

TEST REPORT

Application No.: SZCR2603000761HS
Applicant: Vsync (US) Corporation
Address of Applicant: 1775 FLIGHT WAY, SUITE 150, TUSTIN, California 92782, United States
Equipment Under Test (EUT):
EUT Name: Air Purifier
Model No.: LAP-P201S-WUS, LAP-P201S-WCA,
 LAP-P201S-xxxx(x=A to Z, 0 to 9 or blank, represents different appearances,
 sales regions and sales channels.) ♣
 ♣ Please refer to section 2 of this report which indicates which model was
 actually tested and which were electrically identical.
Trade Mark: Levoit, levoit vital
FCC ID: 2AB22-LAPP201S
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2026-03-03
Date of Test: 2026-03-12 to 2026-03-18
Date of Issue: 2026-03-24

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



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Shenzhen Branch EMC Laboratory

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2026-03-24		Original

Authorized for issue by:				
		Martin Tang		
		Martin Tang/Project Engineer		
		Eric Fu		
		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
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2020) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Radiated Emissions which fall in the restricted bands		ANSI C63.10 (2020) Section 6.10.5 & 11.12	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10 (2020) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10 (2020) Section 6.6 & 11.12	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Maximum Conducted Output Power		ANSI C63.10 (2020) Section 11.9.2	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Minimum 6dB Bandwidth		ANSI C63.10 (2020) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Power Spectral Density		ANSI C63.10 (2020) Section 11.10.3	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Band Edges Measurement		ANSI C63.10 (2020) Section 6.10.4	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Spurious Emissions		ANSI C63.10 (2020) Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass

Declaration of EUT Family Grouping:

Model No.: LAP-P201S-WUS, LAP-P201S-WCA, LAP-P201S-xxxx(x=A to Z, 0 to 9 or blank, represents different appearances, sales regions and sales channels.)

Only the model LAP-P201S-WUS(with adapter 1, motor 1) was tested, since according to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, with only difference on model No., appearances, sales regions and sales channels.

Additionally, based on the model LAP-P201S-WUS, changed the adapter and motor.

Considering to the difference, there is no impact on RF characteristics.



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4 General Information

4.1 Details of E.U.T.

Power Supply:	Input: DC 24V,2A via AC/DC adapter; Rated power:41W Adapter 1 model:GQ48-240200-BU Input:AC100-240V,50/60Hz,1.5A Max; Output: DC 24.0V,2.0A Adapter 2 model:ZD060CB240200US Input:AC100-240V,50/60Hz,1.5A ; Output: DC 24.0V,2000mA
Cable(s):	Undetachable DC cable(adapter):about1.85m unshielded
Cable Loss (for RF conducted test):	0.5dB
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz, 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK), 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels:	802.11b/g/n(HT20): 11, 802.11n(HT40):7
Channel Spacing:	5MHz
Antenna Type:	PCB Antenna
Antenna Gain:	0.9dBi
Test Voltage:	AC 120V/60Hz

Remark: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.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--
The EUT has been tested as an independent unit.			



4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	$\pm 3.2\text{dB}$
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)
Maximum Conducted Output Power	$\pm 0.4\text{dB}$
Minimum 6dB Bandwidth	$\pm 0.3\%$
Power Spectral Density	$\pm 0.4\text{dB}$
Conducted Band Edges Measurement	$\pm 2.7\text{dB}$
Conducted Spurious Emissions	$\pm 2.7\text{dB}$

Remark:

The U_{lab} (lab Uncertainty) is less than $U_{\text{CISPR/ETSI}}$ (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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No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.

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

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2025-05-07	2028-05-06
EMI Test Receiver	Rohde&Schwarz	ESR	SZ-WRG-M-047	2025-12-15	2026-12-14
Measurement Software	AUDIX	e3 V8.2014-6-27a	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2025-07-05	2026-07-04
LISN	Rohde&Schwarz	ENV216	SEM007-01	2025-07-25	2026-07-24
LISN	ETS-LINDGREN	3816/2	SEM007-02	2026-02-24	2027-02-23

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Fully-Anechoic Chamber	AUDIX	N/A	SEM001-02	2025-05-07	2028-05-06
Signal Analyzer	Rohde & Schwarz	FSV40	SEM008-04	2026-02-02	2027-02-01
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2025-07-22	2026-07-21
Microwave system amplifier	Agilent	83017A	SEM005-25	2025-09-10	2026-09-09
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2025-07-05	2026-07-04
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2025-07-22	2027-07-21
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2025-03-21	2026-03-20

Radiated Spurious Emissions Below 30MHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2025-03-21	2026-03-20
MXE EMI receiver	KEYSIGHT	N9038A	SEM004-16	2025-07-25	2026-07-24
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-18	2025-08-29	2027-08-28
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-04	2026-02-02	2027-02-01
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2025-11-17	2027-11-16
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM029-01	2025-07-05	2026-07-04



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Radiated Spurious Emissions 30MHz-1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2025-11-17	2027-11-16
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2025-07-25	2026-07-24
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2025-08-29	2027-08-28
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2026-02-02	2027-02-01
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2025-07-05	2026-07-04

Radiated Spurious Emissions Above 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Fully-Anechoic Chamber	AUDIX	N/A	SEM001-02	2025-05-07	2028-05-06
Signal Analyzer	Rohde & Schwarz	FSV40	SEM008-04	2026-02-02	2027-02-01
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2025-07-22	2026-07-21
Microwave system amplifier	Agilent	83017A	SEM005-25	2025-09-10	2026-09-09
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2025-07-05	2026-07-04
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2025-07-22	2027-07-21
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2025-03-21	2026-03-20
Low Noise Amplifier 1G-18GHz	Tonscend	TAP01018050	SZ-WRG-M-051	2025-12-16	2026-12-15
Low Noise Amplifier 18G-40GHz	Tonscend	TAP18040048	SZ-WRG-M-052	2025-12-16	2026-12-15
Double Ridge Horn Antenna 1GHz-18GHz	SCHWARZBECK	BBHA 9120 D	SZ-WRG-M-055	2025-12-13	2026-12-12
SHF-EHF Horn 15GHz-40GHz	SCHWARZBECK	BBHA 9170	SZ-WRG-M-056	2025-12-13	2026-12-12



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RF Conducted Test					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Power Sensor	TST PASS	TSPS2023R	SEM009-26	2026-02-04	2027-02-03
Power Sensor	KEYSIGHT	U2021XA	SEM009-16	2026-02-04	2027-02-03
DC Power Supply	Chroma	62012P-80-60	SEM011-11	2025-07-24	2026-07-23
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-19	2026-02-03	2027-02-02
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2025-07-05	2026-07-04
Attenuator	Huber+Suhner	6620_SMA-50-1	SEM021-09	2026-02-02	2027-02-01

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2025-07-23	2026-07-22
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2025-07-23	2026-07-22
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2026-02-14	2027-02-13



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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

Standard 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.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement.

Antenna location: Refer to internal photo.



7 Radio Spectrum Matter Test Results

7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement: 47 CFR Part 15, Subpart C 15.207
 Test Method: ANSI C63.10 (2020) Section 6.2
 Test Engineer: Mason Wu

Limit:

Frequency of emission(MHz)	Conducted limit(dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency.		
Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz		

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.6 °C Humidity: 42.3 % RH Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT(LAP-P201S-WUS with motor 1) 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 @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report(powered by adapter 1).



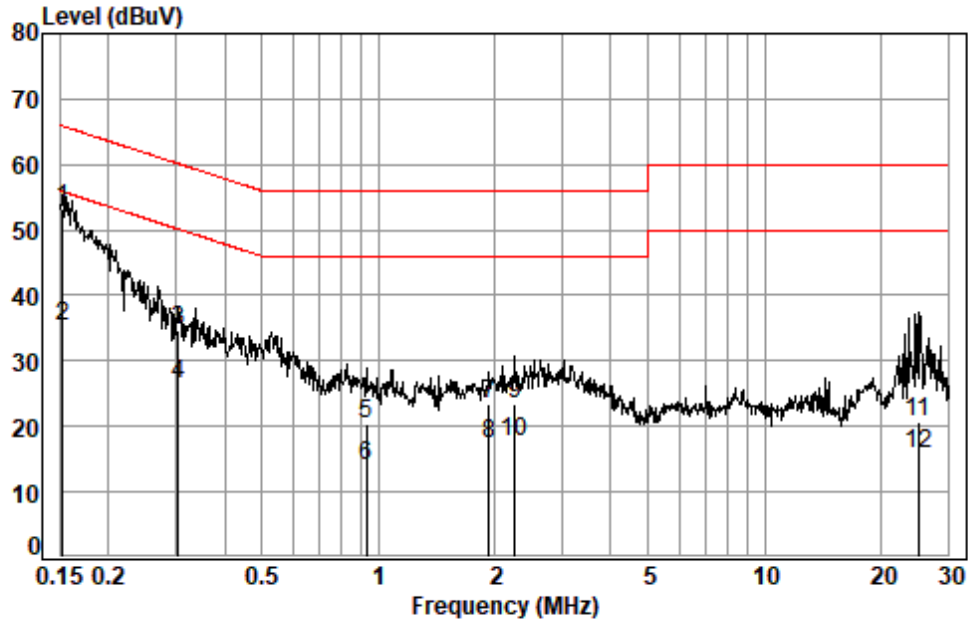
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SZEMC-TRF-01 Rev. A/2

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Test Mode: 02; Line: Live line



Site : Shielding Room
Condition: Line
Job No. : 00761HS/00762HS
Test mode: 02

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 *	0.1524	0.06	9.63	43.42	53.11	65.87	-12.76	QP
2 *	0.1524	0.06	9.63	25.72	35.41	55.87	-20.46	Average
3	0.3035	0.08	9.63	24.95	34.66	60.15	-25.49	QP
4	0.3035	0.08	9.63	16.79	26.50	50.15	-23.65	Average
5	0.9331	0.11	9.66	10.55	20.32	56.00	-35.68	QP
6	0.9331	0.11	9.66	4.19	13.96	46.00	-32.04	Average
7	1.9386	0.12	9.72	13.49	23.33	56.00	-32.67	QP
8	1.9386	0.12	9.72	7.47	17.31	46.00	-28.69	Average
9	2.2606	0.13	9.75	13.46	23.34	56.00	-32.66	QP
10	2.2606	0.13	9.75	7.89	17.77	46.00	-28.23	Average
11	25.0545	0.25	13.29	7.03	20.57	60.00	-39.43	QP
12	25.0545	0.25	13.29	2.14	15.68	50.00	-34.32	Average



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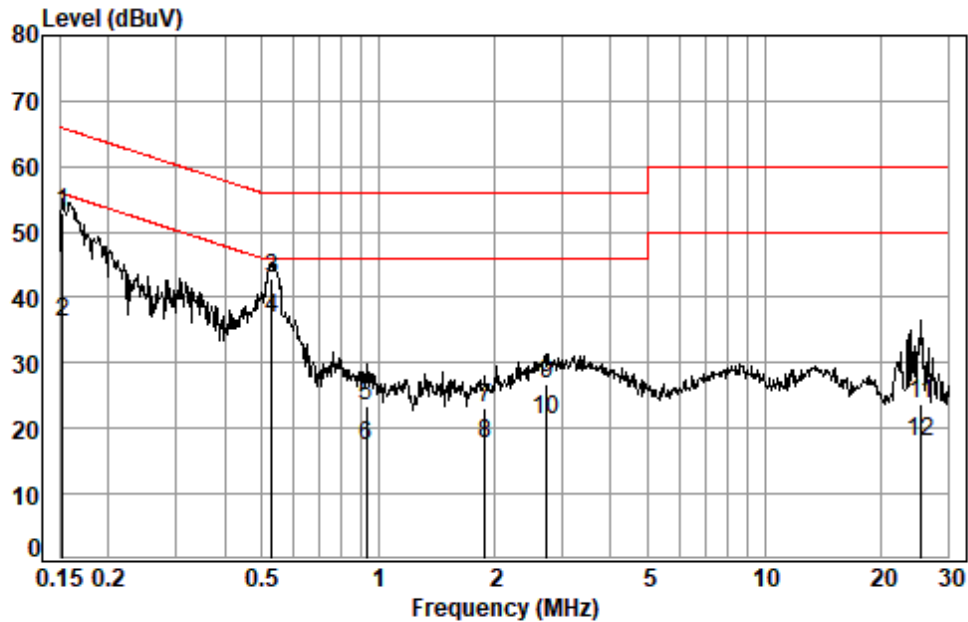
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SZEMC-TRF-01 Rev. A/2

Report No.: SZCR260300076103

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Test Mode: 02; Line: Neutral Line



Site : Shielding Room
Condition: Neutral
Job No. : 00761HS/00762HS
Test mode: 02

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1524	0.06	9.63	43.09	52.78	65.87	-13.09	QP
2	0.1524	0.06	9.63	26.43	36.12	55.87	-19.75	Average
3 *	0.5293	0.09	9.63	33.22	42.94	56.00	-13.06	QP
4 *	0.5293	0.09	9.63	26.96	36.68	46.00	-9.32	Average
5	0.9331	0.11	9.66	13.65	23.42	56.00	-32.58	QP
6	0.9331	0.11	9.66	7.59	17.36	46.00	-28.64	Average
7	1.8879	0.12	9.72	13.33	23.17	56.00	-32.83	QP
8	1.8879	0.12	9.72	7.93	17.77	46.00	-28.23	Average
9	2.7356	0.13	9.79	16.71	26.63	56.00	-29.37	QP
10	2.7356	0.13	9.79	11.28	21.20	46.00	-24.80	Average
11	25.4560	0.25	13.32	10.22	23.79	60.00	-36.21	QP
12	25.4560	0.25	13.32	4.45	18.02	50.00	-31.98	Average



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Report No.: SZCR260300076103

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7.2 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 (2020) Section 6.10.5 & 11.12
 Measurement Distance: 3m
 Test Engineer: Logic Wang

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.

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.5 °C Humidity: 56.3 % RH Atmospheric Pressure: 1020 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT(LAP-P201S-WUS with motor 1) 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 @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report(powered by adapter 1).



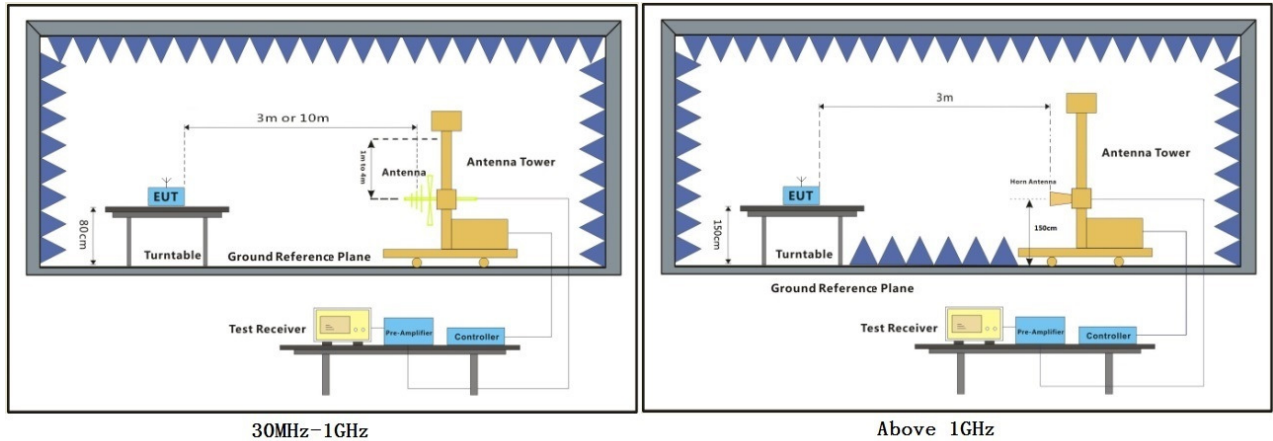
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7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

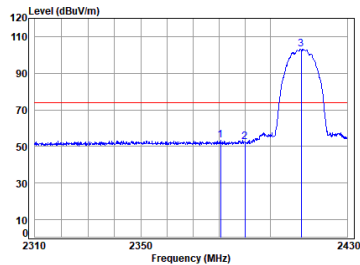
- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 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.



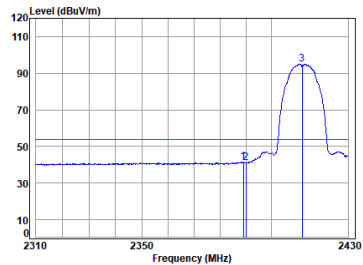
11b_TX_CH_01_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2412 Band edge
2.4G WIFI 11b

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2380.667	16.12	29.10	32.79	41.02	53.45	74.00	-20.55	Peak	0.00
2	2390.000	16.13	29.10	32.78	39.86	52.31	74.00	-21.69	Peak	0.00
3 p	2412.000	16.17	29.05	32.77	90.60	103.05	74.00	29.05	Peak	0.00

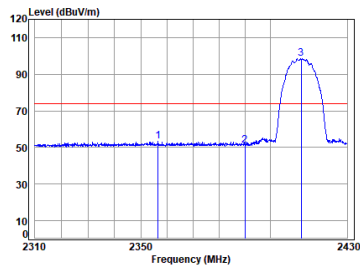
11b_TX_CH_01_Horizontal-Avg



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2412 Band edge
2.4G WIFI 11b

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2380.000	16.13	29.10	32.78	29.28	41.73	54.00	-12.27	Average	0.00
2	2390.000	16.13	29.10	32.78	28.43	40.88	54.00	-13.12	Average	0.00
3 q	2412.000	16.17	29.05	32.77	82.63	95.08	54.00	41.08	Average	0.00

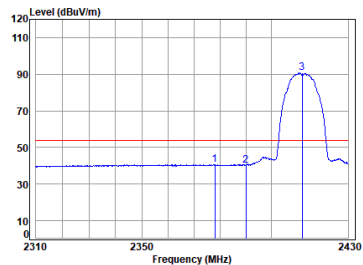
11b_TX_CH_01_Vertical-Peak



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2412 Band edge
2.4G WIFI 11b

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2356.675	16.08	29.10	32.80	40.89	53.27	74.00	-20.73	Peak	0.00
2	2390.000	16.13	29.10	32.78	38.88	51.33	74.00	-22.67	Peak	0.00
3 p	2412.000	16.17	29.05	32.77	85.94	98.39	74.00	24.39	Peak	0.00

11b_TX_CH_01_Vertical-Avg

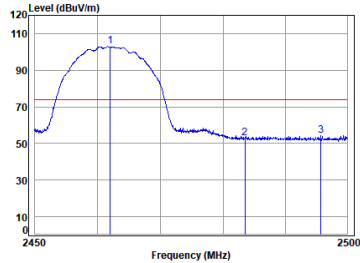


Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2412 Band edge
2.4G WIFI 11b

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over Limit	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2378.016	16.12	29.10	32.79	28.37	40.80	54.00	-13.20	Average	0.00
2	2390.000	16.13	29.10	32.78	27.82	40.27	54.00	-13.73	Average	0.00
3 q	2412.000	16.17	29.05	32.77	78.18	90.63	54.00	36.63	Average	0.00



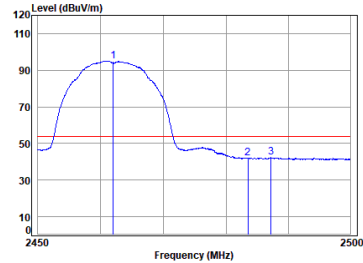
11b_TX_CH_11_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2462 Band edge
: 2.4G WIFI 11b

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 p 2462.000	16.24	28.90	32.74	90.55	102.95	74.00	28.95	Peak	0.00
2 2483.500	16.28	28.90	32.73	40.55	53.00	74.00	-21.00	Peak	0.00
3 2495.761	16.29	28.90	32.73	41.80	54.26	74.00	-19.74	Peak	0.00

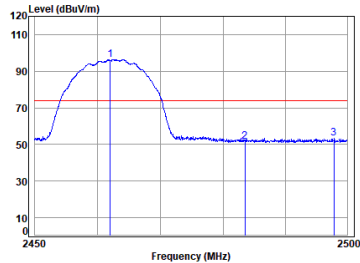
11b_TX_CH_11_Horizontal-Avg



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2462 Band edge
: 2.4G WIFI 11b

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 q 2462.000	16.24	28.90	32.74	82.72	95.12	54.00	41.12	Average	0.00
2 2483.500	16.28	28.90	32.73	29.45	41.90	54.00	-12.10	Average	0.00
3 2487.254	16.28	28.90	32.73	29.90	42.35	54.00	-11.65	Average	0.00

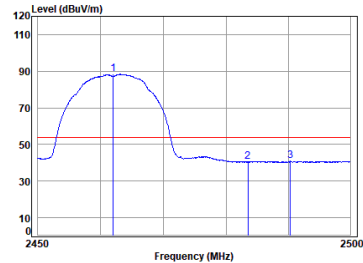
11b_TX_CH_11_Vertical-Peak



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2462 Band edge
: 2.4G WIFI 11b

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 p 2462.000	16.24	28.90	32.74	83.92	96.32	74.00	22.32	Peak	0.00
2 2483.500	16.28	28.90	32.73	39.10	51.55	74.00	-22.45	Peak	0.00
3 2497.880	16.30	28.90	32.73	40.85	53.32	74.00	-20.68	Peak	0.00

