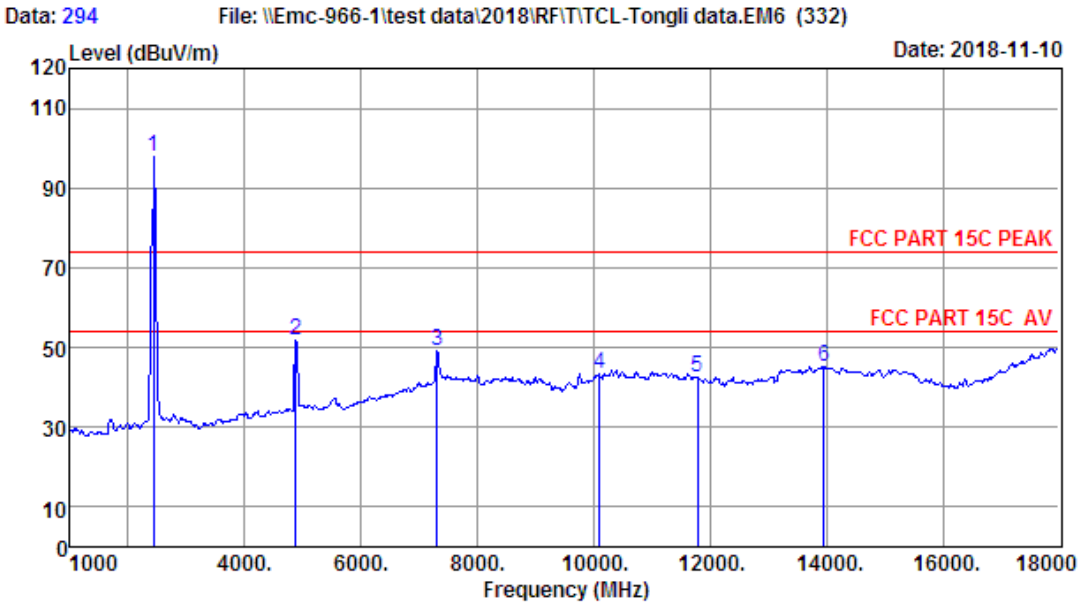

Site no. : 1# 966 Chamber Data no. : 294
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH6 2437TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	102.20	97.87	74.00	-23.87	Peak
2	4874.00	32.18	4.73	35.14	49.90	51.67	74.00	22.33	Peak
3	7311.00	36.78	6.09	33.31	39.58	49.14	74.00	24.86	Peak
4	10095.00	39.14	9.26	34.57	29.72	43.55	74.00	30.45	Peak
5	11778.00	39.71	8.23	32.43	26.88	42.39	74.00	31.61	Peak
6	13954.00	41.66	10.12	32.84	26.39	45.33	74.00	28.67	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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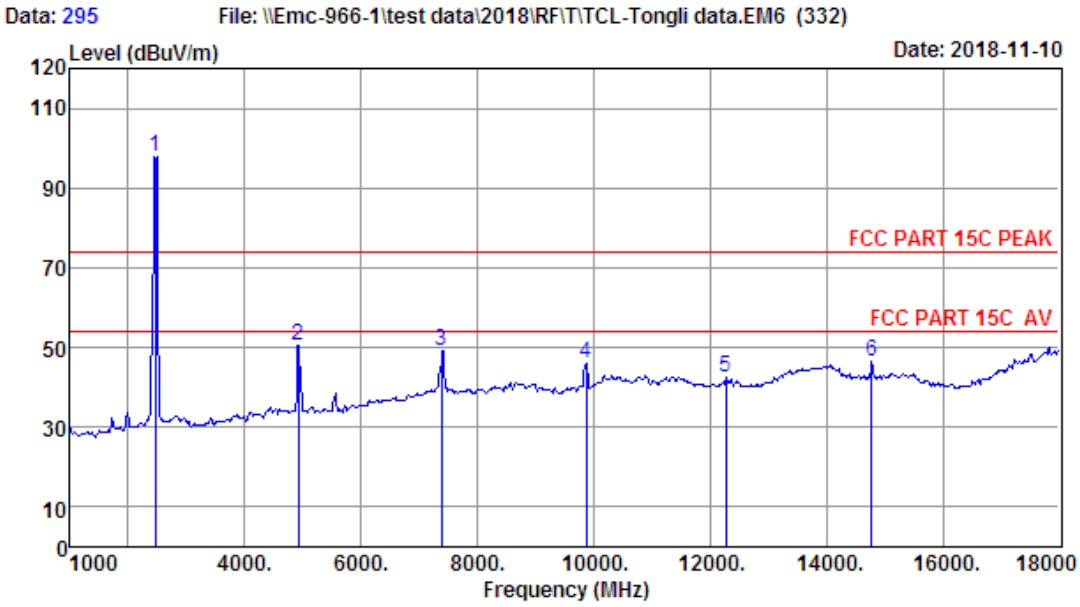

Site no. : 1# 966 Chamber Data no. : 295
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH11 2462TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.52	3.27	35.14	102.18	97.83	74.00	-23.83	Peak
2	4924.00	32.28	4.77	35.20	48.74	50.59	74.00	23.41	Peak
3	7386.00	36.97	6.12	33.17	39.45	49.37	74.00	24.63	Peak
4	9874.00	39.03	8.32	34.90	33.76	46.21	74.00	27.79	Peak
5	12271.00	39.34	8.43	32.63	27.28	42.42	74.00	31.58	Peak
6	14770.00	40.72	10.49	33.63	29.08	46.66	74.00	27.34	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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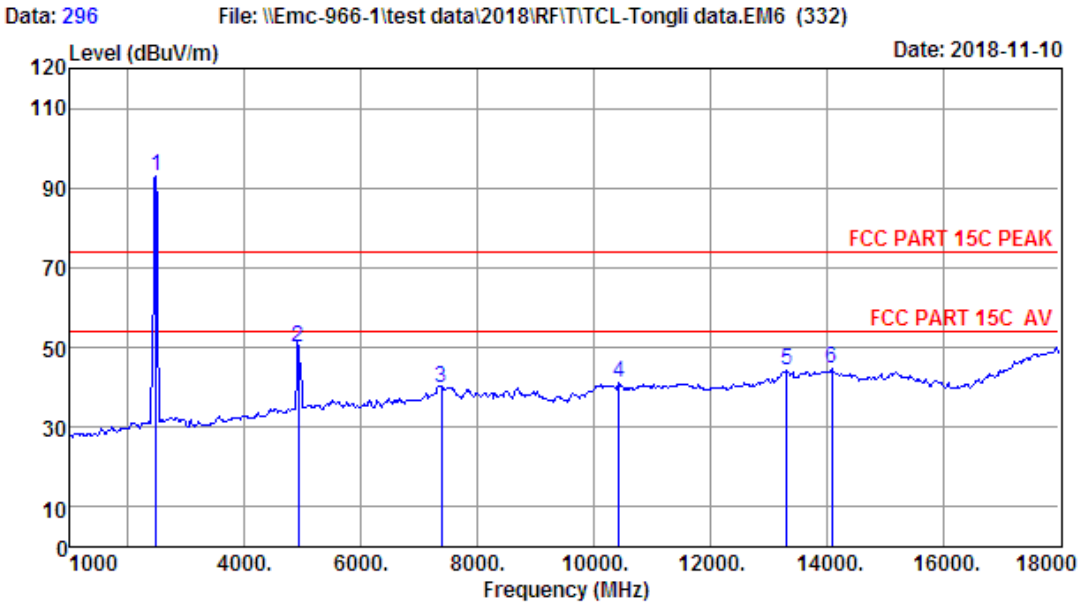

Site no. : 1# 966 Chamber Data no. : 296
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH11 2462TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.00	27.56	3.29	35.21	97.24	92.88	74.00	-18.88	Peak
2	4927.00	32.28	4.77	35.20	48.38	50.23	74.00	23.77	Peak
3	7386.00	36.97	6.12	33.17	30.04	39.96	74.00	34.04	Peak
4	10435.00	39.27	9.85	34.20	26.09	41.01	74.00	32.99	Peak
5	13325.00	40.89	9.43	32.65	26.65	44.32	74.00	29.68	Peak
6	14090.00	41.61	10.14	32.99	25.74	44.50	74.00	29.50	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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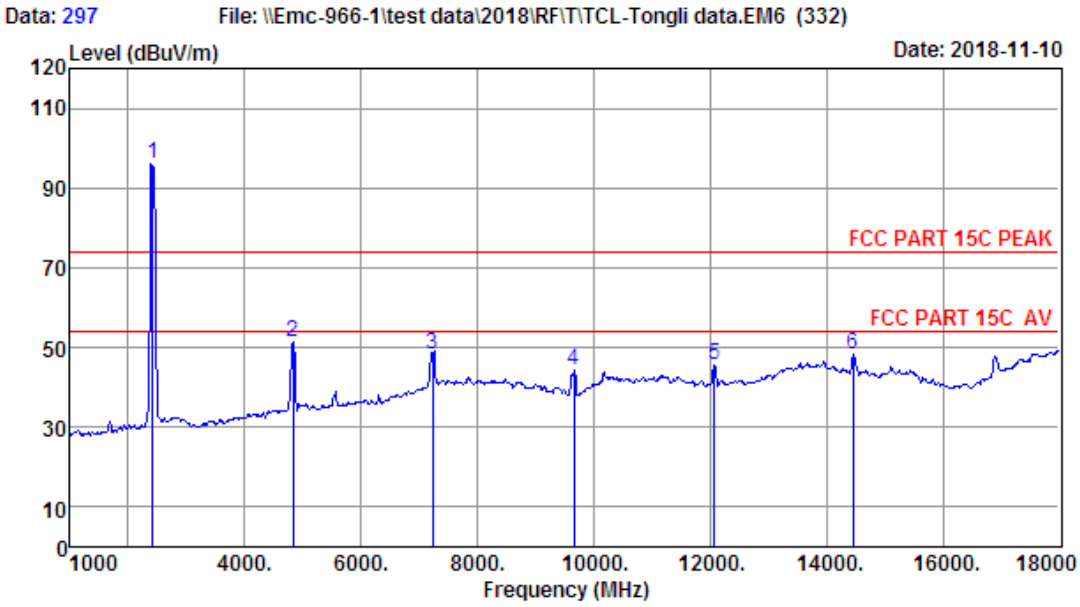

Site no. : 1# 966 Chamber Data no. : 297
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT20 CH1 2412TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.39	3.23	34.94	100.46	96.14	74.00	-22.14	Peak
2	4824.00	32.09	4.69	35.08	49.85	51.55	74.00	22.45	Peak
3	7236.00	36.63	6.03	33.42	38.96	48.20	74.00	25.80	Peak
4	9653.00	38.89	7.74	35.34	33.04	44.33	74.00	29.67	Peak
5	12067.00	39.39	8.29	32.55	30.46	45.59	74.00	28.41	Peak
6	14464.00	41.23	10.19	33.47	30.20	48.15	74.00	25.85	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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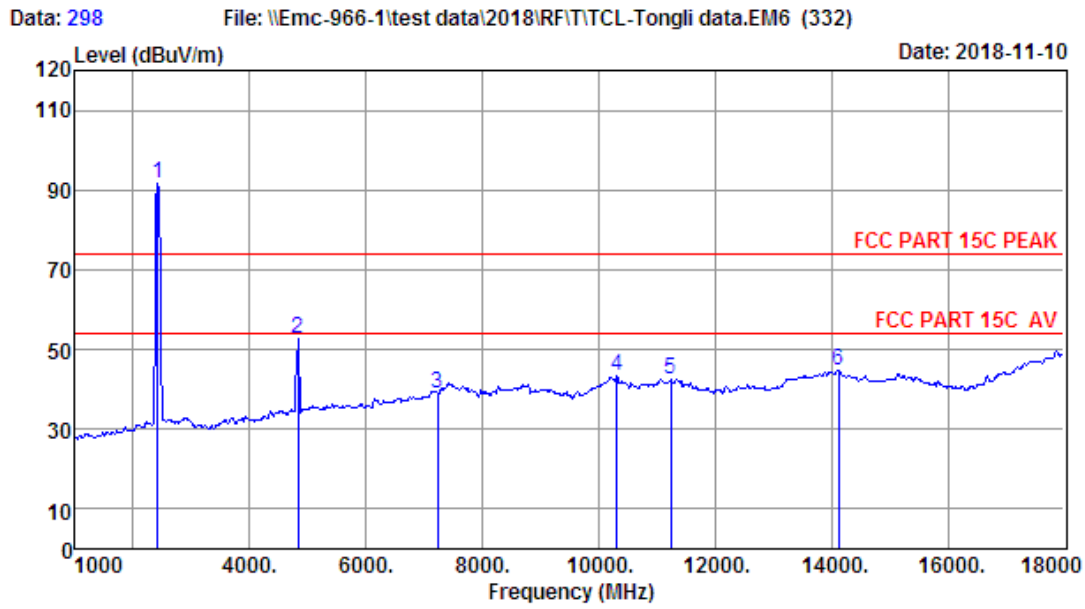


```
Site no.      : 1# 966 Chamber              Data no.  : 298
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer      : Viking
EUT           : JMDD Module
Power         : AC 120V/60Hz
M/N           : JMDD
Test Mode     : IEEE 802.11n HT20 CH1 2412TX
                Antenna 1+2
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2412.00	27.39	3.23	34.94	96.05	91.73	74.00	-17.73	Peak
2	4824.00	32.09	4.69	35.08	50.78	52.48	74.00	21.52	Peak
3	7236.00	36.63	6.03	33.42	29.91	39.15	74.00	34.85	Peak
4	10316.00	39.23	10.20	34.34	28.21	43.30	74.00	30.70	Peak
5	11234.00	39.99	8.40	33.03	26.98	42.34	74.00	31.66	Peak
6	14124.00	41.58	10.14	33.04	26.17	44.85	74.00	29.15	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
         2. Margin= Limit - Emission Level.
         3. The emission levels that are 20dB below the official
            limit are not reported.
```

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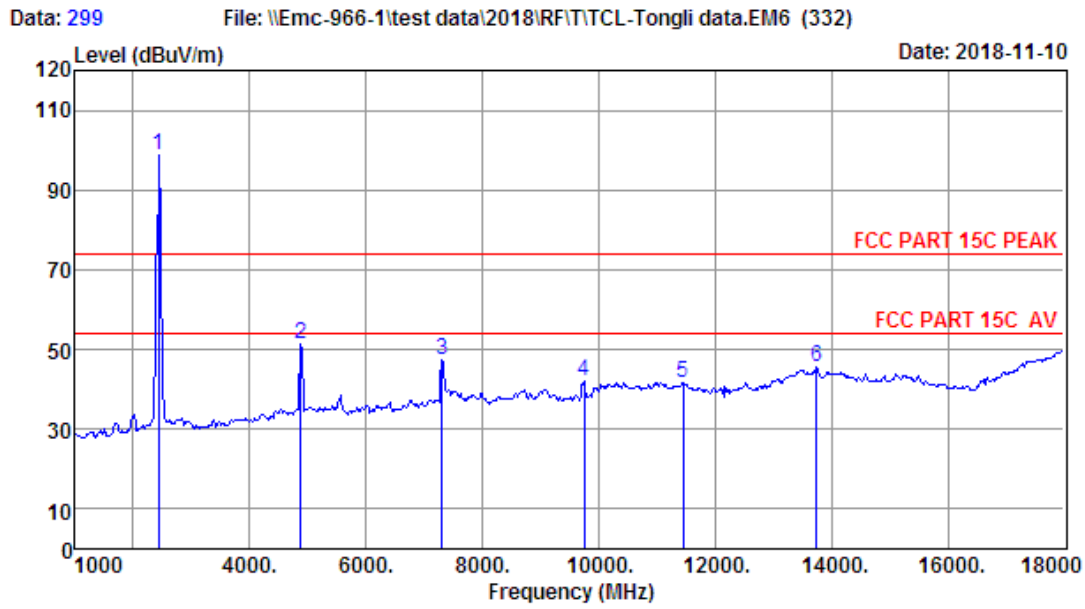

Site no. : 1# 966 Chamber Data no. : 299
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT20 CH6 2437TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	103.25	98.92	74.00	-24.92	Peak
2	4874.00	32.18	4.73	35.14	49.80	51.57	74.00	22.43	Peak
3	7311.00	36.78	6.09	33.31	37.81	47.37	74.00	26.63	Peak
4	9755.00	38.96	7.96	35.14	30.31	42.09	74.00	31.91	Peak
5	11455.00	40.08	8.28	32.62	25.96	41.70	74.00	32.30	Peak
6	13750.00	41.50	10.01	32.69	26.83	45.65	74.00	28.35	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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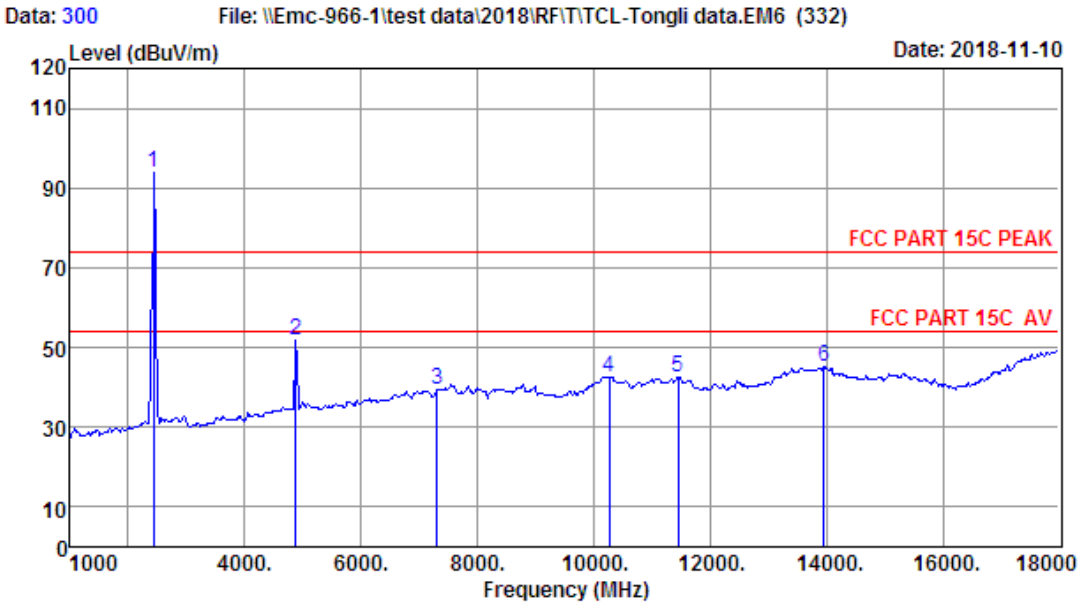

Site no. : 1# 966 Chamber Data no. : 300
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT20 CH6 2437TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	98.25	93.92	74.00	-19.92	Peak
2	4874.00	32.18	4.73	35.14	50.05	51.82	74.00	22.18	Peak
3	7311.00	36.78	6.09	33.31	29.66	39.22	74.00	34.78	Peak
4	10265.00	39.21	9.98	34.39	27.92	42.72	74.00	31.28	Peak
5	11455.00	40.08	8.28	32.62	26.84	42.58	74.00	31.42	Peak
6	13954.00	41.66	10.12	32.84	26.07	45.01	74.00	28.99	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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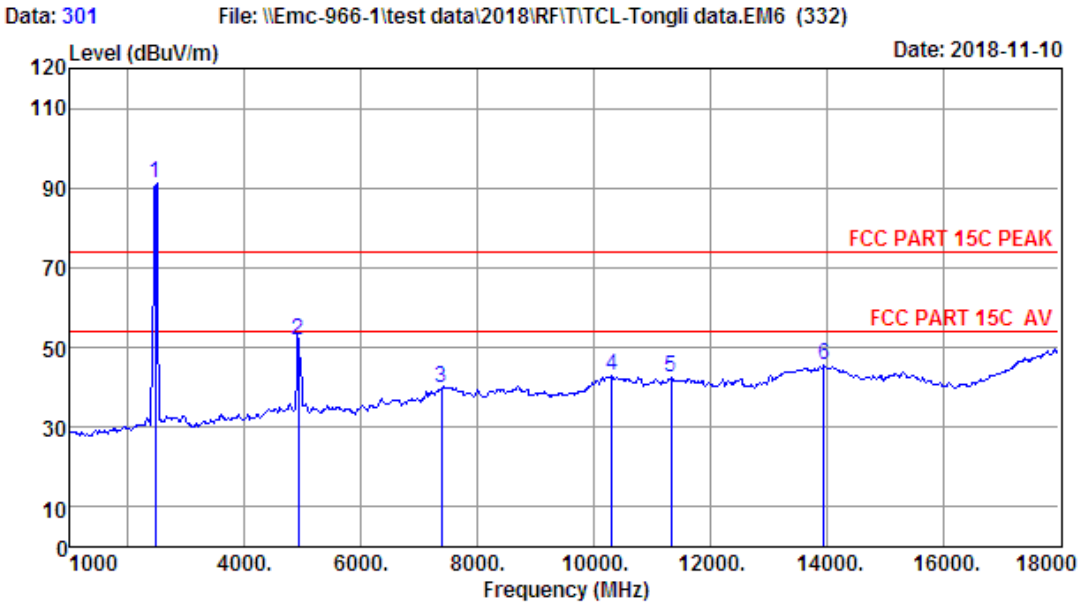

Site no. : 1# 966 Chamber Data no. : 301
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT20 CH11 2462TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.52	3.27	35.14	95.50	91.15	74.00	-17.15	Peak
2	4924.00	32.28	4.77	35.20	49.85	51.70	74.00	22.30	Peak
3	7386.00	36.97	6.12	33.17	29.89	39.81	74.00	34.19	Peak
4	10316.00	39.23	10.20	34.34	27.75	42.84	74.00	31.16	Peak
5	11336.00	40.03	8.32	32.84	26.91	42.42	74.00	31.58	Peak
6	13954.00	41.66	10.12	32.84	26.69	45.63	74.00	28.37	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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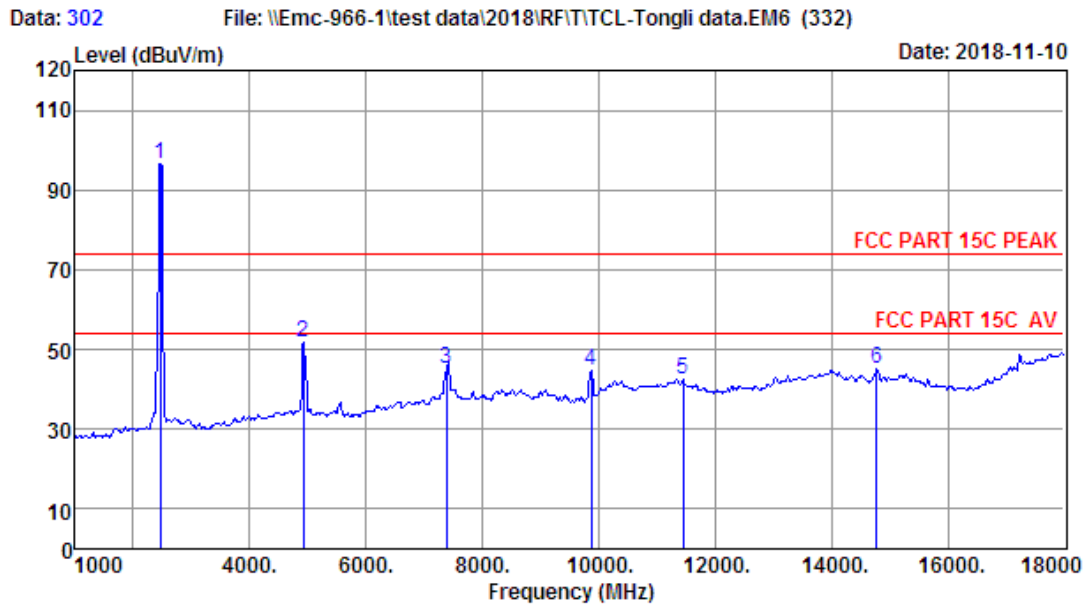

Site no. : 1# 966 Chamber Data no. : 302
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT20 CH11 2462TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.00	27.52	3.27	35.14	101.09	96.74	74.00	-22.74	Peak
2	4924.00	32.28	4.77	35.20	49.83	51.68	74.00	22.32	Peak
3	7386.00	36.97	6.12	33.17	35.28	45.20	74.00	28.80	Peak
4	9874.00	39.03	8.32	34.90	32.06	44.51	74.00	29.49	Peak
5	11455.00	40.08	8.28	32.62	26.74	42.48	74.00	31.52	Peak
6	14770.00	40.72	10.49	33.63	27.76	45.34	74.00	28.66	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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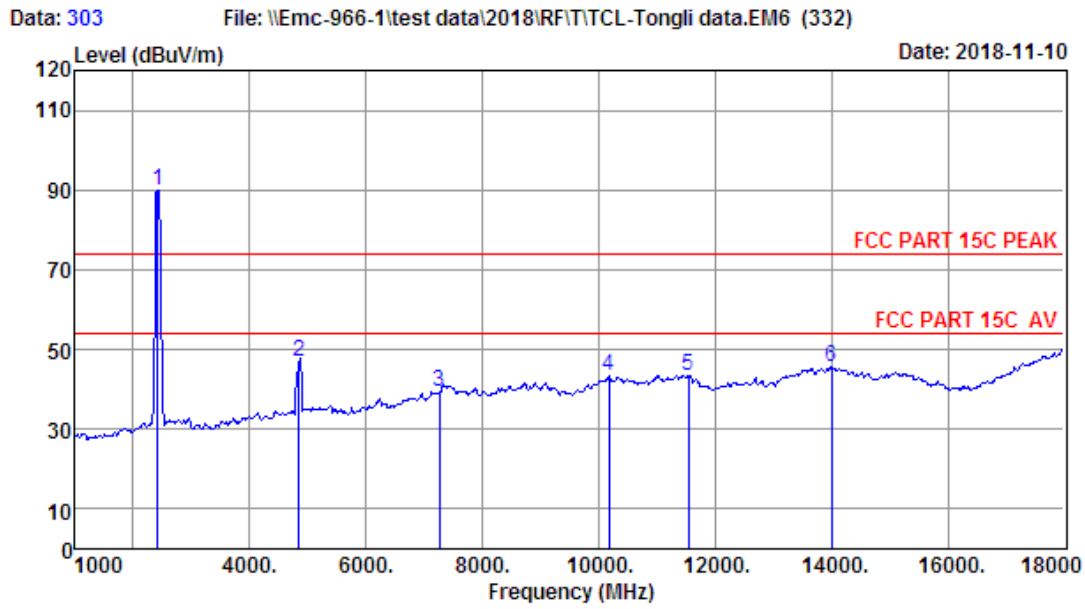

Site no. : 1# 966 Chamber Data no. : 303
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT40 CH3 2422TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2422.00	27.43	3.24	35.00	94.17	89.84	74.00	-15.84	Peak
2	4844.00	32.12	4.70	35.10	45.37	47.09	74.00	26.91	Peak
3	7266.00	36.71	6.05	33.36	29.88	39.28	74.00	34.72	Peak
4	10180.00	39.17	9.62	34.47	29.28	43.60	74.00	30.40	Peak
5	11540.00	40.05	8.27	32.49	27.72	43.55	74.00	30.45	Peak
6	14005.00	41.70	10.13	32.88	26.74	45.69	74.00	28.31	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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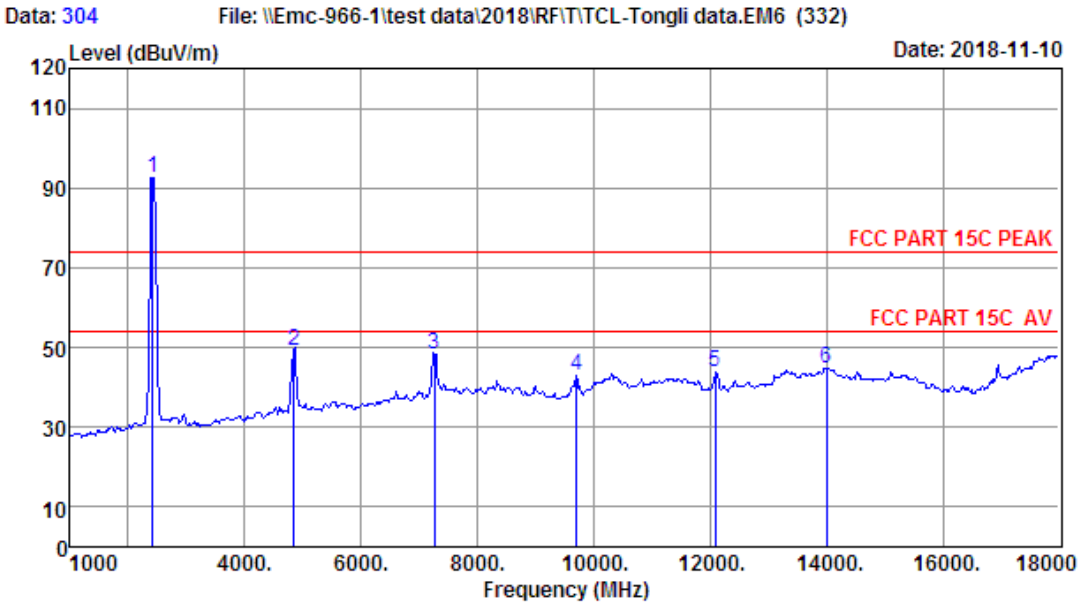

Site no. : 1# 966 Chamber Data no. : 304
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT40 CH3 2422TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2422.00	27.43	3.24	35.00	97.02	92.69	74.00	-18.69	Peak
2	4844.00	32.12	4.70	35.10	47.49	49.21	74.00	24.79	Peak
3	7266.00	36.71	6.05	33.36	39.01	48.41	74.00	25.59	Peak
4	9704.00	38.92	7.85	35.24	31.63	43.16	74.00	30.84	Peak
5	12084.00	39.38	8.30	32.55	28.75	43.88	74.00	30.12	Peak
6	14005.00	41.70	10.13	32.88	25.81	44.76	74.00	29.24	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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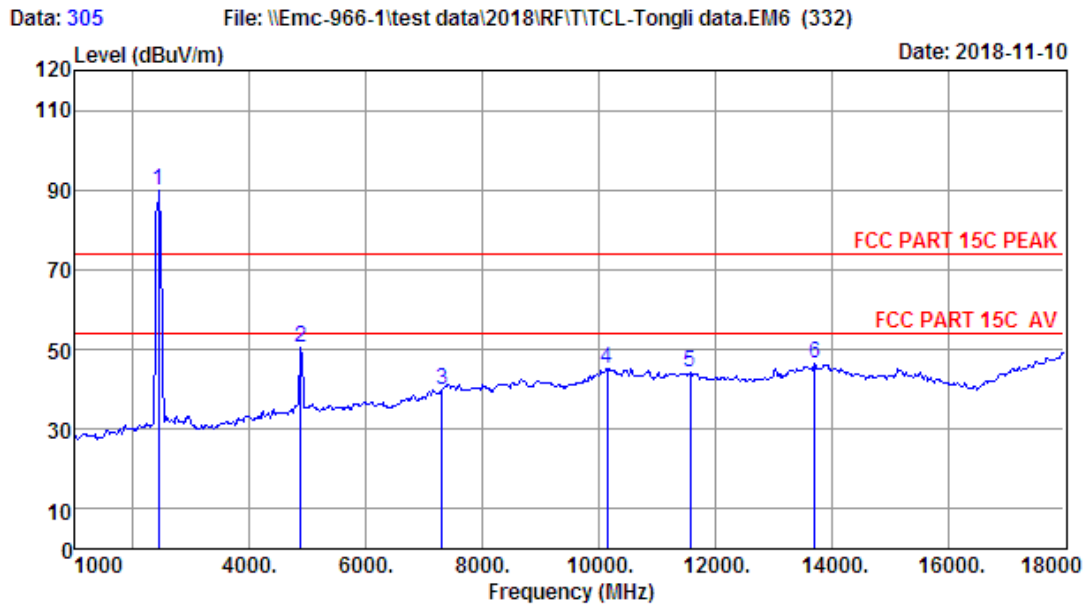

Site no. : 1# 966 Chamber Data no. : 305
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT40 CH6 2437TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	94.44	90.11	74.00	-16.11	Peak
2	4874.00	32.18	4.73	35.14	48.64	50.41	74.00	23.59	Peak
3	7311.00	36.78	6.09	33.31	30.37	39.93	74.00	34.07	Peak
4	10146.00	39.16	9.48	34.51	31.20	45.33	74.00	28.67	Peak
5	11574.00	40.00	8.26	32.42	28.49	44.33	74.00	29.67	Peak
6	13716.00	41.47	9.96	32.66	27.76	46.53	74.00	27.47	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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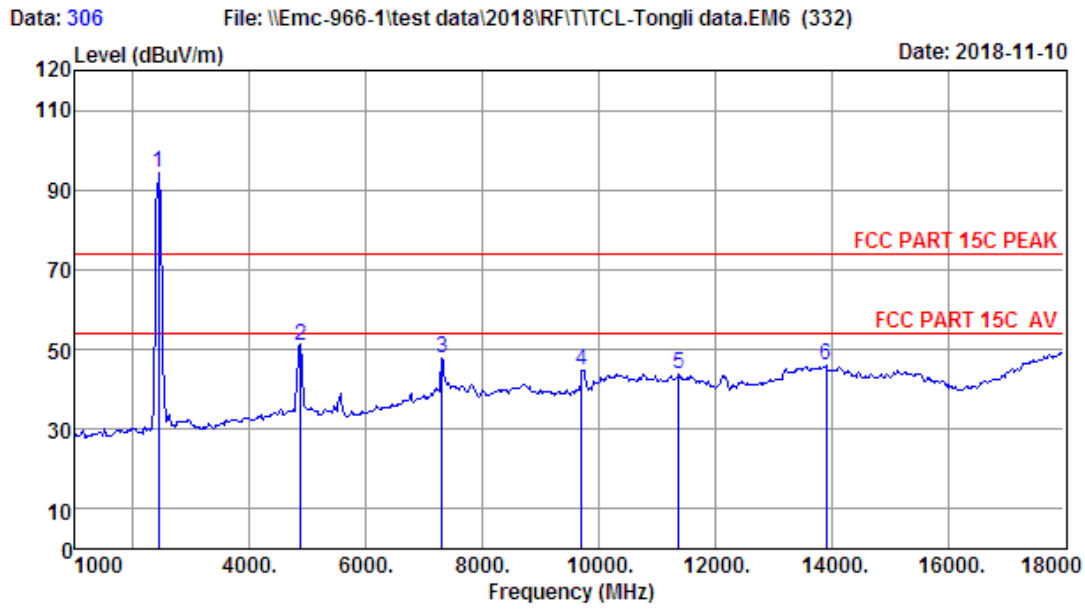

Site no. : 1# 966 Chamber Data no. : 306
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT40 CH6 2437TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2437.00	27.48	3.26	35.07	98.82	94.49	74.00	-20.49	Peak
2	4874.00	32.18	4.73	35.14	48.97	50.74	74.00	23.26	Peak
3	7311.00	36.78	6.09	33.31	38.21	47.77	74.00	26.23	Peak
4	9704.00	38.92	7.85	35.24	33.20	44.73	74.00	29.27	Peak
5	11370.00	40.05	8.30	32.78	28.13	43.70	74.00	30.30	Peak
6	13903.00	41.62	10.11	32.81	27.05	45.97	74.00	28.03	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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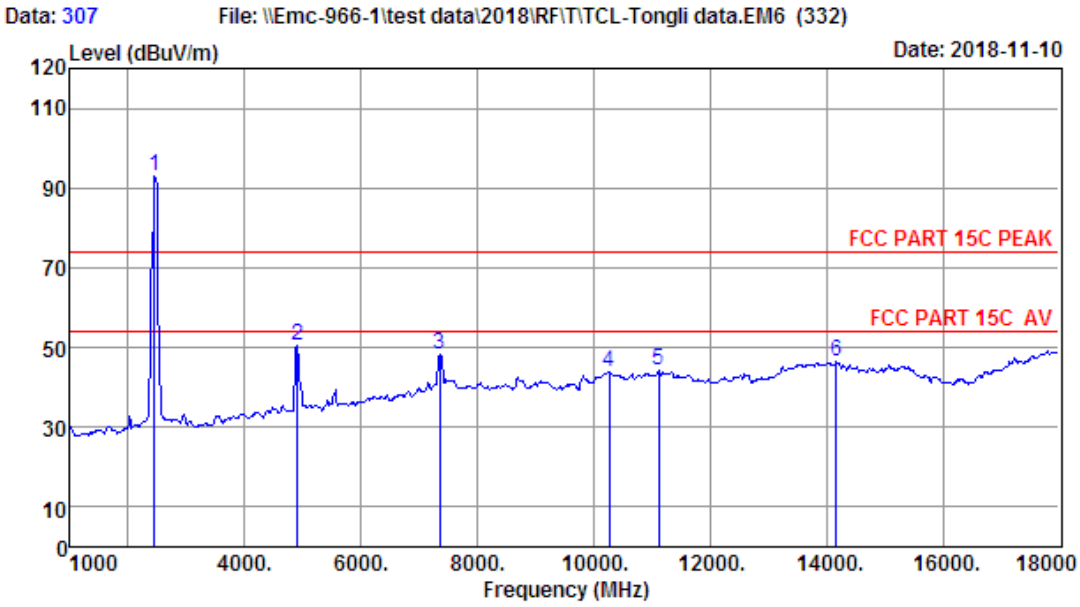

Site no. : 1# 966 Chamber Data no. : 307
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT40 CH9 2452TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2445.00	27.48	3.26	35.07	97.52	93.19	74.00	-19.19	Peak
2	4910.00	32.24	4.76	35.18	48.44	50.26	74.00	23.74	Peak
3	7356.00	36.90	6.11	33.22	38.46	48.25	74.00	25.75	Peak
4	10265.00	39.21	9.98	34.39	29.10	43.90	74.00	30.10	Peak
5	11115.00	39.95	8.49	33.23	29.12	44.33	74.00	29.67	Peak
6	14175.00	41.53	10.15	33.11	27.79	46.36	74.00	27.64	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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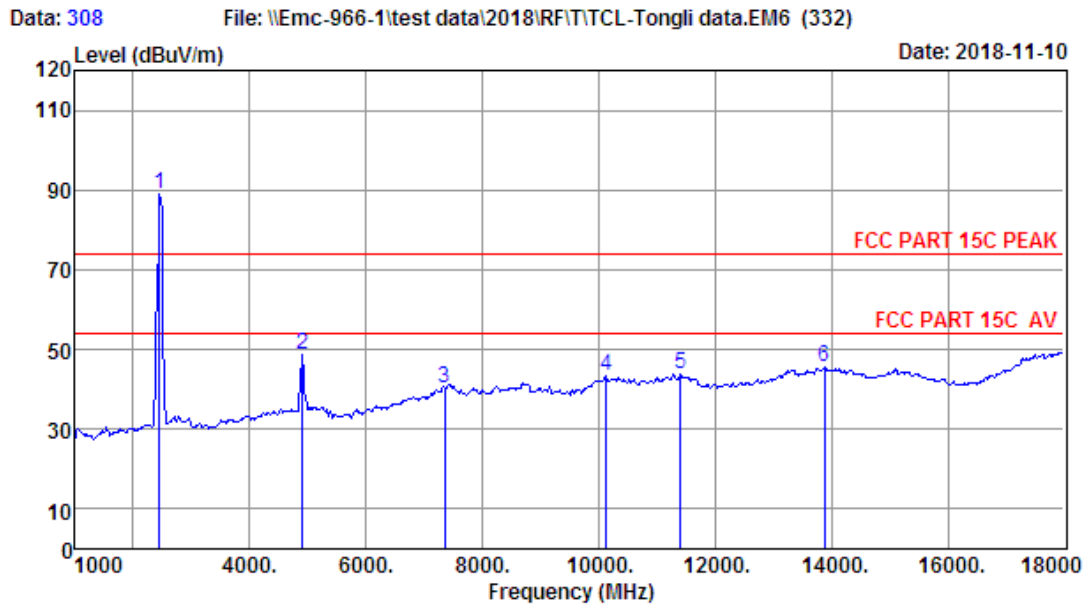


Site no. : 1# 966 Chamber Data no. : 308
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT40 CH9 2452TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2452.00	27.48	3.26	35.07	93.22	88.89	74.00	-14.89	Peak
2	4904.00	32.24	4.76	35.18	46.73	48.55	74.00	25.45	Peak
3	7356.00	36.90	6.11	33.22	30.72	40.51	74.00	33.49	Peak
4	10129.00	39.15	9.40	34.53	29.24	43.26	74.00	30.74	Peak
5	11404.00	40.06	8.29	32.71	28.06	43.70	74.00	30.30	Peak
6	13886.00	41.61	10.11	32.80	26.52	45.44	74.00	28.56	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

18000MHz – 25000MHz

Pass

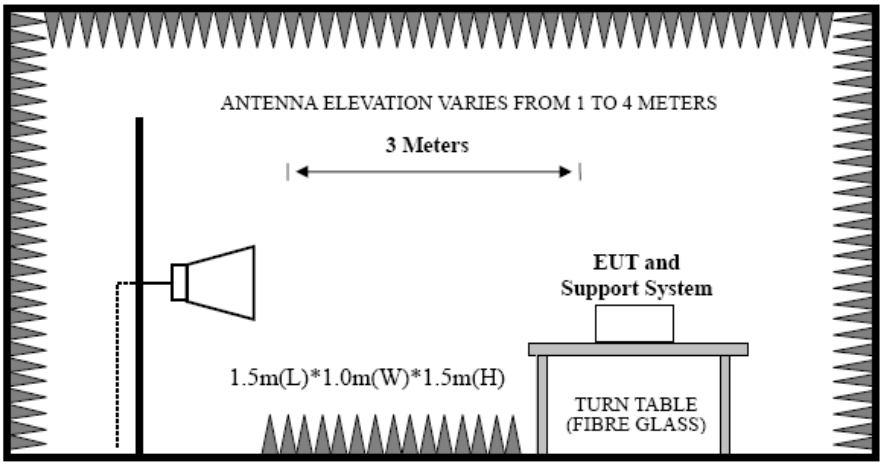
Note: The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

5 BAND EDGE COMPLIANCE TEST

5.1 Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits

5.2 Block Diagram of Test setup



5.3 Test Procedure

EUT was placed on a turn table, which is 1.5 m high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of emissions
Peak : RBW = 1MHz, VBW = 1MHz, Detector=PEAK detector, Sweep time = auto.
AV : RBW = 1MHz, VBW = 10Hz, Detector=PEAK detector, Sweep time = auto.

5.4 Test Result

Pass (The testing data was attached in the next pages.)

Note: 1、For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
2、The frequency 2412 MHz 、2422MHz、2452MHz and 2462 MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

5.5 Test Data

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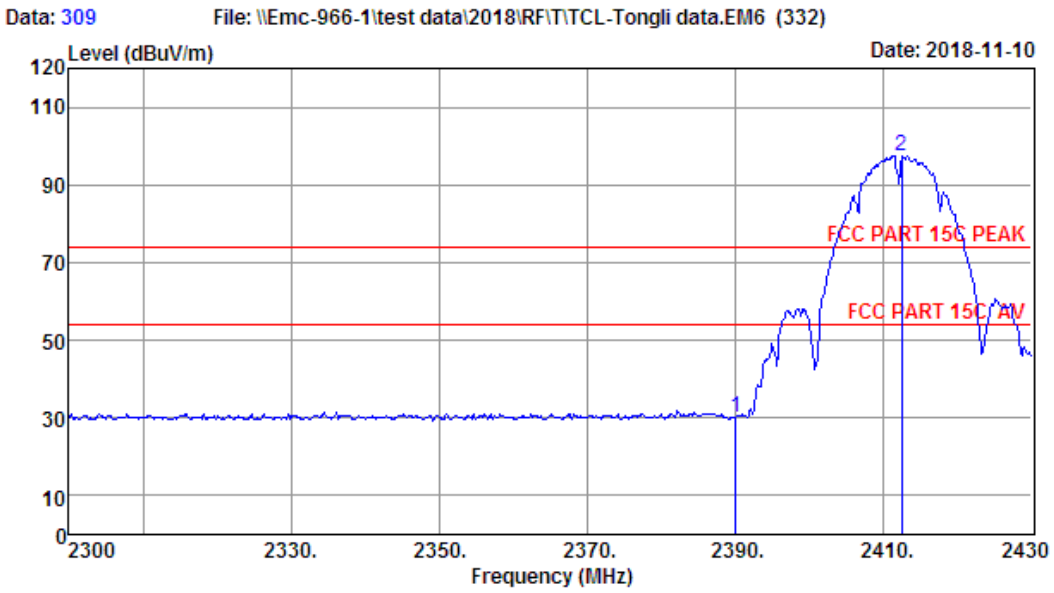


```
Site no.      : 1# 966 Chamber              Data no.  : 309
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer      : Viking
EUT           : JMDD Module
Power         : AC 120V/60Hz
M/N           : JMDD
Test Mode     : IEEE 802.11b CH1 2412TX
                Antenna 1
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.35	3.21	34.87	34.53	30.22	74.00	43.78	Peak
2	2412.45	27.39	3.23	34.94	101.87	97.55	74.00	-23.55	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
         2. Margin= Limit - Emission Level.
         3. The emission levels that are 20dB below the official
            limit are not reported.
```

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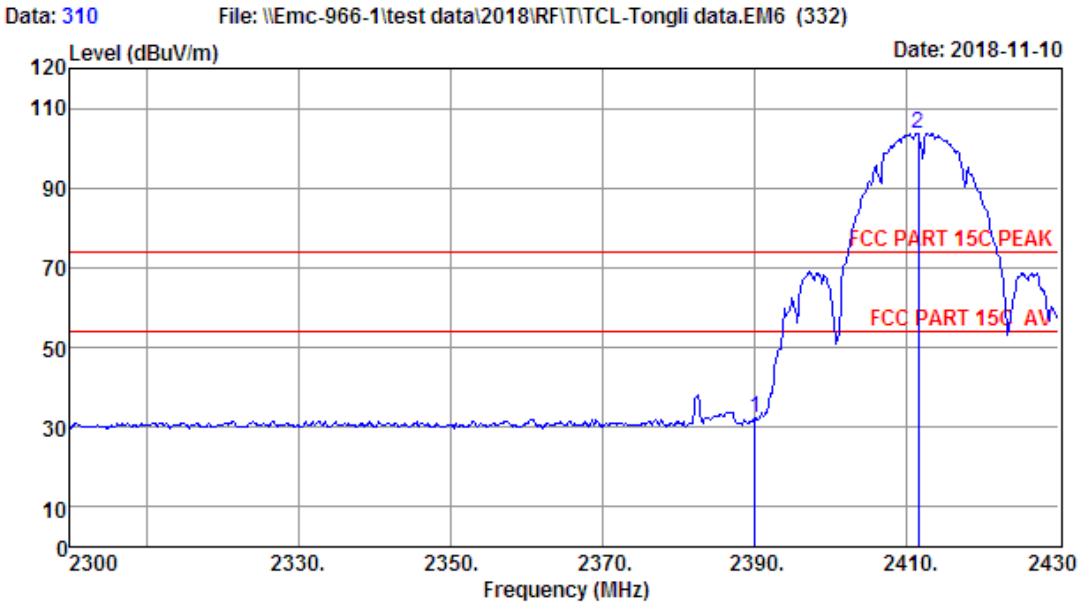

Site no. : 1# 966 Chamber Data no. : 310
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH1 2412TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.35	3.21	34.87	36.79	32.48	74.00	41.52	Peak
2	2411.54	27.39	3.23	34.94	108.15	103.83	74.00	-29.83	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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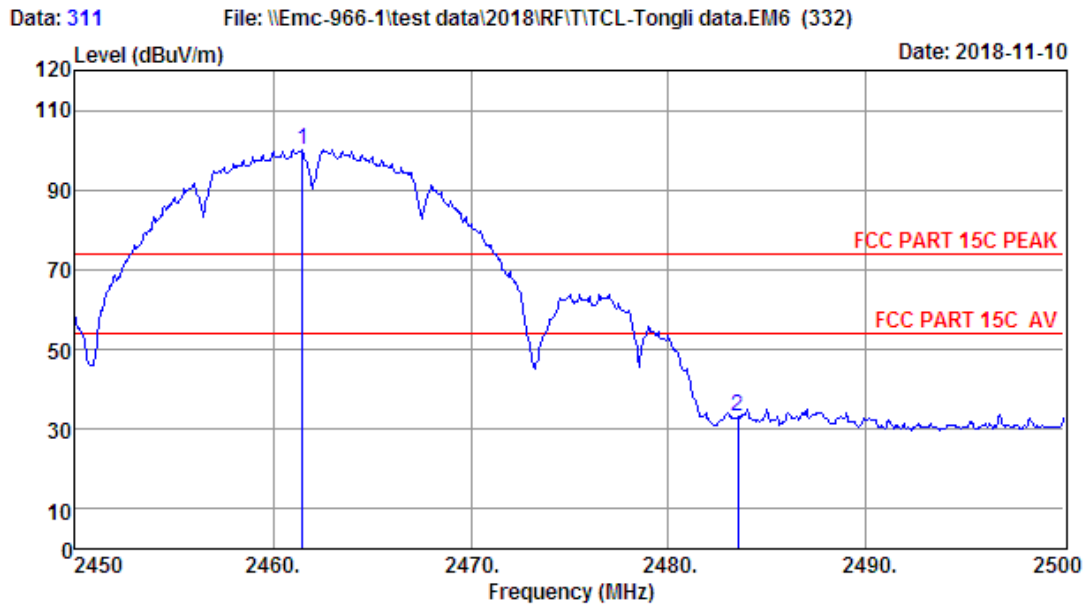

Site no. : 1# 966 Chamber Data no. : 311
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH11 2462TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2461.50	27.52	3.27	35.14	104.53	100.18	74.00	-26.18	Peak
2	2483.50	27.56	3.29	35.21	37.41	33.05	74.00	40.95	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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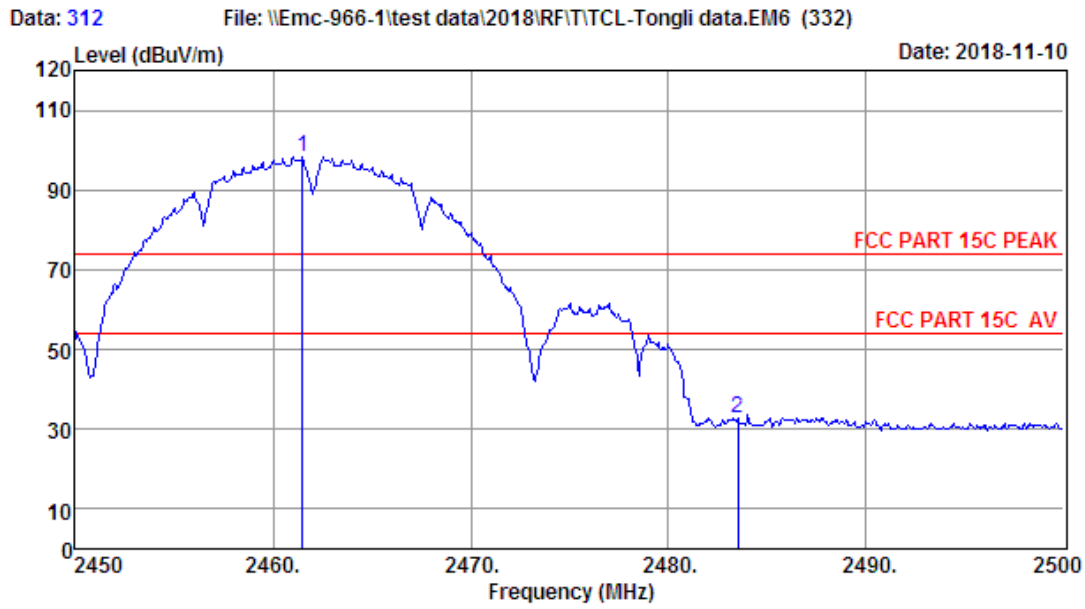

