

TEST REPORT

Application No.: SZCR2503000774AT
Applicant: CNH Industrial America LLC
Address of Applicant: 700 State Street, Racine, WI 53404, Racine, Wisconsin 53404 United States
Manufacturer: CNH Industrial America LLC
Address of Manufacturer: 700 State Street, Racine, Wisconsin 53404, United States
Factory: Raven Applied Technologies, LLC
Address of Factory: 1101 W Algonquin Sioux Falls SD 57104 USA
Equipment Under Test (EUT):
EUT Name: Processing & Connectivity Module
Model No.: PCM4
FCC ID: 2BMQI-PCM4
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2025-03-03
Date of Test: 2025-05-08 to 2025-06-05
Date of Issue: 2025-06-10

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu

Keny Xu
EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch EMC Laboratory

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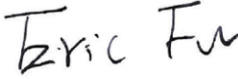
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SZEMC-TRF-01 Rev. A/1

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2025-06-10		Original

Authorized for issue by:				
				
		Charlie Dai/Project Engineer		
				
		Eric Fu/Reviewer		



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2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)	Pass

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10 (2013) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Conducted Peak Output Power		ANSI C63.10 (2013) Section 11.9.2	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Minimum 6dB Bandwidth		ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Power Spectrum Density		ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Band Edges Measurement		ANSI C63.10 (2013) Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Spurious Emissions		ANSI C63.10 (2013) Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass



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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 12V
Cable:	N/A
Operation Frequency:	802.11b/g/n(HT20)/ax(HEW20): 2412MHz to 2462MHz,
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK), 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK), 802.11HEW20: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK),
Channel Spacing:	5MHz
Number of Channels:	802.11b/g/n(HT20)/ax(HEW20): 11
Antenna Type:	Chip Antenna
Antenna Gain:	ANT 1&2: 2.1dBi
Cable Loss (for RF conducted test):	0.8dBi

Remark 1: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

Remark 2: Only 802.11 ax (HEW20) supports the beamforming function. In the case of beamforming, the transmit conducted power of the product will be 3 dB lower than that in non-beamforming mode.

Remark 3: Regarding the ax section, only the data of Full RU and the worst RU26 were retained in the report.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
DC power supply	ZHAOXIN	KXN-6020D	REF. No.SEA27B00
Laptop	Lenovo	T480	REF. No.SEA18C02G

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Radiated Emissions which fall in the restricted bands	$\pm 6.0\text{dB}$ (Below 1GHz); $\pm 4.6\text{dB}$ (Above 1GHz)
Radiated Spurious Emissions Below 1GHz	$\pm 6.0\text{dB}$ for 3m; $\pm 5.0\text{dB}$ for 10m
Radiated Spurious Emissions Above 1GHz	$\pm 4.6\text{dB}$ (1-18GHz); $\pm 4.8\text{dB}$ (18-40GHz)
Conducted Peak Output Power	$\pm 0.75\text{dB}$
Minimum 6dB Bandwidth	$\pm 3\%$
Power Spectrum Density	$\pm 2.84\text{dB}$
Conducted Band Edges Measurement	$\pm 0.75\text{dB}$
Conducted Spurious Emissions	$\pm 0.75\text{dB}$



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Remark:

The U_{lab} (lab Uncertainty) is less than $U_{CISPR/ETSI}$ (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



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4.4 Test Location

All tests were performed at:

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Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 Equipment List

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Signal & Spectrum Analyzer	Rohde & Schwarz	FSV	SZ-WRG-M-048	2025-01-07	2026-01-06
Low Noise Amplifier 30M-8GHz	Tonscend	TAP30M8G30	SZ-WRG-M-050	2025-01-07	2026-01-06
Double Ridge Horn Antenna 1GHz-18GHz	SCHWARZBECK	BBHA 9120 D	SZ-WRG-M-055	2023-12-21	2025-12-20
RSE Test Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Chamber	CRTSGSSAC966	N/A	SZ-WRG-C-063	2025-01-06	2028-01-05
Humidity and Temperature Indicator	deli	8838	SEM002-46	2024-07-24	2025-07-23

Radiated Spurious Emissions Below 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2023-11-20	2025-11-19
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2024-08-14	2025-08-13
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2023-09-16	2025-09-15
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2025-03-04	2026-03-03
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2024-07-06	2025-07-05



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Radiated Spurious Emissions Above 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Signal & Spectrum Analyzer	Rohde & Schwarz	FSV	SZ-WRG-M-048	2025-01-07	2026-01-06
Low Noise Amplifier 1G-18GHz	Tonscend	TAP01018050	SZ-WRG-M-051	2025-01-07	2026-01-06
Low Noise Amplifier 18G-40GHz	Tonscend	TAP18040048	SZ-WRG-M-052	2025-01-08	2026-01-07
Double Ridge Horn Antenna 1GHz-18GHz	SCHWARZBECK	BBHA 9120 D	SZ-WRG-M-055	2023-12-21	2025-12-20
SHF-EHF Horn 15GHz-40GHz	SCHWARZBECK	BBHA 9170	SZ-WRG-M-056	2023-12-25	2025-12-24
RSE Test Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Chamber	CRTSGSSAC966	N/A	SZ-WRG-C-063	2025-01-06	2028-01-05
Humidity and Temperature Indicator	deli	8838	SEM002-46	2024-07-24	2025-07-23

RF Conducted Test					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Power Sensor	TST PASS	TSPS2023R	SEM009-26	2025-03-04	2026-03-03
Power Sensor	KEYSIGHT	U2021XA	SEM009-16	2025-03-04	2026-03-03
DC Power Supply	Chroma	62012P-80-60	SEM011-11	2024-08-14	2025-08-13
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-19	2025-03-04	2026-03-03
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2024-07-06	2025-07-05
Attenuator	Huber+Suhner	6620_SMA-50-1	SEM021-09	2025-03-03	2026-03-02

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2024-07-24	2025-07-23
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2024-07-24	2025-07-23
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2025-03-03	2026-03-02



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6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

6.1.2 Conclusion

15.203 requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is ANT 1&2: 2.1dBi.

Directional gain= G_{ANT} +Array Gain; (G_{ANT} is 2.1dBi)

For Non-Beamforming:

Array gain=0dB for $N_{ANT} \leq 4$ (N_{ANT} for the device is 2)

For Beamforming:

Array gain= $10 \cdot \log(N_{ANT}/N_{SS})$ dB=3.01dB, (N_{ANT} for the device is 1)

So, the directional gain is 5.11dBi during 802.11ax Beamforming, while it is 2.1dBi in all other modes.

Antenna location: Refer to internal photos



7 Radio Spectrum Matter Test Results

7.1 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.10.5

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.9 °C

Humidity: 51.0 % RH

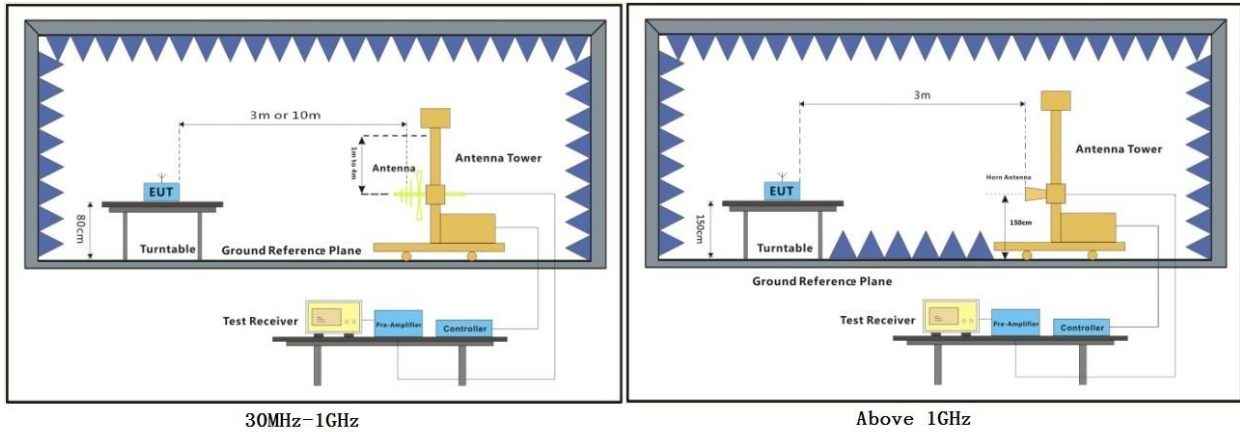
Atmospheric Pressure: 1020 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

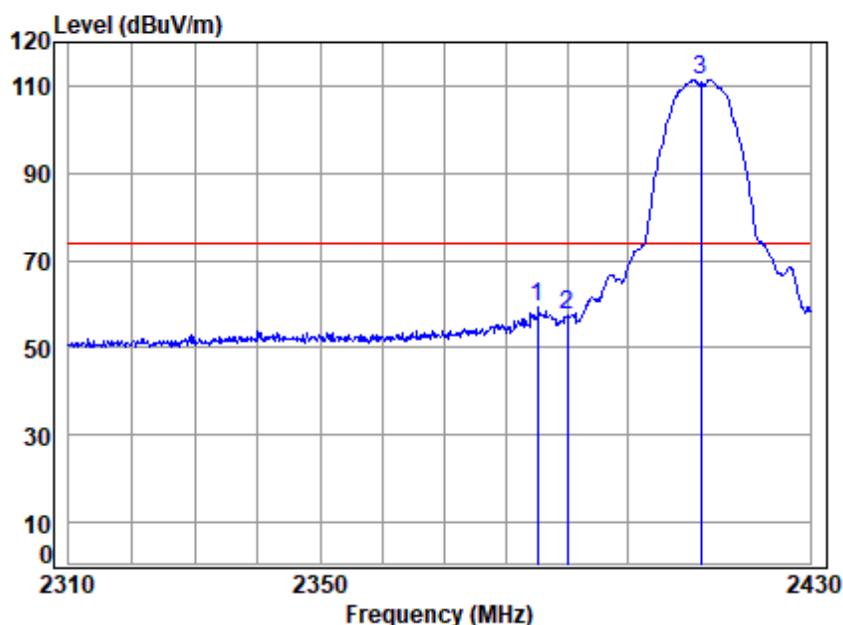
Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Remark 3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

Remark 4: For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.



Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

Mode : 2412 Band edge

: 2.4G Wi-Fi 11b

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2385.252	6.82	27.44	31.54	56.60	59.32	74.00	-14.68 peak
2	2390.000	6.82	27.46	31.54	54.53	57.27	74.00	-16.73 peak
3	pp 2412.000	6.91	27.52	31.54	108.41	111.30	74.00	37.30 peak



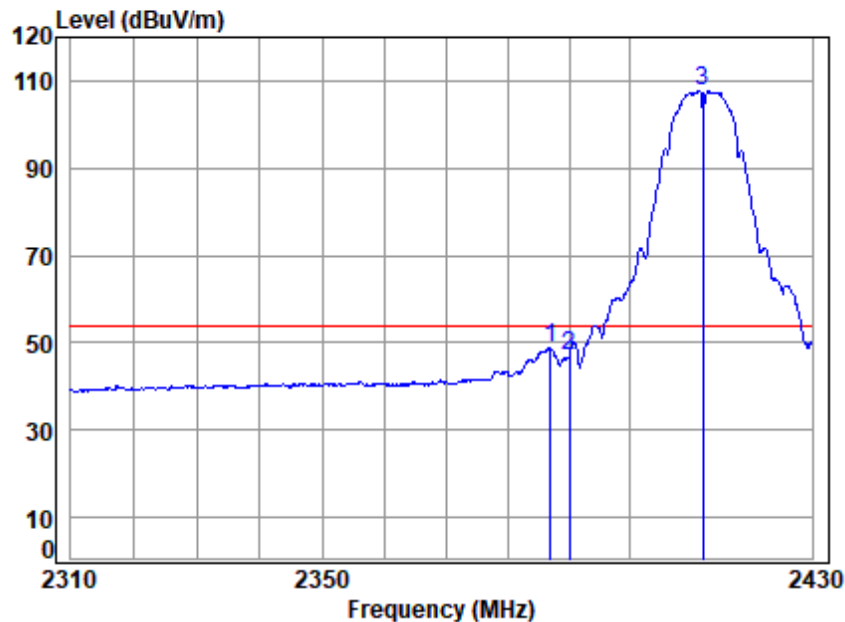
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

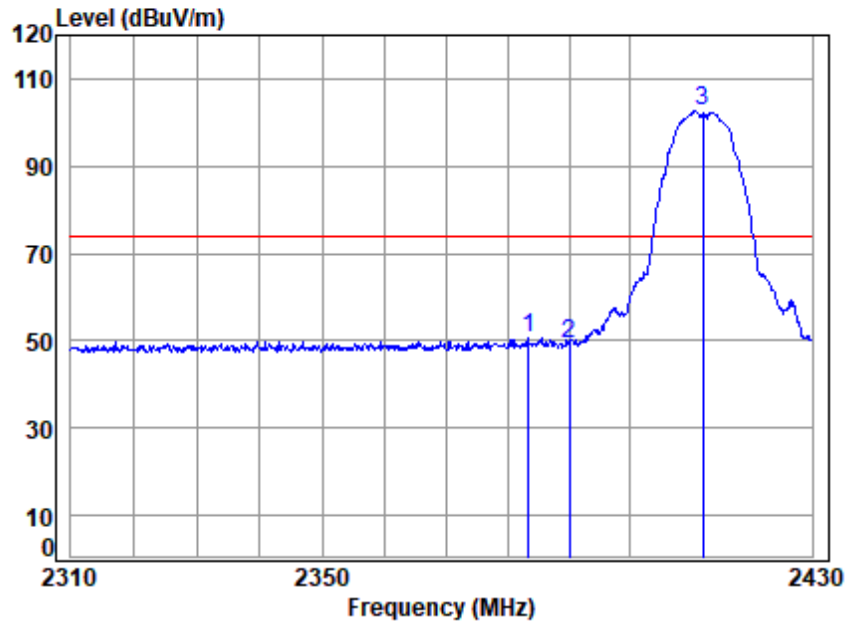
Mode : 2412 Band edge

: 2.4G Wi-Fi 11b

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2386.944	6.82	27.45	31.54	45.99	48.72	54.00	-5.28 Average
2 2390.000	6.82	27.46	31.54	44.28	47.02	54.00	-6.98 Average
3 pp 2412.000	6.91	27.52	31.54	104.90	107.79	54.00	53.79 Average



Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Condition: 3m VERTICAL

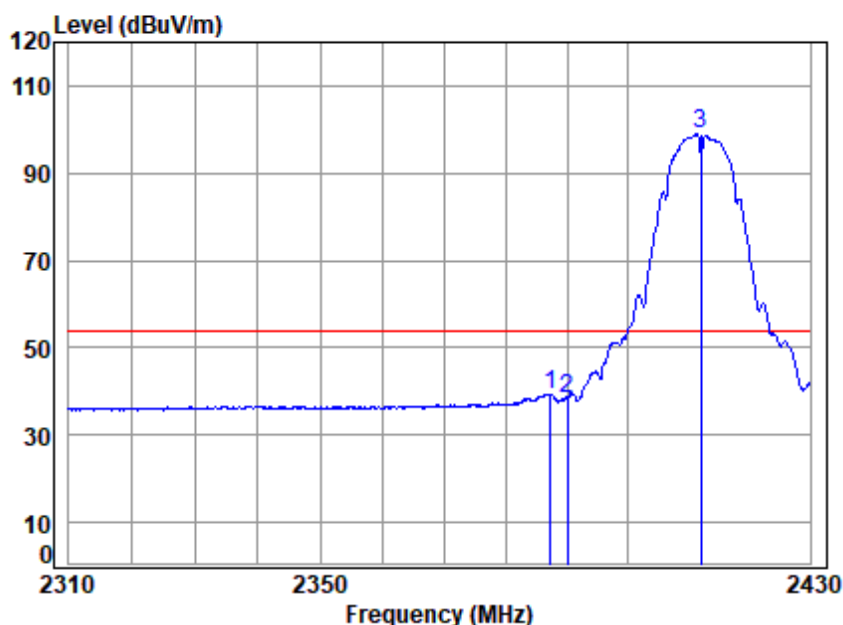
Job No : 00774AT/00775AT

Mode : 2412 Band edge
: 2.4G Wi-Fi 11b

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2383.321	6.82	27.43	31.54	48.00	50.71	74.00	-23.29	Peak
2	2390.000	6.82	27.46	31.54	46.64	49.38	74.00	-24.62	Peak
3 pp	2412.000	6.91	27.52	31.54	99.68	102.57	74.00	28.57	Peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

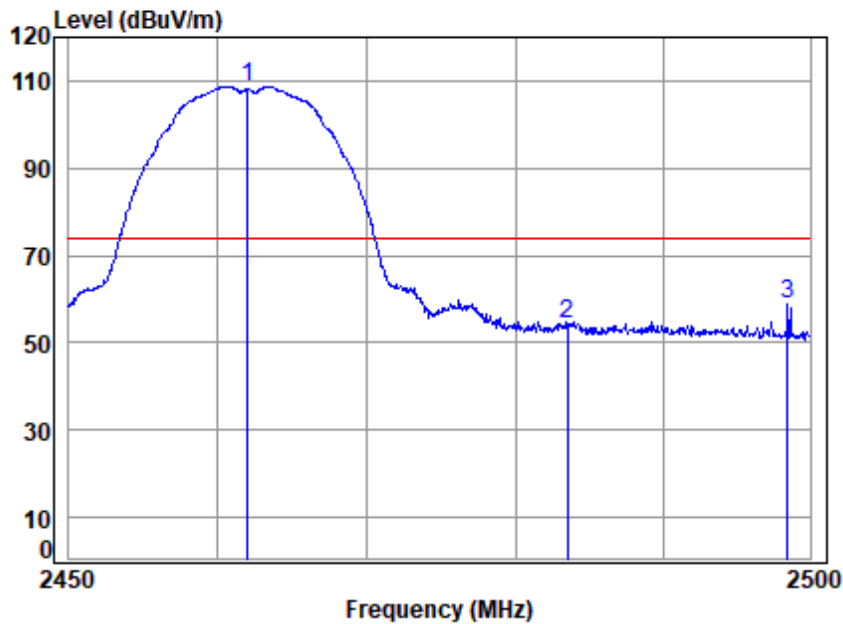
Mode : 2412 Band edge

: 2.4G Wi-Fi 11b

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2387.307	6.82	27.45	31.54	36.73	39.46	54.00	-14.54	Average
2	2390.000	6.82	27.46	31.54	35.63	38.37	54.00	-15.63	Average
3 pp	2412.000	6.91	27.52	31.54	95.97	98.86	54.00	44.86	Average



Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Condition: 3m HORIZONTAL

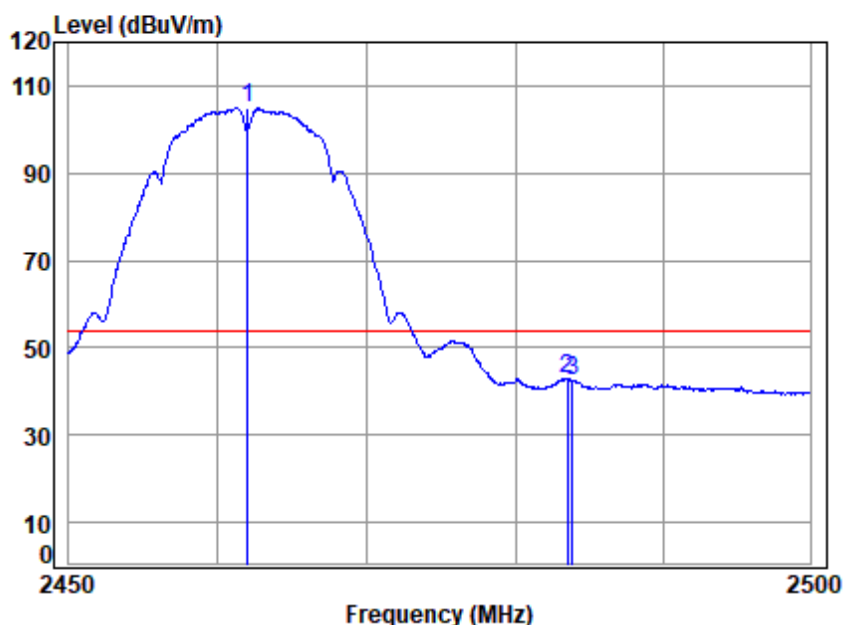
Job No : 00774AT/00775AT

Mode : 2462 Band edge
: 2.4G Wi-Fi 11b

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	105.32	108.69	74.00	34.69	peak
2	2483.500	7.40	27.80	31.55	50.67	54.32	74.00	-19.68	peak
3	2498.435	7.50	27.89	31.55	54.92	58.76	74.00	-15.24	peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

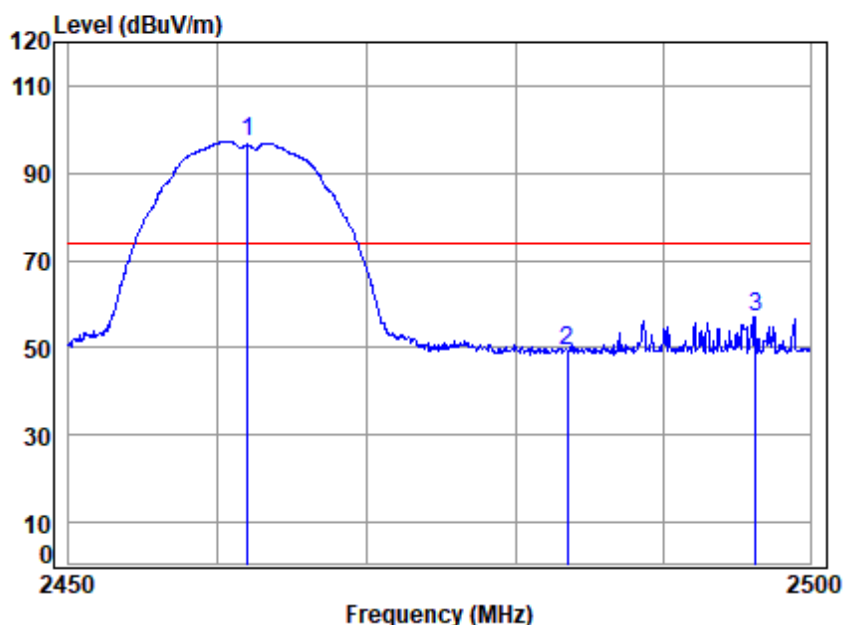
Mode : 2462 Band edge

: 2.4G Wi-Fi 11b

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 2462.000		7.25	27.67	31.55	101.47	104.84	54.00	50.84	Average
2 2483.500		7.40	27.80	31.55	39.07	42.72	54.00	-11.28	Average
3 2483.890		7.40	27.80	31.55	38.97	42.62	54.00	-11.38	Average



Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

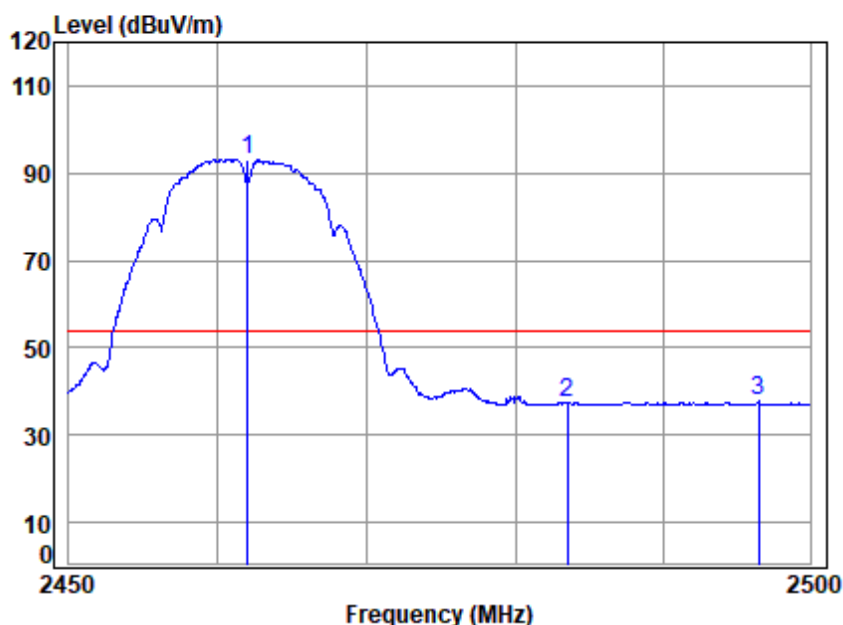
Mode : 2462 Band edge

: 2.4G Wi-Fi 11b

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	93.89	97.26	74.00	23.26	Peak
2	2483.500	7.40	27.80	31.55	45.59	49.24	74.00	-24.76	Peak
3	2496.265	7.48	27.88	31.55	53.37	57.18	74.00	-16.82	Peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2462 Band edge

: 2.4G Wi-Fi 11b

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	89.80	93.17	54.00	39.17	Average
2	2483.500	7.40	27.80	31.55	33.68	37.33	54.00	-16.67	Average
3	2496.518	7.49	27.88	31.55	33.86	37.68	54.00	-16.32	Average



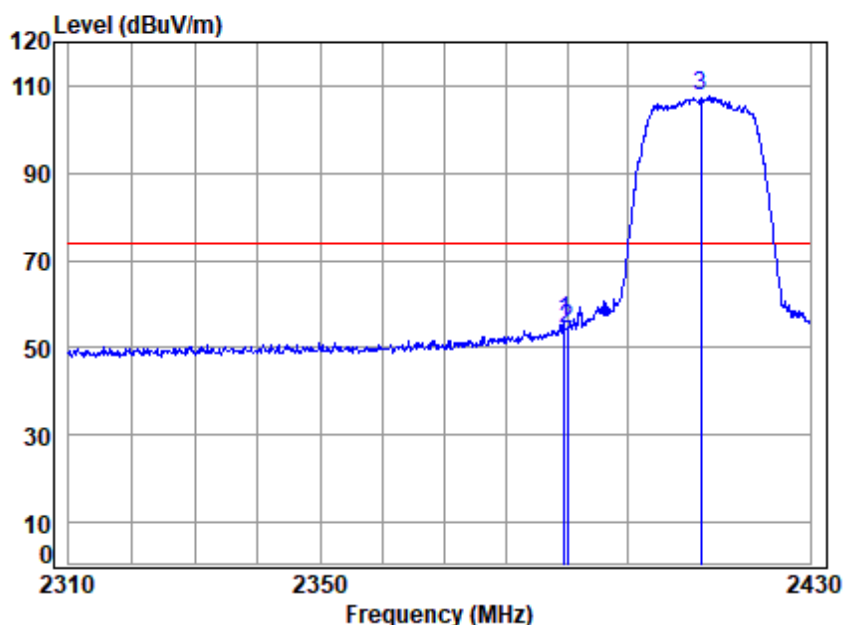
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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

Mode : 2412 Band edge

: 2.4G Wi-Fi 11n20

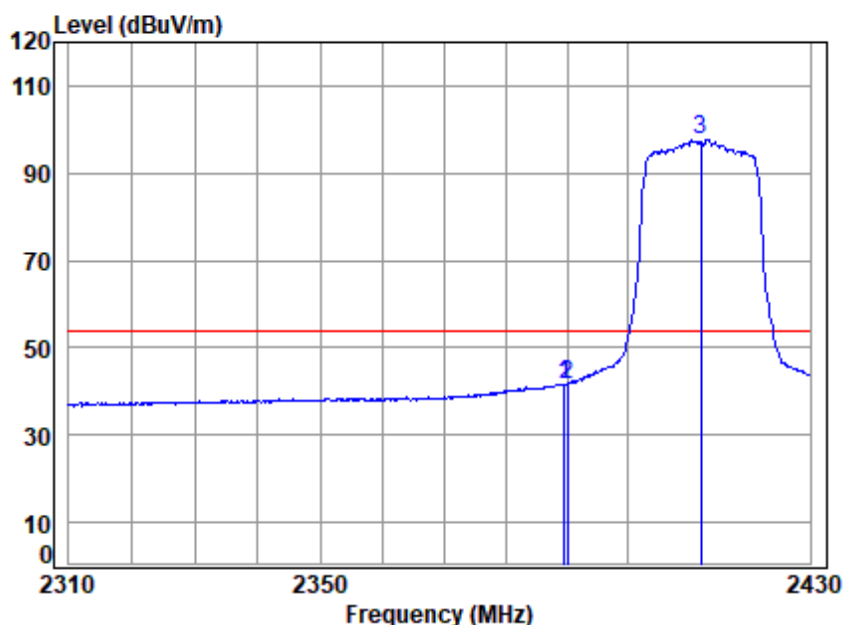
		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2389.484	6.82	27.46	31.54	53.40	56.14	74.00	-17.86	peak
2	2390.000	6.82	27.46	31.54	51.70	54.44	74.00	-19.56	peak
3 pp	2412.000	6.91	27.52	31.54	104.78	107.67	74.00	33.67	peak



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

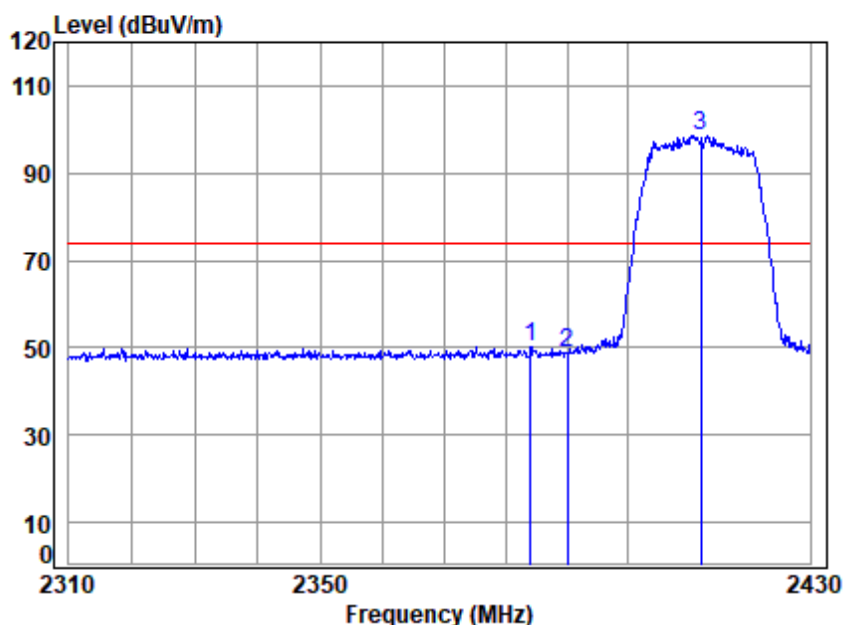
Mode : 2412 Band edge

: 2.4G Wi-Fi 11n20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2389.484	6.82	27.46	31.54	38.88	41.62	54.00	-12.38	Average
2	2390.000	6.82	27.46	31.54	38.77	41.51	54.00	-12.49	Average
3 pp	2412.000	6.91	27.52	31.54	94.85	97.74	54.00	43.74	Average



Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2412 Band edge

: 2.4G Wi-Fi 11n20

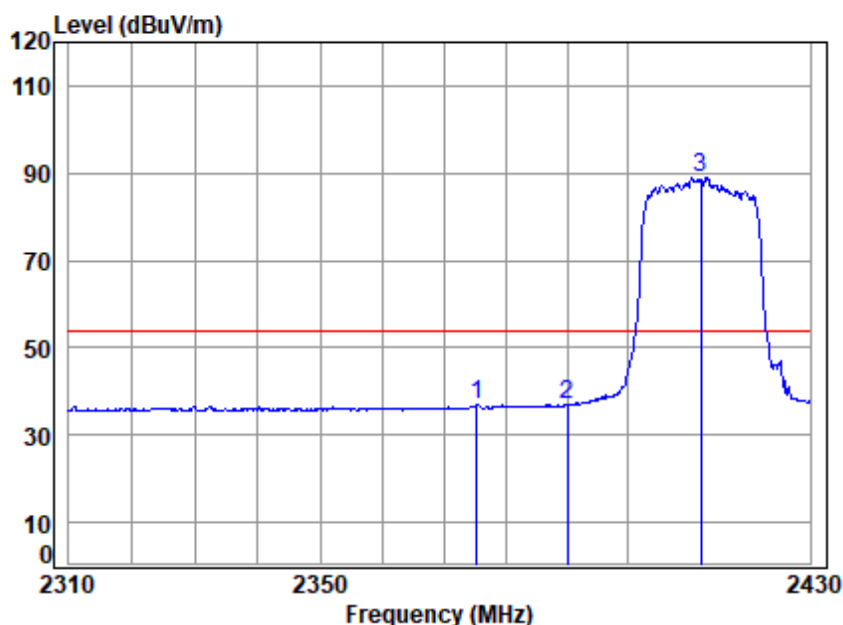
		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2384.045	6.82	27.44	31.54	47.53	50.25	74.00	-23.75	Peak
2	2390.000	6.82	27.46	31.54	46.12	48.86	74.00	-25.14	Peak
3 pp	2412.000	6.91	27.52	31.54	95.80	98.69	74.00	24.69	Peak