11b_TX_CH_11_Vertical-Avg

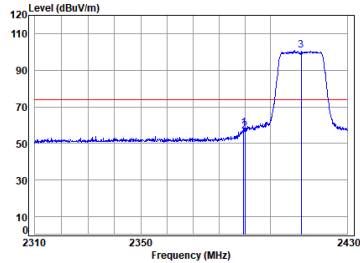


Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2462 Band edge
: 2.4G WIFI 11b

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 q 2462.000	16.24	28.90	32.74	75.94	88.34	54.00	34.34	Average	0.00
2 2483.500	16.28	28.90	32.73	28.05	40.50	54.00	-13.50	Average	0.00
3 2490.322	16.29	28.90	32.73	28.40	40.86	54.00	-13.14	Average	0.00



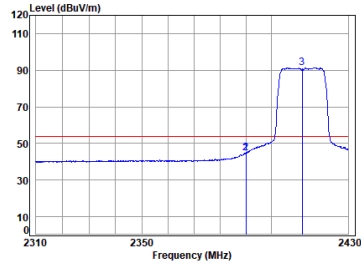
11n_HT(20M)_TX_CH_01_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2412 Band edge
2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2389.605	16.13	29.10	32.78	45.96	58.41	74.00	-15.59	Peak	0.00
2	2390.000	16.13	29.10	32.78	43.98	56.43	74.00	-17.57	Peak	0.00
3 p	2412.000	16.17	29.05	32.77	88.46	100.91	74.00	26.91	Peak	0.00

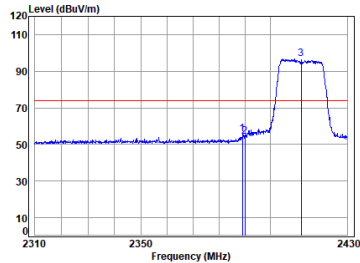
11n_HT(20M)_TX_CH_01_Horizontal-Avg



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2412 Band edge
2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2389.968	16.13	29.10	32.78	32.31	44.76	54.00	-9.24	Average	0.00
2	2390.000	16.13	29.10	32.78	32.31	44.76	54.00	-9.24	Average	0.00
3 q	2412.000	16.17	29.05	32.77	78.93	91.38	54.00	37.38	Average	0.00

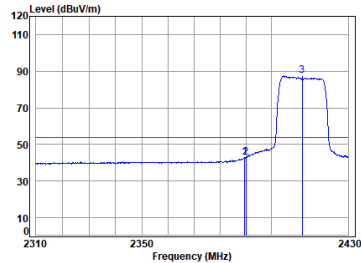
11n_HT(20M)_TX_CH_01_Vertical-Peak



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2412 Band edge
2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2389.121	16.13	29.10	32.78	43.12	55.57	74.00	-18.43	Peak	0.00
2	2390.000	16.13	29.10	32.78	41.95	54.40	74.00	-19.60	Peak	0.00
3 p	2412.000	16.17	29.05	32.77	84.17	96.62	74.00	22.62	Peak	0.00

11n_HT(20M)_TX_CH_01_Vertical-Avg

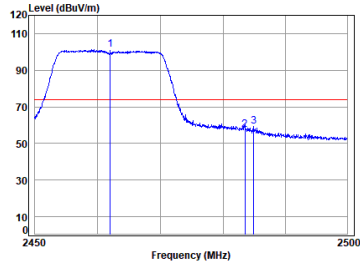


Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2412 Band edge
2.4G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2389.605	16.13	29.10	32.78	30.48	42.93	54.00	-11.07	Average	0.00
2	2390.000	16.13	29.10	32.78	30.31	42.76	54.00	-11.24	Average	0.00
3 q	2412.000	16.17	29.05	32.77	74.93	87.38	54.00	33.38	Average	0.00



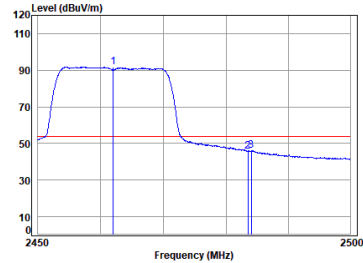
11n_HT(20M)_TX_CH_11_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2462 Band edge
2.4G WIFI 11N20

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 p 2462.000	16.24	28.90	32.74	89.02	101.42	74.00	27.42	Peak	0.00
2 2483.500	16.28	28.90	32.73	44.88	57.33	74.00	-16.67	Peak	0.00
3 2484.944	16.28	28.90	32.73	47.07	59.52	74.00	-14.48	Peak	0.00

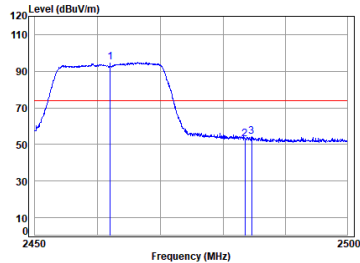
11n_HT(20M)_TX_CH_11_Horizontal-Avg



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2462 Band edge
2.4G WIFI 11N20

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 q 2462.000	16.24	28.90	32.74	79.37	91.77	54.00	37.77	Average	0.00
2 2483.500	16.28	28.90	32.73	33.34	45.79	54.00	-8.21	Average	0.00
3 2484.091	16.28	28.90	32.73	33.60	46.05	54.00	-7.95	Average	0.00

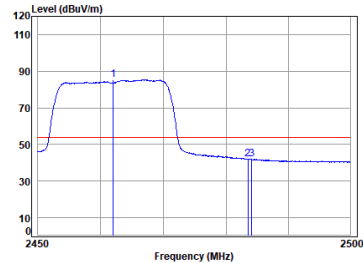
11n_HT(20M)_TX_CH_11_Vertical-Peak



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2462 Band edge
2.4G WIFI 11N20

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 p 2462.000	16.24	28.90	32.74	82.61	95.01	74.00	21.01	Peak	0.00
2 2483.500	16.28	28.90	32.73	40.59	53.04	74.00	-20.96	Peak	0.00
3 2484.593	16.28	28.90	32.73	42.05	54.50	74.00	-19.50	Peak	0.00

11n_HT(20M)_TX_CH_11_Vertical-Avg

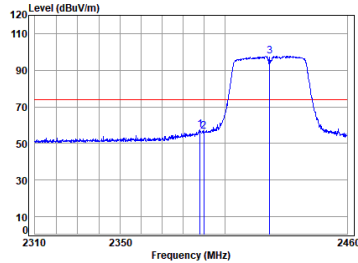


Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2462 Band edge
2.4G WIFI 11N20

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 q 2462.000	16.24	28.90	32.74	72.90	85.30	54.00	31.30	Average	0.00
2 2483.500	16.28	28.90	32.73	29.36	41.81	54.00	-12.19	Average	0.00
3 2484.141	16.28	28.90	32.73	29.60	42.05	54.00	-11.95	Average	0.00



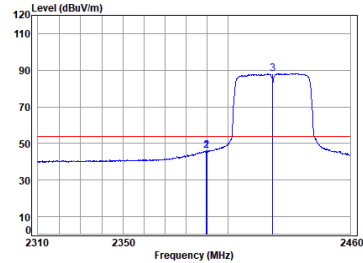
11n_HT(40M)_TX_CH_03_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2422 Band edge
: 2.4G WIFI 11N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2388.174	16.13	29.10	32.78	44.86	57.31	74.00	-16.69	Peak	0.00
2	2390.000	16.13	29.10	32.78	44.09	56.54	74.00	-17.46	Peak	0.00
3 p	2422.000	16.18	29.01	32.76	85.25	97.68	74.00	23.68	Peak	0.00

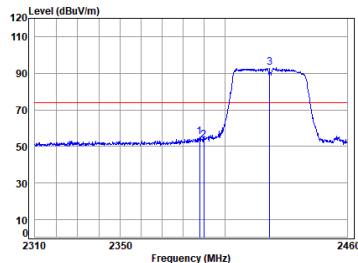
11n_HT(40M)_TX_CH_03_Horizontal-Avg



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2422 Band edge
: 2.4G WIFI 11N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2389.827	16.13	29.10	32.78	33.73	46.18	54.00	-7.82	Average	0.00
2	2390.000	16.13	29.10	32.78	33.65	46.10	54.00	-7.90	Average	0.00
3 q	2422.000	16.18	29.01	32.76	75.82	88.25	54.00	34.25	Average	0.00

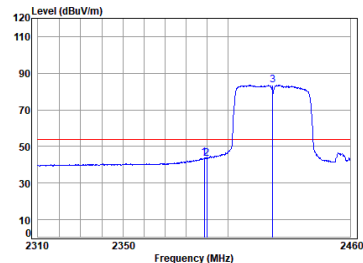
11n_HT(40M)_TX_CH_03_Vertical-Peak



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2422 Band edge
: 2.4G WIFI 11N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2388.023	16.13	29.10	32.78	42.55	55.00	74.00	-19.00	Peak	0.00
2	2390.000	16.13	29.10	32.78	40.96	53.41	74.00	-20.59	Peak	0.00
3 p	2422.000	16.18	29.01	32.76	80.59	93.02	74.00	19.02	Peak	0.00

11n_HT(40M)_TX_CH_03_Vertical-Avg

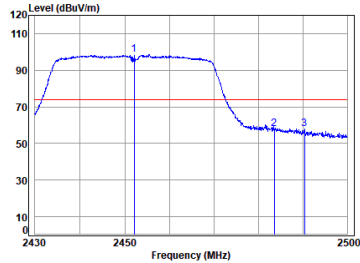


Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2422 Band edge
: 2.4G WIFI 11N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	2388.775	16.13	29.10	32.78	31.33	43.78	54.00	-10.22	Average	0.00
2	2390.000	16.13	29.10	32.78	30.99	43.44	54.00	-10.56	Average	0.00
3 q	2422.000	16.18	29.01	32.76	71.03	83.46	54.00	29.46	Average	0.00



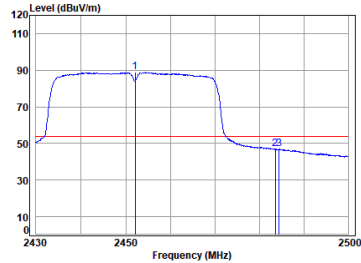
11n_HT(40M)_TX_CH_09_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2452 Band edge
2.4G WIFI 11N40

Freq	Cable Loss	Ant Factor	Preamp	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 p 2452.000	16.23	28.90	32.75	86.03	98.41	74.00	24.41	Peak	0.00
2 2483.500	16.28	28.90	32.73	45.30	57.75	74.00	-16.25	Peak	0.00
3 2490.292	16.29	28.90	32.73	45.67	58.13	74.00	-15.87	Peak	0.00

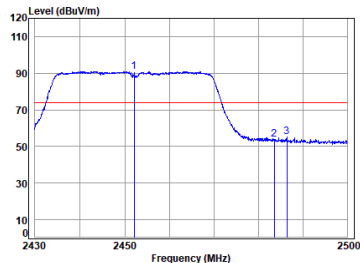
11n_HT(40M)_TX_CH_09_Horizontal-Avg



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2452 Band edge
2.4G WIFI 11N40

Freq	Cable Loss	Ant Factor	Preamp	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 q 2452.000	16.23	28.90	32.75	76.37	88.75	54.00	34.75	Average	0.00
2 2483.500	16.28	28.90	32.73	34.42	46.87	54.00	-7.13	Average	0.00
3 2484.358	16.28	28.90	32.73	34.58	47.03	54.00	-6.97	Average	0.00

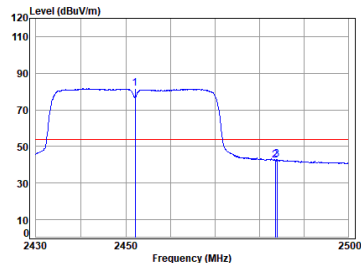
11n_HT(40M)_TX_CH_09_Vertical-Peak



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2452 Band edge
2.4G WIFI 11N40

Freq	Cable Loss	Ant Factor	Preamp	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 p 2452.000	16.23	28.90	32.75	78.55	90.93	74.00	16.93	Peak	0.00
2 2483.500	16.28	28.90	32.73	41.19	53.64	74.00	-20.36	Peak	0.00
3 2486.335	16.28	28.90	32.73	42.77	55.22	74.00	-18.78	Peak	0.00

11n_HT(40M)_TX_CH_09_Vertical-Avg



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2452 Band edge
2.4G WIFI 11N40

Freq	Cable Loss	Ant Factor	Preamp	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 q 2452.000	16.23	28.90	32.75	69.15	81.53	54.00	27.53	Average	0.00
2 2483.500	16.28	28.90	32.73	29.86	42.31	54.00	-11.69	Average	0.00
3 2483.865	16.28	28.90	32.73	30.30	42.75	54.00	-11.25	Average	0.00



7.3 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209
 Test Method: ANSI C63.10 (2020) Section 6.4,6.5
 Measurement Distance: 3m
 Test Engineer: Kaito Zeng

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

Note

1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

2. At frequencies below 1GHz, measurements may be performed at a distance different to specified in the regulations.

Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor+ Aux Factor (if applicable)

The aux factor needs to be added when measurements are performed at a distance other than the limit distance provided.

EX. Below 30MHz, Aux Factor = 40 dB/decade of distance, the aux factor is $40\log(3/300) = -80\text{dB}$ (for 3m test distance).

EX. Above 30MHz, Aux Factor = 20 dB/decade of distance, the aux factor is $20\log(10/3) = 10.46\text{dB}$ (for 10m test distance).

7.3.1 E.U.T. Operation

Operating Environment:

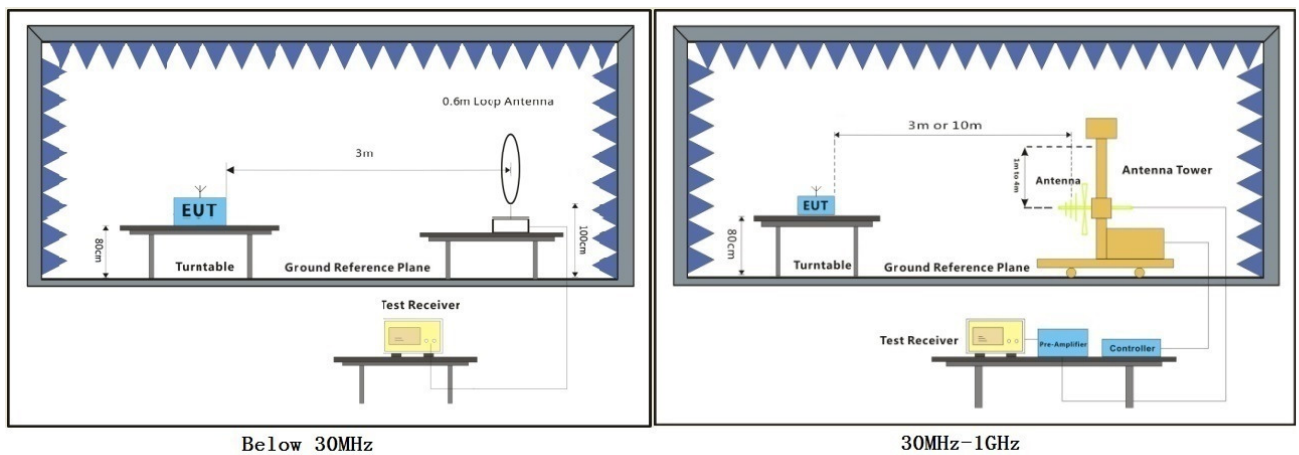
Temperature: 23.3 °C Humidity: 45.6 % RH Atmospheric Pressure: 1010 mbar



7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT(LAP-P201S-WUS with motor 1) 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 @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report(powered by adapter 1).

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

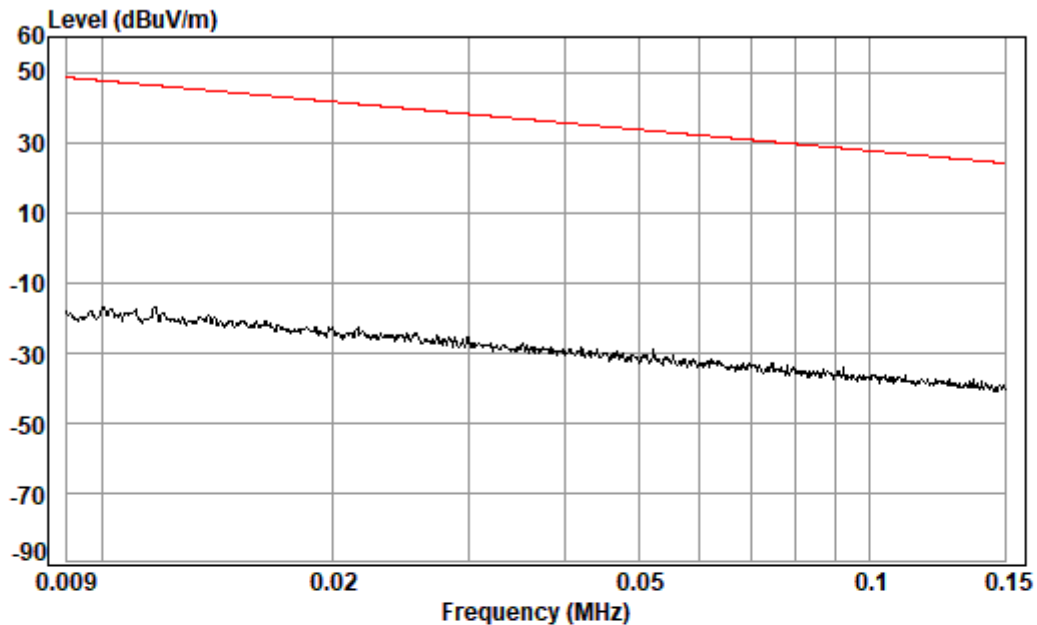
- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8m above the ground at a semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3m or 10m away from the interference-receiving antenna, which was mounted on the variable-height antenna tower.
- c. The antenna height is varied from 1m to 4m 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 1m to 4m (for the test frequency of below 30MHz, the antenna was tuned to heights 1m) 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 quasi-peak 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. 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 below 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.
2. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the worst-case test curve is displayed.



Test Mode: 02; Polarity: Coaxial



Condition: 3m

Job No. : 00761HS

Test Mode: 02

: coaxial



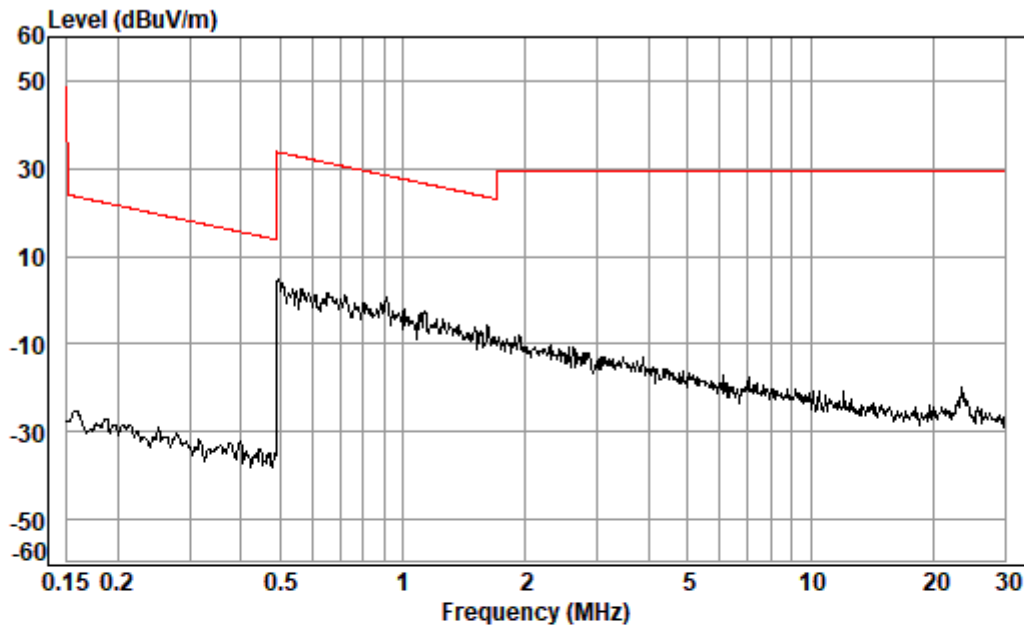
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SZEMC-TRF-01 Rev. A/2

Report No.: SZCR260300076103

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Test Mode: 02; Polarity: Coaxial