Site no. : 1# 966 Chamber Data no. : 312
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH11 2462TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2461.50	27.52	3.27	35.14	102.61	98.26	74.00	-24.26	Peak
2	2483.50	27.56	3.29	35.21	36.93	32.57	74.00	41.43	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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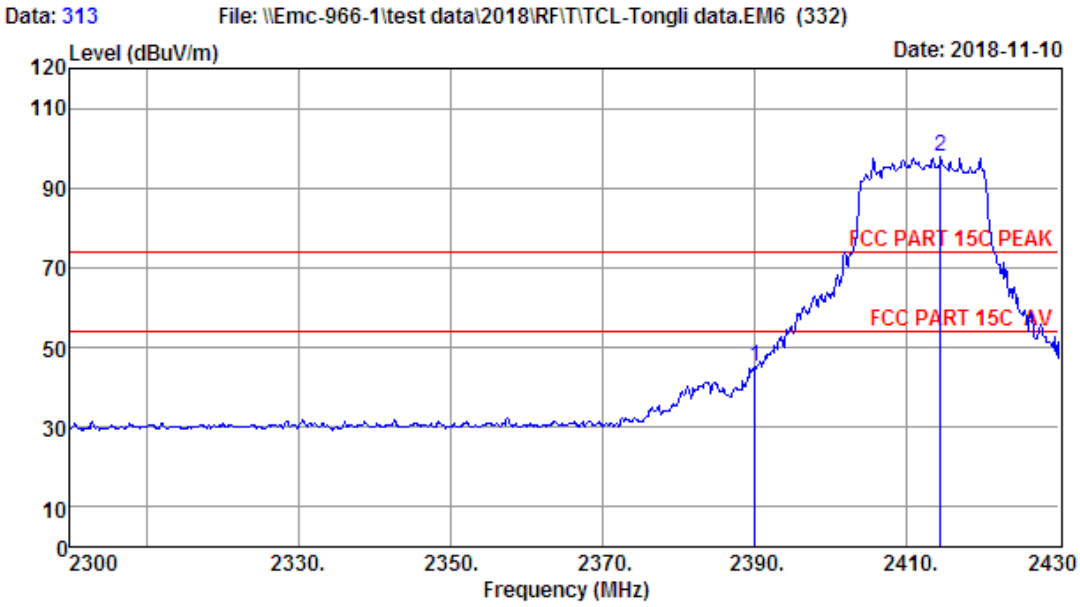

Site no. : 1# 966 Chamber Data no. : 313
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH1 2412TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.35	3.21	34.87	49.46	45.15	74.00	28.85	Peak
2	2414.40	27.39	3.23	34.94	102.09	97.77	74.00	-23.77	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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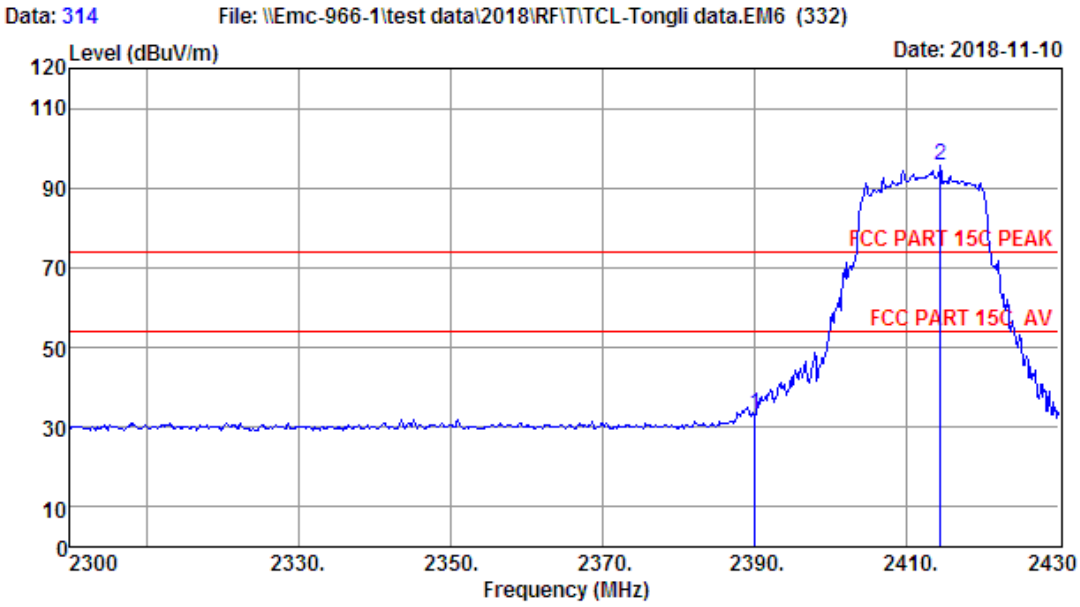

Site no. : 1# 966 Chamber Data no. : 314
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH1 2412TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.35	3.21	34.87	37.57	33.26	74.00	40.74	Peak
2	2414.40	27.39	3.23	34.94	99.81	95.49	74.00	-21.49	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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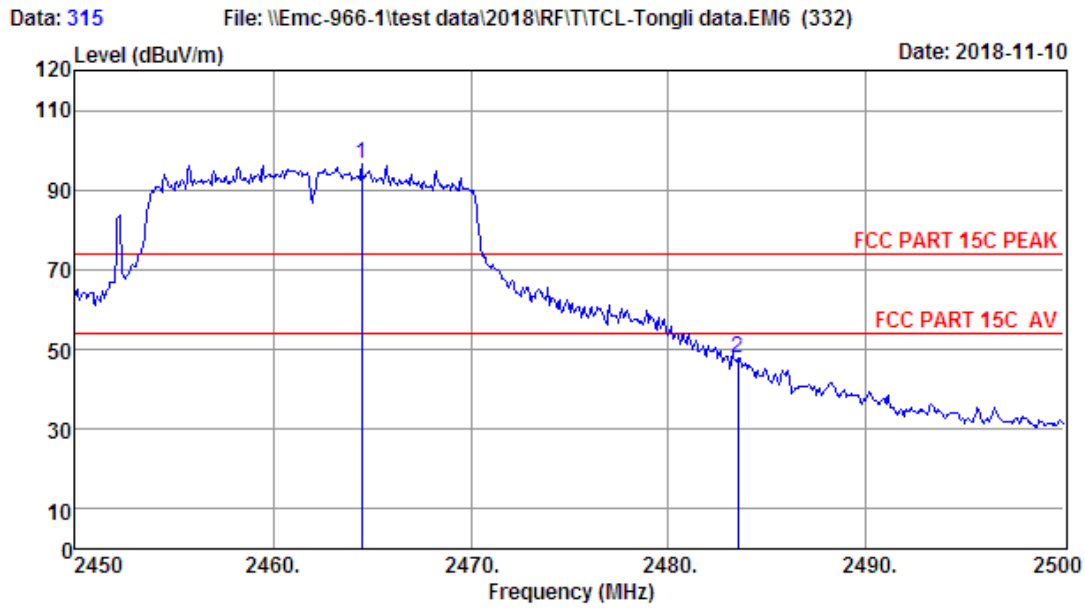

Site no. : 1# 966 Chamber Data no. : 315
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH11 2462TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.50	27.52	3.27	35.14	100.72	96.37	74.00	-22.37	Peak
2	2483.50	27.56	3.29	35.21	52.19	47.83	74.00	26.17	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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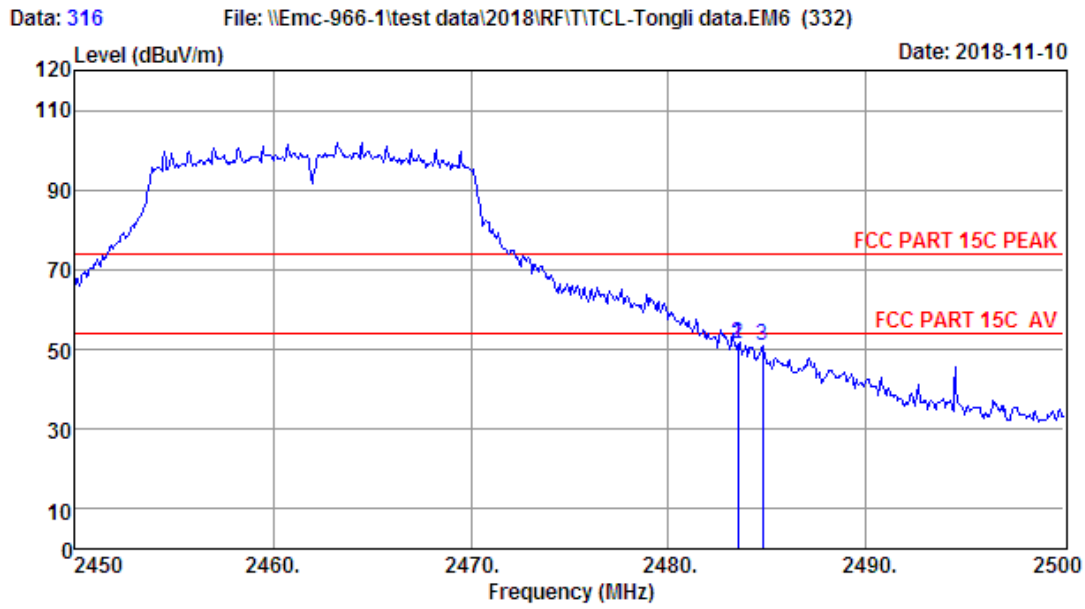

Site no. : 1# 966 Chamber Data no. : 316
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH11 2462TX
Antenna 1

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2483.50	27.56	3.29	35.21	55.67	51.31	74.00	22.69	Peak
2	2483.50	27.56	3.29	35.21	55.67	51.31	74.00	22.69	Peak
3	2484.75	27.56	3.29	35.21	55.18	50.82	74.00	23.18	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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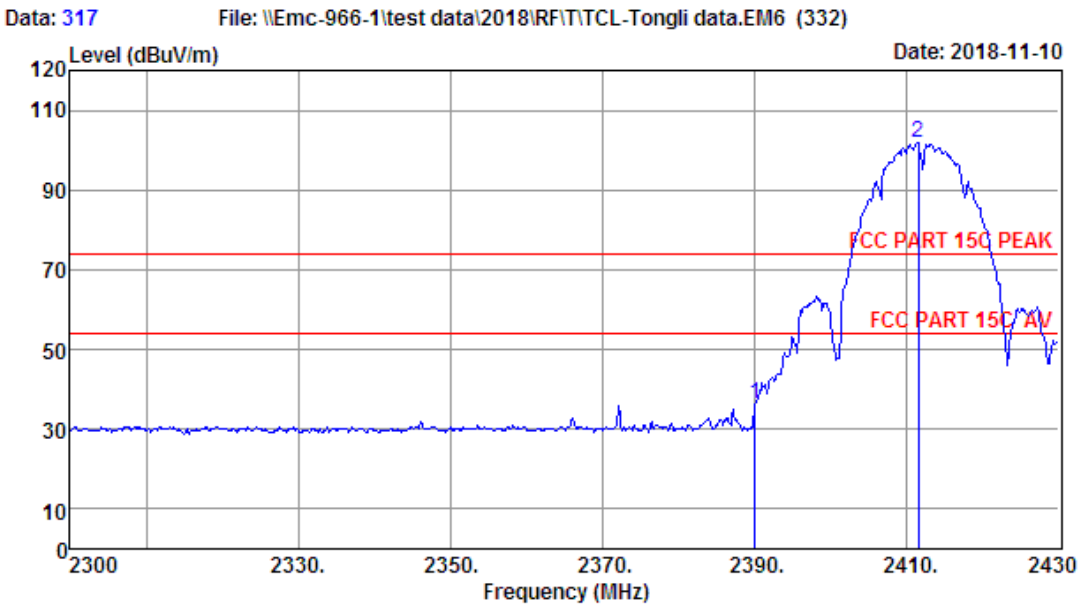

Site no. : 1# 966 Chamber Data no. : 317
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH1 2412TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.35	3.21	34.87	40.62	36.31	74.00	37.69	Peak
2	2411.54	27.39	3.23	34.94	106.09	101.77	74.00	-27.77	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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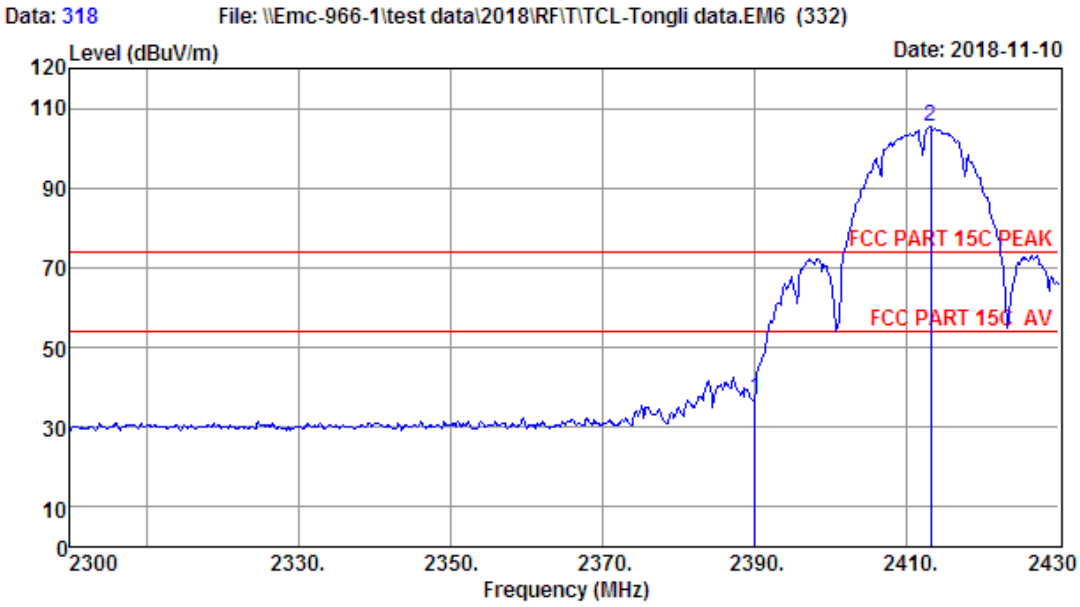

Site no. : 1# 966 Chamber Data no. : 318
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH1 2412TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.35	3.21	34.87	41.35	37.04	74.00	36.96	Peak
2	2413.10	27.39	3.23	34.94	109.78	105.46	74.00	-31.46	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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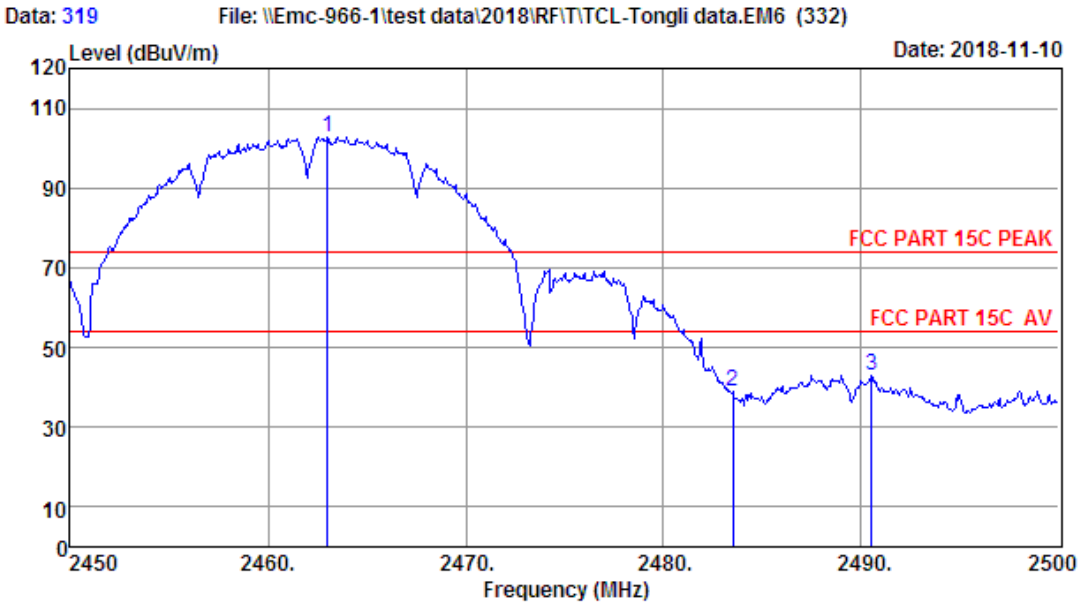

Site no. : 1# 966 Chamber Data no. : 319
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH11 2462TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2463.00	27.52	3.27	35.14	107.23	102.88	74.00	-28.88	Peak
2	2483.50	27.56	3.29	35.21	43.13	38.77	74.00	35.23	Peak
3	2490.50	27.60	3.30	35.27	47.45	43.08	74.00	30.92	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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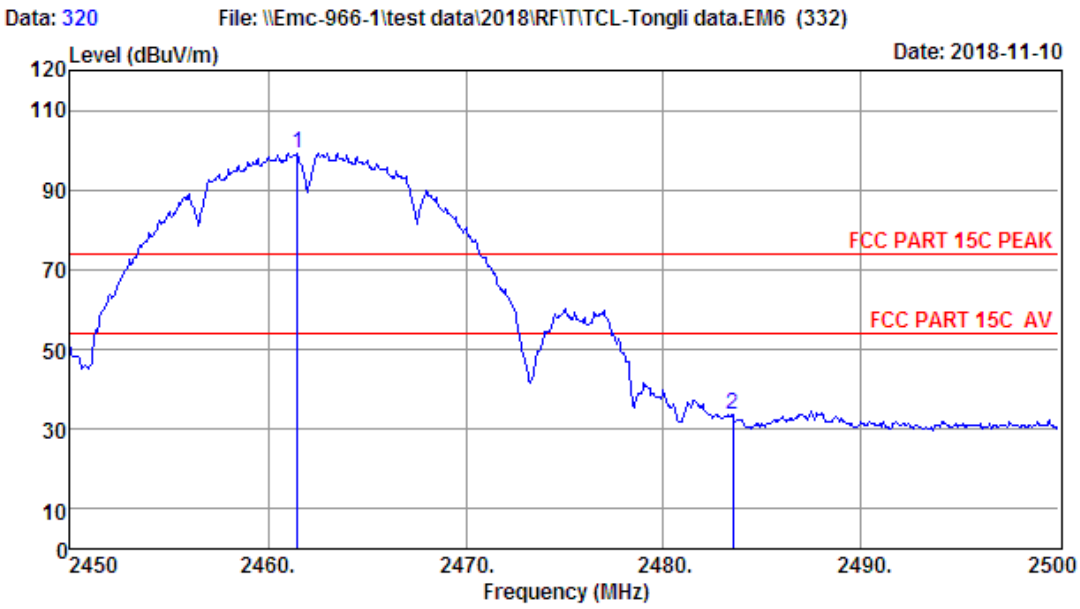

Site no. : 1# 966 Chamber Data no. : 320
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11b CH11 2462TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2461.50	27.52	3.27	35.14	103.71	99.36	74.00	-25.36	Peak
2	2483.50	27.56	3.29	35.21	38.14	33.78	74.00	40.22	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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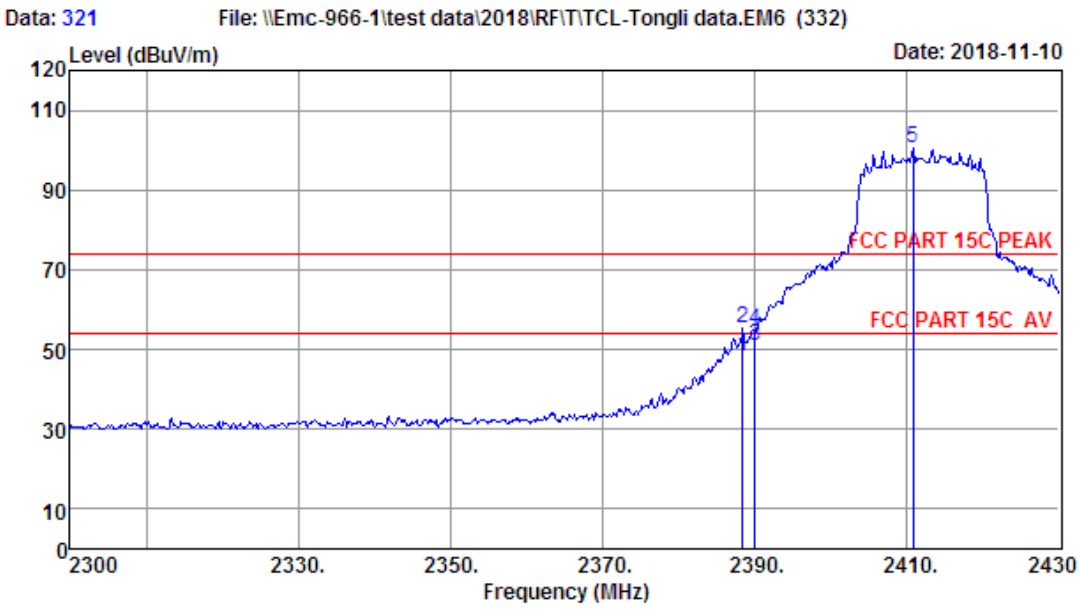

Site no. : 1# 966 Chamber Data no. : 321
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH1 2412TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2388.40	27.35	3.21	34.87	52.49	48.18	54.00	5.82	Average
2	2388.40	27.35	3.21	34.87	59.49	55.18	74.00	18.82	Peak
3	2390.00	27.35	3.21	34.87	55.22	50.91	54.00	3.09	Average
4	2390.00	27.35	3.21	34.87	59.22	54.91	74.00	19.09	Peak
5	2410.76	27.39	3.23	34.94	104.75	100.43	74.00	-26.43	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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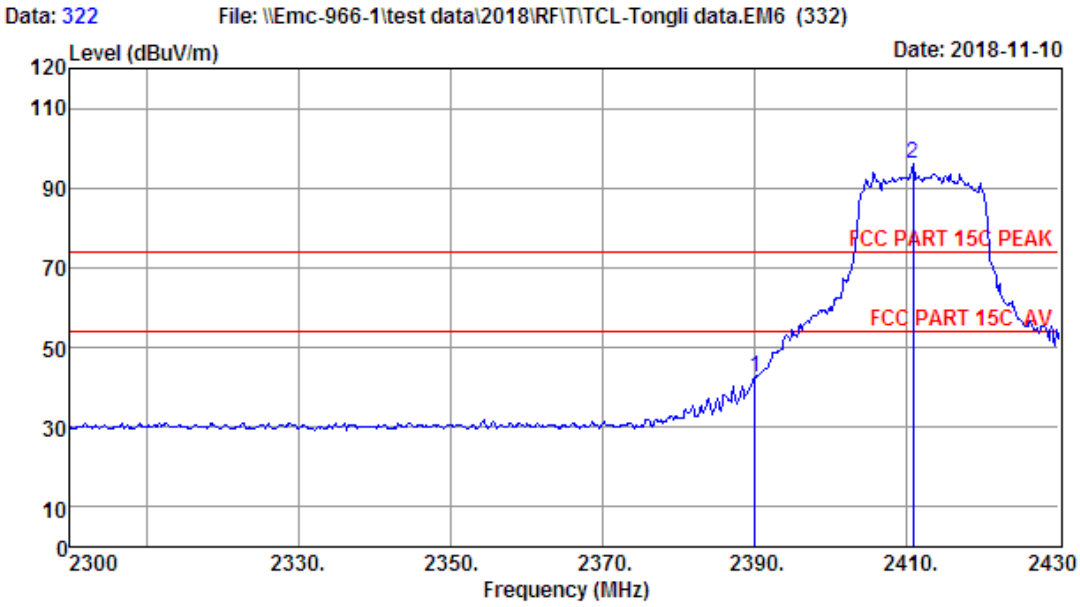

Site no. : 1# 966 Chamber Data no. : 322
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH1 2412TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.35	3.21	34.87	46.93	42.62	74.00	31.38	Peak
2	2410.76	27.39	3.23	34.94	100.48	96.16	74.00	-22.16	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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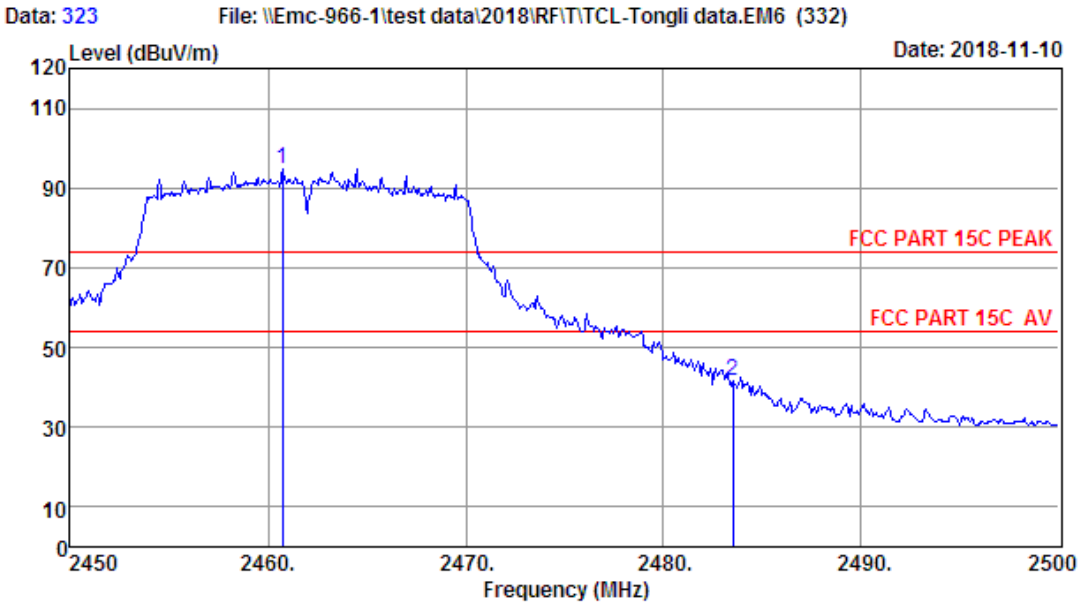

Site no. : 1# 966 Chamber Data no. : 323
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH11 2462TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2460.75	27.52	3.27	35.14	99.17	94.82	74.00	-20.82	Peak
2	2483.50	27.56	3.29	35.21	46.02	41.66	74.00	32.34	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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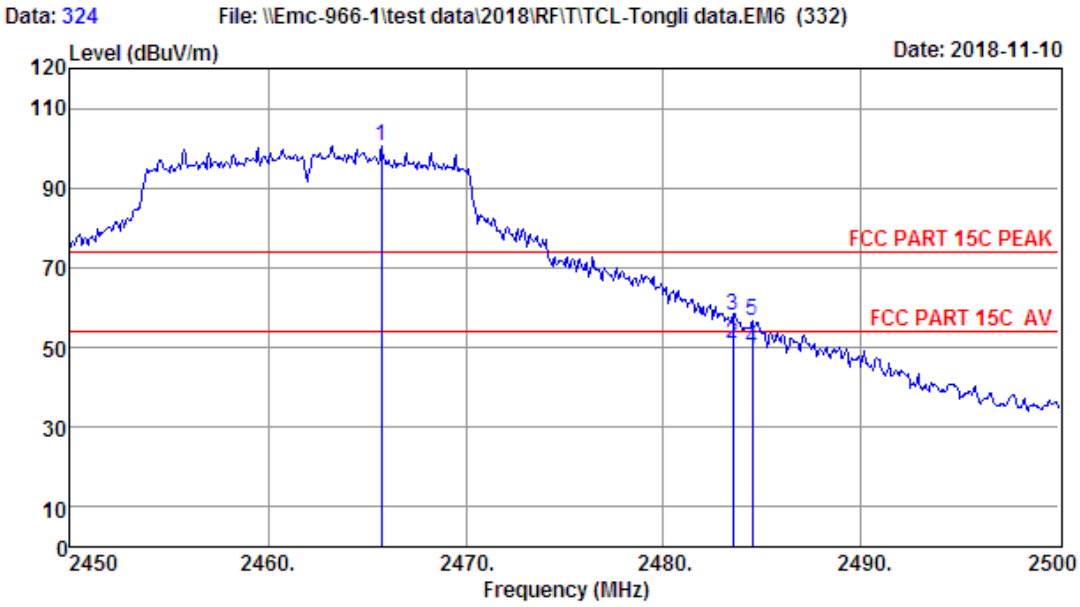

Site no. : 1# 966 Chamber Data no. : 324
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11g CH11 2462TX
Antenna 2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2465.75	27.52	3.27	35.14	104.77	100.42	74.00	-26.42	Peak
2	2483.50	27.56	3.29	35.21	55.33	50.97	54.00	3.03	Average
3	2483.50	27.56	3.29	35.21	62.33	57.97	74.00	16.03	Peak
4	2484.50	27.56	3.29	35.21	54.00	49.64	54.00	4.36	Average
5	2484.50	27.56	3.29	35.21	61.00	56.64	74.00	17.36	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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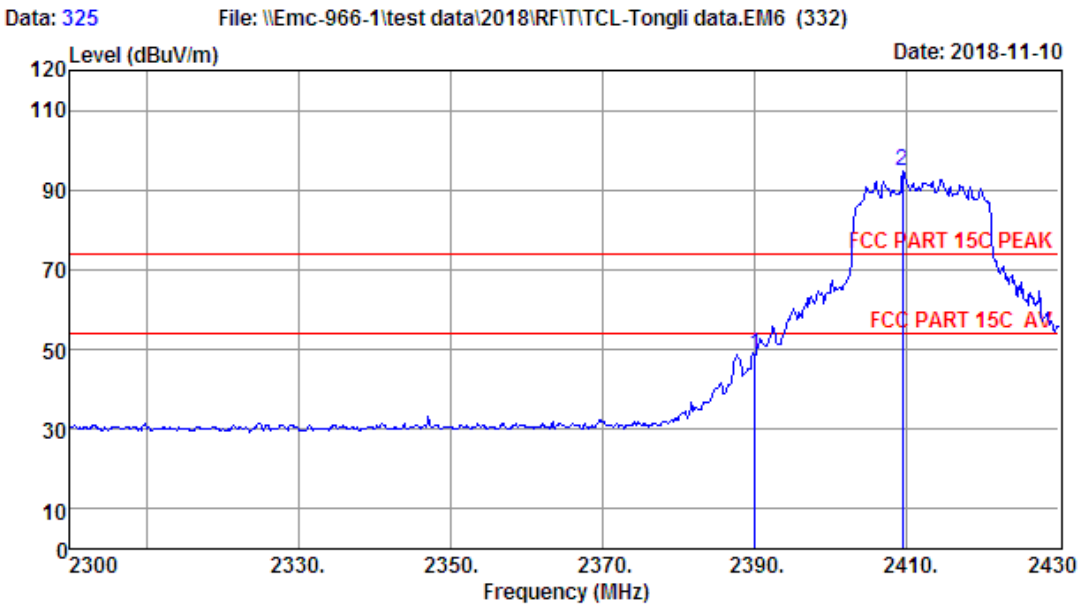

Site no. : 1# 966 Chamber Data no. : 325
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT20 CH1 2412TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.35	3.21	34.87	52.84	48.53	74.00	25.47	Peak
2	2409.46	27.39	3.23	34.94	99.23	94.91	74.00	-20.91	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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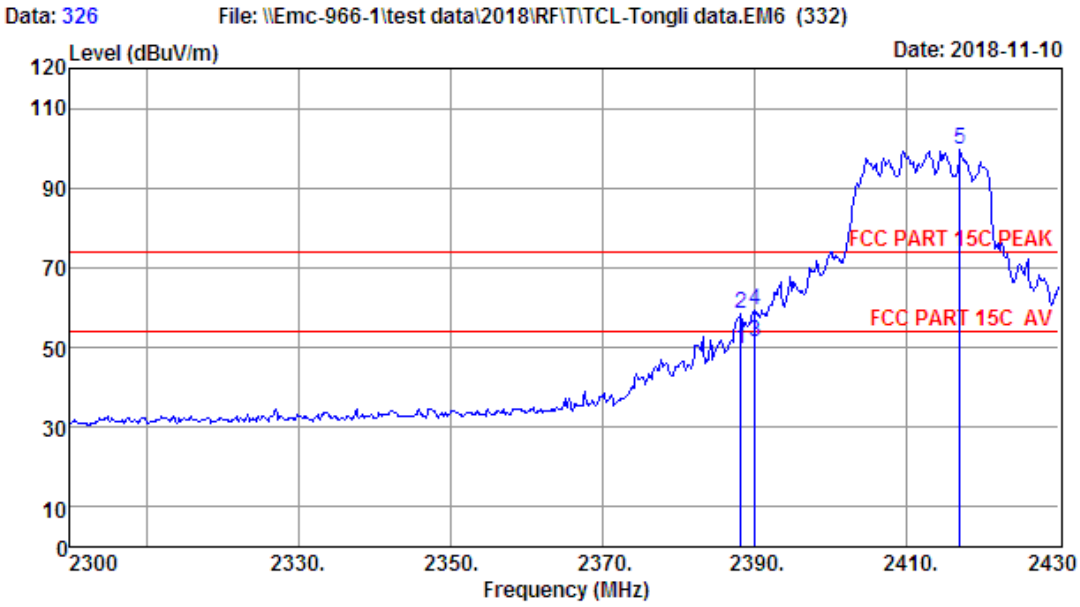