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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2412 Band edge

: 2.4G Wi-Fi 11n20

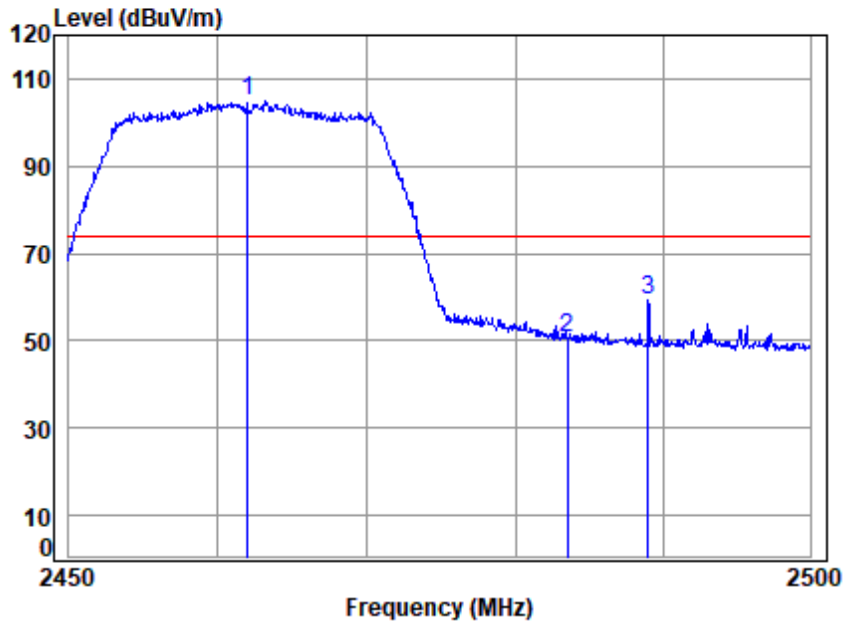
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Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 2375.368	6.82	27.40	31.54	34.47	37.15	54.00	-16.85	Average
2 2390.000	6.82	27.46	31.54	34.20	36.94	54.00	-17.06	Average
3 pp 2412.000	6.91	27.52	31.54	85.93	88.82	54.00	34.82	Average



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

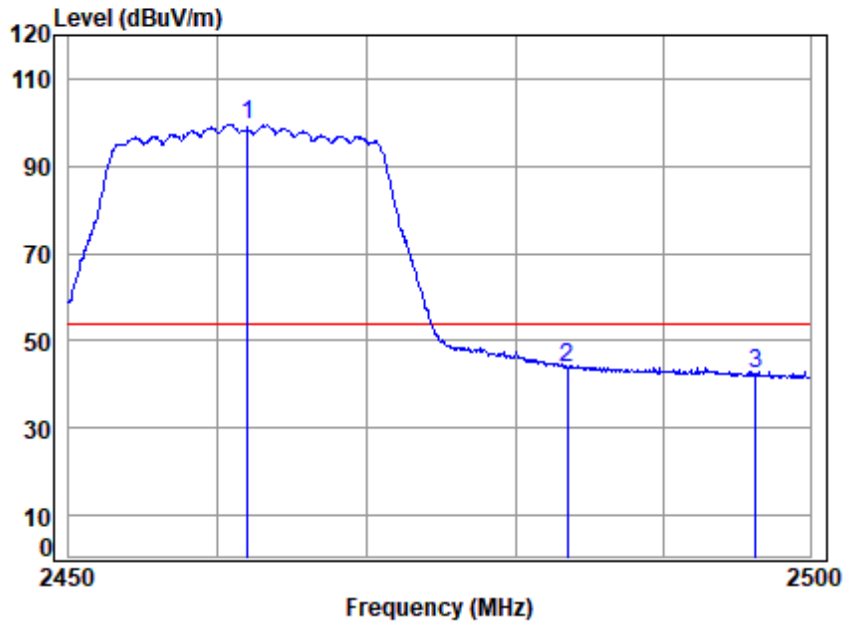
Mode : 2462 Band edge

: 2.4G Wi-Fi 11n20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	101.43	104.80	74.00	30.80	peak
2	2483.500	7.40	27.80	31.55	47.22	50.87	74.00	-23.13	peak
3	2489.014	7.44	27.83	31.55	55.73	59.45	74.00	-14.55	peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

Mode : 2462 Band edge

: 2.4G Wi-Fi 11n20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	96.26	99.63	54.00	45.63	Average
2	2483.500	7.40	27.80	31.55	40.29	43.94	54.00	-10.06	Average
3	2496.265	7.48	27.88	31.55	38.82	42.63	54.00	-11.37	Average



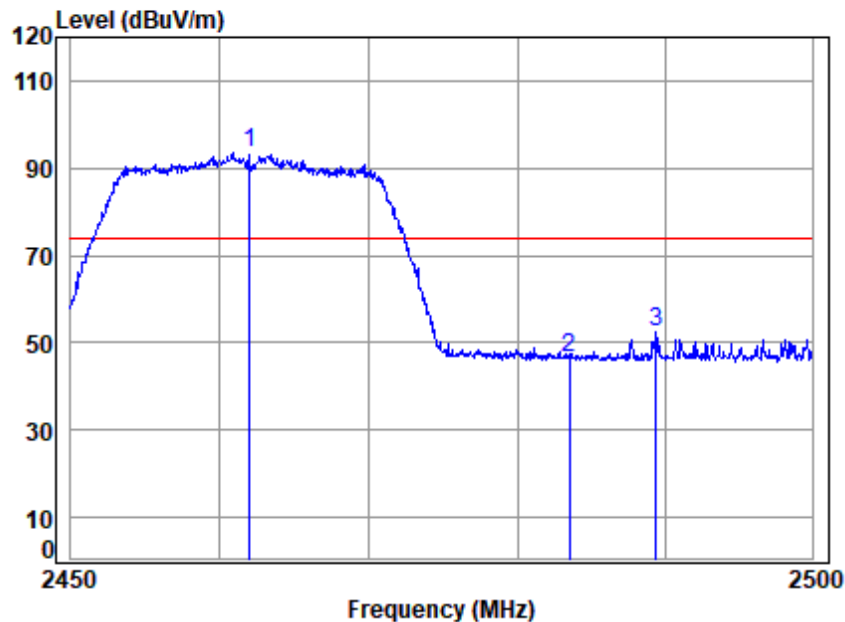
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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

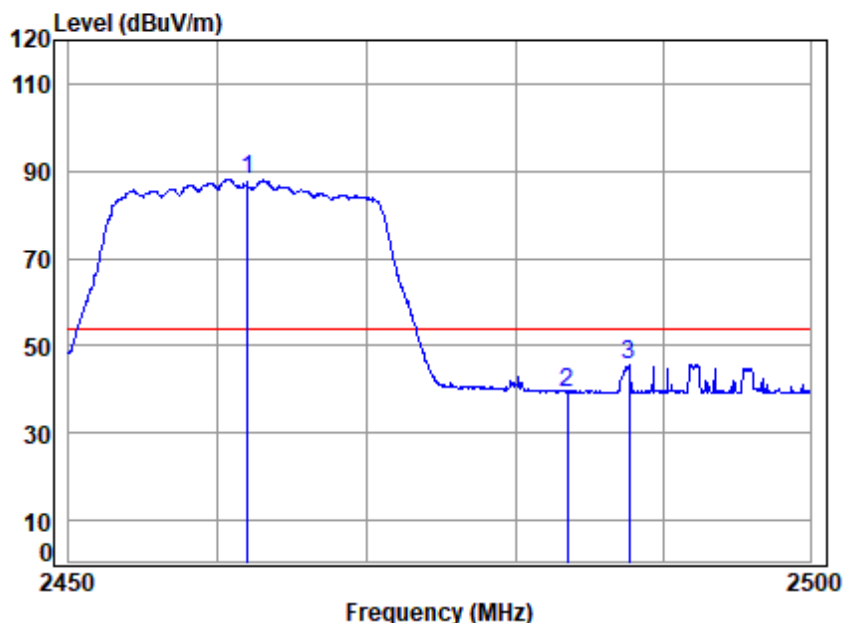
Mode : 2462 Band edge

: 2.4G Wi-Fi 11n20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	90.27	93.64	74.00	19.64	Peak
2	2483.500	7.40	27.80	31.55	42.95	46.60	74.00	-27.40	Peak
3	2489.416	7.44	27.84	31.55	48.81	52.54	74.00	-21.46	Peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2462 Band edge

: 2.4G Wi-Fi 11n20

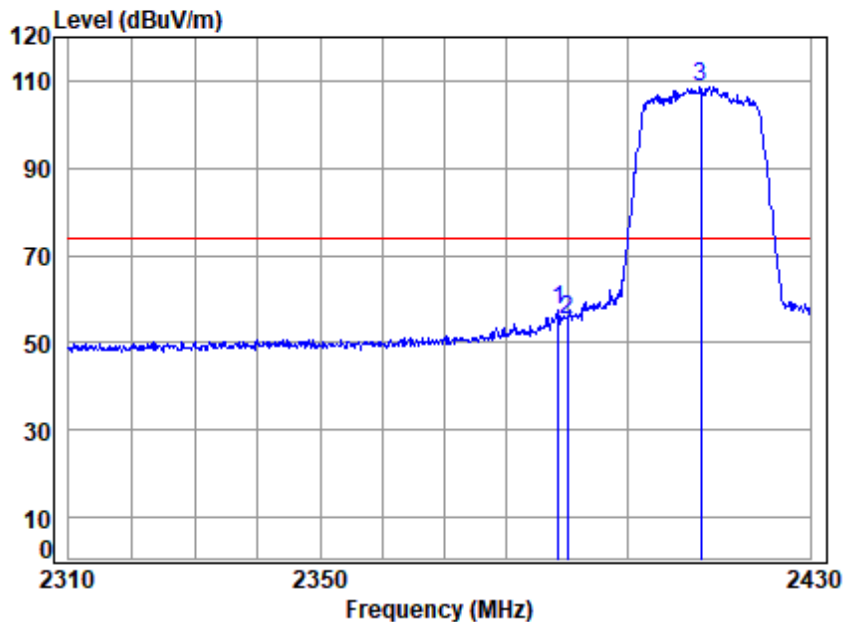
		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	84.80	88.17	54.00	34.17	Average
2	2483.500	7.40	27.80	31.55	35.70	39.35	54.00	-14.65	Average
3	2487.707	7.43	27.83	31.55	41.85	45.56	54.00	-8.44	Average



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

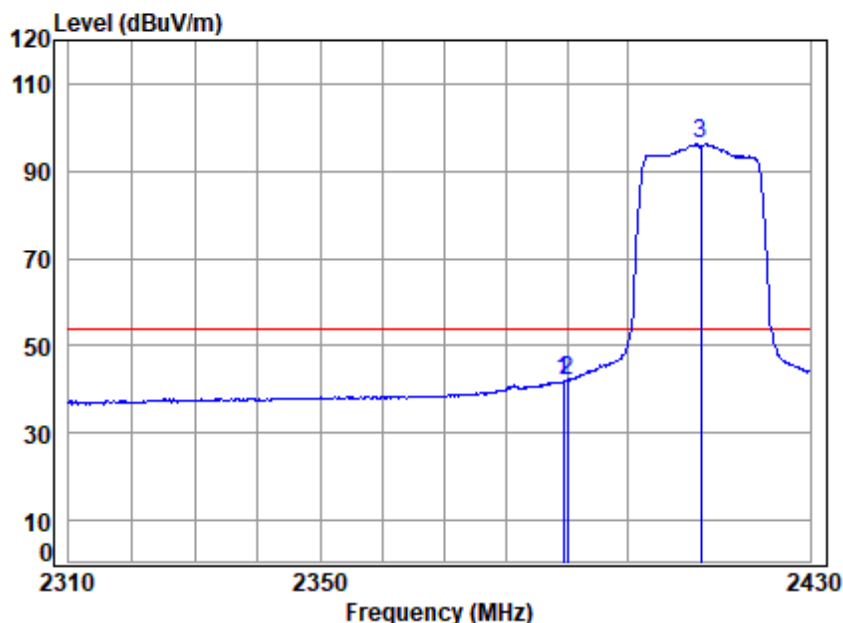
Mode : 2412 Band edge

: 2.4G Wi-Fi 11ax20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2388.637	6.82	27.45	31.54	54.59	57.32	74.00	-16.68	peak
2	2390.000	6.82	27.46	31.54	52.63	55.37	74.00	-18.63	peak
3 pp	2412.000	6.91	27.52	31.54	105.84	108.73	74.00	34.73	peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

Mode : 2412 Band edge

: 2.4G Wi-Fi 11ax20

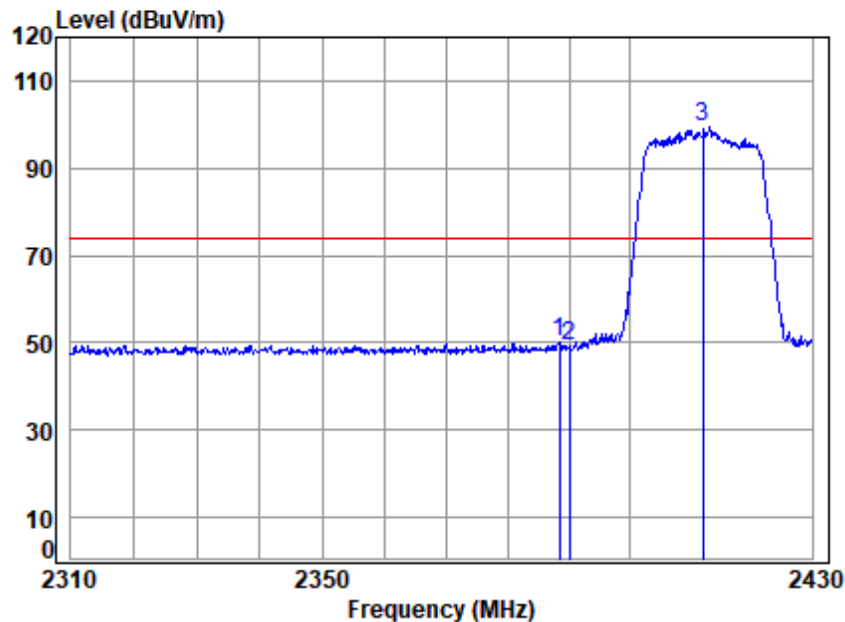
		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2389.363	6.82	27.46	31.54	39.24	41.98	54.00	-12.02	Average
2	2390.000	6.82	27.46	31.54	39.06	41.80	54.00	-12.20	Average
3 pp	2412.000	6.91	27.52	31.54	93.28	96.17	54.00	42.17	Average



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Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:Low



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

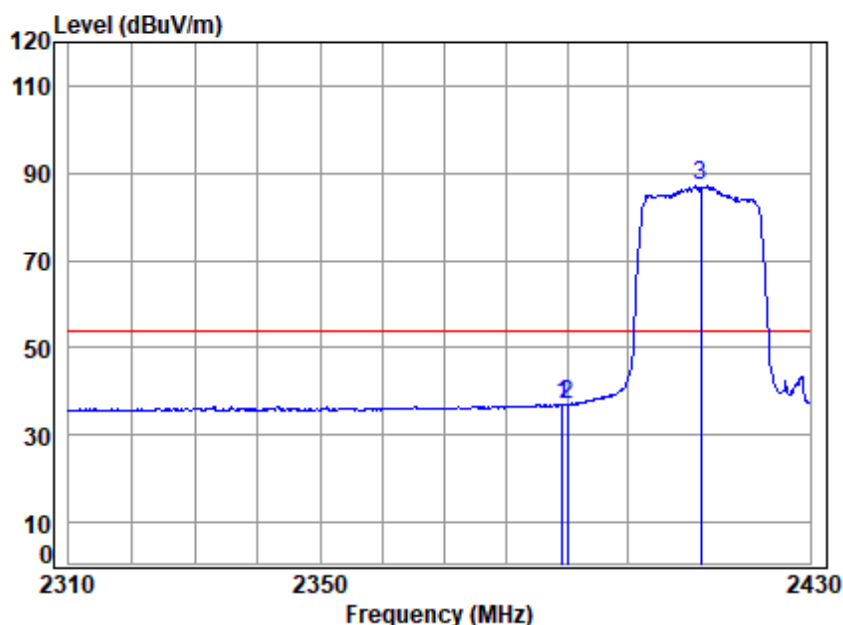
Mode : 2412 Band edge

: 2.4G Wi-Fi 11ax20

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2388.395	6.82	27.45	31.54	47.34	50.07	74.00	-23.93 Peak
2 2390.000	6.82	27.46	31.54	46.63	49.37	74.00	-24.63 Peak
3 pp 2412.000	6.91	27.52	31.54	96.54	99.43	74.00	25.43 Peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:Low



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2412 Band edge

: 2.4G Wi-Fi 11ax20

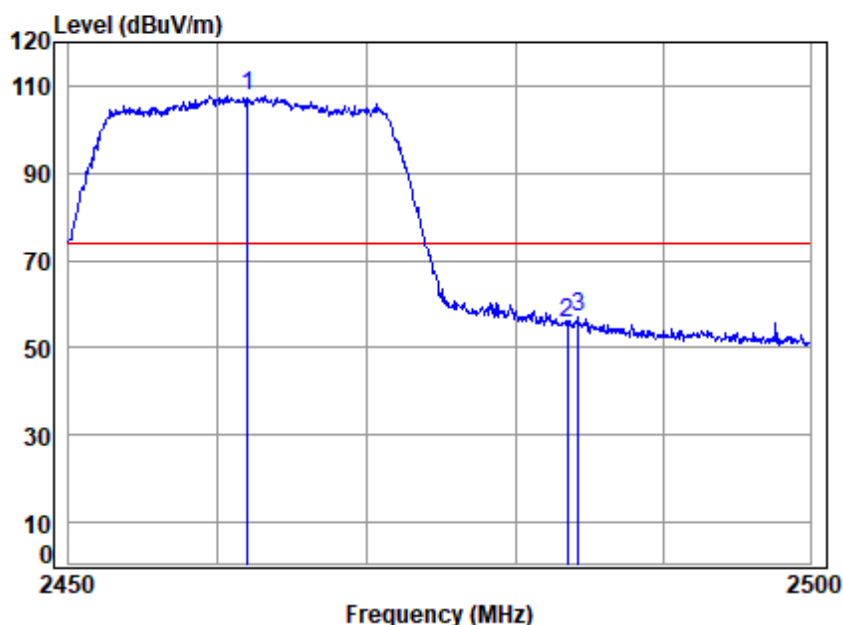
		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2389.242	6.82	27.46	31.54	34.31	37.05	54.00	-16.95	Average
2	2390.000	6.82	27.46	31.54	34.21	36.95	54.00	-17.05	Average
3 pp	2412.000	6.91	27.52	31.54	84.14	87.03	54.00	33.03	Average



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:High



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

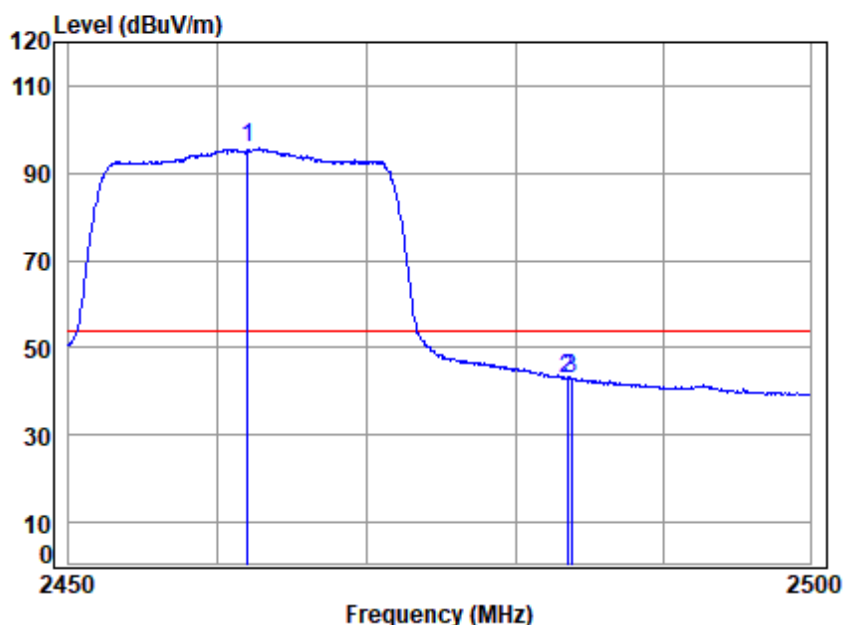
Mode : 2462 Band edge

: 2.4G Wi-Fi 11ax20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	104.47	107.84	74.00	33.84	peak
2	2483.500	7.40	27.80	31.55	52.10	55.75	74.00	-18.25	peak
3	2484.241	7.40	27.81	31.55	53.15	56.81	74.00	-17.19	peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:High



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

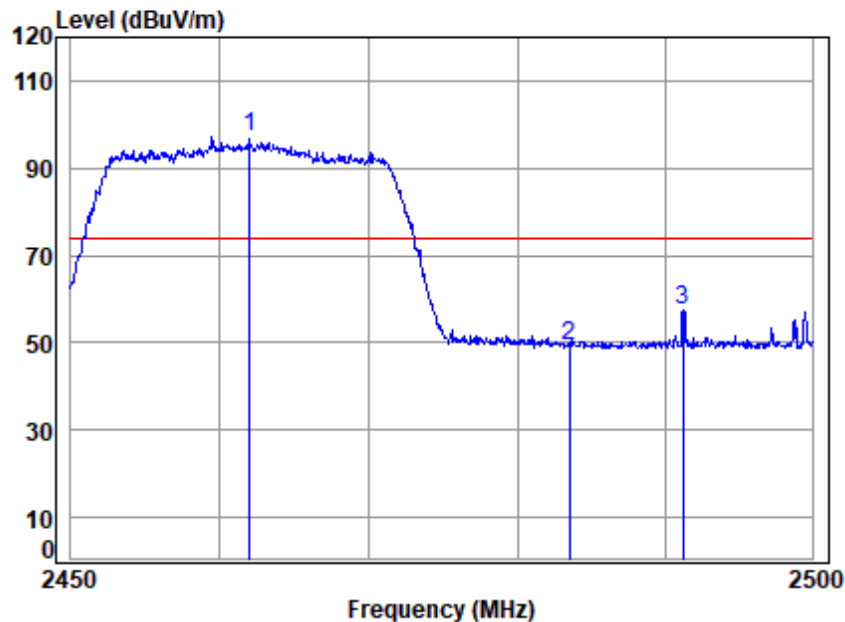
Mode : 2462 Band edge

: 2.4G Wi-Fi 11ax20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	92.42	95.79	54.00	41.79	Average
2	2483.500	7.40	27.80	31.55	39.43	43.08	54.00	-10.92	Average
3	2483.790	7.40	27.80	31.55	39.42	43.07	54.00	-10.93	Average



Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

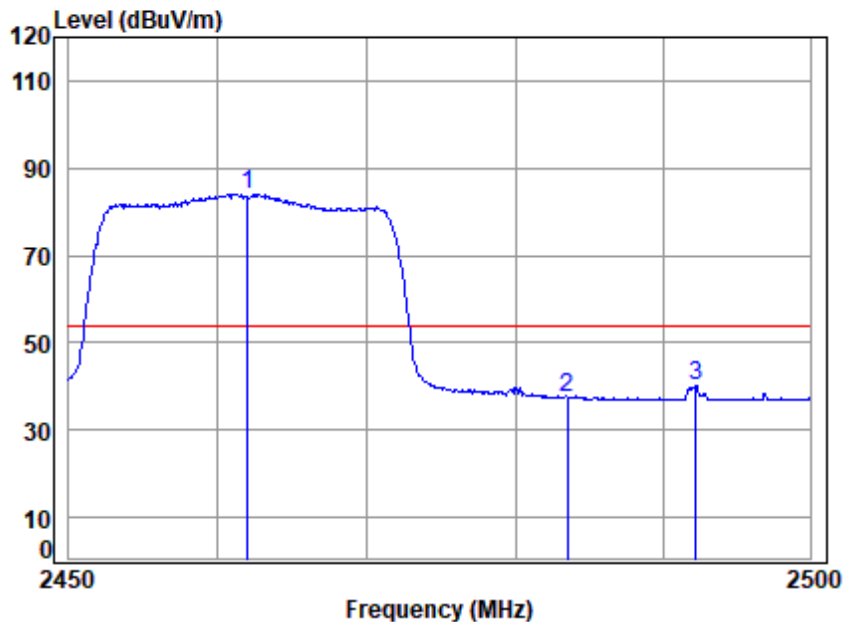
Mode : 2462 Band edge

: 2.4G Wi-Fi 11ax20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	93.85	97.22	74.00	23.22	Peak
2	2483.500	7.40	27.80	31.55	45.62	49.27	74.00	-24.73	Peak
3	2491.227	7.45	27.85	31.55	53.86	57.61	74.00	-16.39	Peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

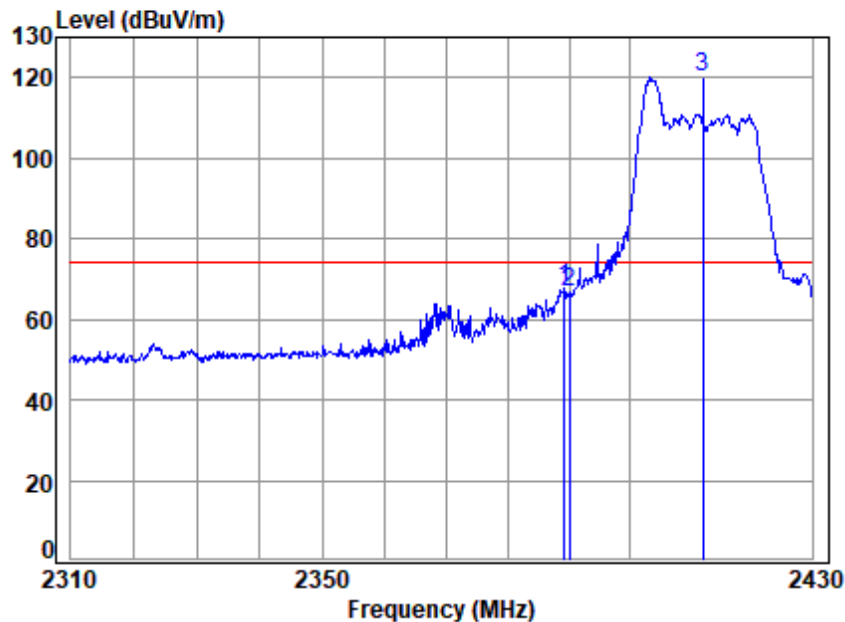
Mode : 2462 Band edge

: 2.4G Wi-Fi 11ax20

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	80.79	84.16	54.00	30.16	Average
2	2483.500	7.40	27.80	31.55	33.88	37.53	54.00	-16.47	Average
3	2492.234	7.46	27.85	31.55	36.24	40.00	54.00	-14.00	Average



Test Mode: 04; Polarity: Horizontal; Modulation: 802.11ax(RU 26); Bandwidth:20MHz; Channel:Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

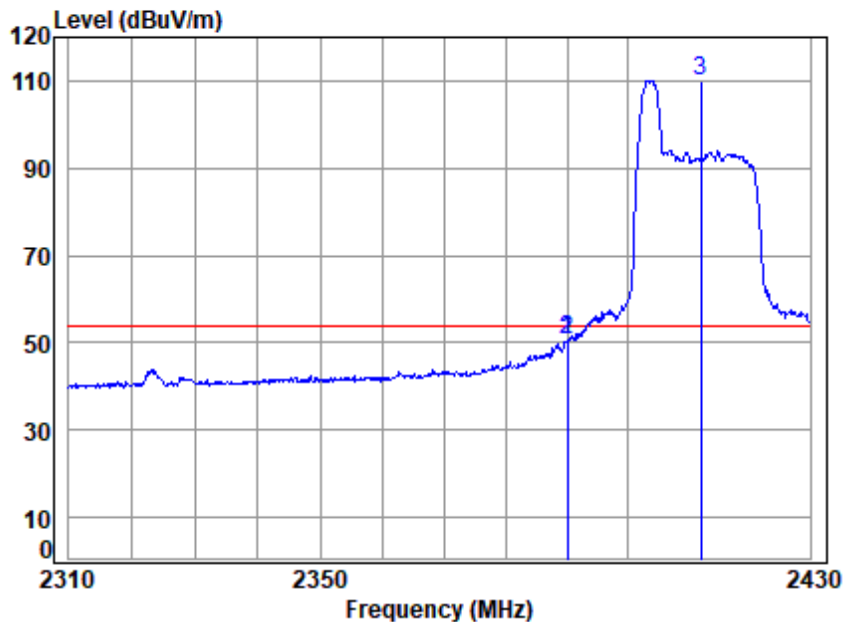
Mode : 2412 Band edge

: 2.4G Wi-Fi 11ax20 RU26

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2389.242	6.82	27.46	31.54	64.80	67.54	74.00	-6.46 peak
2	2390.000	6.82	27.46	31.54	63.85	66.59	74.00	-7.41 peak
3	pp 2412.000	6.91	27.52	31.54	117.00	119.89	74.00	45.89 peak



Test Mode: 04; Polarity: Horizontal; Modulation: 802.11ax(RU 26); Bandwidth:20MHz; Channel:Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

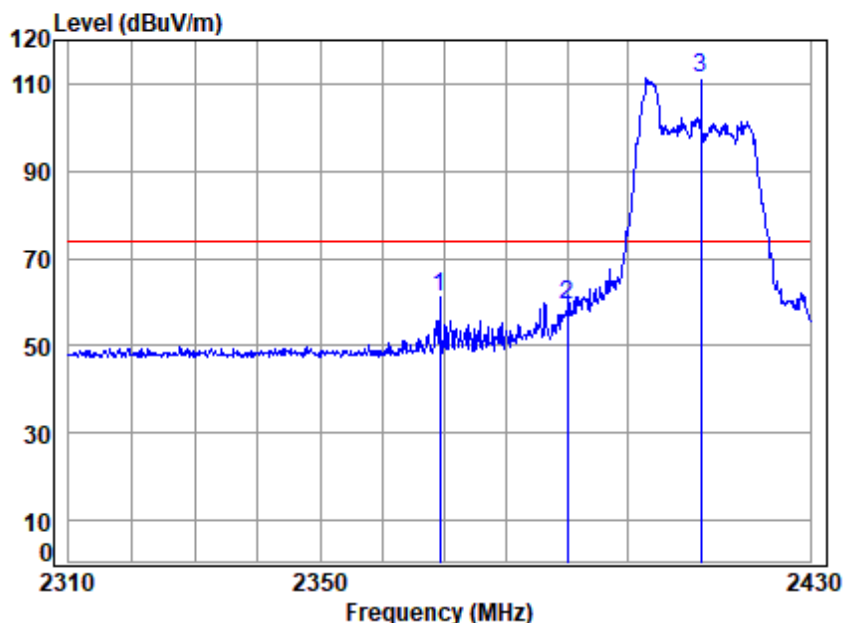
Mode : 2412 Band edge

: 2.4G Wi-Fi 11ax20 RU26

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 2389.968	6.82	27.46	31.54	47.97	50.71	54.00	-3.29	Average
2 2390.000	6.82	27.46	31.54	47.97	50.71	54.00	-3.29	Average
3 pp 2412.000	6.91	27.52	31.54	107.15	110.04	54.00	56.04	Average



Test Mode: 04; Polarity: Vertical; Modulation: 802.11ax(RU 26); Bandwidth:20MHz; Channel:Low