Condition: 3m

Job No. : 00761HS

Test Mode: 02

: coaxial



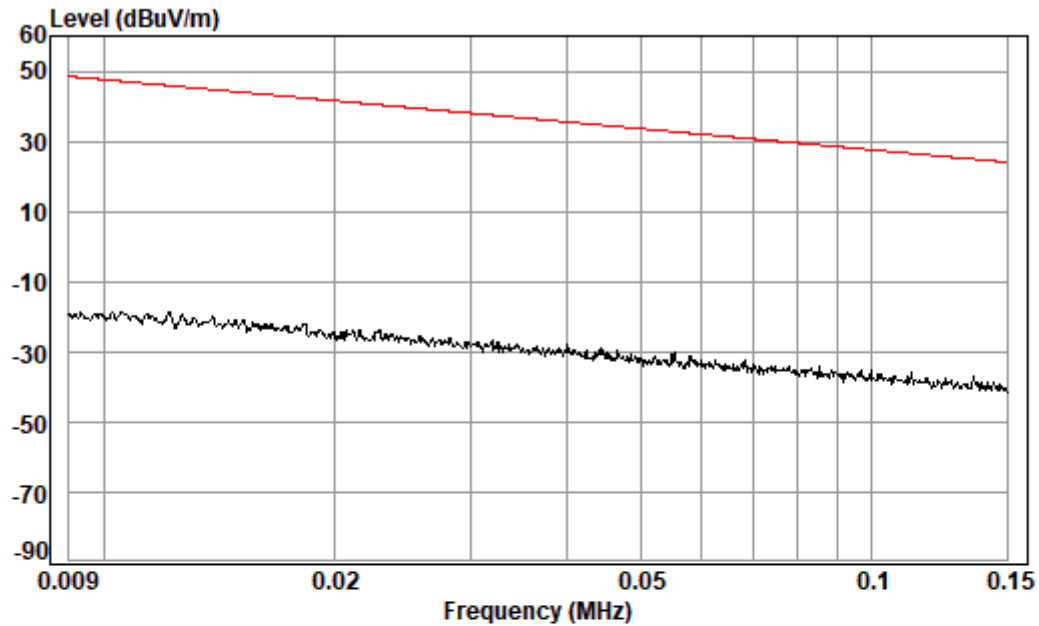
SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing Center Laboratory

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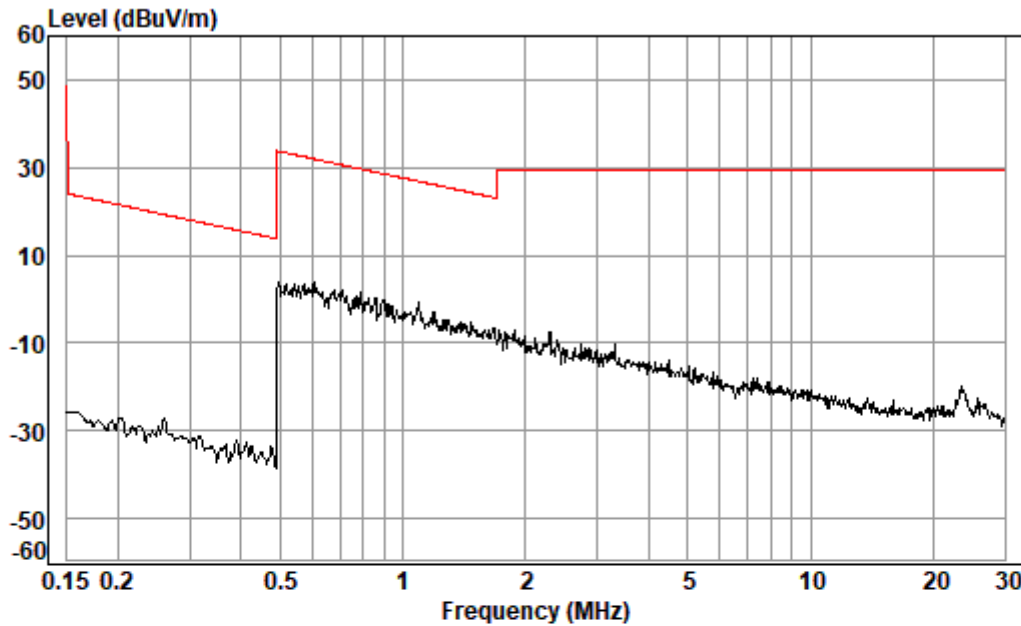
Test Mode: 02; Polarity: Coplanar



Condition: 3m
Job No. : 00761HS
Test Mode: 02
: coplanar



Test Mode: 02; Polarity: Coplanar



Condition: 3m

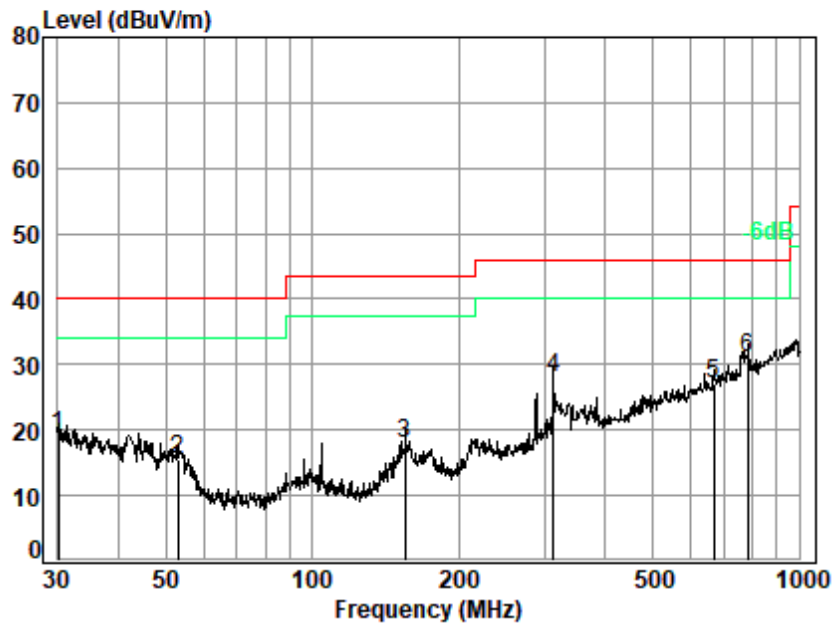
Job No. : 00761HS

Test Mode: 02

: coplanar



Test Mode: 02; Polarity: Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No. : 00761HS/00762HS
Test Mode: 02

	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	30.105	21.40	0.74	27.65	24.57	19.06	40.00	-20.94 QP
2	52.945	12.45	0.91	27.63	29.84	15.57	40.00	-24.43 QP
3	155.364	13.93	1.53	27.73	30.29	18.02	43.50	-25.48 QP
4	312.179	18.39	2.16	27.53	34.88	27.90	46.00	-18.10 QP
5	668.142	25.29	3.32	27.91	26.37	27.07	46.00	-18.93 QP
6 q	785.093	27.79	3.65	27.63	27.24	31.05	46.00	-14.95 QP



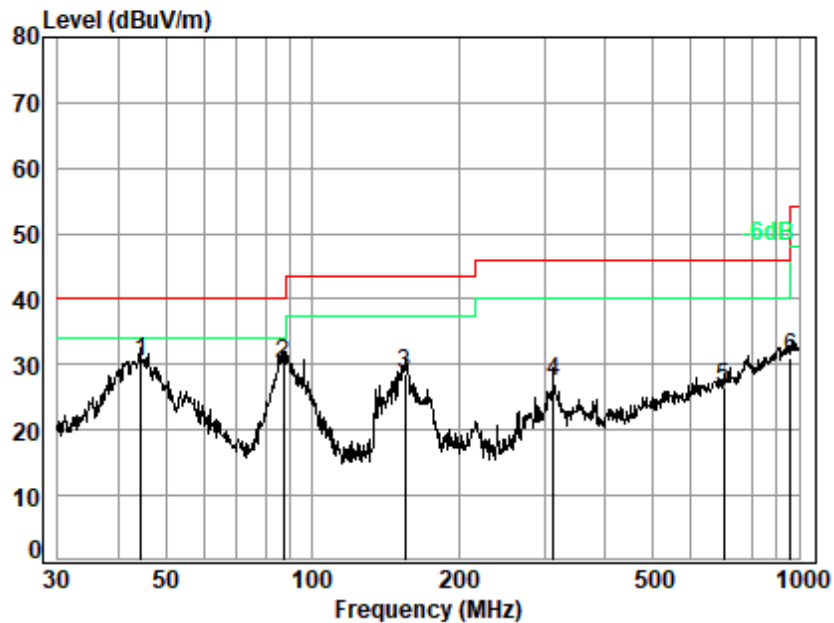
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Test Mode: 02; Polarity: Vertical



Site : chamber

Condition: 3m VERTICAL

Job No. : 00761HS/00762HS

Test Mode: 02

		Ant	Cable	Preamp	Read	Limit	Over	
	Freq	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB
1	q	44.431	14.55	0.86	27.64	42.76	30.53	40.00 -9.47 QP
2		87.112	11.50	1.16	27.61	44.94	29.99	40.00 -10.01 QP
3		154.821	13.91	1.52	27.73	40.97	28.67	43.50 -14.83 QP
4		312.179	18.39	2.16	27.53	34.34	27.36	46.00 -18.64 QP
5		699.305	25.89	3.41	27.83	25.06	26.53	46.00 -19.47 QP
6		958.794	29.31	4.09	26.63	24.13	30.90	46.00 -15.10 QP



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

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

SZEMC-TRF-01 Rev. A/2

Report No.: SZCR260300076103

Page: 35 of 102

7.4 Radiated Spurious Emissions Above 1GHz

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

Test Method: ANSI C63.10 (2020) Section 6.6 & 11.12

Measurement Distance: 1-18GHz: 3m; Above 18GHz: 1m

Test Engineer: Logic Wang

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

Note:

At Above 18GHz, measurements may be performed at a distance shorter than that specified in the regulations

Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor+ Aux Factor (if applicable)

The aux factor needs to be added when measurements are performed at a distance other than the limit distance provided.

EX. Above 18GHz, Aux Factor = 20 dB/decade of distance, the aux factor is $20\log(1/3) = -9.54\text{dB}$ (for 1m test distance).

7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 23.5 °C

Humidity: 56.3 % RH

Atmospheric Pressure: 1020 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT(LAP-P201S-WUS with motor 1) 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 @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report(powered by adapter 1).



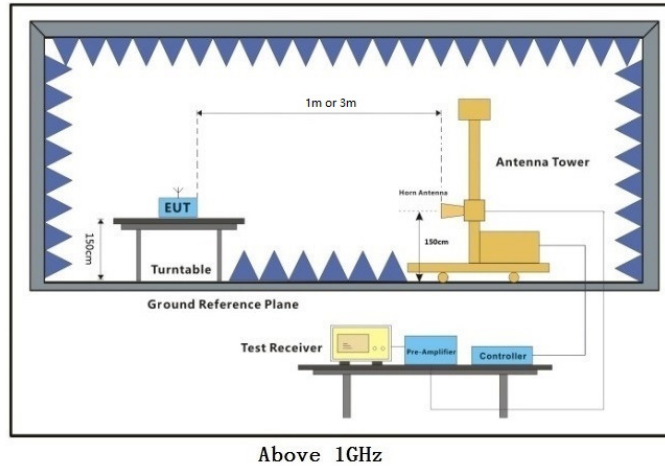
SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Inspection & Testing Services Laboratory

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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

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

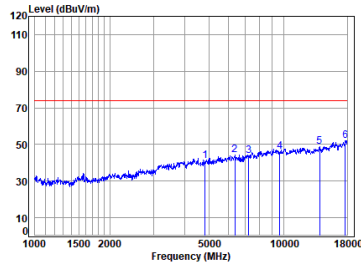
- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5m above the ground at a 3m fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3m away from the interference-receiving antenna from 1GHz to 18GHz, and 1m away from the interference-receiving antenna above 18GHz.
- b. The interference-receiving antenna was mounted on the variable-height antenna tower, with its boresight facing the EUT throughout the test.
- c. The antenna height is varied from 1m to 4m 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 1m to 4m 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. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- g. 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.
- h. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Scan from 1GHz to 10th harmonic of the highest frequency or 40 GHz, whichever is lower.
2. 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.
3. For the frequency above 18GHz, testing had been executed under all test modes, only the worst-case test curve is displayed in the report.
4. For devices with multiple operating modes, measurements on the middle channel is used to determine the worst-case mode(s). Only the worst-case mode with the highest output power and the mode with the highest output power spectral density for each modulation family (e.g., OFDM and direct sequence spread spectrum) is recorded in the test report.



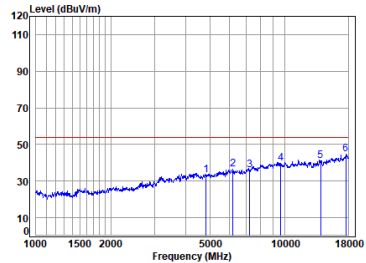
11b_TX_CH_01_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2412 TX RSE
2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	4824.000	7.43	34.40	54.22	53.52	41.13	74.00	-32.87	Peak	0.00
2	6358.789	8.89	34.95	53.14	53.73	44.43	74.00	-29.57	Peak	0.00
3	7236.000	8.49	35.70	53.18	52.83	43.84	74.00	-30.16	Peak	0.00
4	9648.000	10.72	37.50	53.34	51.22	46.10	74.00	-27.90	Peak	0.00
5	13957.530	10.97	39.62	52.91	51.01	48.69	74.00	-25.31	Peak	0.00
6	p17690.530	11.32	43.78	52.55	49.59	52.14	74.00	-21.86	Peak	0.00

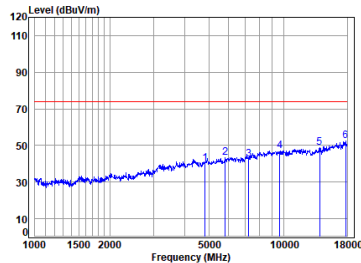
11b_TX_CH_01_Horizontal-Avg



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2412 TX RSE
2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	4824.000	7.43	34.40	54.22	45.83	33.44	54.00	-20.56	Average	0.00
2	6195.508	8.91	34.72	53.12	45.82	36.33	54.00	-17.67	Average	0.00
3	7236.000	8.49	35.70	53.18	45.15	36.16	54.00	-17.84	Average	0.00
4	9648.000	10.72	37.50	53.34	44.96	39.84	54.00	-14.16	Average	0.00
5	13957.530	10.97	39.62	52.91	43.28	40.96	54.00	-13.04	Average	0.00
6	q17639.470	11.28	43.68	52.58	42.43	44.81	54.00	-9.19	Average	0.00

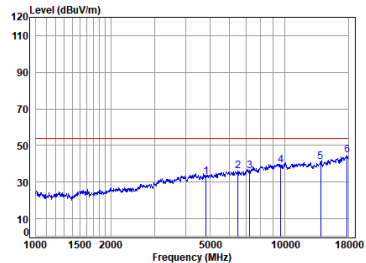
11b_TX_CH_01_Vertical-Peak



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2412 TX RSE
2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	4824.000	7.43	34.40	54.22	52.56	40.17	74.00	-33.83	Peak	0.00
2	5813.812	8.65	34.33	53.29	53.83	43.52	74.00	-30.48	Peak	0.00
3	7236.000	8.49	35.70	53.18	51.43	42.44	74.00	-31.56	Peak	0.00
4	9648.000	10.72	37.50	53.34	52.13	47.01	74.00	-26.99	Peak	0.00
5	13957.530	10.97	39.62	52.91	51.20	48.88	74.00	-25.12	Peak	0.00
6	p17741.740	11.35	43.84	52.53	49.83	52.49	74.00	-21.51	Peak	0.00

11b_TX_CH_01_Vertical-Avg

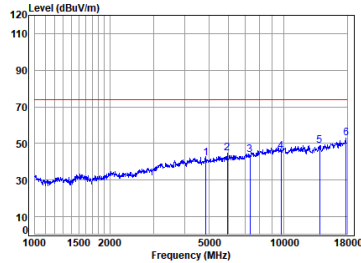


Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2412 TX RSE
2.4G WIFI 11B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark	Aux Factor
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1	4824.000	7.43	34.40	54.22	45.42	33.03	54.00	-20.97	Average	0.00
2	6488.754	8.88	35.58	53.15	44.54	35.85	54.00	-18.15	Average	0.00
3	7236.000	8.49	35.70	53.18	45.22	36.23	54.00	-17.77	Average	0.00
4	9648.000	10.72	37.50	53.34	44.51	39.39	54.00	-14.61	Average	0.00
5	13957.530	10.97	39.62	52.91	43.43	41.11	54.00	-12.89	Average	0.00
6	q17844.590	11.41	43.90	52.48	42.00	44.83	54.00	-9.17	Average	0.00



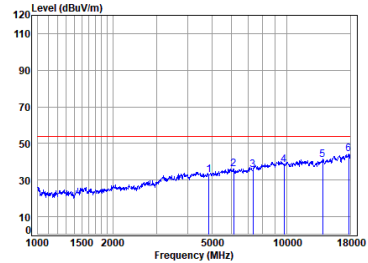
11b_TX_CH_06_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2437 TX RSE
: 2.4G WIFI 11B

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4874.000	7.47	34.60	54.21	54.30	42.16	74.00	-31.84	Peak	0.00
2 5932.638	8.83	34.67	53.17	54.21	44.54	74.00	-29.46	Peak	0.00
3 7311.000	8.47	35.70	53.17	52.65	43.65	74.00	-30.35	Peak	0.00
4 9748.000	10.69	37.40	53.30	50.71	45.50	74.00	-28.50	Peak	0.00
5 13957.530	10.97	39.62	52.91	50.94	46.62	74.00	-25.38	Peak	0.00
6 p17795.090	11.38	43.89	52.50	49.94	52.71	74.00	-21.29	Peak	0.00

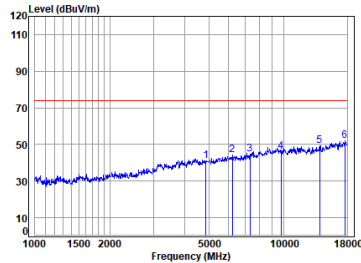
11b_TX_CH_06_Horizontal-Avg



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2437 TX RSE
: 2.4G WIFI 11B

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4874.000	7.47	34.60	54.21	45.07	32.93	54.00	-21.07	Average	0.00
2 6124.292	8.92	35.00	53.11	45.35	36.16	54.00	-17.84	Average	0.00
3 7311.000	8.47	35.70	53.17	44.73	35.73	54.00	-18.27	Average	0.00
4 9748.000	10.69	37.40	53.30	43.51	38.30	54.00	-15.70	Average	0.00
5 13957.530	10.97	39.62	52.91	43.51	41.19	54.00	-12.81	Average	0.00
6 q17741.740	11.35	43.84	52.53	41.64	44.30	54.00	-9.70	Average	0.00

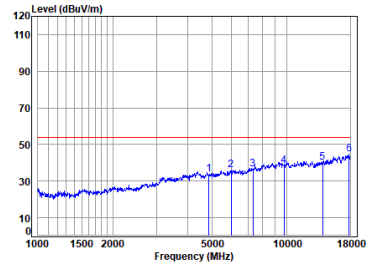
11b_TX_CH_06_Vertical-Peak



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2437 TX RSE
: 2.4G WIFI 11B

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4874.000	7.47	34.60	54.21	53.18	41.04	74.00	-32.96	Peak	0.00
2 6213.441	8.91	34.75	53.12	53.89	44.43	74.00	-29.57	Peak	0.00
3 7311.000	8.47	35.70	53.17	53.55	44.55	74.00	-29.45	Peak	0.00
4 9748.000	10.69	37.40	53.30	51.21	46.00	74.00	-28.00	Peak	0.00
5 13957.530	10.97	39.62	52.91	51.40	49.08	74.00	-24.92	Peak	0.00
6 p17639.470	11.28	43.68	52.58	49.71	52.09	74.00	-21.91	Peak	0.00

11b_TX_CH_06_Vertical-Avg

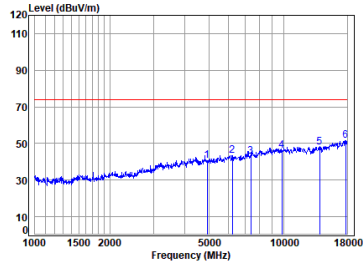


Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2437 TX RSE
: 2.4G WIFI 11B

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4874.000	7.47	34.60	54.21	45.87	33.73	54.00	-20.27	Average	0.00
2 5984.305	8.91	34.84	53.12	45.55	36.18	54.00	-17.82	Average	0.00
3 7311.000	8.47	35.70	53.17	45.67	36.67	54.00	-17.33	Average	0.00
4 9748.000	10.69	37.40	53.30	43.37	38.16	54.00	-15.84	Average	0.00
5 13957.530	10.97	39.62	52.91	42.64	40.32	54.00	-13.68	Average	0.00
6 q17793.090	11.38	43.89	52.50	42.07	44.04	54.00	-9.96	Average	0.00



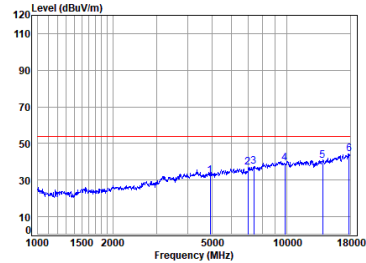
11b_TX_CH_11_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2462 TX RSE
2.4G WIFI 11B

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4924.000	7.50	34.65	54.21	52.62	40.56	74.00	-33.44	Peak	0.00
2 6213.441	8.91	34.75	53.12	52.85	43.39	74.00	-30.61	Peak	0.00
3 7386.000	8.44	35.77	53.16	51.89	42.94	74.00	-31.06	Peak	0.00
4 9848.000	10.66	37.20	53.26	51.39	45.99	74.00	-28.01	Peak	0.00
5 13957.530	10.97	39.62	52.91	50.37	48.05	74.00	-25.95	Peak	0.00
6 p17741.740	11.35	43.04	52.53	49.03	51.69	74.00	-22.31	Peak	0.00