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Site no.      : 1# 966 Chamber              Data no.  : 326
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer      : Viking
EUT           : JMDD Module
Power         : AC 120V/60Hz
M/N           : JMDD
Test Mode     : IEEE 802.11n HT20 CH1 2412TX
                Antenna 1+2
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2388.14	27.35	3.21	34.87	53.90	49.59	54.00	4.41	Average
2	2388.14	27.35	3.21	34.87	62.90	58.59	74.00	15.41	Peak
3	2390.00	27.35	3.21	34.87	55.46	51.15	54.00	2.85	Average
4	2390.00	27.35	3.21	34.87	63.46	59.15	74.00	14.85	Peak
5	2417.00	27.39	3.23	34.94	104.00	99.68	74.00	-25.68	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
         2. Margin= Limit - Emission Level.
         3. The emission levels that are 20dB below the official
            limit are not reported.
```

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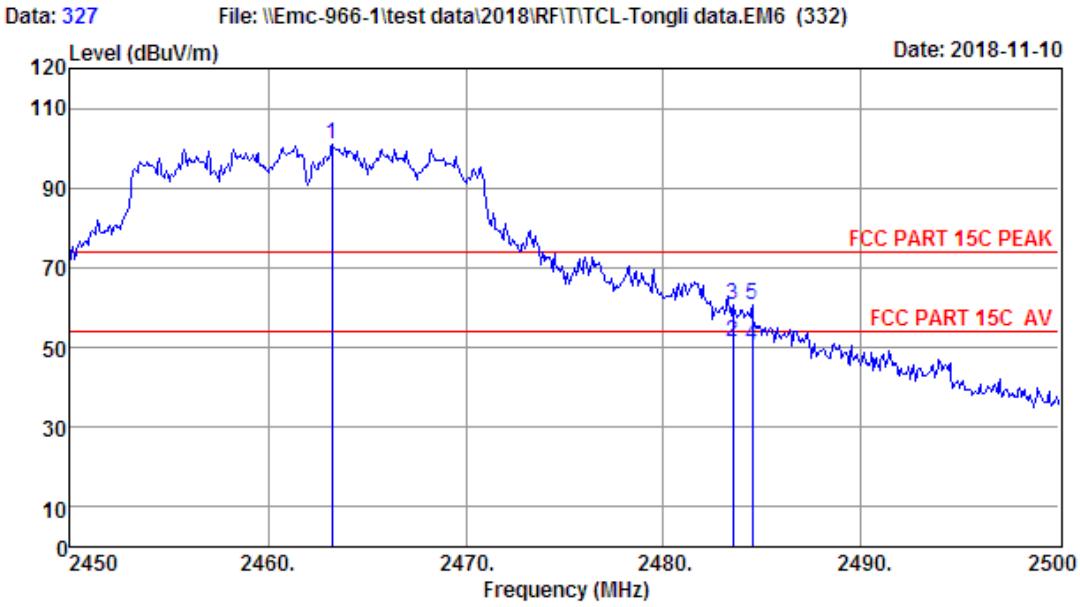

Site no. : 1# 966 Chamber Data no. : 327
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT20 CH11 2462TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2463.25	27.52	3.27	35.14	105.49	101.14	74.00	-27.14	Peak
2	2483.50	27.56	3.29	35.21	55.94	51.58	54.00	2.42	Average
3	2483.50	27.56	3.29	35.21	64.94	60.58	74.00	13.42	Peak
4	2484.50	27.56	3.29	35.21	54.81	50.45	54.00	3.55	Average
5	2484.50	27.56	3.29	35.21	64.81	60.45	74.00	13.55	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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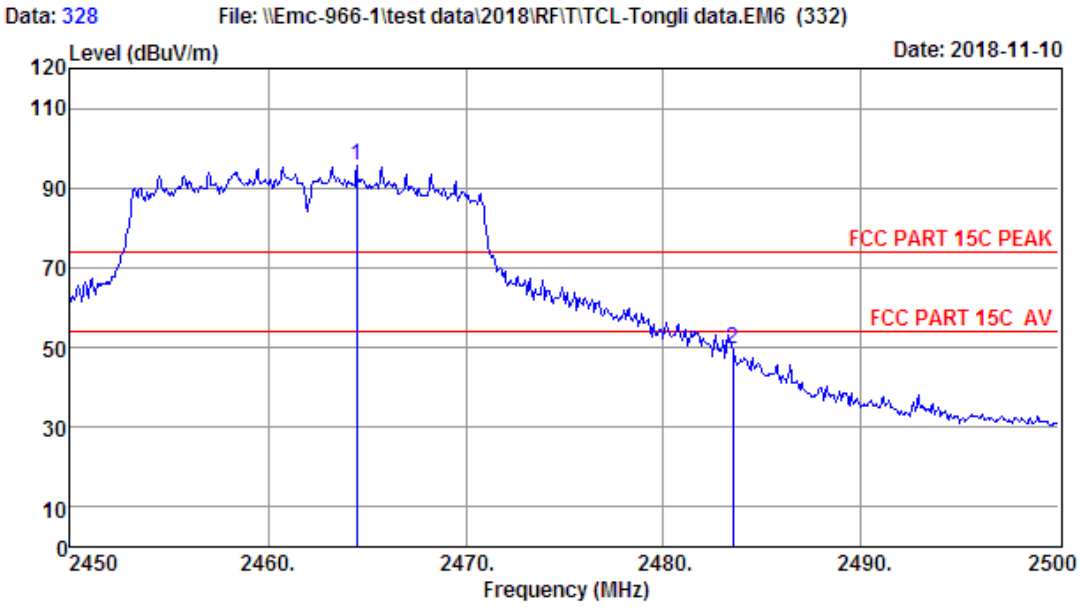

Site no. : 1# 966 Chamber Data no. : 328
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT20 CH11 2462TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.50	27.52	3.27	35.14	99.93	95.58	74.00	-21.58	Peak
2	2483.50	27.56	3.29	35.21	54.01	49.65	74.00	24.35	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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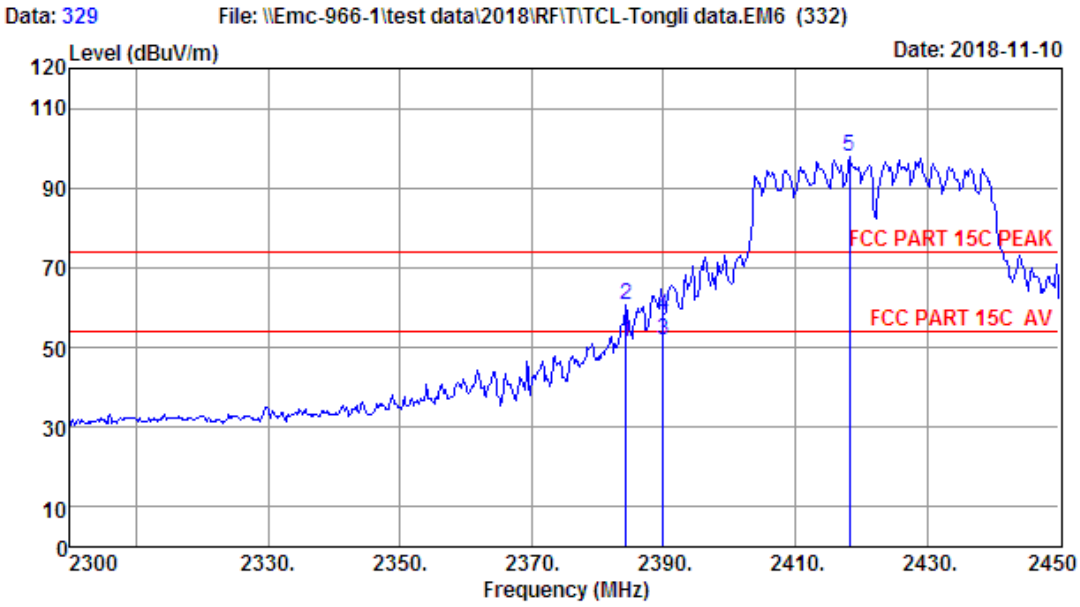

Site no. : 1# 966 Chamber Data no. : 329
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT40 CH3 2422TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2384.30	27.31	3.20	34.87	55.94	51.58	54.00	2.42	Average
2	2384.30	27.31	3.20	34.87	64.94	60.58	74.00	13.42	Peak
3	2390.00	27.35	3.21	34.87	56.24	51.93	54.00	2.07	Average
4	2390.00	27.35	3.21	34.87	62.24	57.93	74.00	16.07	Peak
5	2418.20	27.39	3.23	35.00	102.04	97.66	74.00	-23.66	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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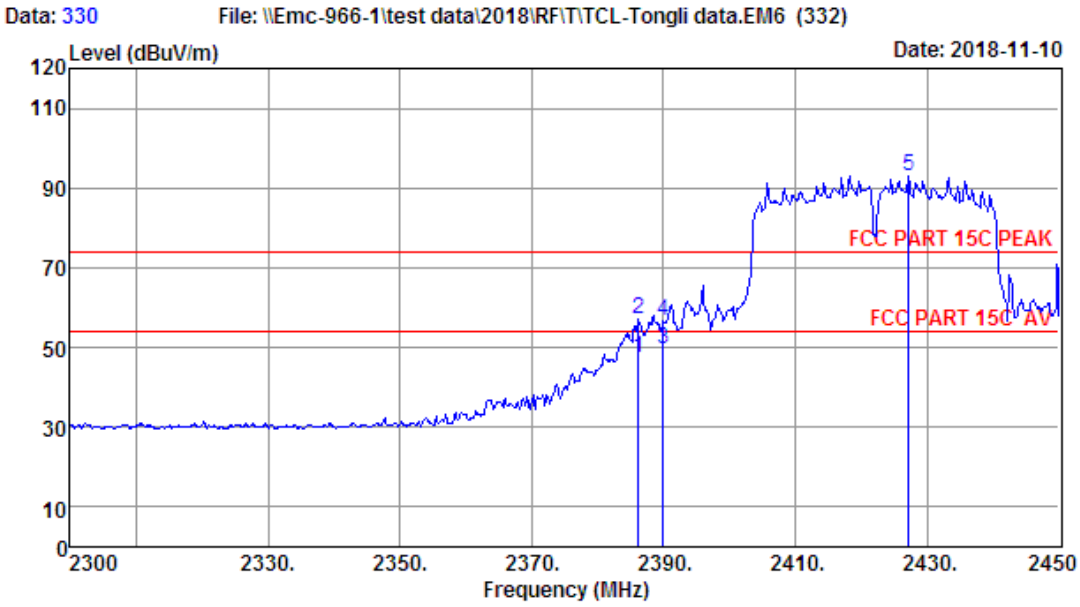

Site no. : 1# 966 Chamber Data no. : 330
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT40 CH3 2422TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2386.25	27.35	3.21	34.87	51.58	47.27	54.00	6.73	Average
2	2386.25	27.35	3.21	34.87	61.58	57.27	74.00	16.73	Peak
3	2390.00	27.35	3.21	34.87	54.03	49.72	54.00	4.28	Average
4	2390.00	27.35	3.21	34.87	61.03	56.72	74.00	17.28	Peak
5	2427.20	27.43	3.24	35.00	97.50	93.17	74.00	-19.17	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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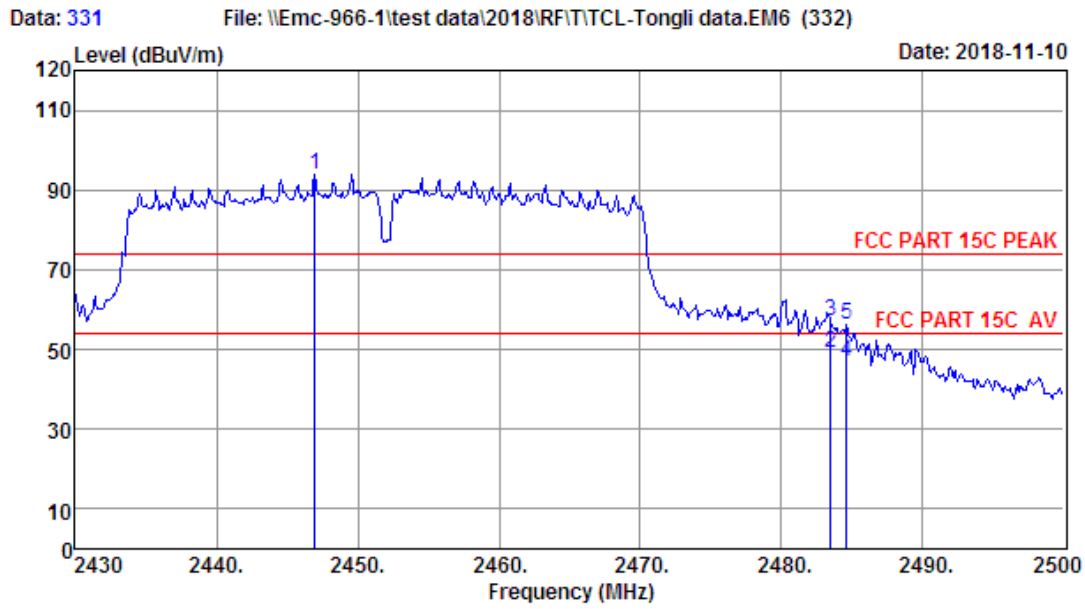

Site no. : 1# 966 Chamber Data no. : 331
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT40 CH9 2452TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2446.94	27.48	3.26	35.07	98.37	94.04	74.00	-20.04	Peak