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2412 Band edge

: 2.4G Wi-Fi 11ax20 RU26

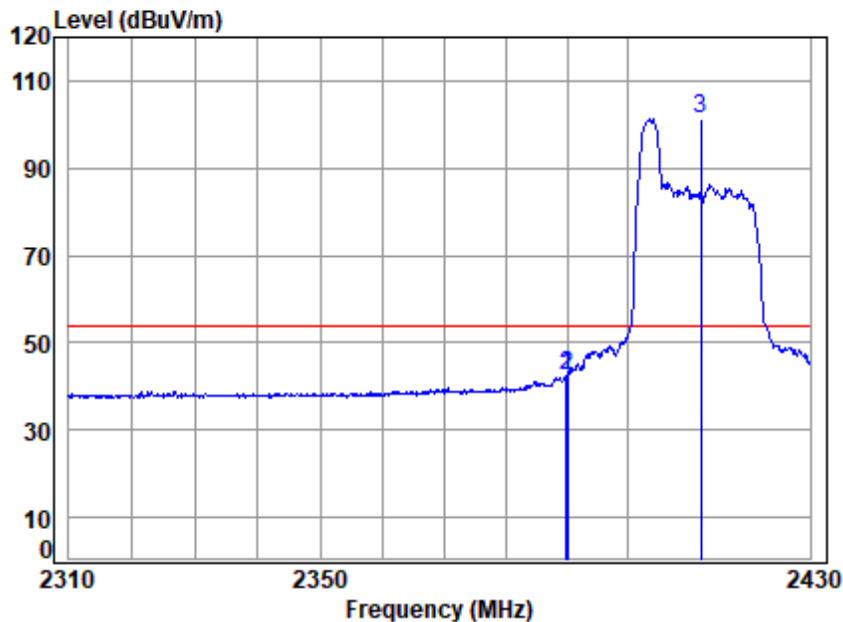
	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 2369.360	6.81	27.38	31.54	58.48	61.13	74.00	-12.87	Peak
2 2390.000	6.82	27.46	31.54	56.47	59.21	74.00	-14.79	Peak
3 pp 2412.000	6.91	27.52	31.54	108.53	111.42	74.00	37.42	Peak



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Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(RU 26); Bandwidth:20MHz; Channel:Low



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2412 Band edge

: 2.4G Wi-Fi 11ax20 RU26

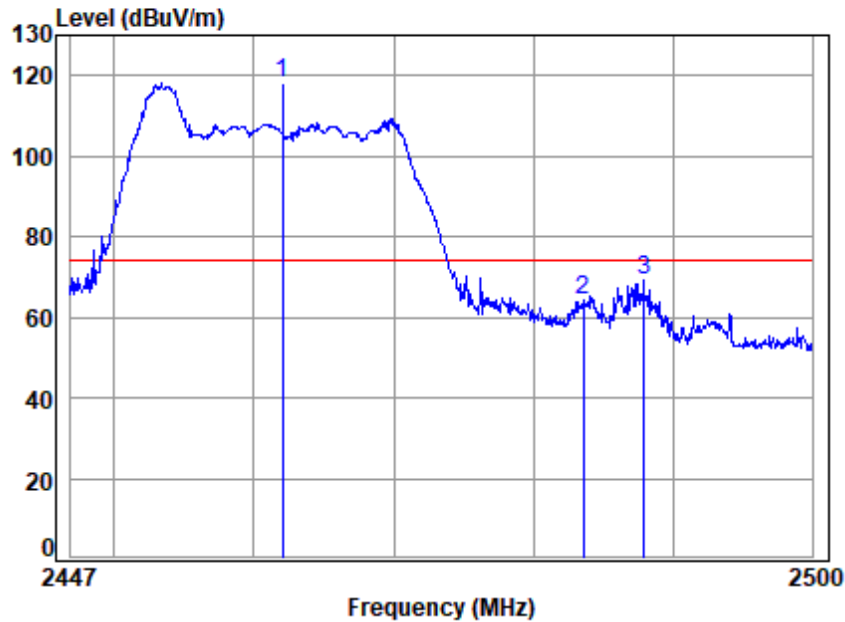
	Cable	Ant	Preamp	Read	Limit	Over		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 2389.847	6.82	27.46	31.54	39.91	42.65	54.00	-11.35	Average
2 2390.000	6.82	27.46	31.54	39.82	42.56	54.00	-11.44	Average
3 pp 2412.000	6.91	27.52	31.54	98.40	101.29	54.00	47.29	Average



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Test Mode: 04; Polarity: Horizontal; Modulation: 802.11ax(RU26); Bandwidth: 20MHz; Channel: High



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

Mode : 2462 Band edge

: 2.4G Wi-Fi 11ax20 RU26

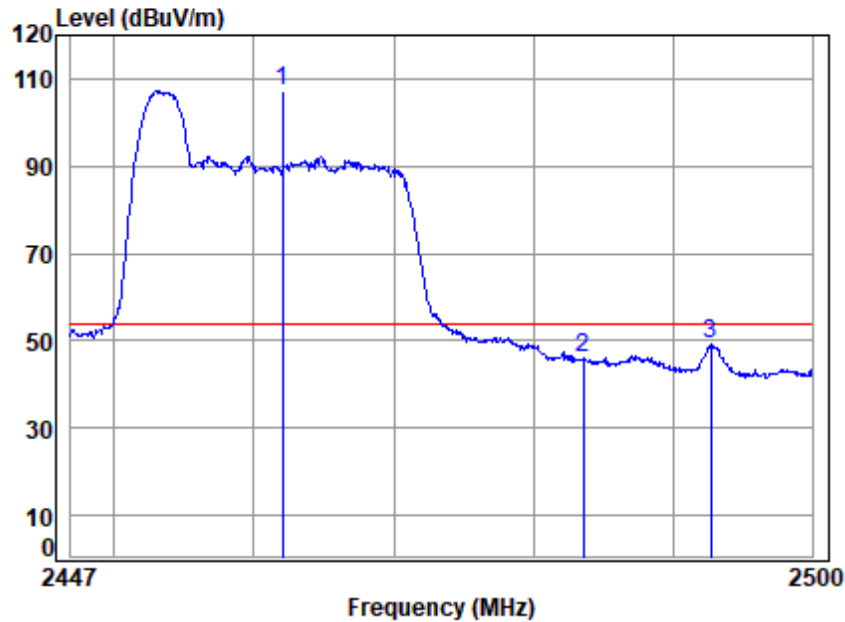
		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	114.53	117.90	74.00	43.90	peak
2	2483.500	7.40	27.80	31.55	60.49	64.14	74.00	-9.86	peak
3	2487.869	7.43	27.83	31.55	65.68	69.39	74.00	-4.61	peak



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Test Mode: 04; Polarity: Horizontal; Modulation: 802.11ax(RU26); Bandwidth: 20MHz; Channel: High



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

Mode : 2462 Band edge

: 2.4G Wi-Fi 11ax20 RU26

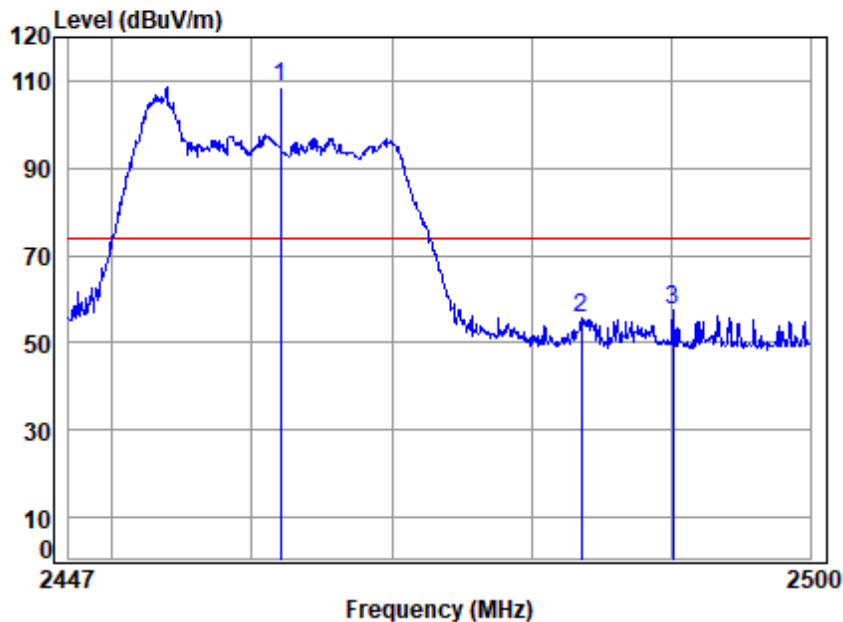
		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	103.90	107.27	54.00	53.27	Average
2	2483.500	7.40	27.80	31.55	42.62	46.27	54.00	-7.73	Average
3	2492.672	7.46	27.86	31.55	45.33	49.10	54.00	-4.90	Average



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Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(RU26); Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

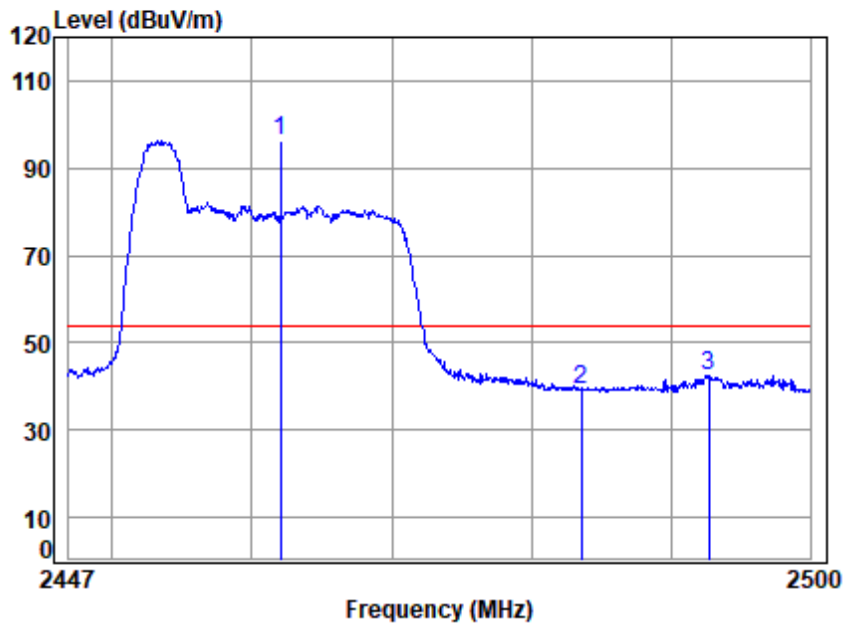
Mode : 2462 Band edge

: 2.4G Wi-Fi 11ax20 RU26

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	105.14	108.51	74.00	34.51	Peak
2	2483.500	7.40	27.80	31.55	52.11	55.76	74.00	-18.24	Peak
3	2490.109	7.44	27.84	31.55	53.60	57.33	74.00	-16.67	Peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(RU26); Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2462 Band edge

: 2.4G Wi-Fi 11ax20 RU26

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.000	7.25	27.67	31.55	92.92	96.29	54.00	42.29	Average
2	2483.500	7.40	27.80	31.55	35.73	39.38	54.00	-14.62	Average
3	2492.672	7.46	27.86	31.55	38.87	42.64	54.00	-11.36	Average



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250300077404

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7.2 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4,6.5

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
960-1000	500	3

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.5 °C

Humidity: 46.8 % RH

Atmospheric Pressure: 1020 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



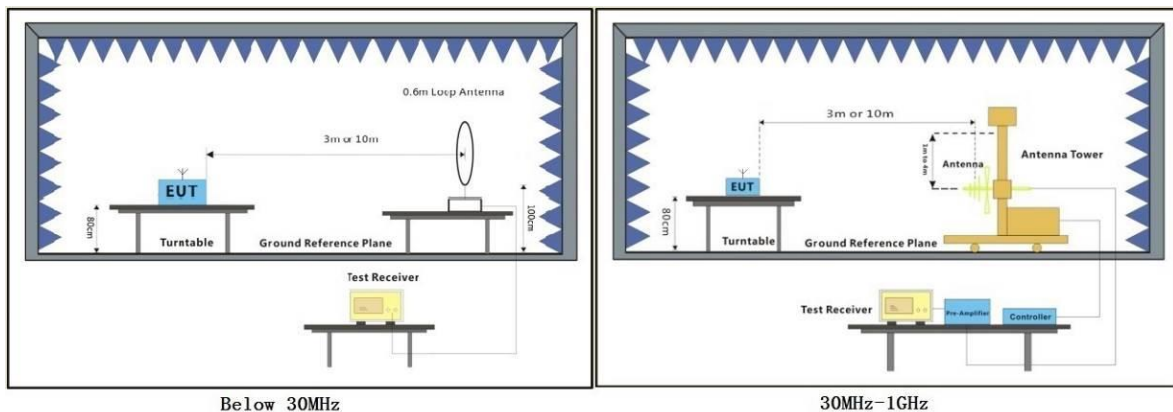
SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Inspection & Testing Services Laboratory

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中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

7.2.3 Test Setup Diagram



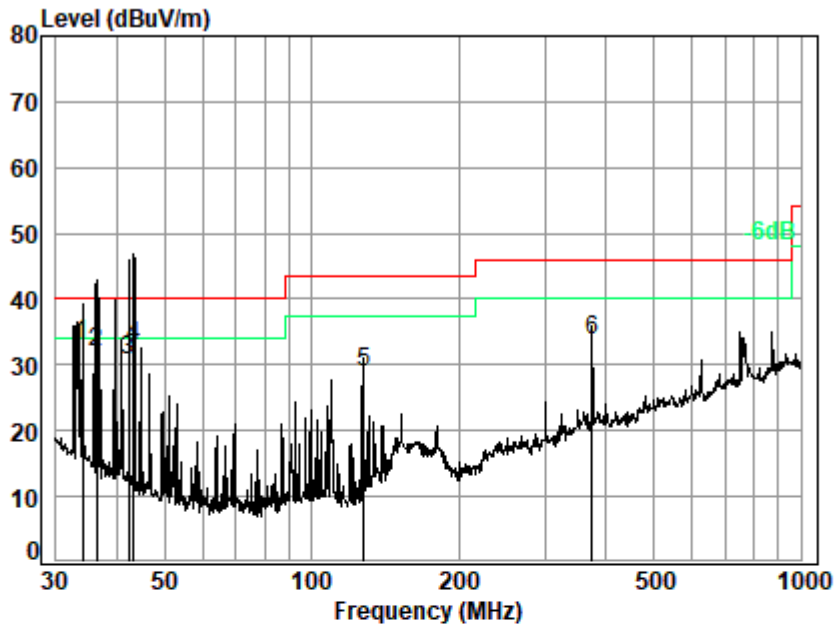
7.2.4 Measurement Procedure and Data

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.
- Test the EUT in the lowest channel, the middle channel, the Highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- Repeat above procedures until all frequencies measured was complete.

Remark:

- Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
- Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test Mode: 04; Polarity: Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No. : 00774AT/00775AT
Test Mode: 04

		Ant	Cable	Preamp	Read		Limit	Over	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	q	34.037	19.41	0.72	27.78	40.94	33.29	40.00	-6.71 QP
2		36.381	18.09	0.74	27.77	40.90	31.96	40.00	-8.04 QP
3		42.302	15.27	0.80	27.76	42.55	30.86	40.00	-9.14 QP
4		43.202	14.86	0.81	27.75	44.94	32.86	40.00	-7.14 QP
5		127.665	10.98	1.41	27.47	44.09	29.01	43.50	-14.49 QP
6		374.623	20.68	2.49	27.05	37.75	33.87	46.00	-12.13 QP



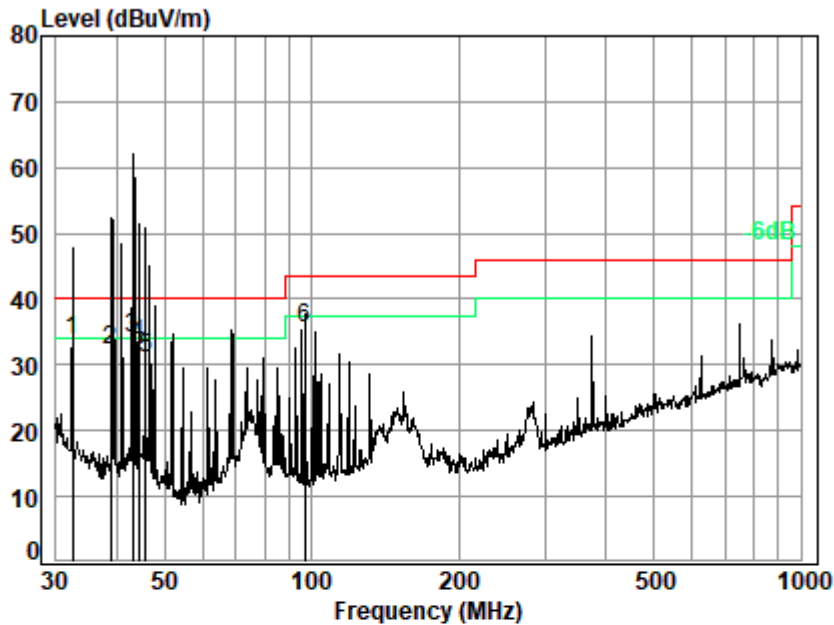
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Test Mode: 04; Polarity: Vertical



Site : chamber
Condition: 3m VERTICAL
Job No. : 00774AT/00775AT
Test Mode: 04

	Ant	Cable	Preamp	Read	Limit	Over	
Freq	Factor	Loss	Factor	Level	Level	Line	Limit Remark
MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB
1	32.406	20.11	0.70	27.79	40.77	33.79	40.00 -6.21 QP
2	38.888	16.89	0.77	27.77	42.42	32.31	40.00 -7.69 QP
3 q	43.050	14.92	0.81	27.75	46.21	34.19	40.00 -5.81 QP
4	44.275	14.46	0.82	27.75	45.73	33.26	40.00 -6.74 QP
5	45.695	14.03	0.83	27.75	43.81	30.92	40.00 -9.08 QP
6	96.775	12.19	1.20	27.60	49.93	35.72	43.50 -7.78 QP



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7.3.4 Measurement Procedure and Data

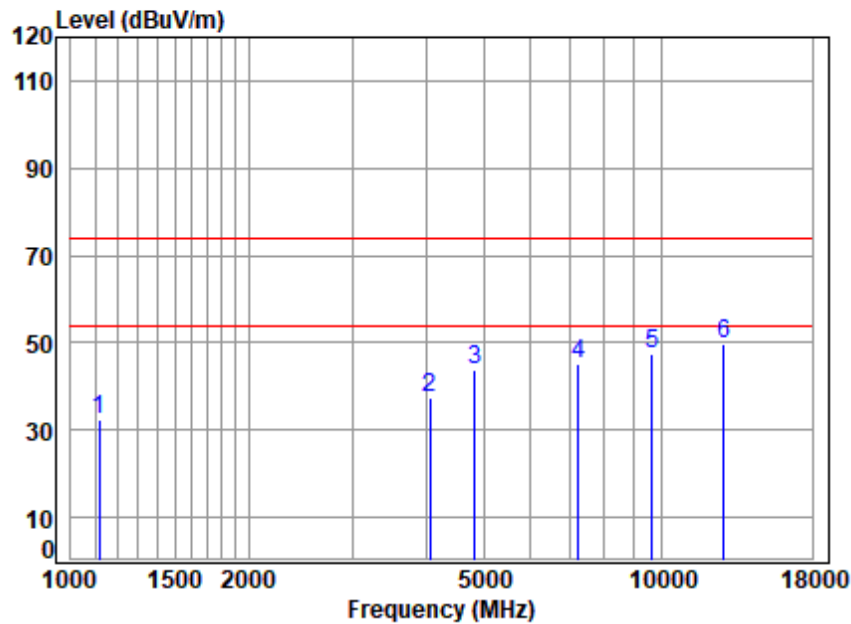
- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 1GHz to 25GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.
- 4: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.
- 5:For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle<98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.



Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

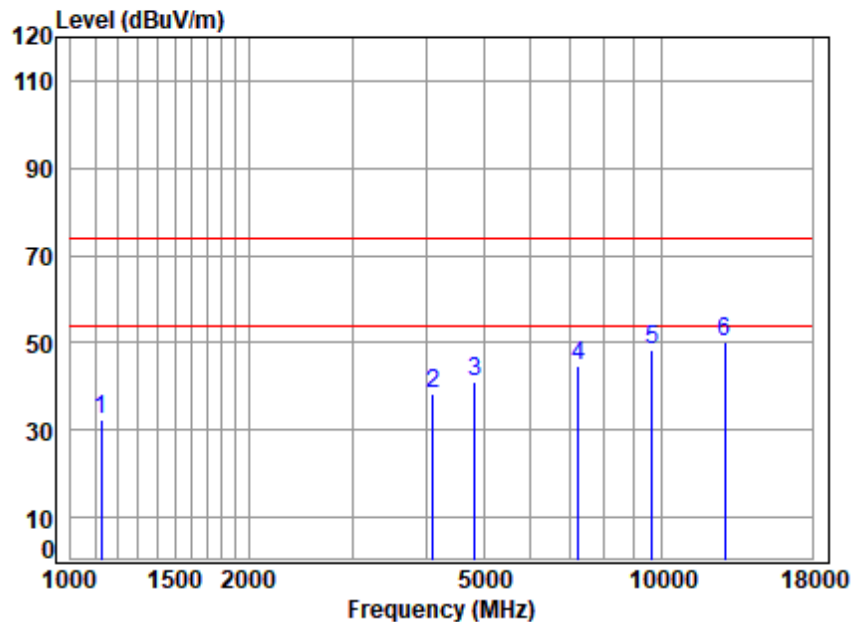
Mode : 2412 TX RSE

: 2.4G Wi-Fi 11b

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1116.093	7.11	25.54	54.70	54.63	32.58	74.00	-41.42 peak
2	4050.904	8.24	30.30	55.64	54.43	37.33	74.00	-36.67 peak
3	4824.000	8.92	32.00	56.18	59.23	43.97	74.00	-30.03 peak
4	7236.000	11.10	36.60	56.51	54.07	45.26	74.00	-28.74 peak
5	9648.000	12.49	38.70	54.42	50.47	47.24	74.00	-26.76 peak
6	pp12761.300	15.07	40.26	54.33	48.84	49.84	74.00	-24.16 peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:Low



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

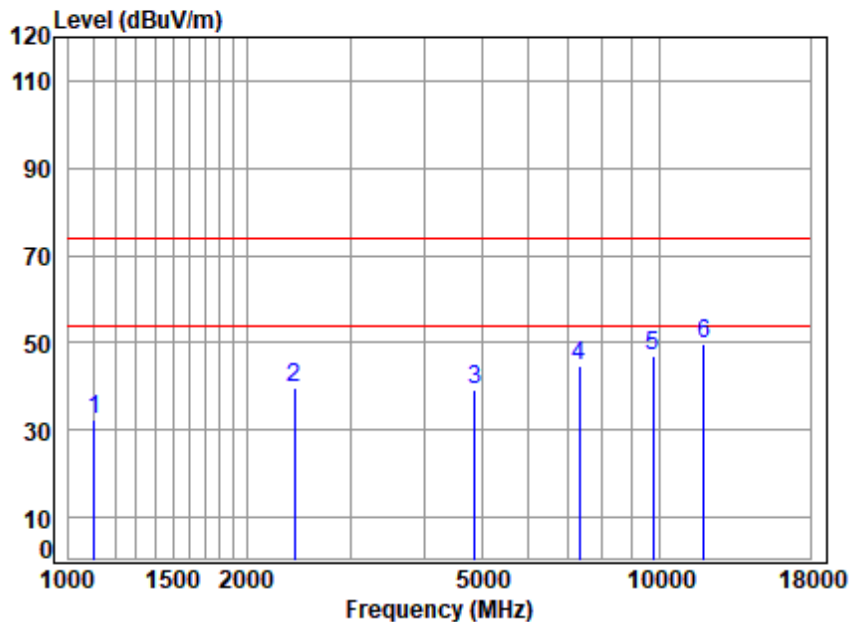
Mode : 2412 TX RSE

: 2.4G Wi-Fi 11b

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1125.813	7.12	25.50	54.70	54.57	32.49	74.00	-41.51 peak
2	4098.010	8.36	30.40	55.67	55.06	38.15	74.00	-35.85 peak
3	4824.000	8.92	32.00	56.18	56.26	41.00	74.00	-33.00 peak
4	7236.000	11.10	36.60	56.51	53.50	44.69	74.00	-29.31 peak
5	9648.000	12.49	38.70	54.42	51.44	48.21	74.00	-25.79 peak
6	pp12798.240	15.15	40.30	54.36	48.99	50.08	74.00	-23.92 peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

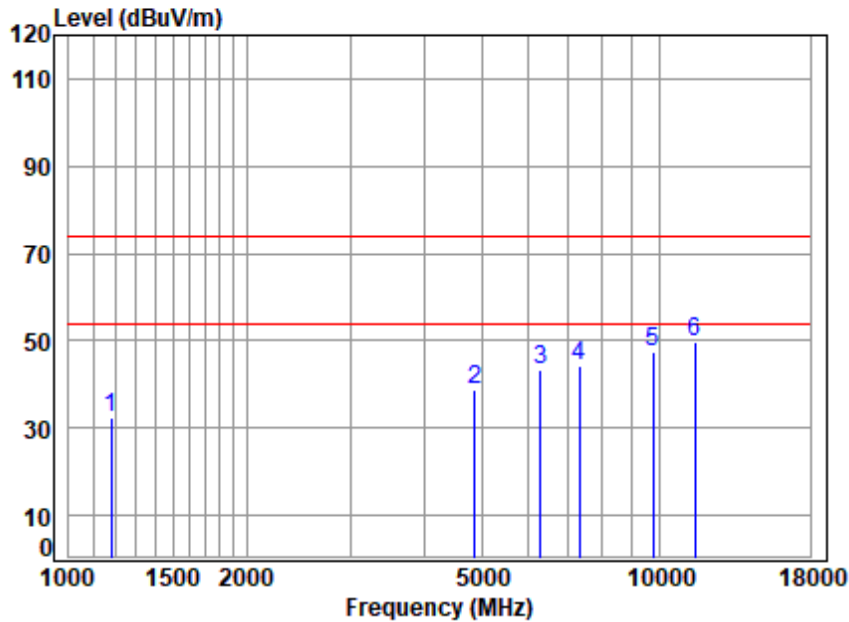
Mode : 2437 TX RSE

: 2.4G Wi-Fi 11b

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1106.457	7.11	25.57	54.70	54.28	32.26	74.00	-41.74 peak
2	2414.672	7.38	27.53	54.82	59.74	39.83	74.00	-34.17 peak
3	4874.000	8.97	32.15	56.21	54.31	39.22	74.00	-34.78 peak
4	7311.000	11.11	36.72	56.45	53.47	44.85	74.00	-29.15 peak
5	9748.000	12.80	38.60	54.33	49.98	47.05	74.00	-26.95 peak
6	pp11906.070	14.62	39.71	53.77	49.08	49.64	74.00	-24.36 peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:middle



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

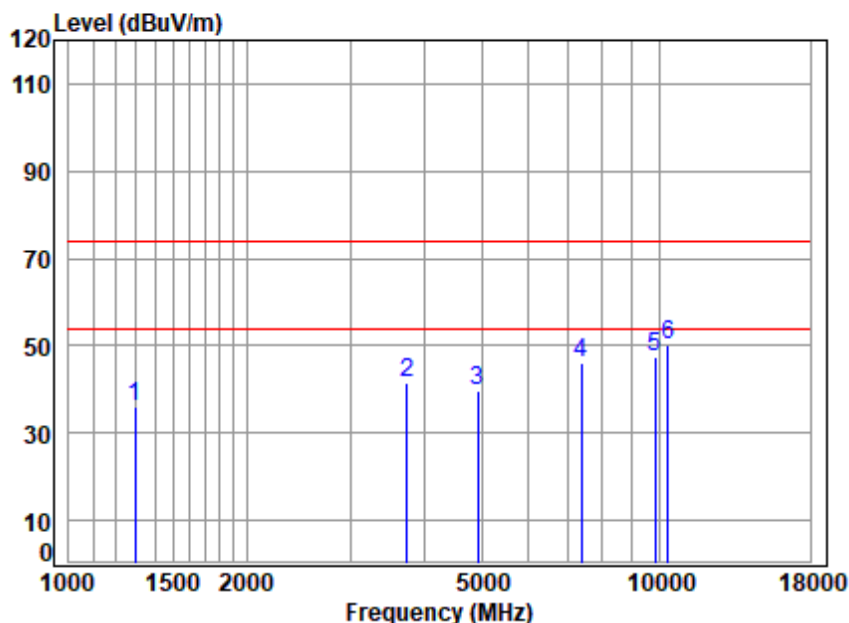
Mode : 2437 TX RSE

: 2.4G Wi-Fi 11b

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1179.100	7.17	25.34	54.70	54.74	32.55	74.00	-41.45 peak
2	4874.000	8.97	32.15	56.21	54.03	38.94	74.00	-35.06 peak
3	6303.890	10.57	34.61	56.84	55.12	43.46	74.00	-30.54 Peak
4	7311.000	11.11	36.72	56.45	53.01	44.39	74.00	-29.61 peak
5	9748.000	12.80	38.60	54.33	50.53	47.60	74.00	-26.40 peak
6	pp11467.000	14.19	39.63	53.64	49.77	49.95	74.00	-24.05 peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

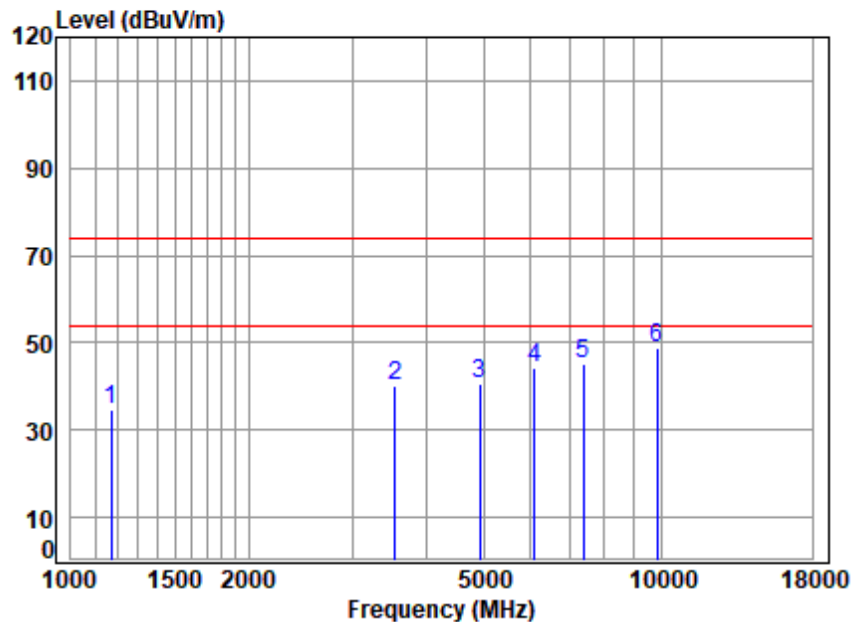
Mode : 2462 TX RSE

: 2.4G Wi-Fi 11b

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1293.359	7.15	25.21	54.70	58.46	36.12	74.00	-37.88 peak
2	3746.792	7.94	29.89	55.45	59.10	41.48	74.00	-32.52 peak
3	4924.000	9.03	32.20	56.25	54.53	39.51	74.00	-34.49 peak
4	7386.000	11.19	36.73	56.39	54.39	45.92	74.00	-28.08 peak
5	9848.000	12.84	37.83	54.24	51.21	47.64	74.00	-26.36 peak
6	pp10363.710	13.51	39.00	53.88	51.67	50.30	74.00	-23.70 peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11b; Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