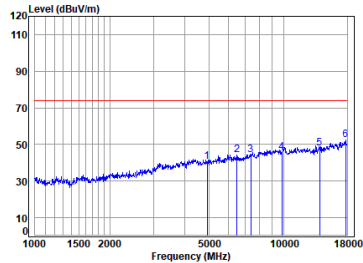
11b_TX_CH_11_Horizontal-Avg



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2462 TX RSE
2.4G WIFI 11B

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4924.000	7.50	34.65	54.21	44.34	32.28	54.00	-21.72	Average	0.00
2 6995.172	8.56	35.71	53.20	46.04	37.11	54.00	-16.89	Average	0.00
3 7386.000	8.44	35.77	53.16	46.36	37.41	54.00	-16.59	Average	0.00
4 9848.000	10.66	37.20	53.26	44.70	39.30	54.00	-14.70	Average	0.00
5 13957.530	10.97	39.62	52.91	43.09	40.77	54.00	-13.23	Average	0.00
6 q17844.590	11.41	43.90	52.48	41.60	44.43	54.00	-9.57	Average	0.00

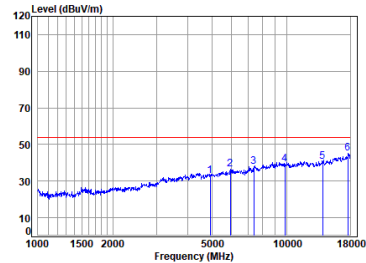
11b_TX_CH_11_Vertical-Peak



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2462 TX RSE
2.4G WIFI 11B

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4924.000	7.50	34.65	54.21	52.73	40.67	74.00	-33.33	Peak	0.00
2 6488.754	8.88	35.58	53.15	53.14	44.45	74.00	-29.55	Peak	0.00
3 7386.000	8.44	35.77	53.16	53.20	44.25	74.00	-29.75	Peak	0.00
4 9848.000	10.66	37.20	53.26	51.21	45.81	74.00	-28.19	Peak	0.00
5 13957.530	10.97	39.62	52.91	50.40	48.08	74.00	-25.92	Peak	0.00
6 p17741.740	11.35	43.04	52.53	49.68	52.26	74.00	-21.74	Peak	0.00

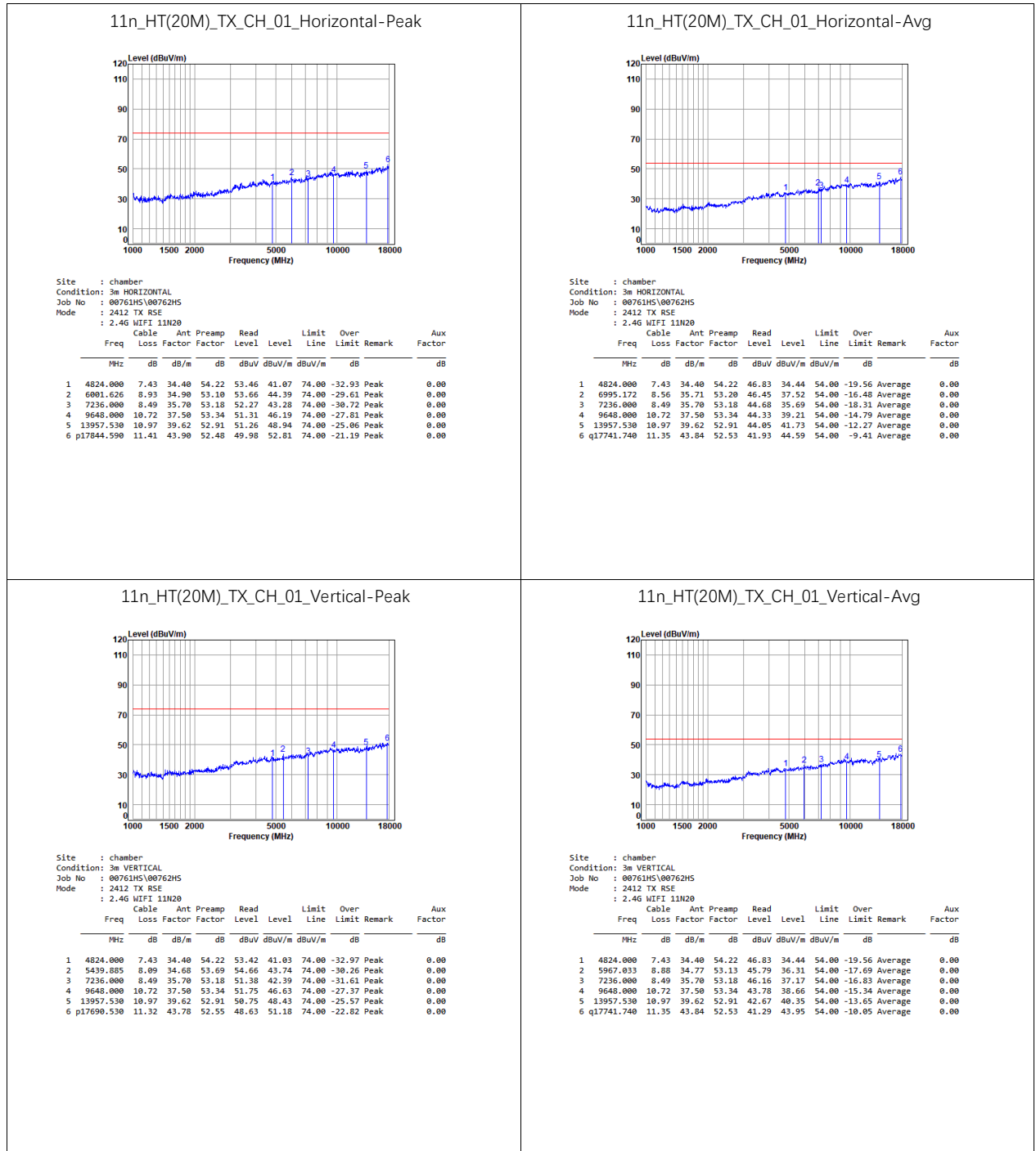
11b_TX_CH_11_Vertical-Avg



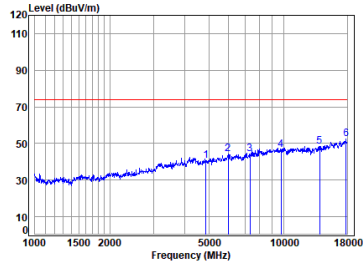
Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2462 TX RSE
2.4G WIFI 11B

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4924.000	7.50	34.65	54.21	45.05	32.99	54.00	-21.01	Average	0.00
2 5932.638	8.83	34.67	53.17	46.15	36.48	54.00	-17.52	Average	0.00
3 7386.000	8.44	35.77	53.16	46.60	37.65	54.00	-16.35	Average	0.00
4 9848.000	10.66	37.20	53.26	44.58	39.18	54.00	-14.82	Average	0.00
5 13957.530	10.97	39.62	52.91	42.92	40.60	54.00	-13.40	Average	0.00
6 q17639.470	11.28	43.68	52.58	42.64	45.02	54.00	-8.98	Average	0.00





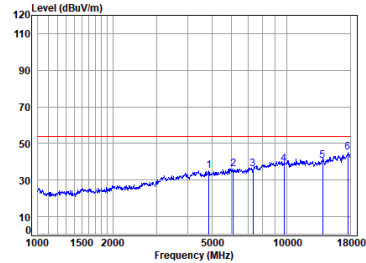
11n_HT(20M)_TX_CH_06_Horizontal-Peak



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2437 TX RSE
: 2.4G WIFI 11N20

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4874.000	7.47	34.60	54.21	52.91	40.77	74.00	-33.23	Peak	0.00
2 5984.305	8.91	34.84	53.12	53.52	44.15	74.00	-29.85	Peak	0.00
3 7311.000	8.47	35.70	53.17	53.14	44.14	74.00	-29.86	Peak	0.00
4 9748.000	10.69	37.40	53.30	51.60	46.39	74.00	-27.61	Peak	0.00
5 13957.530	10.97	39.62	52.91	50.56	48.24	74.00	-25.76	Peak	0.00
6 p17795.090	11.38	43.89	52.50	49.50	52.27	74.00	-21.73	Peak	0.00

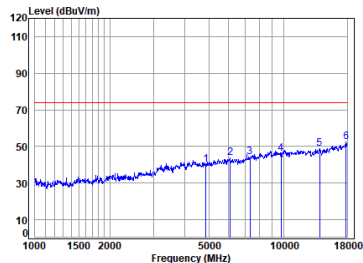
11n_HT(20M)_TX_CH_06_Horizontal-Avg



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2437 TX RSE
: 2.4G WIFI 11N20

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4874.000	7.47	34.60	54.21	47.26	35.12	54.00	-18.88	Average	0.00
2 6106.616	8.92	35.07	53.11	45.37	36.25	54.00	-17.75	Average	0.00
3 7311.000	8.47	35.70	53.17	45.19	36.19	54.00	-17.81	Average	0.00
4 9748.000	10.69	37.40	53.30	43.83	38.62	54.00	-15.38	Average	0.00
5 13957.530	10.97	39.62	52.91	43.13	40.81	54.00	-13.19	Average	0.00
6 q17639.470	11.28	43.68	52.58	42.78	45.16	54.00	-8.84	Average	0.00

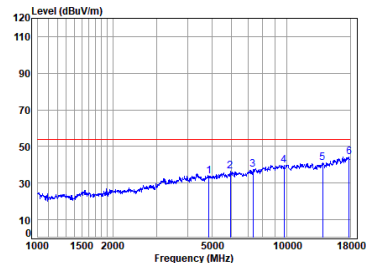
11n_HT(20M)_TX_CH_06_Vertical-Peak



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2437 TX RSE
: 2.4G WIFI 11N20

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4874.000	7.47	34.60	54.21	52.40	40.26	74.00	-33.74	Peak	0.00
2 6088.991	8.92	35.08	53.11	52.83	43.72	74.00	-30.28	Peak	0.00
3 7311.000	8.47	35.70	53.17	53.11	44.11	74.00	-29.89	Peak	0.00
4 9748.000	10.69	37.40	53.30	51.47	46.26	74.00	-27.74	Peak	0.00
5 13957.530	10.97	39.62	52.91	51.29	48.97	74.00	-25.03	Peak	0.00
6 p17844.590	11.41	43.90	52.48	49.48	52.31	74.00	-21.69	Peak	0.00

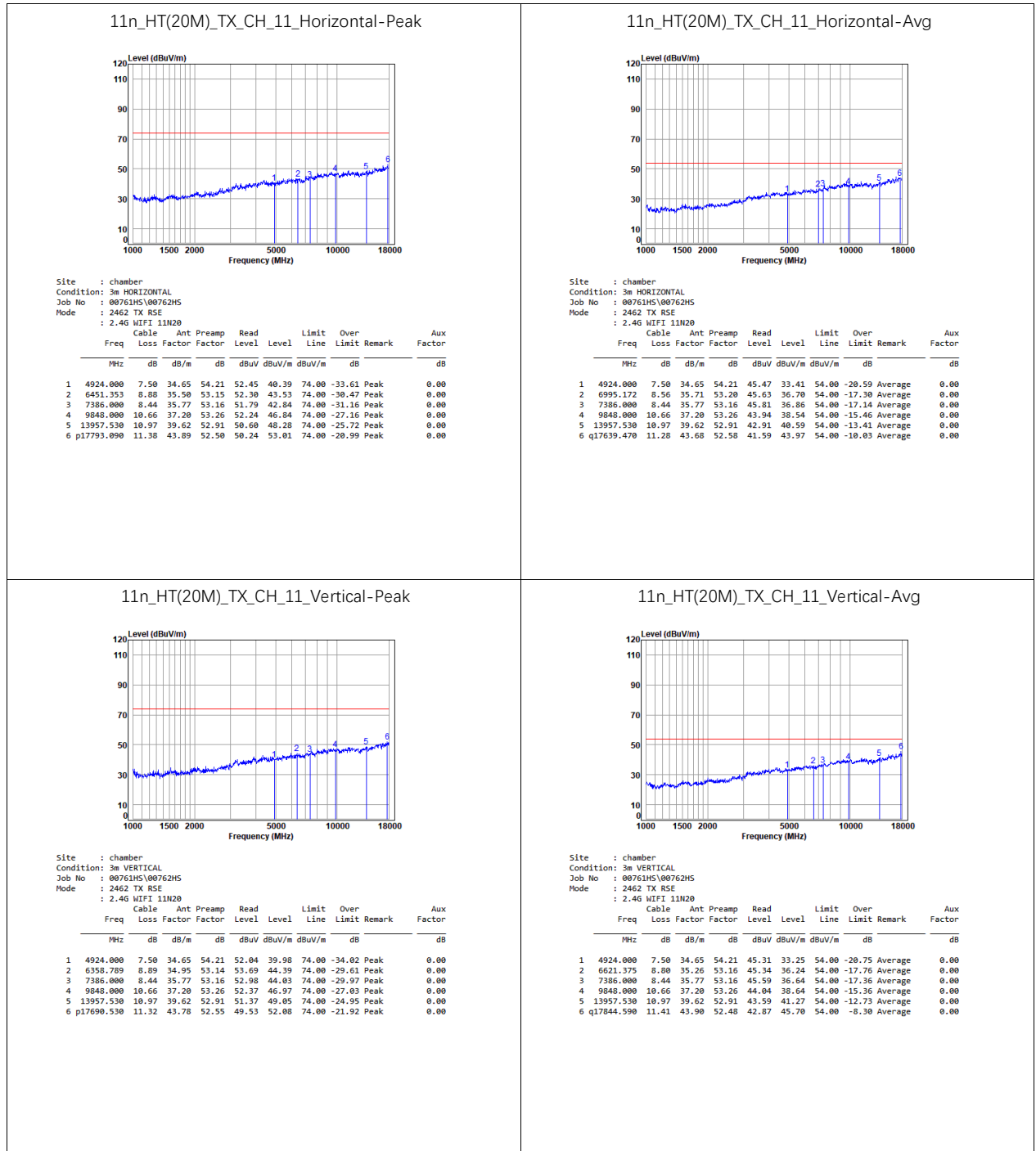
11n_HT(20M)_TX_CH_06_Vertical-Avg

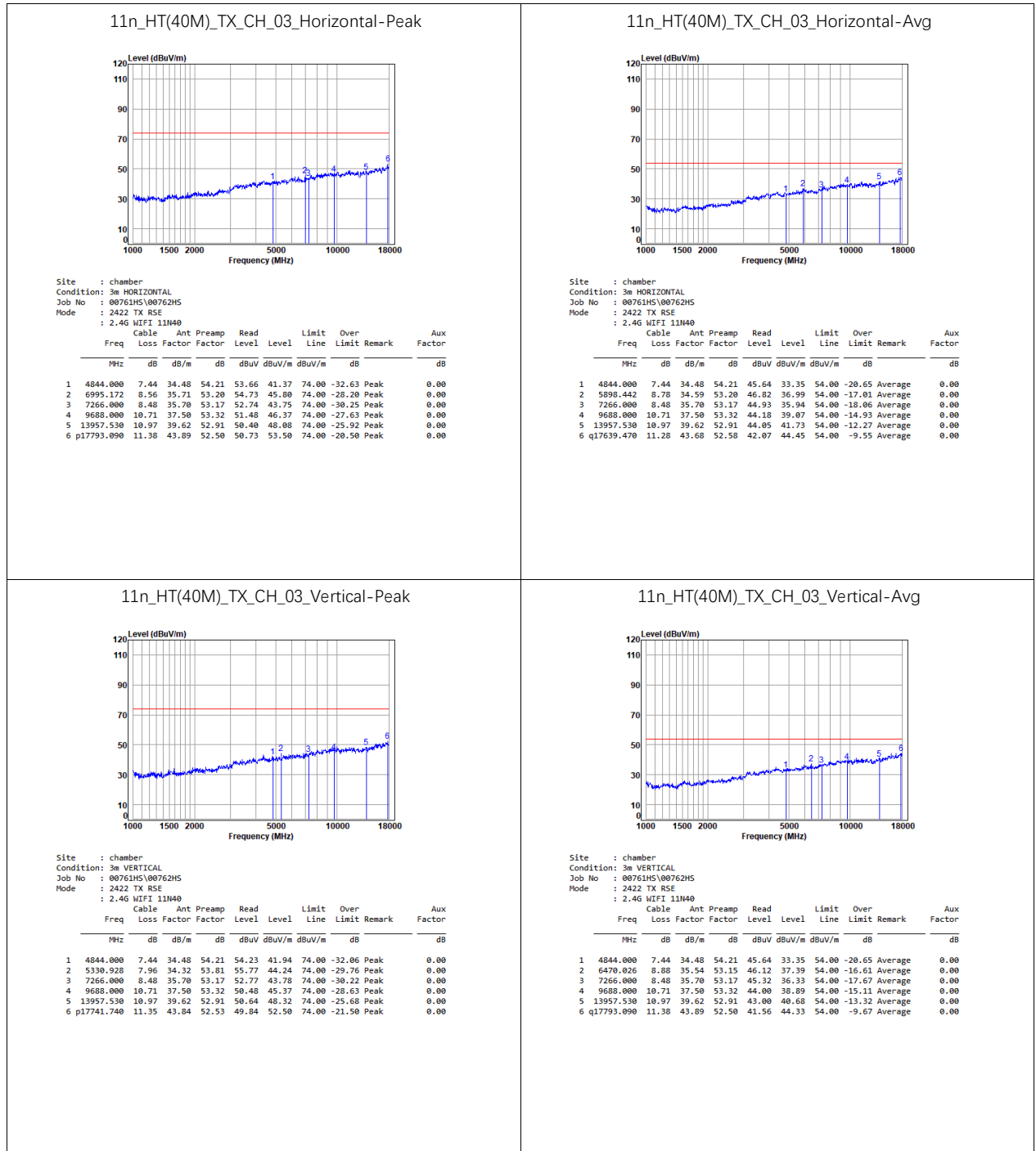


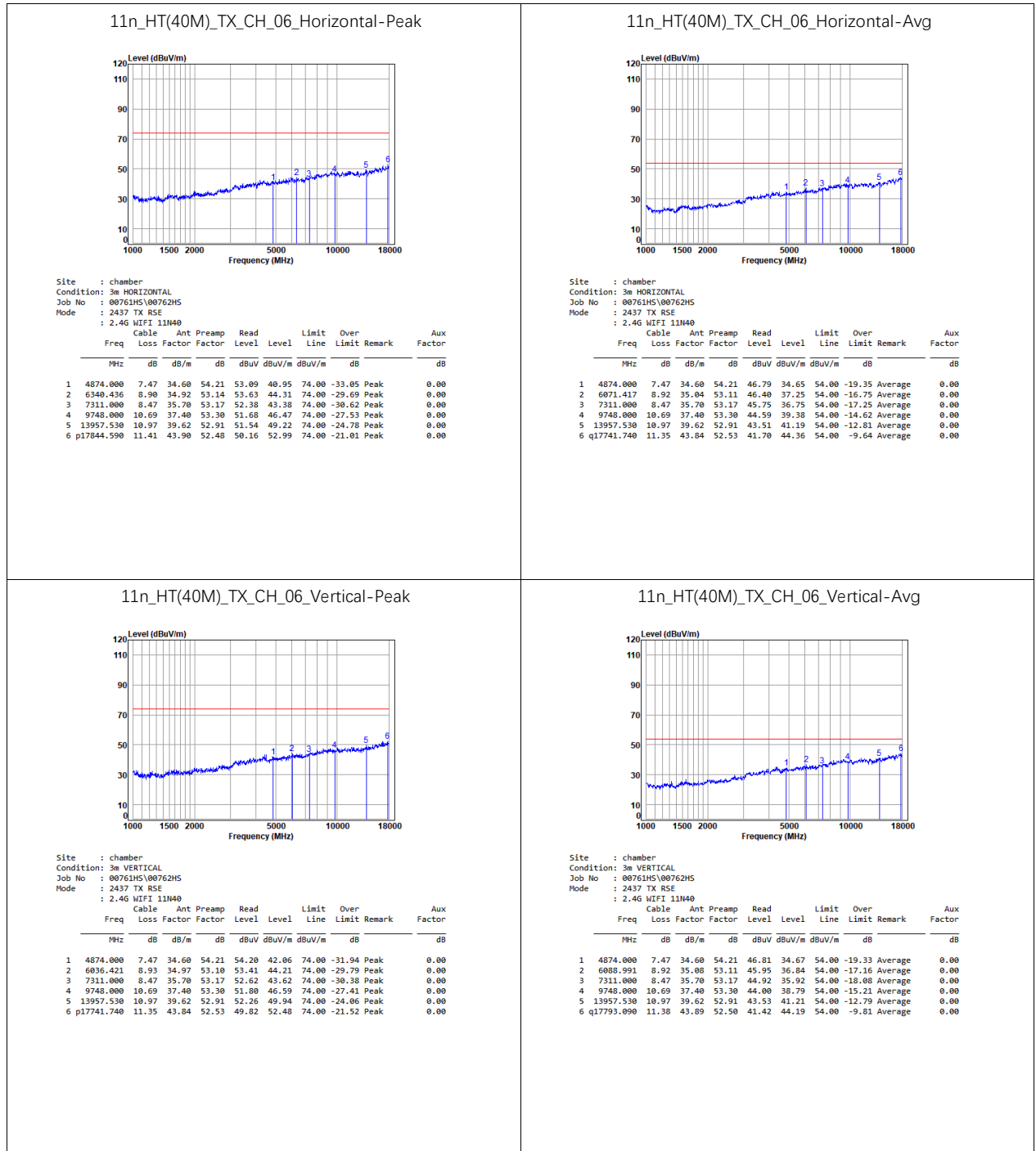
Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2437 TX RSE
: 2.4G WIFI 11N20