2	2483.48	27.56	3.29	35.21	53.43	49.07	54.00	4.93	Average
3	2483.48	27.56	3.29	35.21	61.43	57.07	74.00	16.93	Peak
4	2484.60	27.56	3.29	35.21	51.38	47.02	54.00	6.98	Average
5	2484.60	27.56	3.29	35.21	60.38	56.02	74.00	17.98	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

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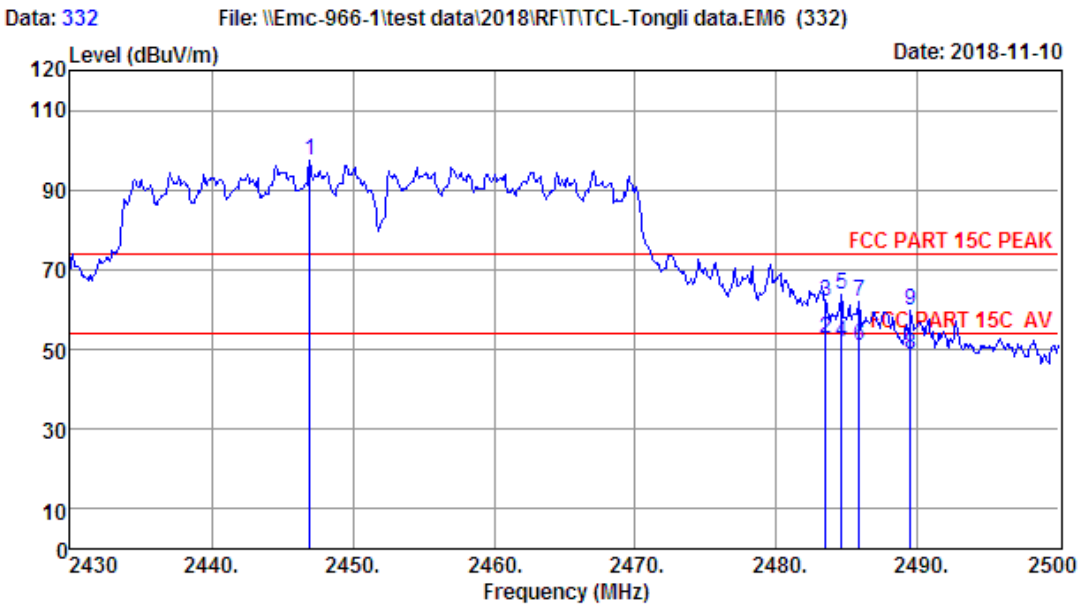


Site no. : 1# 966 Chamber Data no. : 332
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:24.5';Humi:58%;Press:101.52kPa
Engineer : Viking
EUT : JMDD Module
Power : AC 120V/60Hz
M/N : JMDD
Test Mode : IEEE 802.11n HT40 CH9 2452TX
Antenna 1+2

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2446.94	27.48	3.26	35.07	101.57	97.24	74.00	-23.24	Peak
2	2483.50	27.56	3.29	35.21	57.17	52.81	54.00	1.19	Average
3	2483.50	27.56	3.29	35.21	66.17	61.81	74.00	12.19	Peak
4	2484.60	27.56	3.29	35.21	56.08	51.72	54.00	2.28	Average
5	2484.60	27.56	3.29	35.21	68.08	63.72	74.00	10.28	Peak
6	2485.86	27.56	3.29	35.21	55.18	50.82	54.00	3.18	Average
7	2485.86	27.56	3.29	35.21	66.18	61.82	74.00	12.18	Peak
8	2489.50	27.60	3.30	35.27	53.29	48.92	54.00	5.08	Average
9	2489.50	27.60	3.30	35.27	64.29	59.92	74.00	14.08	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

6 6dB & 20dB Bandwidth Test

6.1 Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

6.2 Test Procedure for 6dB

1, The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable.

2, Follow the test procedure as described in KDB 558074

(1). Set resolution bandwidth (RBW) = 100 kHz.

(2). Set the video bandwidth (VBW) ≥ 3 x RBW.

(3). Detector = Peak.

(4). Trace mode = max hold.

(5). Sweep = auto couple.

(6). Allow the trace to stabilize.

(7). Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.3 Test Procedure for 20dB

1, The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable.

2, Follow the test procedure as described in C63.10

(1). The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.

(2). The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW andvideo bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement.

(3). Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.

(4). Steps a) through c) might require iteration to adjust within the specified tolerances.

(5). The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “−xx dB down” requirement; that is, if the requirement calls for measuring the −20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.

(6). Set detection mode to peak and trace mode to max hold.

(7). Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).

(8). Determine the “−xx dB down amplitude” using [(reference value) − xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument.

(9). If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j).

(10). Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “_xx dB down amplitude” determined in step h). If a marker is below this “−xx dB down amplitude” value,

then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “_xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.

(11). The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

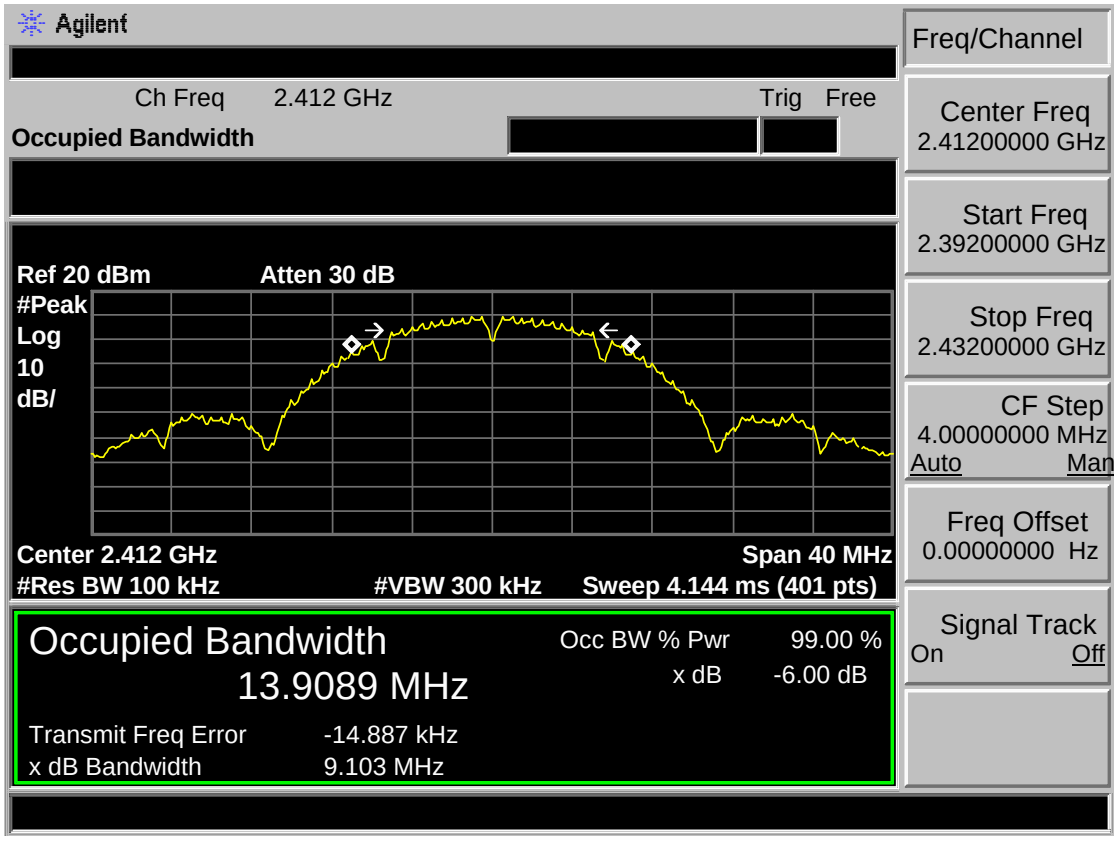
6.4 Test Result

EUT: JMDD Module					
M/N: JMDD					