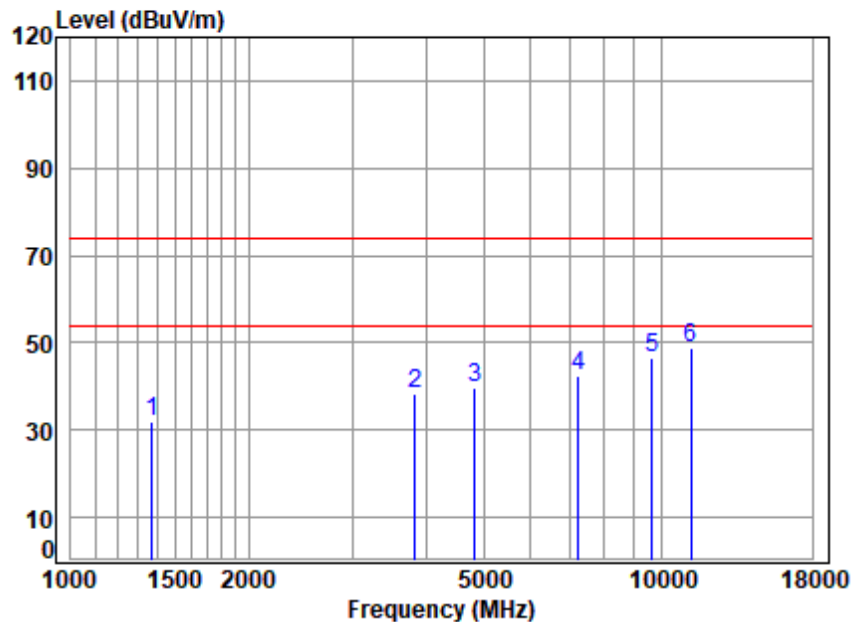
Mode : 2462 TX RSE

: 2.4G Wi-Fi 11b

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1168.920	7.16	25.36	54.70	57.02	34.84	74.00	-39.16 peak
2	3546.577	7.74	29.79	55.33	58.04	40.24	74.00	-33.76 peak
3	4924.000	9.03	32.20	56.25	55.47	40.45	74.00	-33.55 peak
4	6088.991	10.32	33.74	56.88	57.22	44.40	74.00	-29.60 Peak
5	7386.000	11.19	36.73	56.39	53.77	45.30	74.00	-28.70 peak
6 pp	9848.000	12.84	37.83	54.24	52.40	48.83	74.00	-25.17 peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

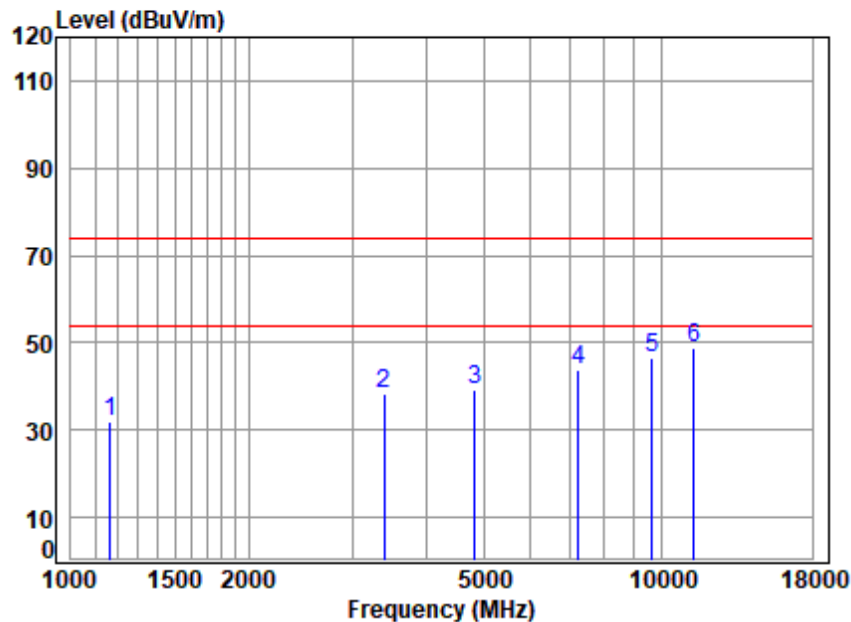
Mode : 2412 TX RSE

: 2.4G Wi-Fi 11n20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1374.295	7.19	25.05	54.70	54.58	32.12	74.00	-41.88	peak
2	3823.371	8.02	29.85	55.49	55.78	38.16	74.00	-35.84	peak
3	4824.000	8.92	32.00	56.18	55.15	39.89	74.00	-34.11	peak
4	7236.000	11.10	36.60	56.51	51.45	42.64	74.00	-31.36	peak
5	9648.000	12.49	38.70	54.42	49.75	46.52	74.00	-27.48	peak
6	pp11204.900	14.25	39.60	53.56	48.41	48.70	74.00	-25.30	peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:Low



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

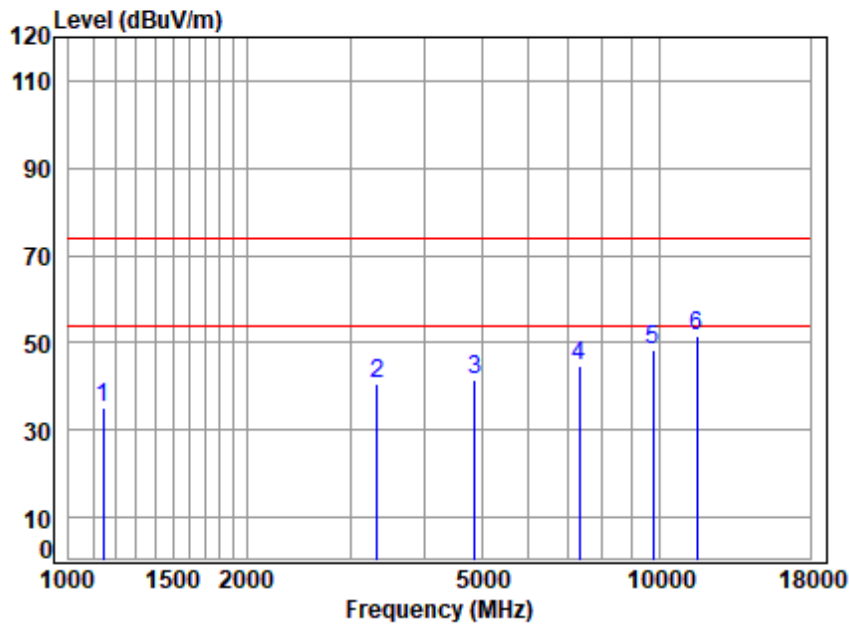
Mode : 2412 TX RSE

: 2.4G Wi-Fi 11n20

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7.16	25.37	54.70	54.25	32.08	74.00	-41.92	peak
2	7.65	29.29	55.24	56.64	38.34	74.00	-35.66	peak
3	8.92	32.00	56.18	54.46	39.20	74.00	-34.80	peak
4	11.10	36.60	56.51	52.72	43.91	74.00	-30.09	peak
5	12.49	38.70	54.42	49.86	46.63	74.00	-27.37	peak
6	14.29	39.70	53.60	48.26	48.65	74.00	-25.35	peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

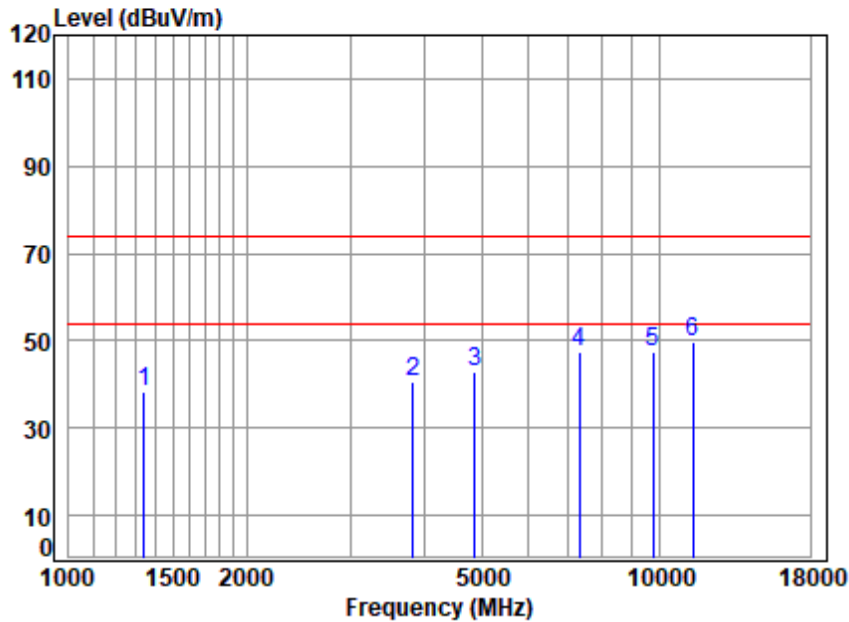
Mode : 2437 TX RSE

: 2.4G Wi-Fi 11n20

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1145.507	7.14	25.42	54.70	57.26	35.12	74.00	-38.88 peak
2	3328.077	7.60	29.20	55.20	58.92	40.52	74.00	-33.48 peak
3	4874.000	8.97	32.15	56.21	56.74	41.65	74.00	-32.35 peak
4	7311.000	11.11	36.72	56.45	53.36	44.74	74.00	-29.26 peak
5	9748.000	12.80	38.60	54.33	51.13	48.20	74.00	-25.80 peak
6	pp11566.870	14.40	39.60	53.67	51.14	51.47	74.00	-22.53 peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:middle



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

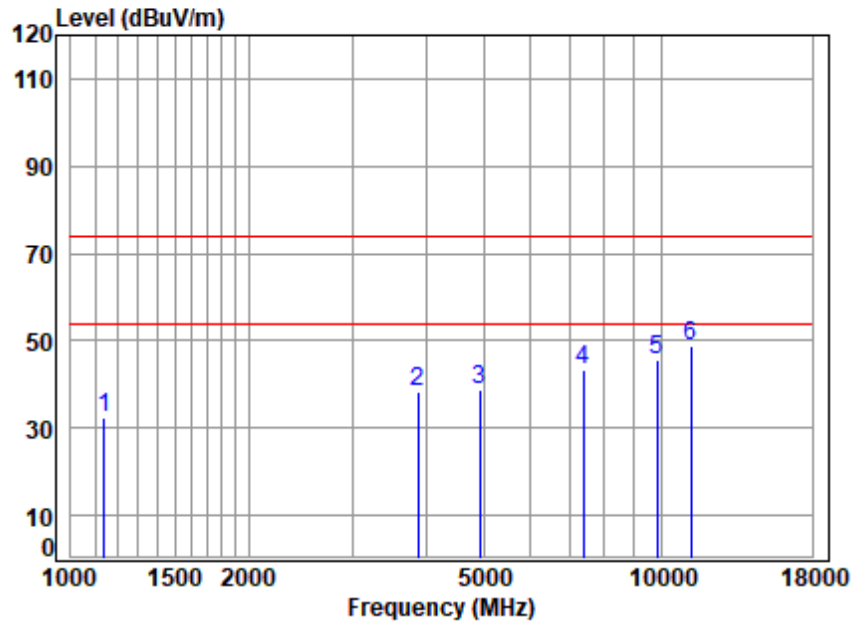
Mode : 2437 TX RSE

: 2.4G Wi-Fi 11n20

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1339.006	7.17	25.12	54.70	60.93	38.52	74.00	-35.48 peak
2	3834.438	8.02	29.83	55.50	58.15	40.50	74.00	-33.50 peak
3	4874.000	8.97	32.15	56.21	58.14	43.05	74.00	-30.95 peak
4	7311.000	11.11	36.72	56.45	55.93	47.31	74.00	-26.69 peak
5	9748.000	12.80	38.60	54.33	50.42	47.49	74.00	-26.51 peak
6	pp11400.910	14.10	39.70	53.62	49.55	49.73	74.00	-24.27 peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

Mode : 2462 TX RSE

: 2.4G Wi-Fi 11n20

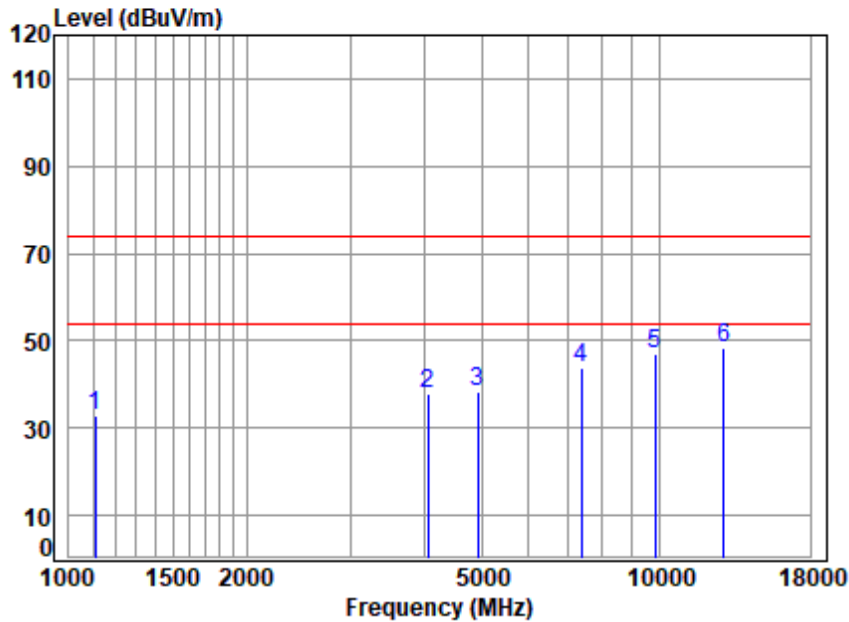
	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1138.904	7.14	25.44	54.70	54.55	32.43	74.00	-41.57 peak
2	3867.831	8.05	29.84	55.52	55.76	38.13	74.00	-35.87 peak
3	4924.000	9.03	32.20	56.25	53.58	38.56	74.00	-35.44 peak
4	7386.000	11.19	36.73	56.39	51.59	43.12	74.00	-30.88 peak
5	9848.000	12.84	37.83	54.24	49.37	45.80	74.00	-28.20 peak
6	pp11204.900	14.25	39.60	53.56	48.71	49.00	74.00	-25.00 peak



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Test Mode: 04; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

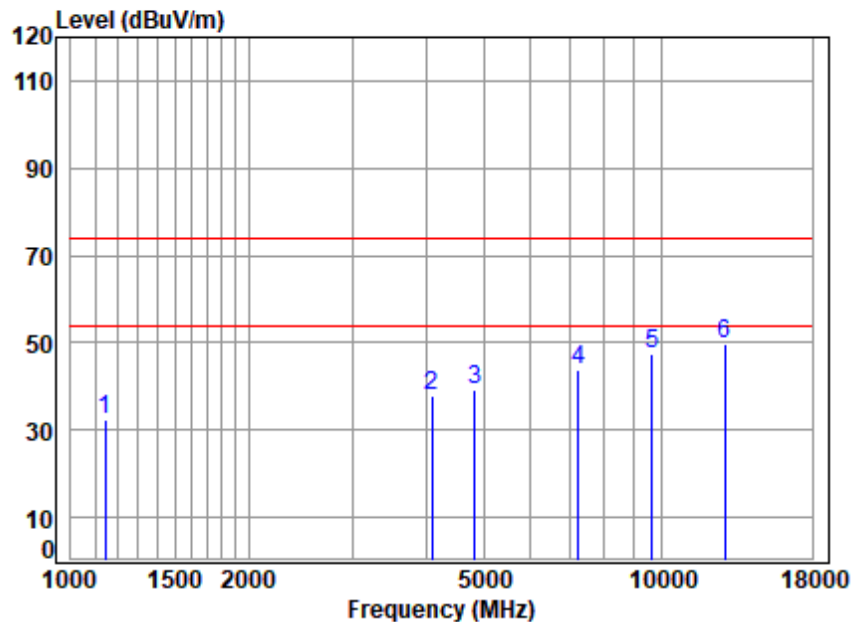
Mode : 2462 TX RSE

: 2.4G Wi-Fi 11n20

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1109.660	7.11	25.56	54.70	54.89	32.86	74.00	-41.14 peak
2	4050.904	8.24	30.30	55.64	55.12	38.02	74.00	-35.98 peak
3	4924.000	9.03	32.20	56.25	53.55	38.53	74.00	-35.47 peak
4	7386.000	11.19	36.73	56.39	52.17	43.70	74.00	-30.30 peak
5	9848.000	12.84	37.83	54.24	50.54	46.97	74.00	-27.03 peak
6	pp12835.290	15.18	40.34	54.38	47.28	48.42	74.00	-25.58 peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

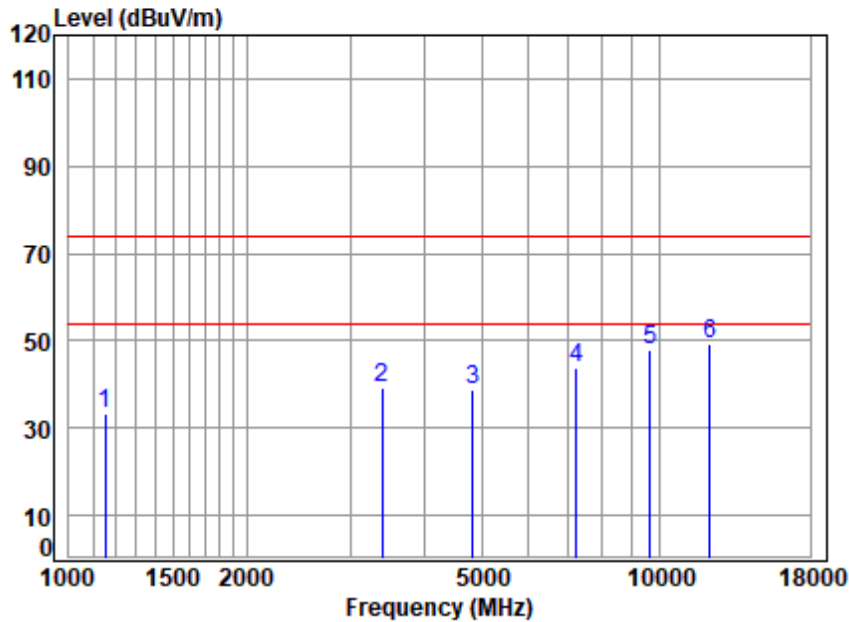
Mode : 2412 TX RSE

: 2.4G Wi-Fi 11ax20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1145.507	7.14	25.42	54.70	54.43	32.29	74.00	-41.71	peak
2	4086.182	8.33	30.37	55.66	54.78	37.82	74.00	-36.18	peak
3	4824.000	8.92	32.00	56.18	54.41	39.15	74.00	-34.85	peak
4	7236.000	11.10	36.60	56.51	52.40	43.59	74.00	-30.41	peak
5	9648.000	12.49	38.70	54.42	50.53	47.30	74.00	-26.70	peak
6	pp12798.240	15.15	40.30	54.36	48.64	49.73	74.00	-24.27	peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:Low



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

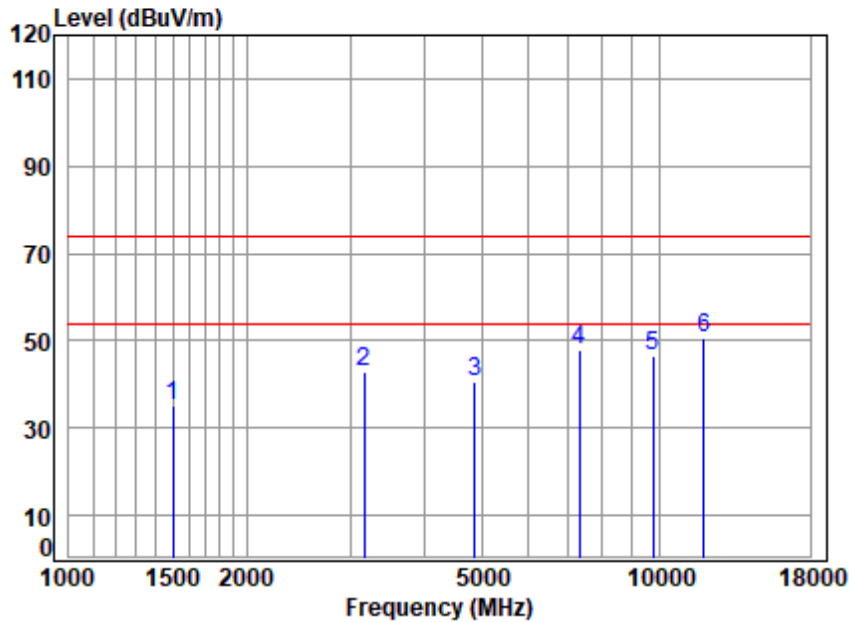
Mode : 2412 TX RSE

: 2.4G Wi-Fi 11ax20

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1152.148	7.15	25.40	54.70	55.33	33.18	74.00	-40.82 peak
2	3396.098	7.65	29.29	55.24	57.55	39.25	74.00	-34.75 peak
3	4824.000	8.92	32.00	56.18	54.23	38.97	74.00	-35.03 peak
4	7236.000	11.10	36.60	56.51	52.52	43.71	74.00	-30.29 peak
5	9648.000	12.49	38.70	54.42	51.25	48.02	74.00	-25.98 peak
6	pp12184.580	14.48	39.87	53.93	49.03	49.45	74.00	-24.55 peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:middle



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

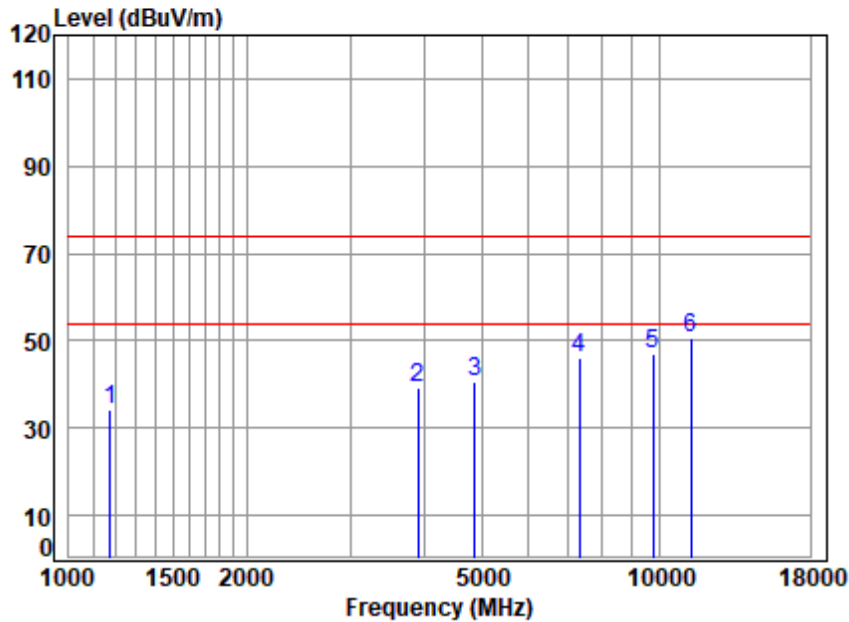
Mode : 2437 TX RSE

: 2.4G Wi-Fi 11ax20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1498.781	7.22	24.90	54.70	57.74	35.16	74.00	-38.84	peak
2	3168.500	7.70	29.20	55.10	60.96	42.76	74.00	-31.24	peak
3	4874.000	8.97	32.15	56.21	55.86	40.77	74.00	-33.23	peak
4	7311.000	11.11	36.72	56.45	56.33	47.71	74.00	-26.29	peak
5	9748.000	12.80	38.60	54.33	49.46	46.53	74.00	-27.47	peak
6	pp11906.070	14.62	39.71	53.77	50.21	50.77	74.00	-23.23	peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:middle



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

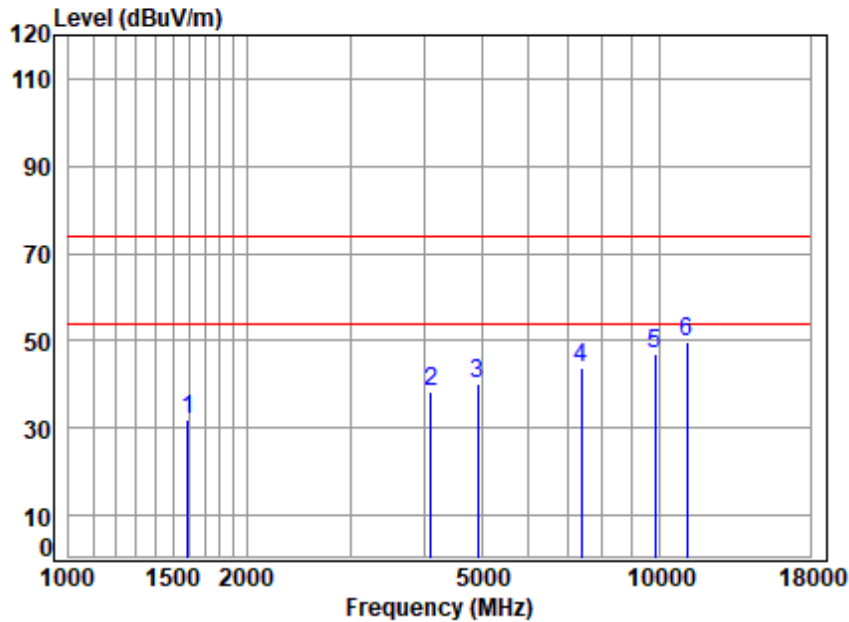
Mode : 2437 TX RSE

: 2.4G Wi-Fi 11ax20

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7.17	25.35	54.70	56.21	34.03	74.00	-39.97	peak
2	8.07	29.91	55.54	56.95	39.39	74.00	-34.61	peak
3	8.97	32.15	56.21	55.60	40.51	74.00	-33.49	peak
4	11.11	36.72	56.45	54.64	46.02	74.00	-27.98	peak
5	12.80	38.60	54.33	49.83	46.90	74.00	-27.10	peak
6	14.39	39.70	53.59	50.03	50.53	74.00	-23.47	peak



Test Mode: 04; Polarity: Horizontal; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:High



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

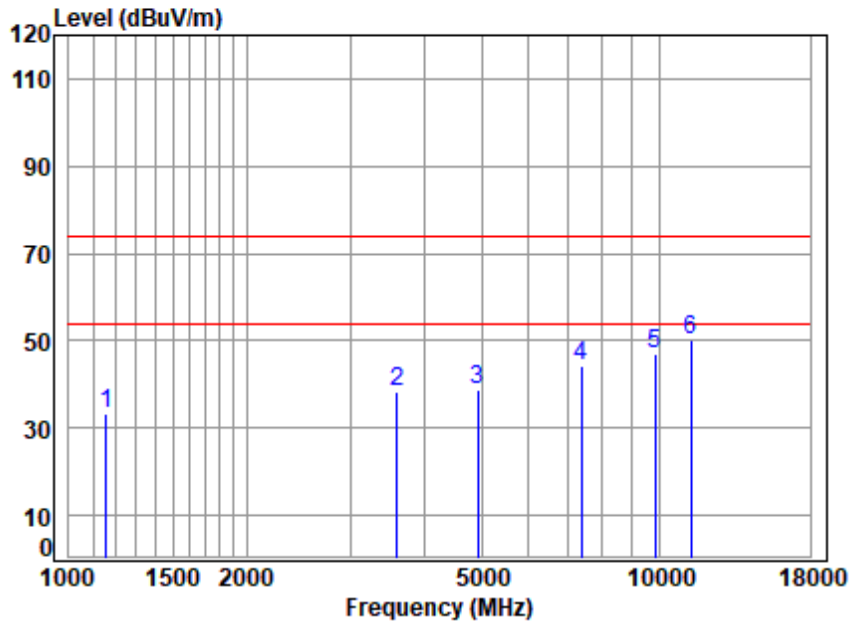
Mode : 2462 TX RSE

: 2.4G Wi-Fi 11ax20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1592.571	7.11	25.09	54.70	54.55	32.05	74.00	-41.95	peak
2	4098.010	8.36	30.40	55.67	55.23	38.32	74.00	-35.68	peak
3	4924.000	9.03	32.20	56.25	55.17	40.15	74.00	-33.85	peak
4	7386.000	11.19	36.73	56.39	52.16	43.69	74.00	-30.31	peak
5	9848.000	12.84	37.83	54.24	50.62	47.05	74.00	-26.95	peak
6	11140.310	14.17	39.54	53.54	49.62	49.79	74.00	-24.21	peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2462 TX RSE

: 2.4G Wi-Fi 11ax20

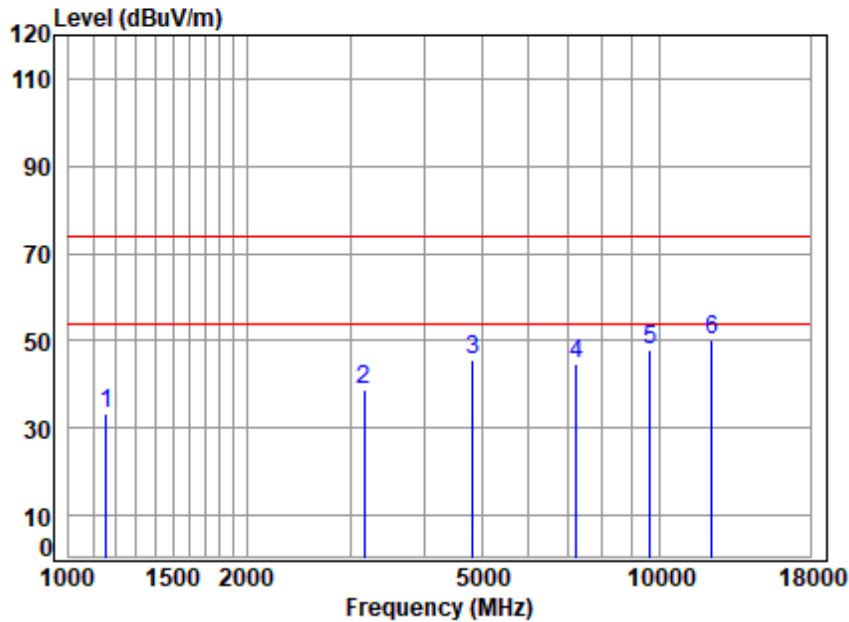
	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1155.483	7.15	25.39	54.70	55.26	33.10	74.00	-40.90	peak
2	3598.203	7.76	29.90	55.36	56.19	38.49	74.00	-35.51	peak
3	4924.000	9.03	32.20	56.25	53.99	38.97	74.00	-35.03	peak
4	7386.000	11.19	36.73	56.39	52.57	44.10	74.00	-29.90	peak
5	9848.000	12.84	37.83	54.24	50.72	47.15	74.00	-26.85	peak
6	pp11302.480	14.39	39.70	53.59	49.68	50.18	74.00	-23.82	peak



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Test Mode: 04; Polarity: Horizontal; Modulation:802.11ax(RU26); Bandwidth:20MHz; Channel: Low



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

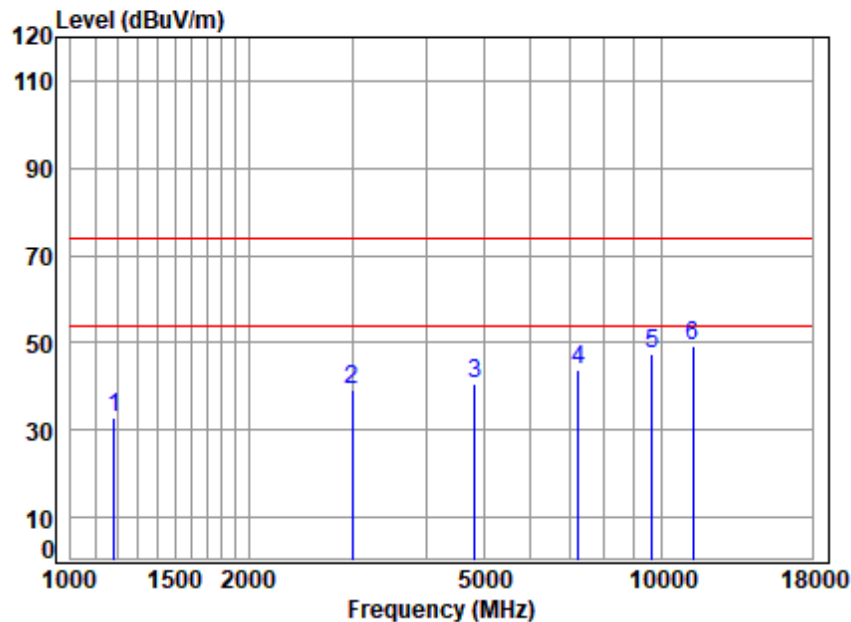
Mode : 2412 TX RSE

: 2.4G Wi-Fi 11ax20 RU26

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1155.483	7.15	25.39	54.70	55.42	33.26	74.00	-40.74 peak
2	3159.355	7.70	29.20	55.10	56.96	38.76	74.00	-35.24 peak
3	4824.000	8.92	32.00	56.18	61.04	45.78	74.00	-28.22 peak
4	7236.000	11.10	36.60	56.51	53.39	44.58	74.00	-29.42 peak
5	9648.000	12.49	38.70	54.42	50.93	47.70	74.00	-26.30 peak
6	pp12255.220	14.61	39.84	53.98	49.68	50.15	74.00	-23.85 peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(RU26); Bandwidth:20MHz; Channel: Low