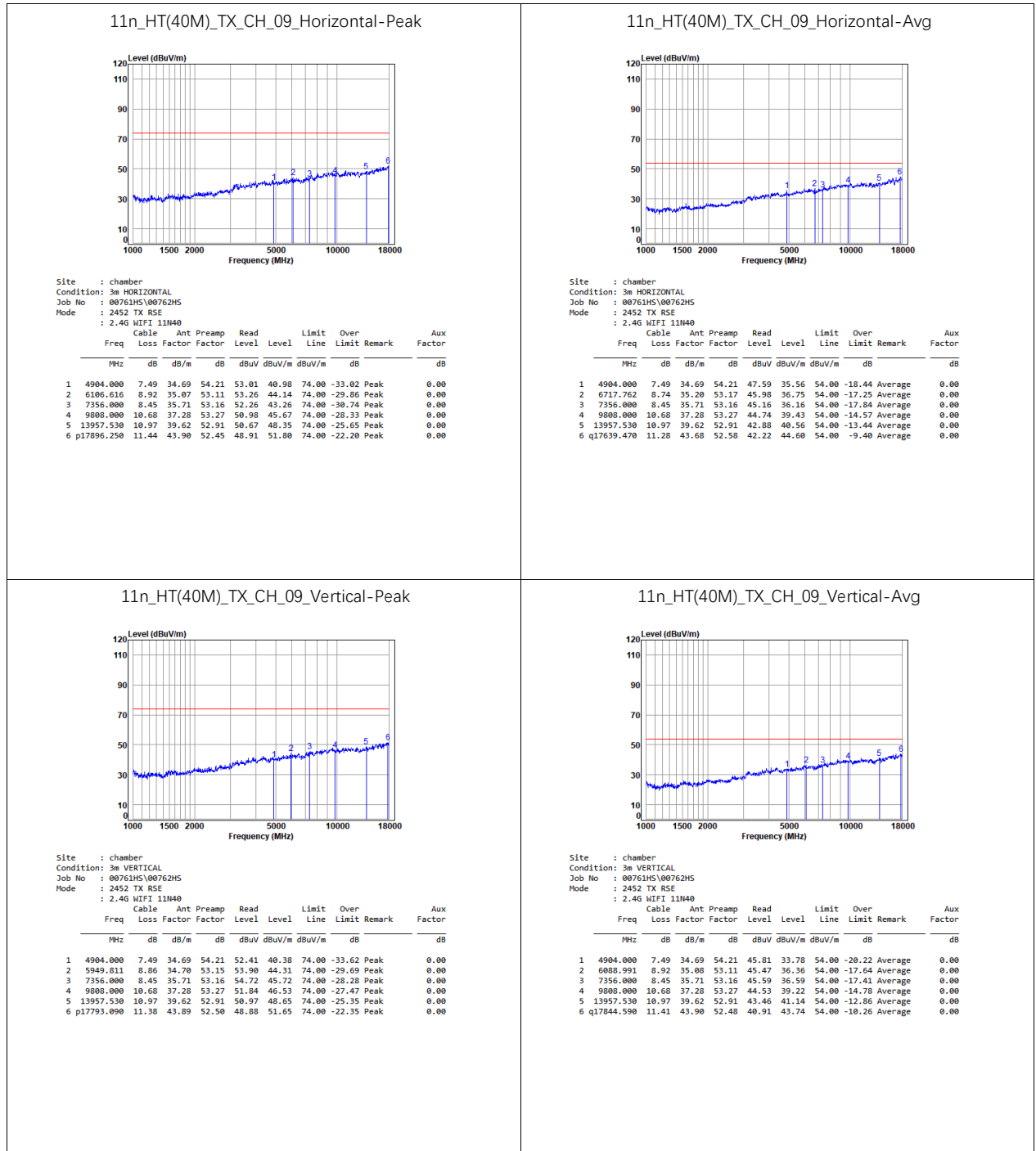
Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 4874.000	7.47	34.60	54.21	45.79	33.65	54.00	-20.35	Average	0.00
2 5932.638	8.83	34.67	53.17	46.24	36.57	54.00	-17.43	Average	0.00
3 7311.000	8.47	35.70	53.17	46.19	37.19	54.00	-16.81	Average	0.00
4 9748.000	10.69	37.40	53.30	45.06	39.85	54.00	-14.15	Average	0.00
5 13957.530	10.97	39.62	52.91	43.50	41.18	54.00	-12.82	Average	0.00
6 q17793.090	11.38	43.89	52.50	41.41	44.18	54.00	-9.82	Average	0.00



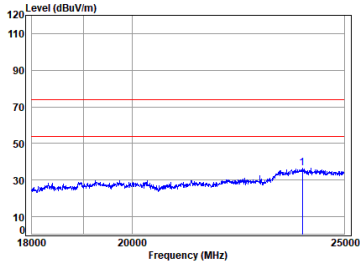








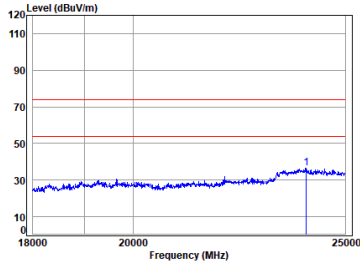
2.4G WIFI_TX_CH_M_Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00761HS\00762HS
Mode : 2437 TX RSE
: 2.4G WIFI 11B

Freq	Cable Loss	Ant Factor	Preamp	Read Level	Level	Limit Line	Over Limit	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 p23923.380	6.78	38.97	50.38	50.68	36.51	74.00	-37.49	Peak	-9.54

2.4G WIFI_TX_CH_M_Vertical



Site : chamber
Condition: 3m VERTICAL
Job No : 00761HS\00762HS
Mode : 2437 TX RSE
: 2.4G WIFI 11B

Freq	Cable Loss	Ant Factor	Preamp	Read Level	Level	Limit Line	Over Limit	Remark	Aux Factor
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		dB
1 p24002.100	6.78	39.00	50.41	50.90	36.73	74.00	-37.27	Peak	-9.54



7.5 Conducted Average Output Power

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

Test Method: ANSI C63.10 (2020) Section 11.9.2

Test Engineer: Linvo Ding

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

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 22.9 °C

Humidity: 52.3 % RH

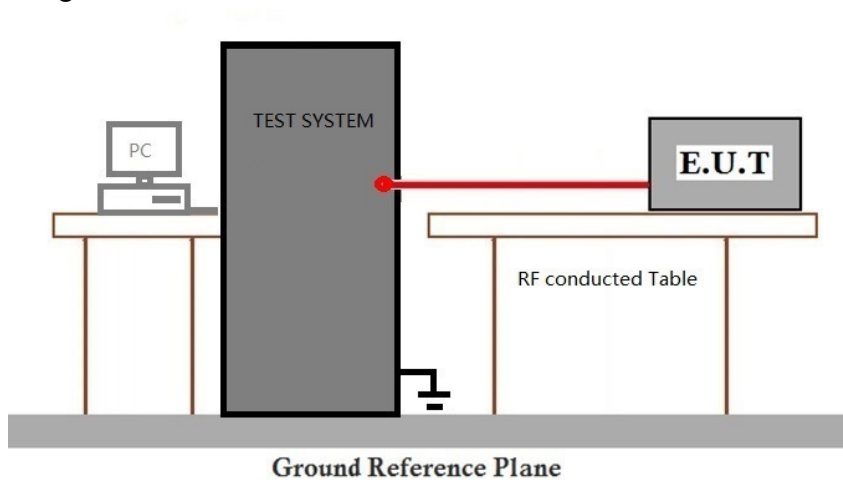
Atmospheric Pressure: 1020 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT(LAP-P201S-WUS with motor 1) 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 @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report(powerd by adapter 1).



7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details



7.6 Minimum 6dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.247a(2)
 Test Method: ANSI C63.10 (2020) Section 11.8.1
 Test Engineer: Linvo Ding

Limit:
 ≥500 kHz

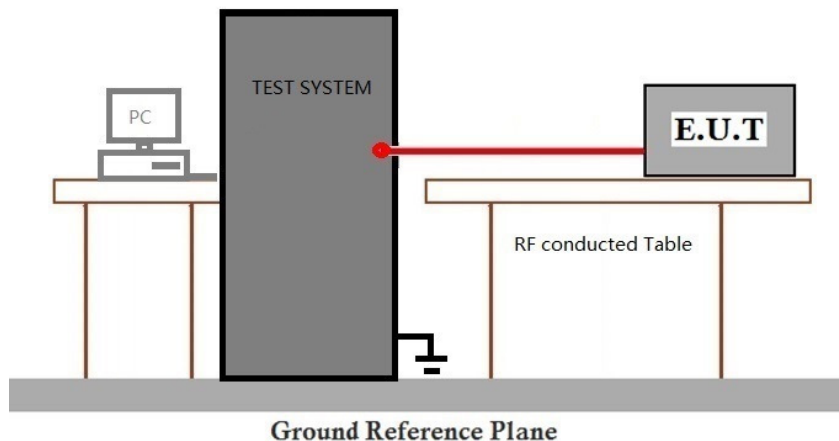
7.6.1 E.U.T. Operation

Operating Environment:
 Temperature: 22.9 °C Humidity: 52.3 % RH Atmospheric Pressure: 1020 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT(LAP-P201S-WUS with motor 1) 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 @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report(powered by adapter 1).

7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.7 Power Spectrum Density

Test Requirement 47 CFR Part 15, Subpart C 15.247(e)
 Test Method: ANSI C63.10 (2020) Section 11.10.3
 Test Engineer: Linvo Ding

Limit:

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

7.7.1 E.U.T. Operation

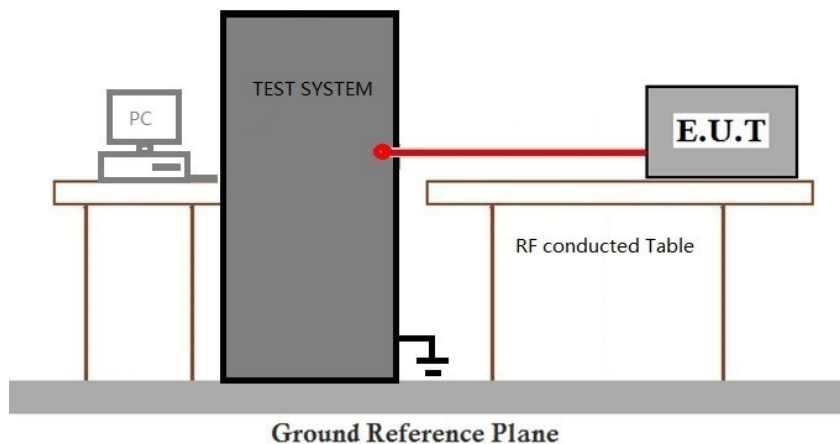
Operating Environment:

Temperature: 22.9 °C Humidity: 52.3 % RH Atmospheric Pressure: 1020 mbar

7.7.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT(LAP-P201S-WUS with motor 1) 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 @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report(powered by adapter 1).

7.7.3 Test Setup Diagram



7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details



7.8 Conducted Band Edges Measurement

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)
 Test Method: ANSI C63.10 (2020) Section 6.10.4
 Test Engineer: Linvo Ding

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:

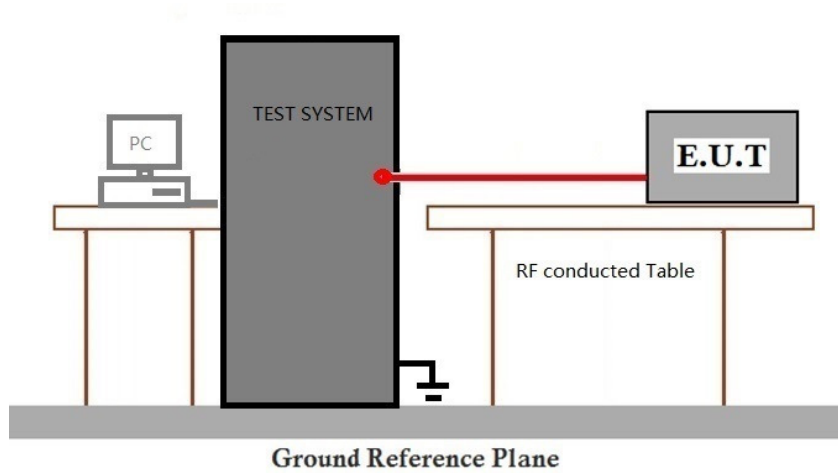
Temperature: 22.9 °C Humidity: 52.3 % RH Atmospheric Pressure: 1020 mbar

7.8.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT(LAP-P201S-WUS with motor 1) 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 @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report(powered by adapter 1).



7.8.3 Test Setup Diagram



7.8.4 Measurement Procedure and Data

Please Refer to Appendix for Details



7.9 Conducted Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)
 Test Method: ANSI C63.10 (2020) Section 11.11
 Test Engineer: Linvo Ding

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)).

7.9.1 E.U.T. Operation

Operating Environment:

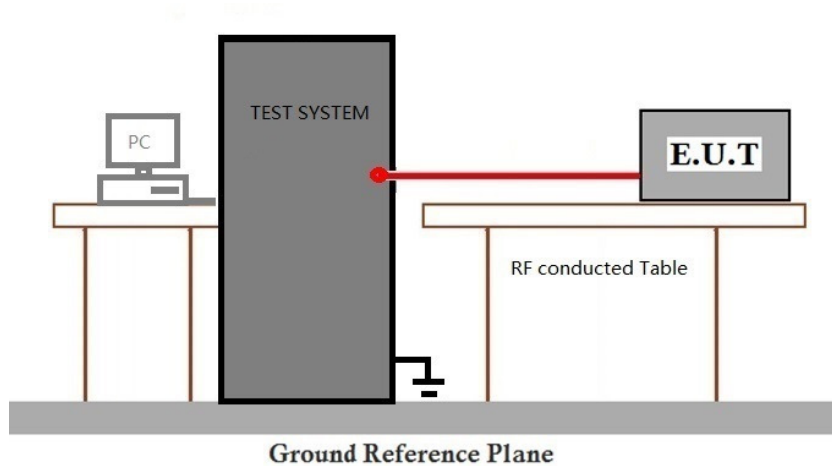
Temperature: 22.9 °C Humidity: 52.3 % RH Atmospheric Pressure: 1020 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT(LAP-P201S-WUS with motor 1) 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 @ 13.5Mbps is the worst case of IEEE 802.11n(HT40), final test modes are considering the modulation and worse data rates. Only the data of worst case is recorded in the report(powered by adapter 1).



7.9.3 Test Setup Diagram



7.9.4 Measurement Procedure and Data

Please Refer to Appendix for Details



8 Test Setup Photo

Refer to Appendix - Test Setup Photo for SZCR2603000761HS

9 EUT Constructional Details (EUT Photos)

Refer to Appendix_Photographs of EUT Constructional Details for SZCR2603000761HS



10 Appendix

1. Duty Cycle

1.1 Test Result

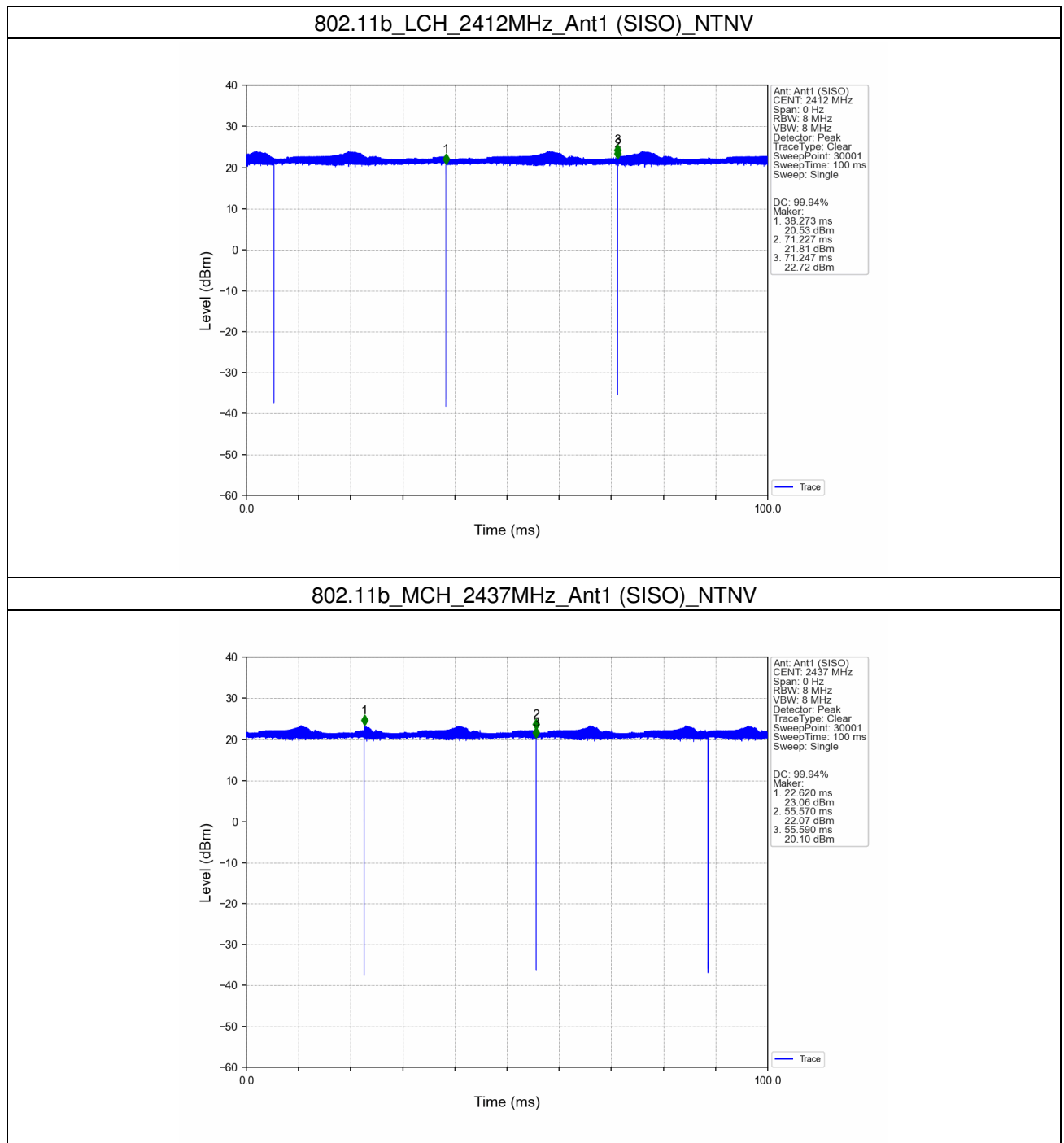
1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	32.954	32.974	99.94	0.00	0.01
		2437	32.950	32.970	99.94	0.00	0.00
		2462	32.953	32.973	99.94	0.00	0.01
802.11g	SISO	2412	5.484	5.510	99.53	0.02	0.00
		2437	5.484	5.510	99.53	0.02	0.00
		2462	5.484	5.510	99.53	0.02	0.00
802.11n (HT20)	SISO	2412	5.081	5.167	98.34	0.07	1.19
		2437	5.080	5.105	99.51	0.02	0.00
		2462	5.080	5.105	99.51	0.02	0.00
802.11n (HT40)	SISO	2422	2.469	2.494	99.00	0.04	0.03
		2437	2.469	2.494	99.00	0.04	0.03
		2452	2.469	2.495	98.96	0.05	0.03