Test date: 2018-09-20		Test site: RF Site		Tested by: Tony	
Test Mode	CH	6dB bandwidth（MHz）	20dB bandwidth（MHz）	Limit	
				6dB BW (KHz)	20dB BW
Antenna 1					
IEEE 802.11 b	CH1	9.103	16.199	>500	/
	CH6	9.052	16.192	>500	/
	CH11	8.563	16.177	>500	/
IEEE 802.11 g	CH1	16.315	19.119	>500	/
	CH6	15.803	19.037	>500	/
	CH11	15.020	19.031	>500	/
IEEE 802.11 n HT 20	CH1	15.037	19.456	>500	/
	CH6	16.083	19.562	>500	/
	CH11	15.062	19.543	>500	/
IEEE 802.11 n HT 40	CH3	35.161	39.988	>500	/
	CH6	35.187	39.936	>500	/
	CH9	35.176	39.940	>500	/
Antenna 2					
IEEE 802.11 b	CH1	9.091	16.094	>500	/
	CH6	9.083	16.118	>500	/
	CH11	9.074	16.144	>500	/
IEEE 802.11 g	CH1	15.321	19.030	>500	/
	CH6	15.146	19.099	>500	/
	CH11	15.712	19.038	>500	/
IEEE 802.11 n HT 20	CH1	15.409	19.236	>500	/
	CH6	15.247	19.076	>500	/
	CH11	16.012	19.135	>500	/
IEEE 802.11 n HT 40	CH3	35.156	39.939	>500	/
	CH6	35.216	39.911	>500	/
	CH9	35.184	39.857	>500	/
Conclusion：PASS					

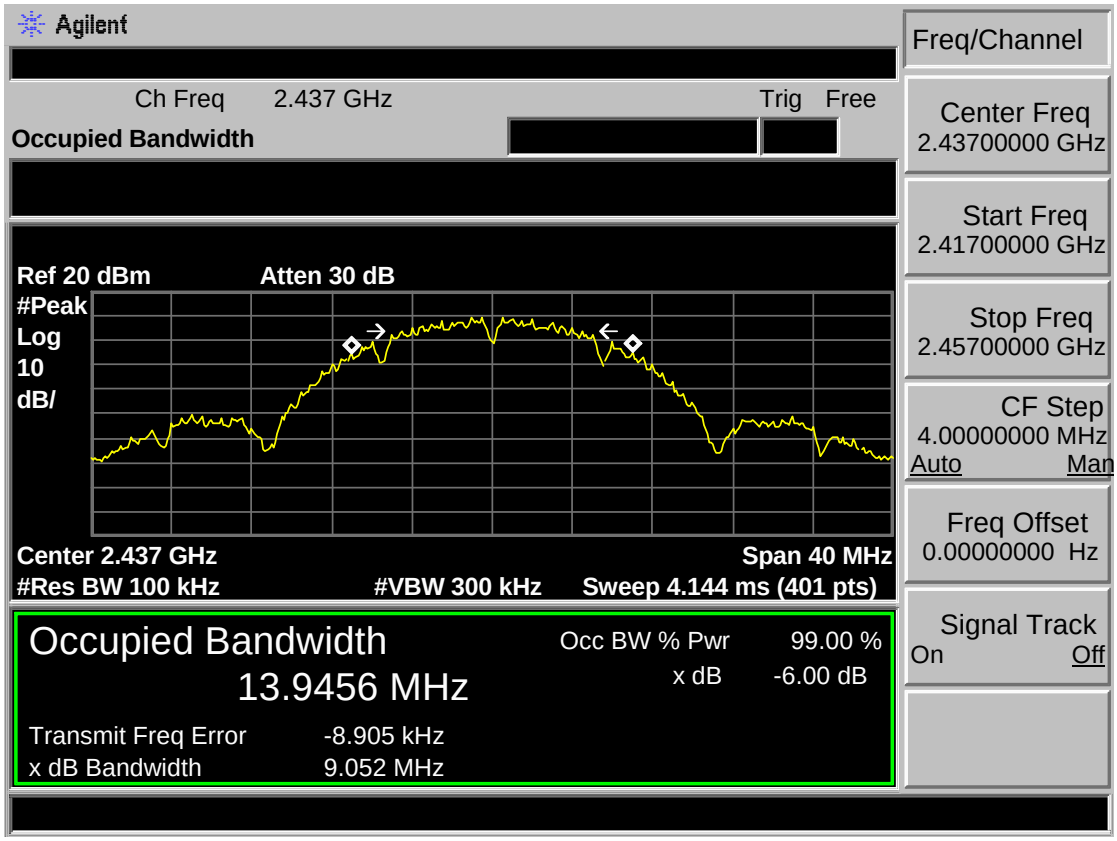
6.5 6dB Test Data

Antenna 1

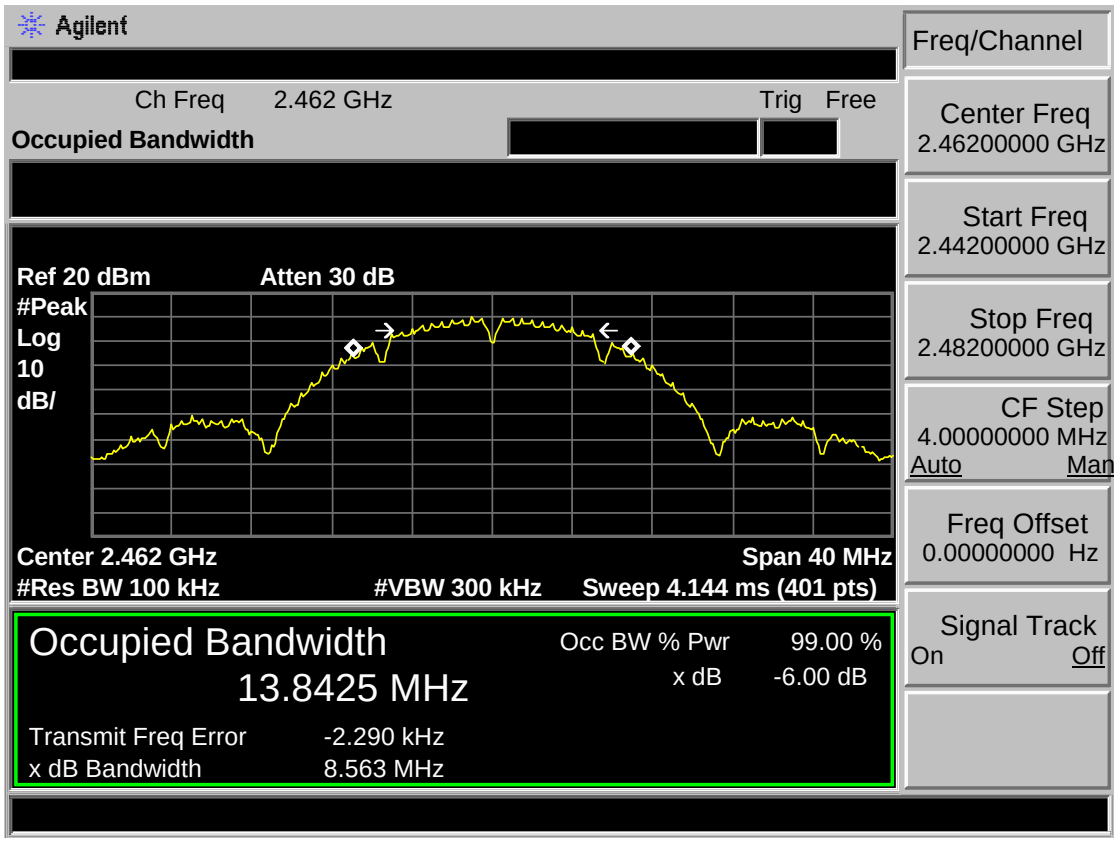
Test Mode: IEEE 802.11b 2412MHz



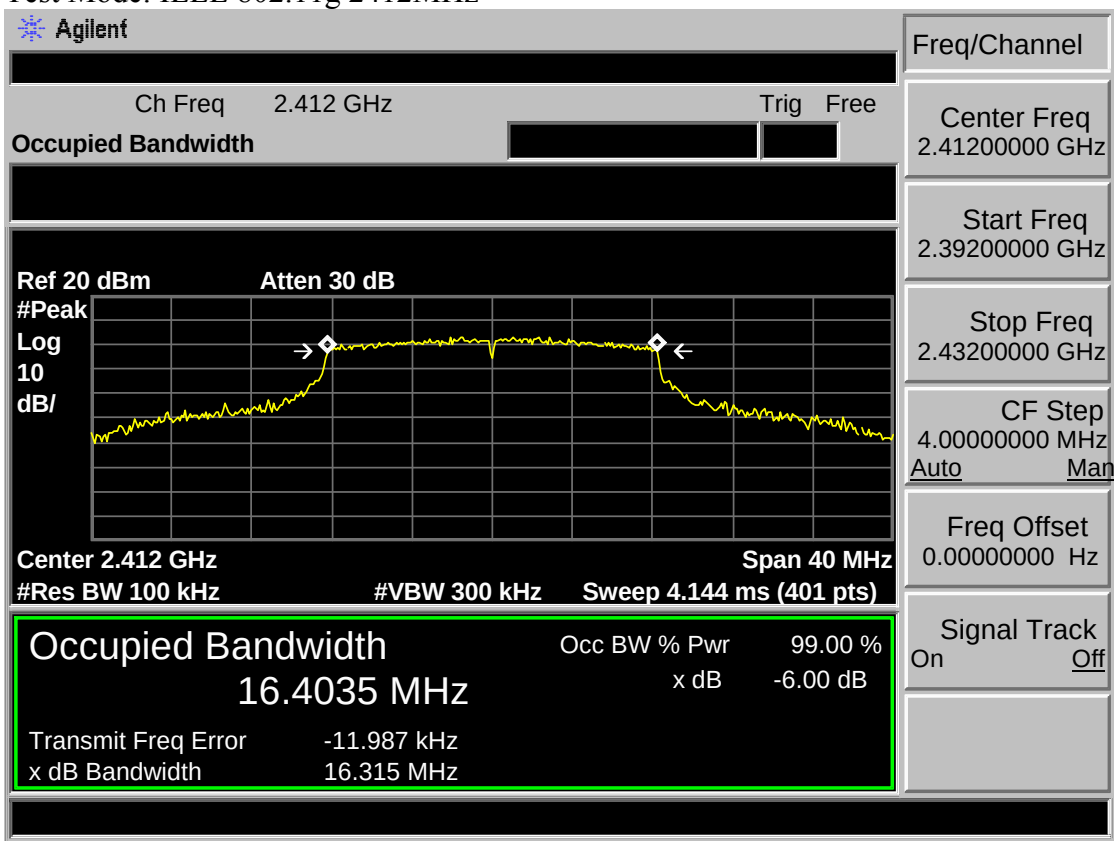
Test Mode: IEEE 802.11b 2437MHz



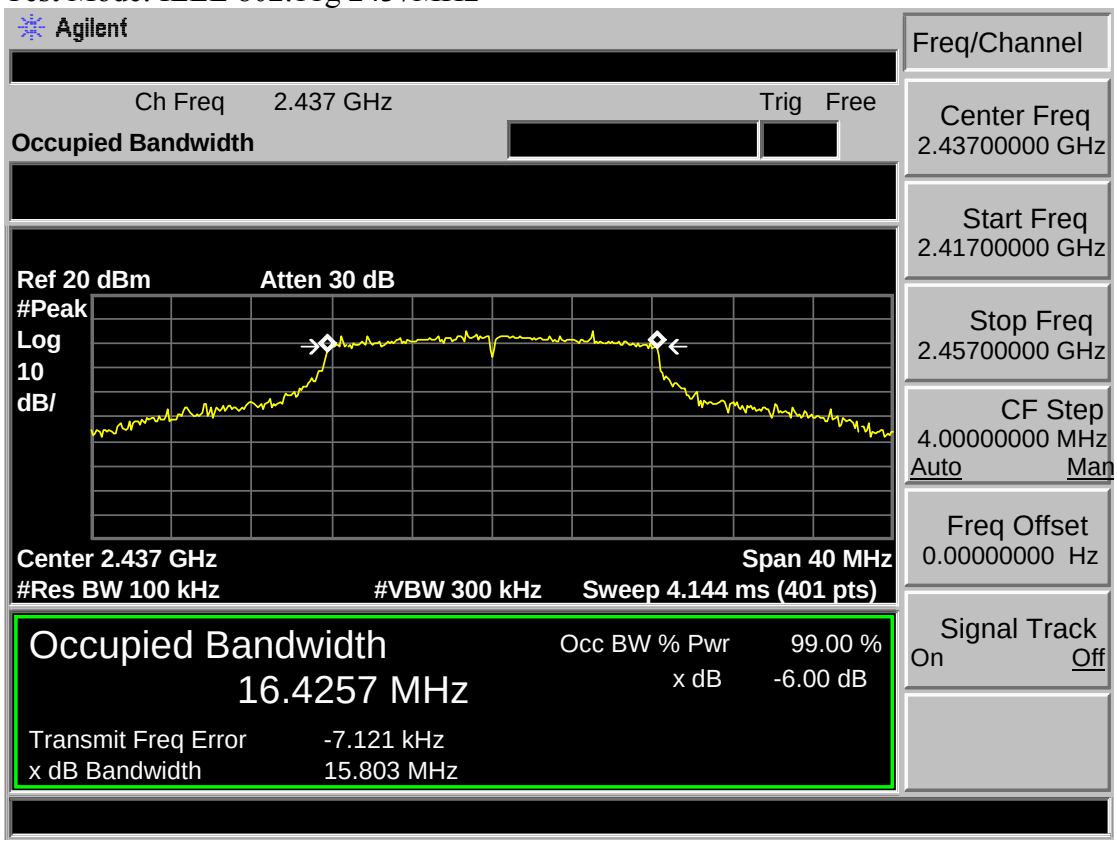
Test Mode: IEEE 802.11b 2462MHz



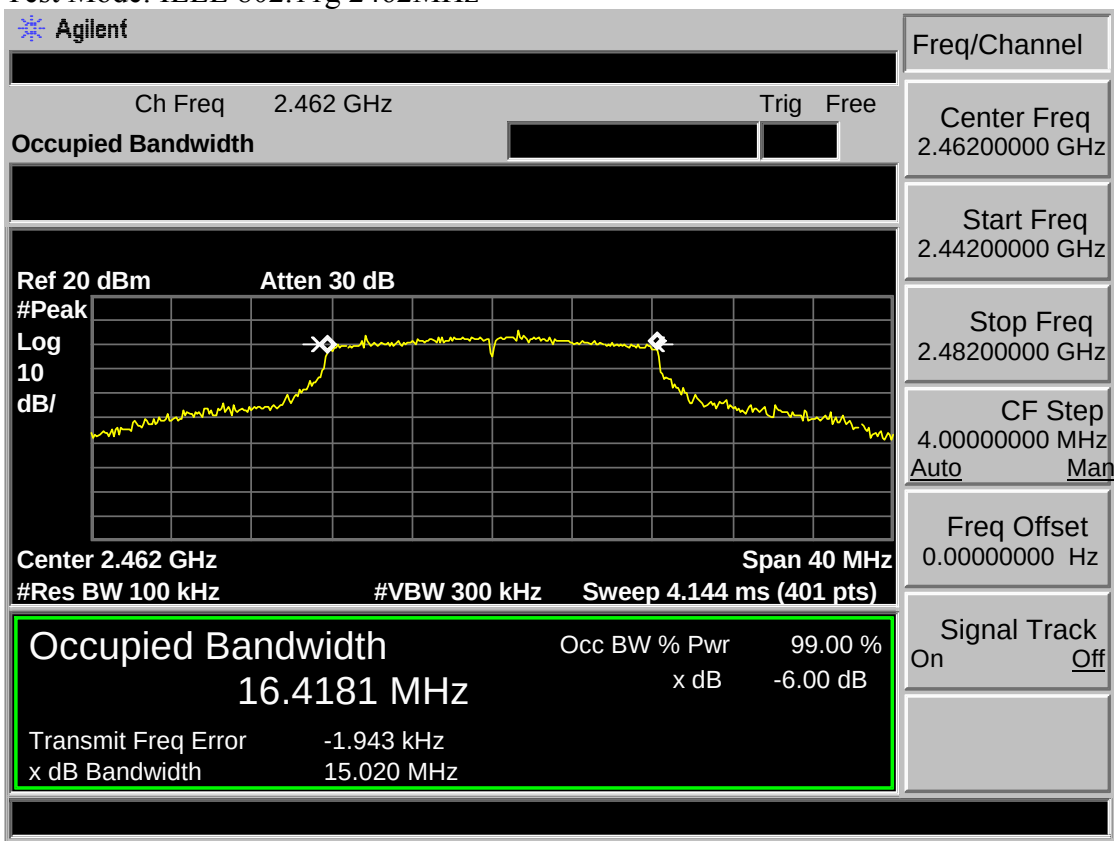
Test Mode: IEEE 802.11g 2412MHz



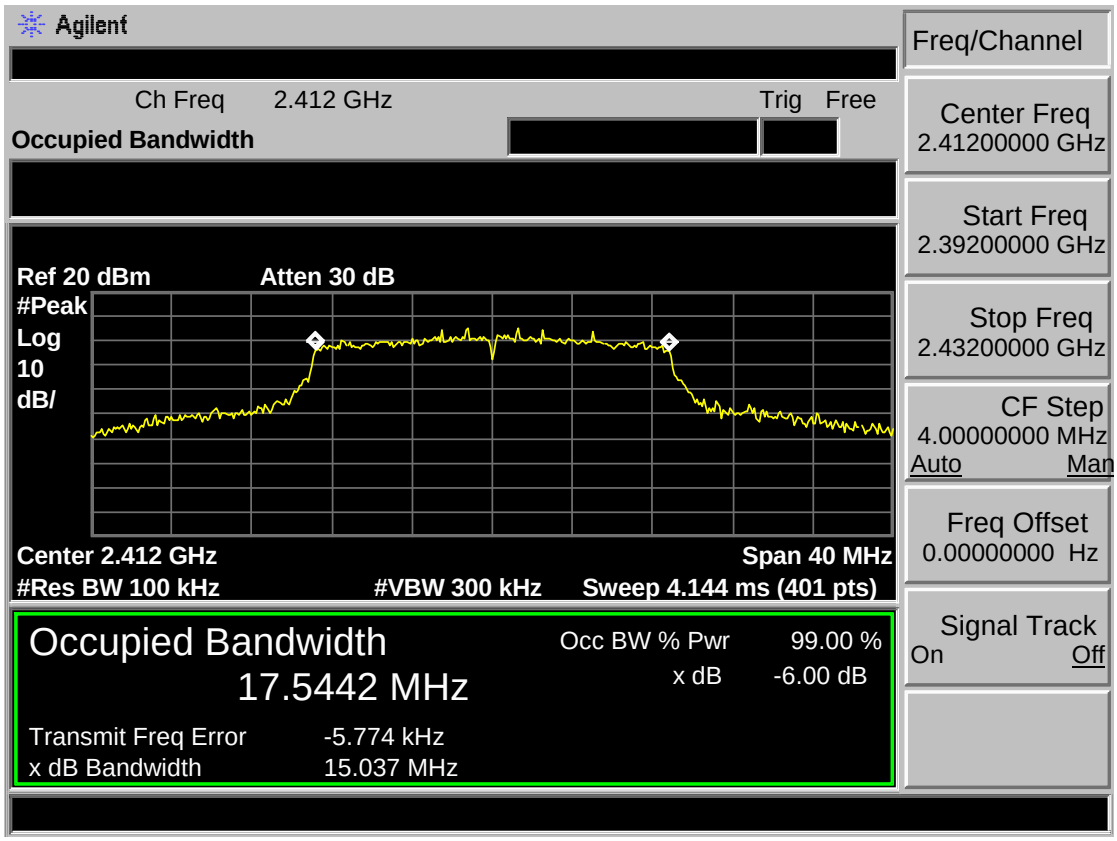
Test Mode: IEEE 802.11g 2437MHz



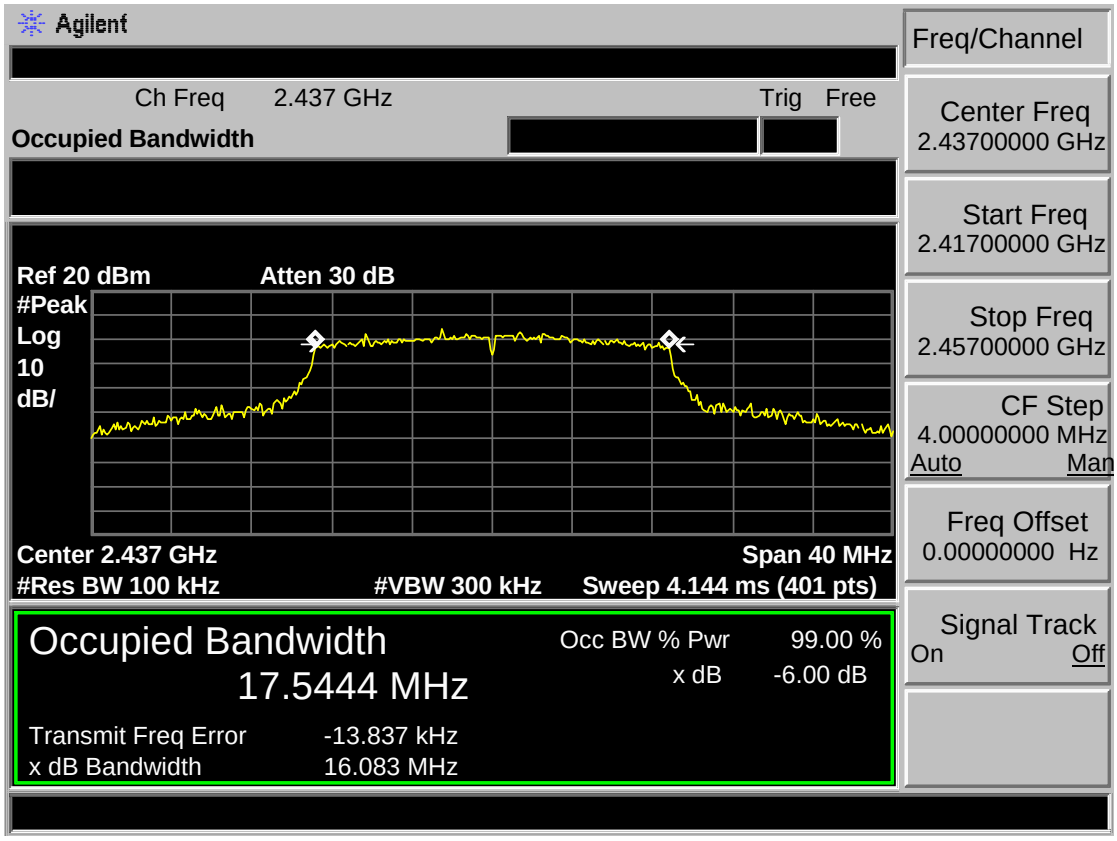
Test Mode: IEEE 802.11g 2462MHz



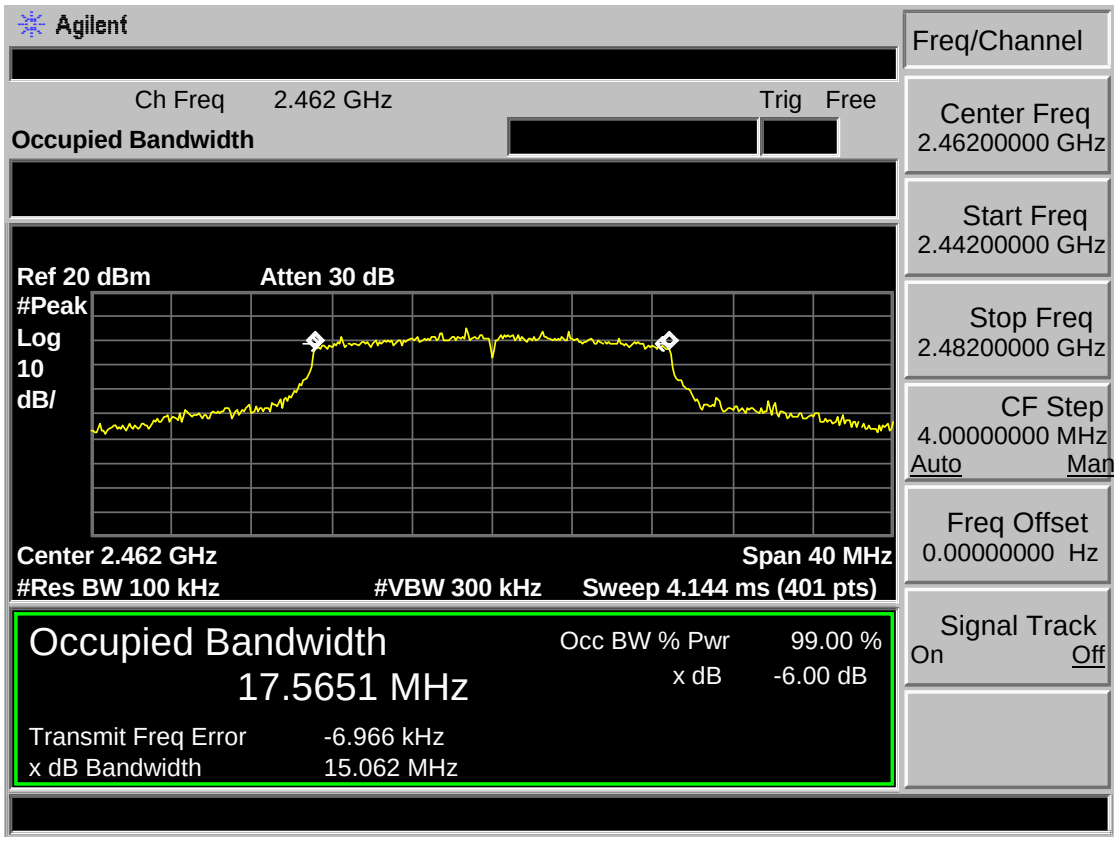
Test Mode: IEEE 802.11n HT20 2412MHz



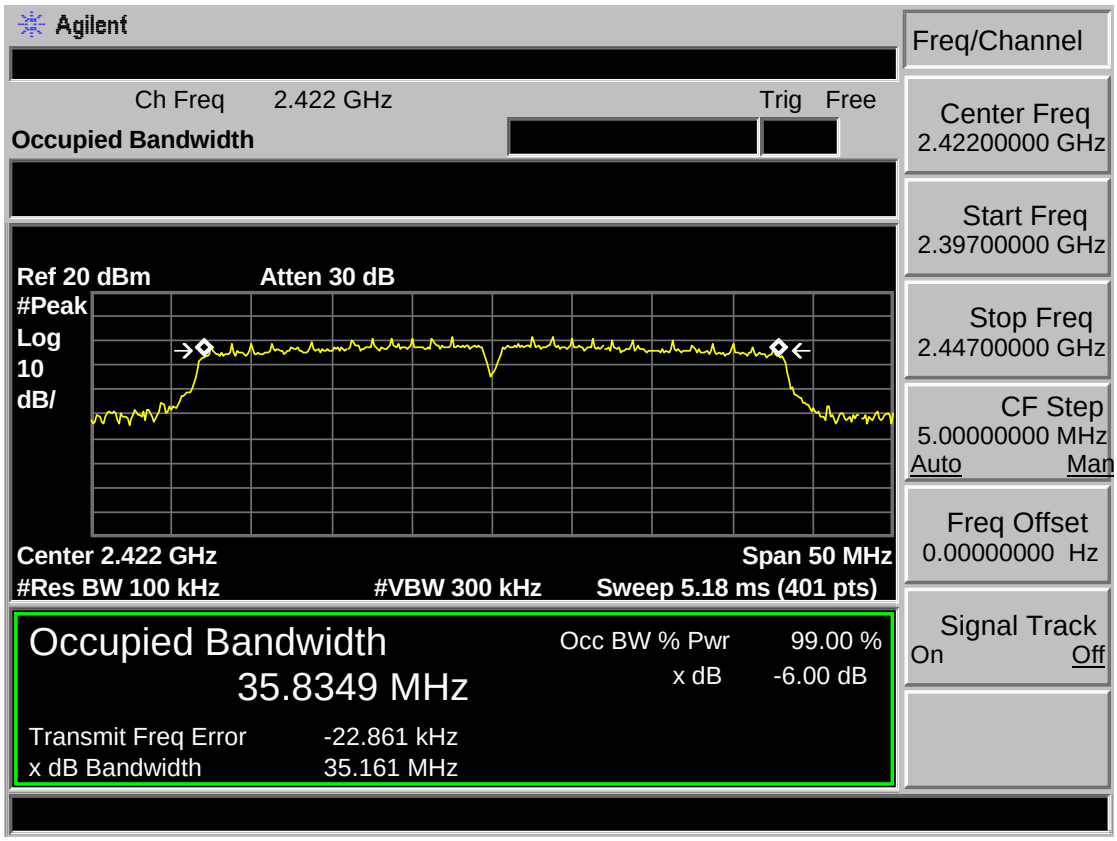
Test Mode: IEEE 802.11n HT20 2437MHz



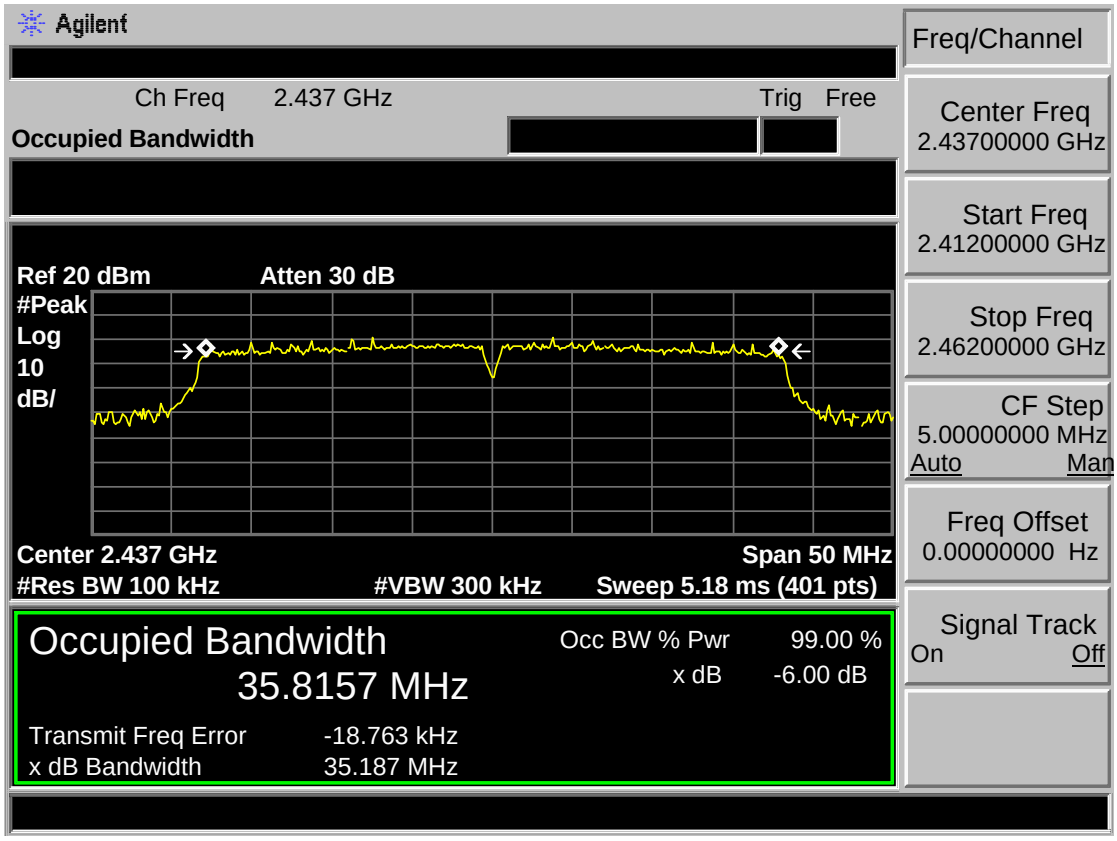
Test Mode: IEEE 802.11n HT20 2462MHz



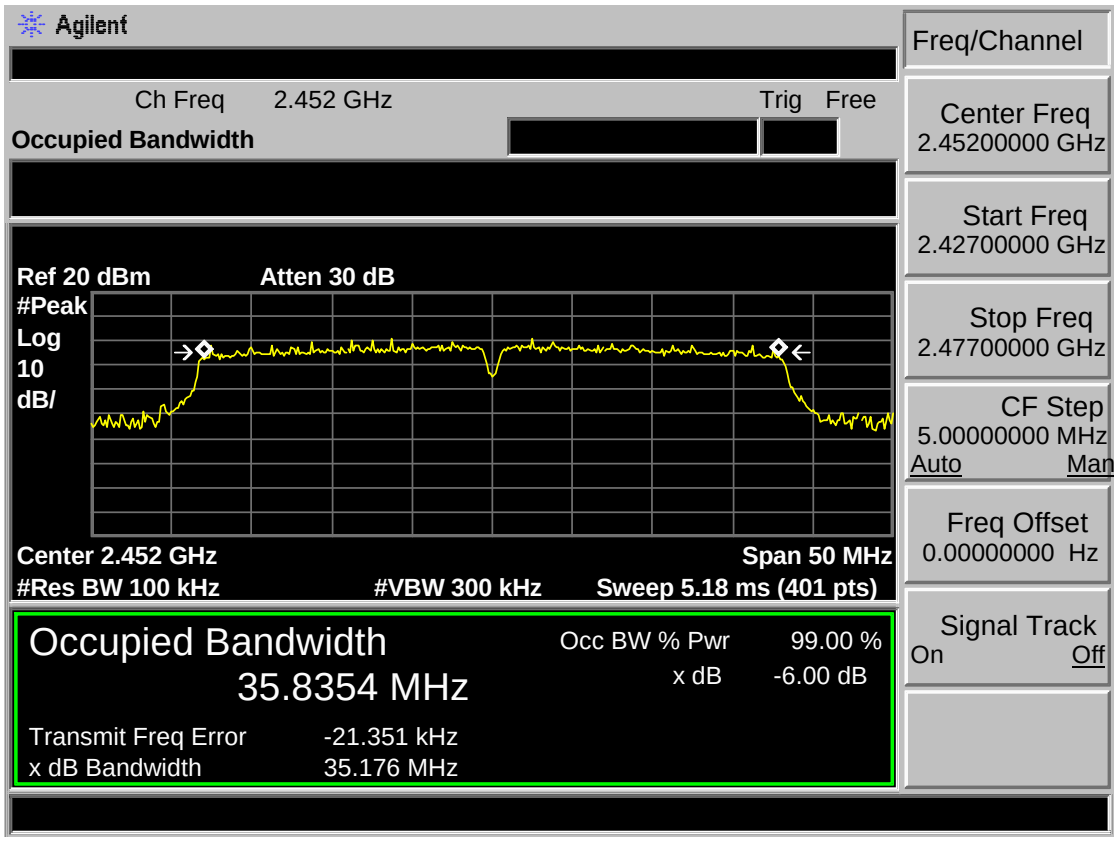
Test Mode: IEEE 802.11n HT40 2422MHz



Test Mode: IEEE 802.11n HT40 2437MHz

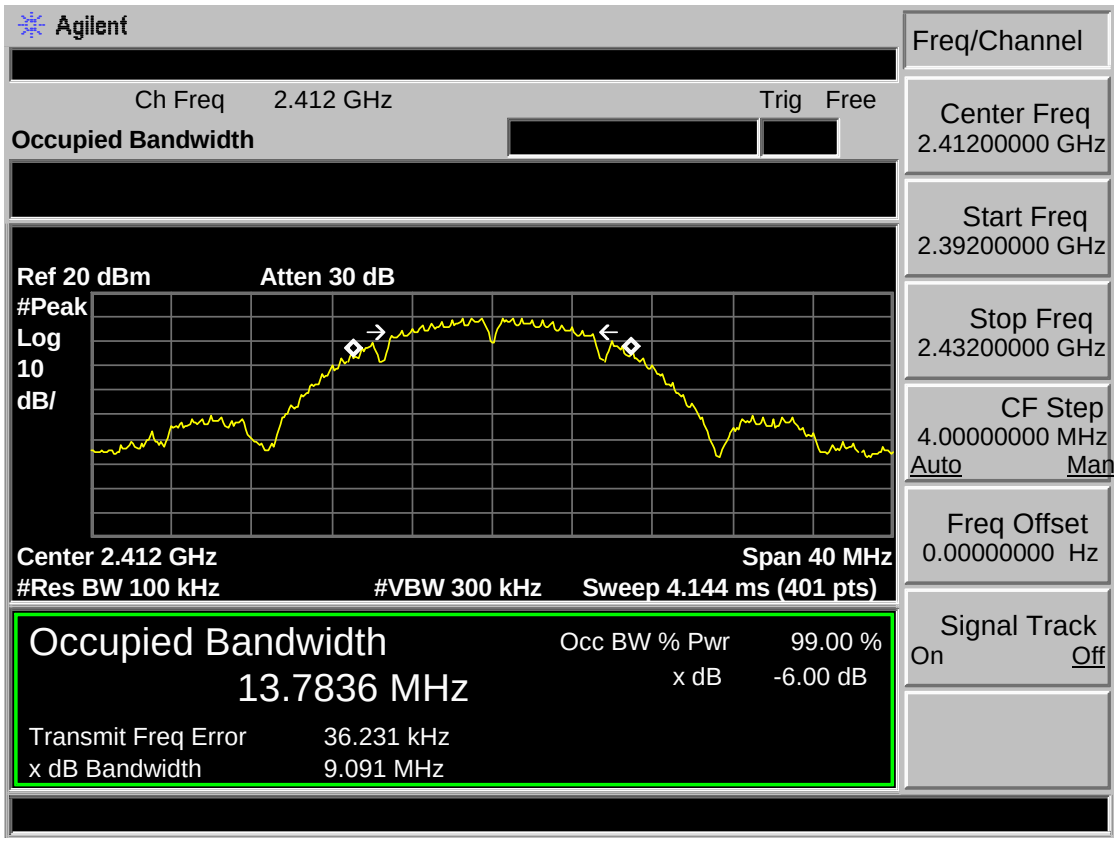


Test Mode: IEEE 802.11n HT40 2452MHz

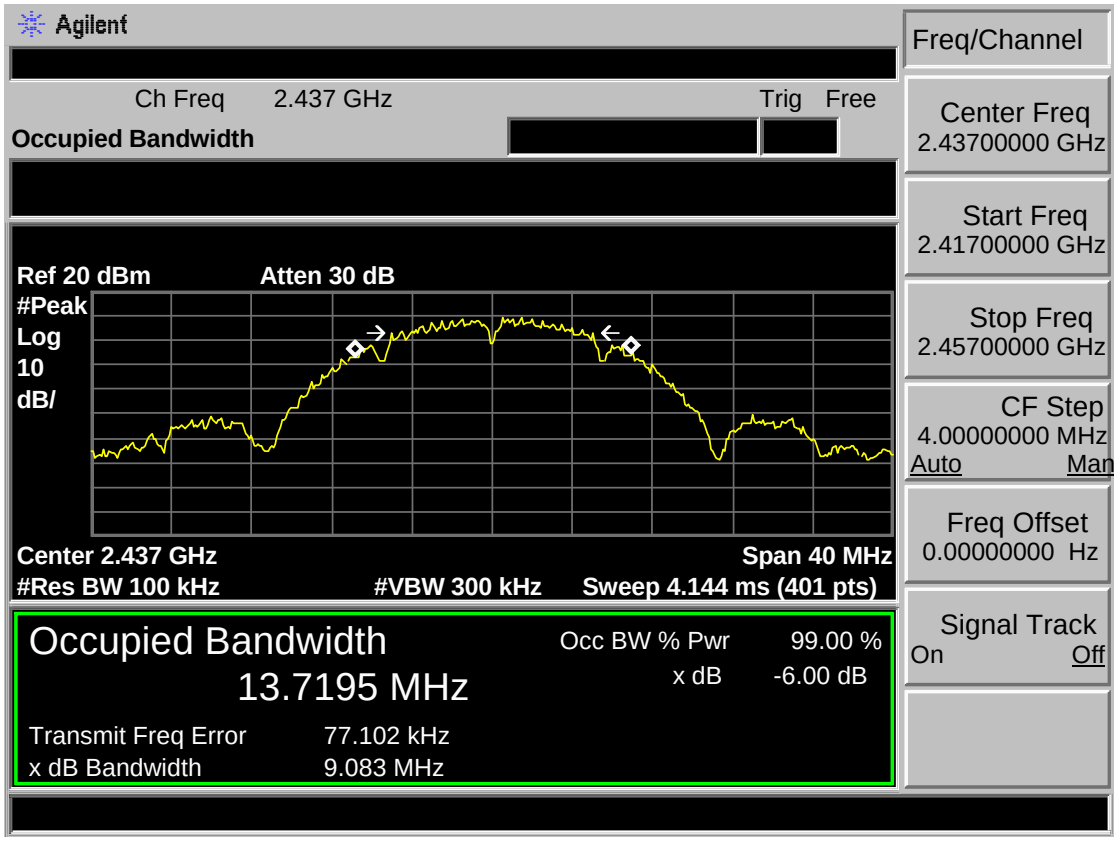


Antenna 2

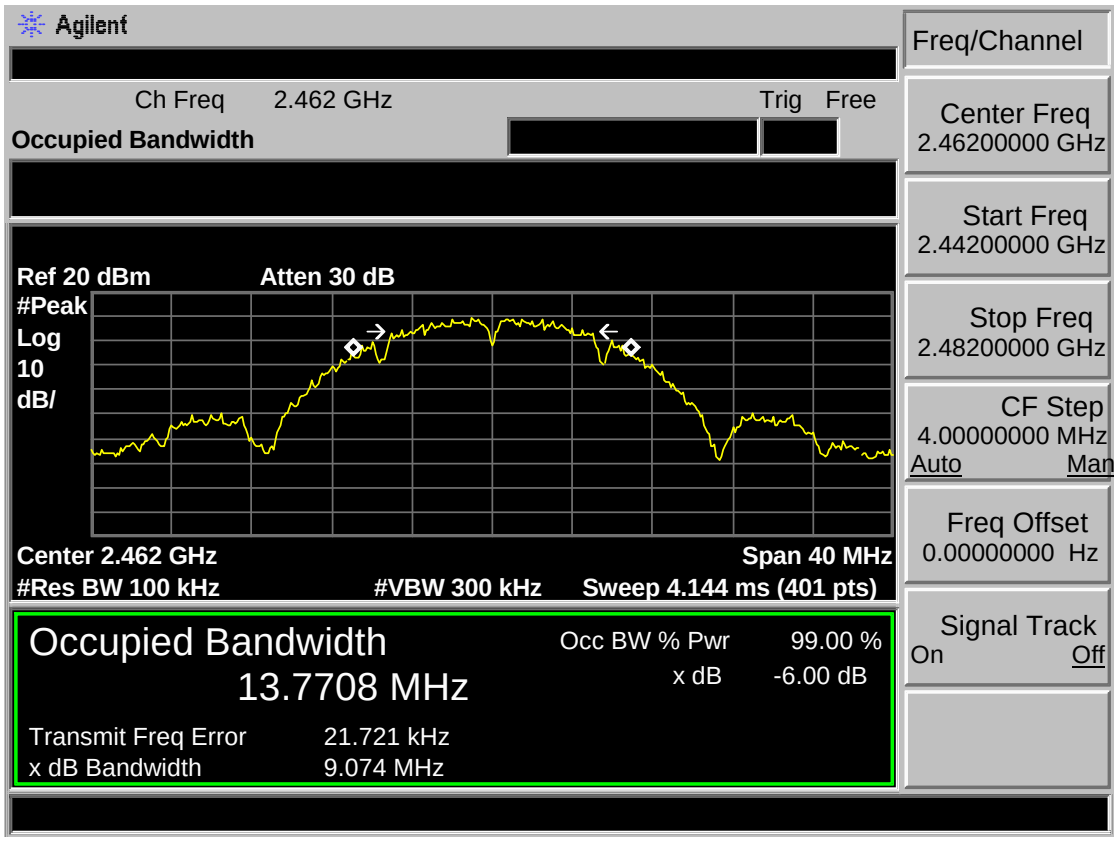
Test Mode: IEEE 802.11b 2412MHz



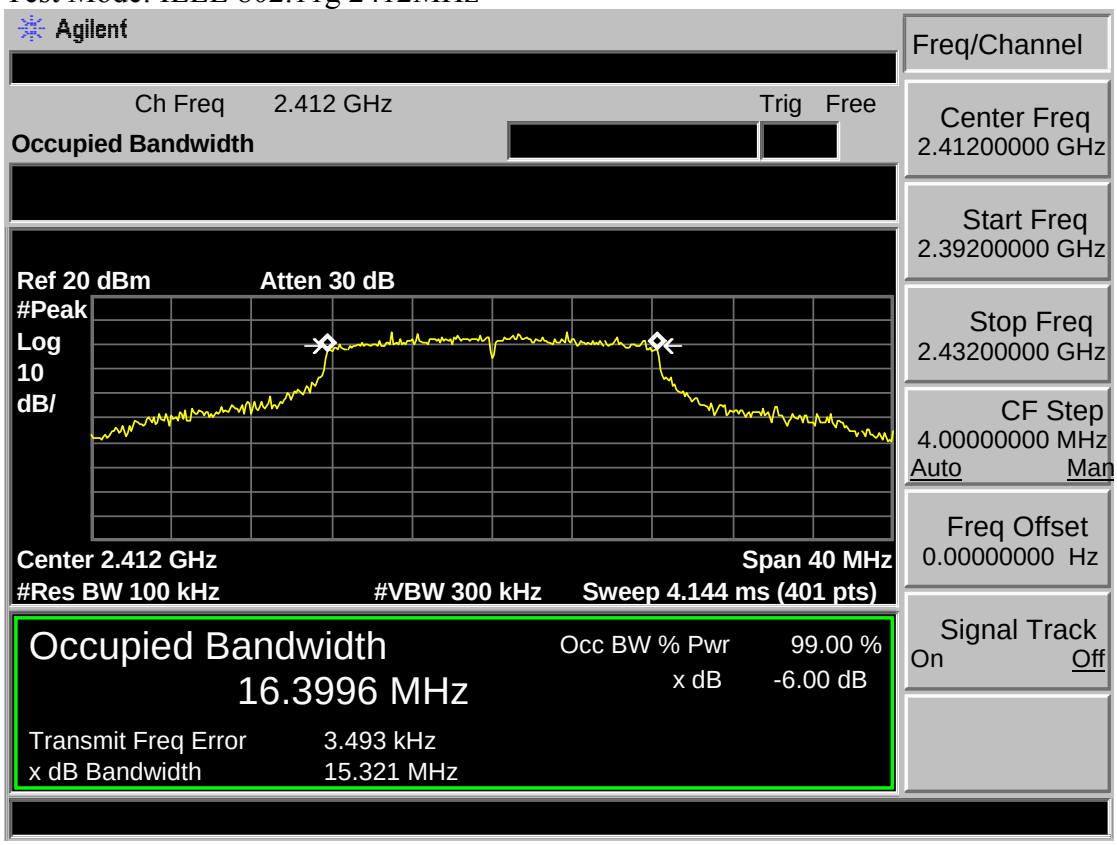
Test Mode: IEEE 802.11b 2437MHz



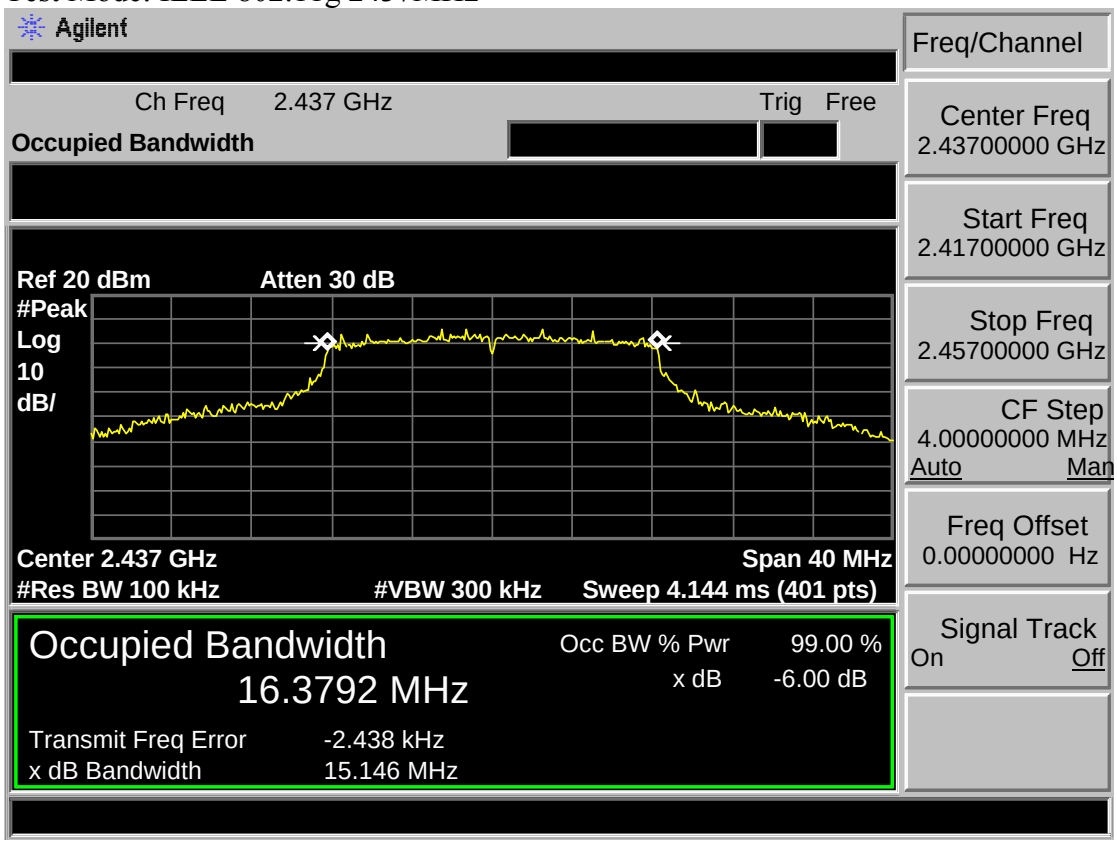
Test Mode: IEEE 802.11b 2462MHz



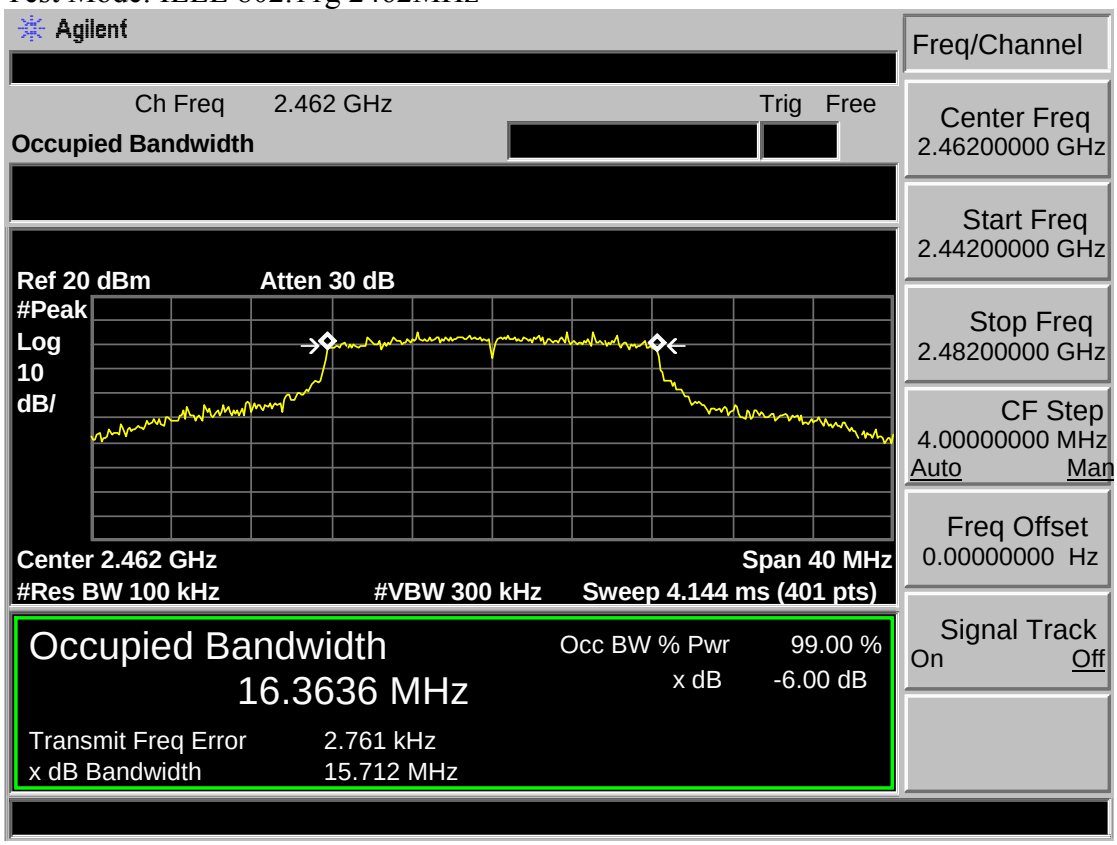
Test Mode: IEEE 802.11g 2412MHz



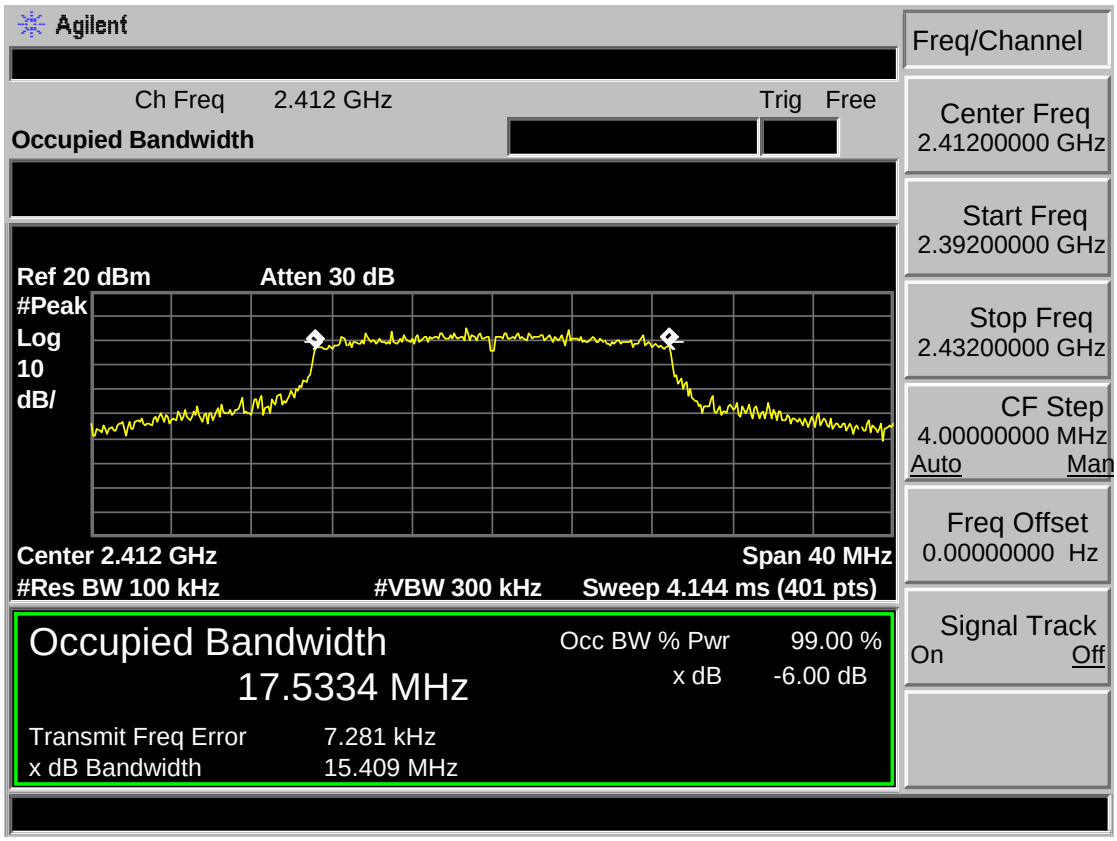
Test Mode: IEEE 802.11g 2437MHz



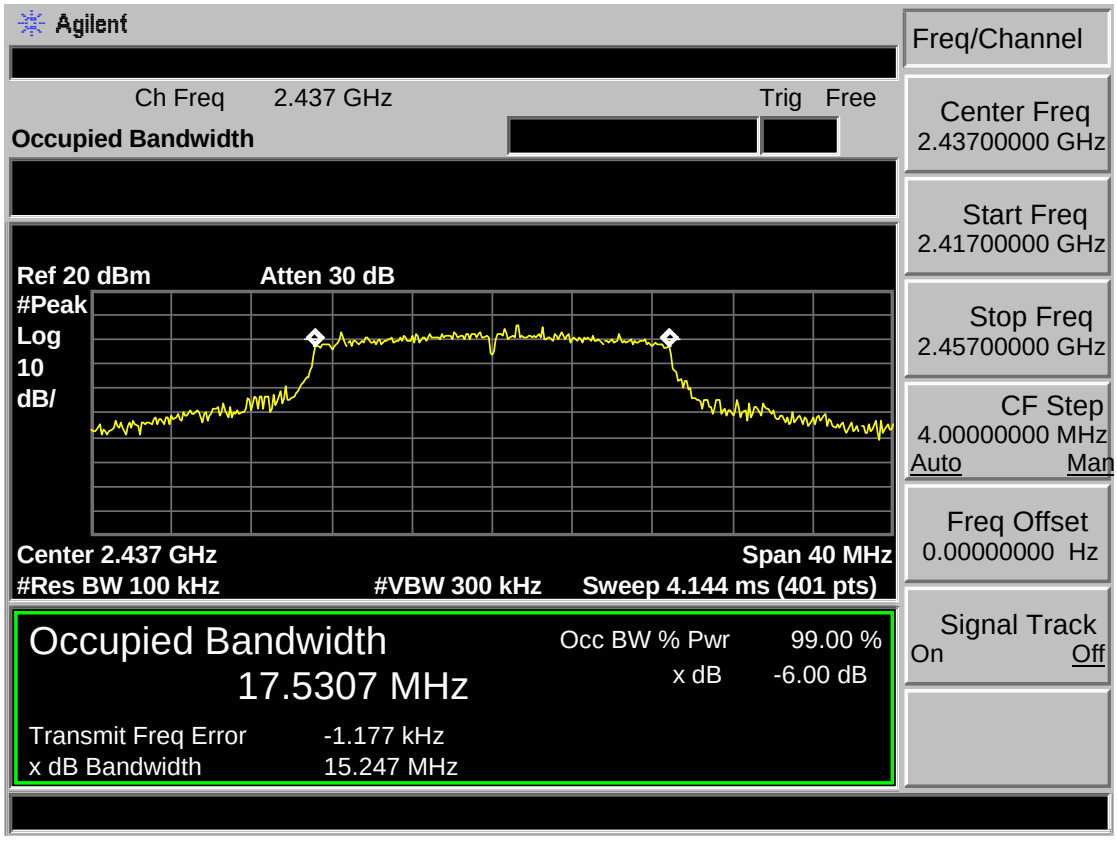
Test Mode: IEEE 802.11g 2462MHz



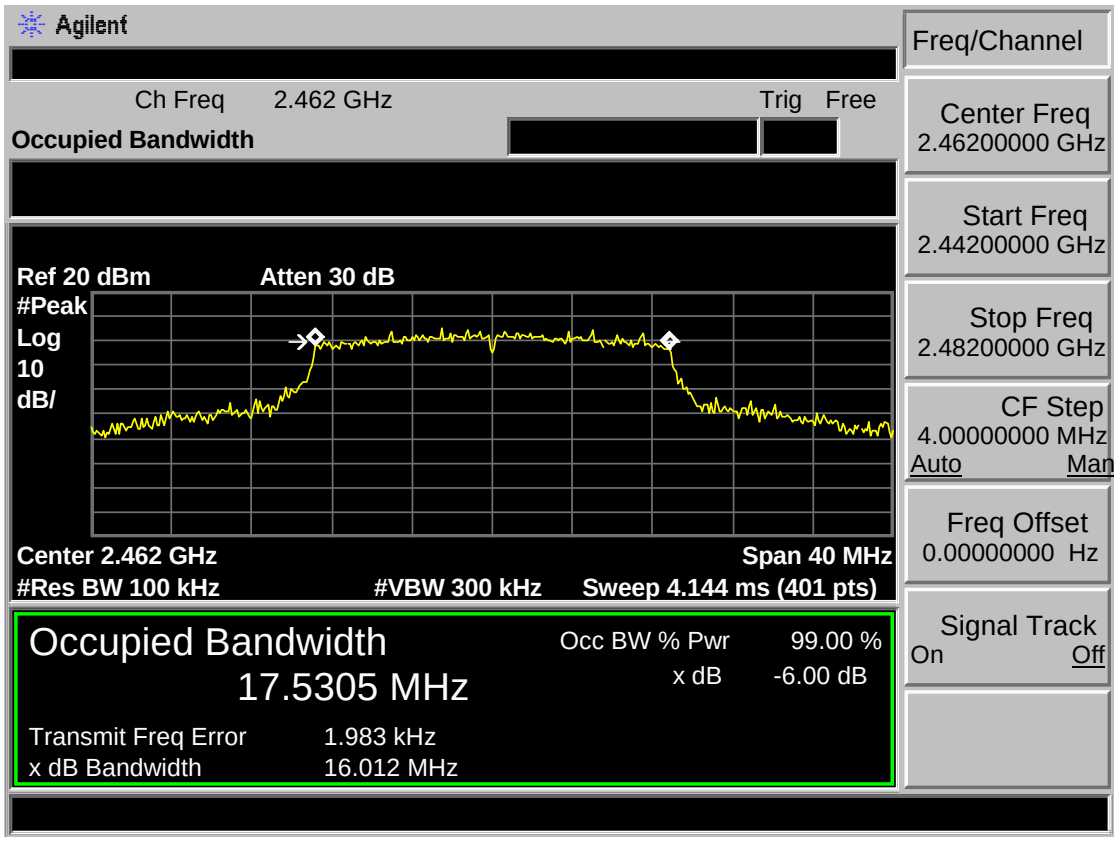
Test Mode: IEEE 802.11n HT20 2412MHz



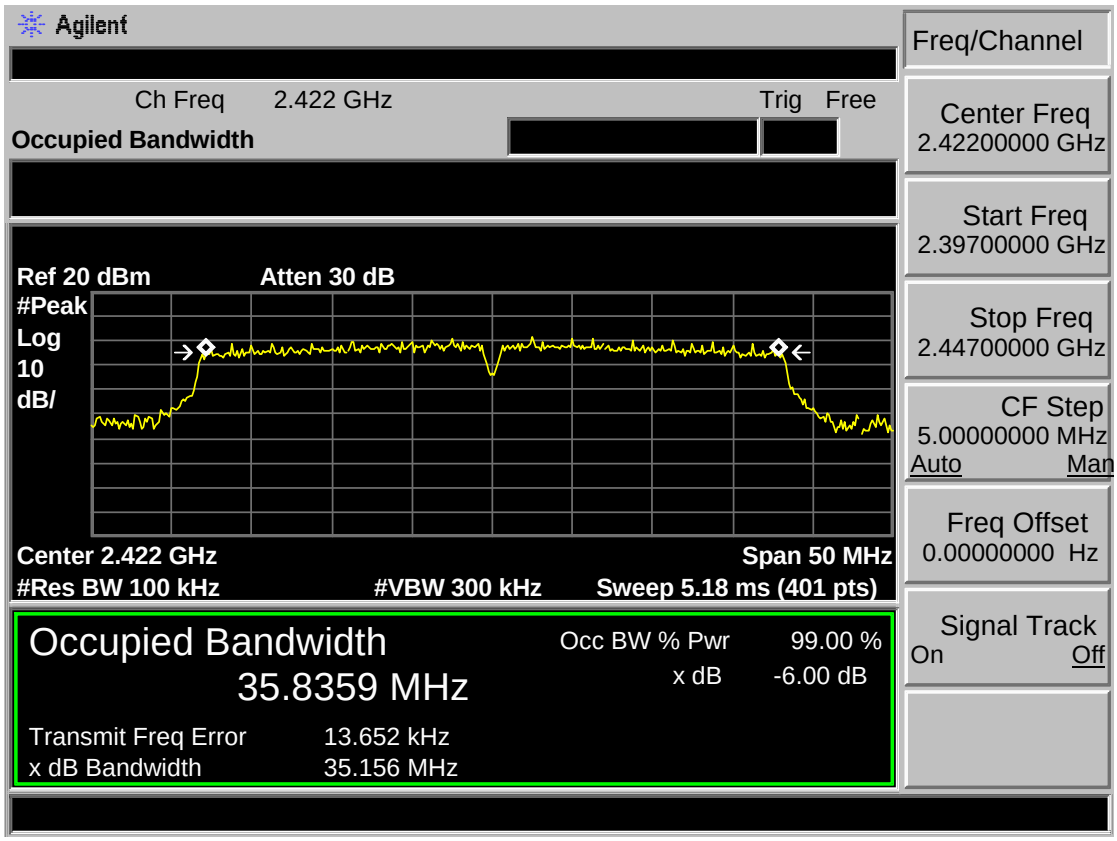
Test Mode: IEEE 802.11n HT20 2437MHz



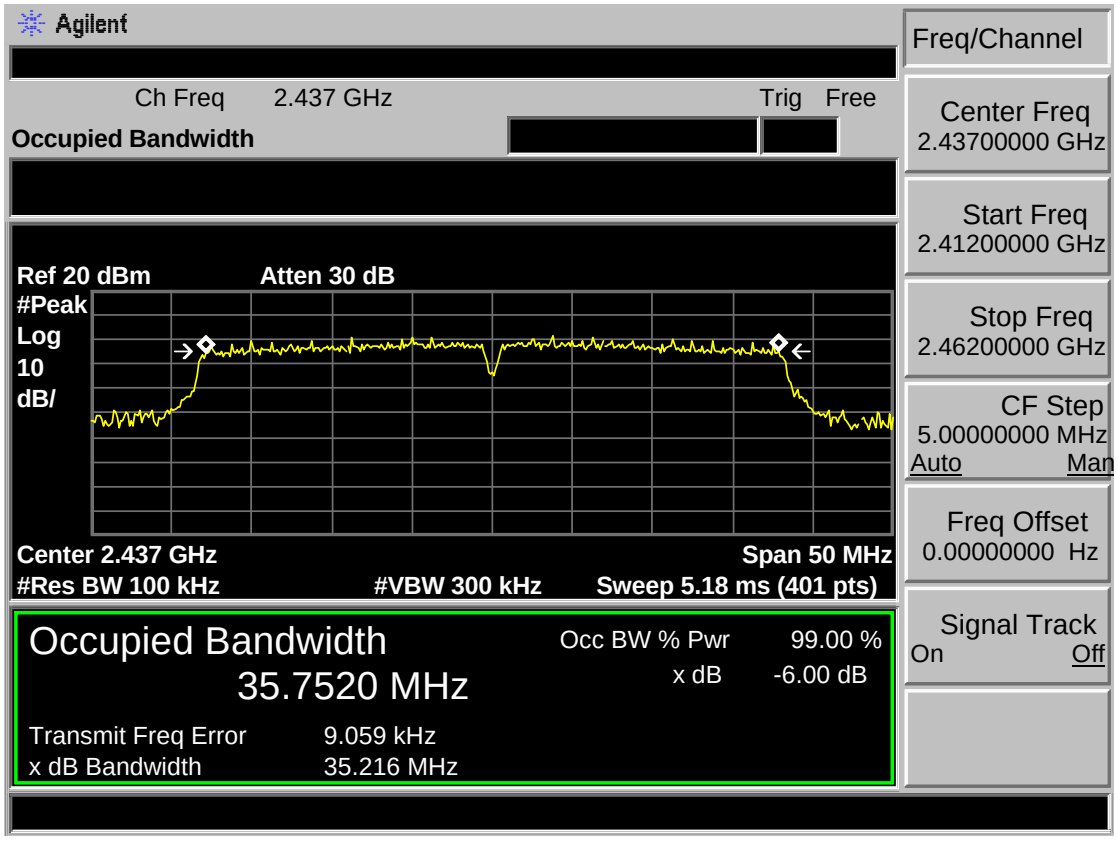
Test Mode: IEEE 802.11n HT20 2462MHz



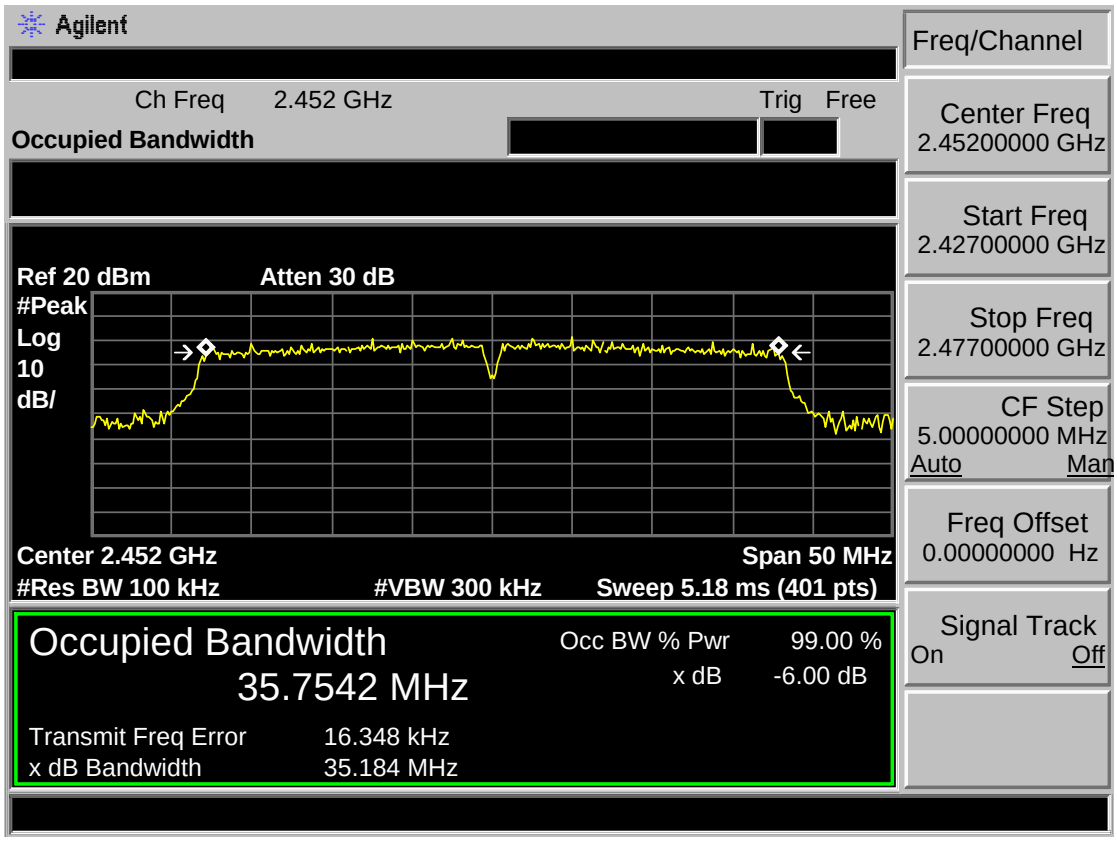
Test Mode: IEEE 802.11n HT40 2422MHz



Test Mode: IEEE 802.11n HT40 2437MHz



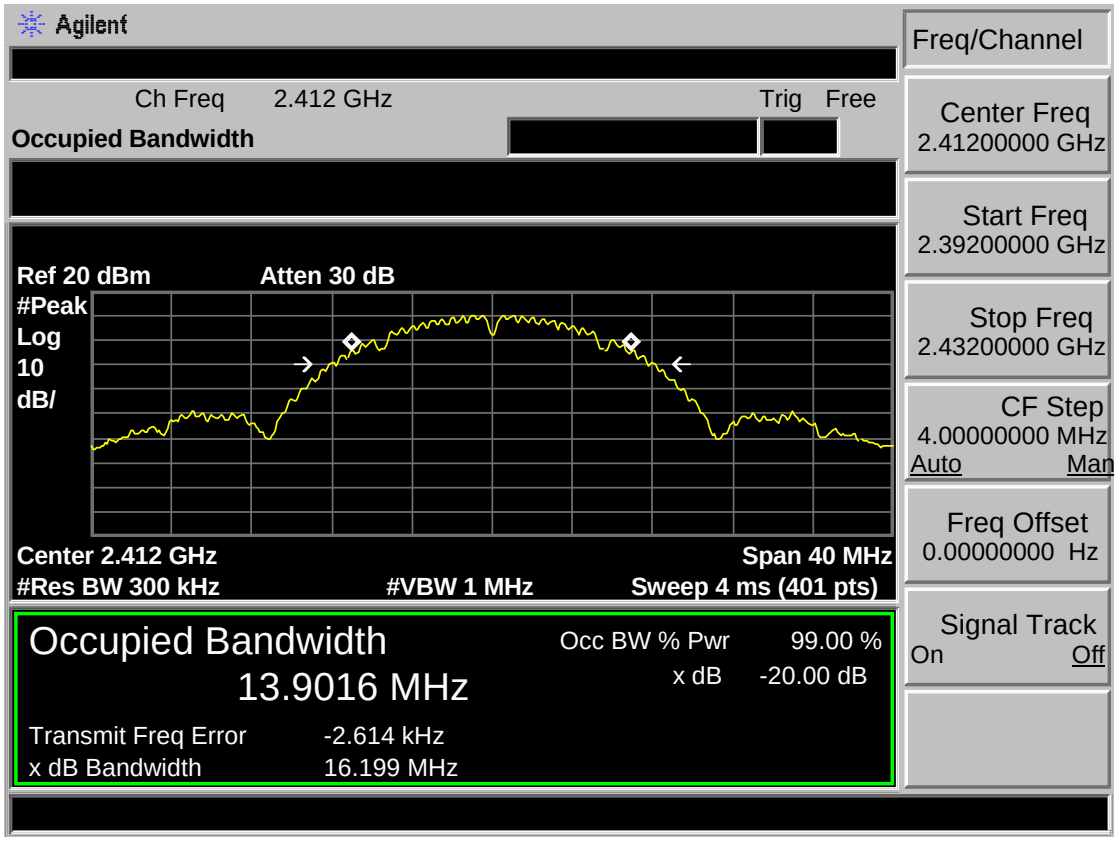
Test Mode: IEEE 802.11n HT40 2452MHz



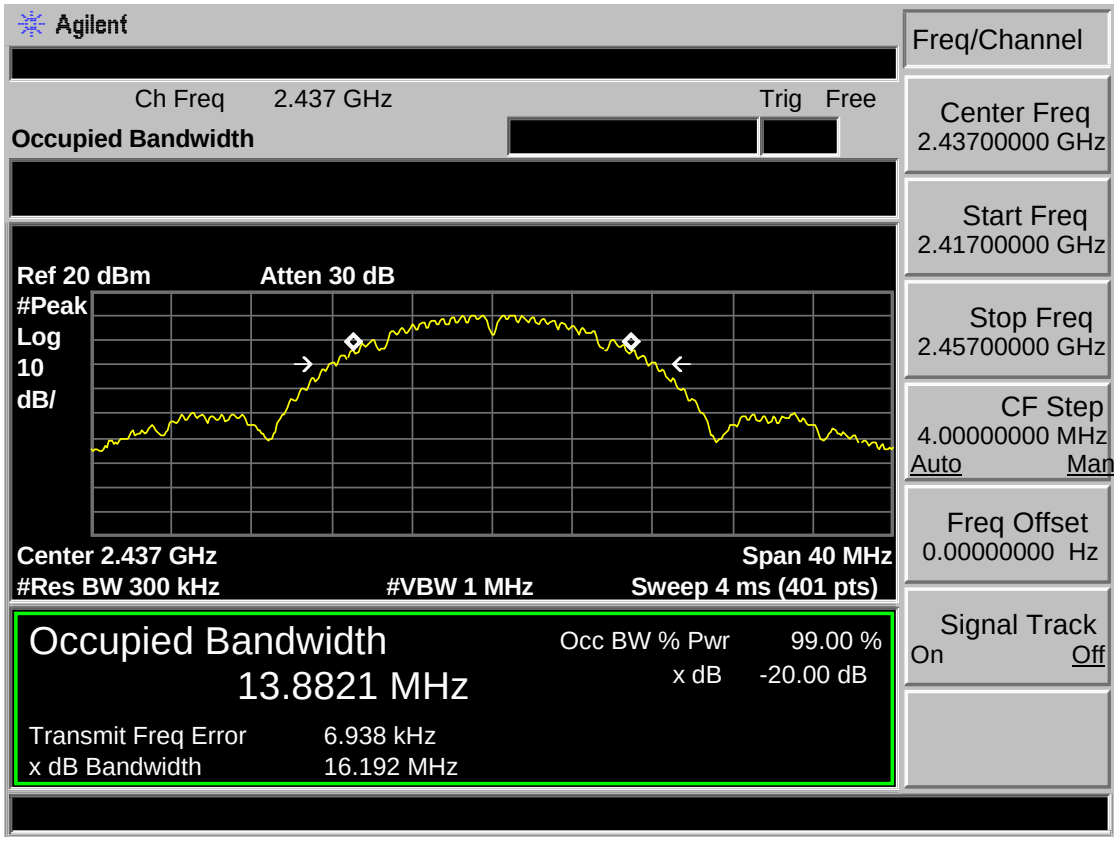
6.6 20dB Test Data

Antenna 1

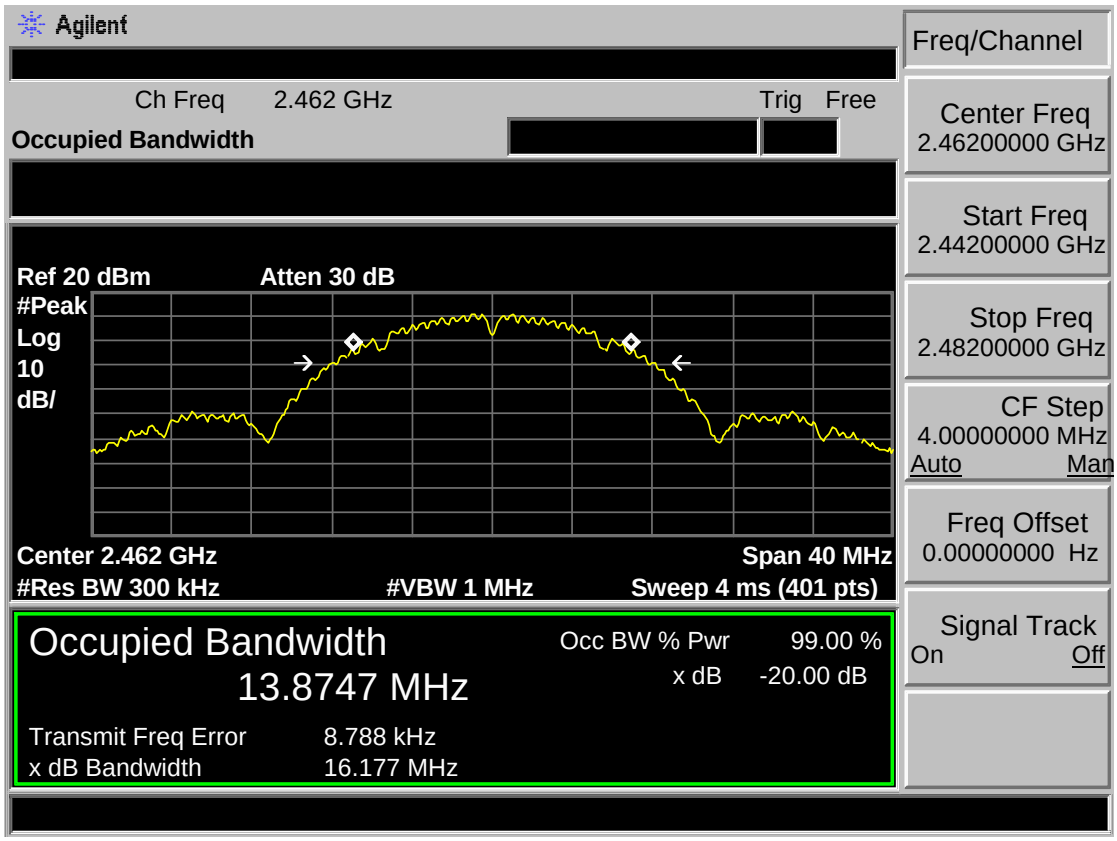
Test Mode: IEEE 802.11b 2412MHz



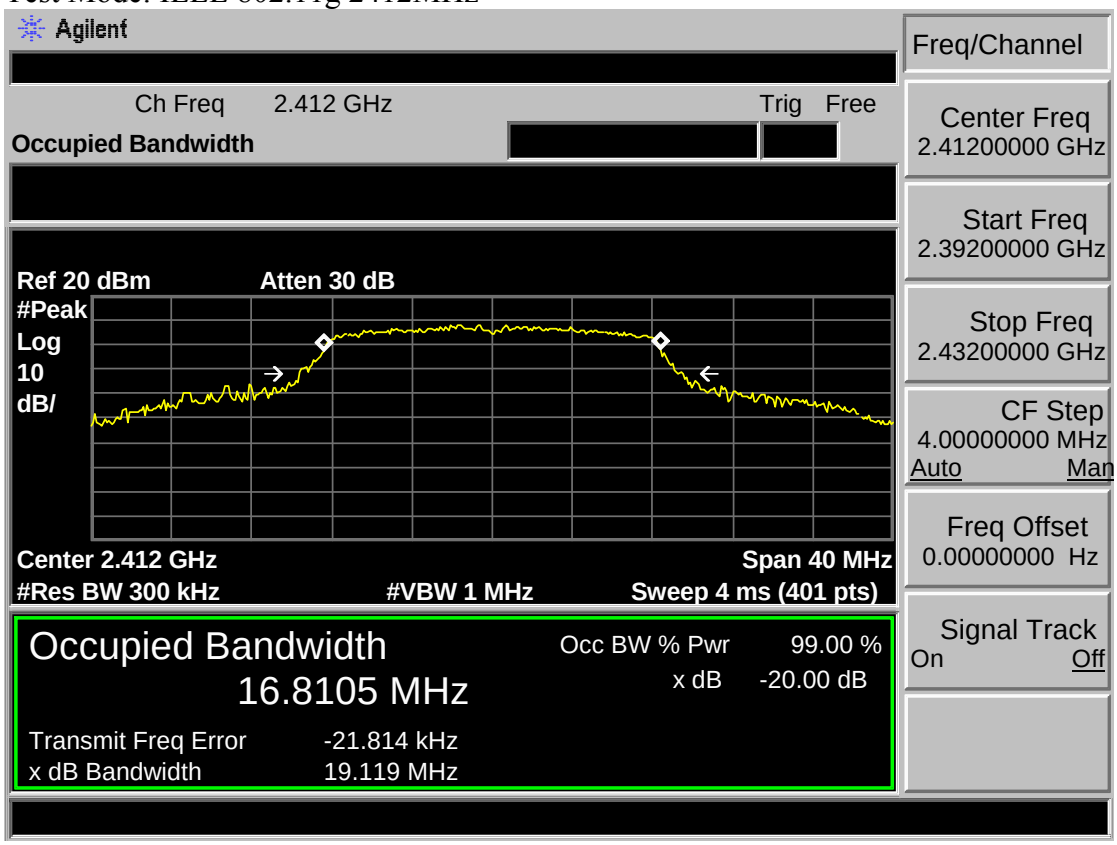
Test Mode: IEEE 802.11b 2437MHz



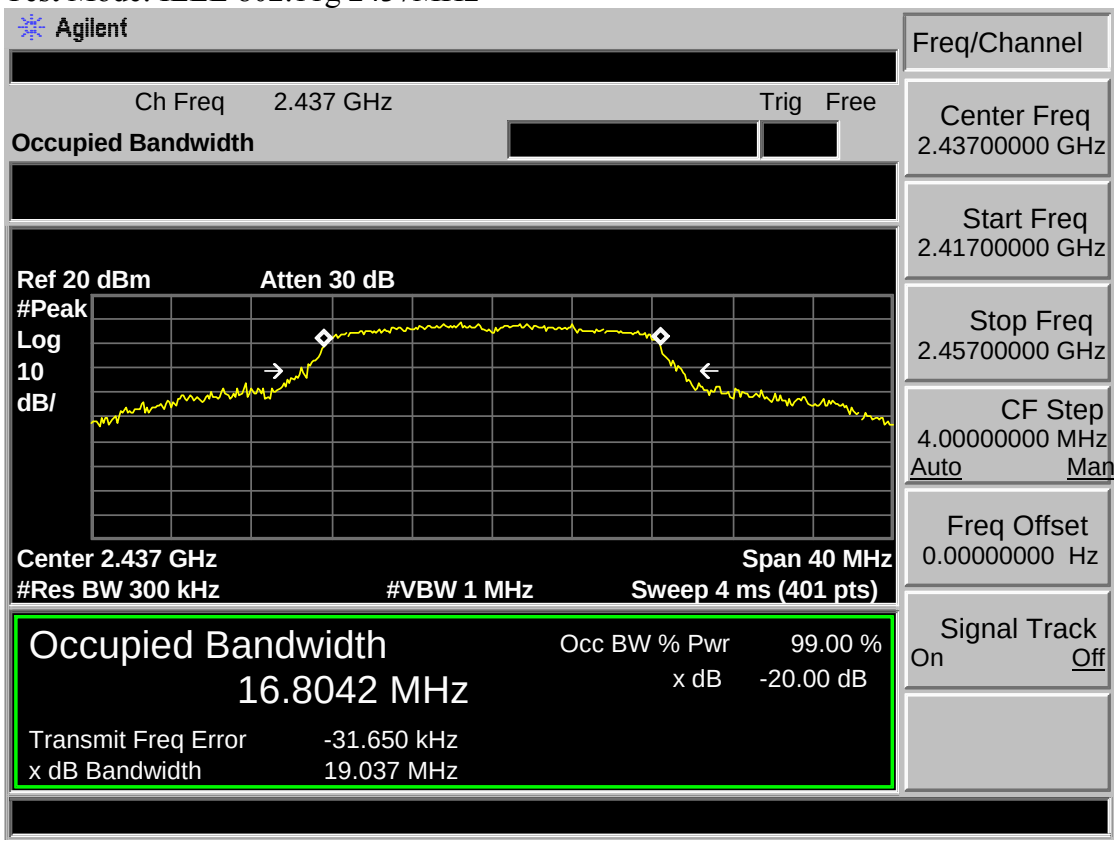
Test Mode: IEEE 802.11b 2462MHz



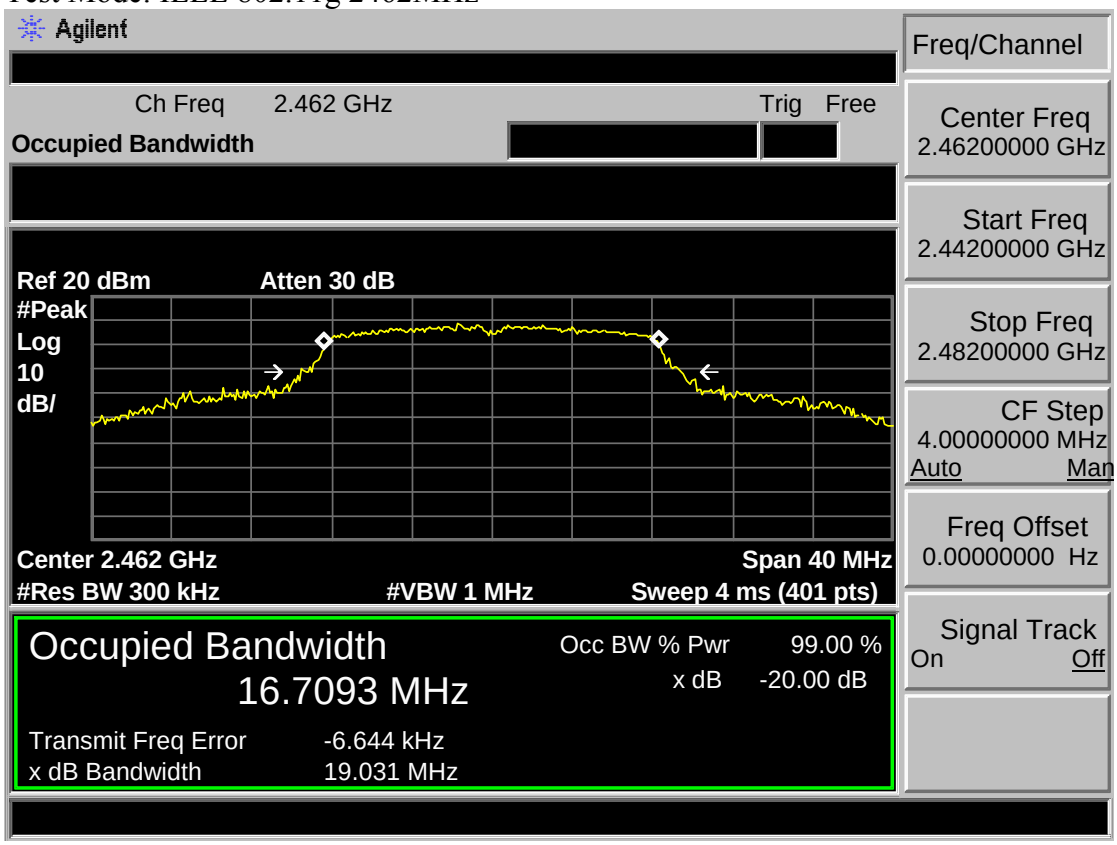
Test Mode: IEEE 802.11g 2412MHz



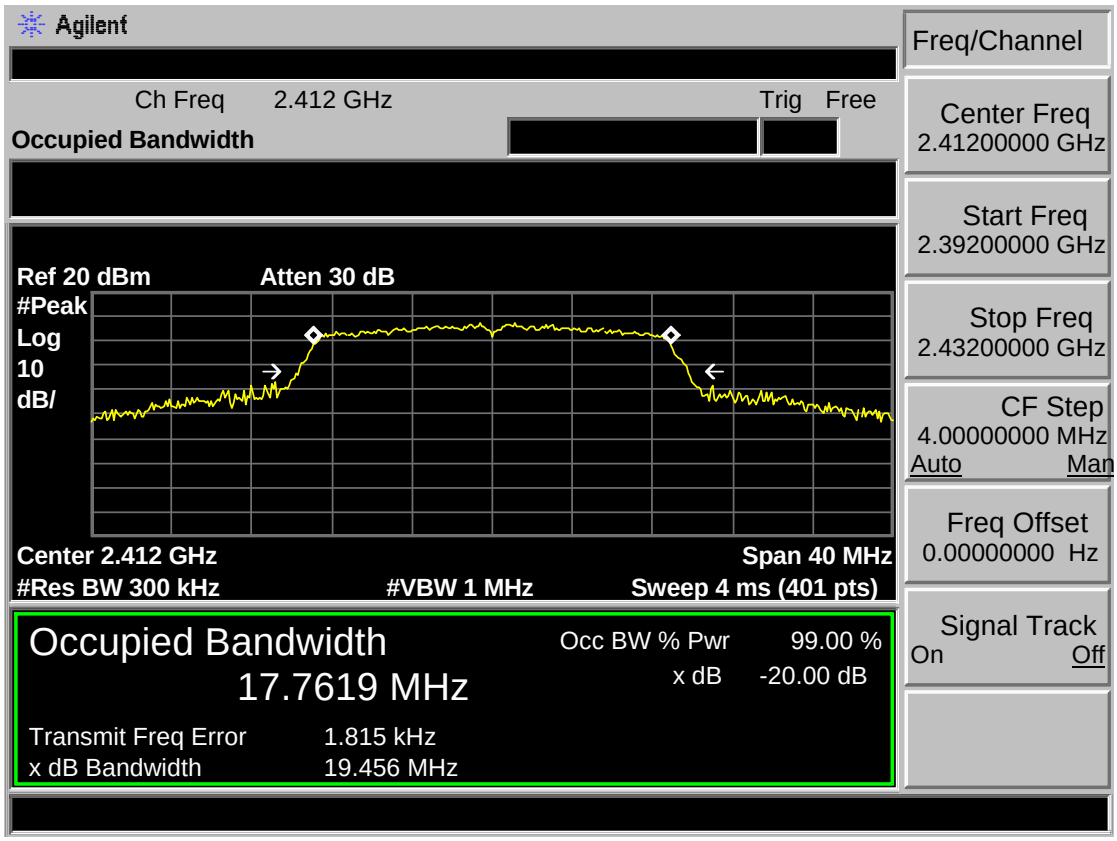
Test Mode: IEEE 802.11g 2437MHz