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2412 TX RSE

: 2.4G Wi-Fi 11ax20 RU26

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1182.513	7.17	25.33	54.70	55.24	33.04	74.00	-40.96 peak
2	2999.187	8.18	29.00	55.00	57.00	39.18	74.00	-34.82 peak
3	4824.000	8.92	32.00	56.18	55.64	40.38	74.00	-33.62 peak
4	7236.000	11.10	36.60	56.51	52.79	43.98	74.00	-30.02 peak
5	9648.000	12.49	38.70	54.42	50.59	47.36	74.00	-26.64 peak
6	pp11302.480	14.39	39.70	53.59	48.91	49.41	74.00	-24.59 peak



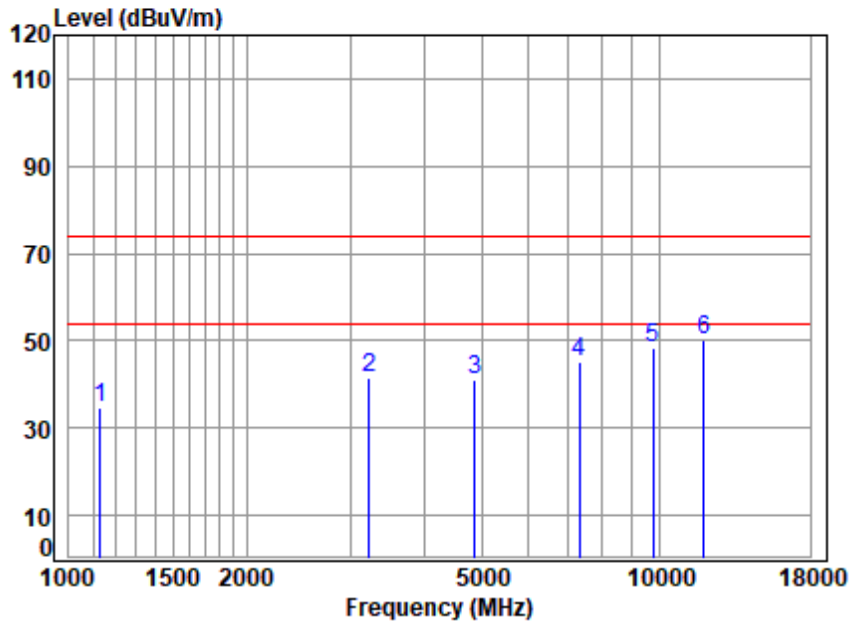
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250300077404

Page: 73 of 252

Test Mode: 04; Polarity: Horizontal; Modulation: 802.11ax(RU26); Bandwidth: 20MHz; Channel: Middle



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

Mode : 2437 TX RSE

: 2.4G Wi-Fi 11ax20 RU26

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1132.340	7.13	25.47	54.70	56.80	34.70	74.00	-39.30 peak
2	3223.928	7.67	29.25	55.13	59.83	41.62	74.00	-32.38 peak
3	4874.000	8.97	32.15	56.21	55.99	40.90	74.00	-33.10 peak
4	7311.000	11.11	36.72	56.45	53.97	45.35	74.00	-28.65 peak
5	9748.000	12.80	38.60	54.33	51.16	48.23	74.00	-25.77 peak
6	pp11906.070	14.62	39.71	53.77	49.79	50.35	74.00	-23.65 peak



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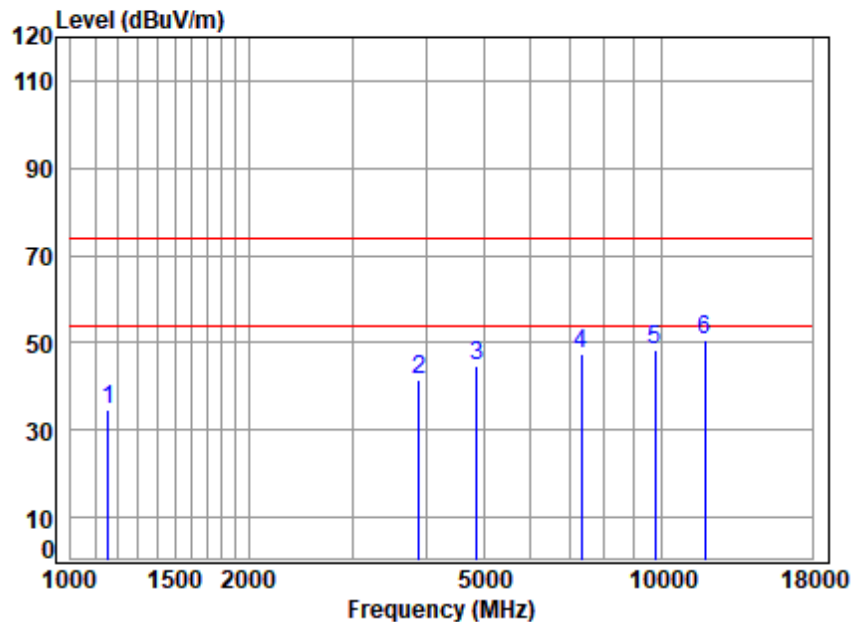
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250300077404

Page: 74 of 252

Test Mode: 04; Polarity: Vertical; Modulation: 802.11ax(RU26); Bandwidth: 20MHz; Channel: Middle



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2437 TX RSE

: 2.4G Wi-Fi 11ax20 RU26

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1158.828	7.15	25.38	54.70	56.79	34.62	74.00	-39.38 peak
2	3890.255	8.06	29.88	55.53	59.08	41.49	74.00	-32.51 peak
3	4874.000	8.97	32.15	56.21	59.86	44.77	74.00	-29.23 peak
4	7311.000	11.11	36.72	56.45	55.85	47.23	74.00	-26.77 peak
5	9748.000	12.80	38.60	54.33	51.26	48.33	74.00	-25.67 peak
6	pp11871.710	14.63	39.67	53.76	49.93	50.47	74.00	-23.53 peak



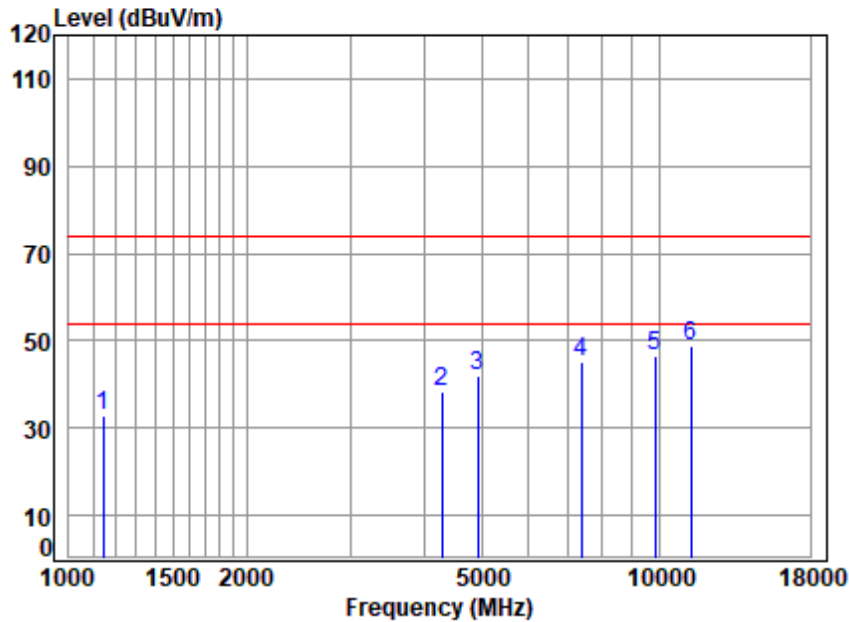
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中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Mode: 04; Polarity: Horizontal; Modulation:802.11ax(Full RU); Bandwidth:20MHz; Channel:High



Condition: 3m HORIZONTAL

Job No : 00774AT/00775AT

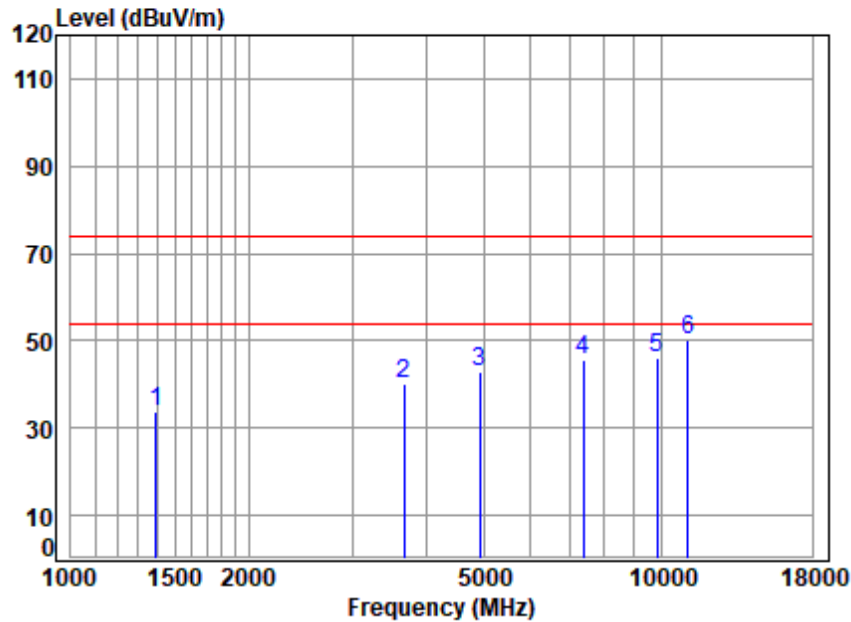
Mode : 2462 TX RSE

: 2.4G Wi-Fi 11ax20 RU26

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	7.14	25.43	54.70	54.80	32.67	74.00	-41.33	peak
2	8.46	31.22	55.80	54.40	38.28	74.00	-35.72	peak
3	9.03	32.20	56.25	57.12	42.10	74.00	-31.90	peak
4	11.19	36.73	56.39	53.63	45.16	74.00	-28.84	peak
5	12.84	37.83	54.24	50.21	46.64	74.00	-27.36	peak
6	14.39	39.70	53.59	48.43	48.93	74.00	-25.07	peak



Test Mode: 04; Polarity: Vertical; Modulation:802.11ax(RU26); Bandwidth:20MHz; Channel:High



Condition: 3m VERTICAL

Job No : 00774AT/00775AT

Mode : 2462 TX RSE

: 2.4G Wi-Fi 11ax20 RU26

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1394.300	7.21	25.01	54.70	56.42	33.94	74.00	-40.06 peak
2	3671.746	7.85	29.80	55.40	57.97	40.22	74.00	-33.78 peak
3	4924.000	9.03	32.20	56.25	57.97	42.95	74.00	-31.05 peak
4	7386.000	11.19	36.73	56.39	53.99	45.52	74.00	-28.48 peak
5	9848.000	12.84	37.83	54.24	49.64	46.07	74.00	-27.93 peak
6	pp11076.100	14.14	39.48	53.52	49.92	50.02	74.00	-23.98 peak



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7.4 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3)

Test Method: ANSI C63.10 (2013) Section 11.9.2

Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq$ hopping channels < 50
	1 for digital modulation
2400-2483.5	1 for ≥ 75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 21.5 °C

Humidity: 35.3 % RH

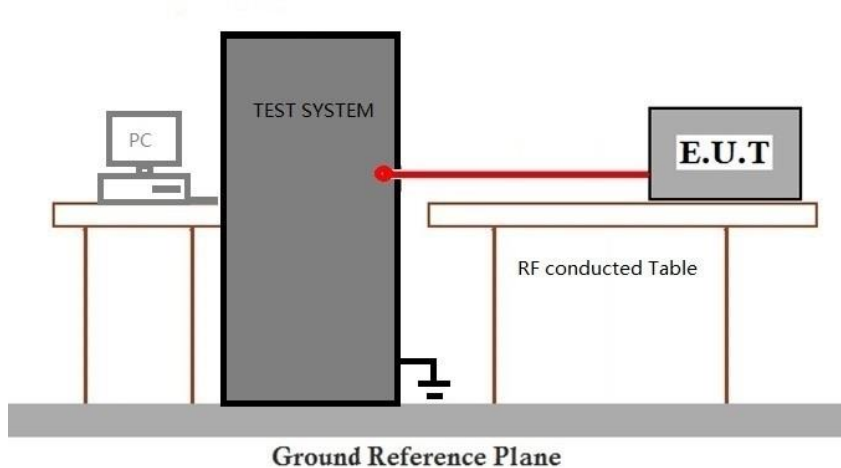
Atmospheric Pressure: 1020 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

Please Refer to Appendix for Details



7.5 Minimum 6dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.247a(2)

Test Method: ANSI C63.10 (2013) Section 11.8.1

Limit:

≥500 kHz

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 21.5 °C

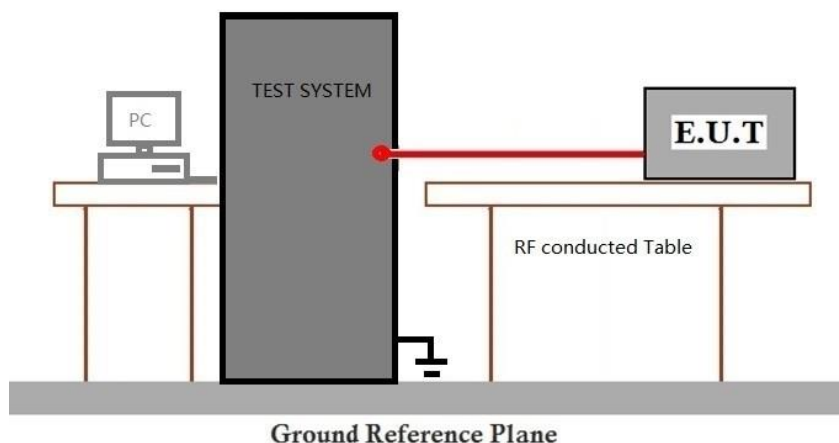
Humidity: 35.3 % RH

Atmospheric Pressure: 1020 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

Please Refer to Appendix for Details



7.6 Power Spectrum Density

Test Requirement 47 CFR Part 15, Subpart C 15.247(e)

Test Method: ANSI C63.10 (2013) Section 11.10.2

Limit:

≤8dBm in any 3 kHz band during any time interval of continuous transmission

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 21.5 °C

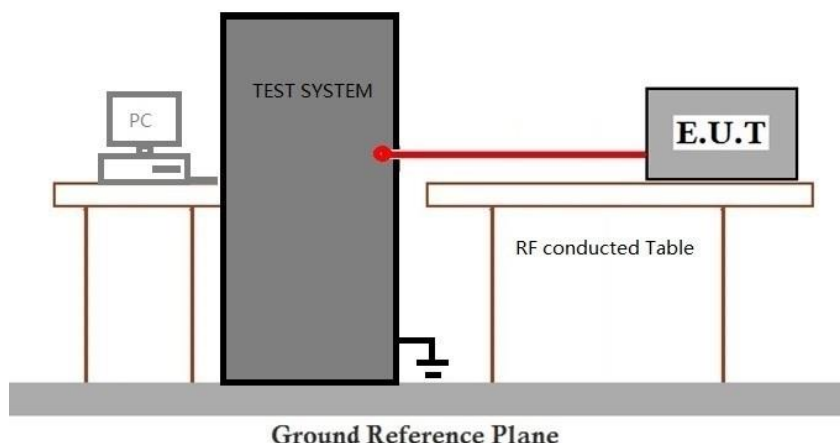
Humidity: 35.3 % RH

Atmospheric Pressure: 1020 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.

7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

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7.7 Conducted Band Edges Measurement

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 11.13.3.2

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 21.5 °C

Humidity: 35.3 % RH

Atmospheric Pressure: 1020 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



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7.7.3 Test Setup Diagram



7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details



7.8 Conducted Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 11.11

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 21.5 °C

Humidity: 35.3 % RH

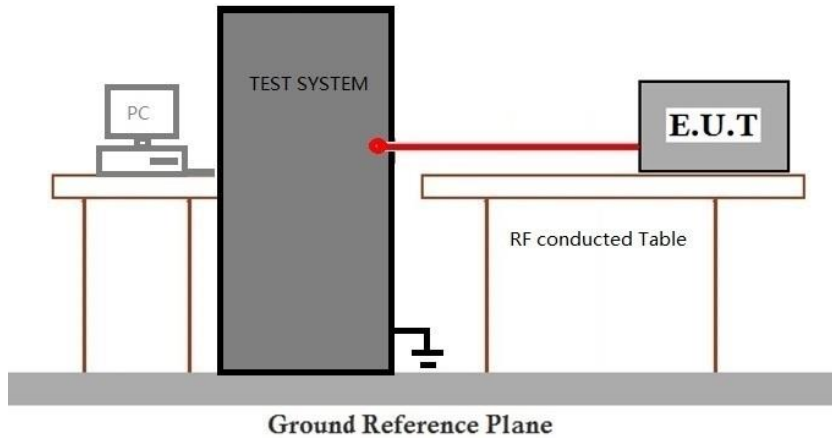
Atmospheric Pressure: 1020 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	04	TX mode_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 1Mbps is the worst case of IEEE 802.11b; data rate @ 6Mbps is the worst case of IEEE 802.11g; data rate @ 6.5Mbps is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11ax(HEW20); final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report.



7.8.3 Test Setup Diagram



7.8.4 Measurement Procedure and Data

Please Refer to Appendix for Details



8 Test Setup Photo

Refer to Appendix - Test Setup Photo for SZCR2503000774AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix – External and Internal Photos for SZCR2503000774AT

10 Appendix

1. Duty Cycle

1.1 Test Result

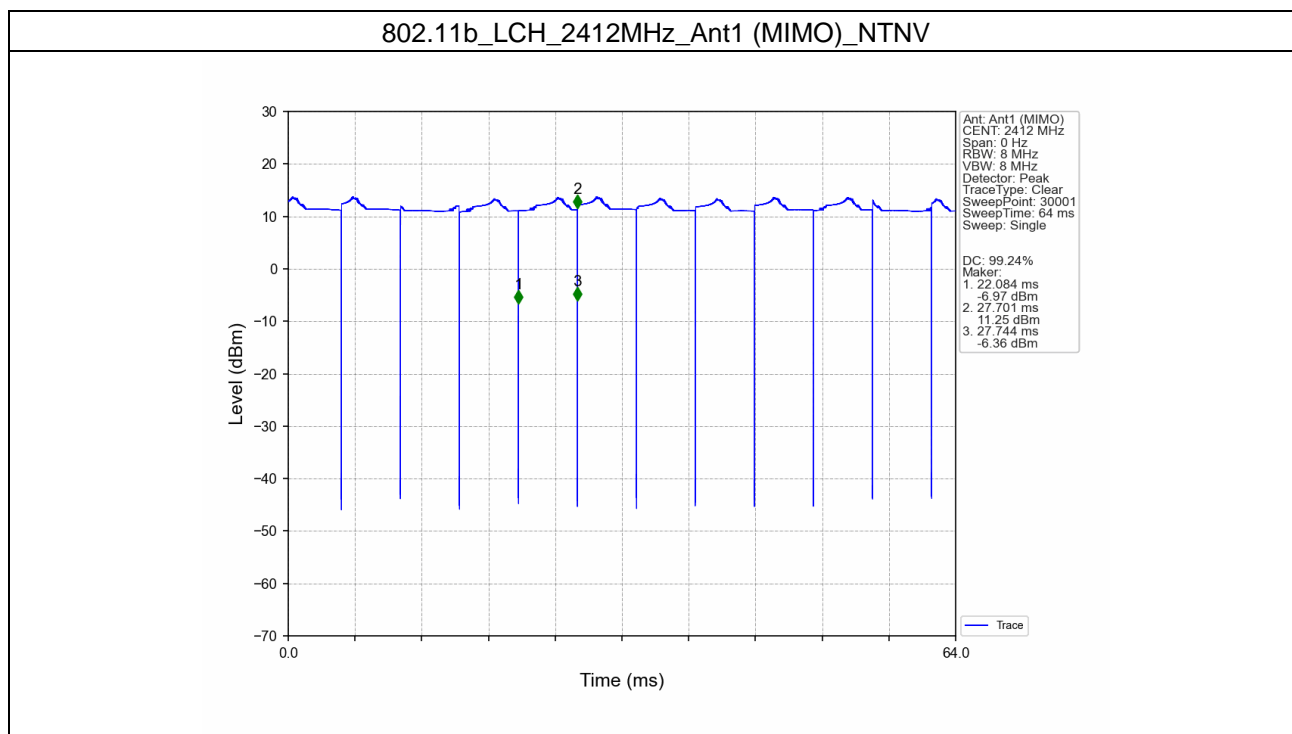
1.1.1 Ant1

Ant1									
Mode	TX Type	Frequency (MHz)	RU	RU Pos	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	MIMO	2412	/	/	5.617	5.660	99.24	0.03	0.04
		2437	/	/	5.616	5.660	99.22	0.03	0.04
		2462	/	/	5.616	5.658	99.26	0.03	0.04
802.11g	MIMO	2412	/	/	2.065	2.115	97.64	0.10	0.03
		2437	/	/	2.065	2.114	97.68	0.10	0.03
		2462	/	/	2.064	2.113	97.68	0.10	0.03
802.11n (HT20)	MIMO	2412	/	/	1.920	1.969	97.51	0.11	0.00
		2437	/	/	1.920	1.970	97.46	0.11	0.03
		2462	/	/	1.920	1.969	97.51	0.11	0.03
802.11ax (HEW20)	MIMO	2412	RU242	Left	0.779	0.829	93.97	0.27	0.03
		2437	RU242	Left	0.780	0.830	93.98	0.27	0.03
		2462	RU242	Left	0.779	0.829	93.97	0.27	0.06

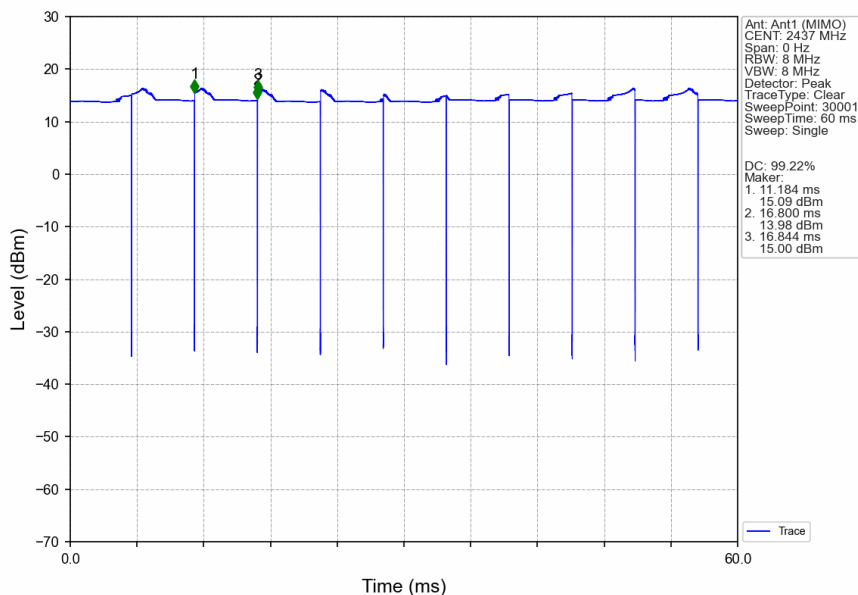


1.2 Test Graph

1.2.1 Ant1



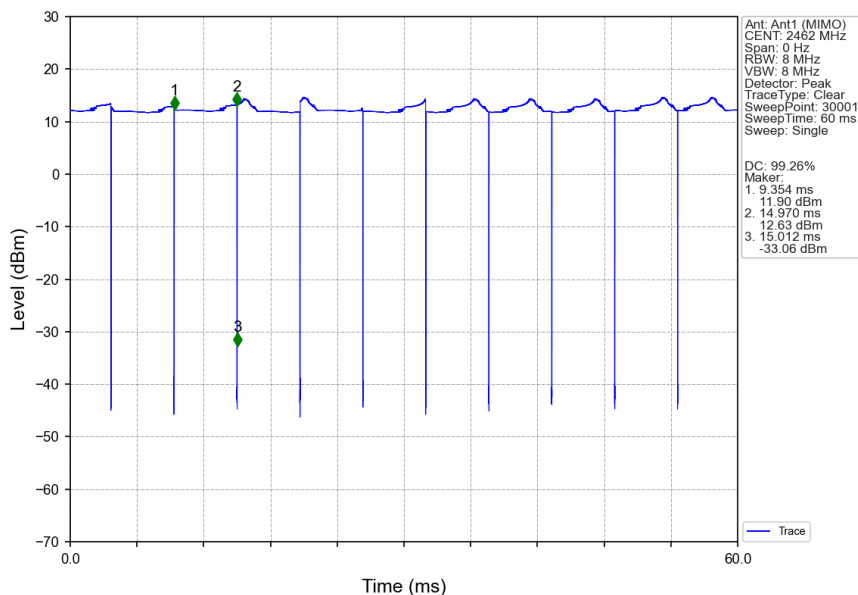
802.11b_MCH_2437MHz_Ant1 (MIMO)_NTNV



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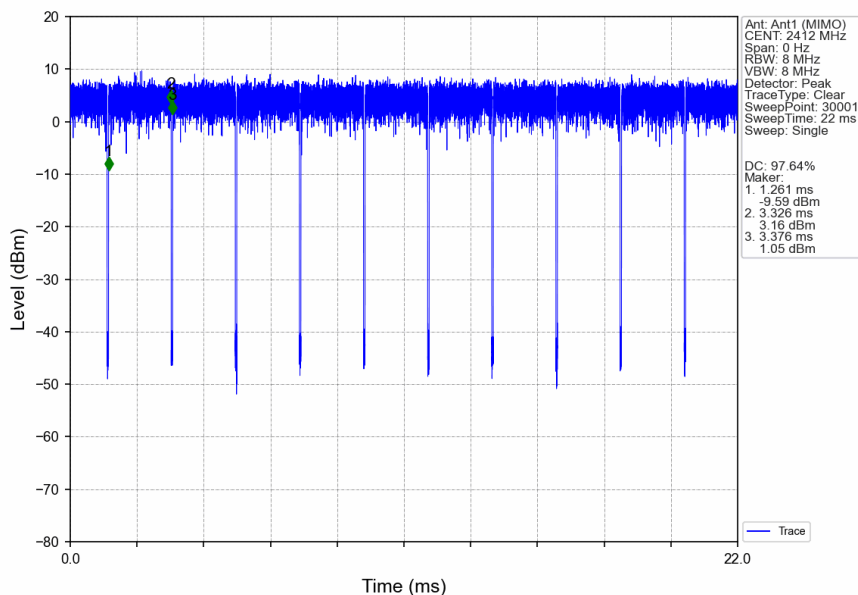
802.11b_HCH_2462MHz_Ant1 (MIMO)_NTNV



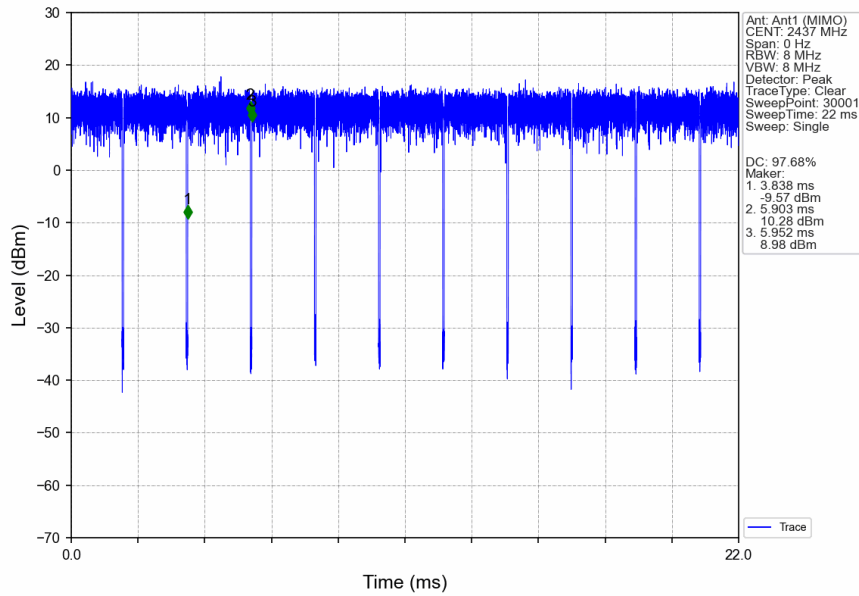
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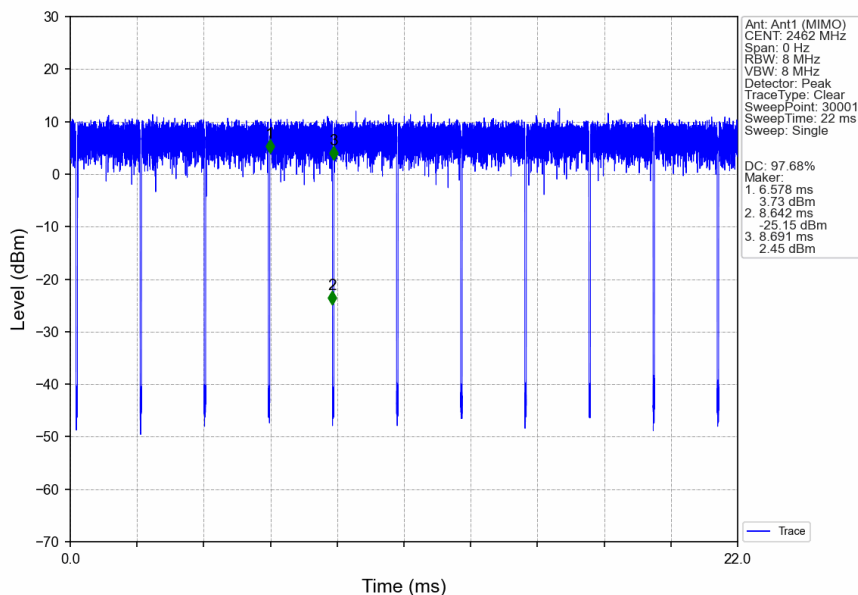
802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV



802.11g_MCH_2437MHz_Ant1 (MIMO)_NTNV



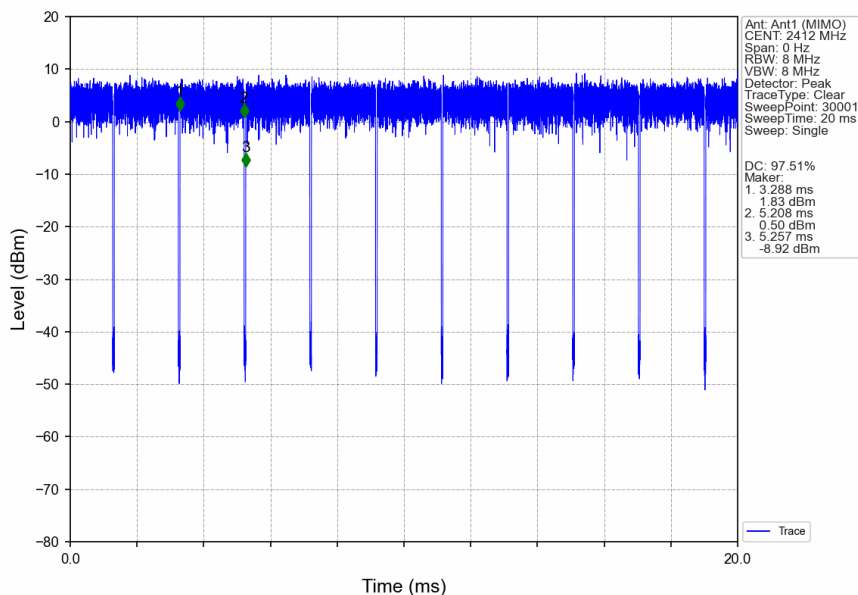
802.11g_HCH_2462MHz_Ant1 (MIMO)_NTNV



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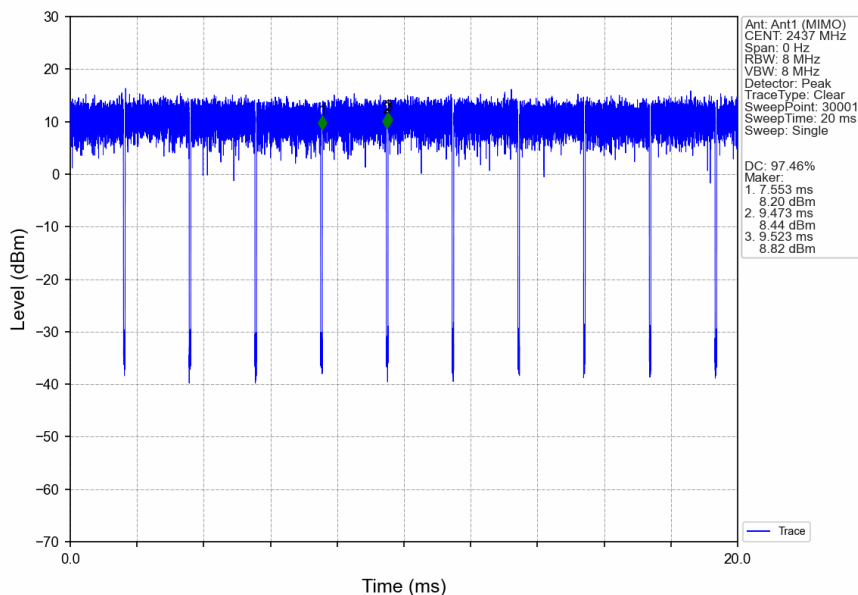
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