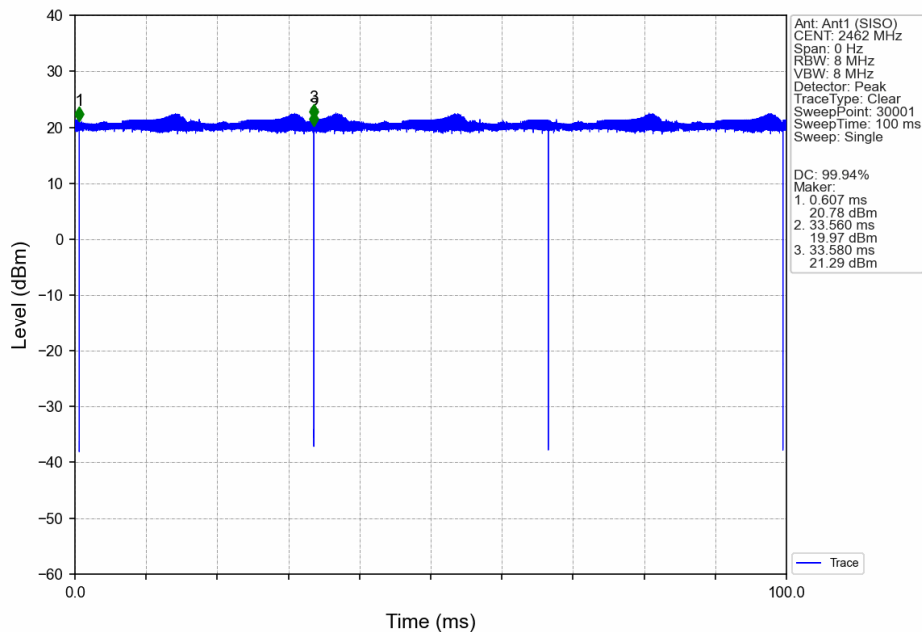


1.2 Test Graph

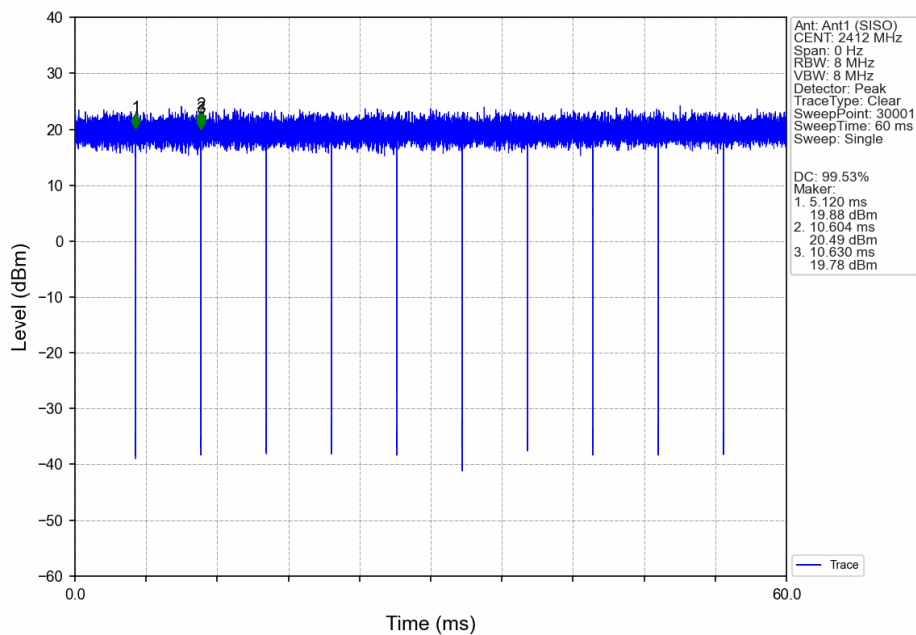
1.2.1 Ant1



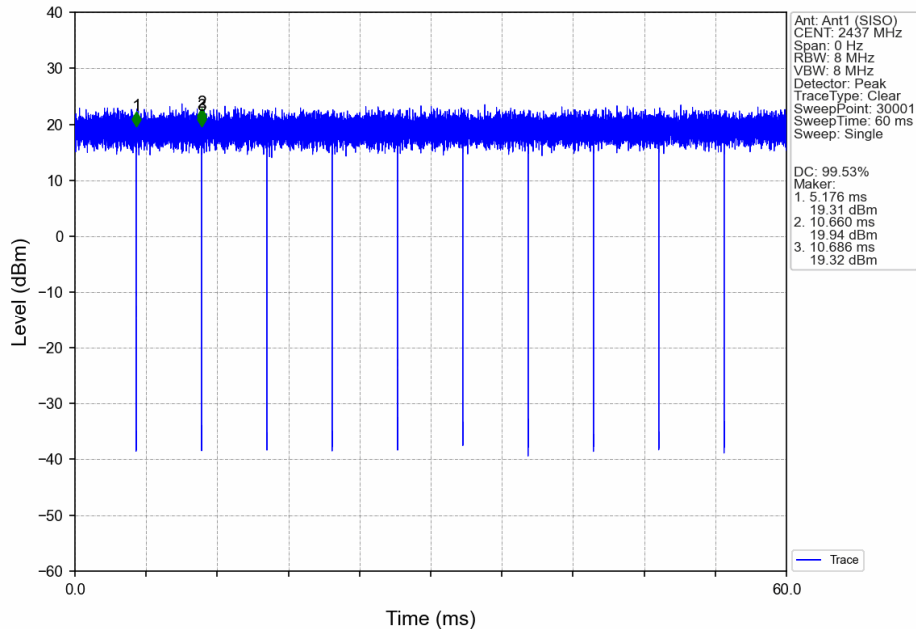
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



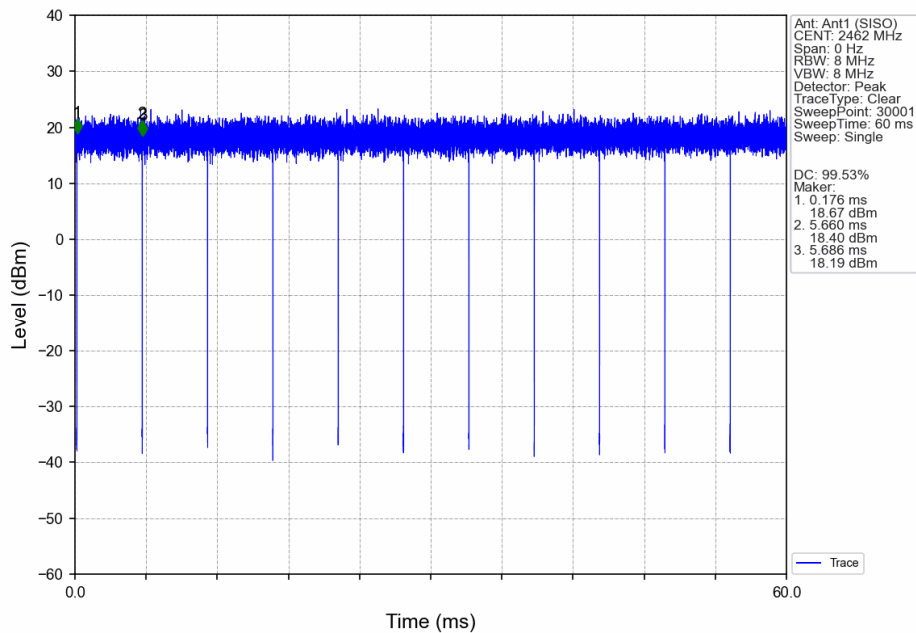
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



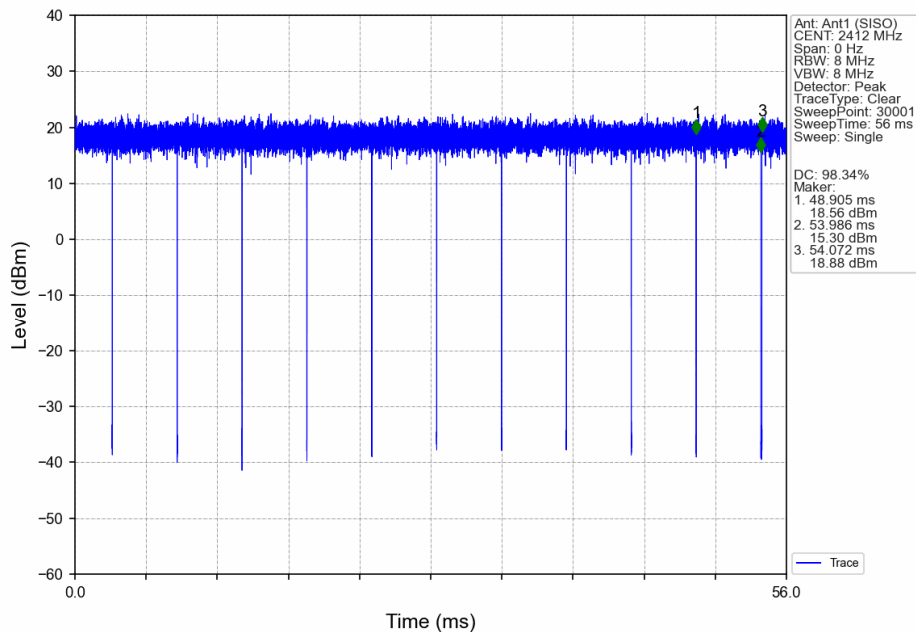
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



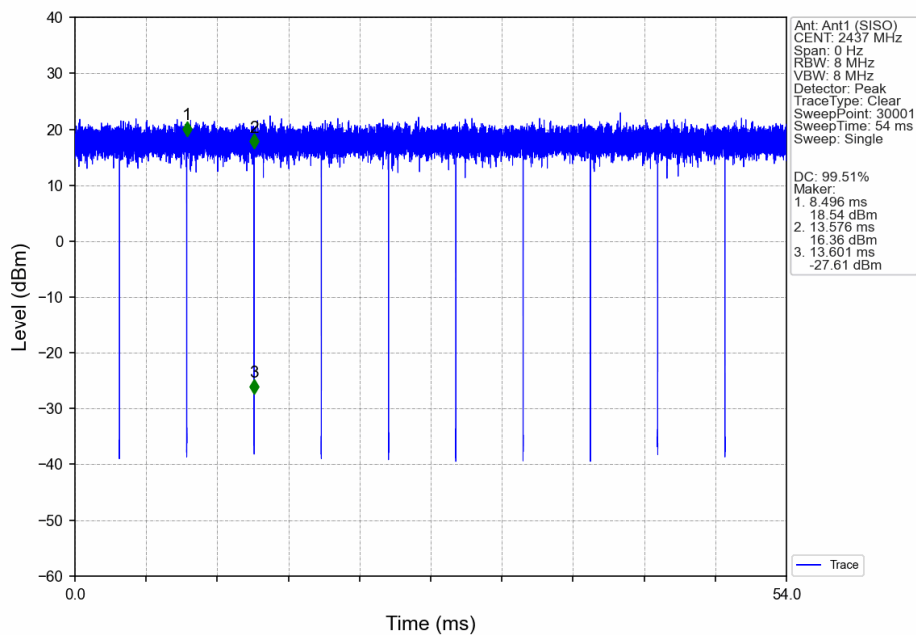
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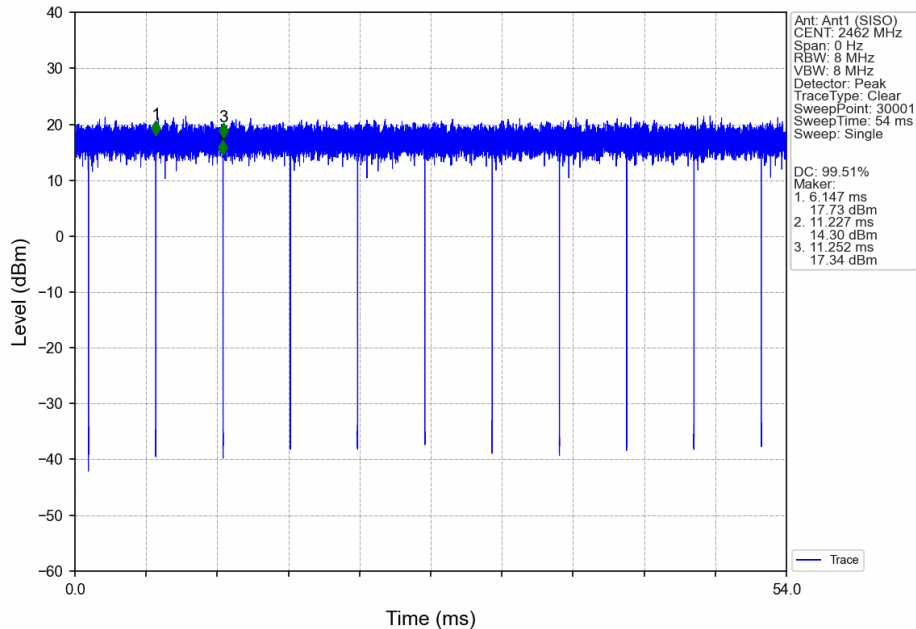
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



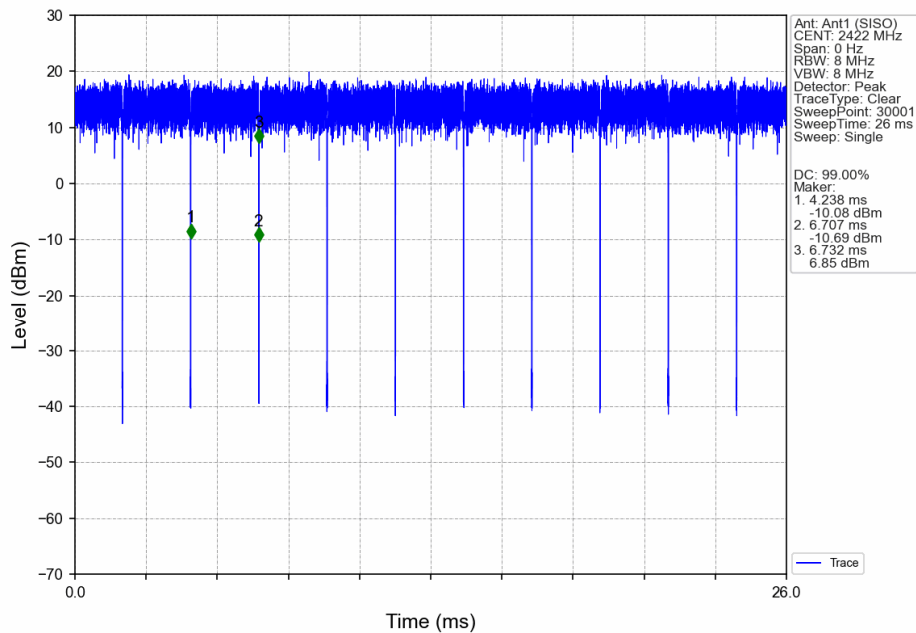
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



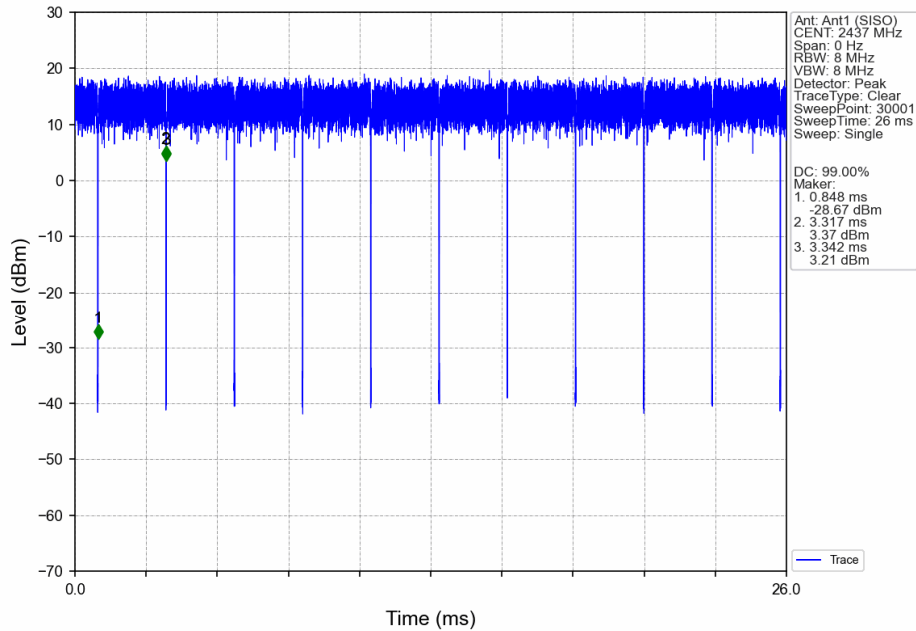
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



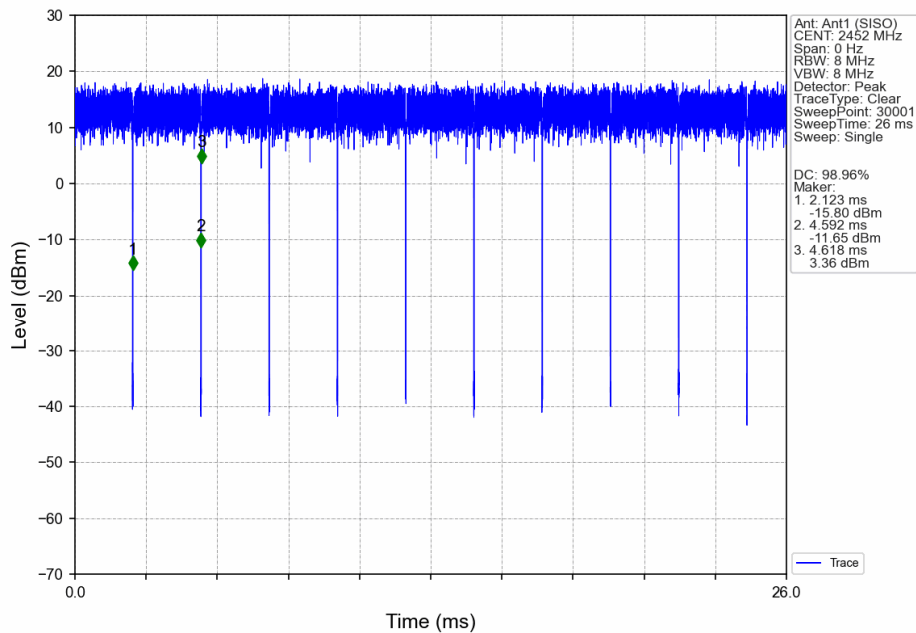
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802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



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2. Bandwidth

2.1 Test Result

2.1.1 OBW

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	13.126	/	Pass
		2437	1	13.121	/	Pass
		2462	1	13.107	/	Pass
802.11g	SISO	2412	1	17.589	/	Pass
		2437	1	17.807	/	Pass
		2462	1	17.477	/	Pass
802.11n (HT20)	SISO	2412	1	17.597	/	Pass
		2437	1	17.617	/	Pass
		2462	1	17.578	/	Pass
802.11n (HT40)	SISO	2422	1	36.104	/	Pass
		2437	1	36.134	/	Pass
		2452	1	36.135	/	Pass

2.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	8.094	≥ 0.5	Pass
		2437	1	9.538	≥ 0.5	Pass
		2462	1	8.873	≥ 0.5	Pass
802.11g	SISO	2412	1	16.370	≥ 0.5	Pass
		2437	1	16.388	≥ 0.5	Pass
		2462	1	16.376	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	16.889	≥ 0.5	Pass
		2437	1	16.900	≥ 0.5	Pass
		2462	1	16.884	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	1	35.134	≥ 0.5	Pass
		2437	1	35.126	≥ 0.5	Pass
		2452	1	35.140	≥ 0.5	Pass



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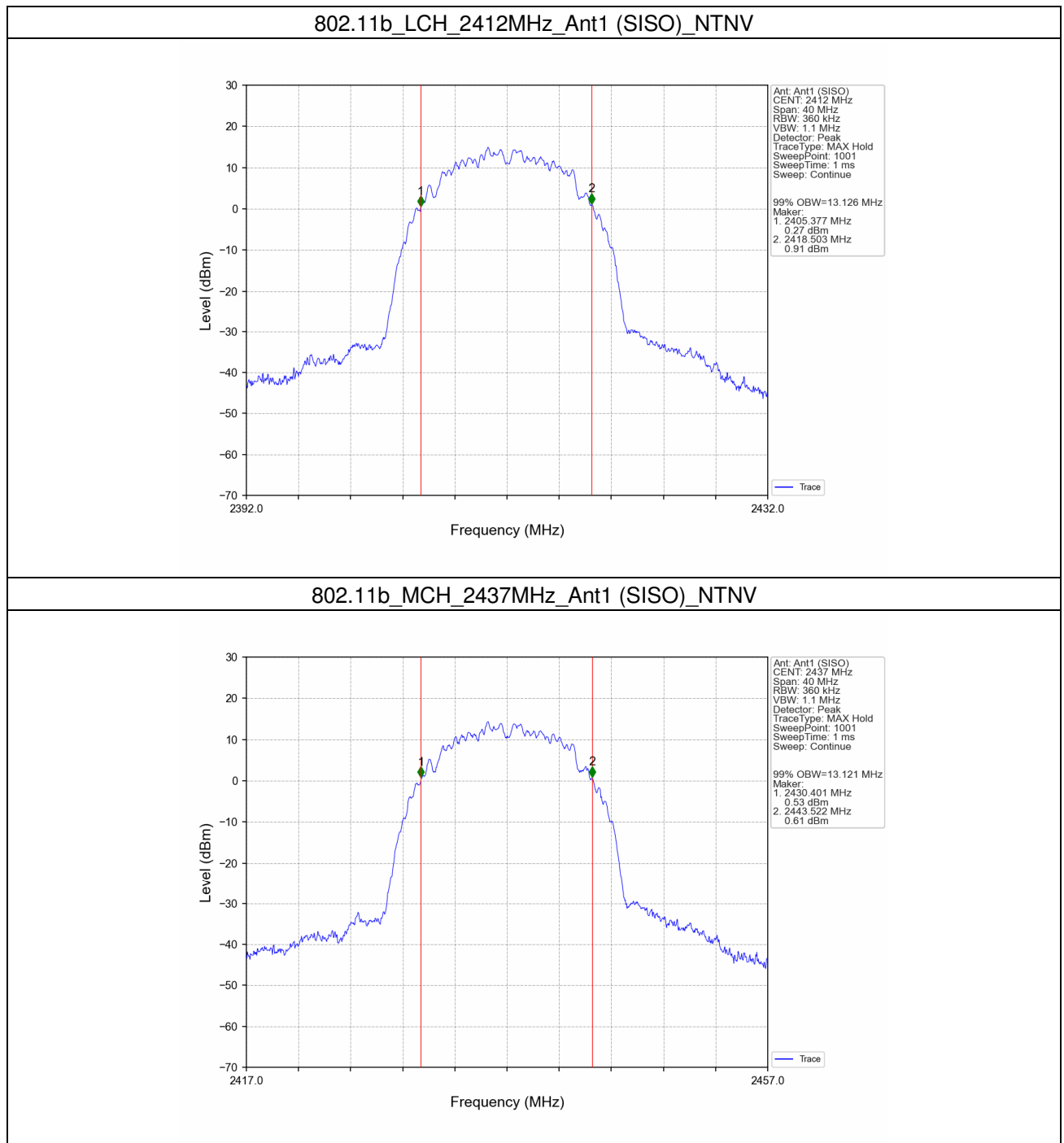
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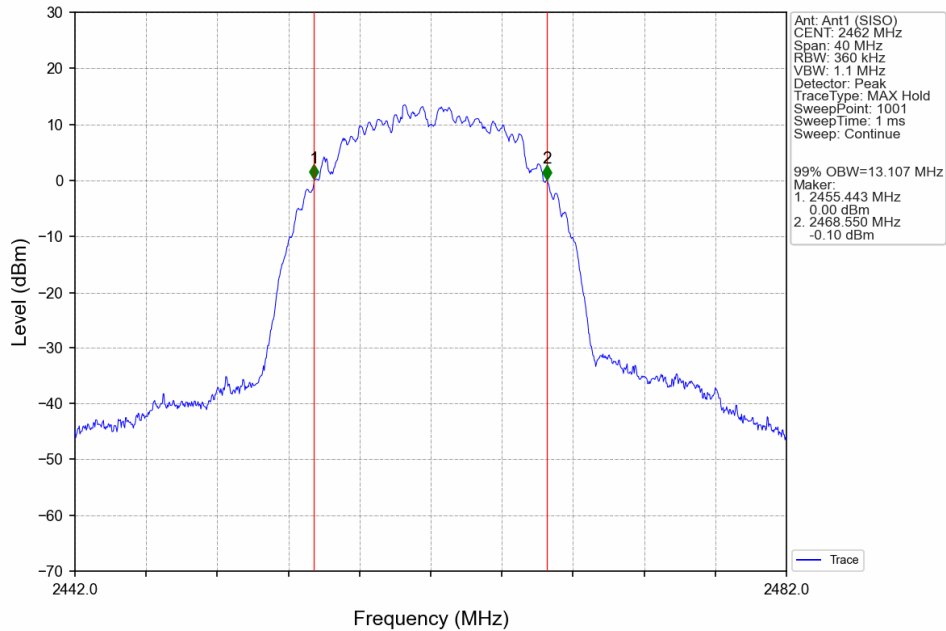
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2.2 Test Graph