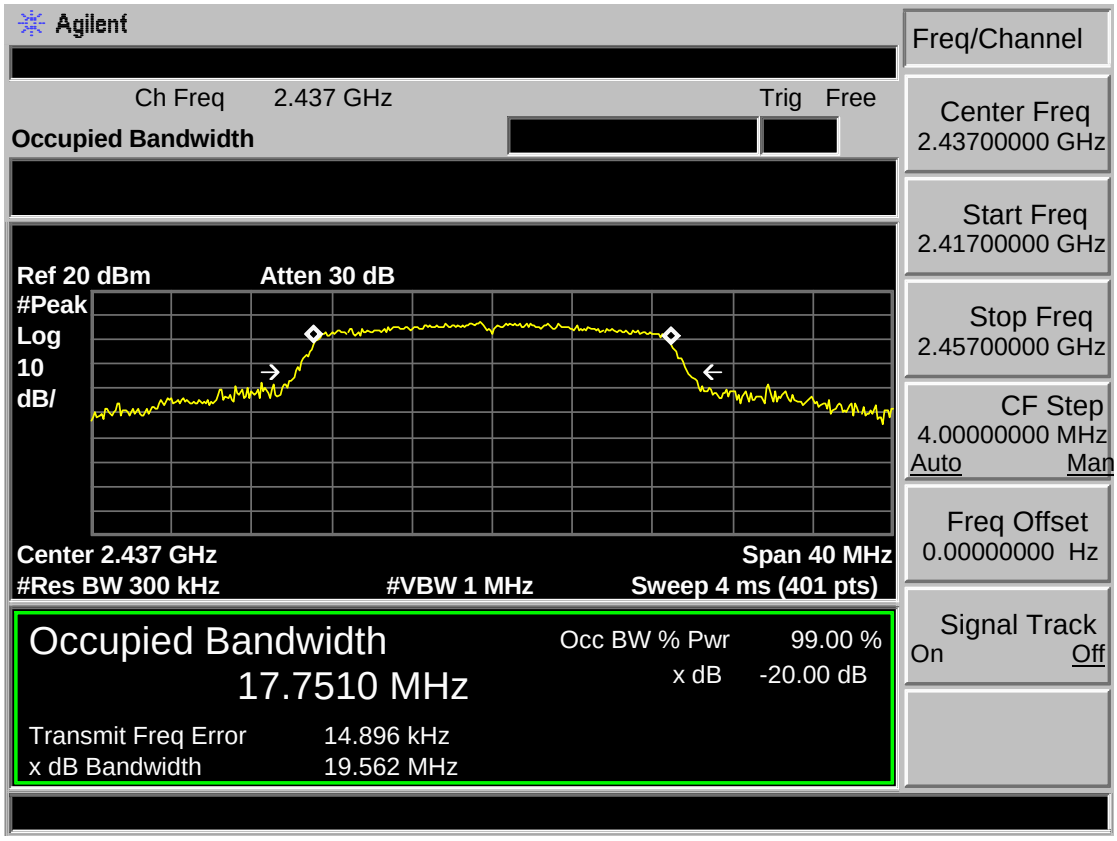
Test Mode: IEEE 802.11g 2462MHz



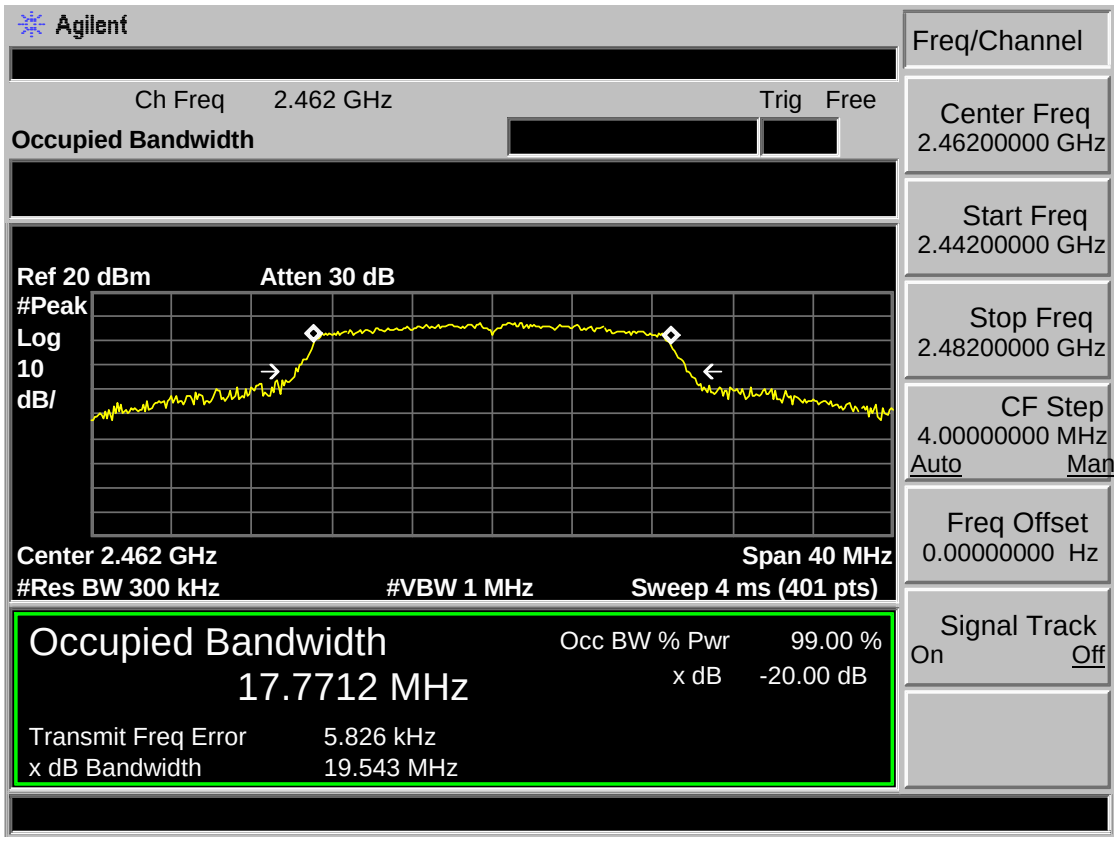
Test Mode: IEEE 802.11n HT20 2412MHz



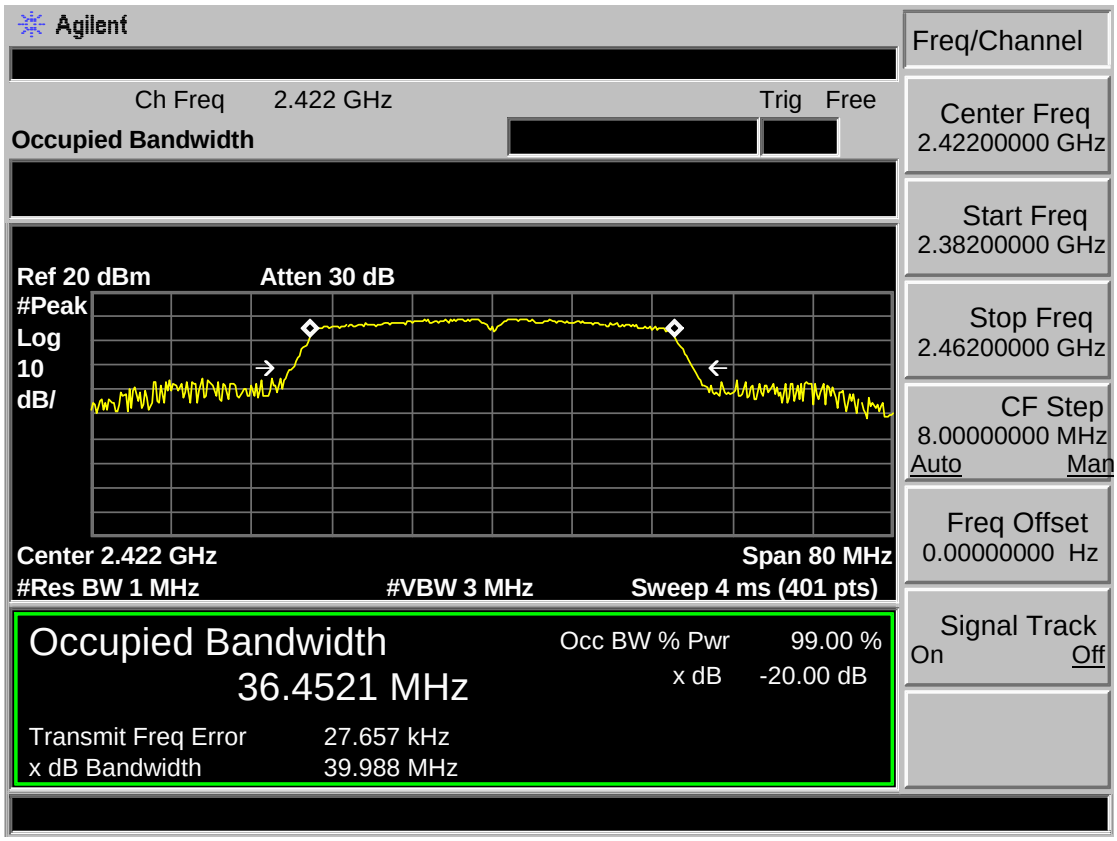
Test Mode: IEEE 802.11n HT20 2437MHz



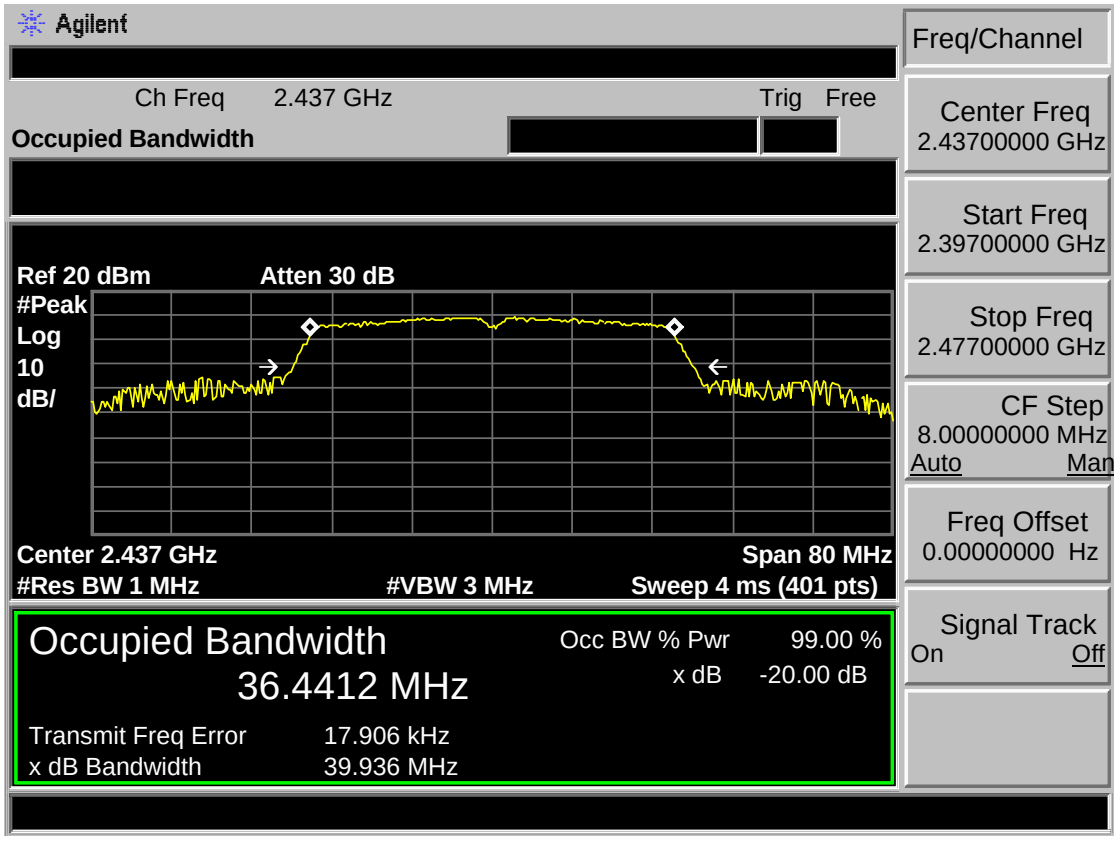
Test Mode: IEEE 802.11n HT20 2462MHz



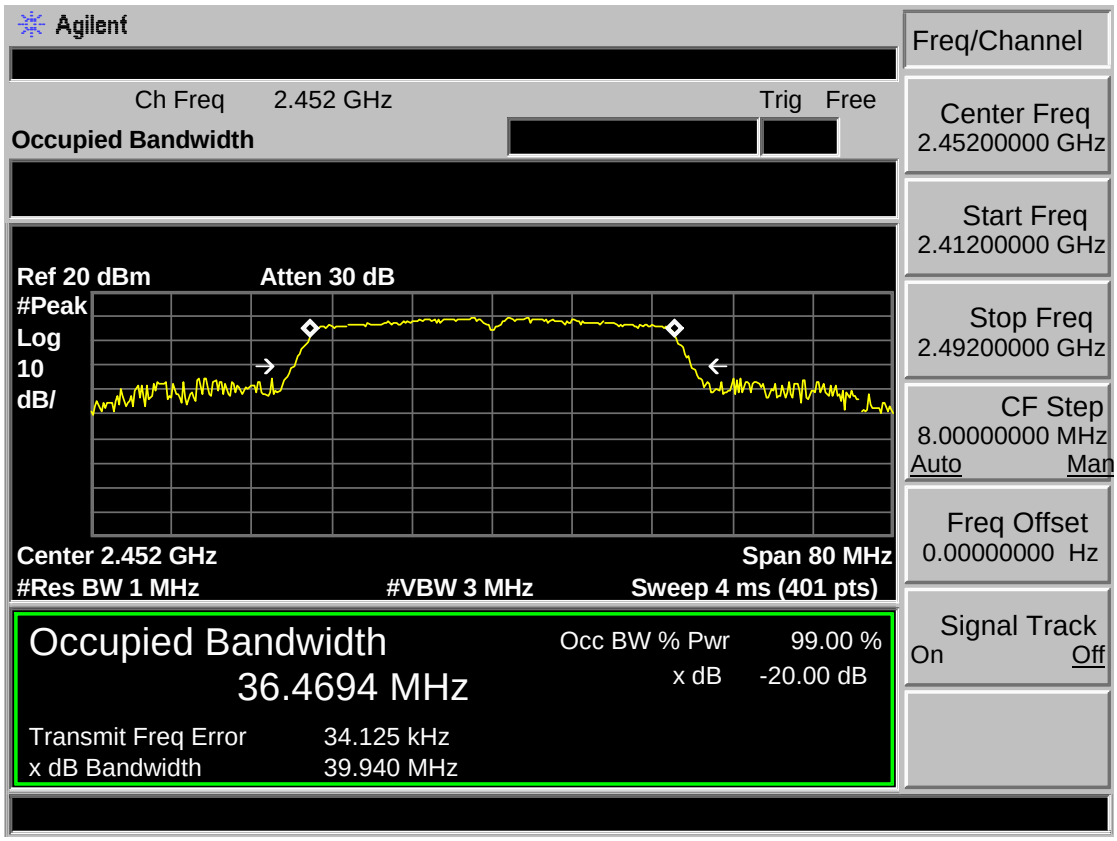
Test Mode: IEEE 802.11n HT40 2422MHz



Test Mode: IEEE 802.11n HT40 2437MHz

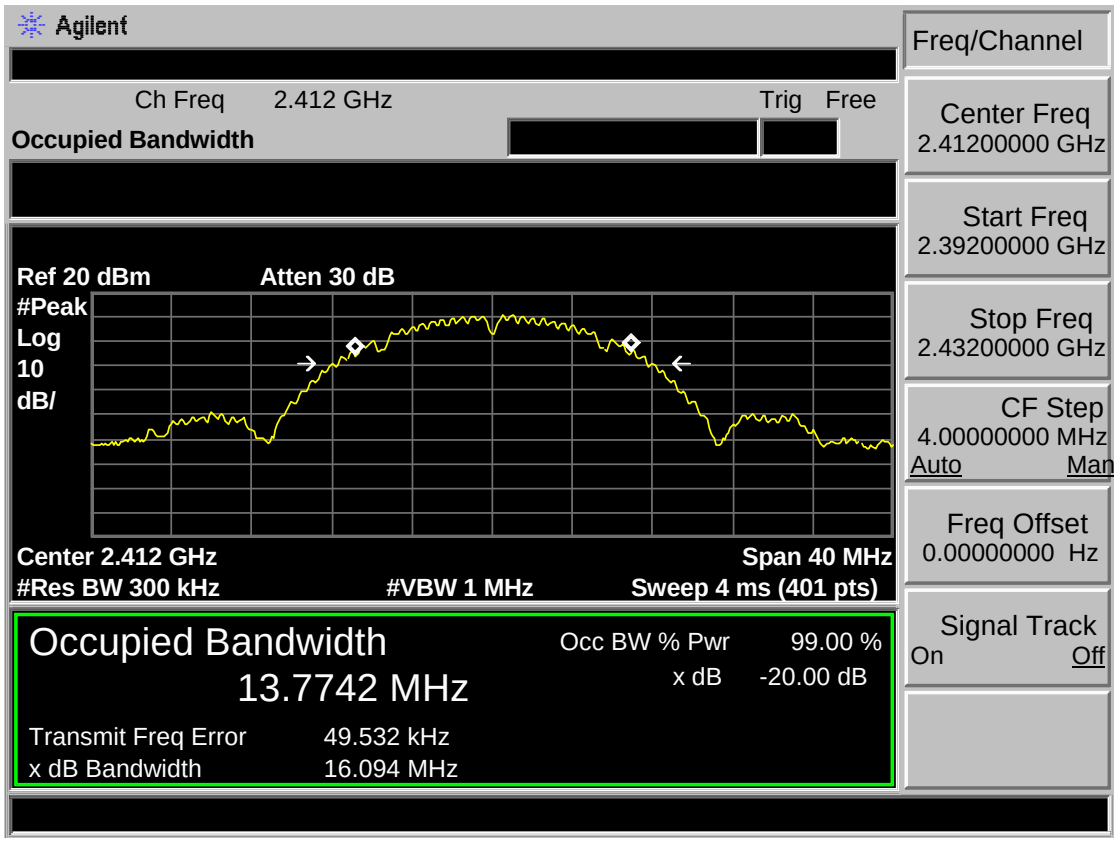


Test Mode: IEEE 802.11n HT40 2452MHz

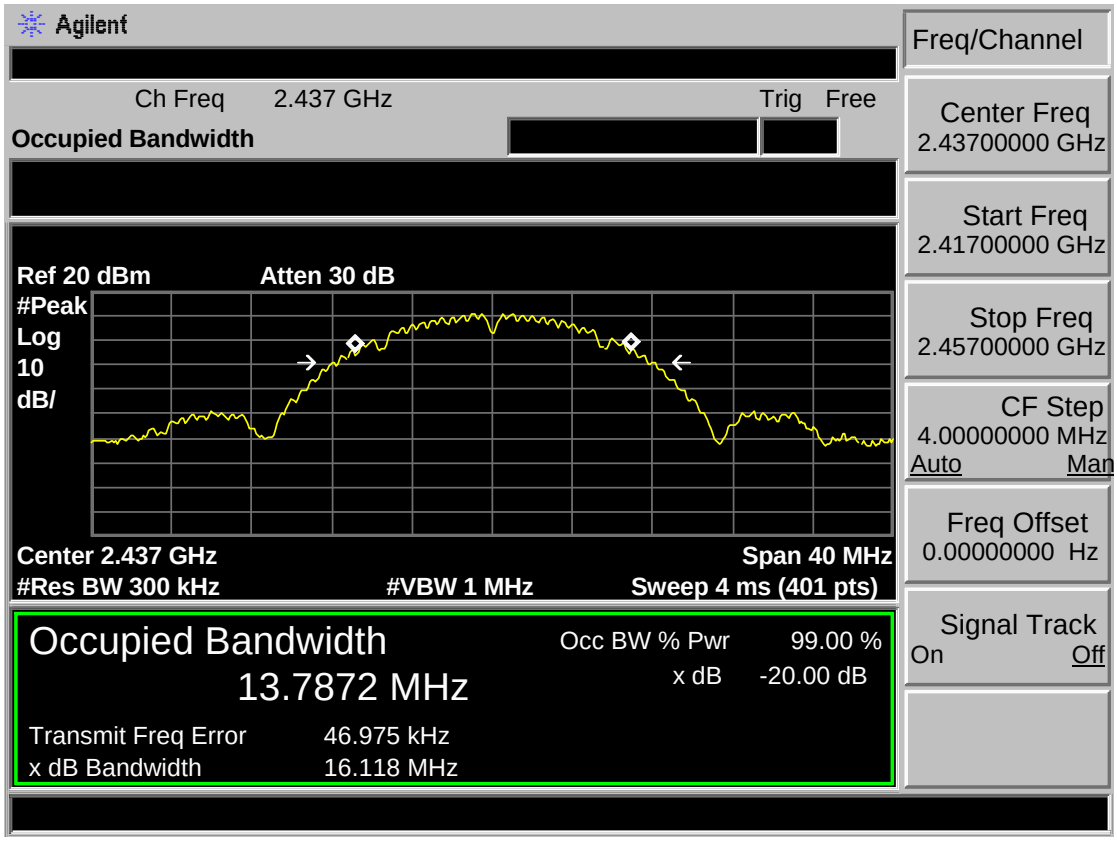


Antenna 2

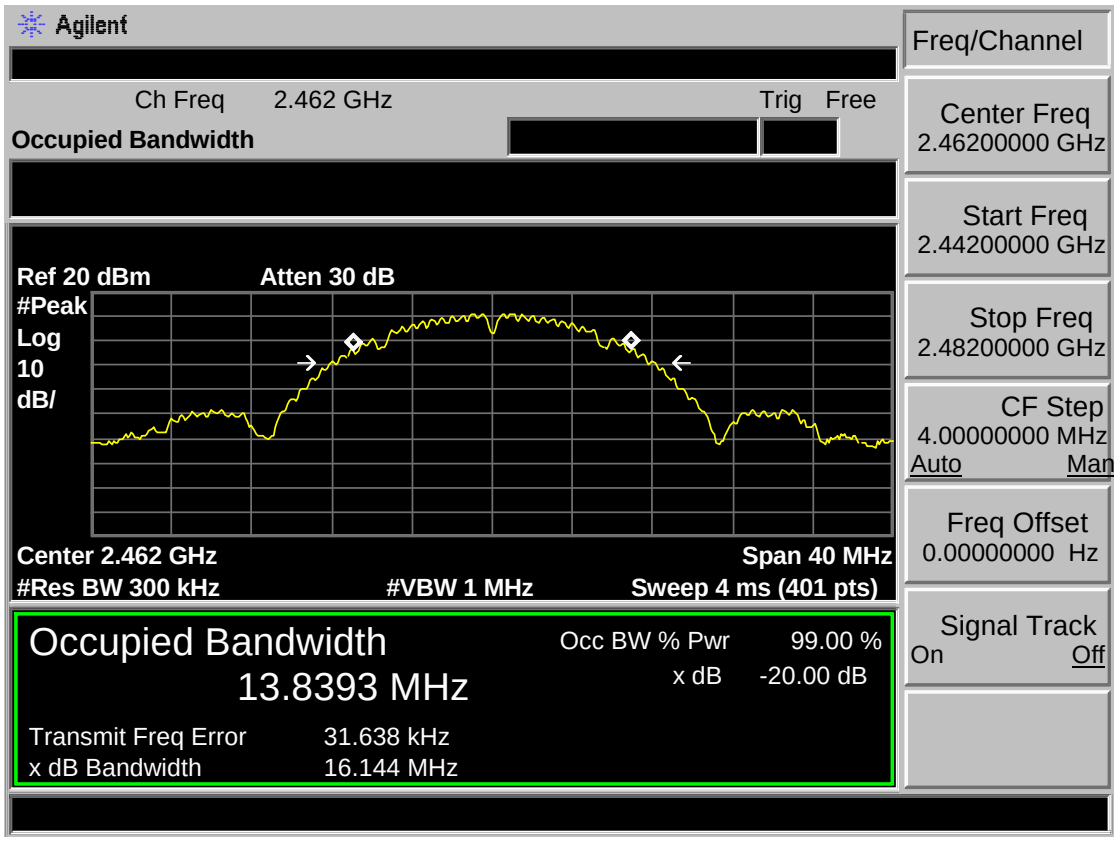
Test Mode: IEEE 802.11b 2412MHz



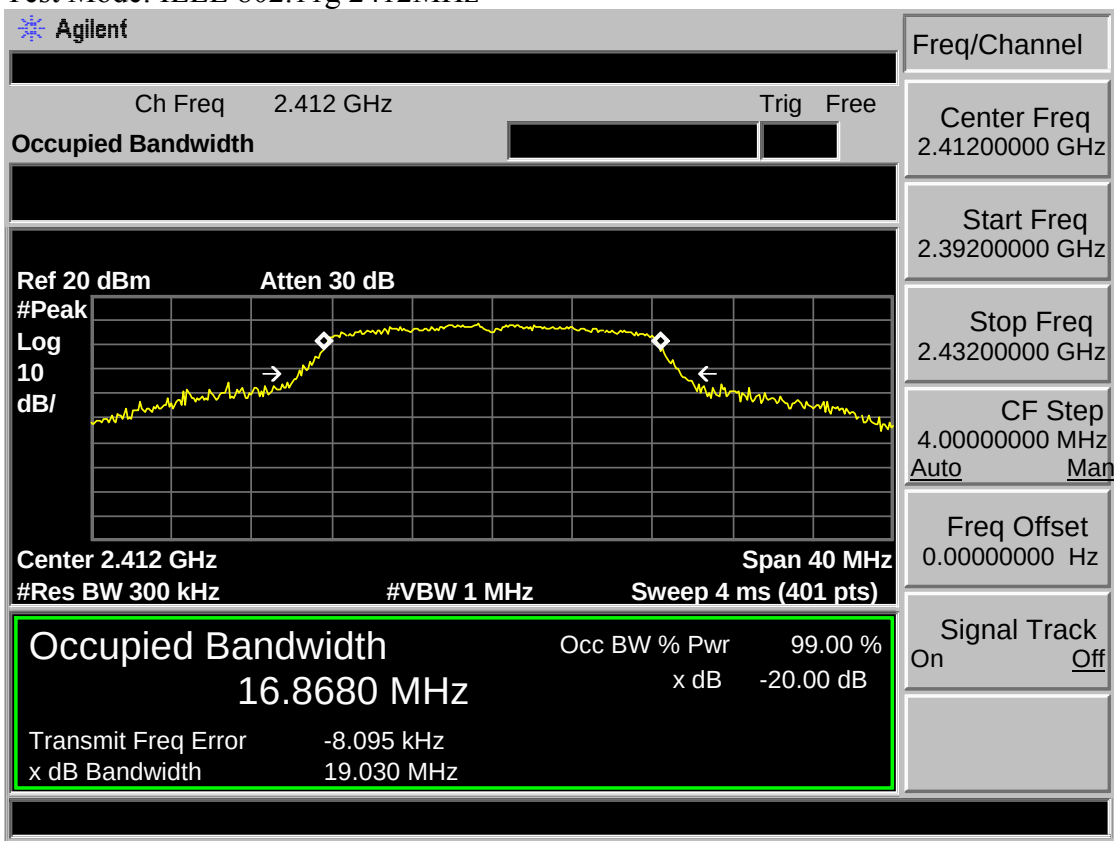
Test Mode: IEEE 802.11b 2437MHz



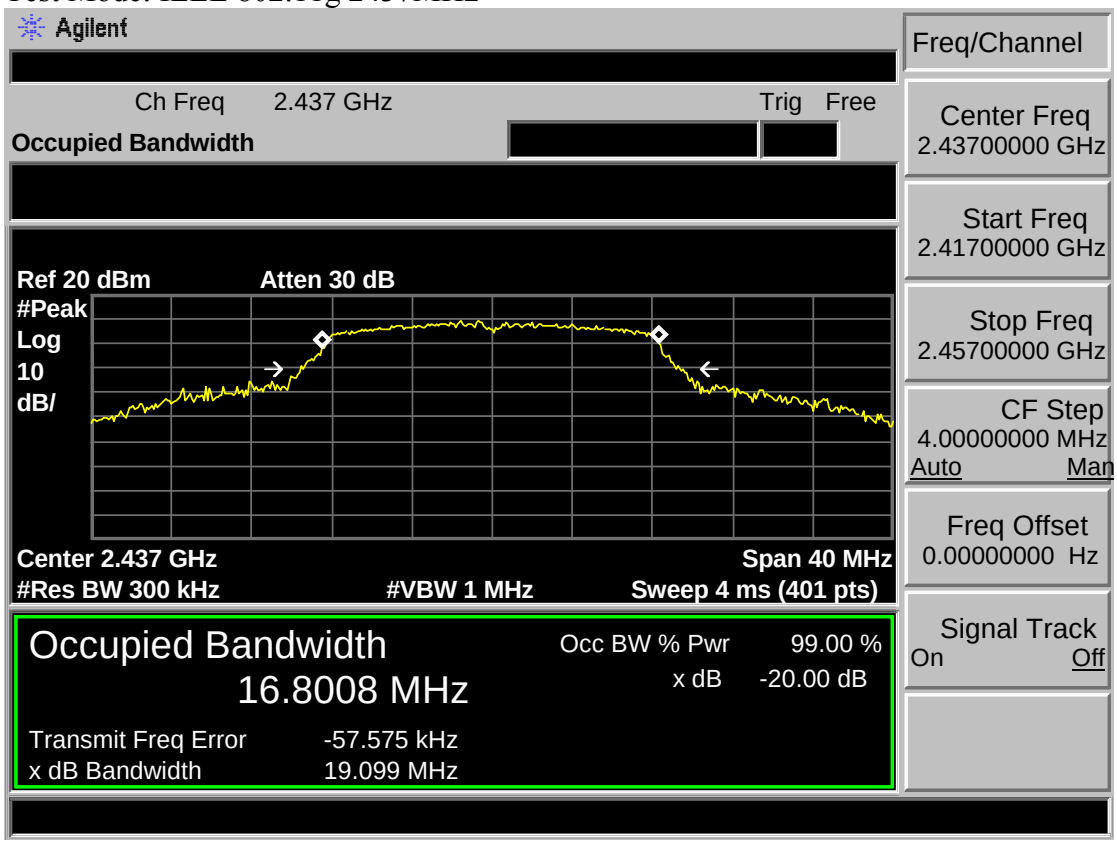
Test Mode: IEEE 802.11b 2462MHz



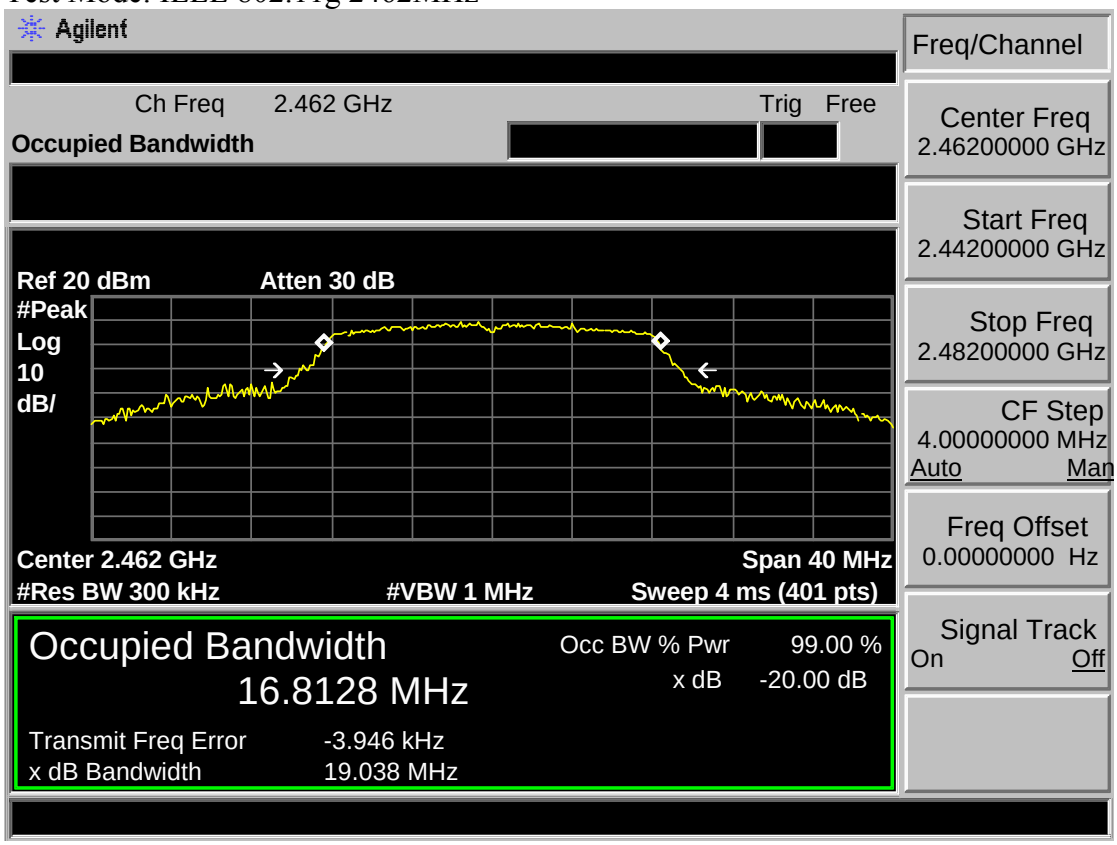
Test Mode: IEEE 802.11g 2412MHz



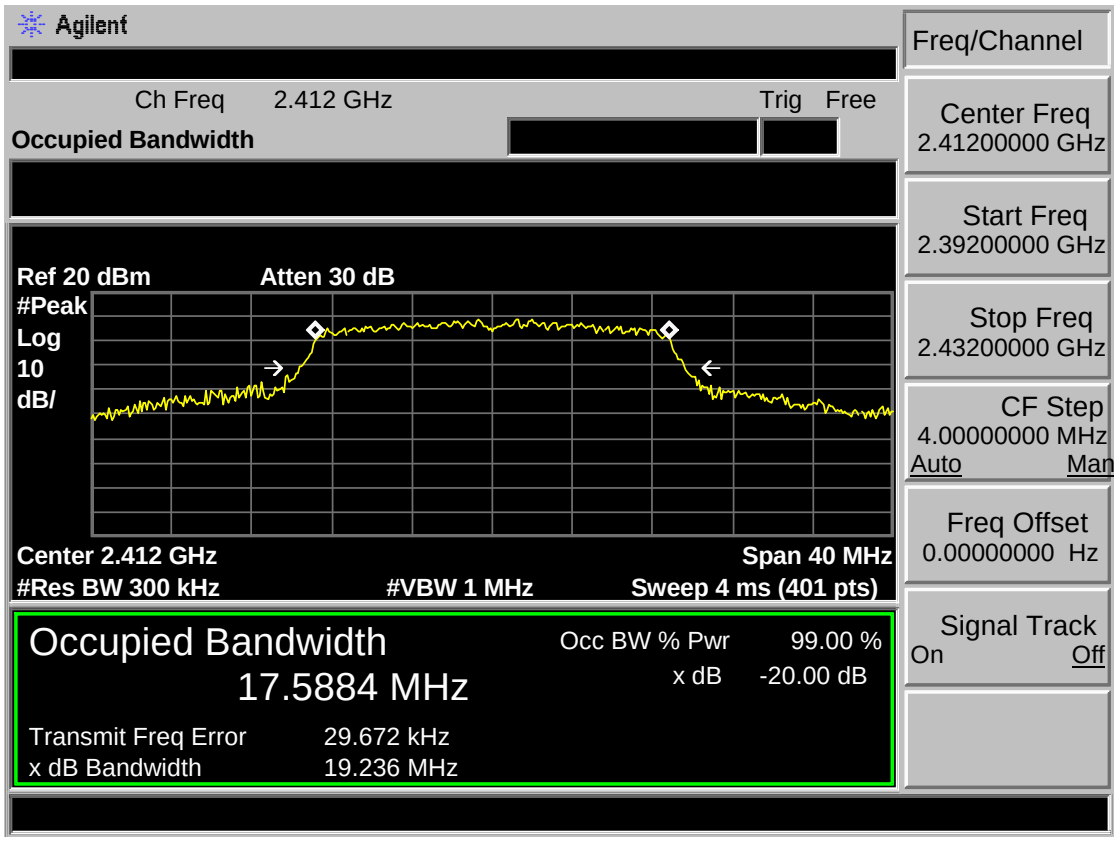
Test Mode: IEEE 802.11g 2437MHz



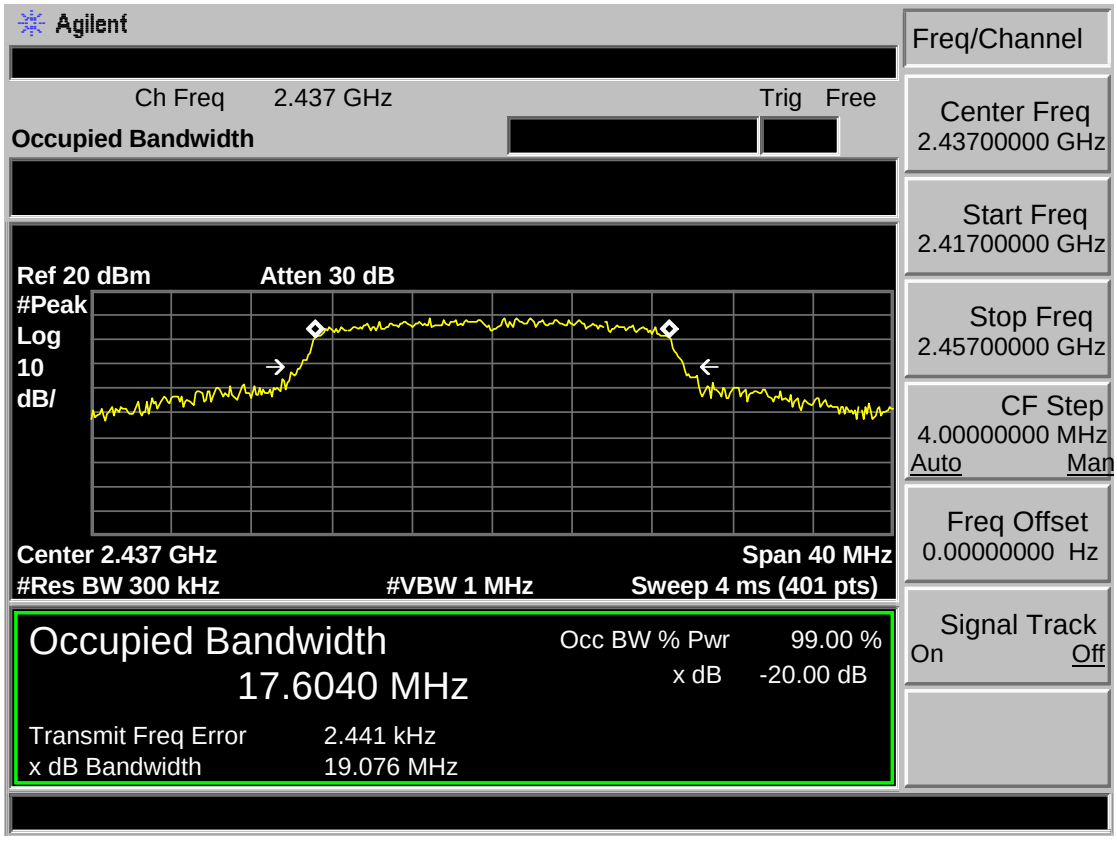
Test Mode: IEEE 802.11g 2462MHz



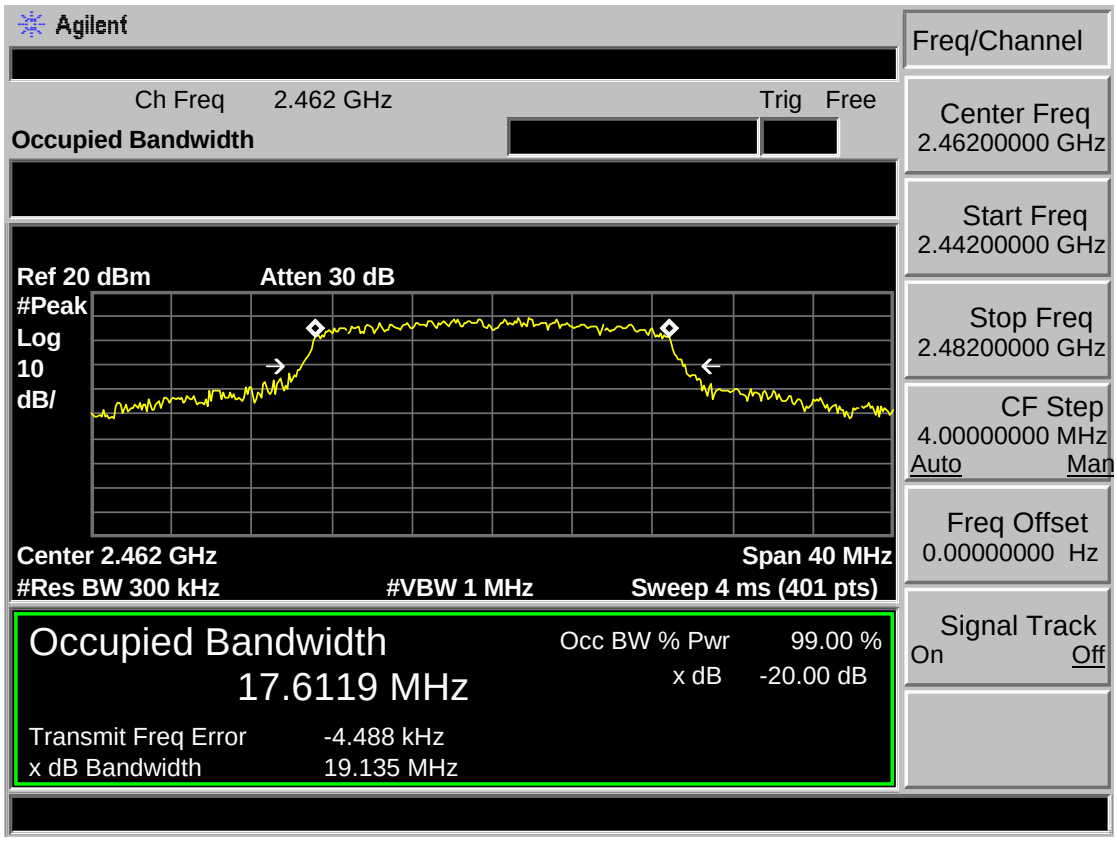
Test Mode: IEEE 802.11n HT20 2412MHz



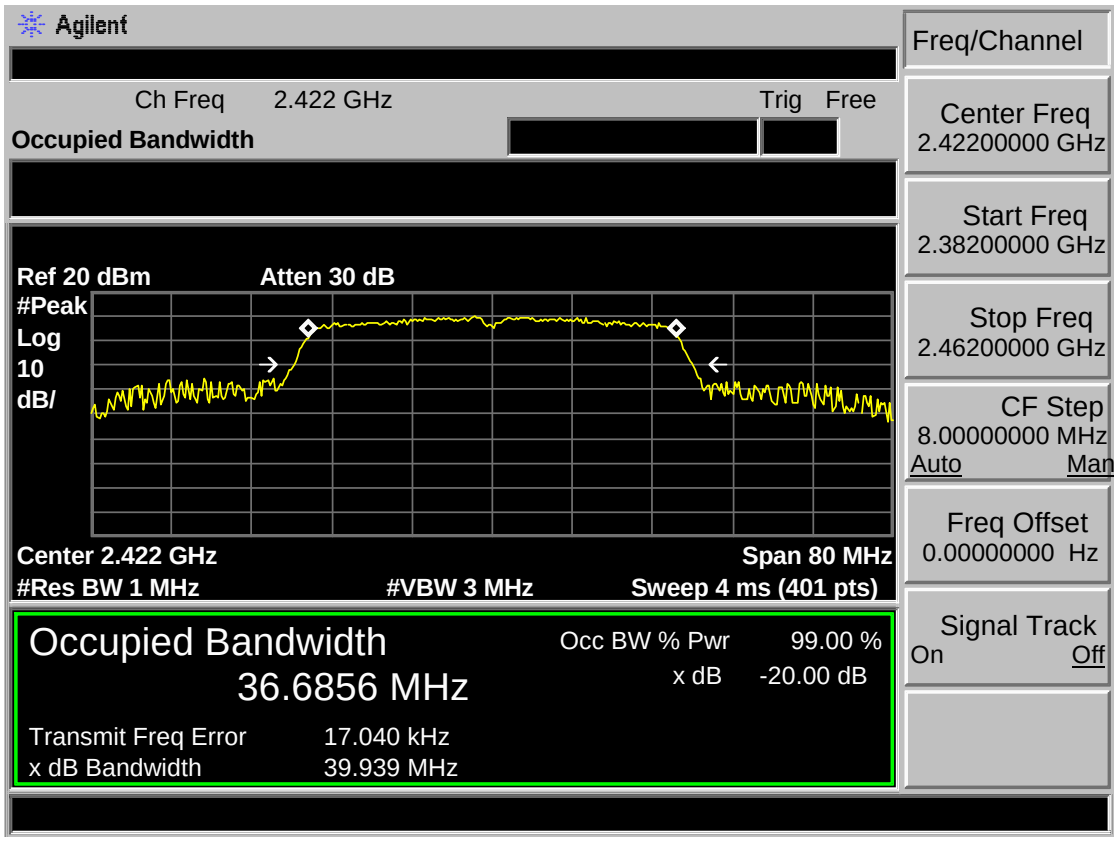
Test Mode: IEEE 802.11n HT20 2437MHz



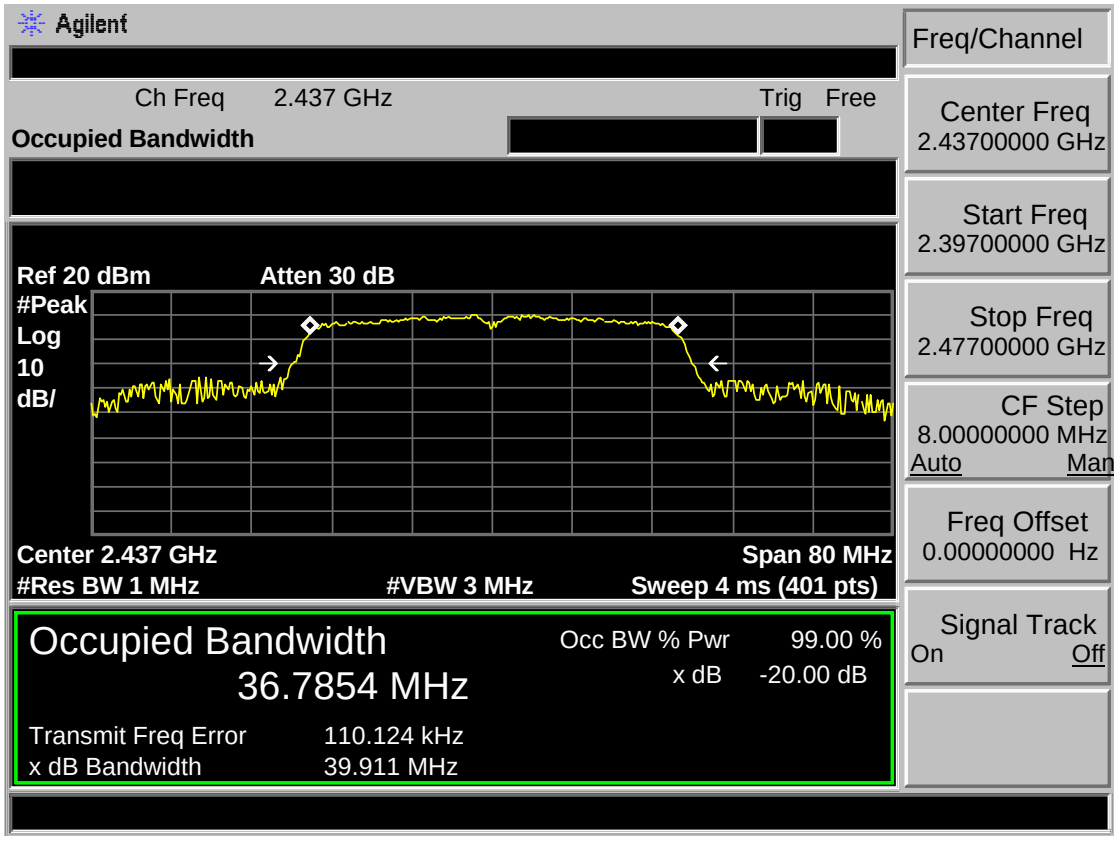
Test Mode: IEEE 802.11n HT20 2462MHz



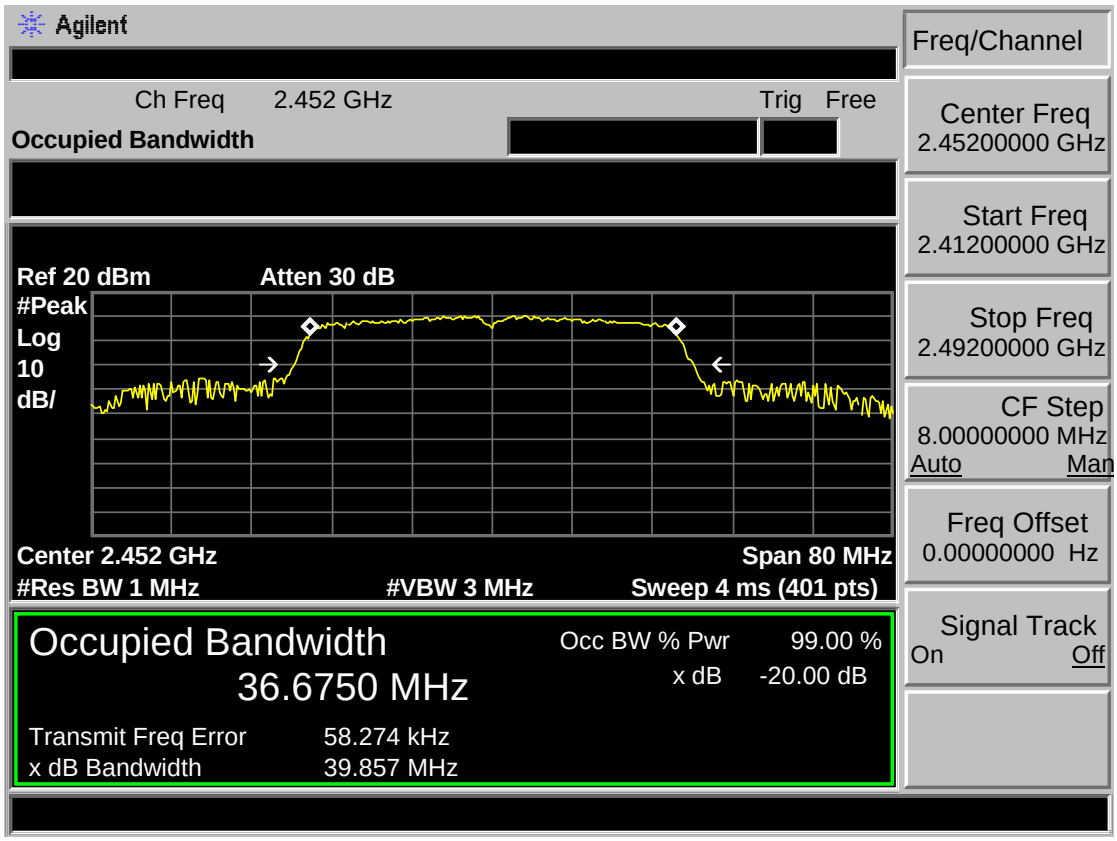
Test Mode: IEEE 802.11n HT40 2422MHz



Test Mode: IEEE 802.11n HT40 2437MHz



Test Mode: IEEE 802.11n HT40 2452MHz



7 OUTPUT POWER TEST

7.1 Limit

For systems using digital modulation in the 2400—2483.5MHz, The Peak out put Power shall not exceed 1W(30dBm)

7.2 Test Procedure

1, The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable.

2, Follow the test procedure as described in KDB 558074

(1)Set span to at least 1.5 times the OBW.

(2)Set RBW = 1-5% of the OBW, not to exceed 1 MHz.

(3)Set VBW ≥ 3 x RBW.

(4)Number of points in sweep ≥ 2 × span / RBW. (This gives bin-to-bin spacing ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)

(4)Sweep time = auto.

(5)Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.

(6)If transmit duty cycle < 98 %, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run”.

(7)Trace average at least 100 traces in power averaging (i.e., RMS) mode.

(8)Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

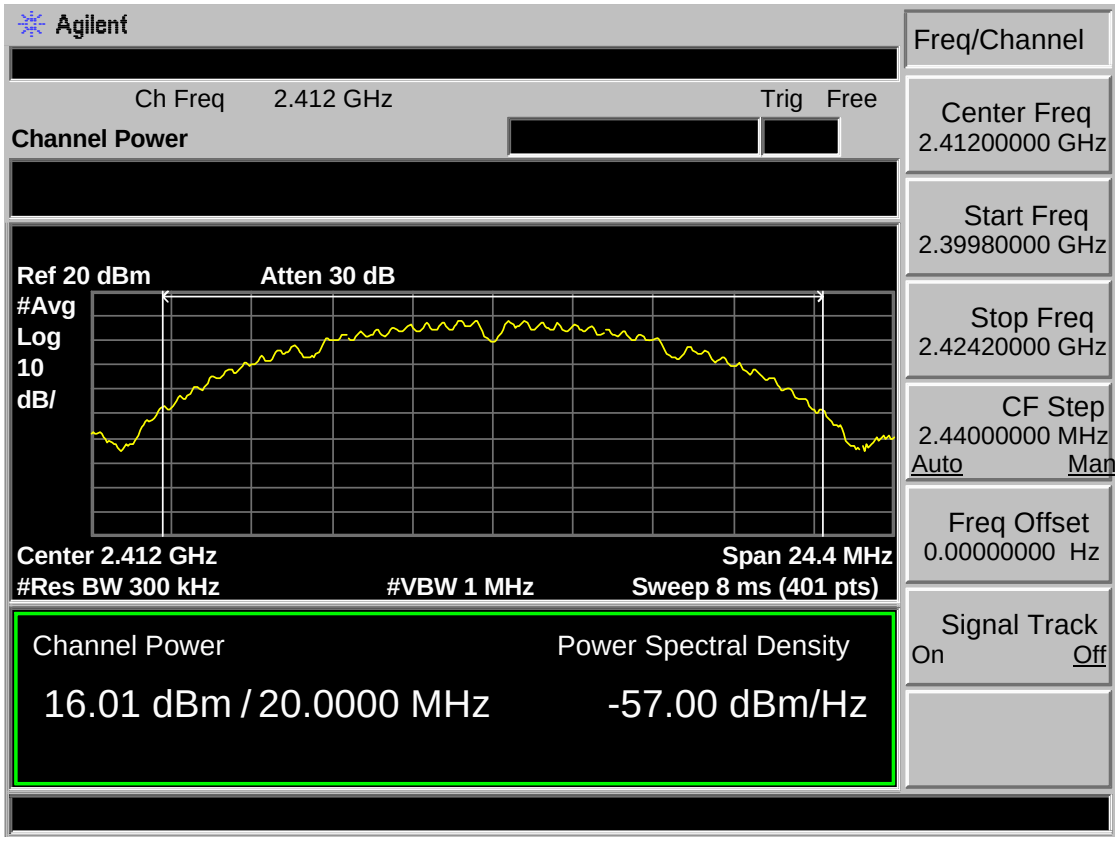
7.3 Test Result

EUT: JMDD Module					
M/N: JMDD					
Test date: 2018-11-07		Test site: RF Site			Tested by: Tony
Pass					
Test Mode	CH	Conducted Power（dBm）			Limit (dBm)
		Ant 1	Ant 2	Total	
IEEE 802.11 b	CH1	16.01	16.52	/	30
	CH6	16.05	16.58	/	30
	CH11	15.41	16.19	/	30
IEEE 802.11 g	CH1	11.54	11.98	/	30
	CH6	11.72	12.15	/	30
	CH11	11.54	12.41	/	30
IEEE 802.11 n HT 20	CH1	8.09	8.58	11.35	29.34
	CH6	8.32	9.34	11.87	29.34
	CH11	8.81	9.59	12.23	29.34
IEEE 802.11 n HT 40	CH3	5.47	5.74	8.62	29.34
	CH6	5.22	5.93	8.60	29.34
	CH9	5.34	5.98	8.68	29.34
Conclusion：PASS					
Note: For 802.11n HT20 and 802.11n HT40, the EUT incorporates a MIMO function. The Antenna directional gain is 6.66dBi. The Output Power limit is the above limits-(6.66-6)=29.34 dBm.					

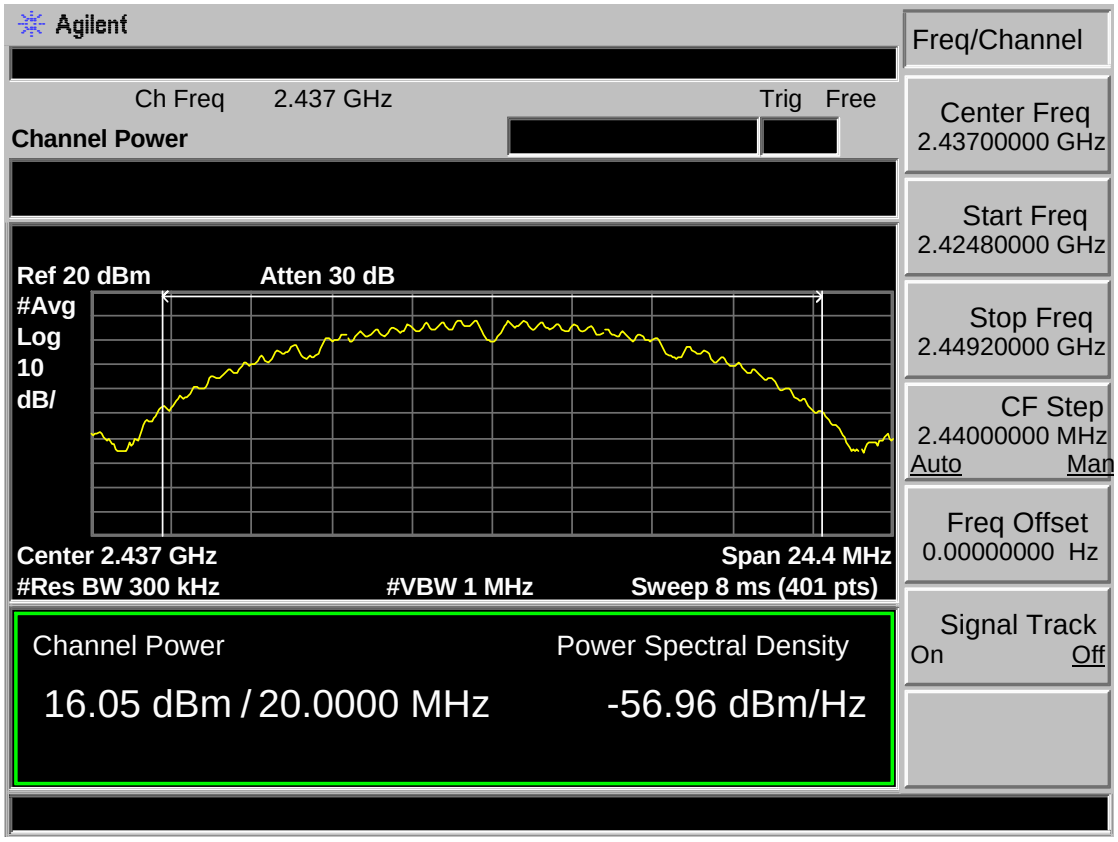
7.4 Test Data

Antenna 1

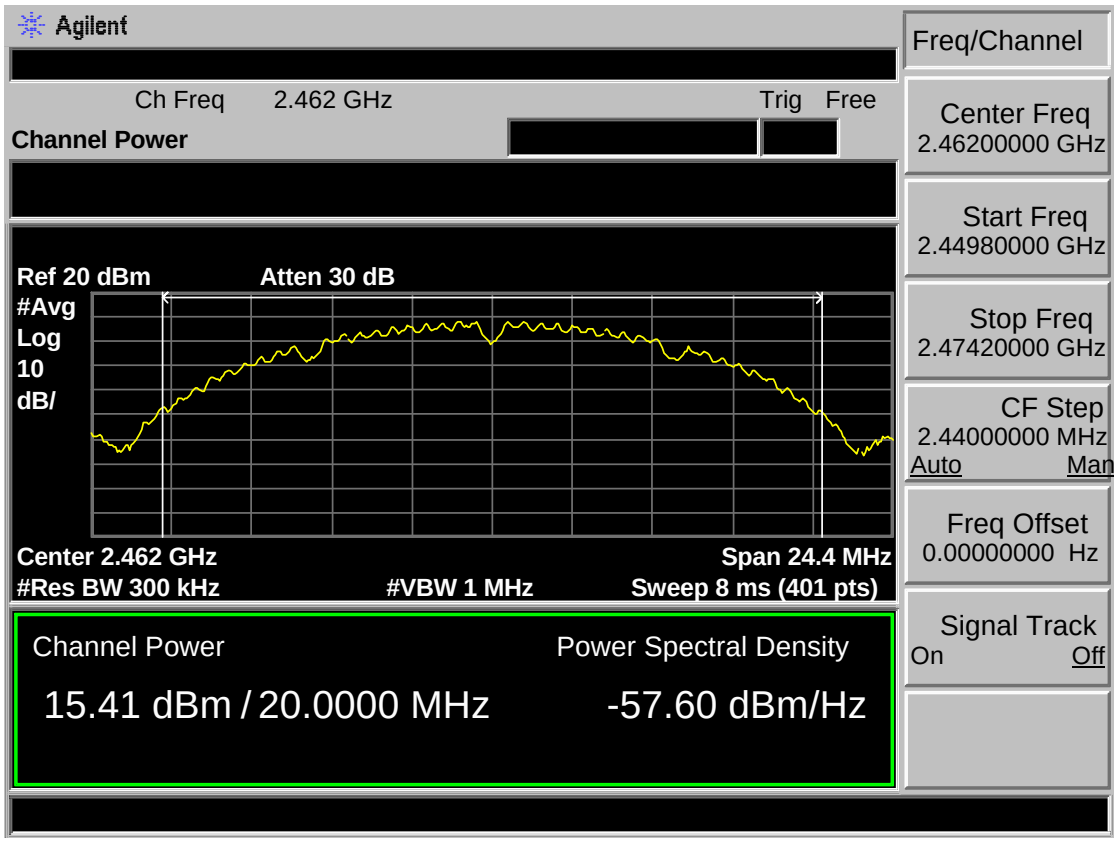
Test Mode: IEEE 802.11b 2412MHz



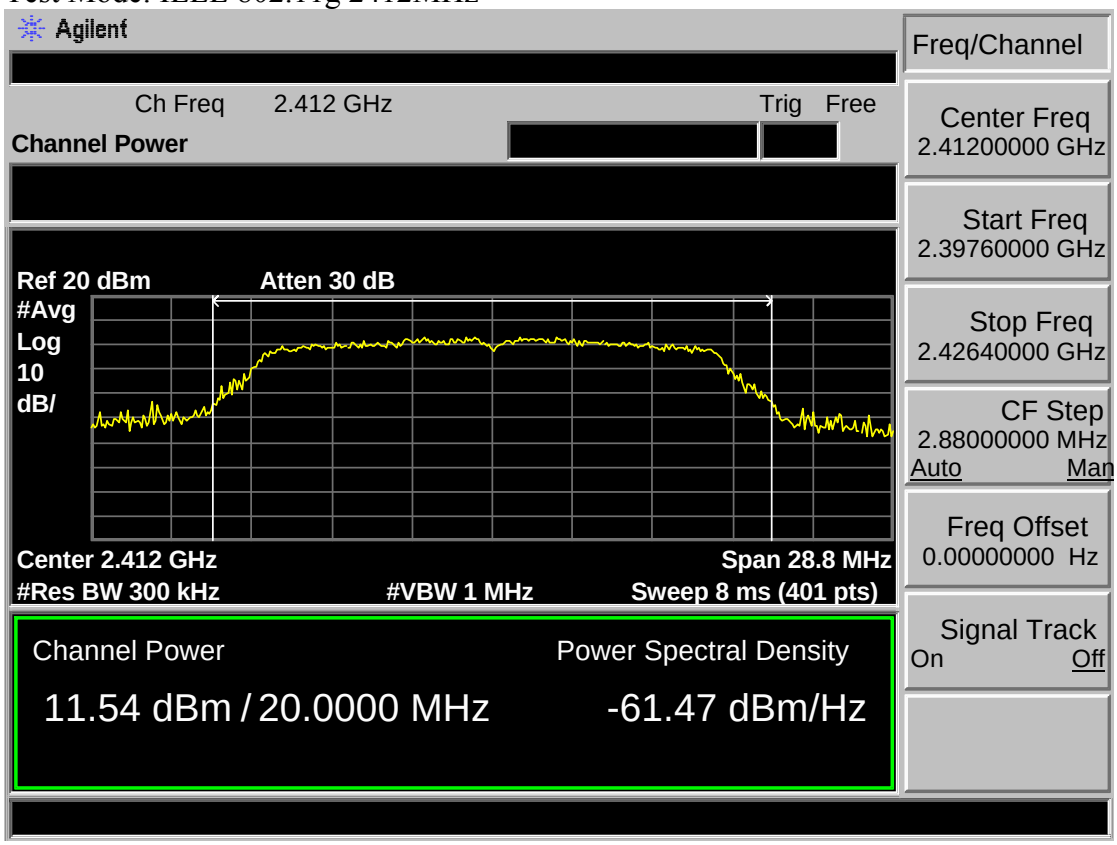