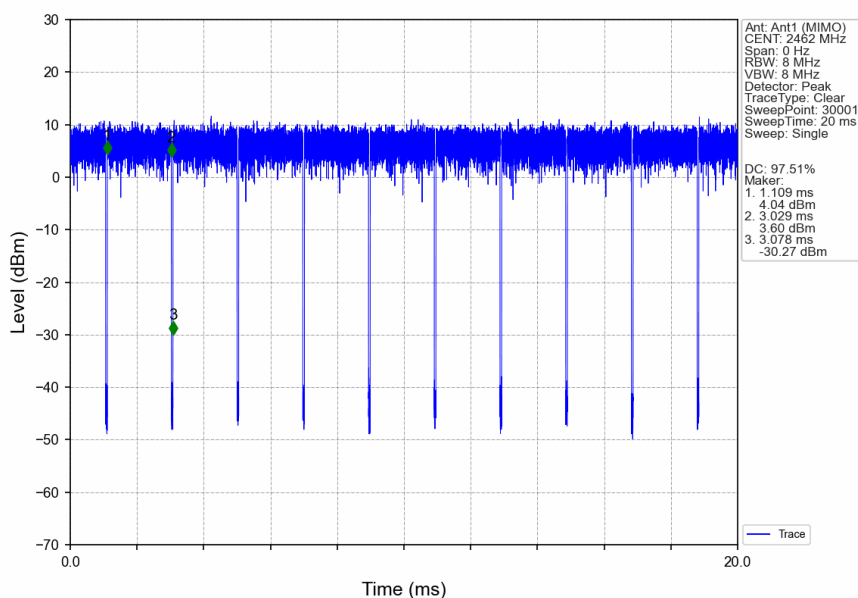
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802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



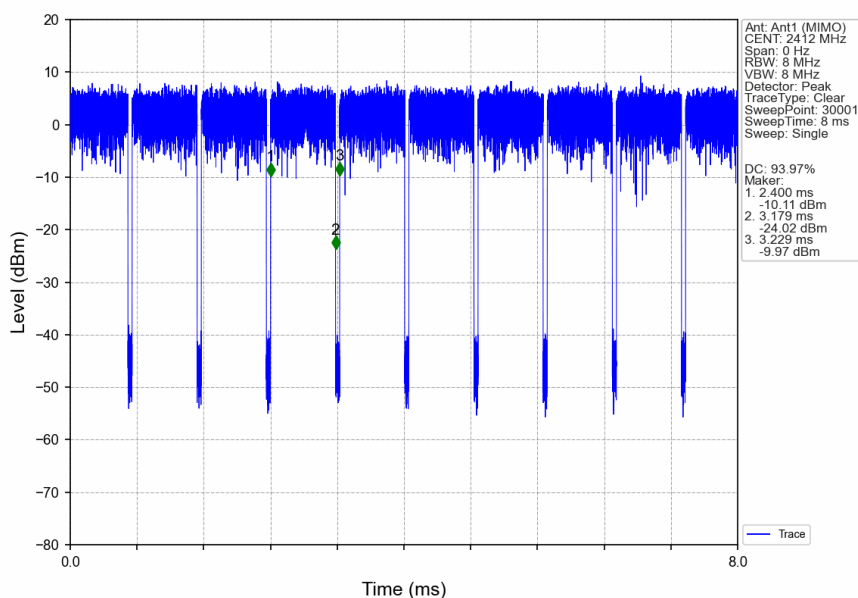
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



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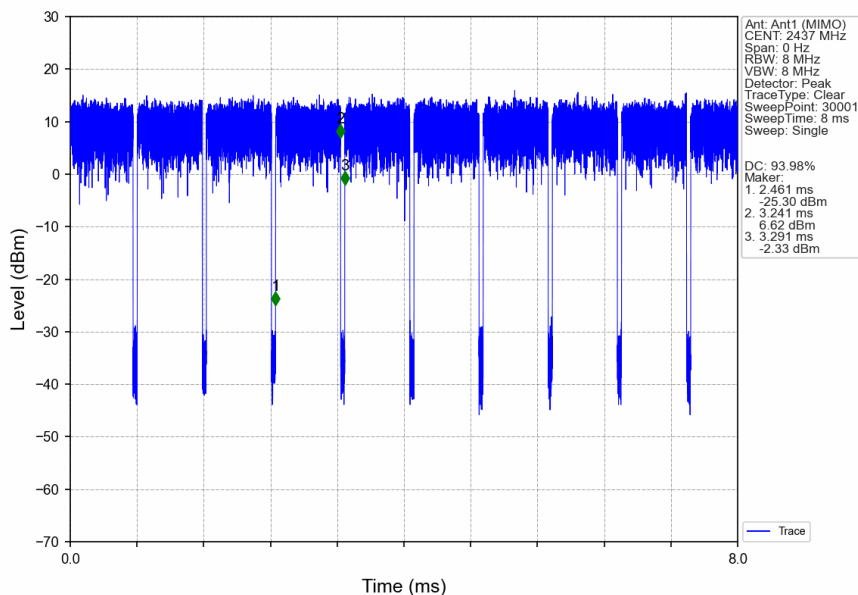
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



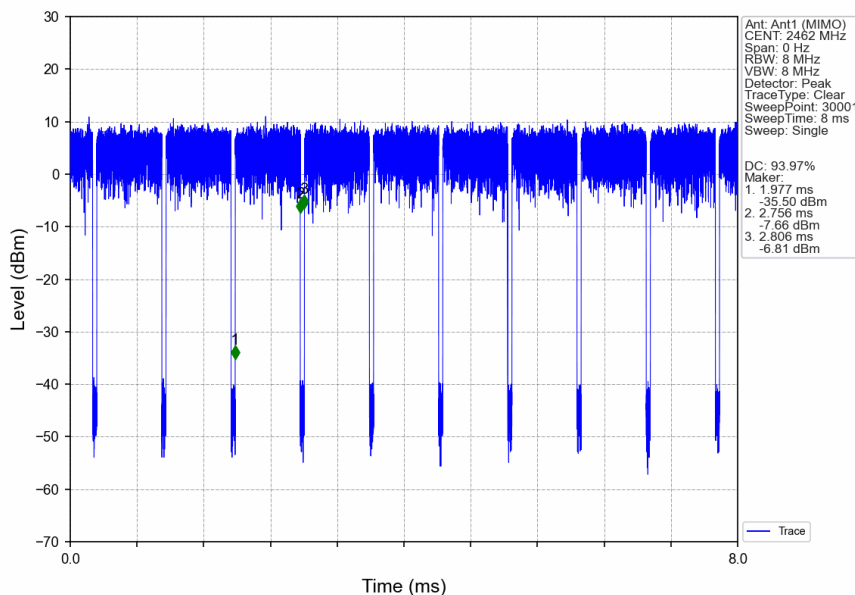
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802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant1 (MIMO)_NTNV



802.11ax(HEW20)_HCH_2462MHz_RU242_Left_Ant1 (MIMO)_NTNV



2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	99% Occupied Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	MIMO	2412	/	/	1	12.161	/	Pass
		2437	/	/	1	13.066	/	Pass
		2462	/	/	1	12.184	/	Pass
802.11g	MIMO	2412	/	/	1	17.803	/	Pass
		2437	/	/	1	18.122	/	Pass
		2462	/	/	1	17.868	/	Pass
802.11n (HT20)	MIMO	2412	/	/	1	18.864	/	Pass
		2437	/	/	1	19.035	/	Pass
		2462	/	/	1	18.784	/	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	1	19.310	/	Pass
		2437	RU242	Left	1	19.370	/	Pass
		2462	RU242	Left	1	19.356	/	Pass

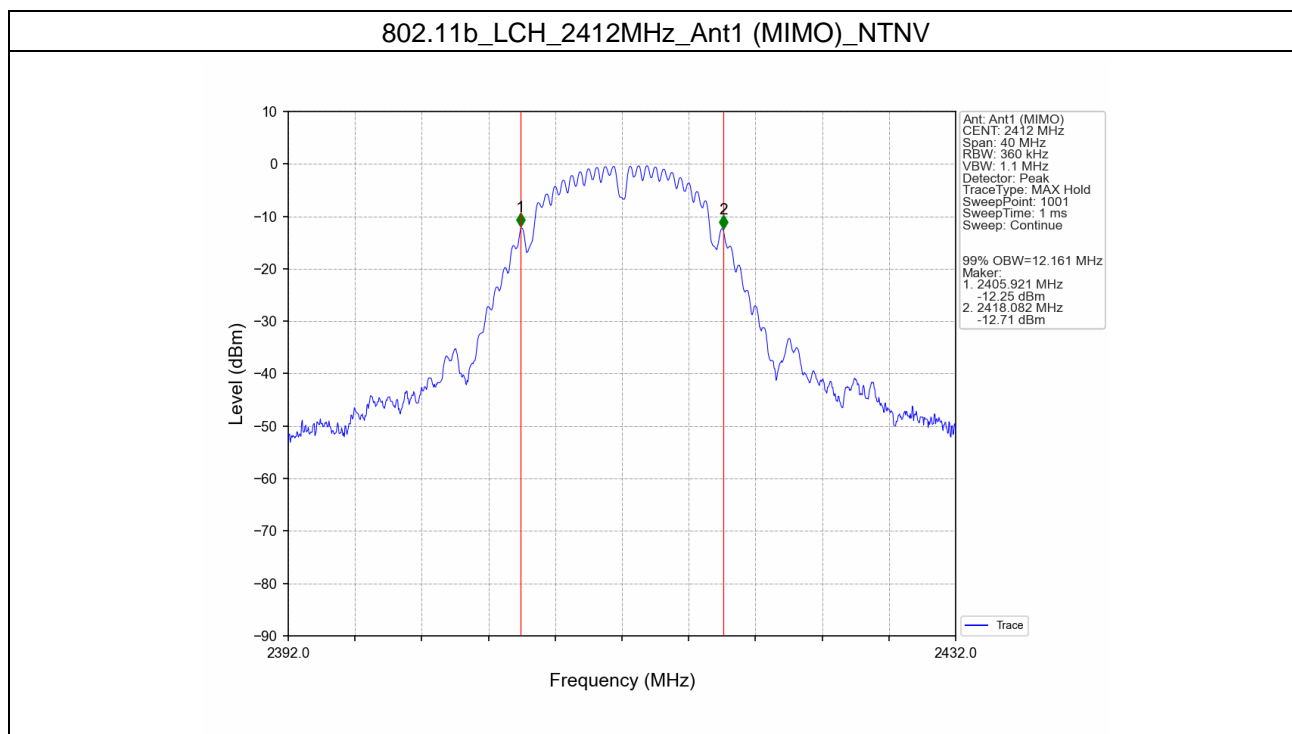
2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	RU	RU Pos	ANT	6dB Bandwidth (MHz)		Verdict
						Result	Limit	
802.11b	MIMO	2412	/	/	1	9.051	>=0.5	Pass
		2437	/	/	1	9.113	>=0.5	Pass
		2462	/	/	1	8.616	>=0.5	Pass
802.11g	MIMO	2412	/	/	1	16.336	>=0.5	Pass
		2437	/	/	1	16.342	>=0.5	Pass
		2462	/	/	1	16.349	>=0.5	Pass
802.11n (HT20)	MIMO	2412	/	/	1	17.339	>=0.5	Pass
		2437	/	/	1	17.559	>=0.5	Pass
		2462	/	/	1	17.583	>=0.5	Pass
802.11ax (HEW20)	MIMO	2412	RU242	Left	1	18.793	>=0.5	Pass
		2437	RU242	Left	1	18.894	>=0.5	Pass
		2462	RU242	Left	1	18.918	>=0.5	Pass

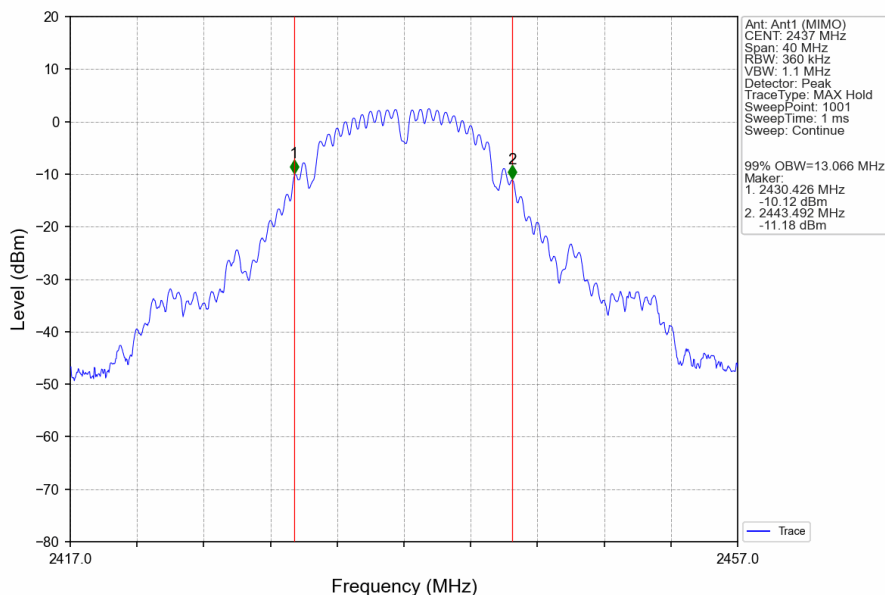


2.2 Test Graph

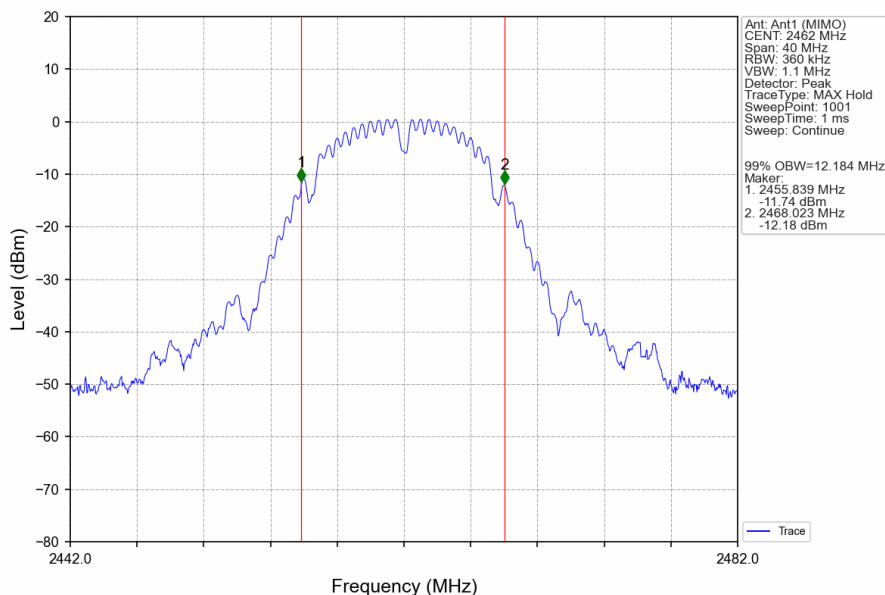
2.2.1 OBW



802.11b_MCH_2437MHz_Ant1 (MIMO)_NTNV



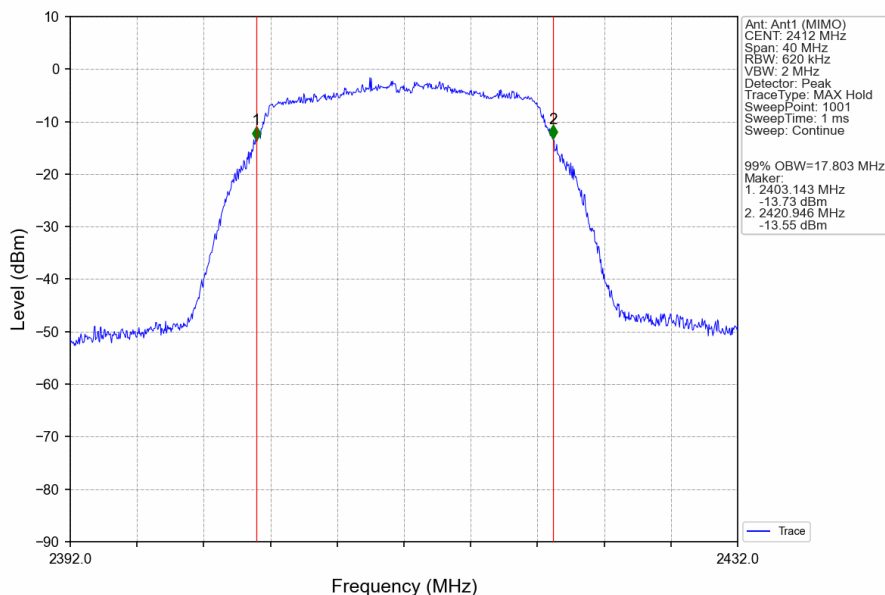
802.11b_HCH_2462MHz_Ant1 (MIMO)_NTNV



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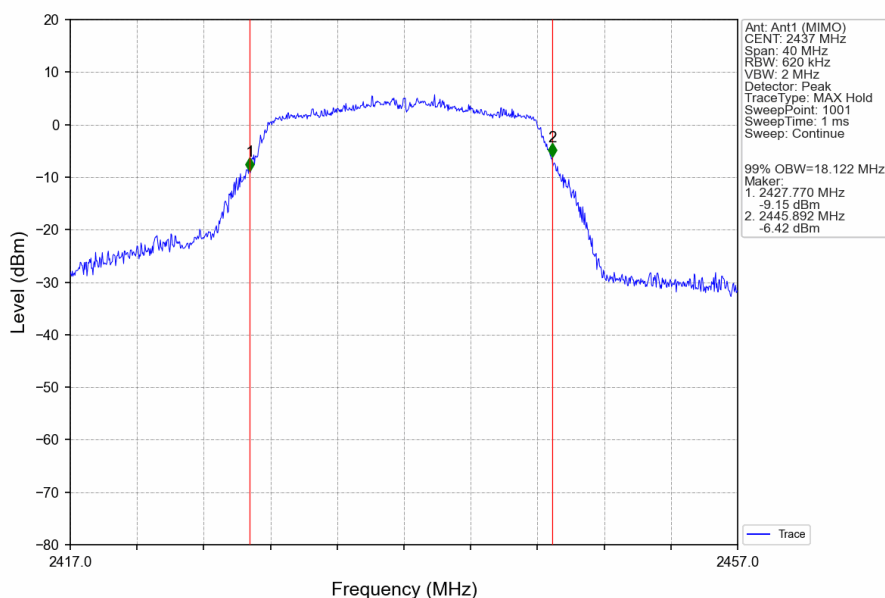
802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV



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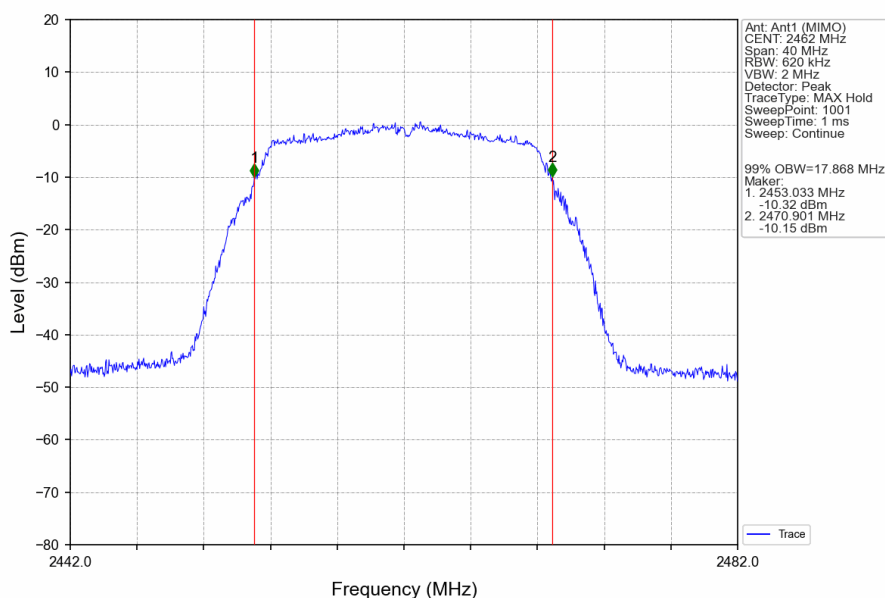
802.11g_MCH_2437MHz_Ant1 (MIMO)_NTNV



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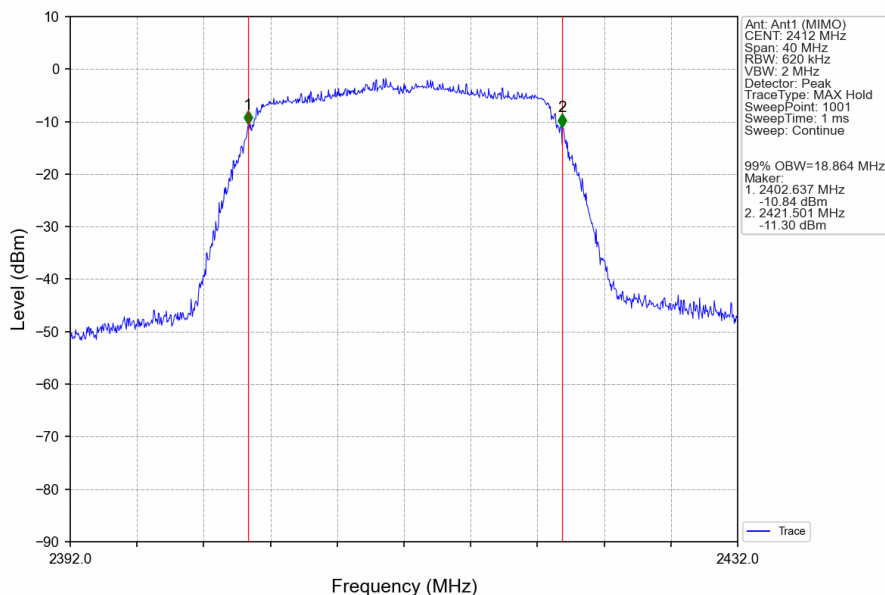
802.11g_HCH_2462MHz_Ant1 (MIMO)_NTNV



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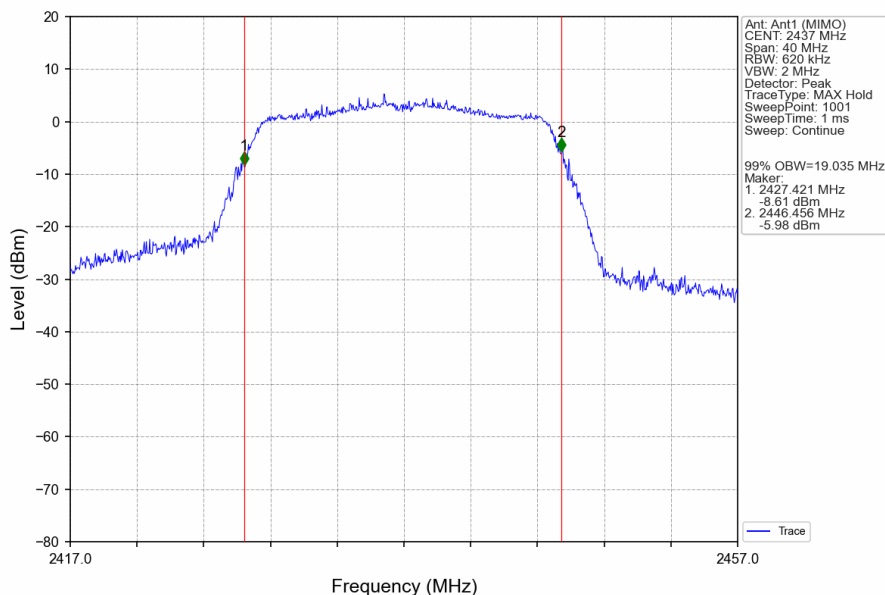
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



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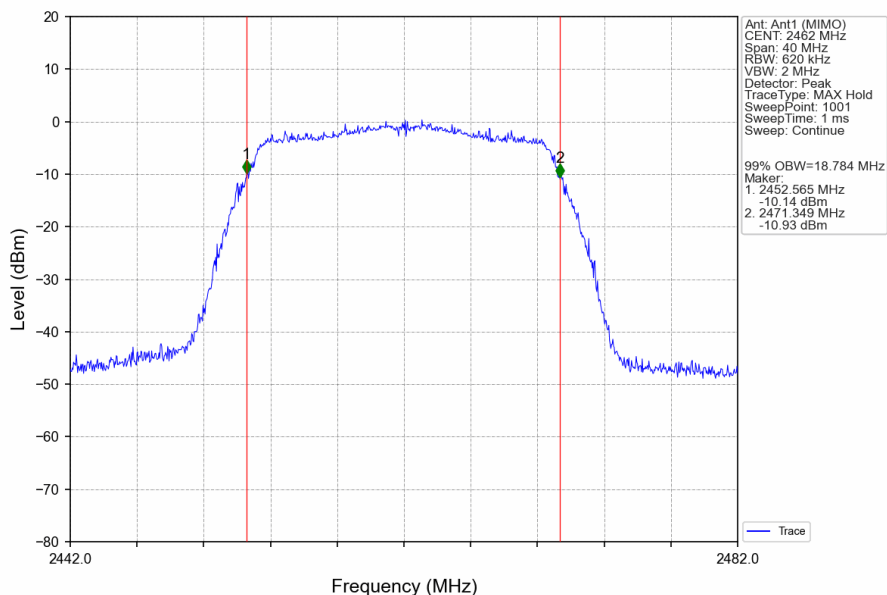
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



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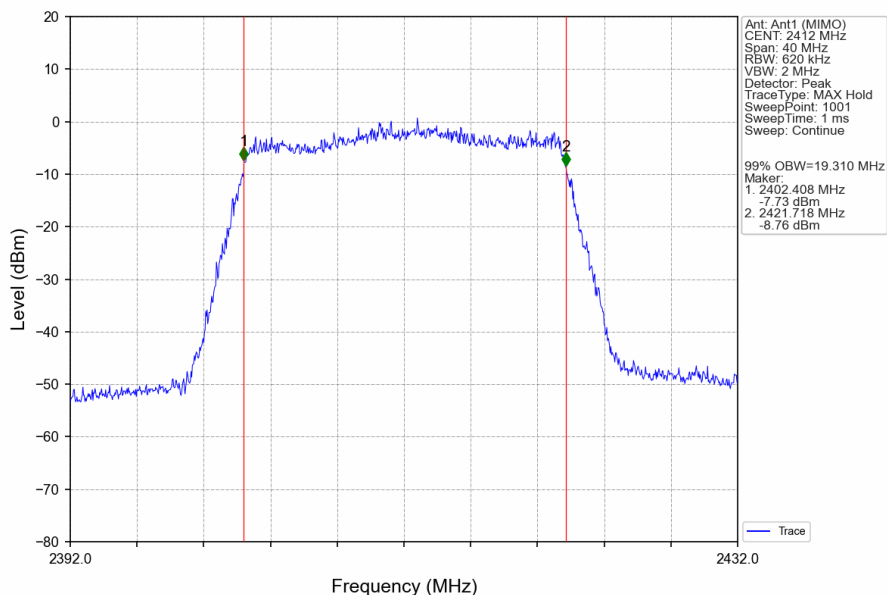
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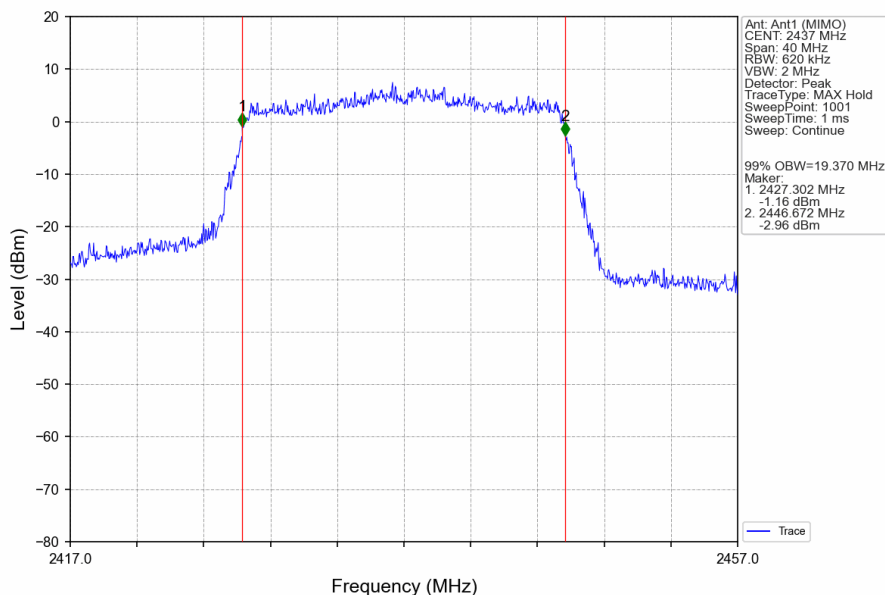
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802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



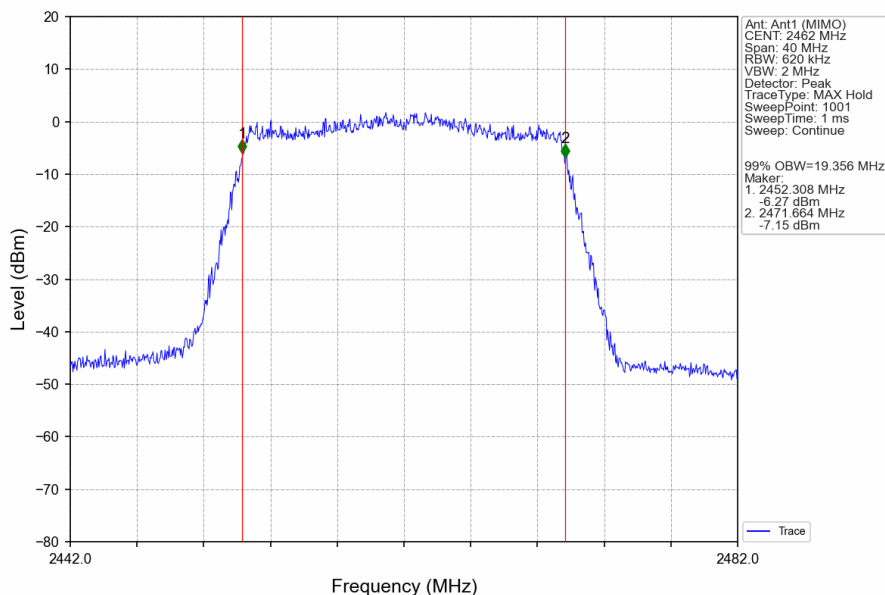
802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant1 (MIMO)_NTNV