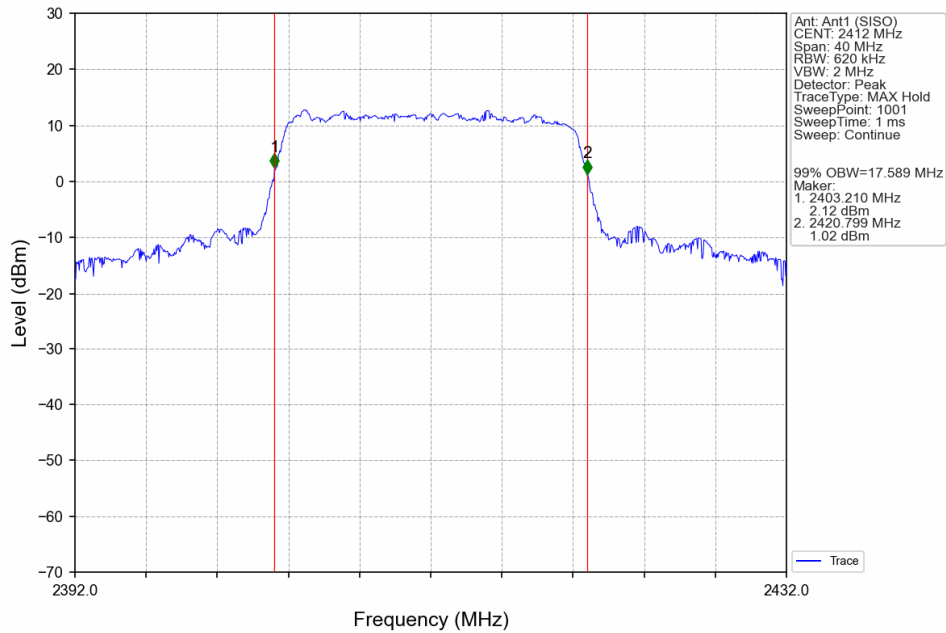
2.2.1 OBW



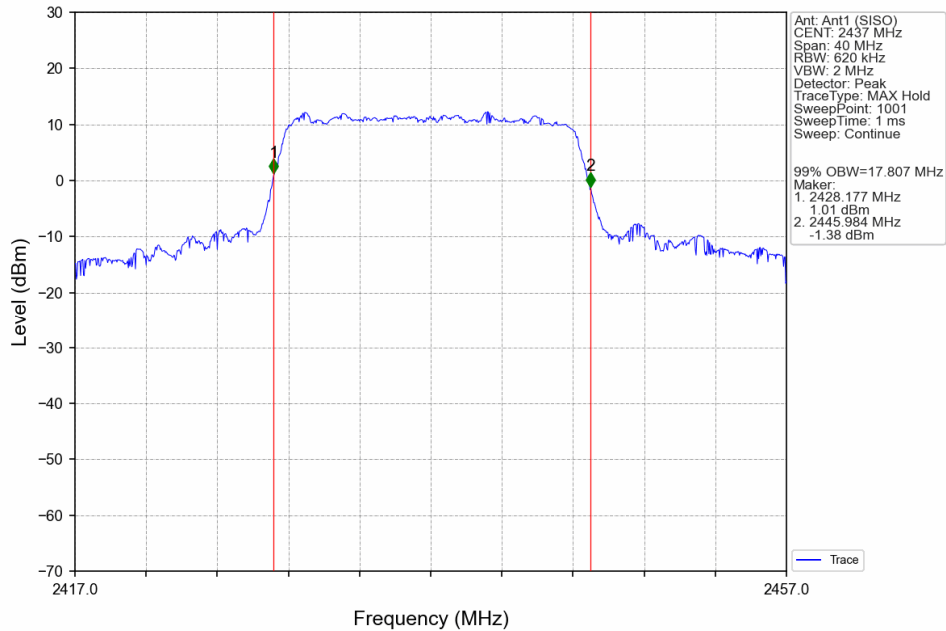
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



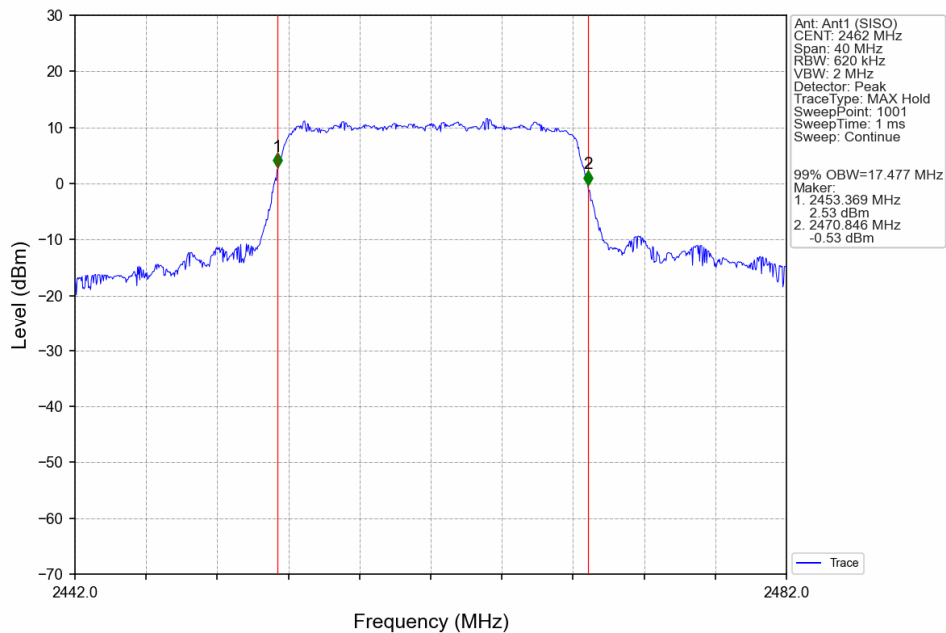
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



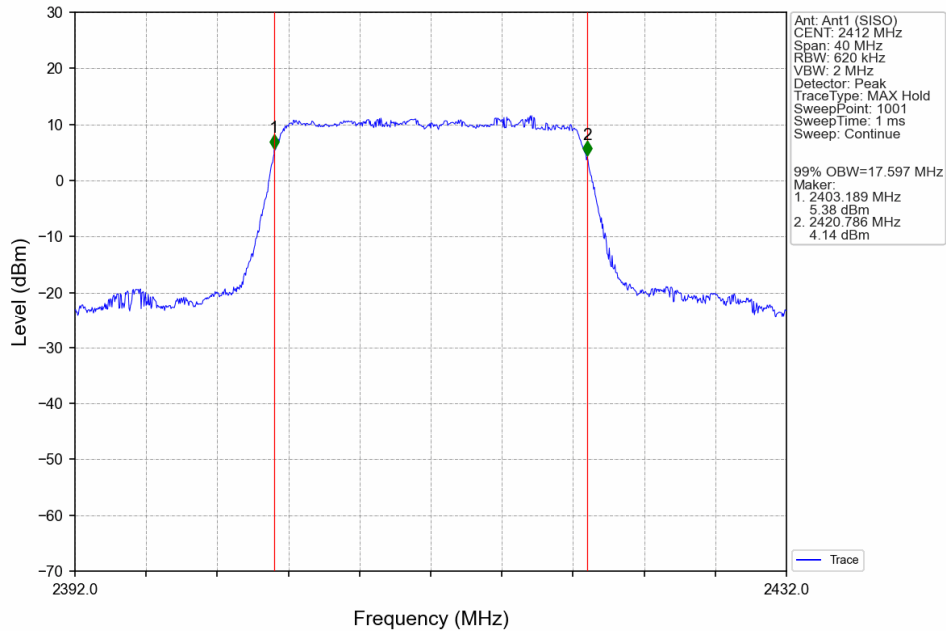
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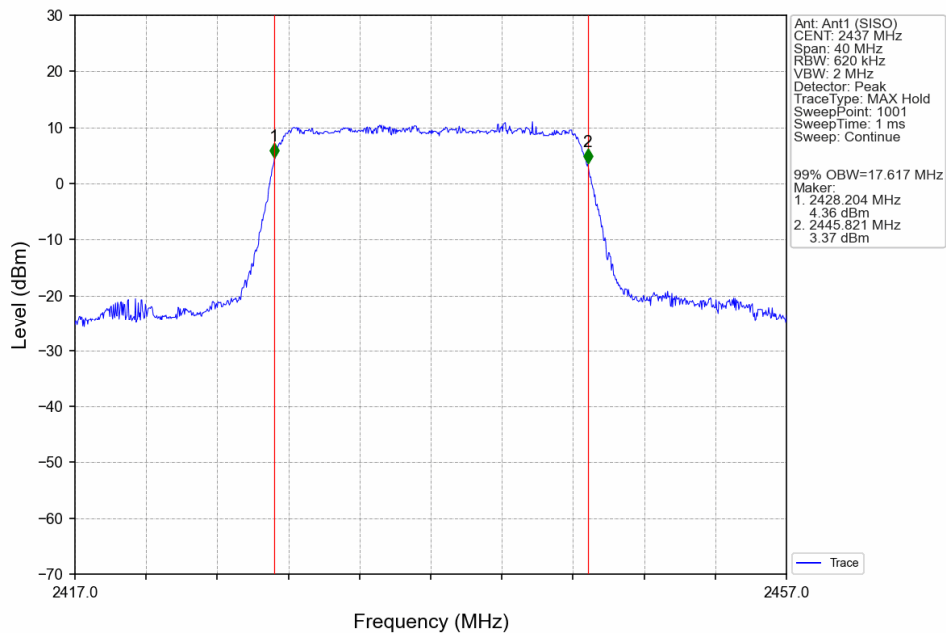
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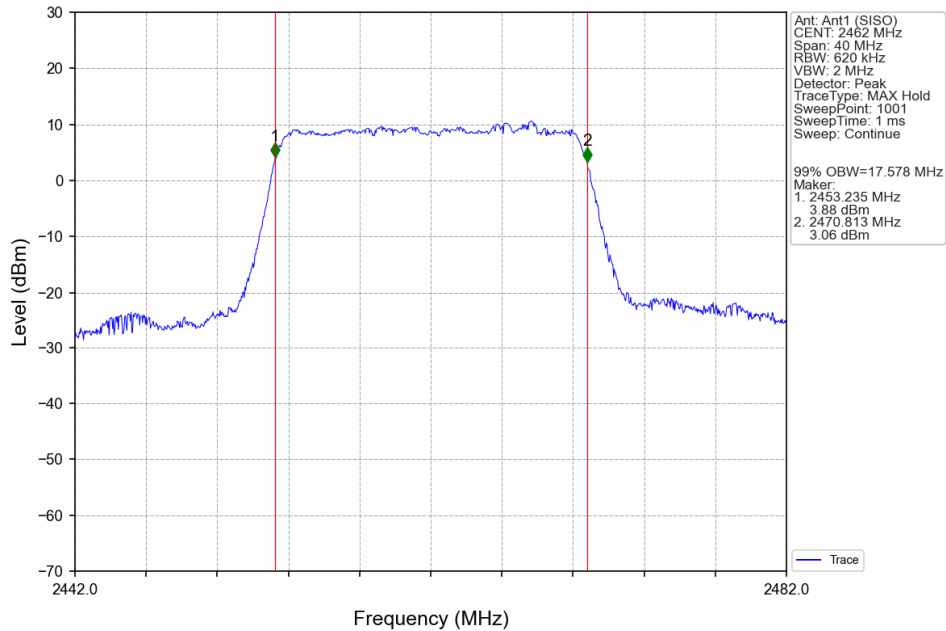
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



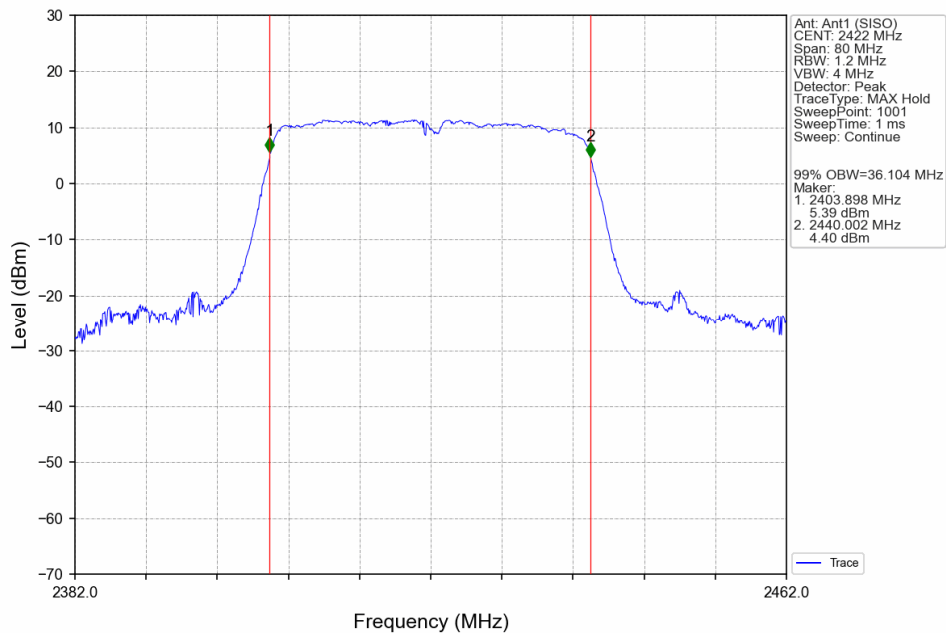
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



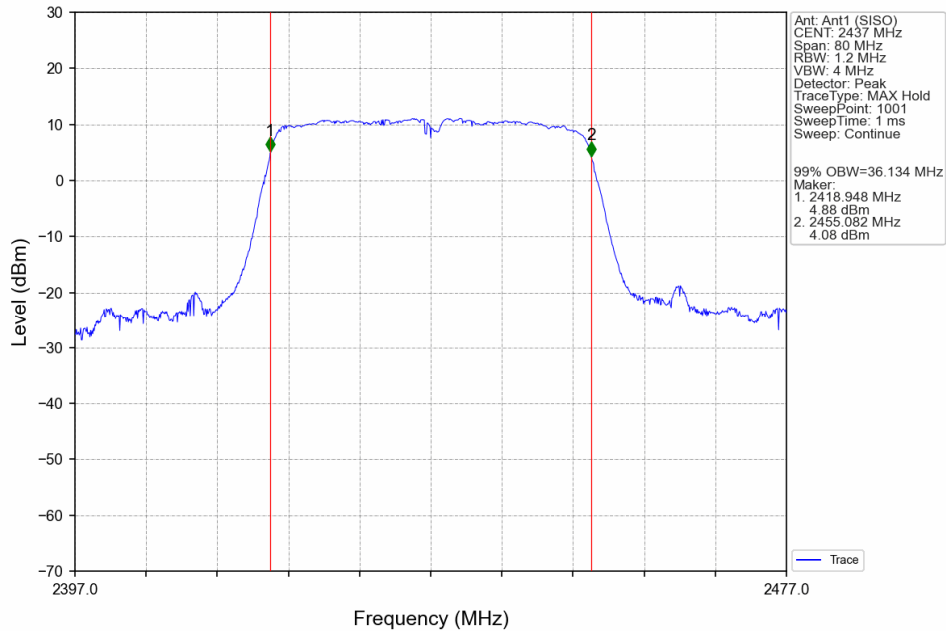
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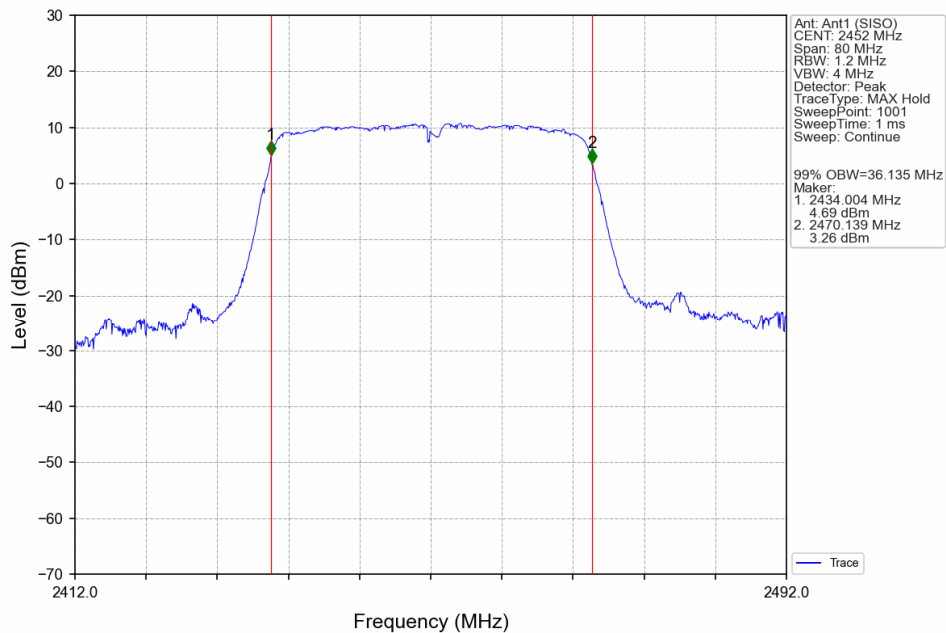
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



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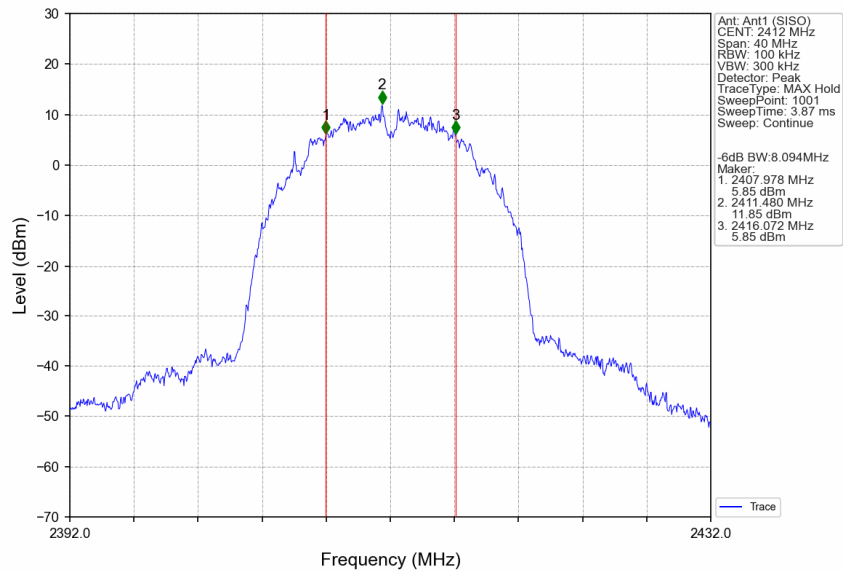
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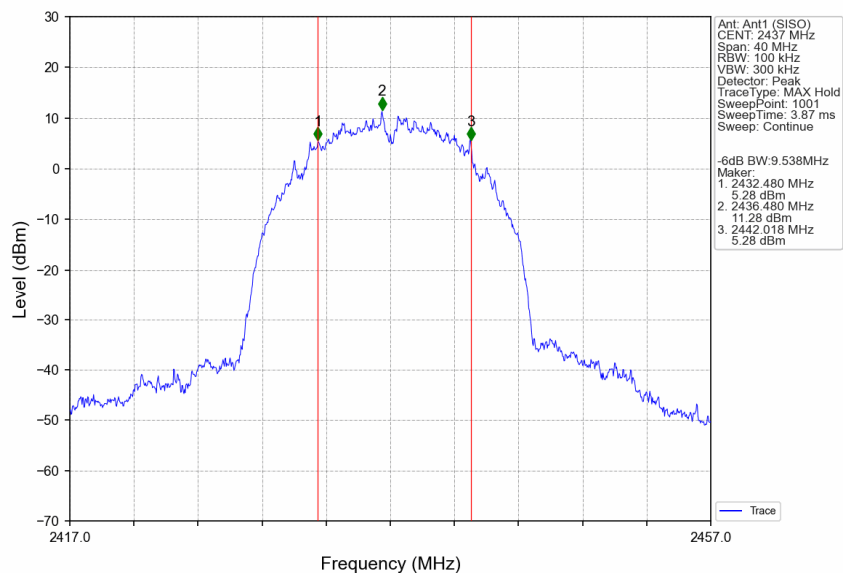
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2.2.2 6dB BW