Test Mode: IEEE 802.11b 2437MHz



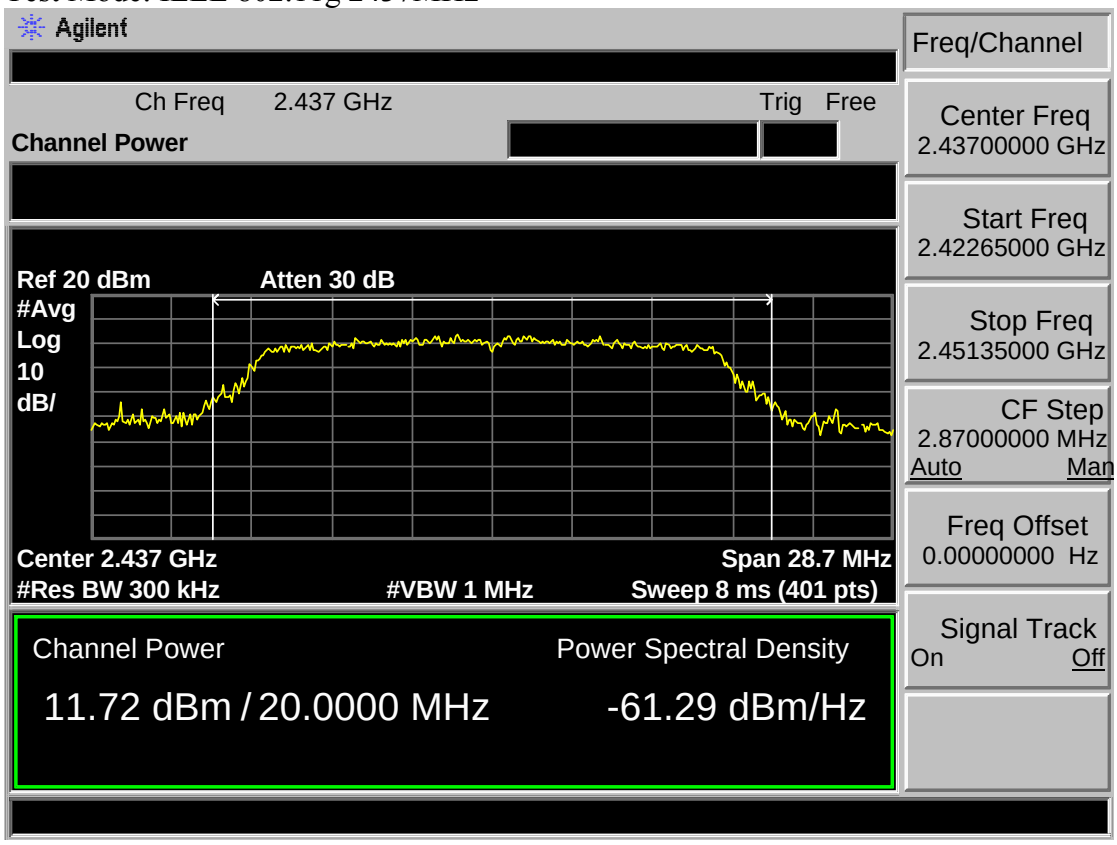
Test Mode: IEEE 802.11b 2462MHz



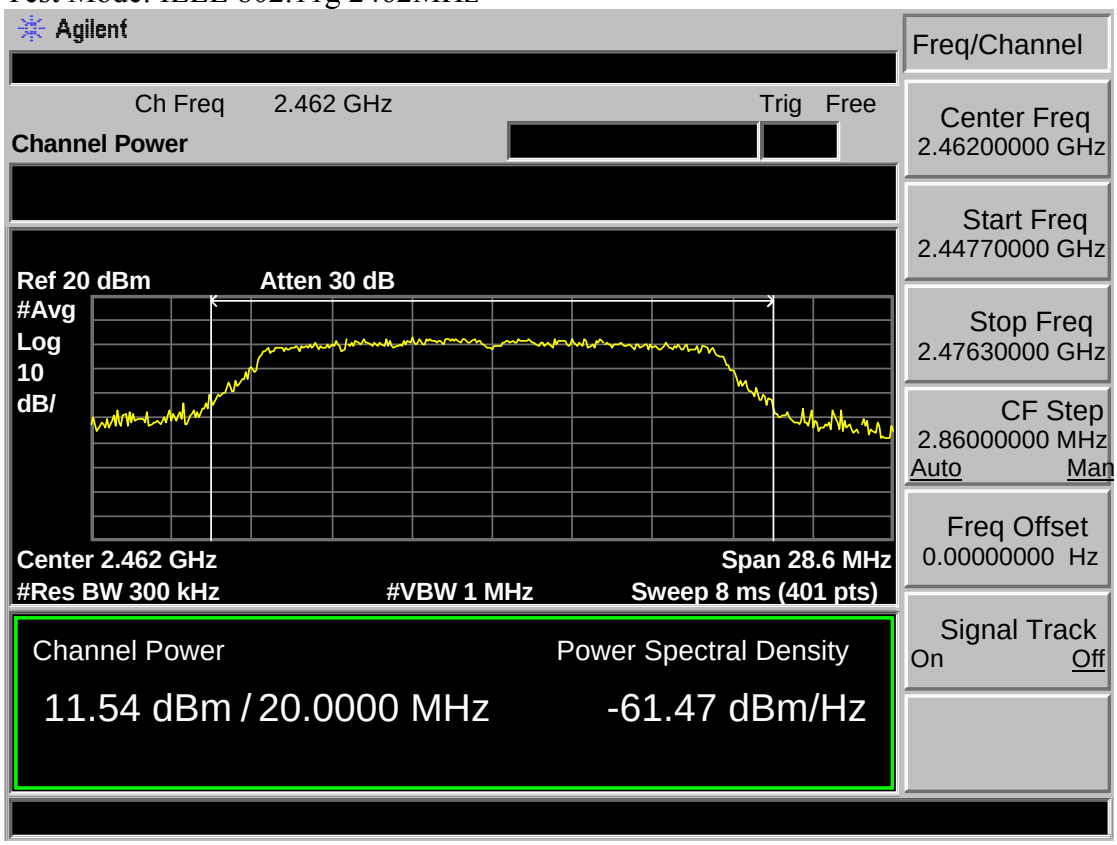
Test Mode: IEEE 802.11g 2412MHz



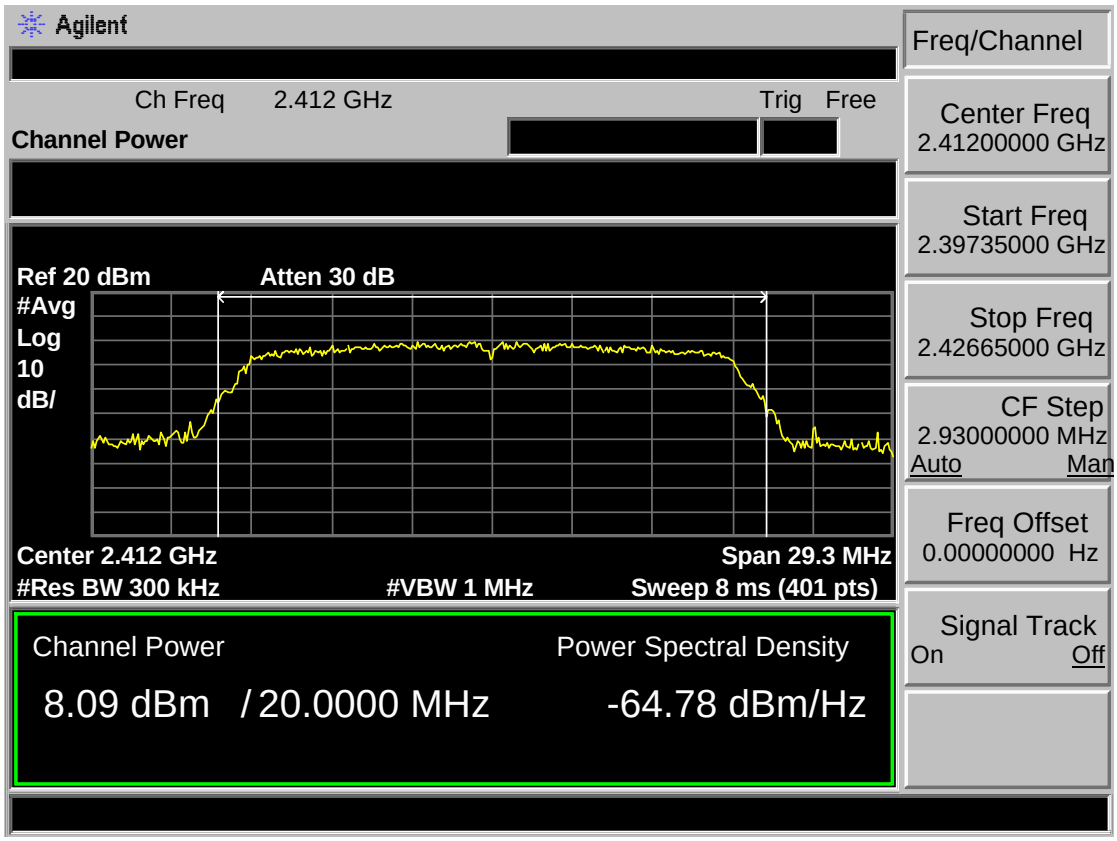
Test Mode: IEEE 802.11g 2437MHz



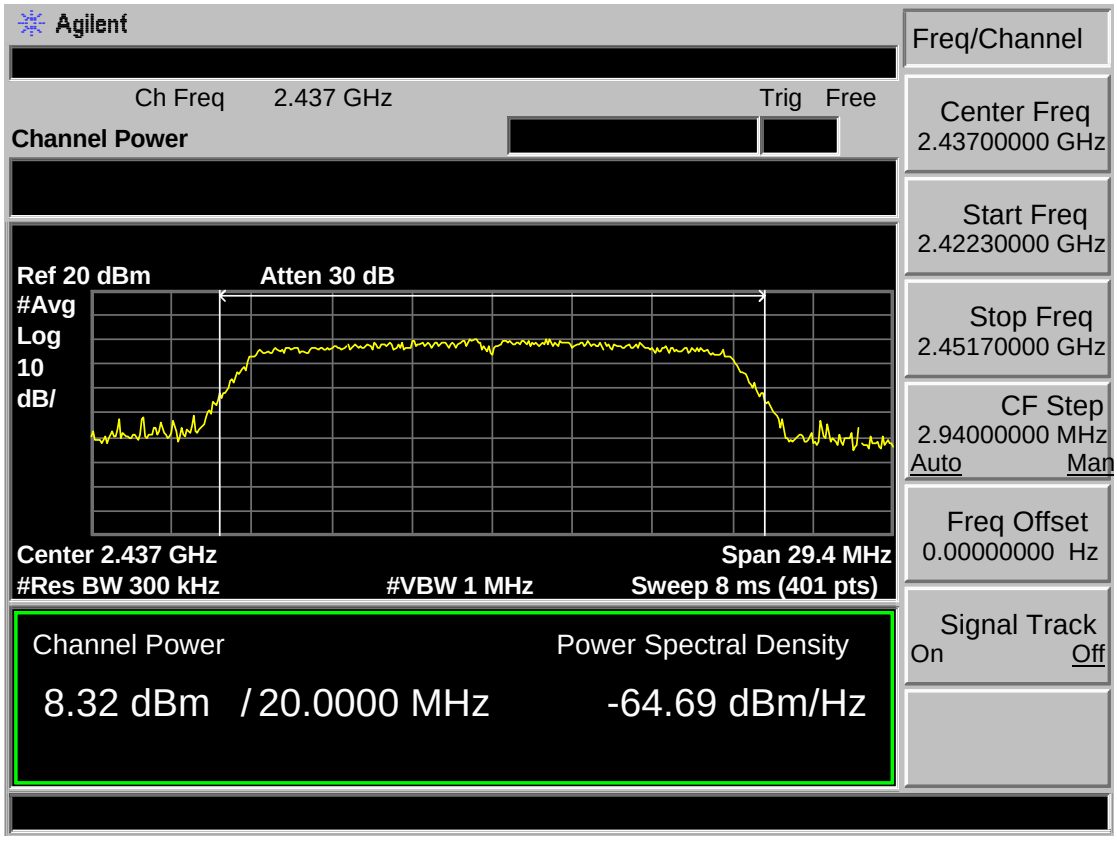
Test Mode: IEEE 802.11g 2462MHz



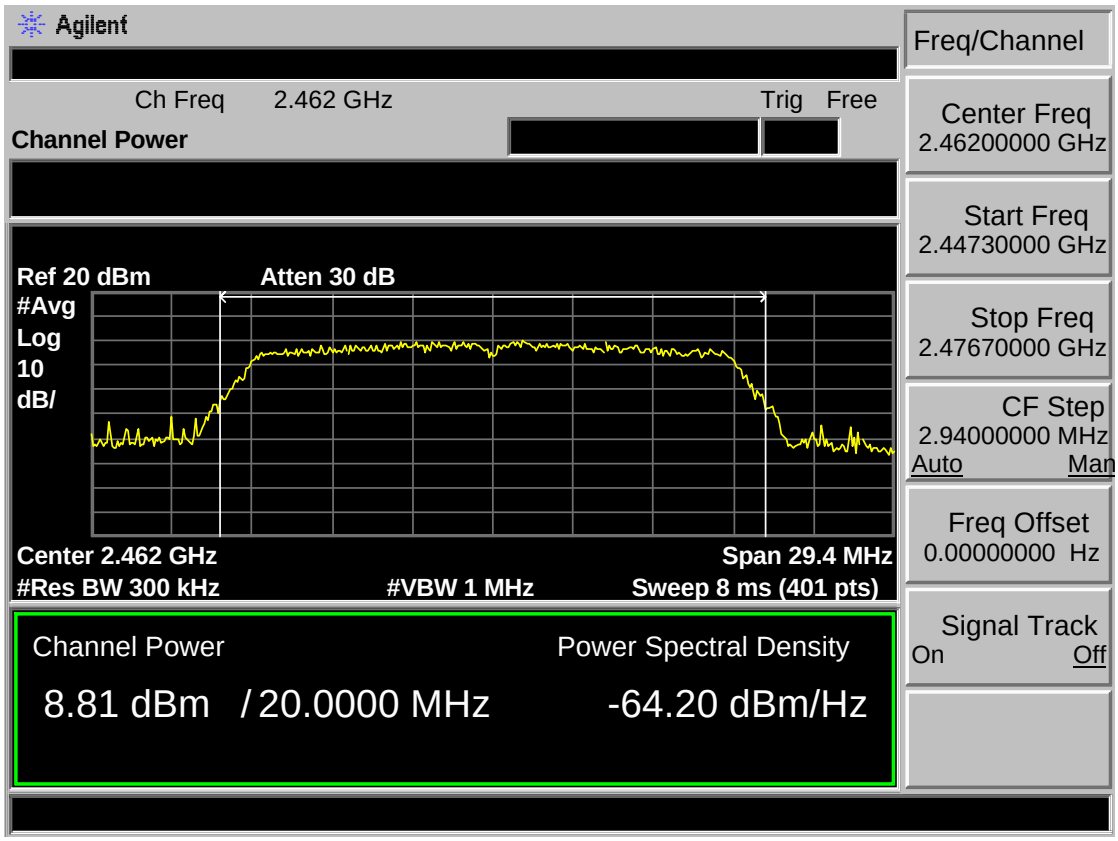
Test Mode: IEEE 802.11n HT20 2412MHz



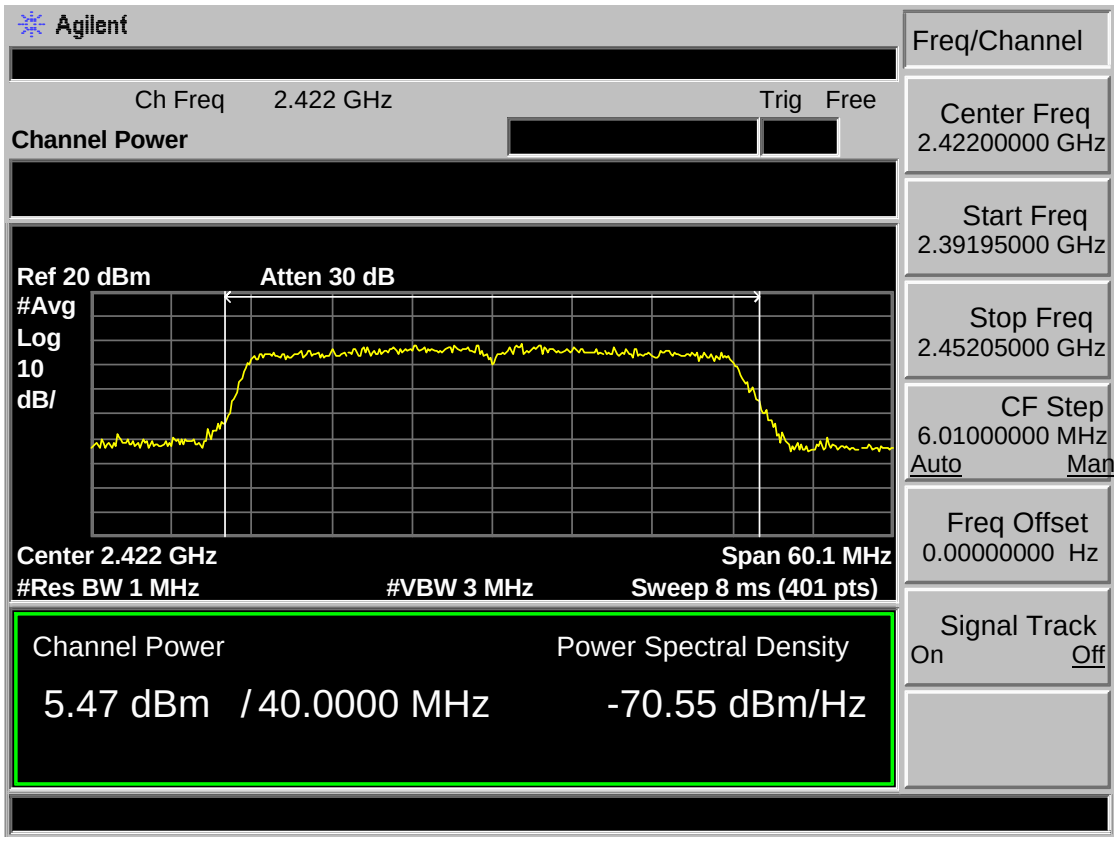
Test Mode: IEEE 802.11n HT20 2437MHz



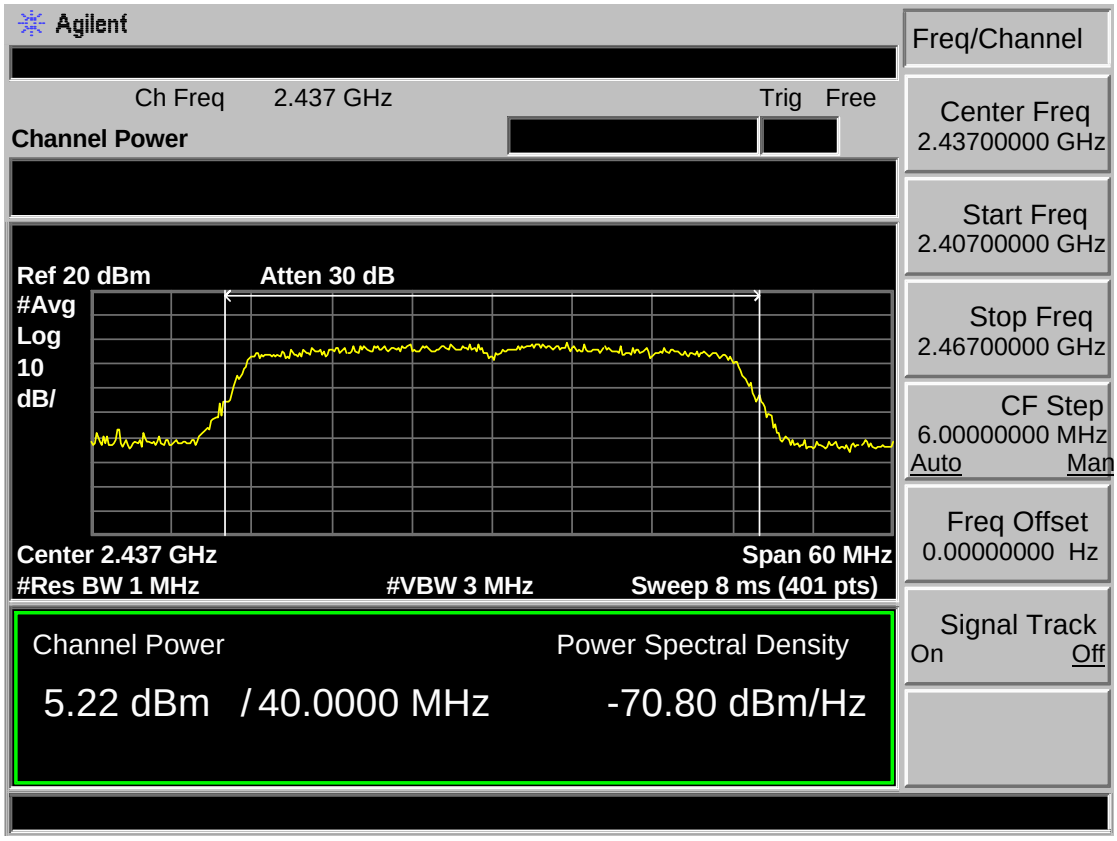
Test Mode: IEEE 802.11n HT20 2462MHz



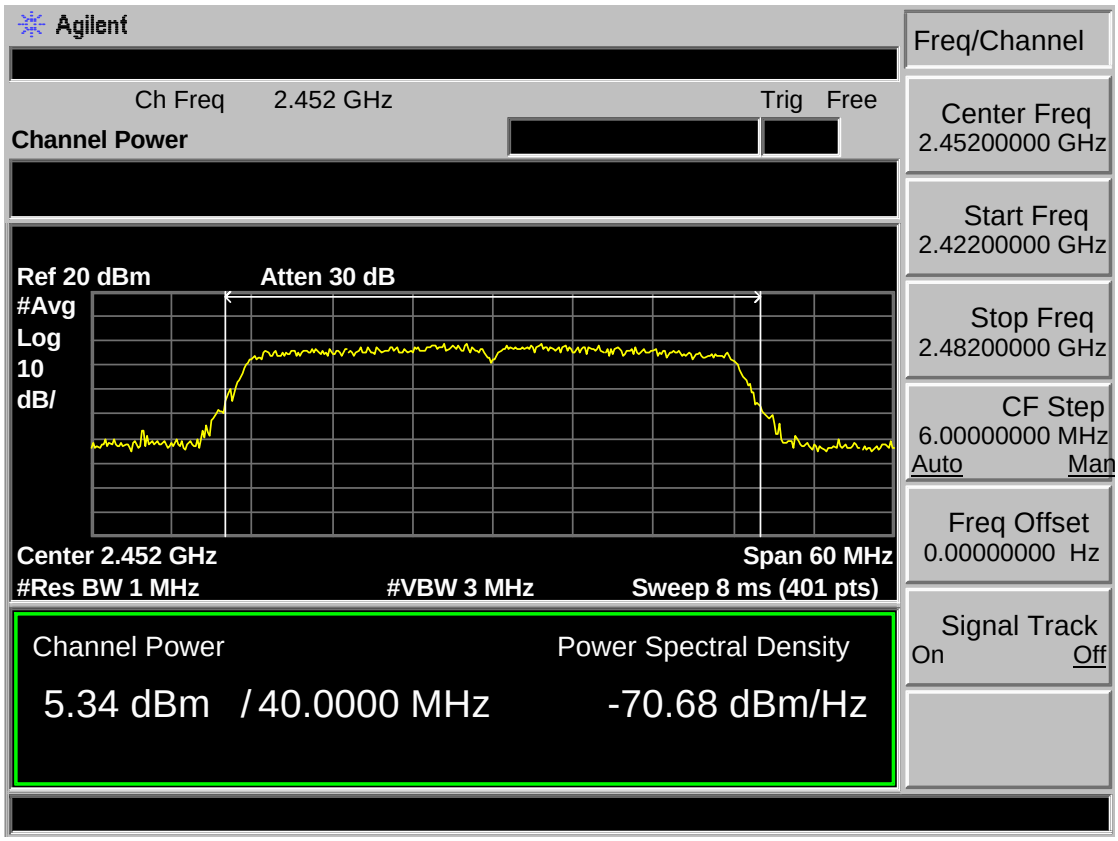
Test Mode: IEEE 802.11n HT40 2422MHz



Test Mode: IEEE 802.11n HT40 2437MHz

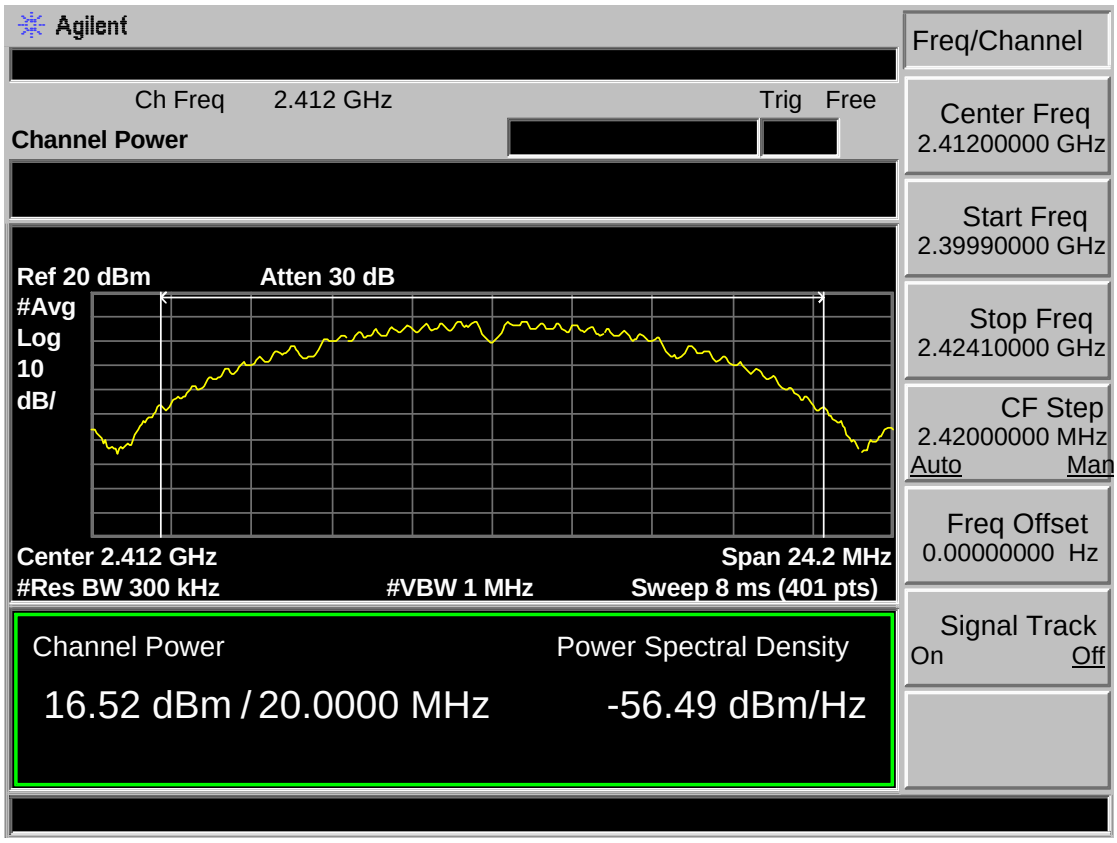


Test Mode: IEEE 802.11n HT40 2452MHz

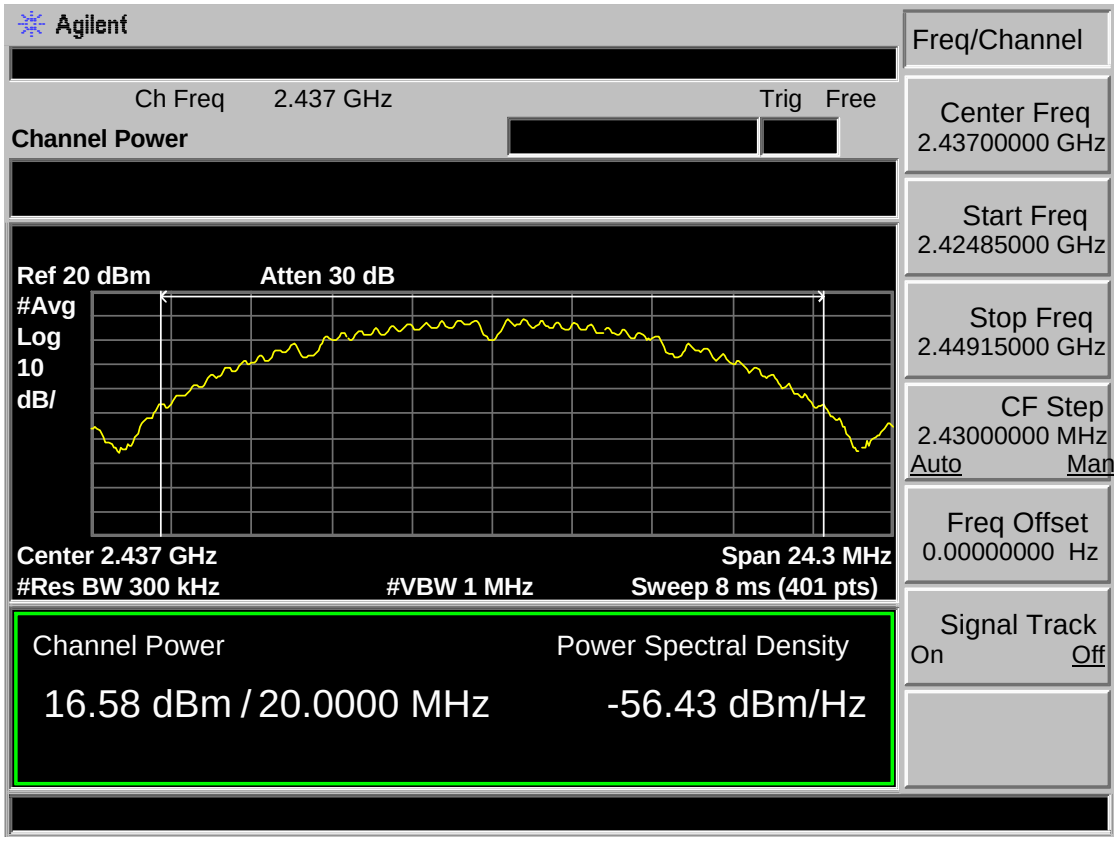


Antenna 2

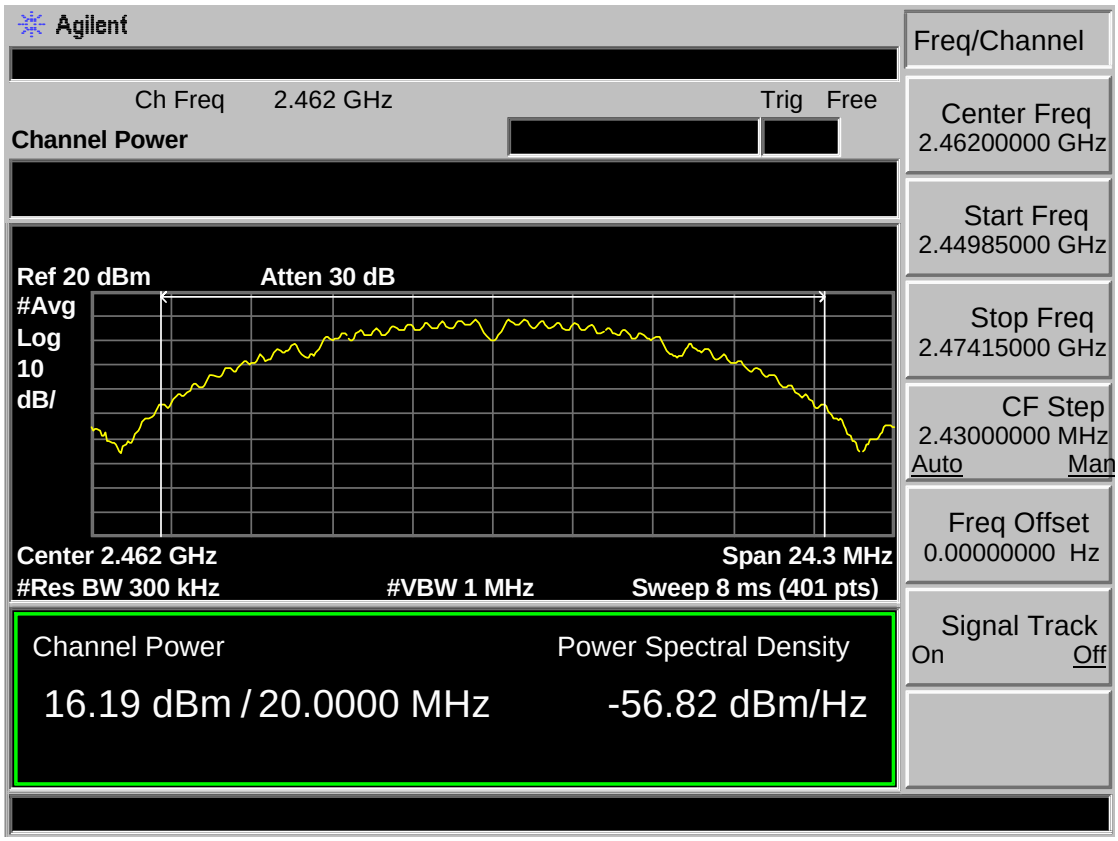
Test Mode: IEEE 802.11b 2412MHz



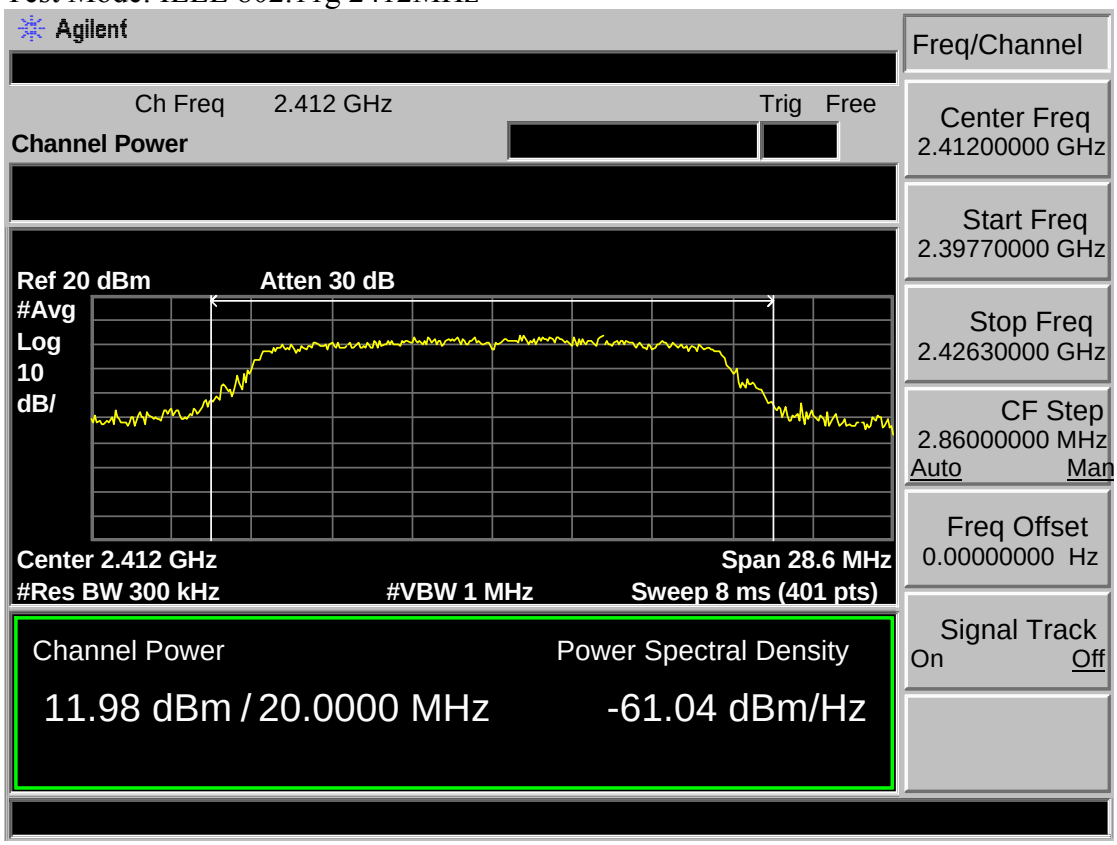
Test Mode: IEEE 802.11b 2437MHz



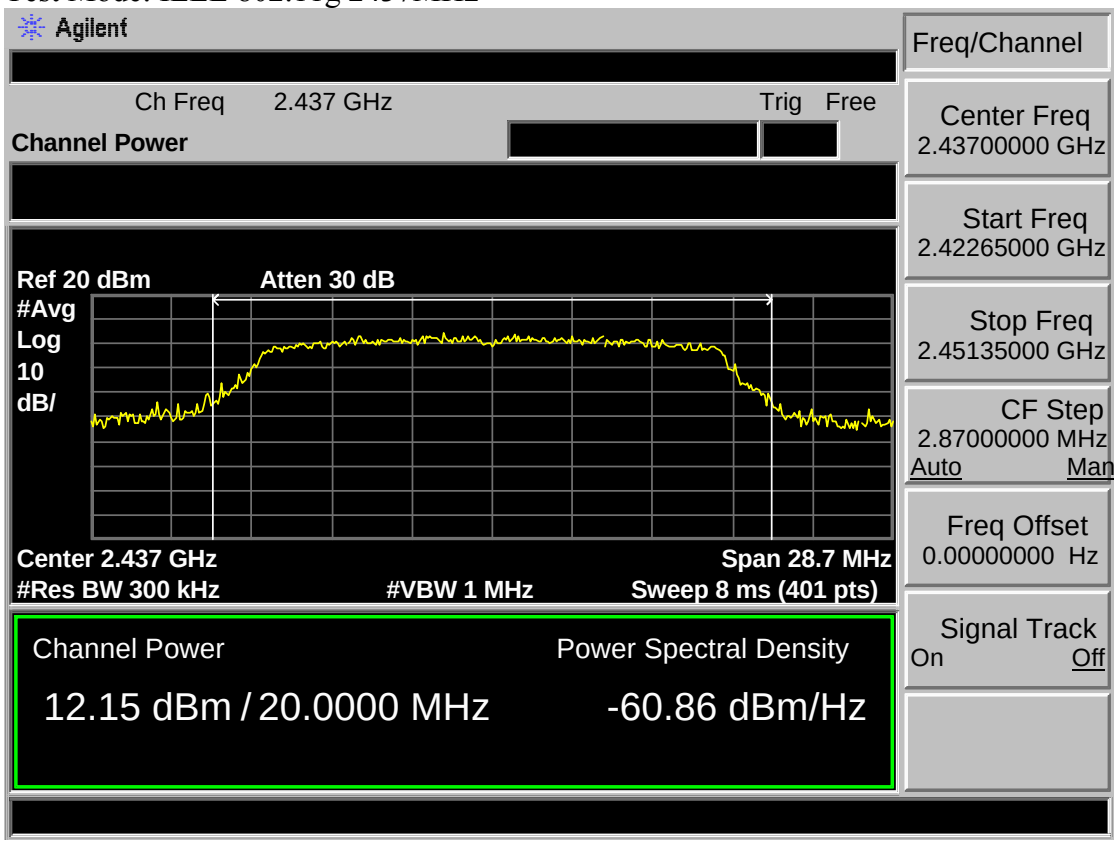
Test Mode: IEEE 802.11b 2462MHz



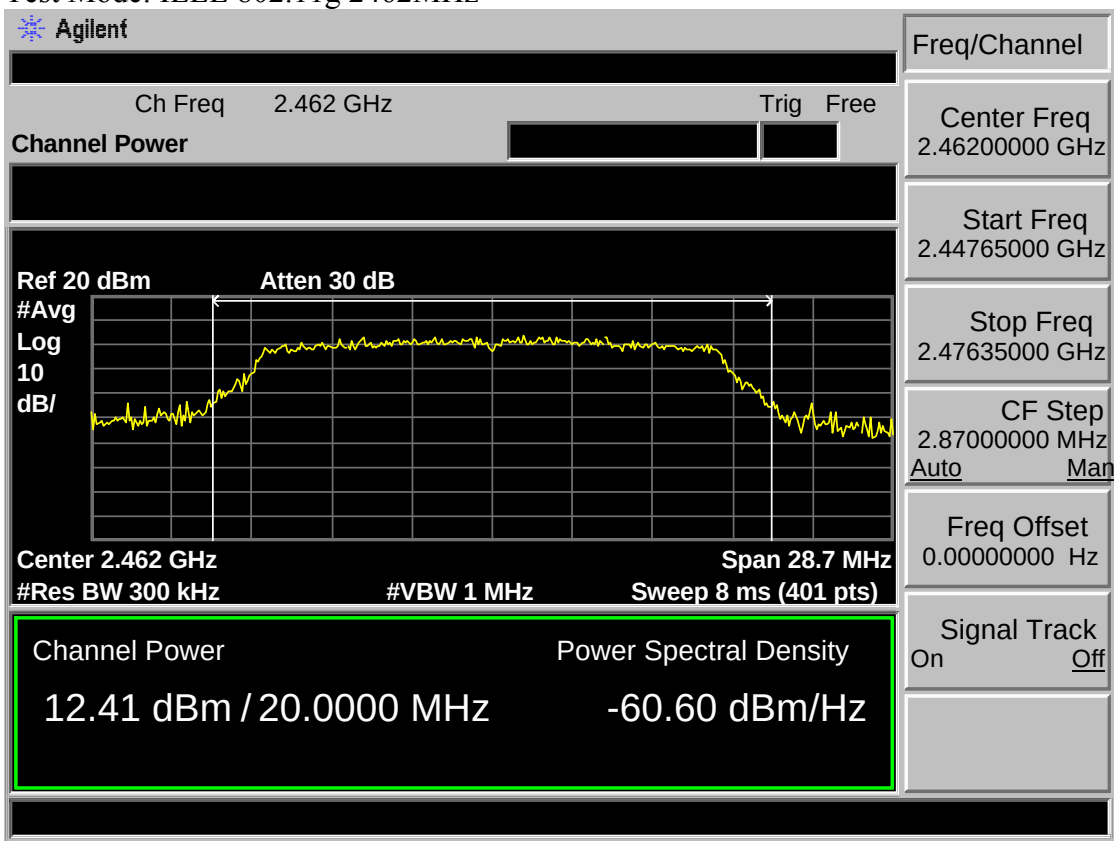
Test Mode: IEEE 802.11g 2412MHz



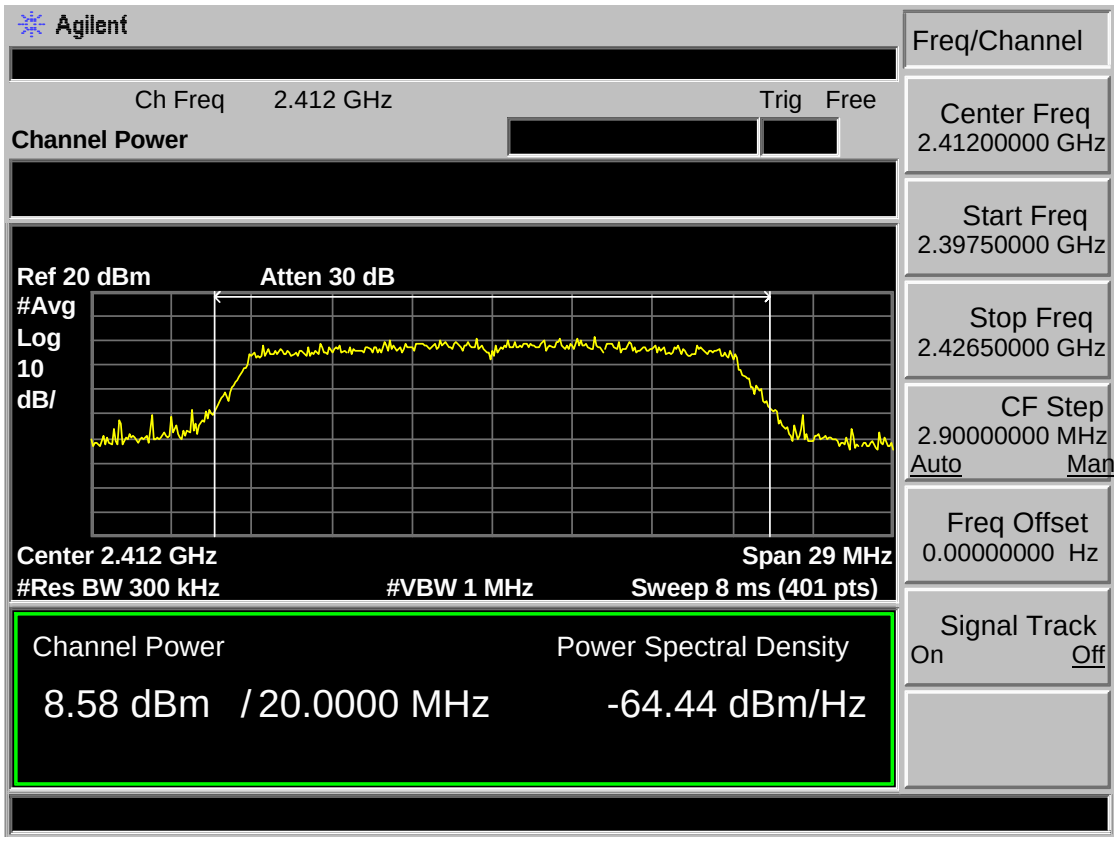
Test Mode: IEEE 802.11g 2437MHz



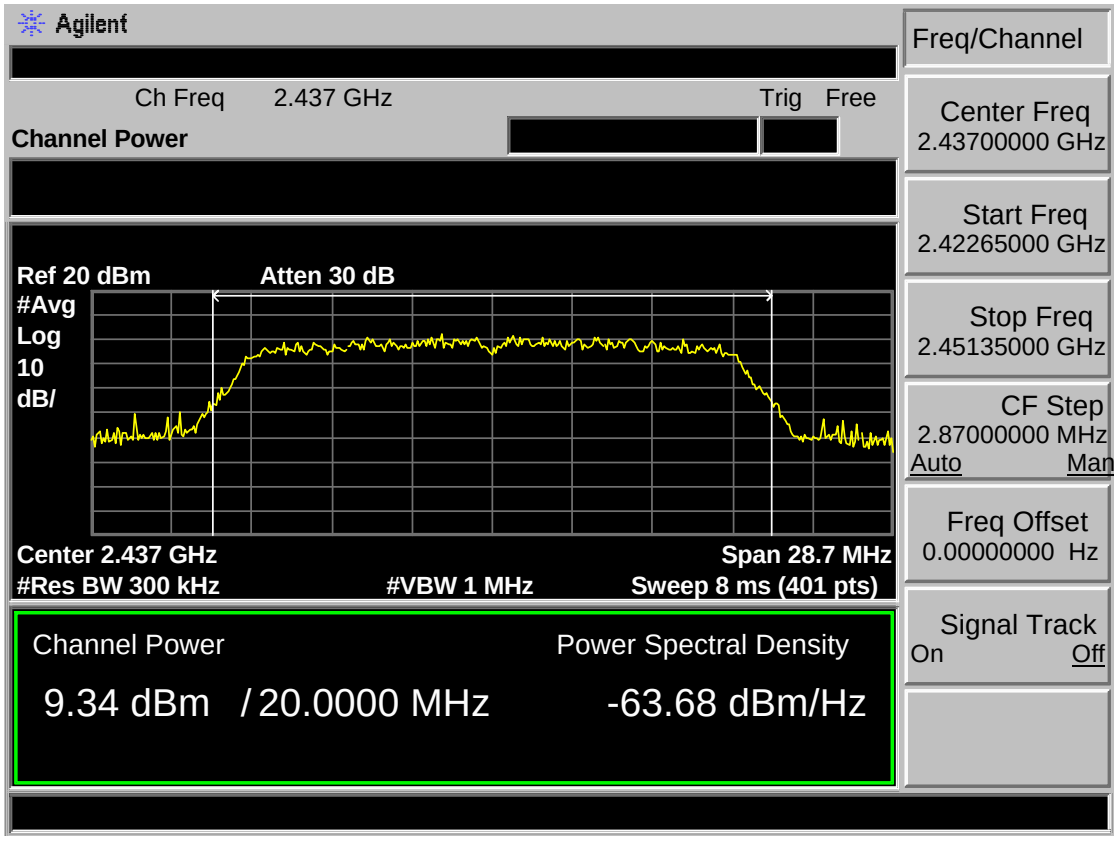
Test Mode: IEEE 802.11g 2462MHz



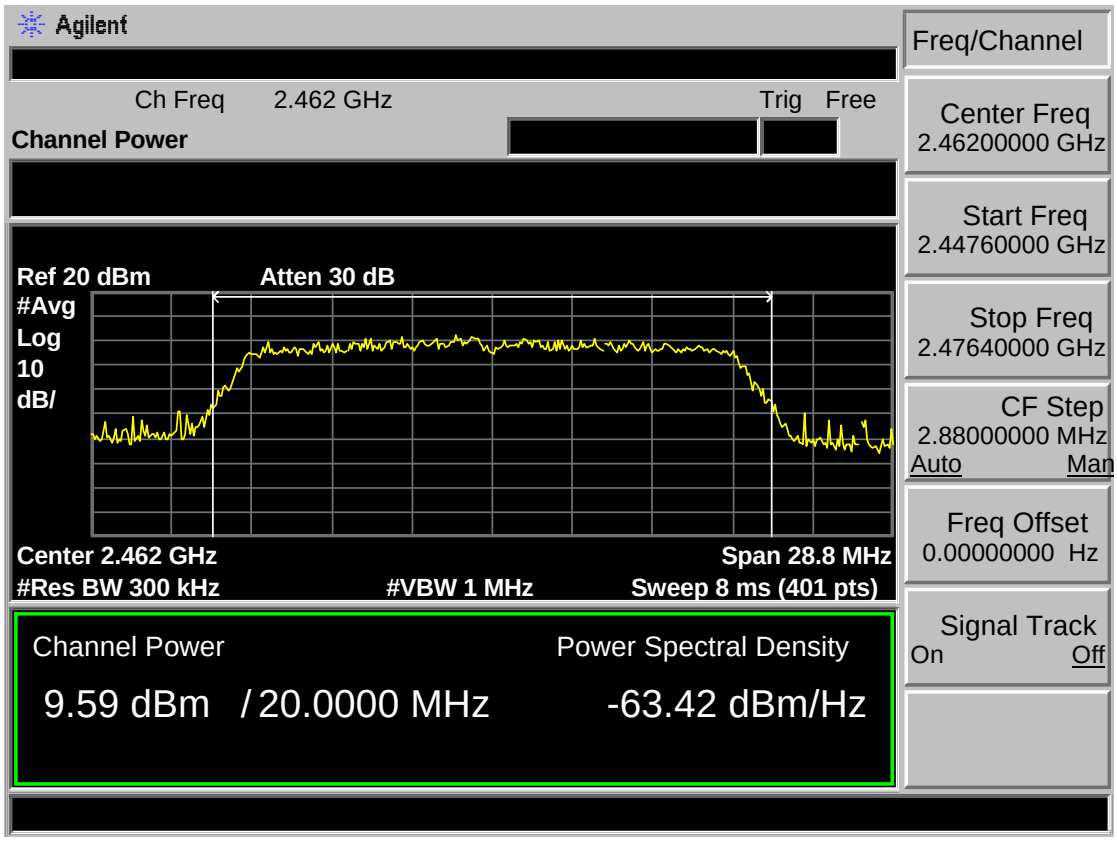
Test Mode: IEEE 802.11n HT20 2412MHz



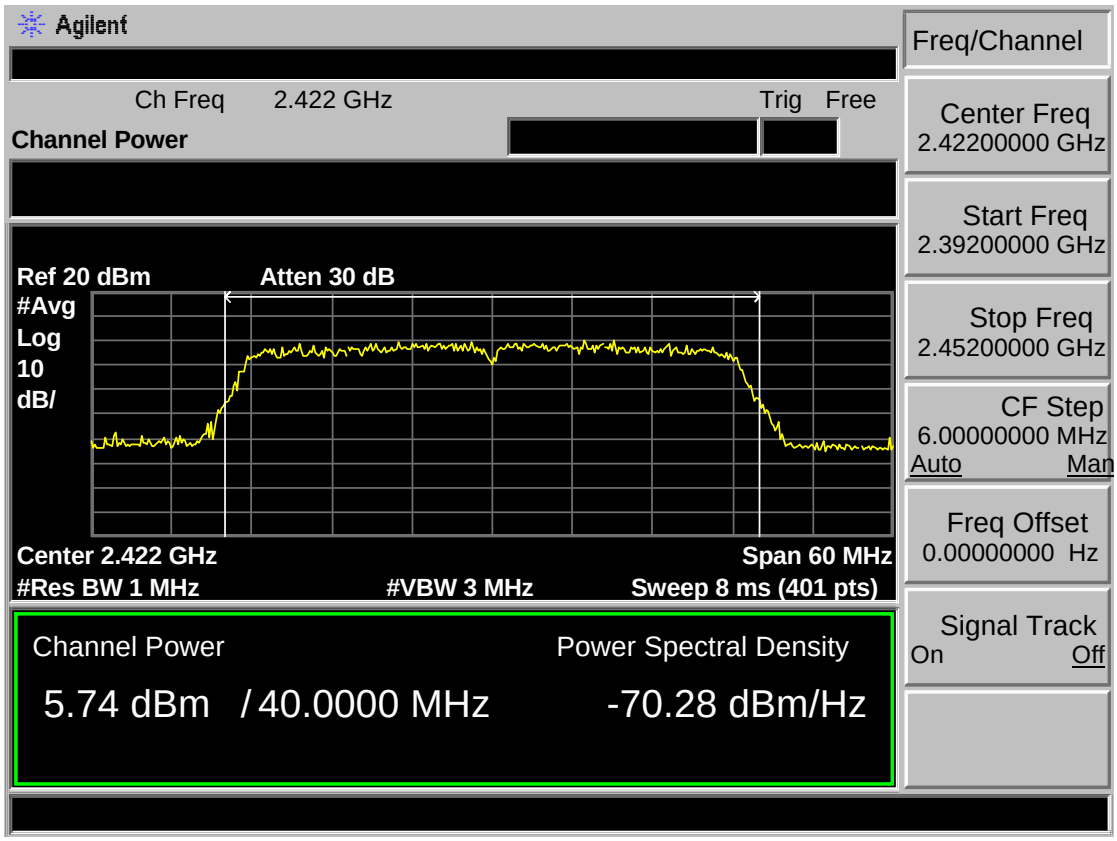
Test Mode: IEEE 802.11n HT20 2437MHz



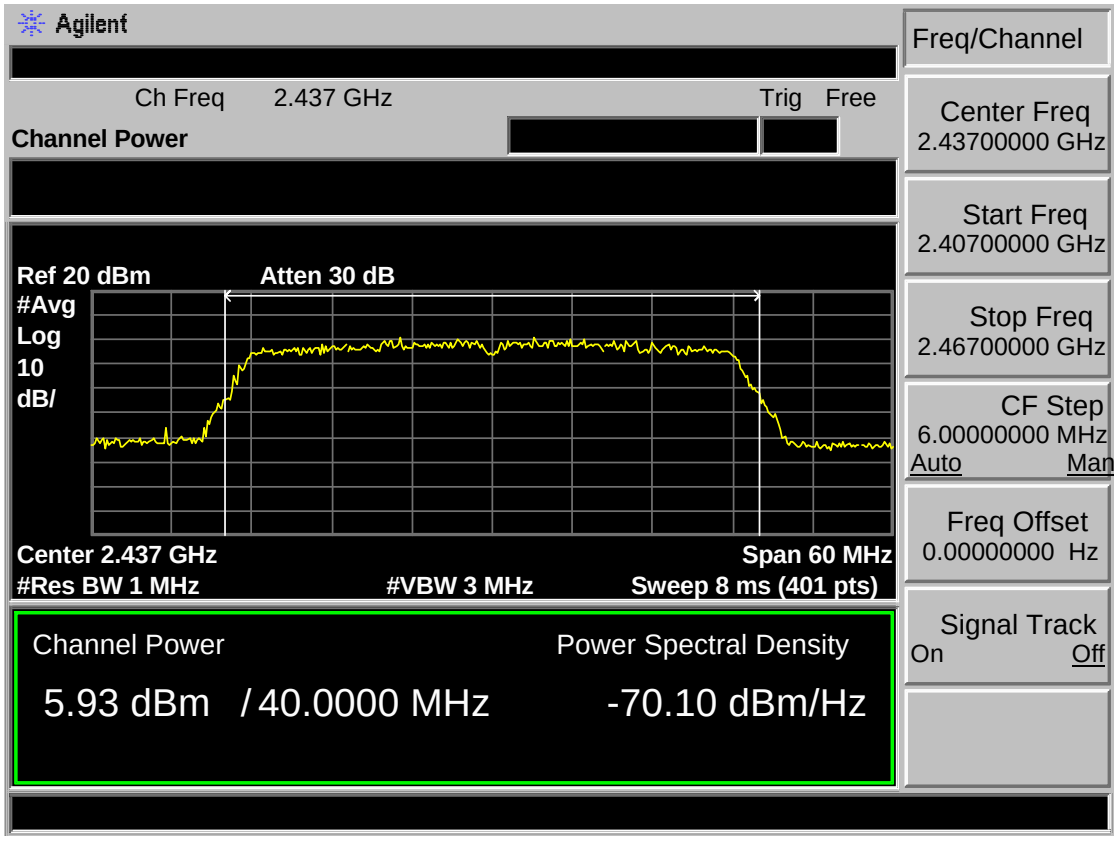
Test Mode: IEEE 802.11n HT20 2462MHz



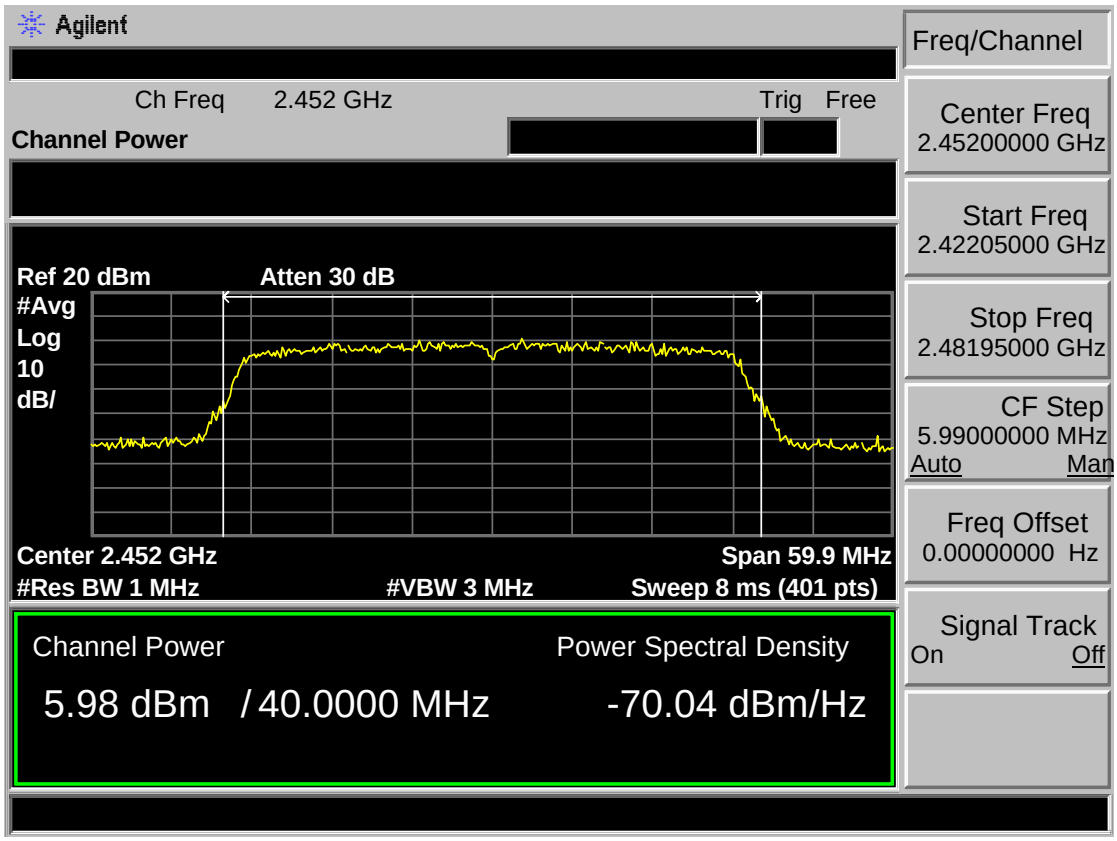
Test Mode: IEEE 802.11n HT40 2422MHz



Test Mode: IEEE 802.11n HT40 2437MHz



Test Mode: IEEE 802.11n HT40 2452MHz



8 POWER SPECTRAL DENSITY TEST

8.1 Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

8.2 Test Procedure

1, The transmitter output (antenna port) was connected to the spectrum analyzer. Connect EUT antenna terminal to the spectrum analyzer with a low loss SMA cable.

2, Follow the test procedure as described in KDB 558074
(1). Set analyzer center frequency to DTS channel center frequency.
(2). Set the span to 1.5 times the DTS bandwidth.
(3). Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
(4). Set the VBW ≥ 3 RBW.
(5). Detector = peak.
(6). Sweep time = auto couple.
(7). Trace mode = max hold.
(8). Allow trace to fully stabilize.
(9). Use the peak marker function to determine the maximum amplitude level.
(10). If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

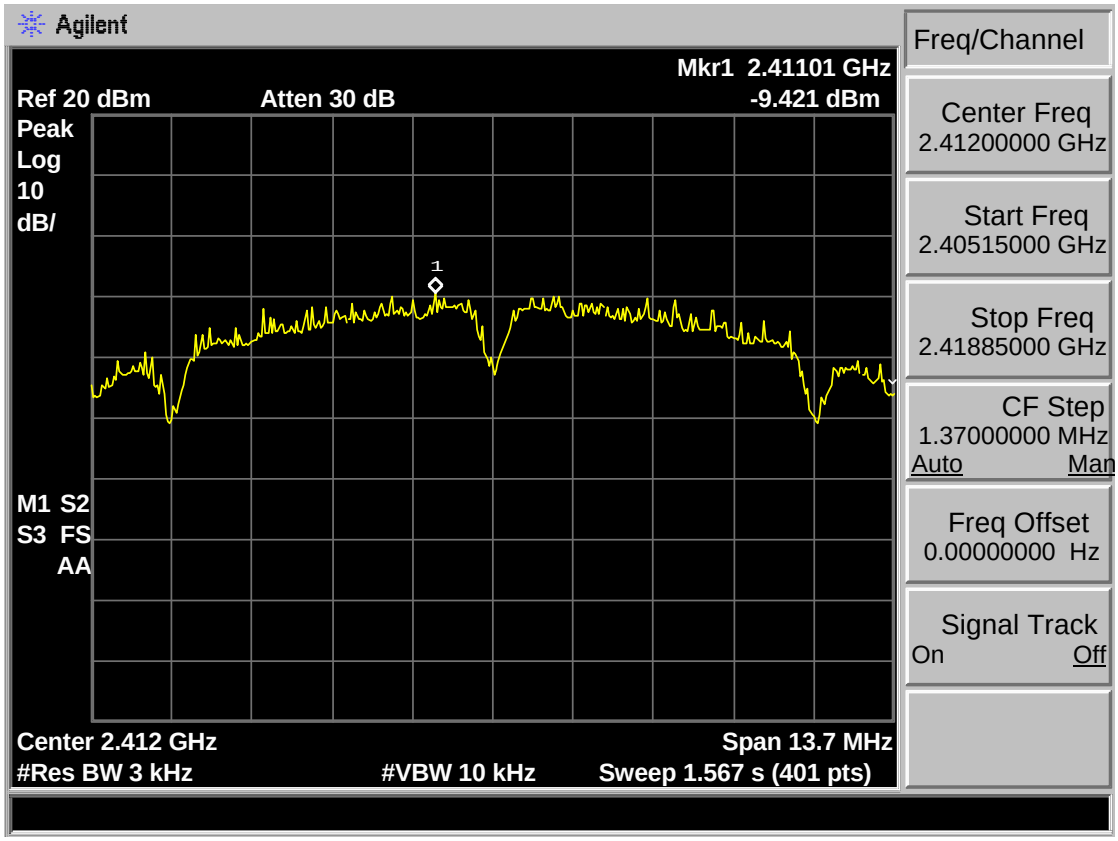
8.3 Test Result

EUT: JMDD Module					
M/N: JMDD					
Test date: 2018-11-07		Test site: RF Site			Tested by: Tony
Pass					
Test Mode	CH	Power density（dBm/3kHz）			Limit (dBm/3kHz)
		Ant 1	Ant 2	Total	
IEEE 802.11 b	CH1	-9.42	-8.98	/	8
	CH6	-9.12	-7.62	/	8
	CH11	-6.49	-8.47	/	8
IEEE 802.11 g	CH1	-13.49	-14.60	/	8
	CH6	-12.52	-14.14	/	8
	CH11	-13.27	-13.27	/	8
IEEE 802.11 n HT 20	CH1	-16.84	-17.75	-14.26	7.34
	CH6	-16.81	-17.16	-13.97	7.34
	CH11	-15.92	-17.37	-13.57	7.34
IEEE 802.11 n HT 40	CH3	-22.04	-21.96	-18.99	7.34
	CH6	-21.56	-20.90	-18.21	7.34
	CH9	-21.47	-22.06	-18.74	7.34
Conclusion：PASS					
Note: For 802.11n HT20 and 802.11n HT40, the EUT incorporates a MIMO function. The Antenna directional gain is 6.66dBi. The Output Power limit is the above limits-(6.66-6)=7.34 dBm.					