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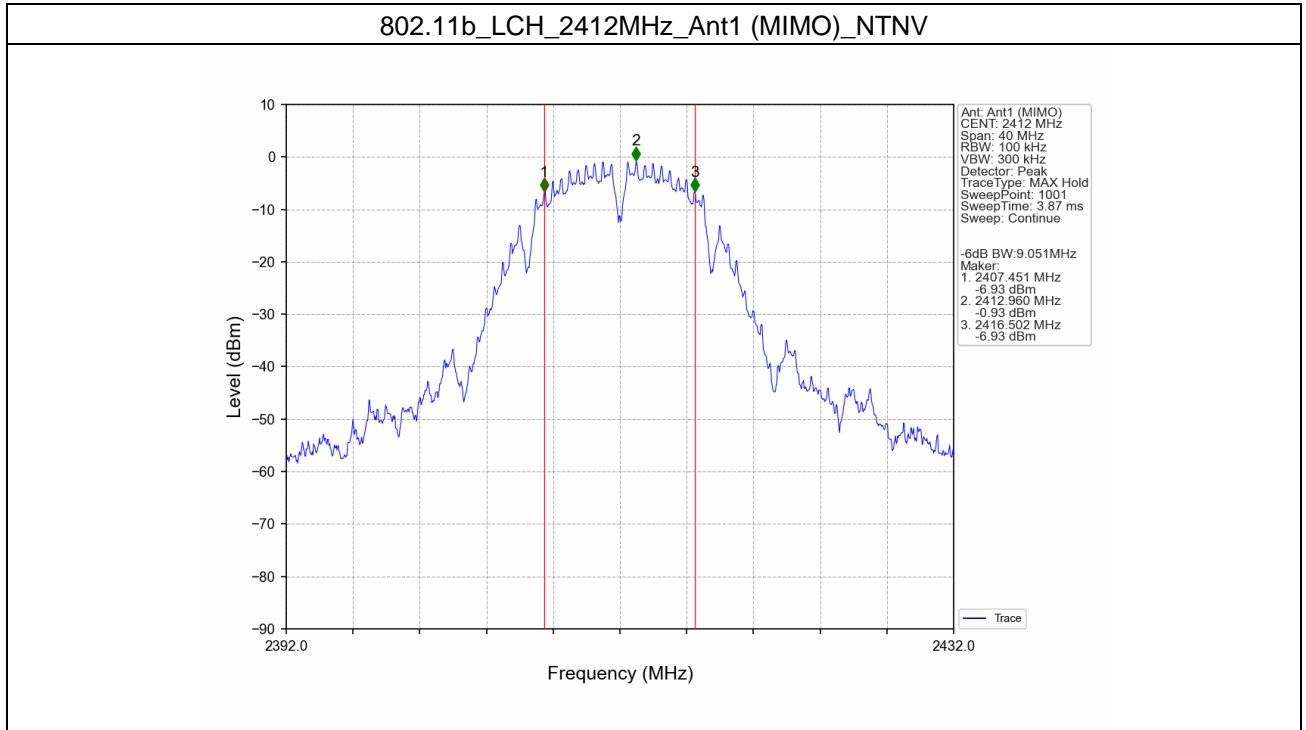
802.11ax(HEW20)_HCH_2462MHz_RU242_Left_Ant1 (MIMO)_NTNV



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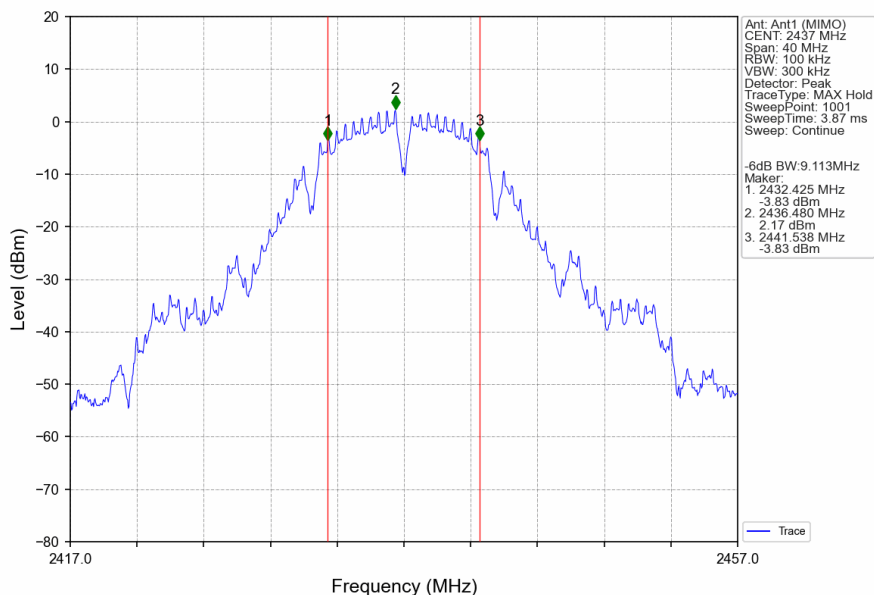
2.2.2 6dB BW



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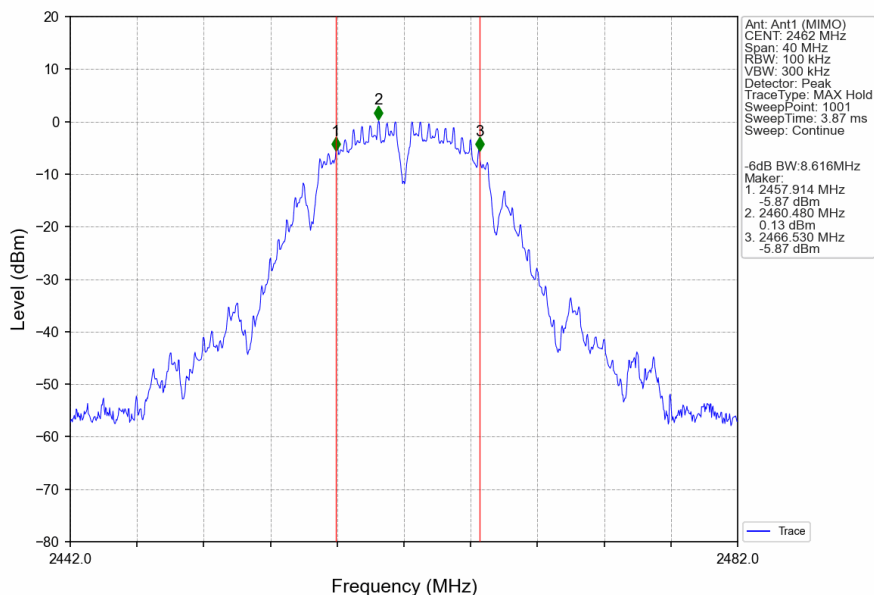
802.11b_MCH_2437MHz_Ant1 (MIMO)_NTNV



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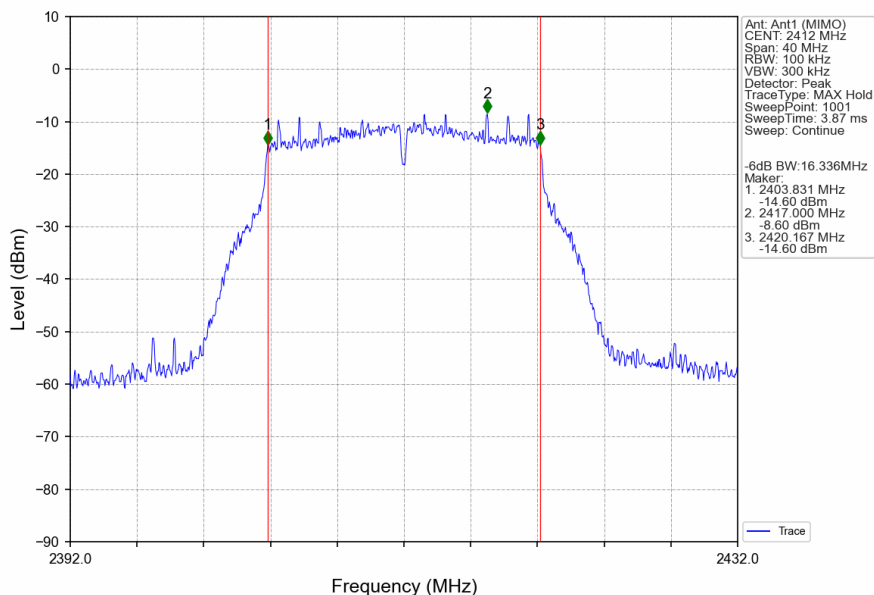
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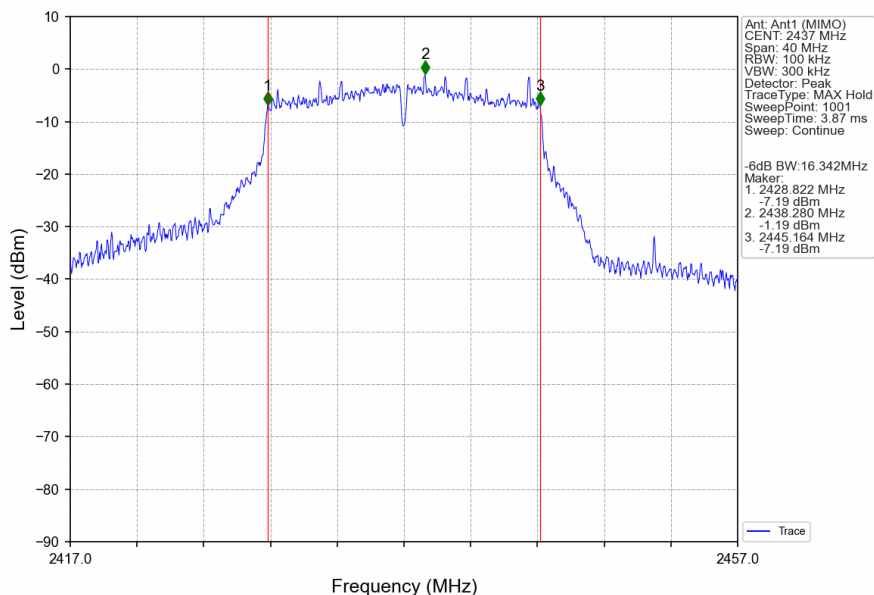
802.11g_LCH_2412MHz_Ant1 (MIMO)_NTNV



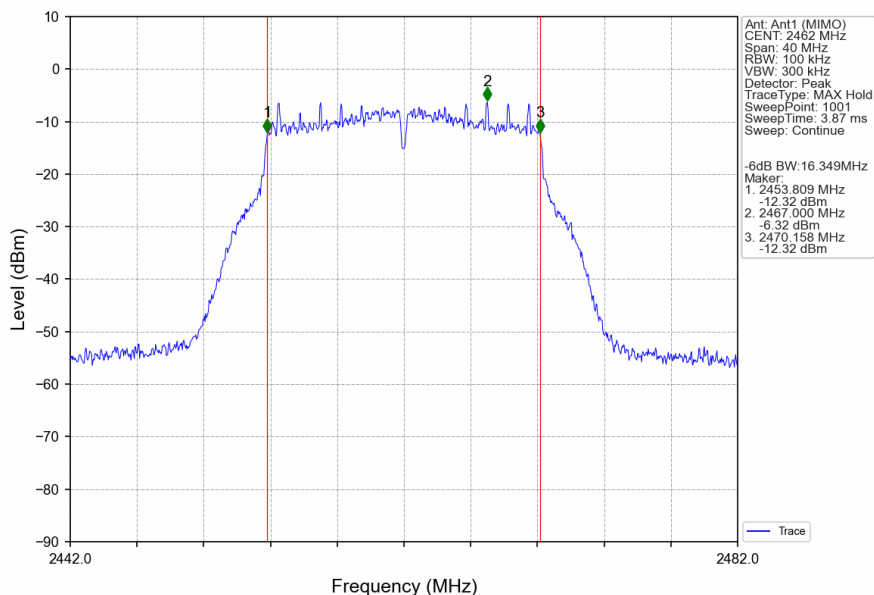
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802.11g_MCH_2437MHz_Ant1 (MIMO)_NTNV



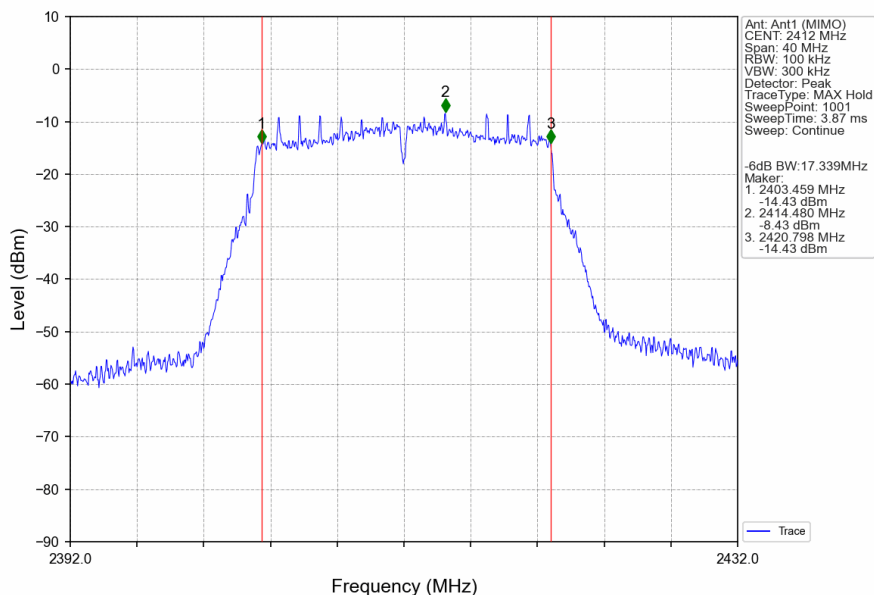
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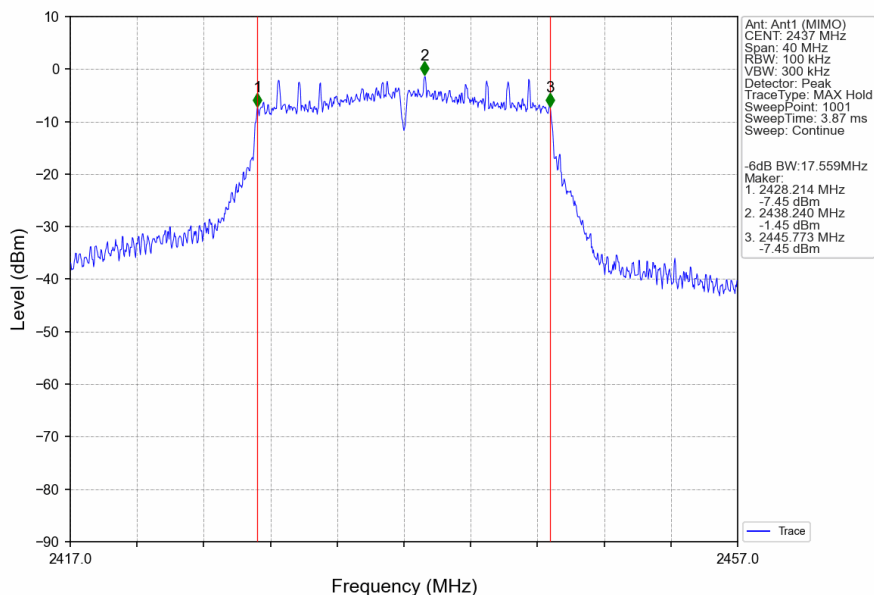
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



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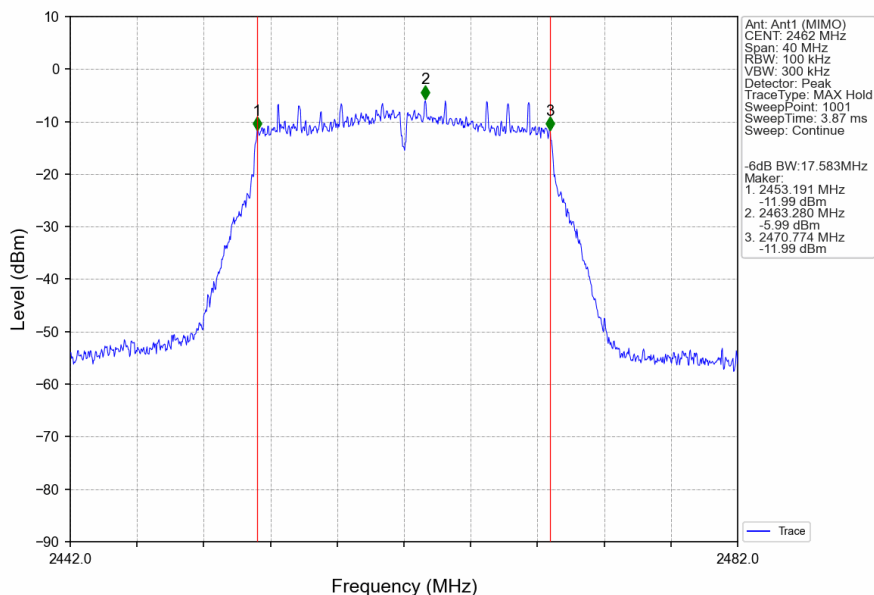
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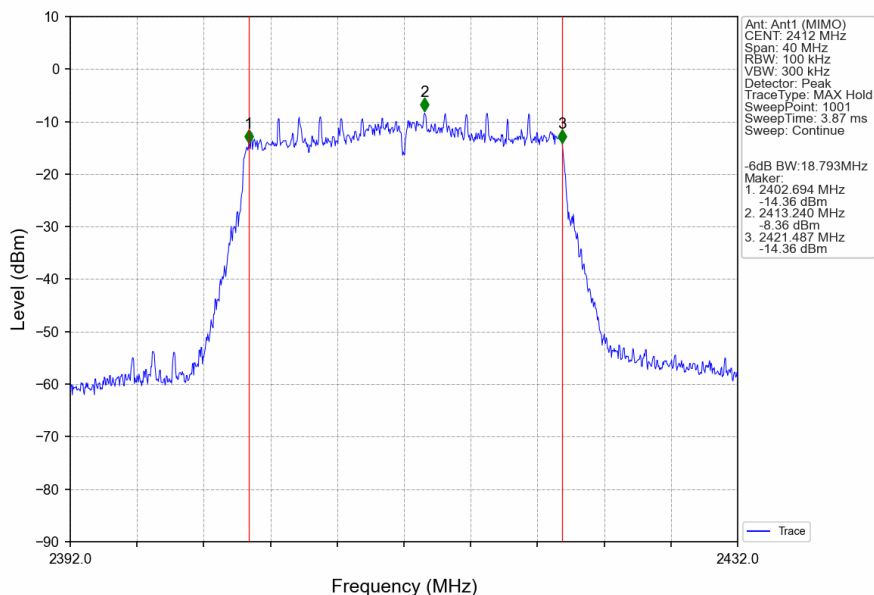
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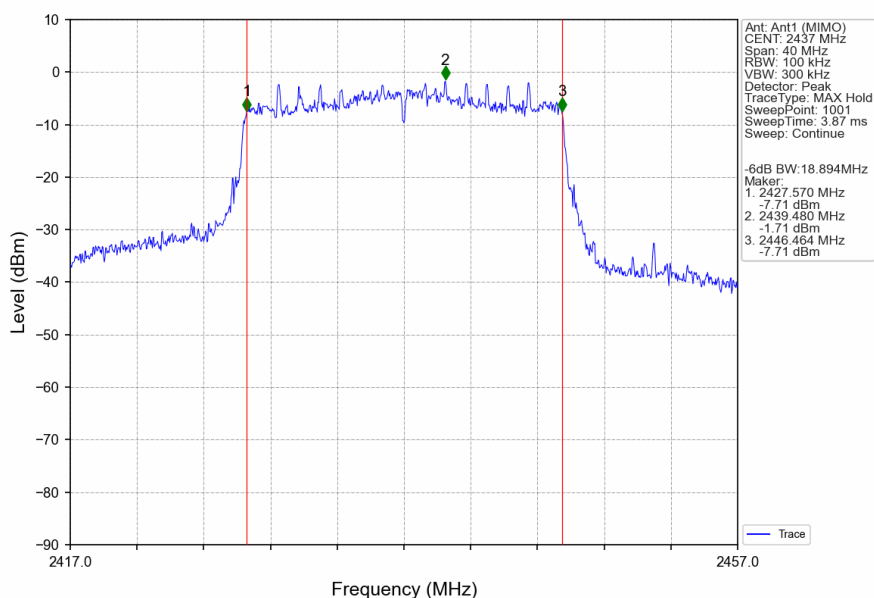
802.11ax(HEW20)_LCH_2412MHz_RU242_Left_Ant1 (MIMO)_NTNV



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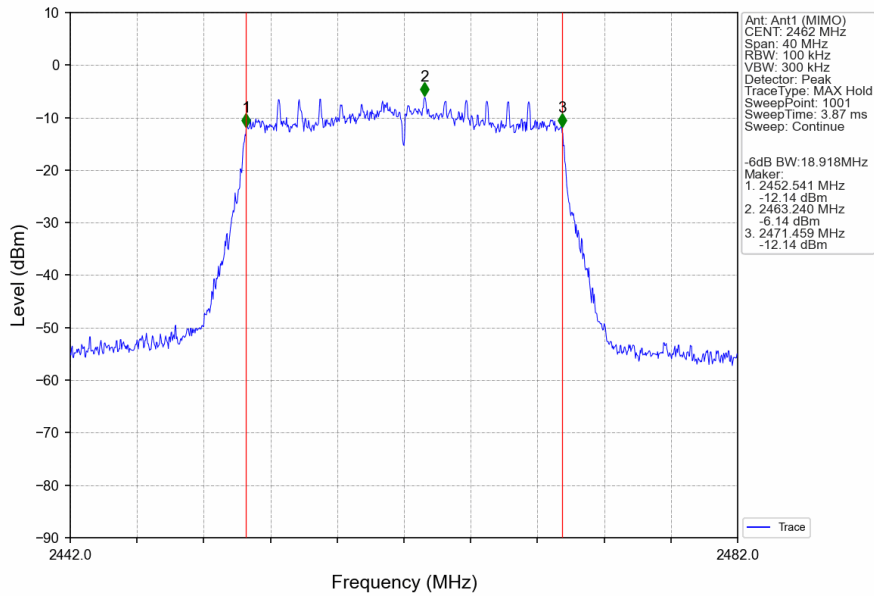
802.11ax(HEW20)_MCH_2437MHz_RU242_Left_Ant1 (MIMO)_NTNV



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3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum Average Conducted Output Power (dBm)				Verdict
					ANT1	ANT2	MIMO	Limit	
802.11b	MIMO	2412	/	/	7.67	12.64	13.84	<=30	Pass
		2437	/	/	10.62	15.70	16.87	<=30	Pass
		2462	/	/	8.56	12.44	13.93	<=30	Pass
802.11g	MIMO	2412	/	/	2.51	8.02	9.10	<=30	Pass
		2437	/	/	9.95	14.75	15.99	<=30	Pass
		2462	/	/	5.13	9.19	10.63	<=30	Pass
802.11n (HT20)	MIMO	2412	/	/	2.75	7.90	9.06	<=30	Pass
		2437	/	/	9.30	14.14	15.37	<=30	Pass
		2462	/	/	5.04	9.00	10.47	<=30	Pass
802.11ax (HEW20)	MIMO	2412	RU26	Left	6.53	11.38	12.61	<=30	Pass
			RU242	Left	2.60	7.96	9.07	<=30	Pass
		2437	RU26	Mid	8.76	14.12	15.23	<=30	Pass
			RU242	Left	9.47	14.22	15.47	<=30	Pass
		2462	RU26	Right	7.24	11.38	12.80	<=30	Pass
			RU242	Left	4.85	9.06	10.46	<=30	Pass

Note1: Antenna Gain: Ant1: 2.1dBi; Ant2: 2.1dBi;
 Note2: 802.11ax(HEW20) Beamforming Directional Gain: 5.11dBi, the others are 2.1dBi.
 Note3: When 802.11ax (HEW20) performs Beamforming, the conducted power will decrease by 3dB.



4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

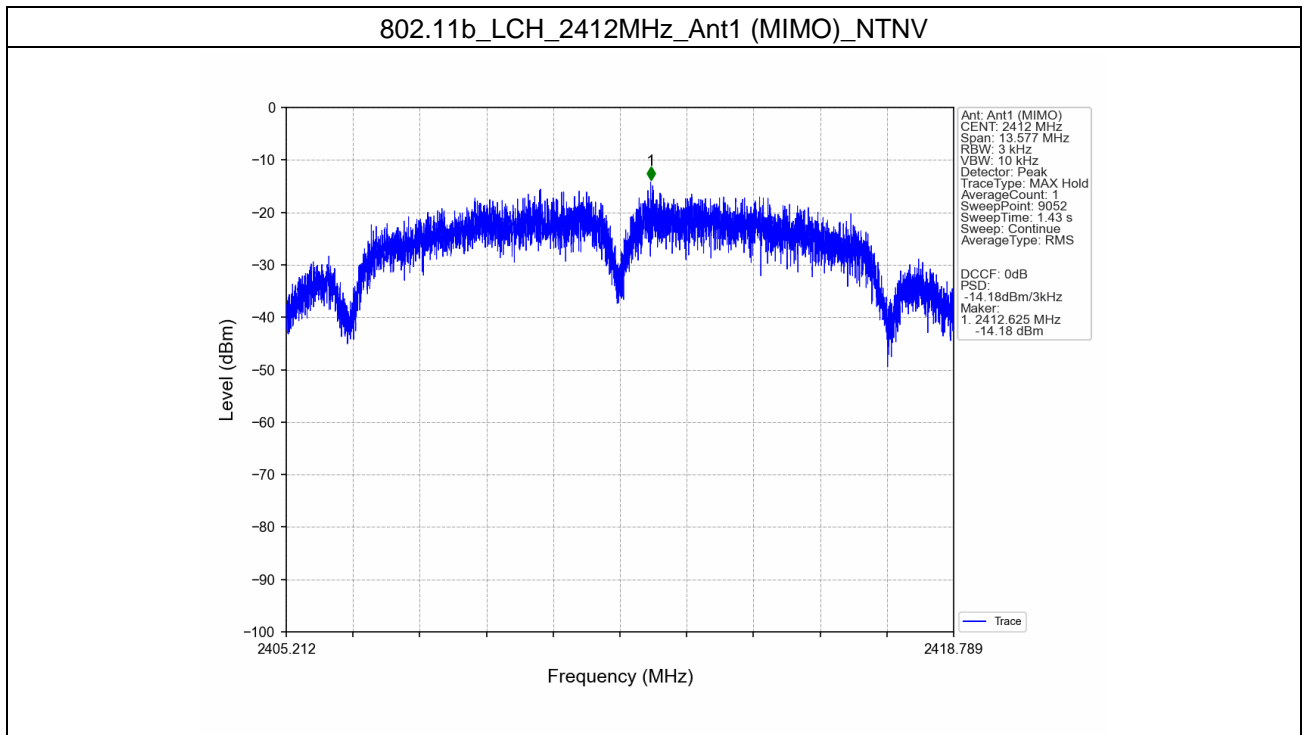
Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum PSD (dBm/3kHz)				Verdict
					ANT1	ANT2	MIMO	Limit	
802.11b	MIMO	2412	/	/	-14.18	-8.85	-8.56	<=8	Pass
		2437	/	/	-12.04	-7.29	-7.07	<=8	Pass
		2462	/	/	-14.37	-9.85	-9.45	<=8	Pass
802.11g	MIMO	2412	/	/	-21.65	-16.83	-15.67	<=8	Pass
		2437	/	/	-14.07	-9.65	-9.45	<=8	Pass
		2462	/	/	-20.07	-15.29	-14.73	<=8	Pass
802.11n (HT20)	MIMO	2412	/	/	-22.10	-16.77	-16.25	<=8	Pass
		2437	/	/	-15.61	-9.88	-9.53	<=8	Pass
		2462	/	/	-19.48	-15.57	-15.15	<=8	Pass
802.11ax (HEW20)	MIMO	2412	RU26	Left	-10.37	-6.10	-5.46	<=8	Pass
			RU242	Left	-21.79	-16.39	-16.27	<=8	Pass
		2437	RU26	Mid	-9.04	-3.85	-3.47	<=8	Pass
			RU242	Left	-15.14	-10.39	-10.08	<=8	Pass
		2462	RU26	Right	-9.86	-5.86	-5.66	<=8	Pass
			RU242	Left	-20.03	-16.11	-15.78	<=8	Pass

Note1: Antenna Gain: Ant1: 2.1dBi; Ant2: 2.1dBi;
Note2: Directional Gain: 5.11dBi