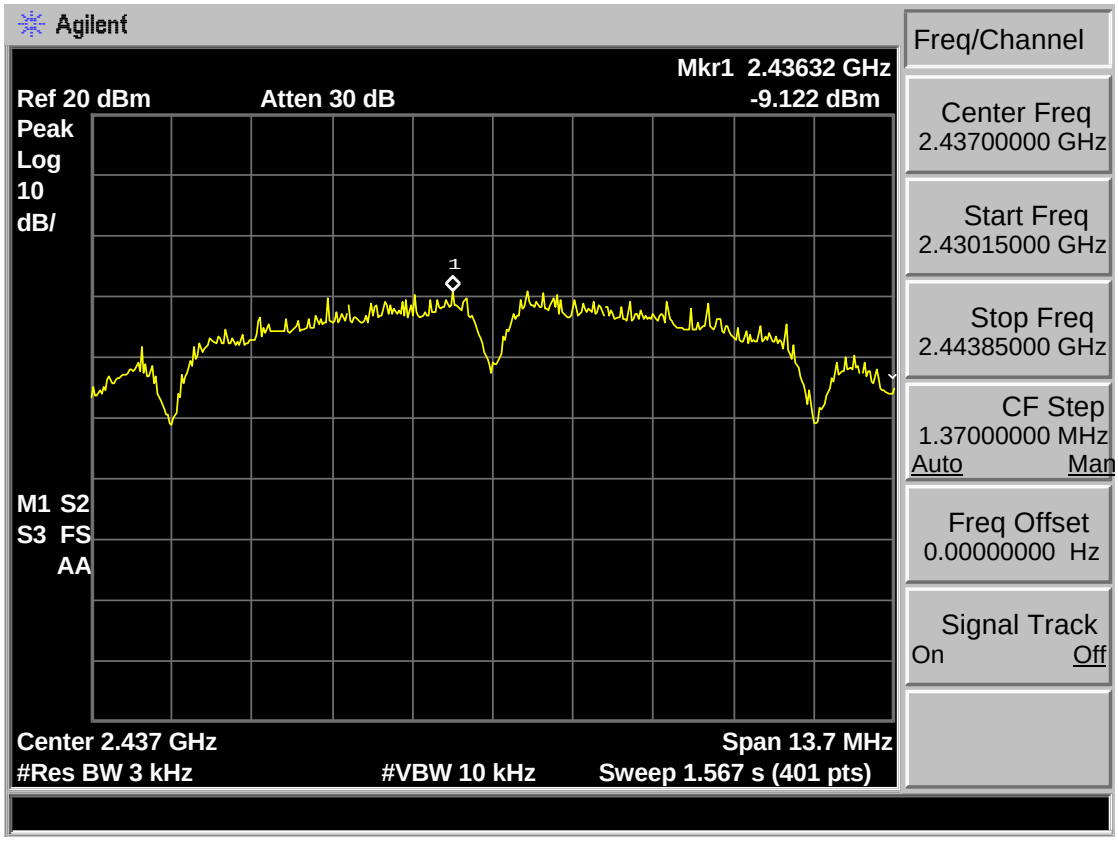
8.4 Test Data

Antenna 1

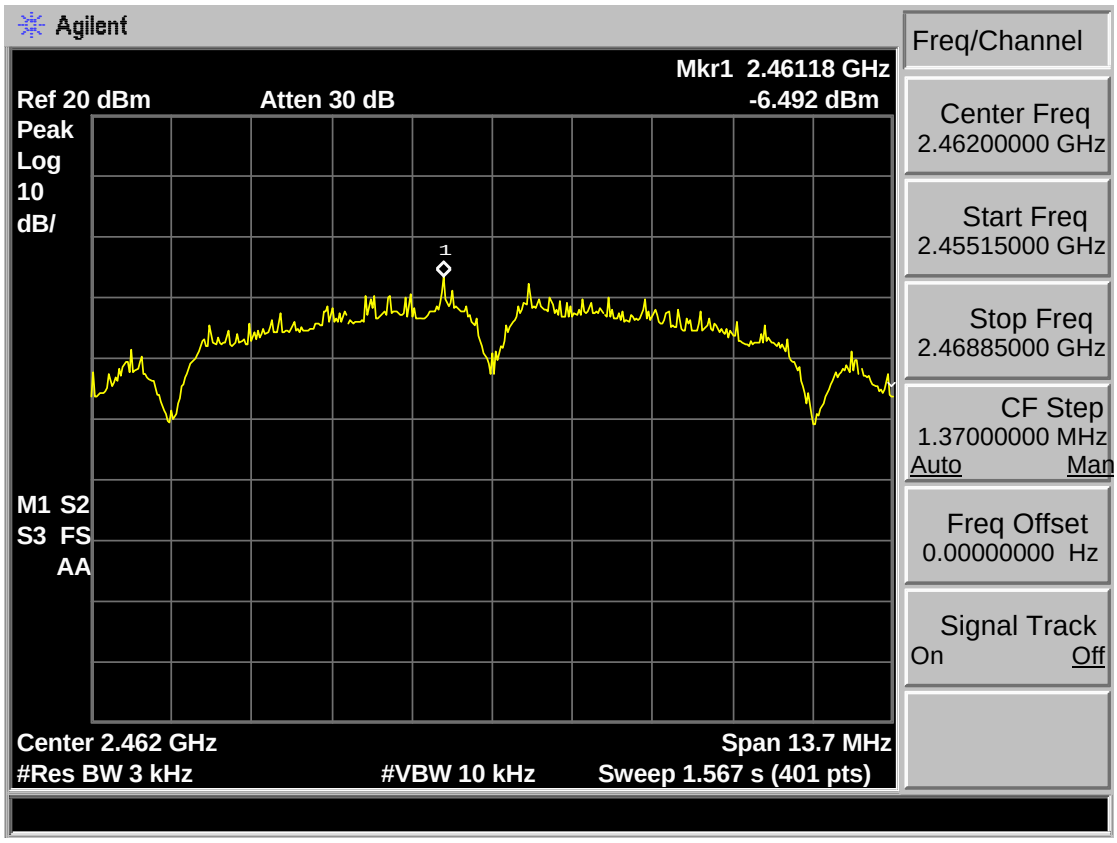
Test Mode: IEEE 802.11b 2412MHz



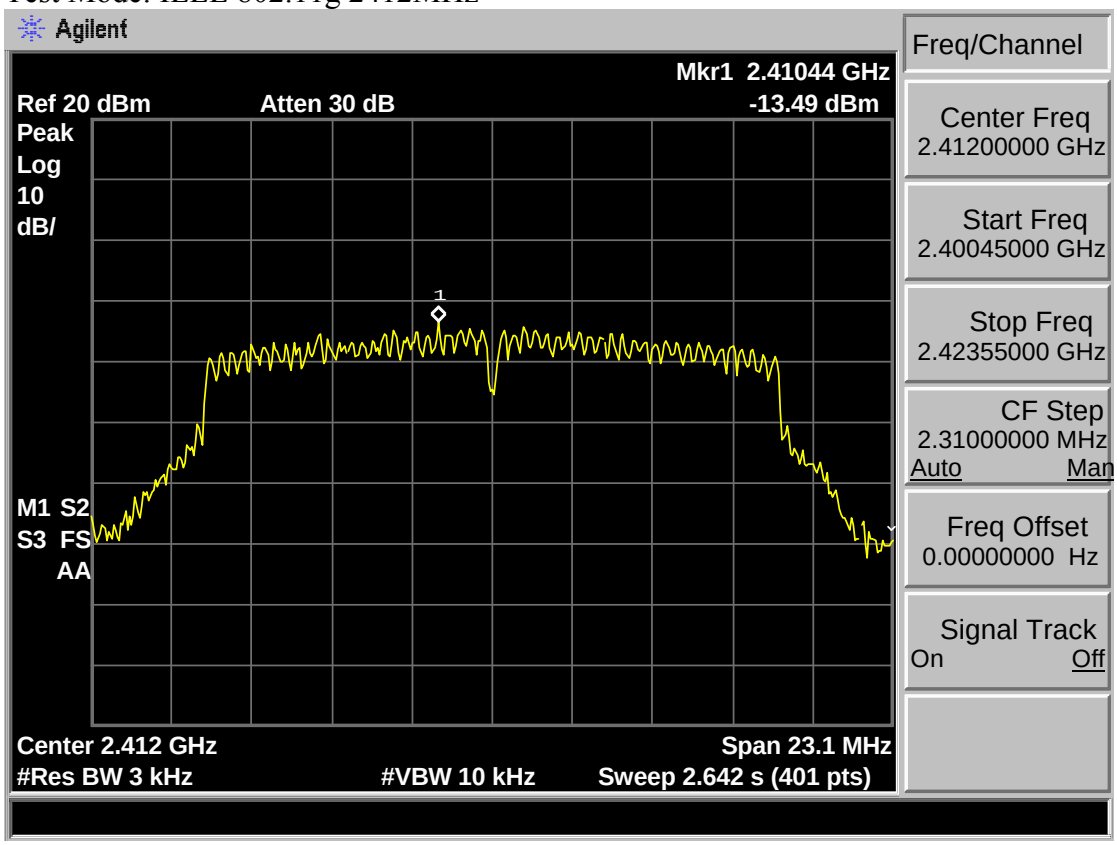
Test Mode: IEEE 802.11b 2437MHz



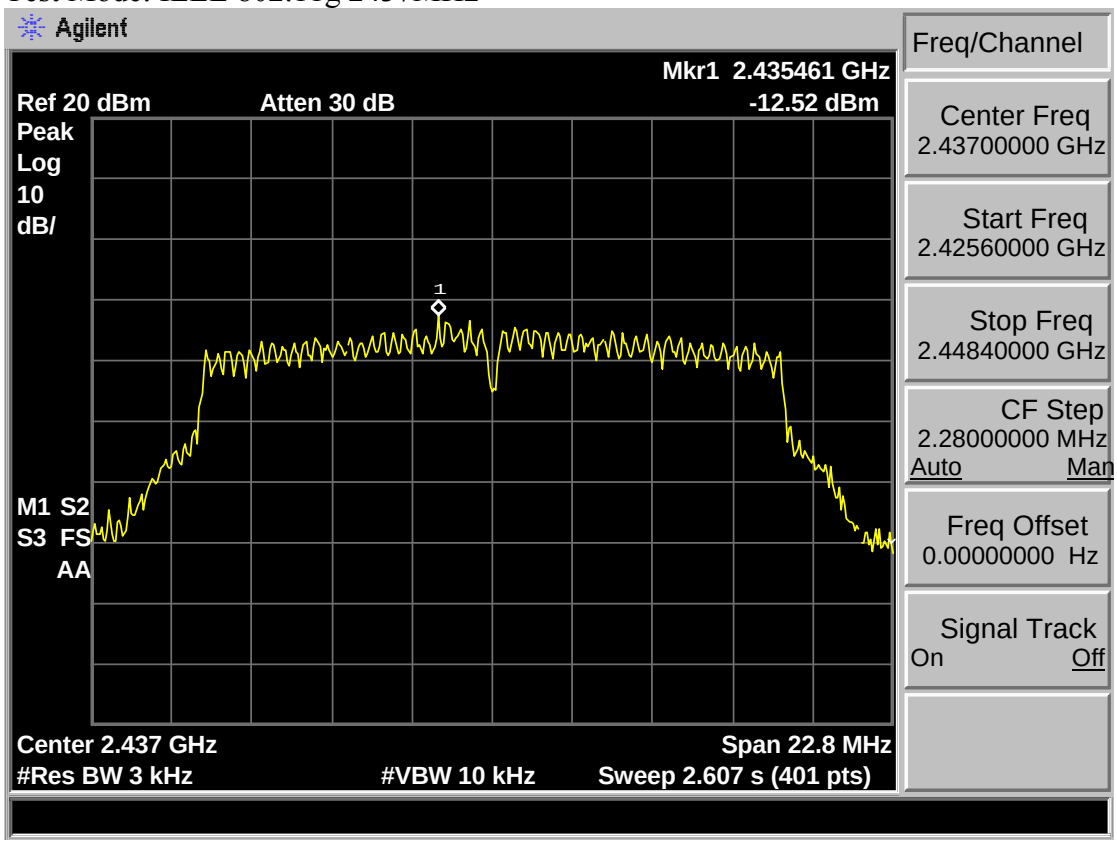
Test Mode: IEEE 802.11b 2462MHz



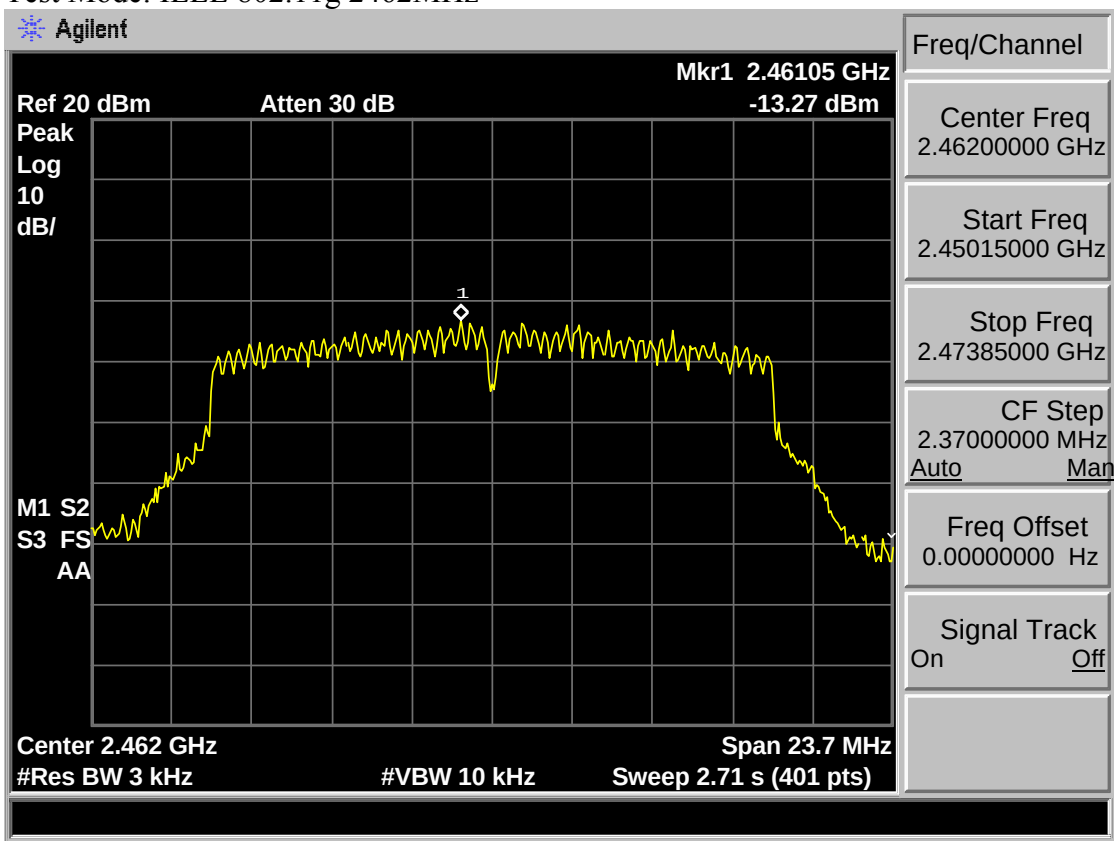
Test Mode: IEEE 802.11g 2412MHz



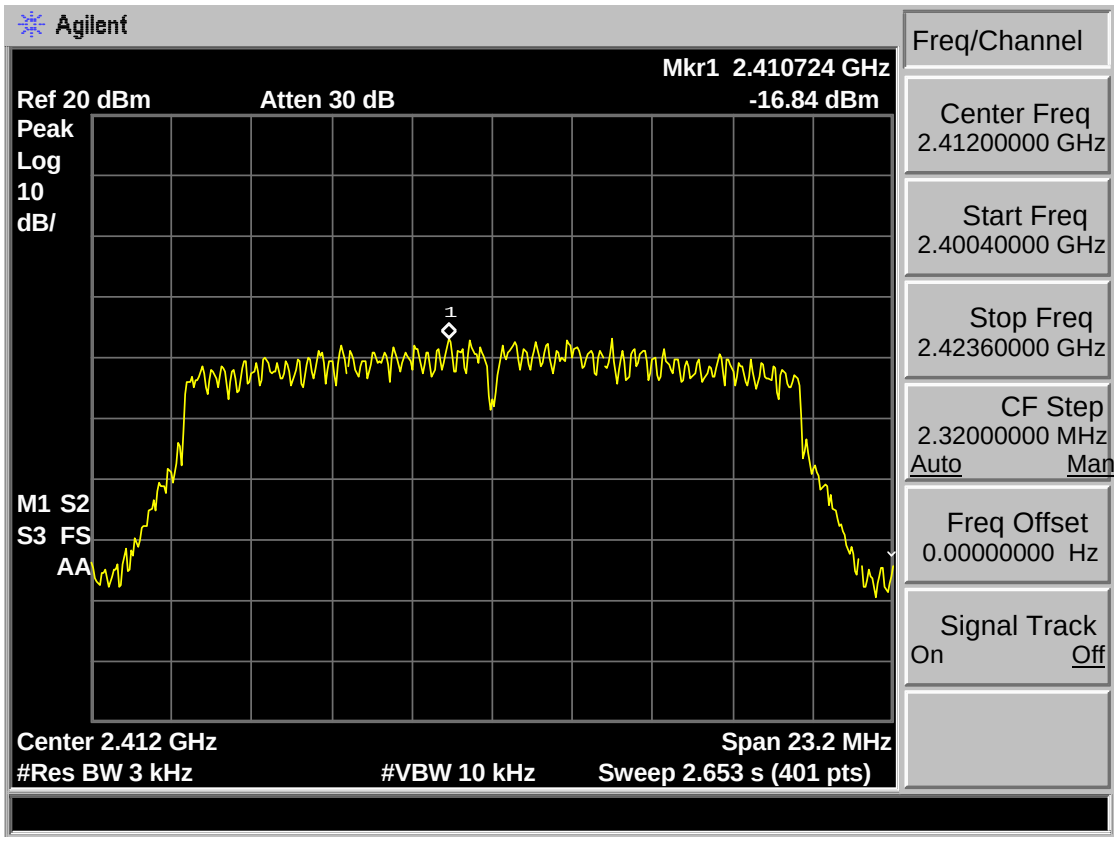
Test Mode: IEEE 802.11g 2437MHz



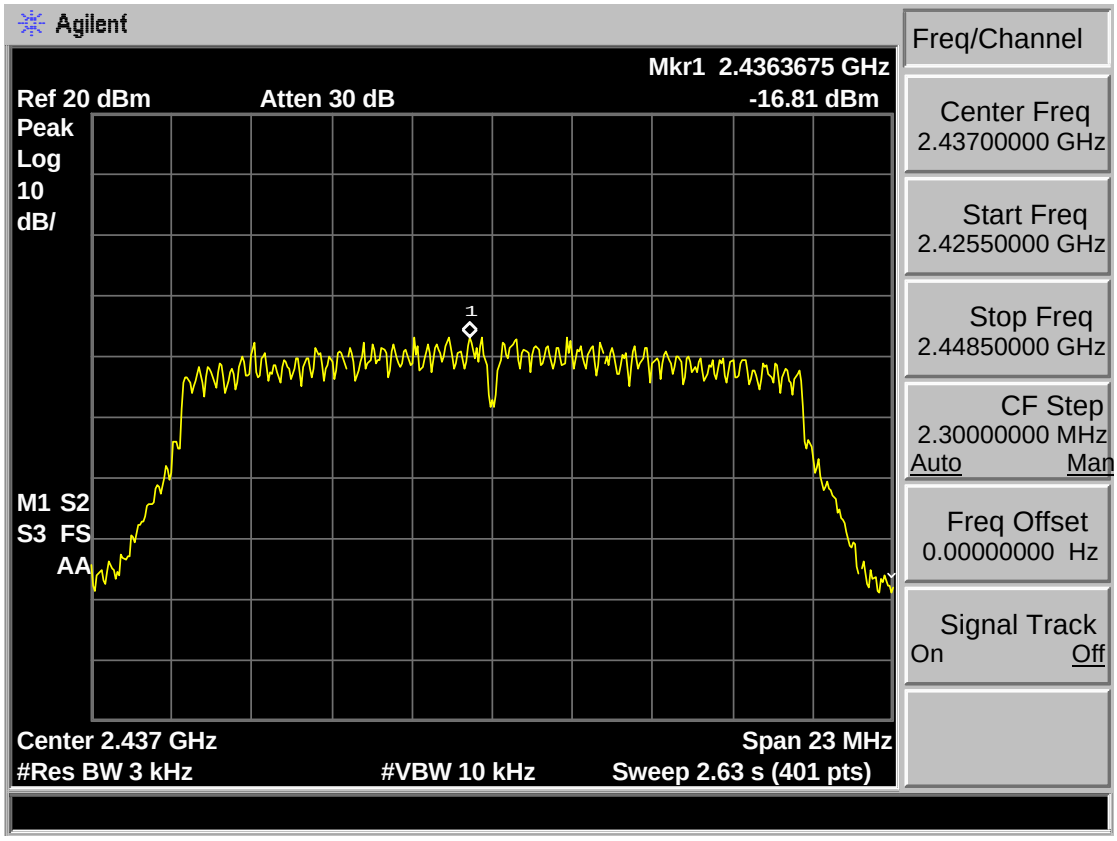
Test Mode: IEEE 802.11g 2462MHz



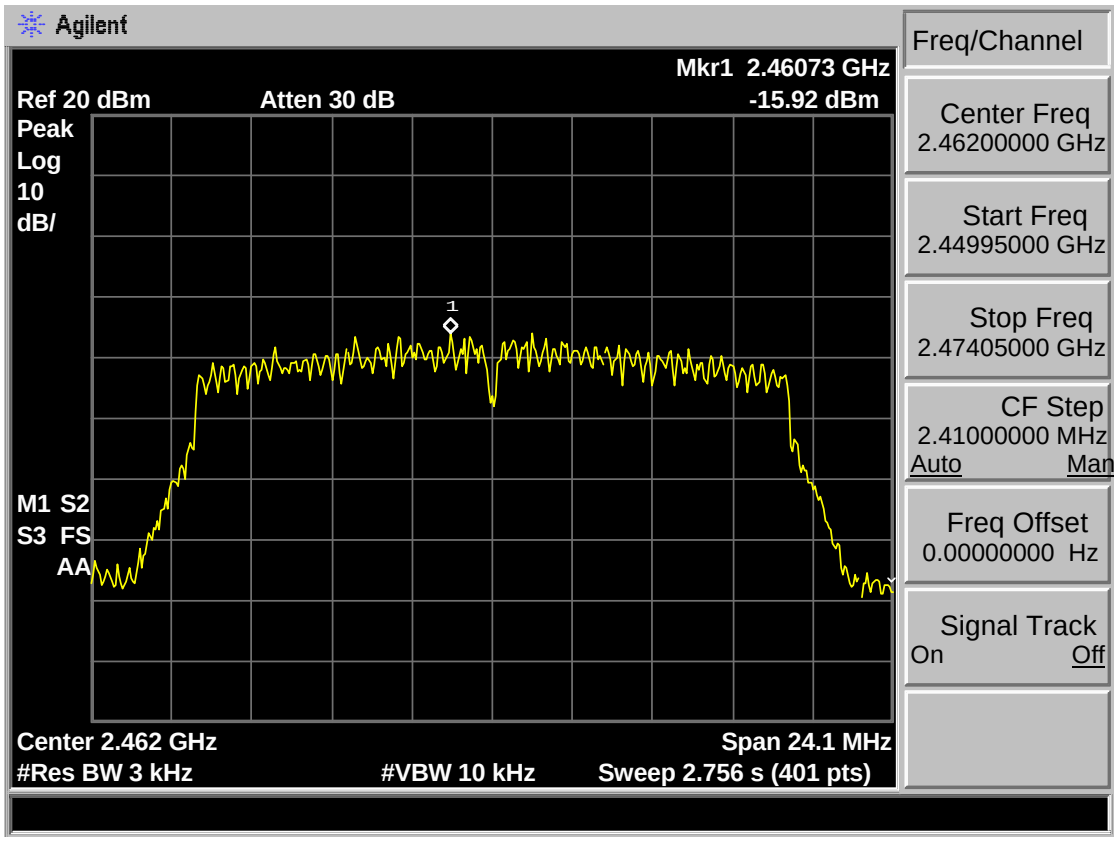
Test Mode: IEEE 802.11n HT20 2412MHz



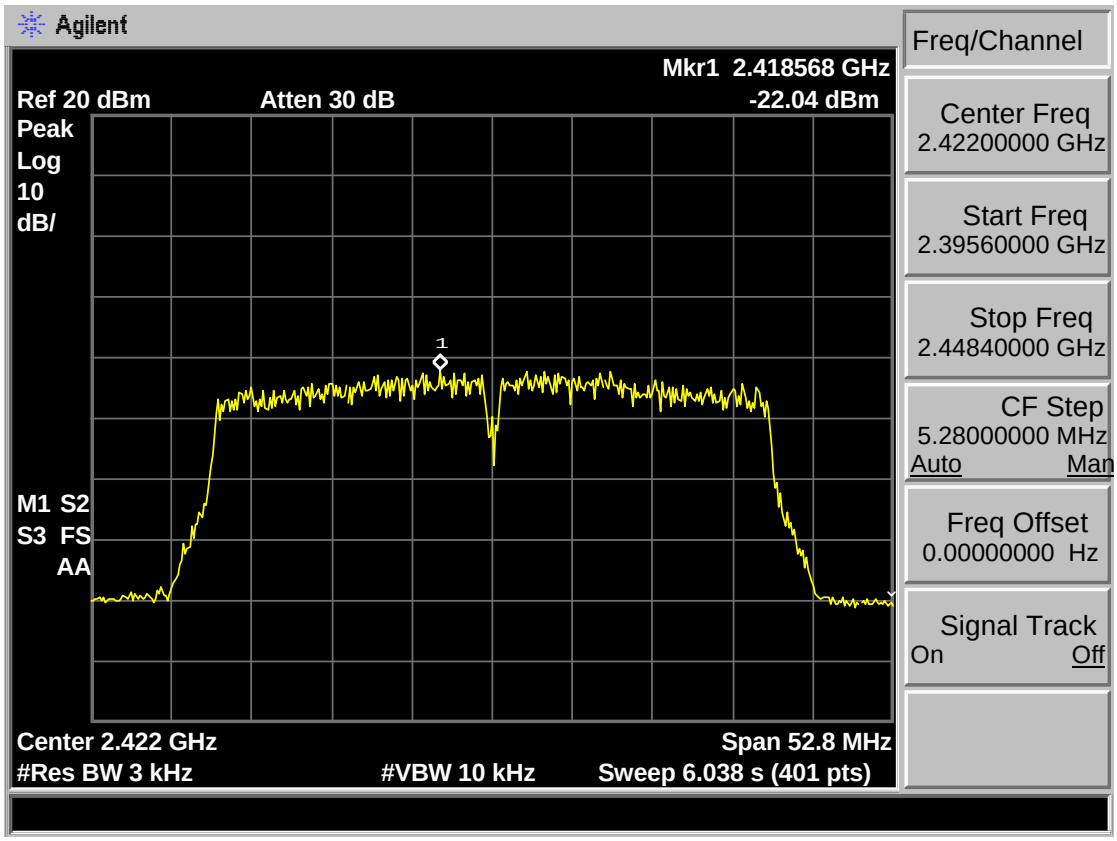
Test Mode: IEEE 802.11n HT20 2437MHz



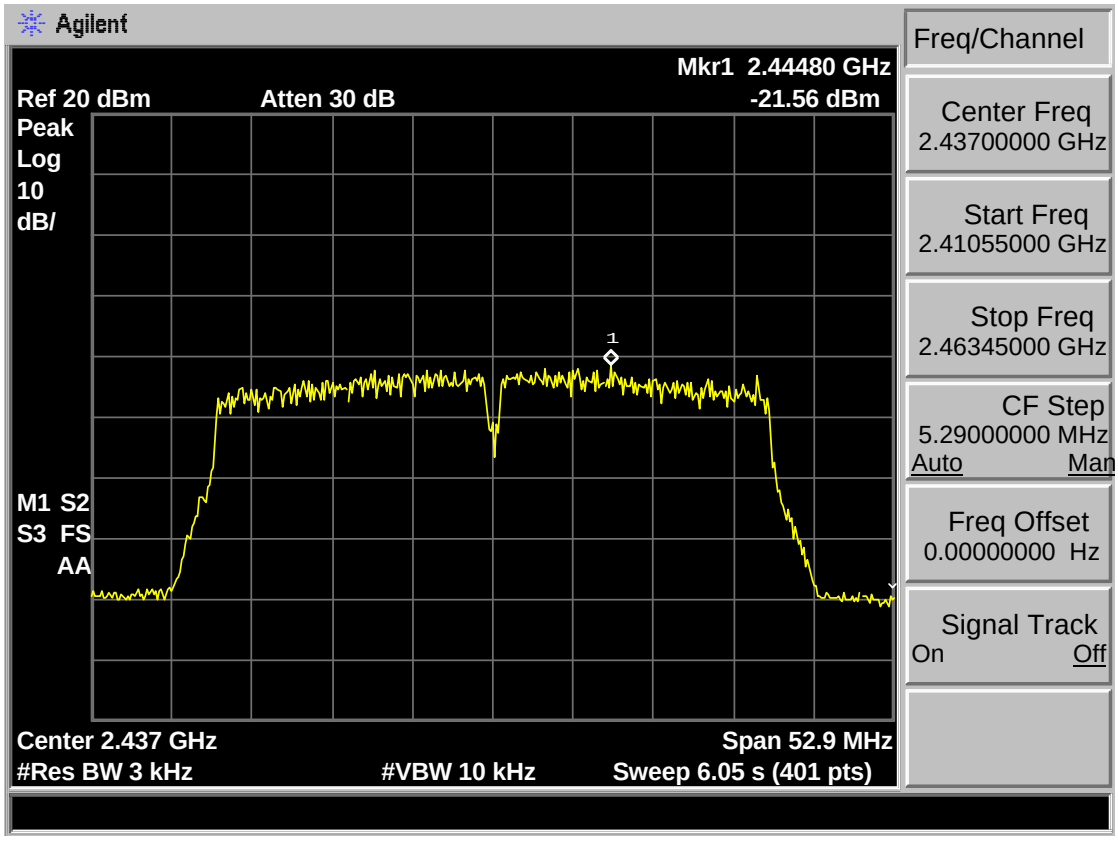
Test Mode: IEEE 802.11n HT20 2462MHz



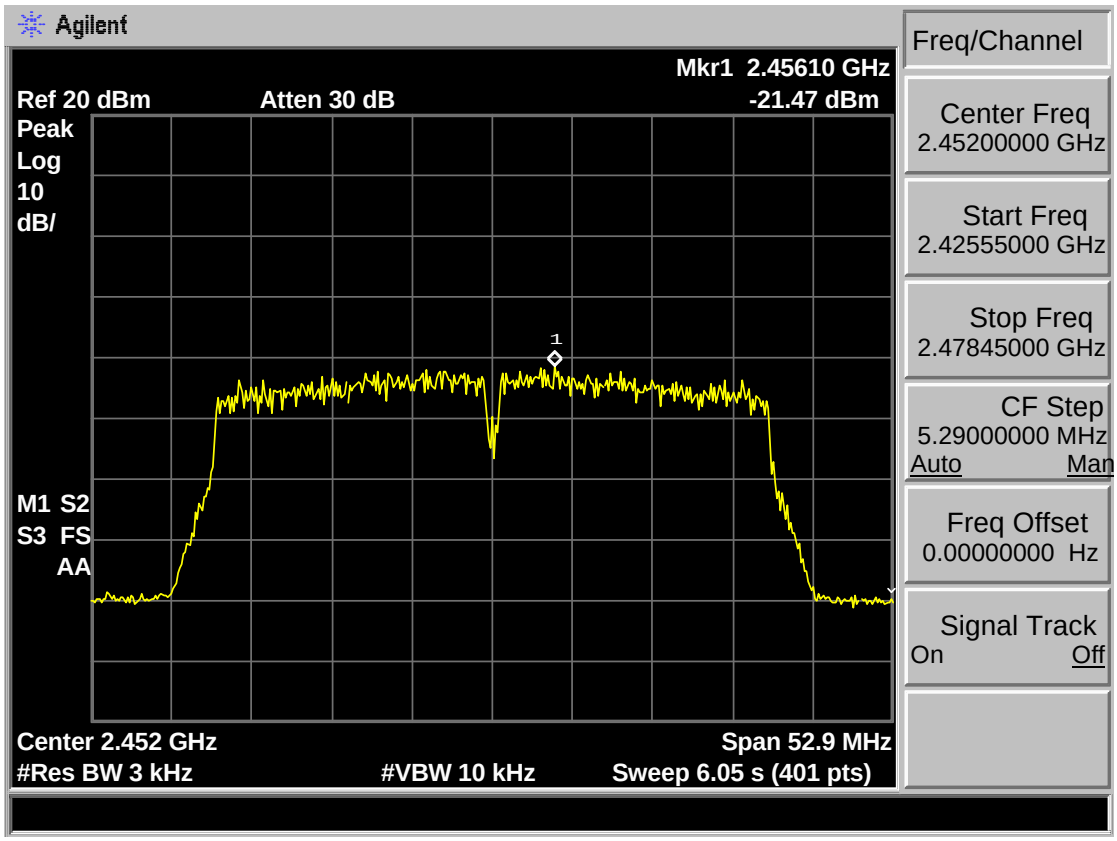
Test Mode: IEEE 802.11n HT40 2422MHz



Test Mode: IEEE 802.11n HT40 2437MHz

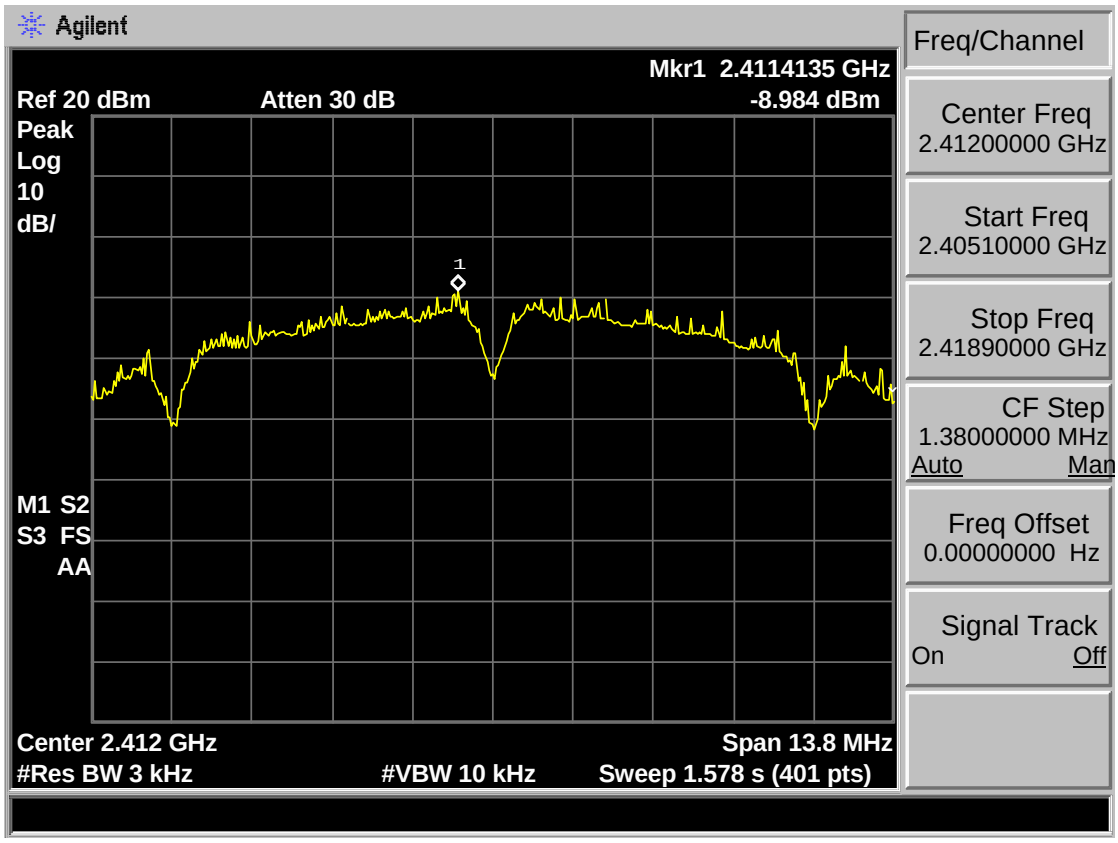


Test Mode: IEEE 802.11n HT40 2452MHz

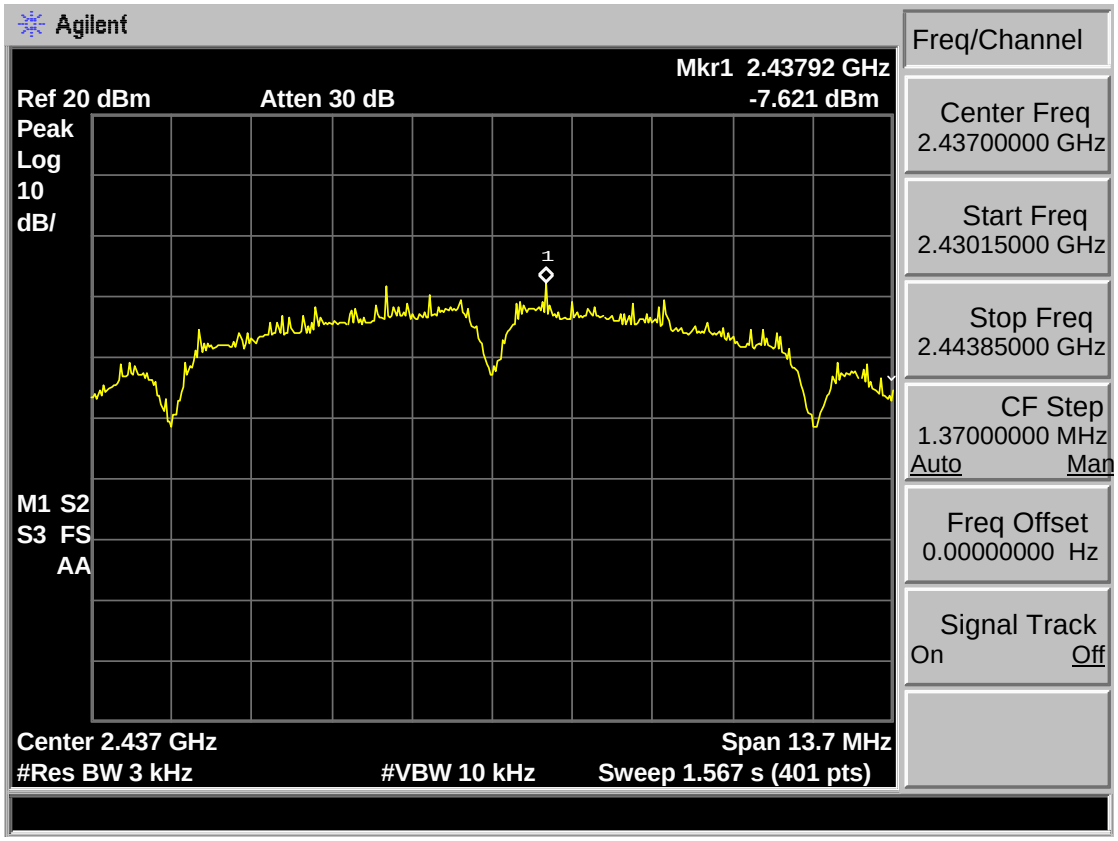


Antenna 2

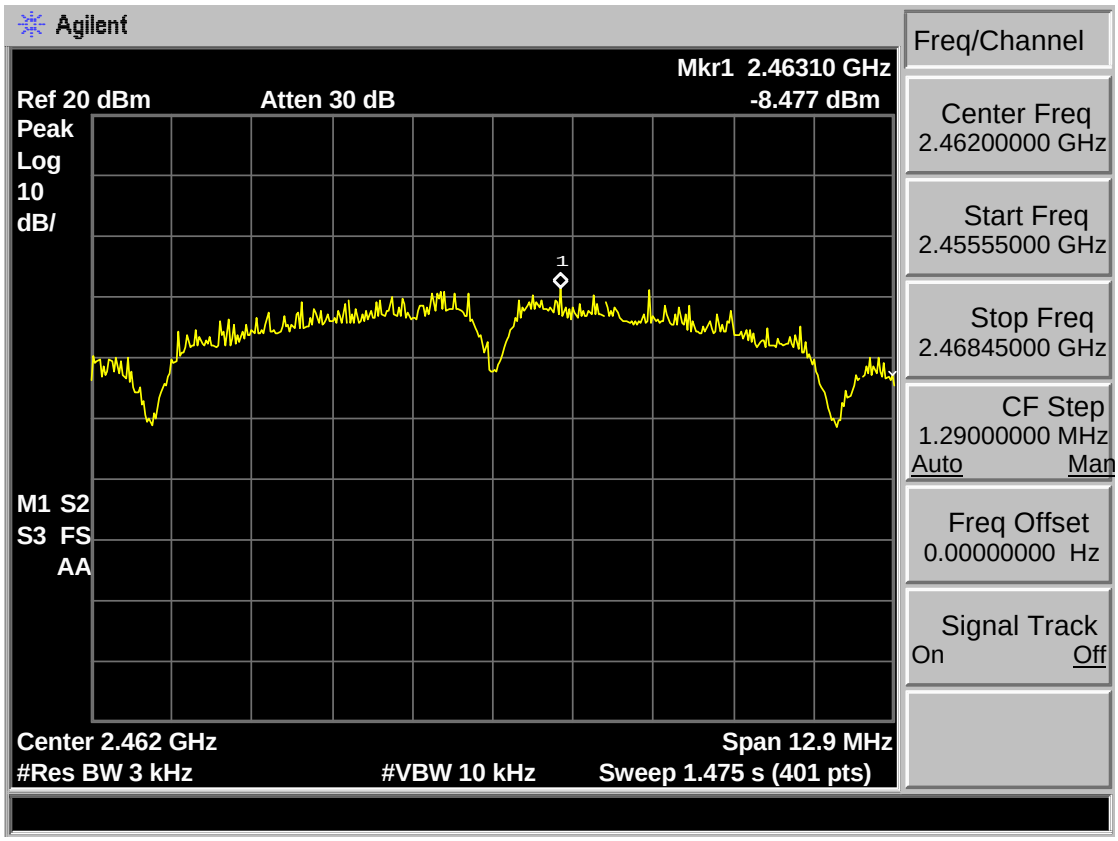
Test Mode: IEEE 802.11b 2412MHz



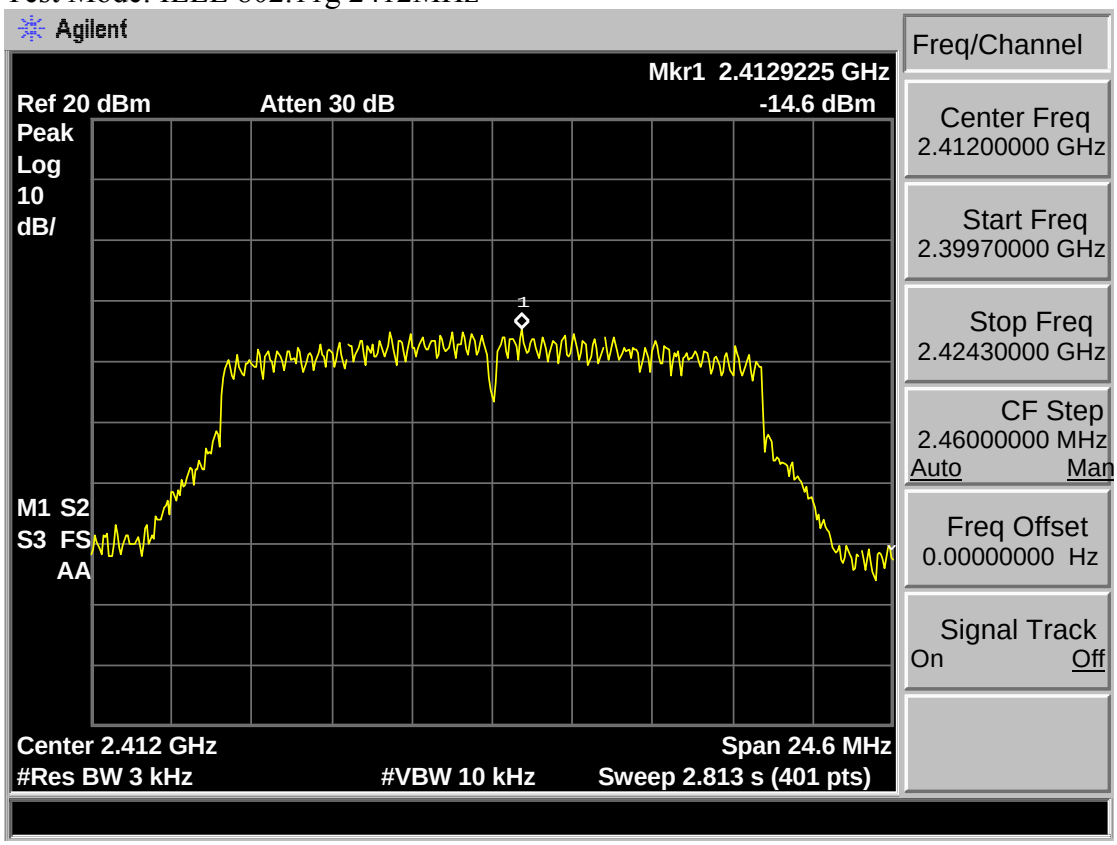
Test Mode: IEEE 802.11b 2437MHz



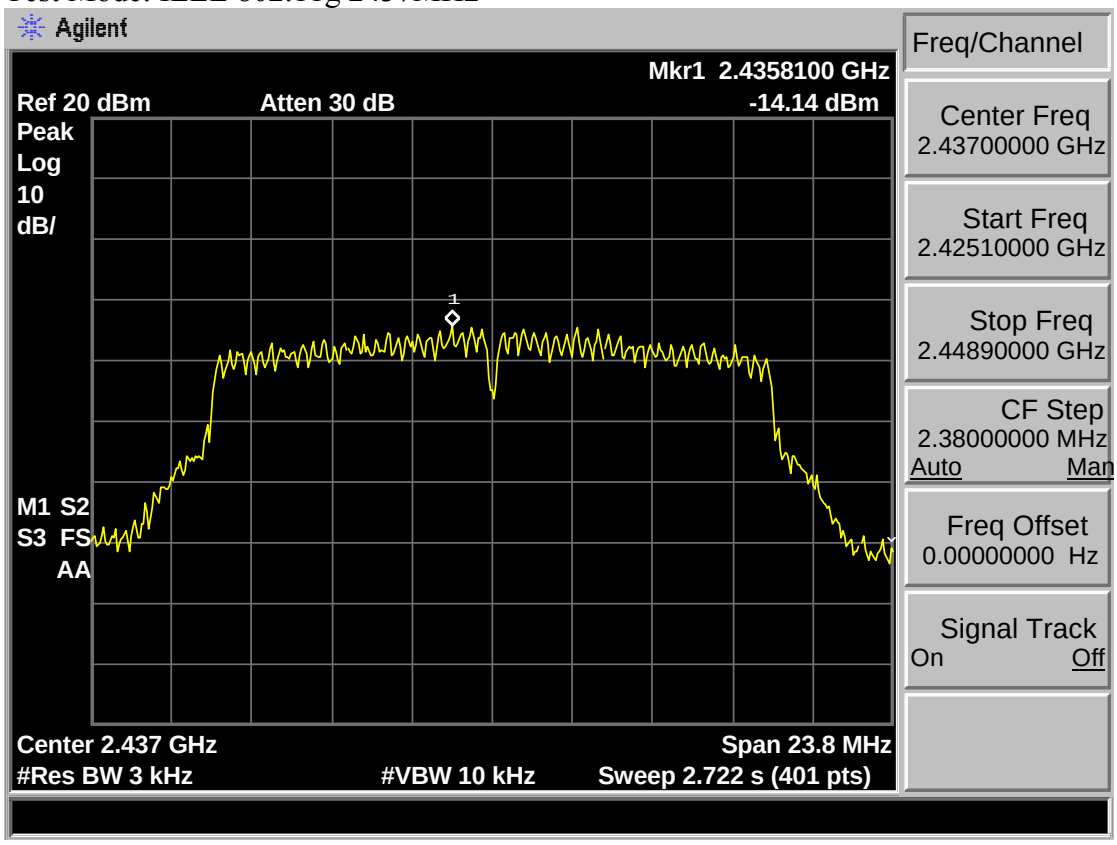
Test Mode: IEEE 802.11b 2462MHz



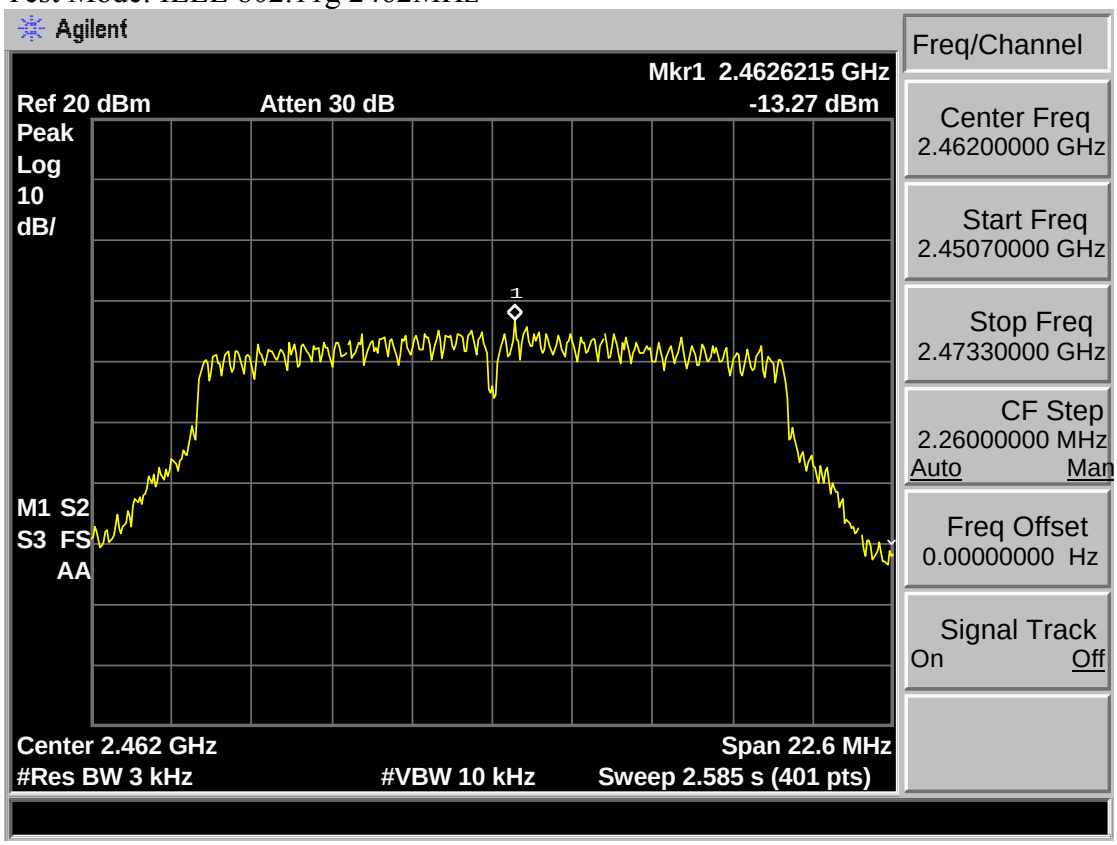
Test Mode: IEEE 802.11g 2412MHz



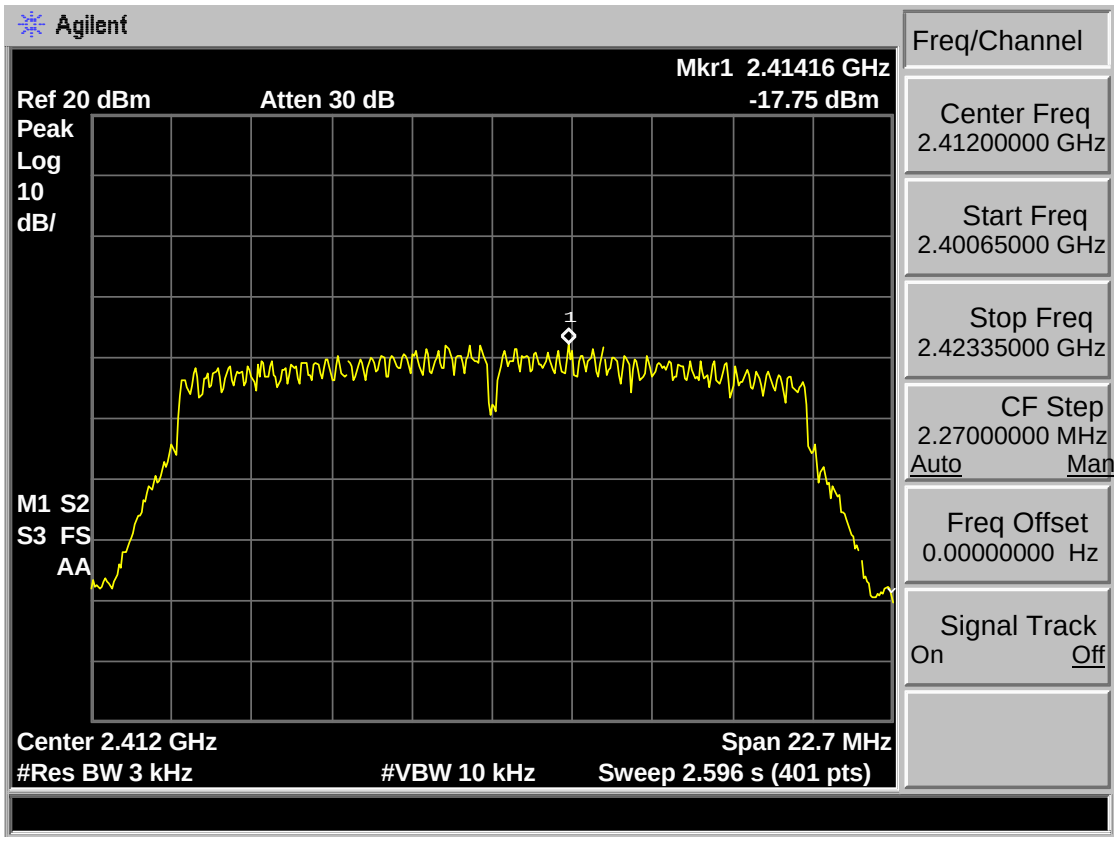
Test Mode: IEEE 802.11g 2437MHz



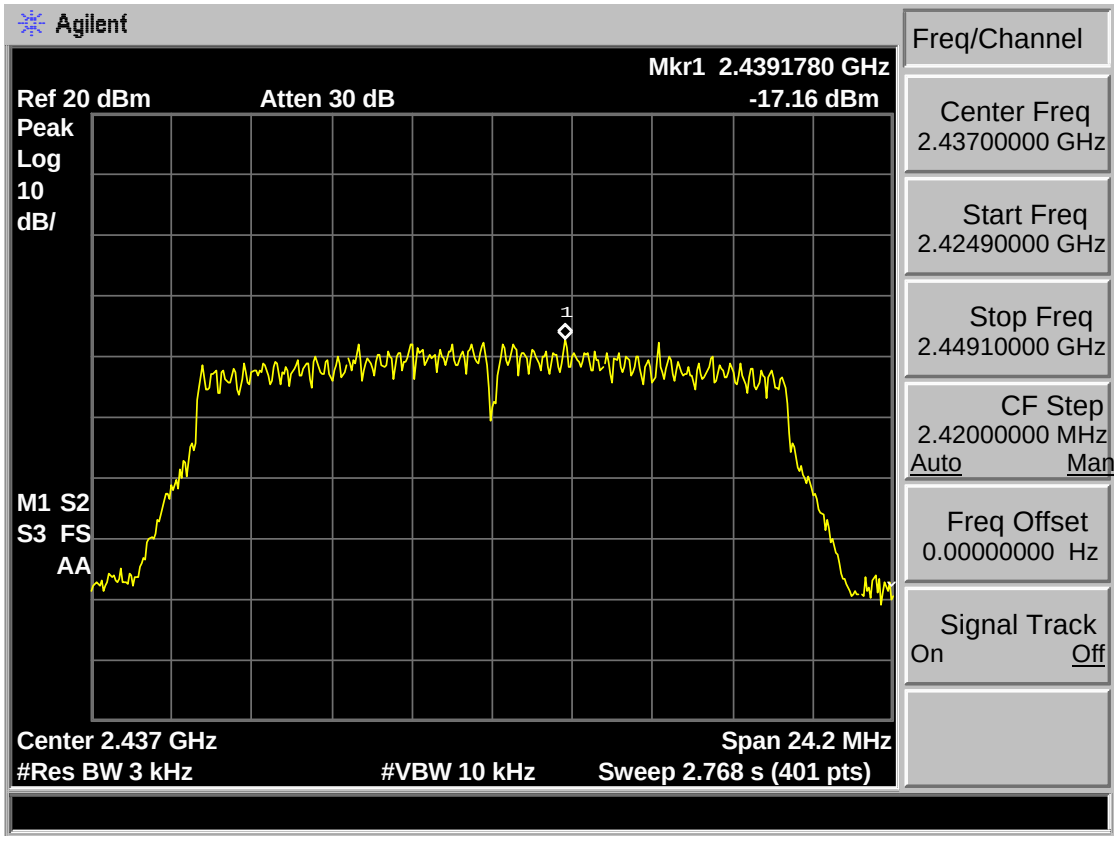
Test Mode: IEEE 802.11g 2462MHz



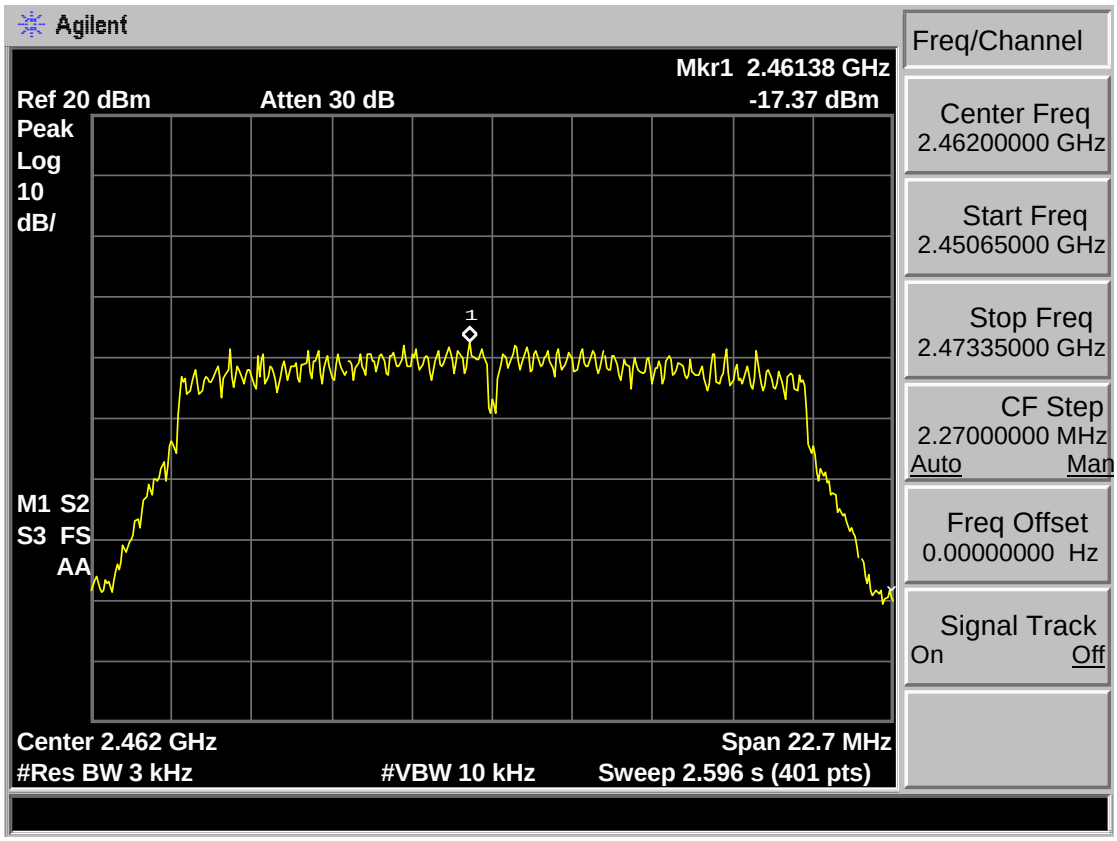
Test Mode: IEEE 802.11n HT20 2412MHz



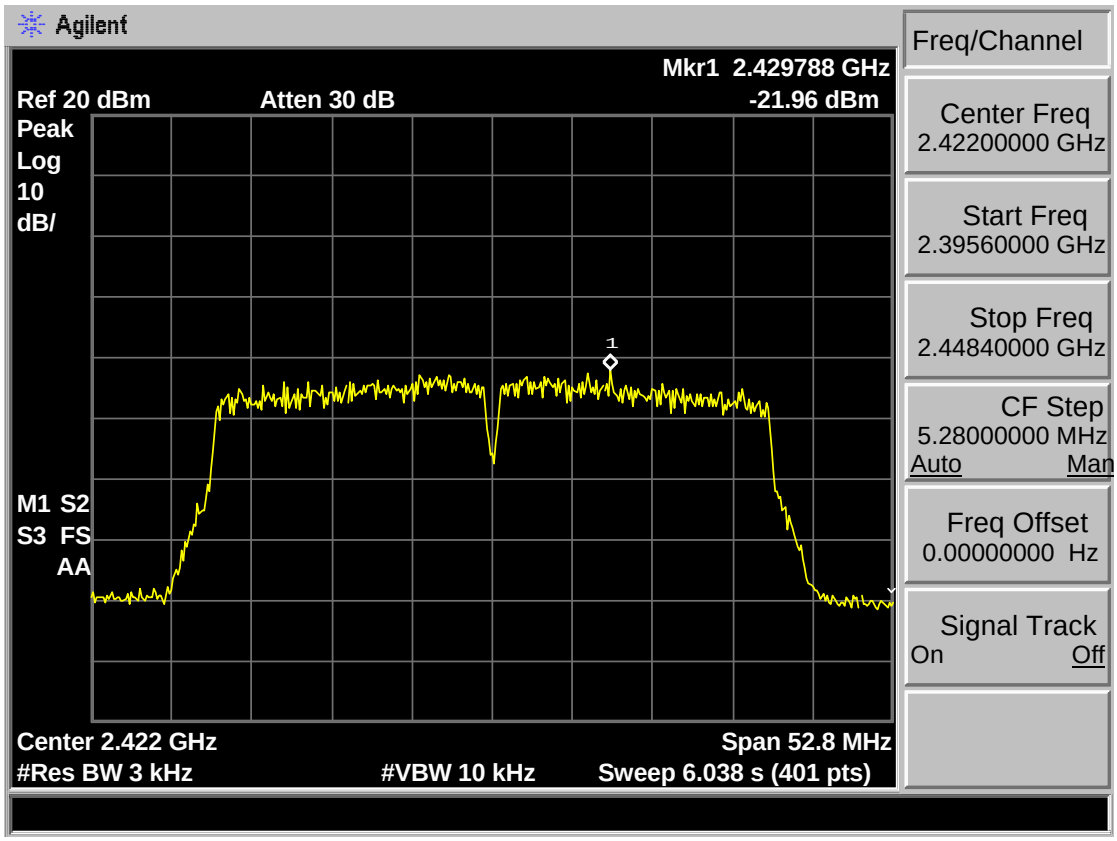
Test Mode: IEEE 802.11n HT20 2437MHz



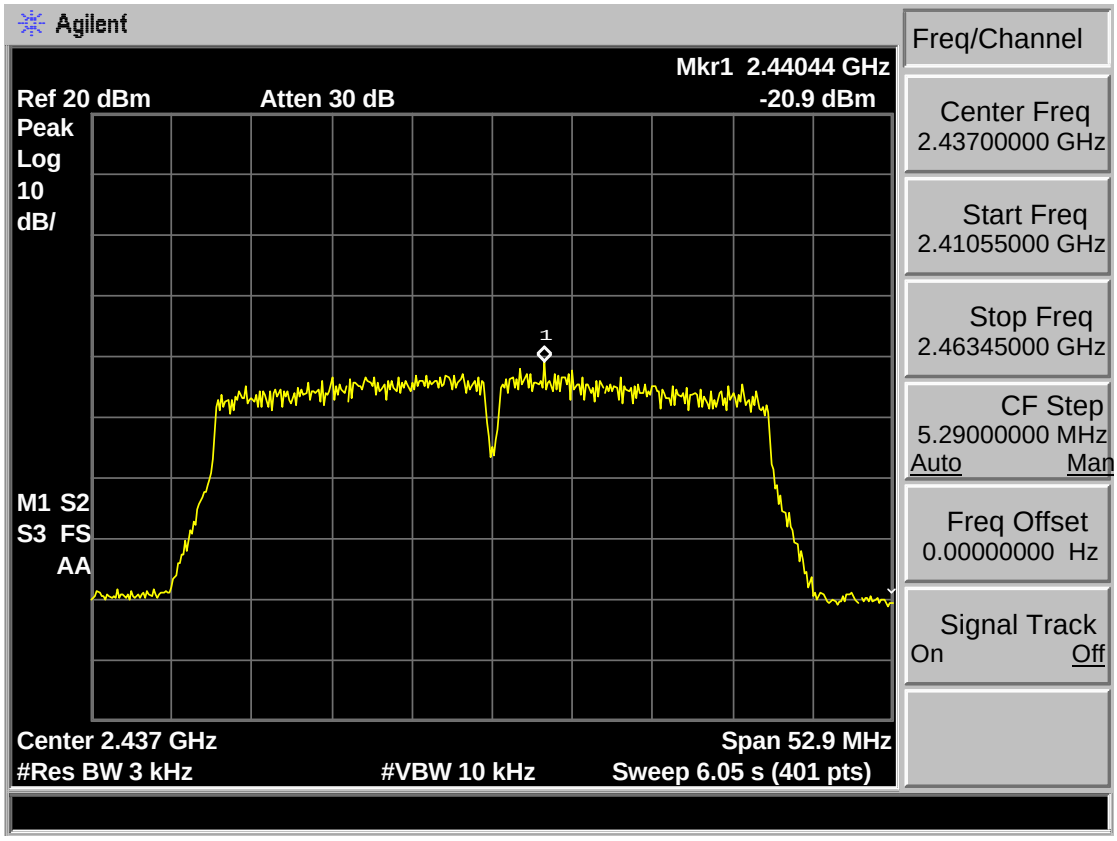
Test Mode: IEEE 802.11n HT20 2462MHz



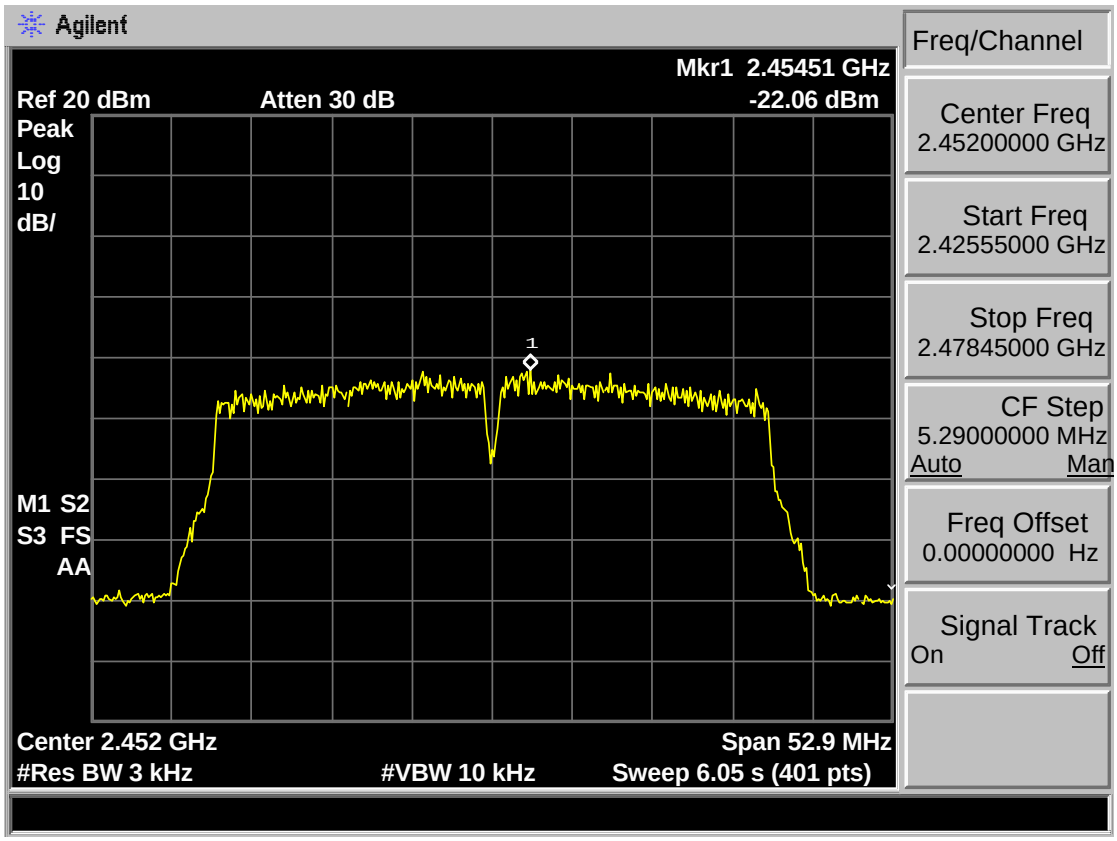
Test Mode: IEEE 802.11n HT40 2422MHz



Test Mode: IEEE 802.11n HT40 2437MHz



Test Mode: IEEE 802.11n HT40 2452MHz



9 ANTENNA REQUIREMENTS

9.1 Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

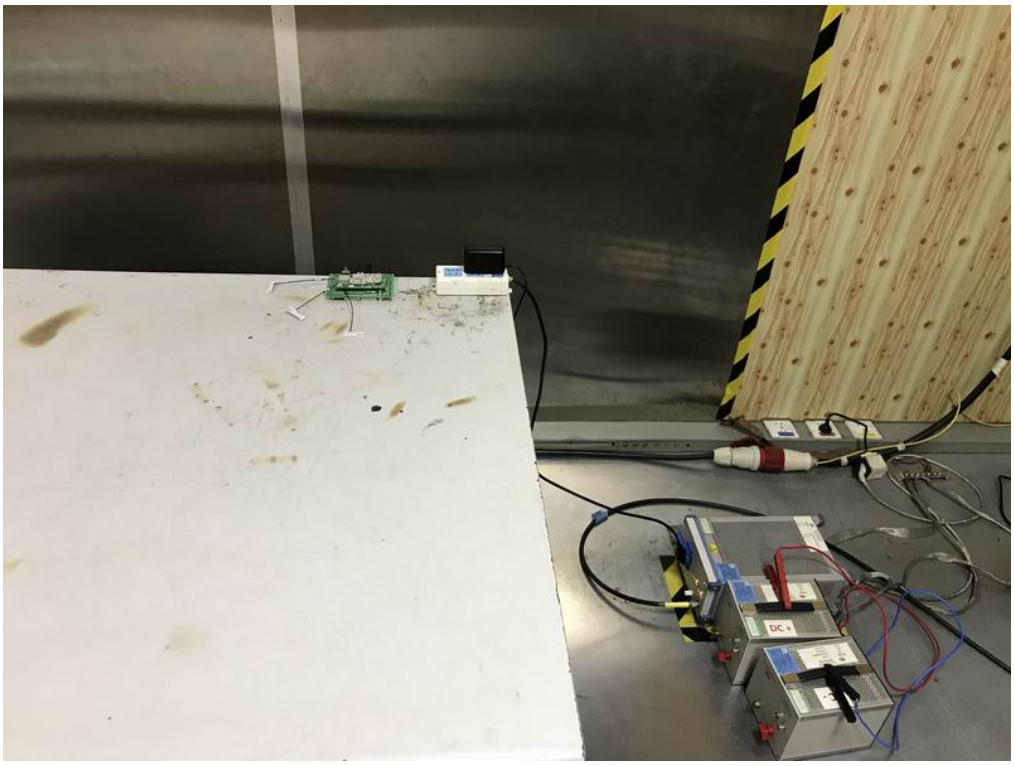
9.2 Result

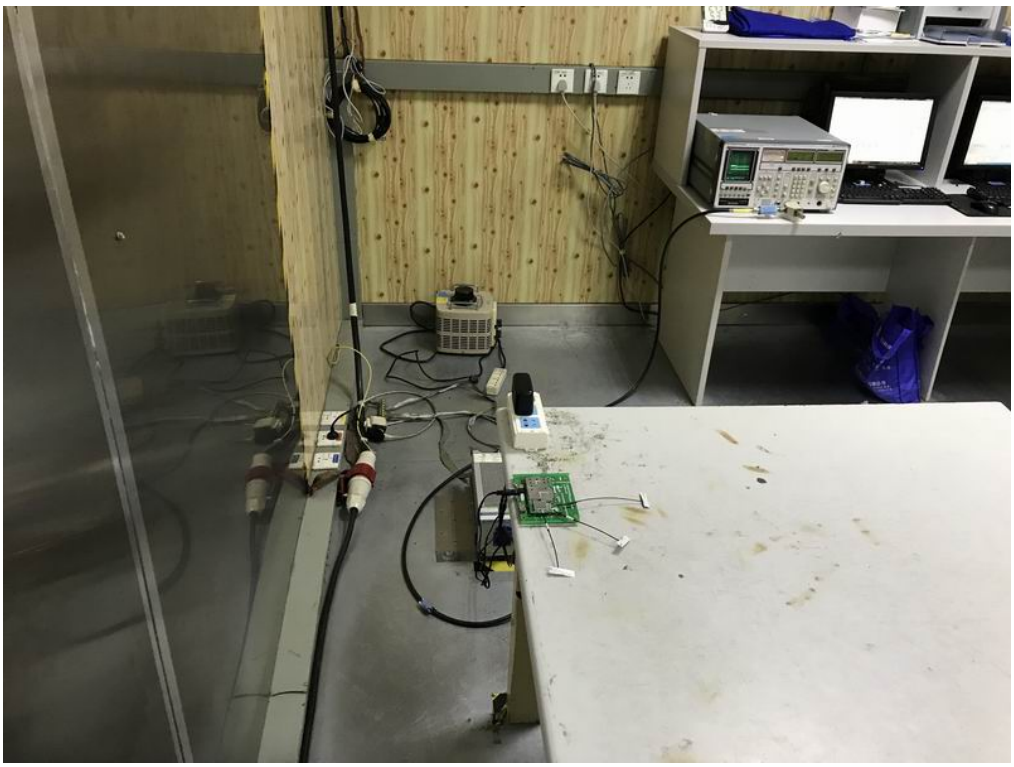
The antennas used for this product are PIFA antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna as follow.

Frequency Range	Antenna 0	Antenna 1	Antenna 2
2400~2483.5 MHz	4.03 dBi	4.10 dBi	3.17 dBi
5150~5250 MHz	/	2.39 dBi	2.91 dBi
5250~5350 MHz	/	1.65 dBi	3.12 dBi
5470~5725 MHz	/	2.97 dBi	4.50 dBi
5725~5850 MHz	/	3.90 dBi	3.56 dBi
2.4G Directional gain: 6.66dBi 5G(Band I) Directional gain: 5.64dBi 5G(Band II) Directional gain: 5.43dBi 5G(Band III) Directional gain: 6.78dBi 5G(Band IV) Directional gain: 6.74dBi Directional gain =$10\log[(10^{G1/20}+10^{G2/20})^2/N_{ANT}]$ dBi Note: KDB 662911 D01 Multiple Transmitter Output v02r01			
Note: Bluetooth uses Antenna 0 11a,b,g,n,ac uses Antenna 1 / Antenna 2 11n,ac uses MIMO			

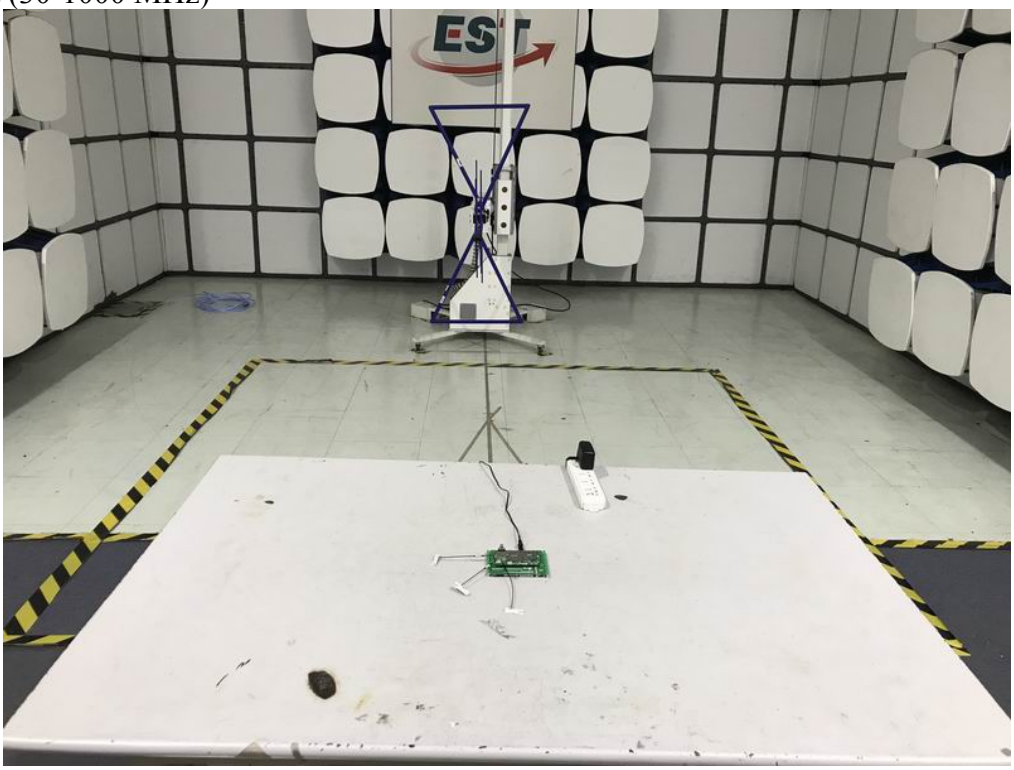
10 TEST SETUP PHOTO

Conducted Test

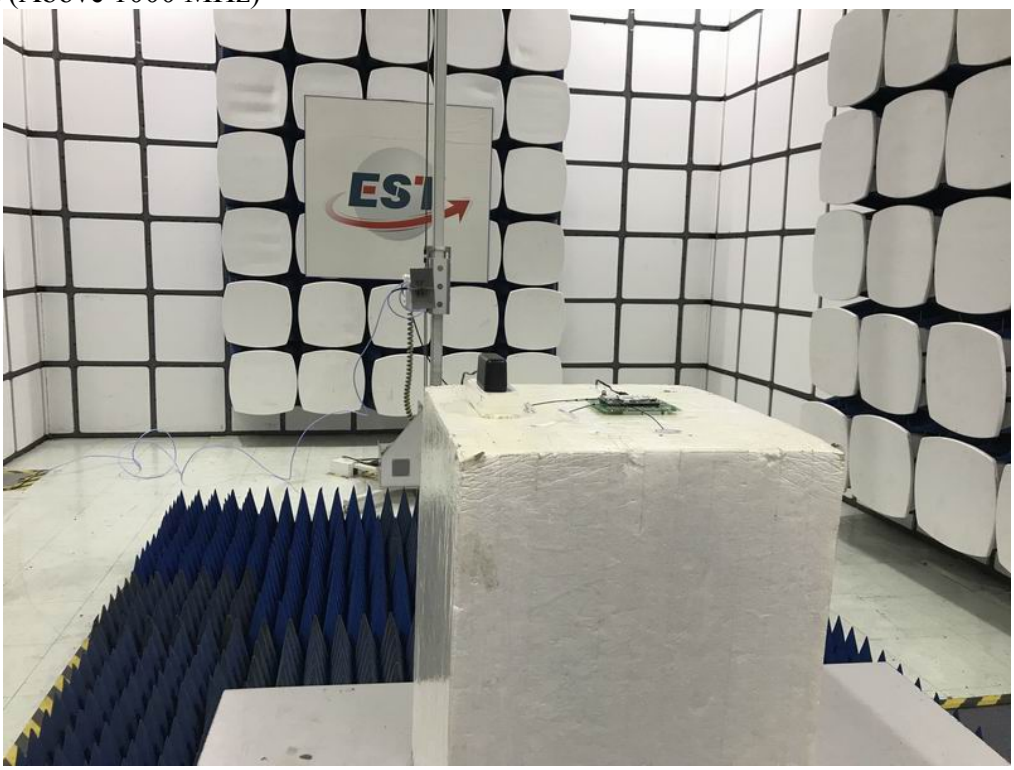




Radiated Test (30-1000 MHz)



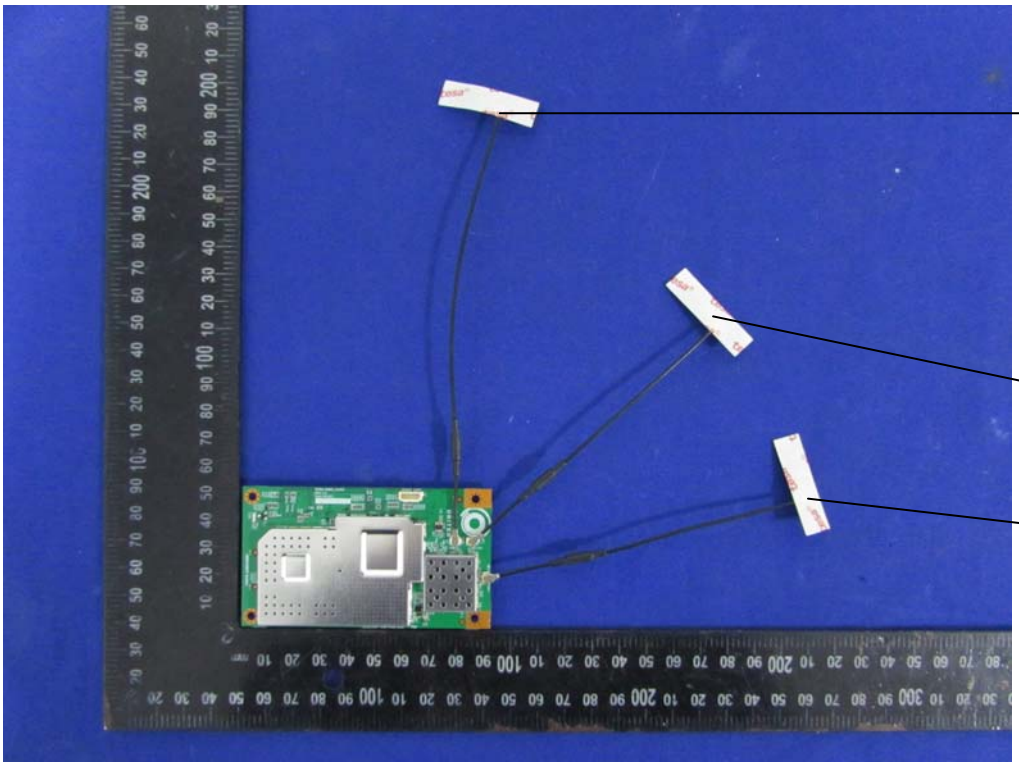
Radiated Test (Above 1000 MHz)

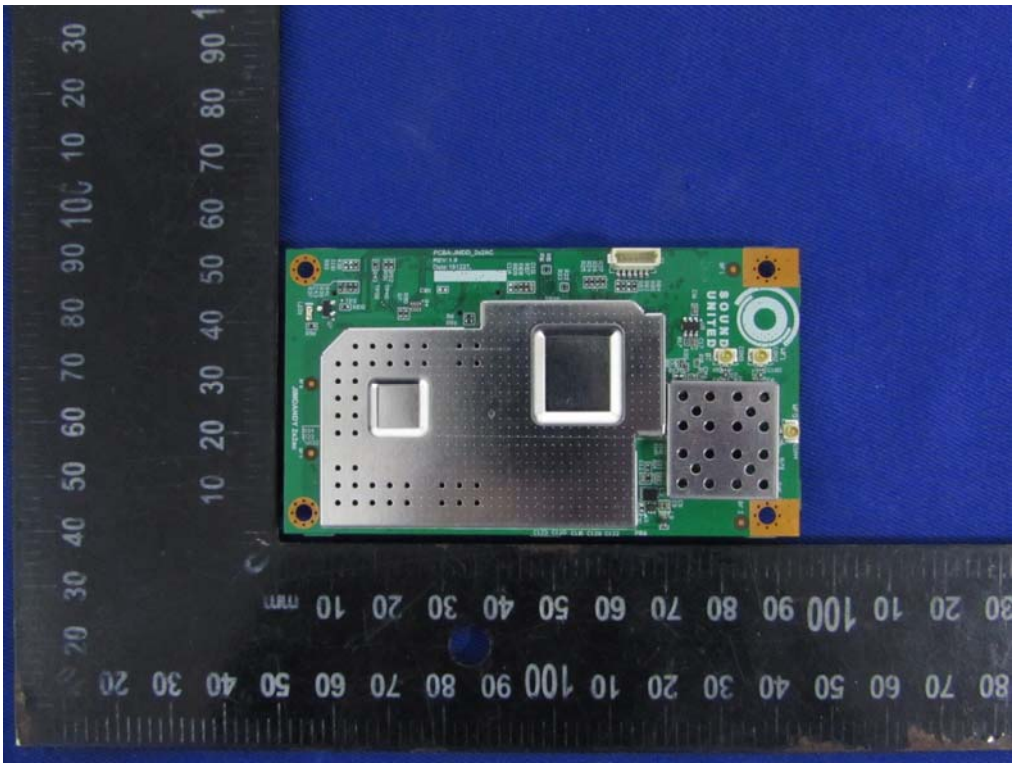


11 PHOTOS OF EUT

External Photos

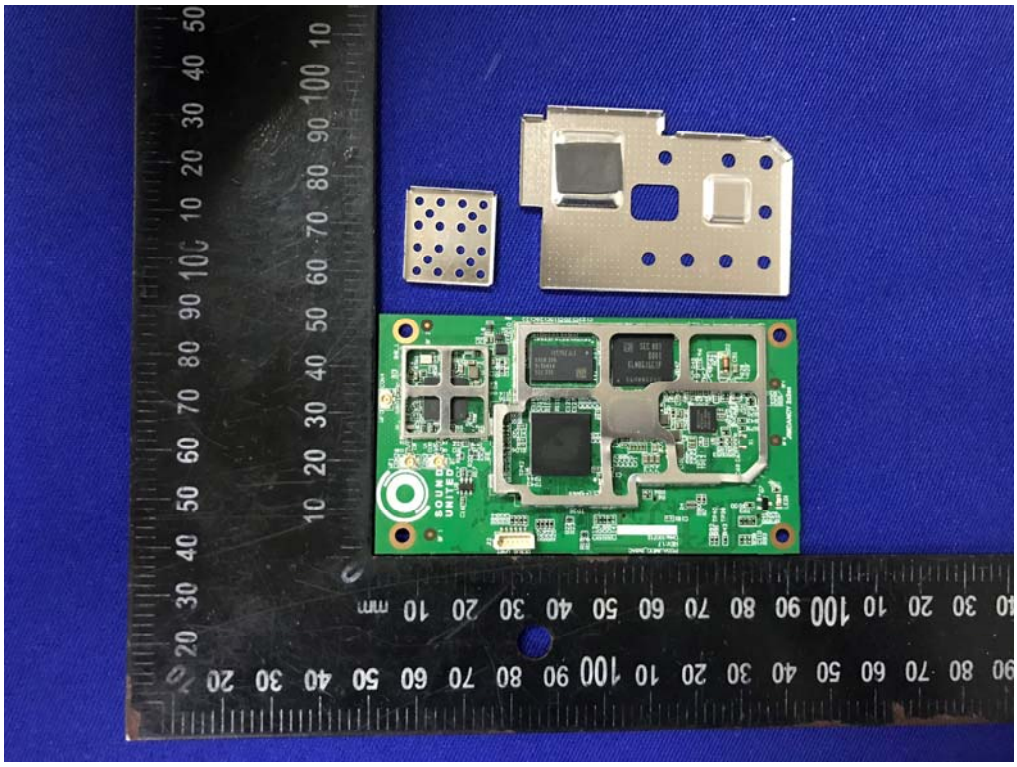
M/N: JMDD

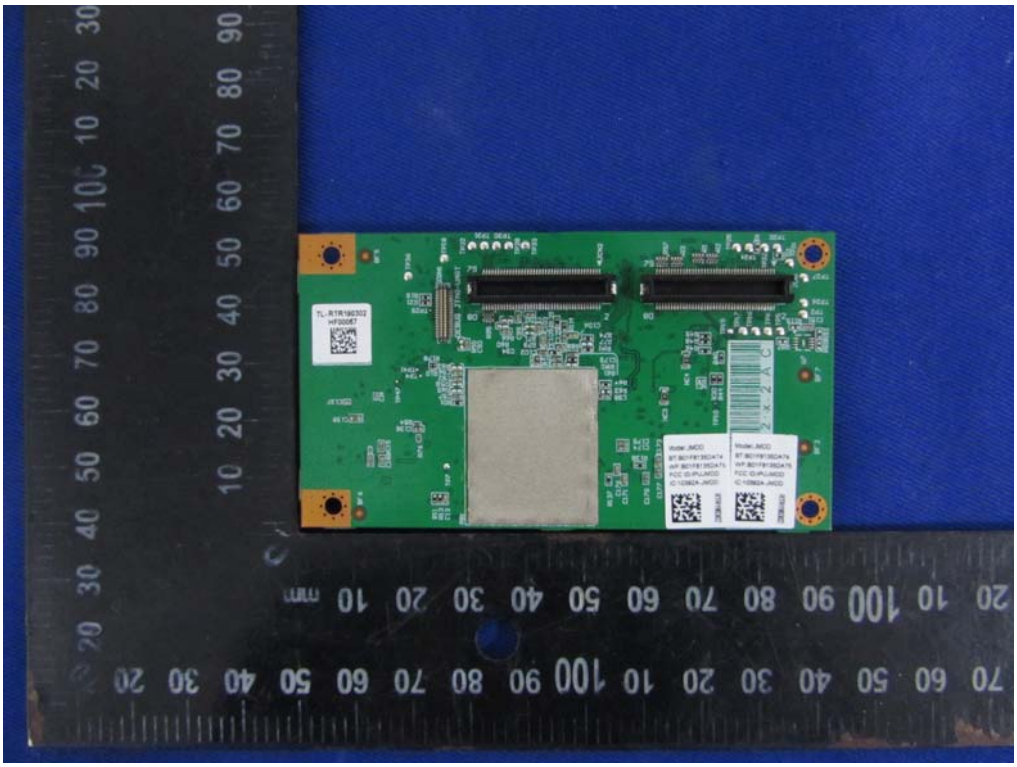




Internal Photos

M/N: JMDD





Internal Photos

M/N: JMDD