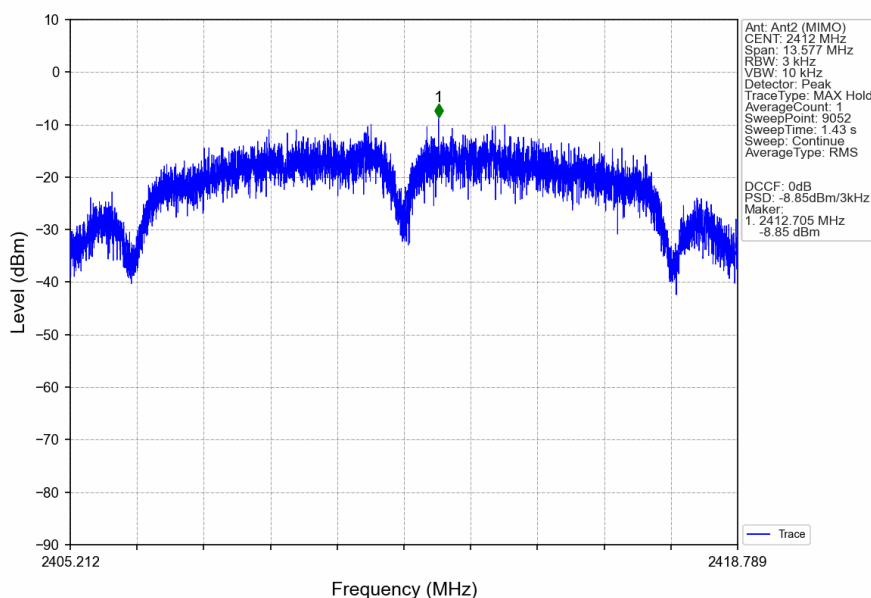


4.2 Test Graph

4.2.1 PSD



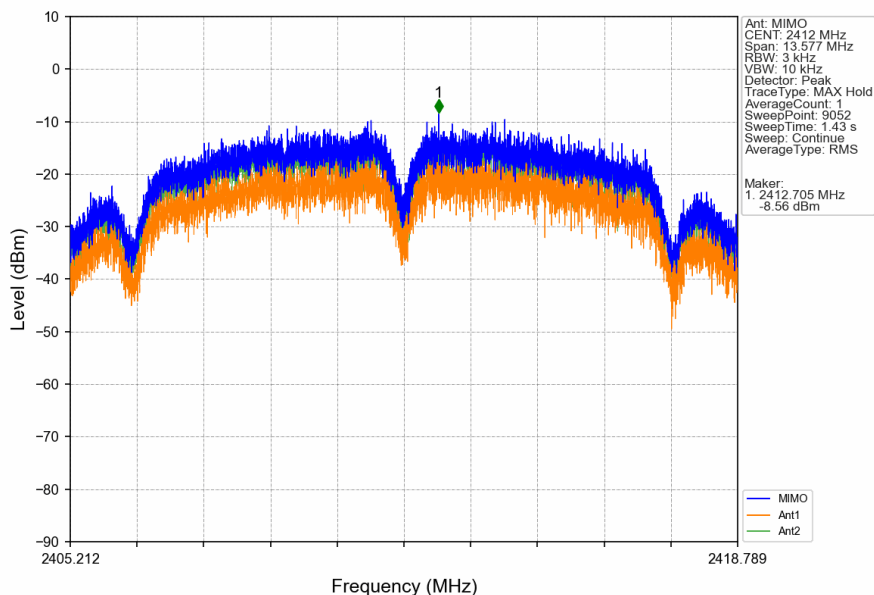
802.11b_LCH_2412MHz_Ant2 (MIMO)_NTNV



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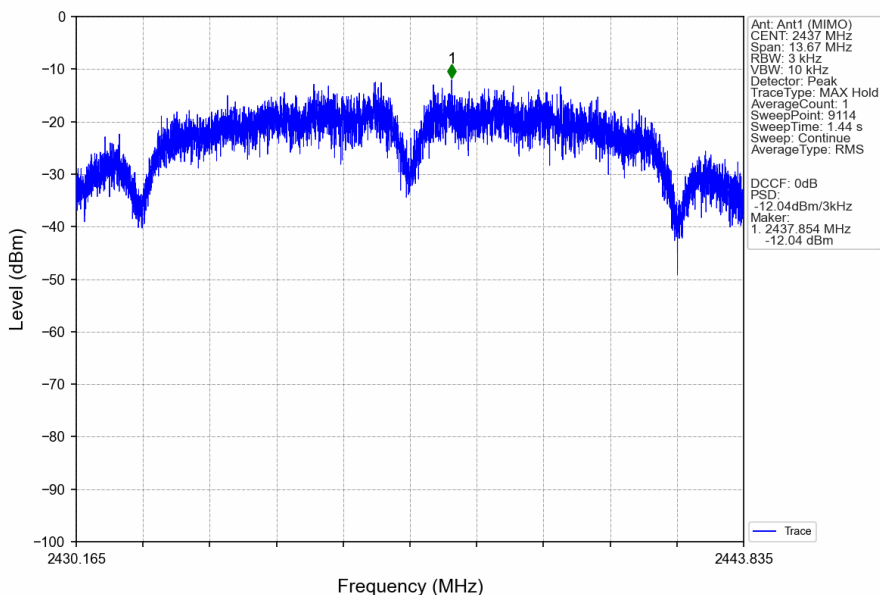
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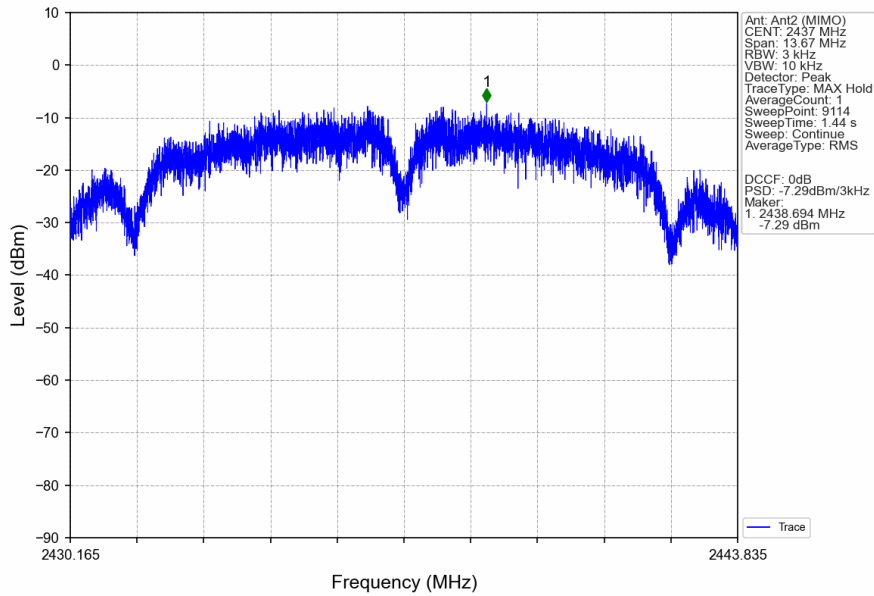
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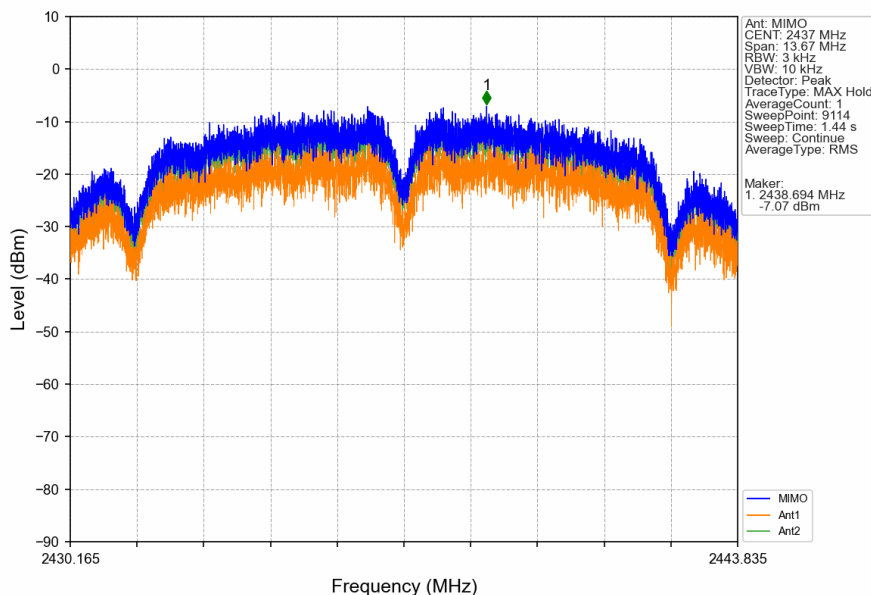
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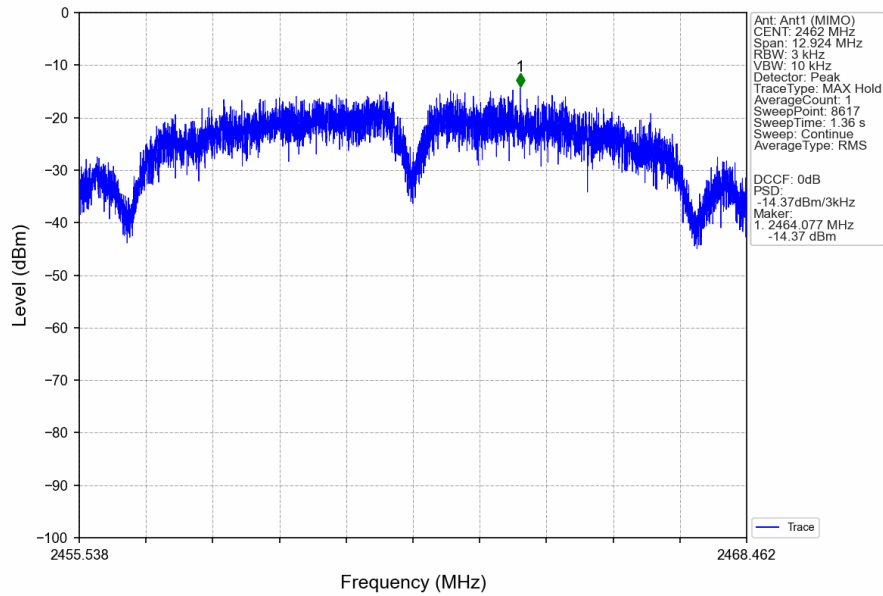
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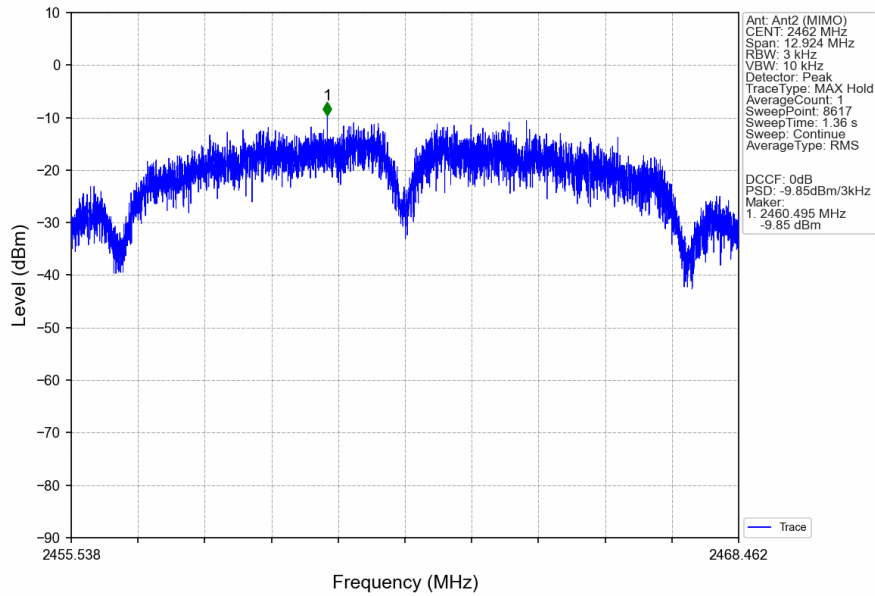
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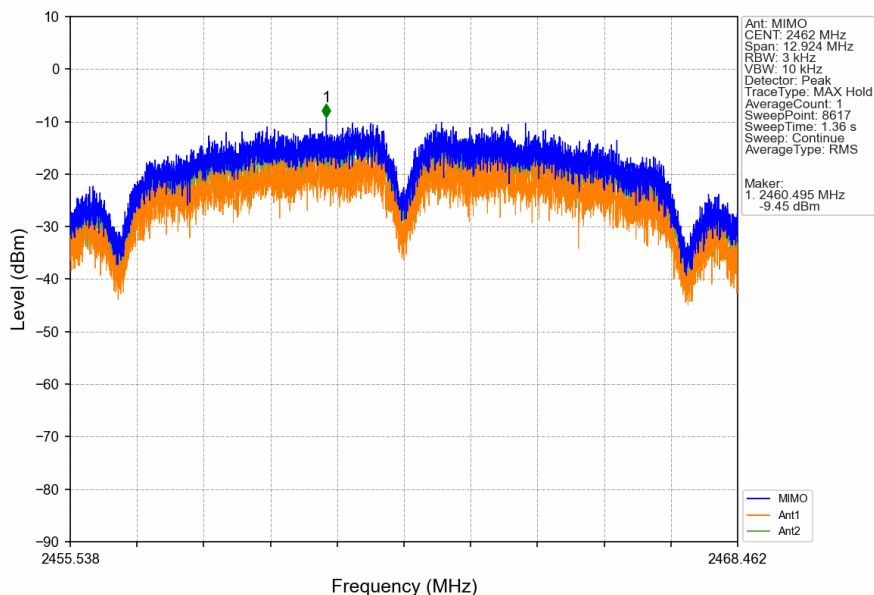
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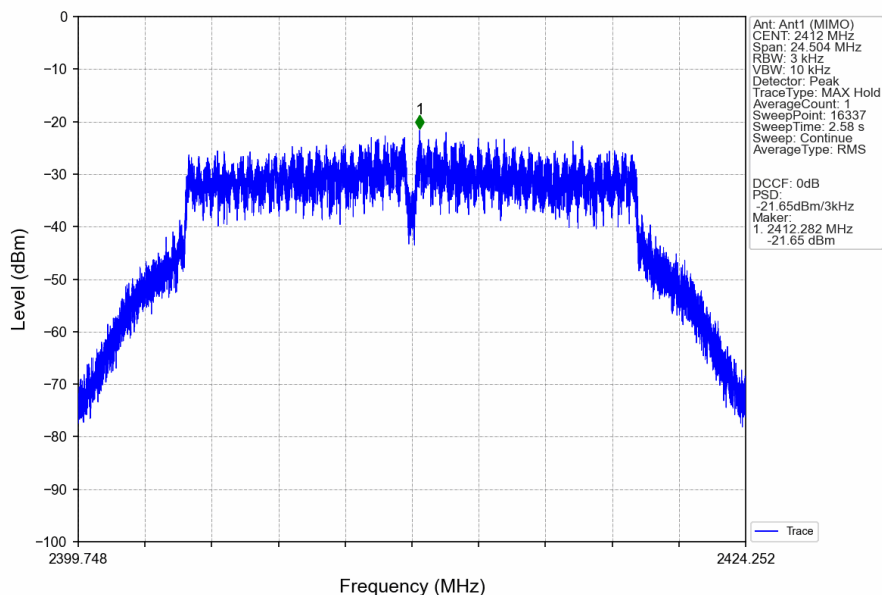
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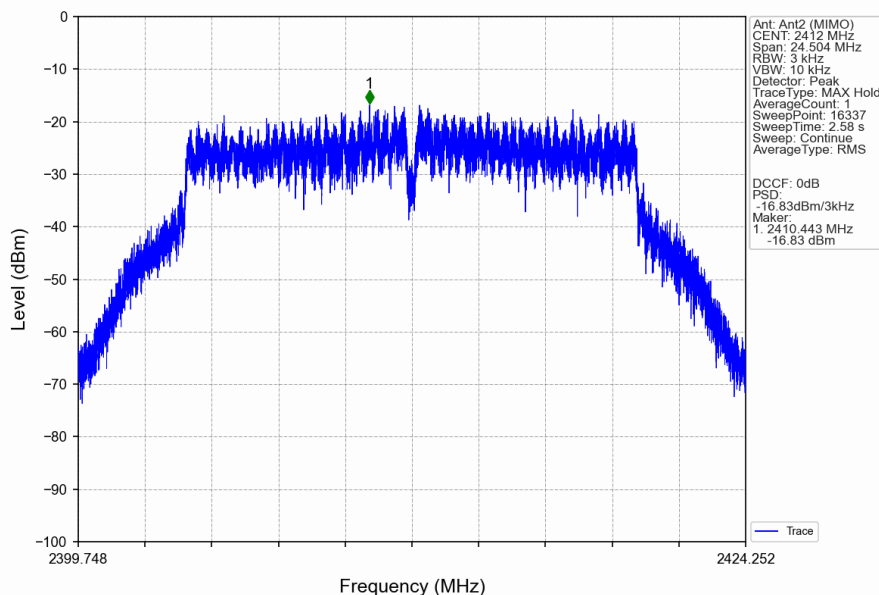
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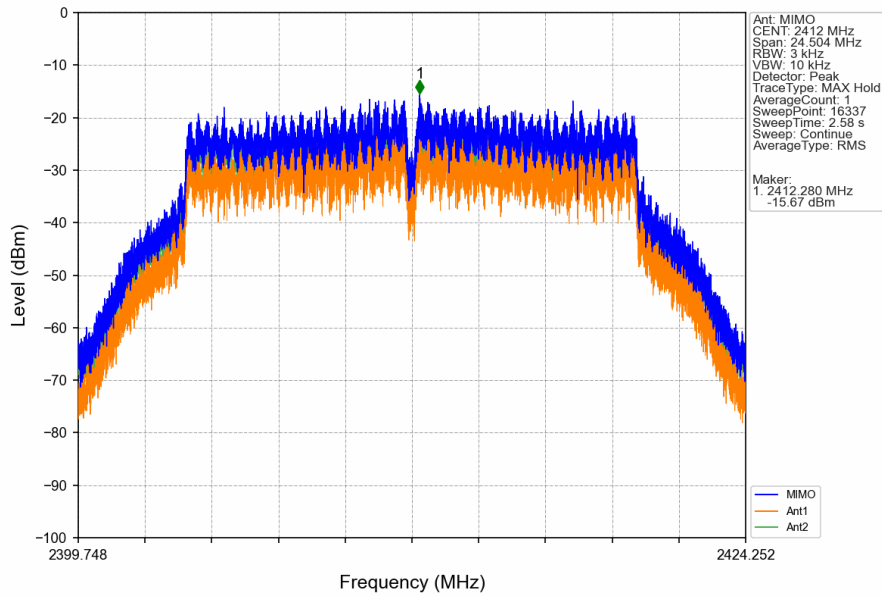
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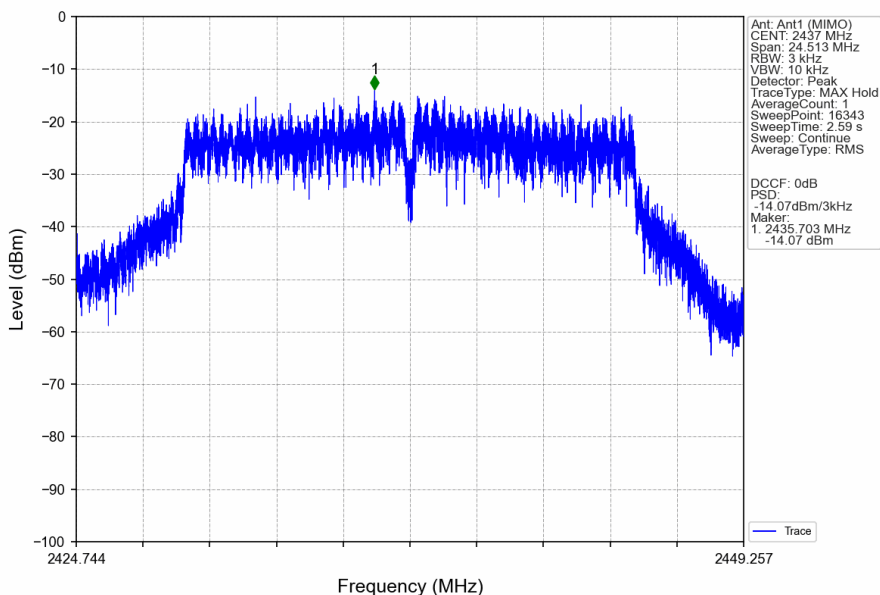
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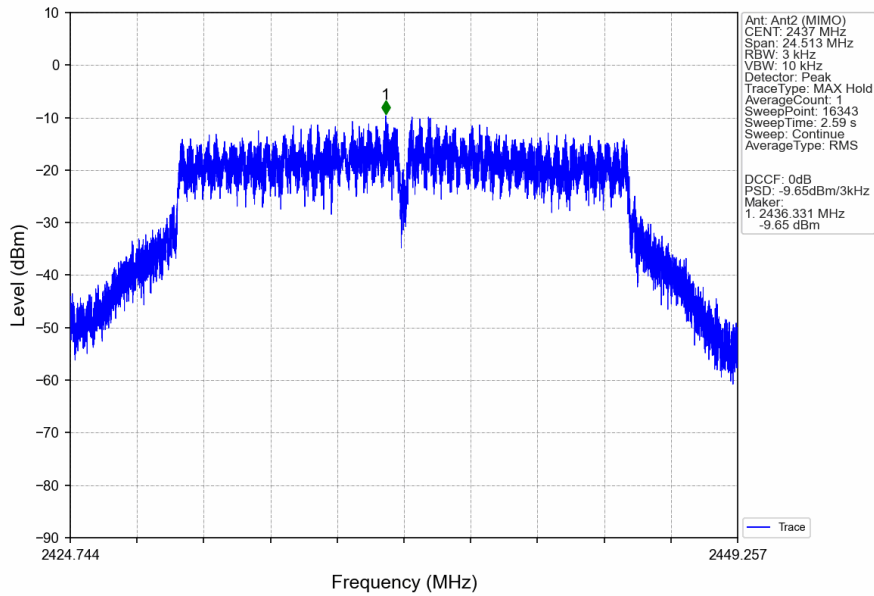
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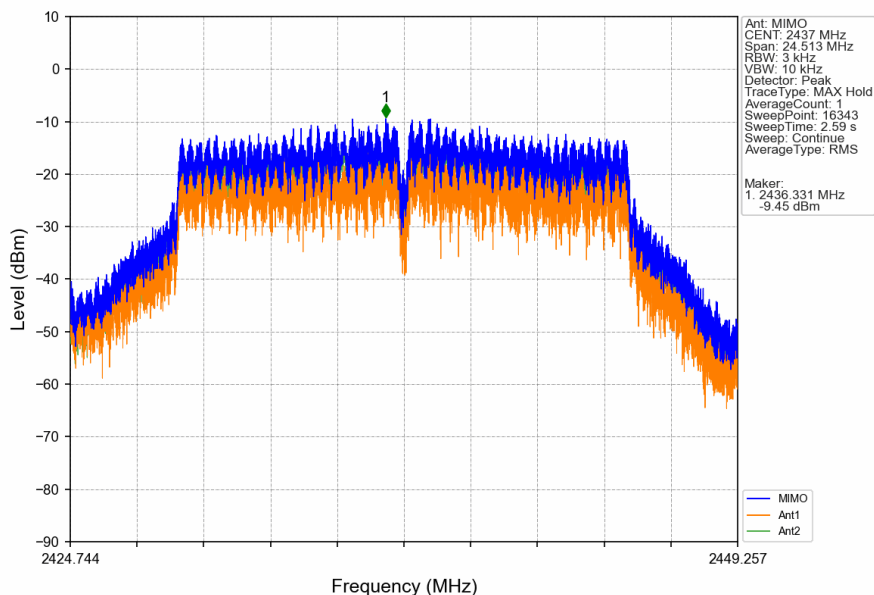
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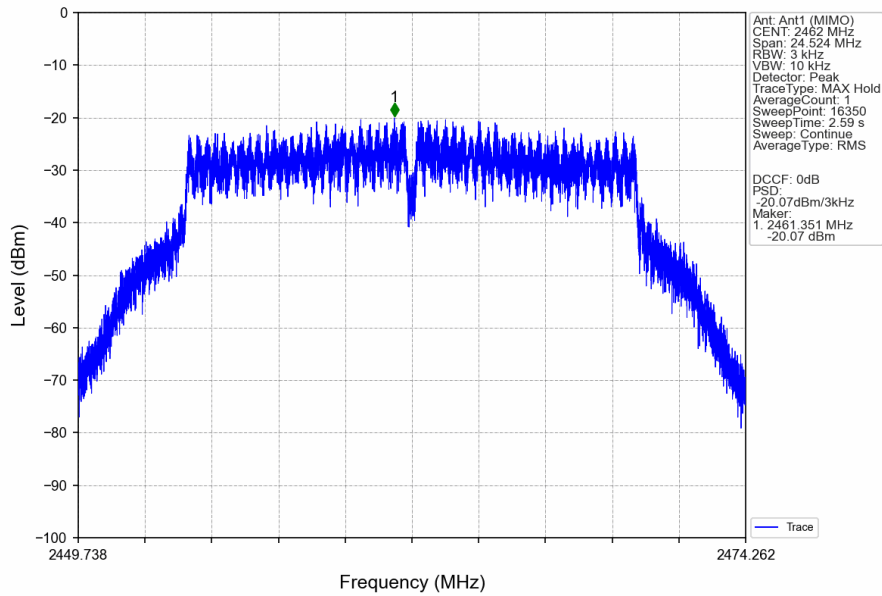
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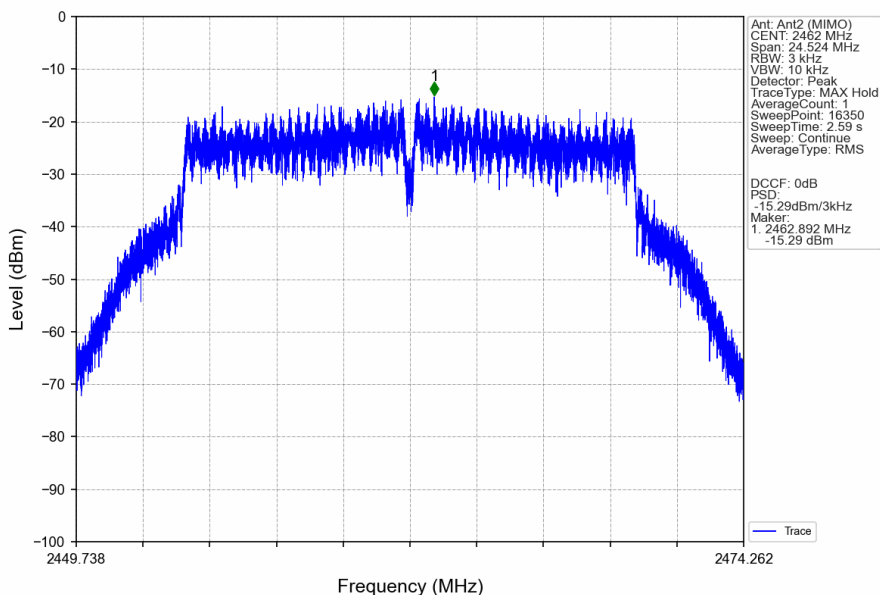
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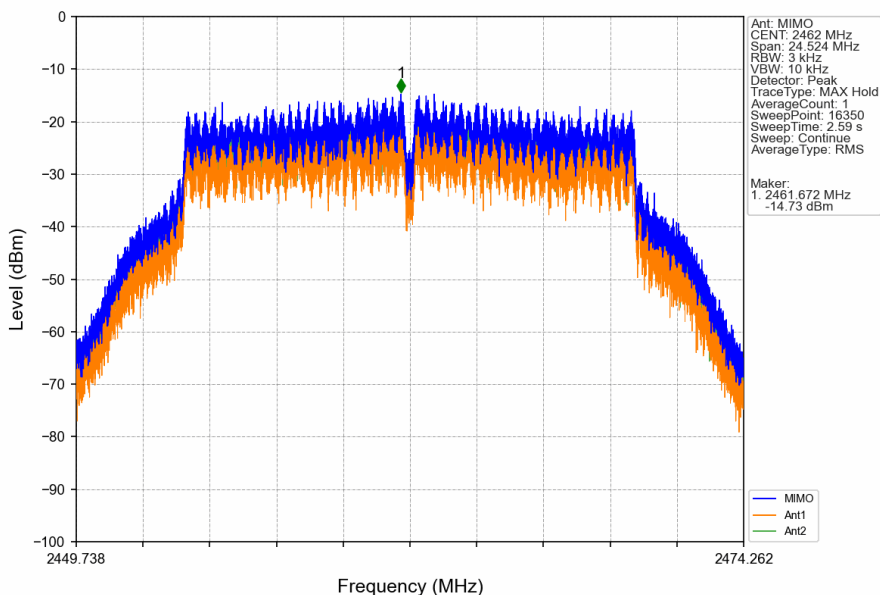
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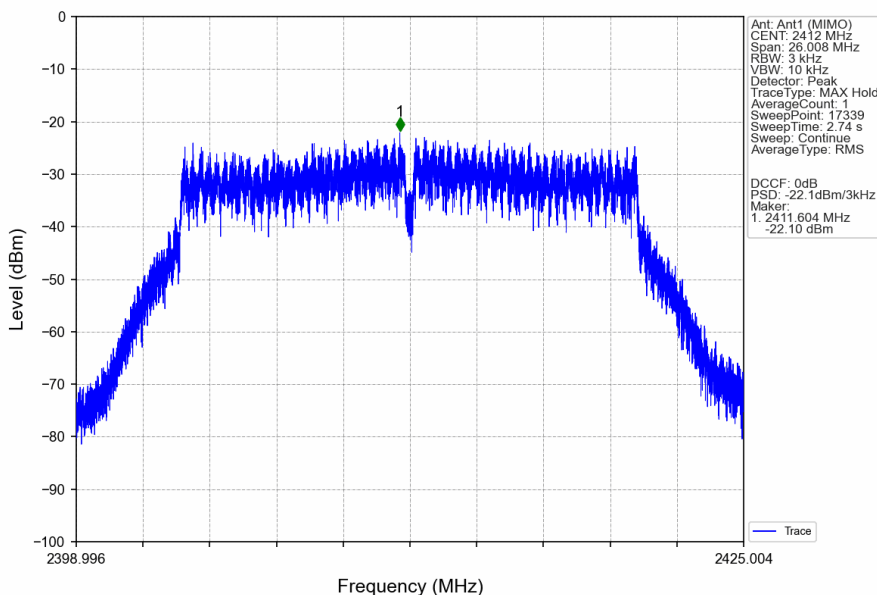
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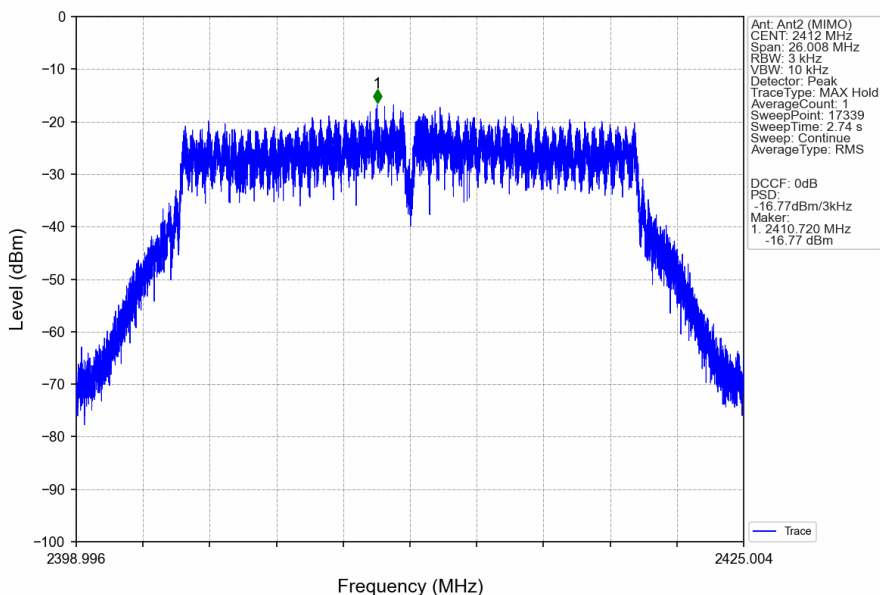
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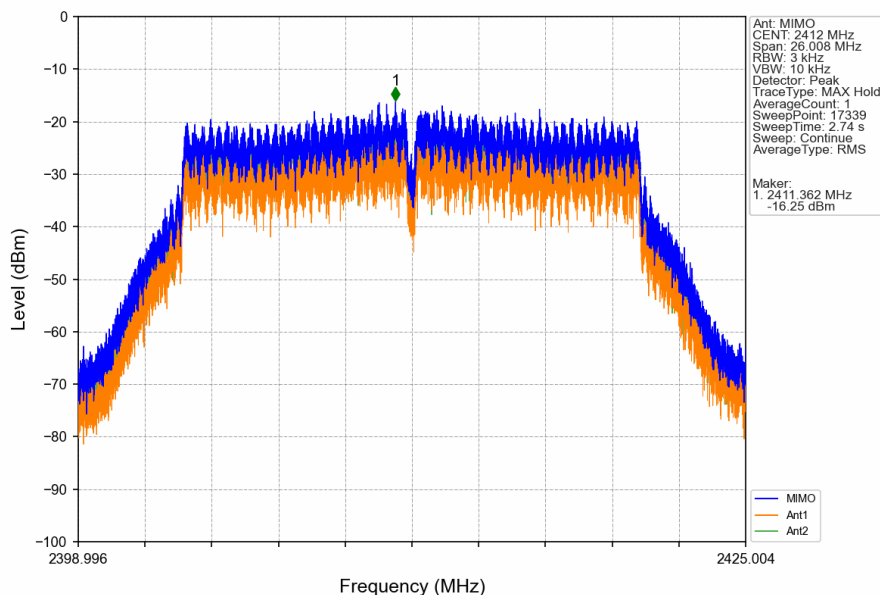
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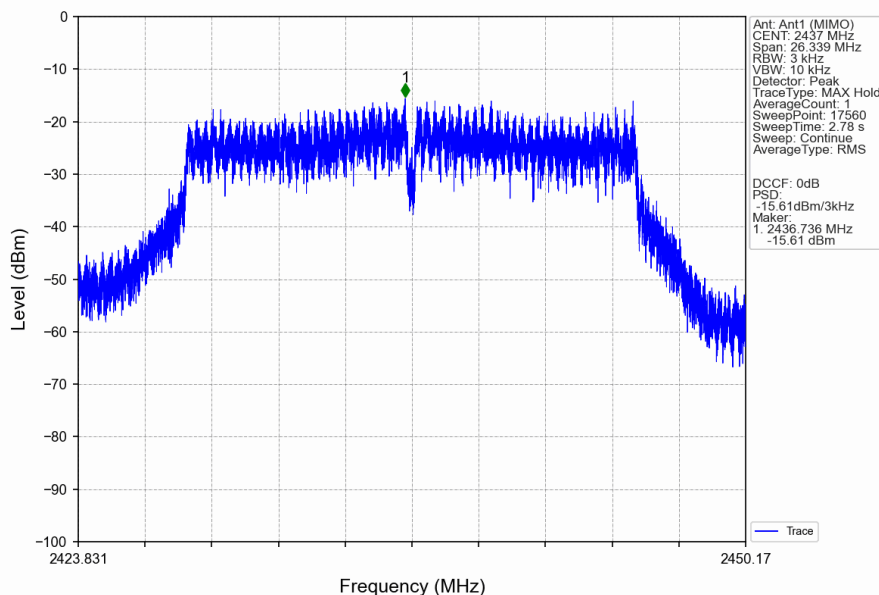
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