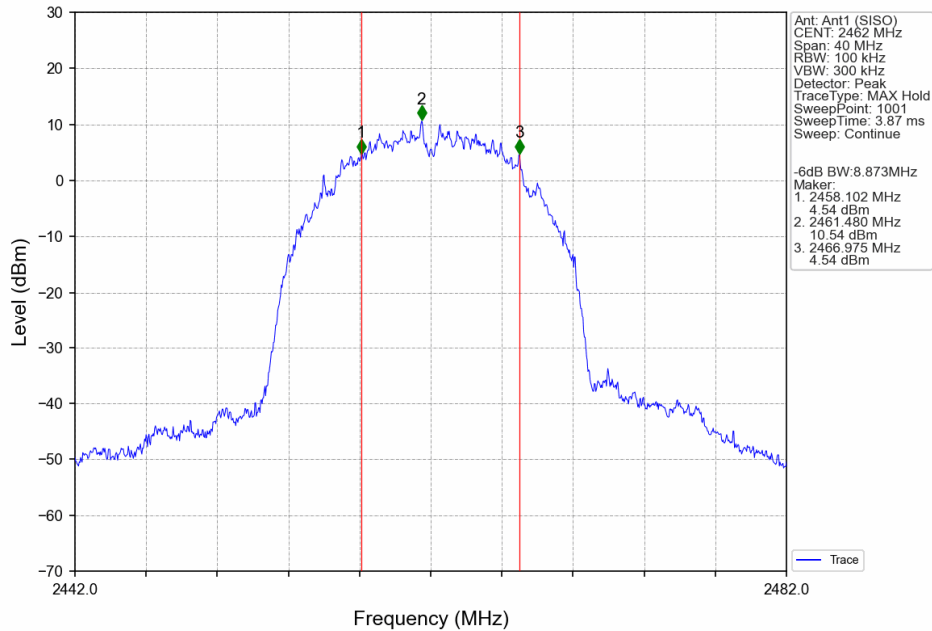
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



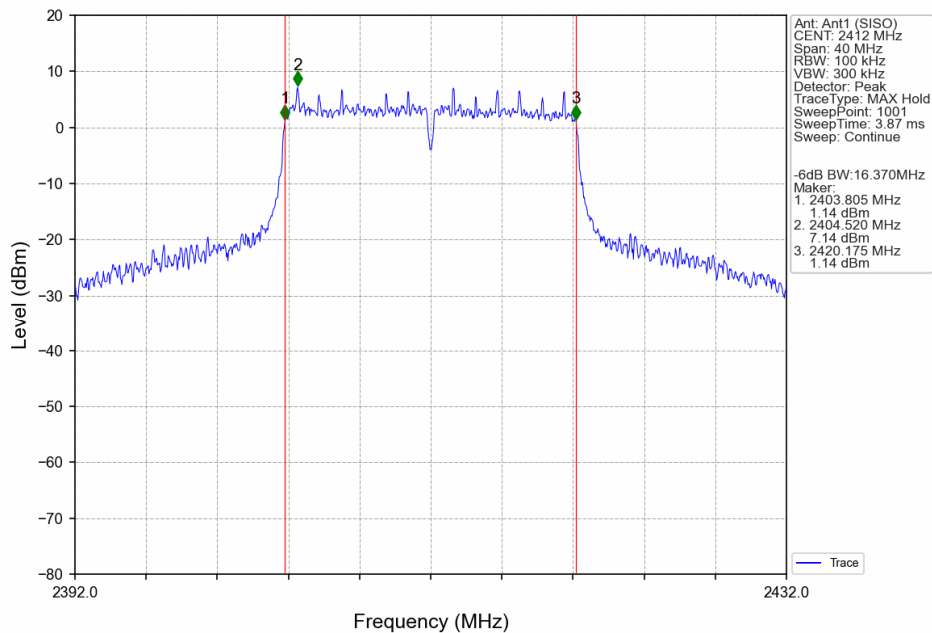
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



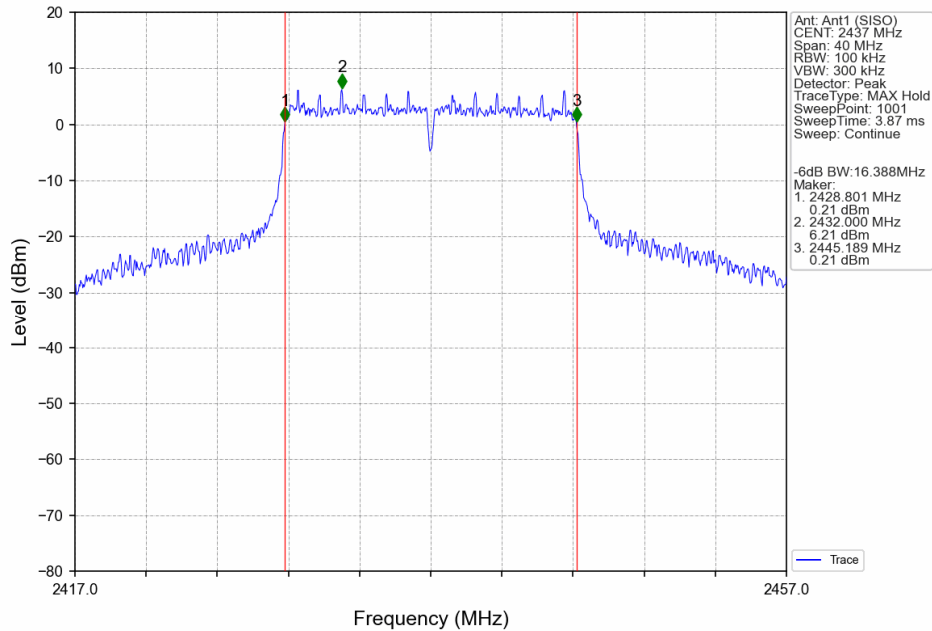
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



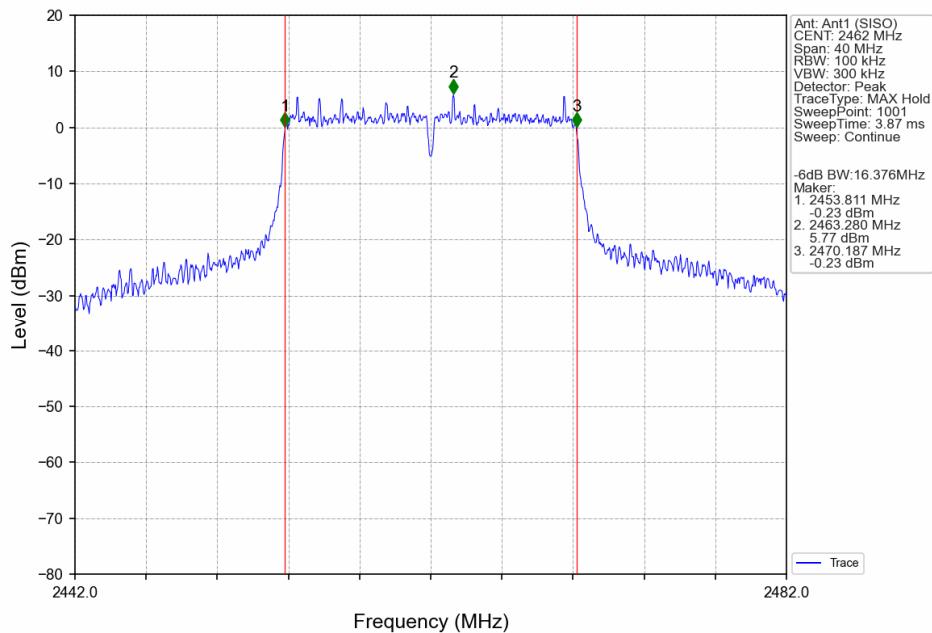
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



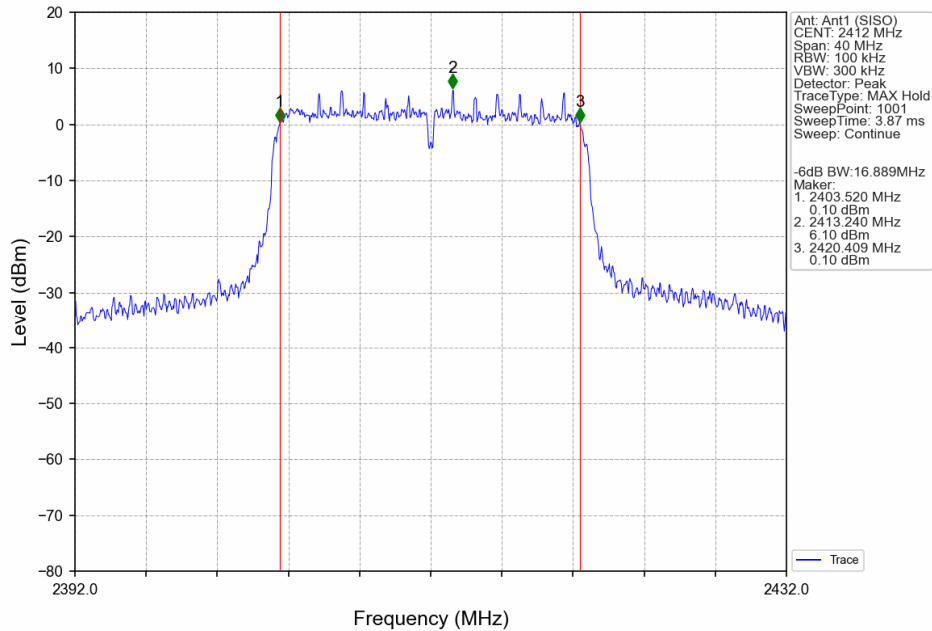
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



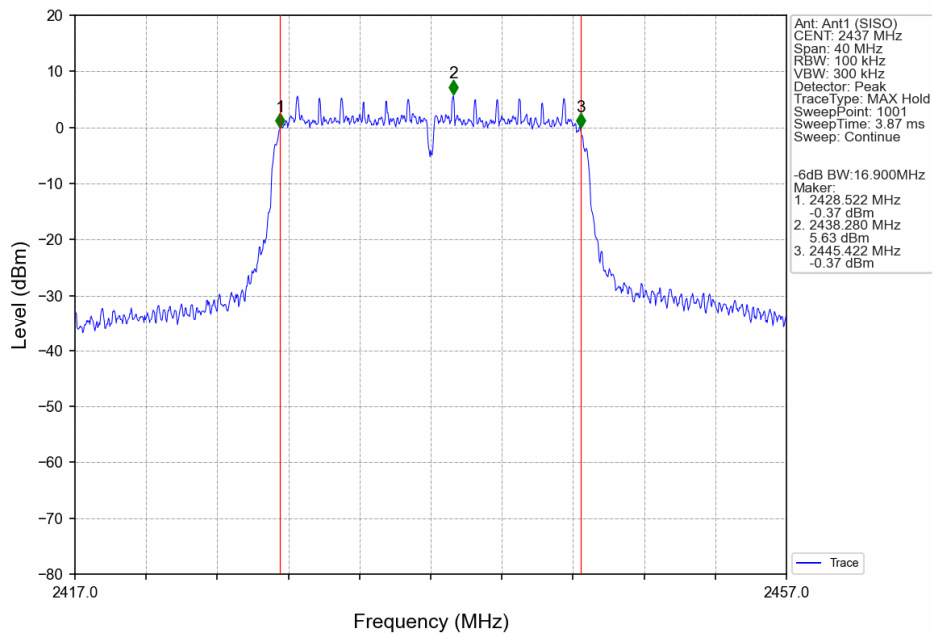
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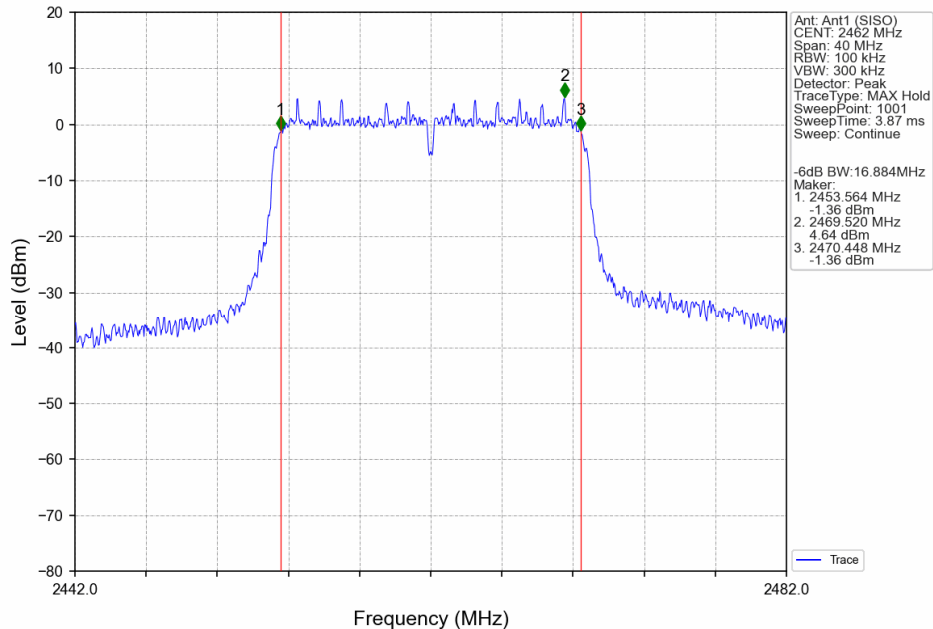
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



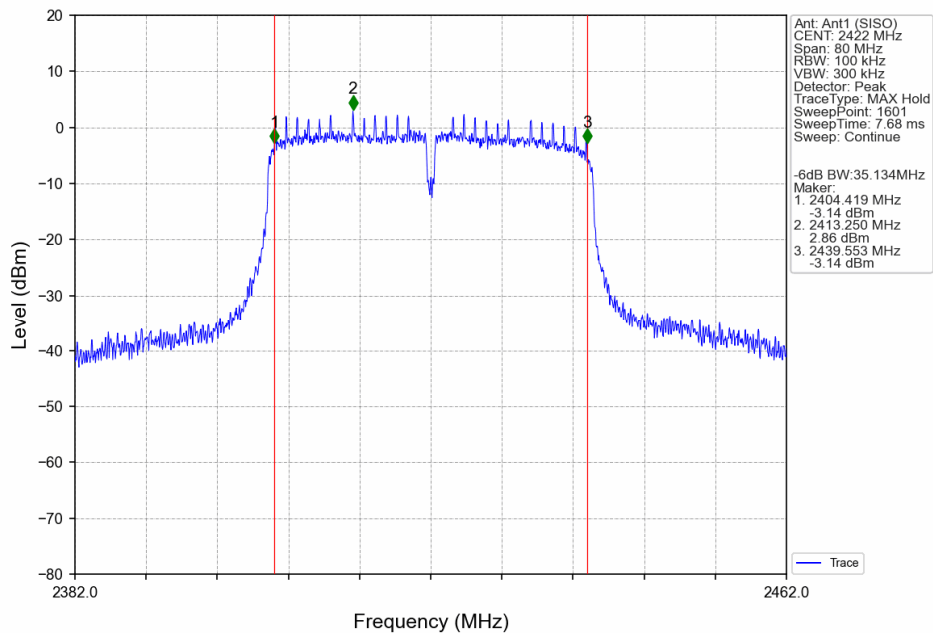
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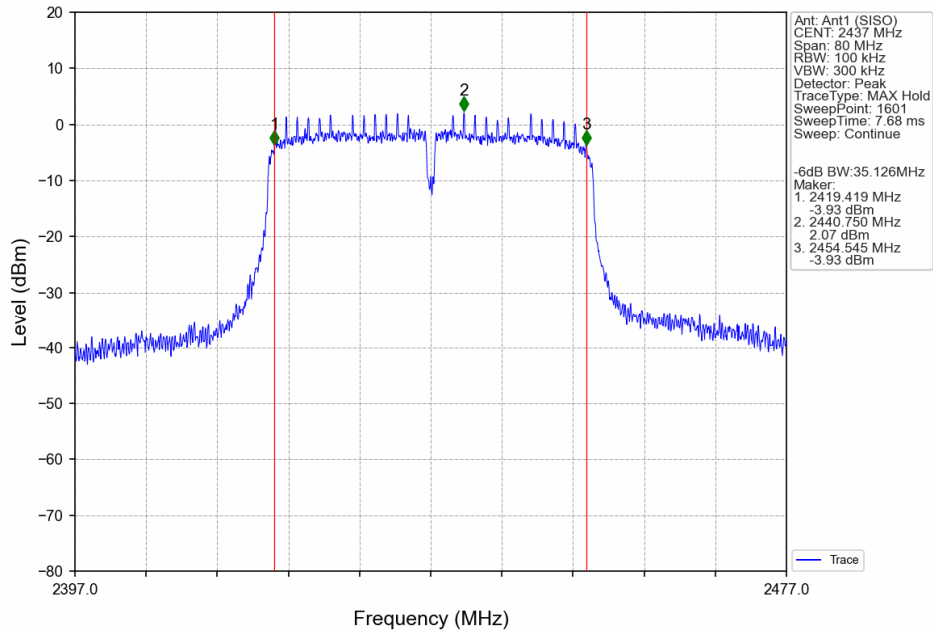
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



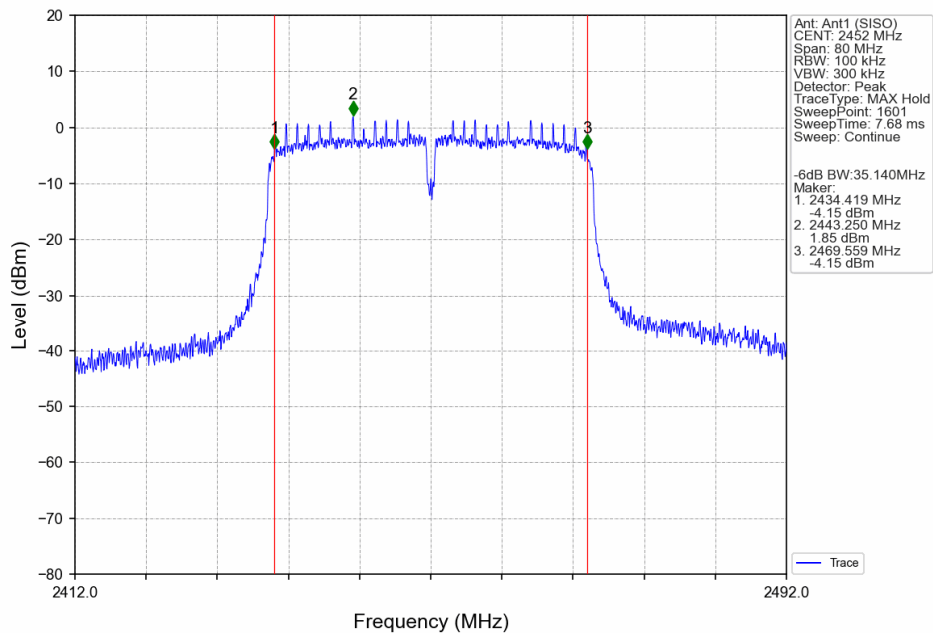
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Average Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	18.57	<=30	Pass
		2437	18.07	<=30	Pass
		2462	17.30	<=30	Pass
802.11g	SISO	2412	16.62	<=30	Pass
		2437	17.26	<=30	Pass
		2462	16.47	<=30	Pass
802.11n (HT20)	SISO	2412	16.67	<=30	Pass
		2437	16.04	<=30	Pass
		2462	15.35	<=30	Pass
802.11n (HT40)	SISO	2422	15.96	<=30	Pass
		2437	15.69	<=30	Pass
		2452	15.33	<=30	Pass

Note1: Antenna Gain: Ant1: 0.90dBi;

4. Maximum Power Spectral Density

4.1 Test Result

4.1.1 PSD

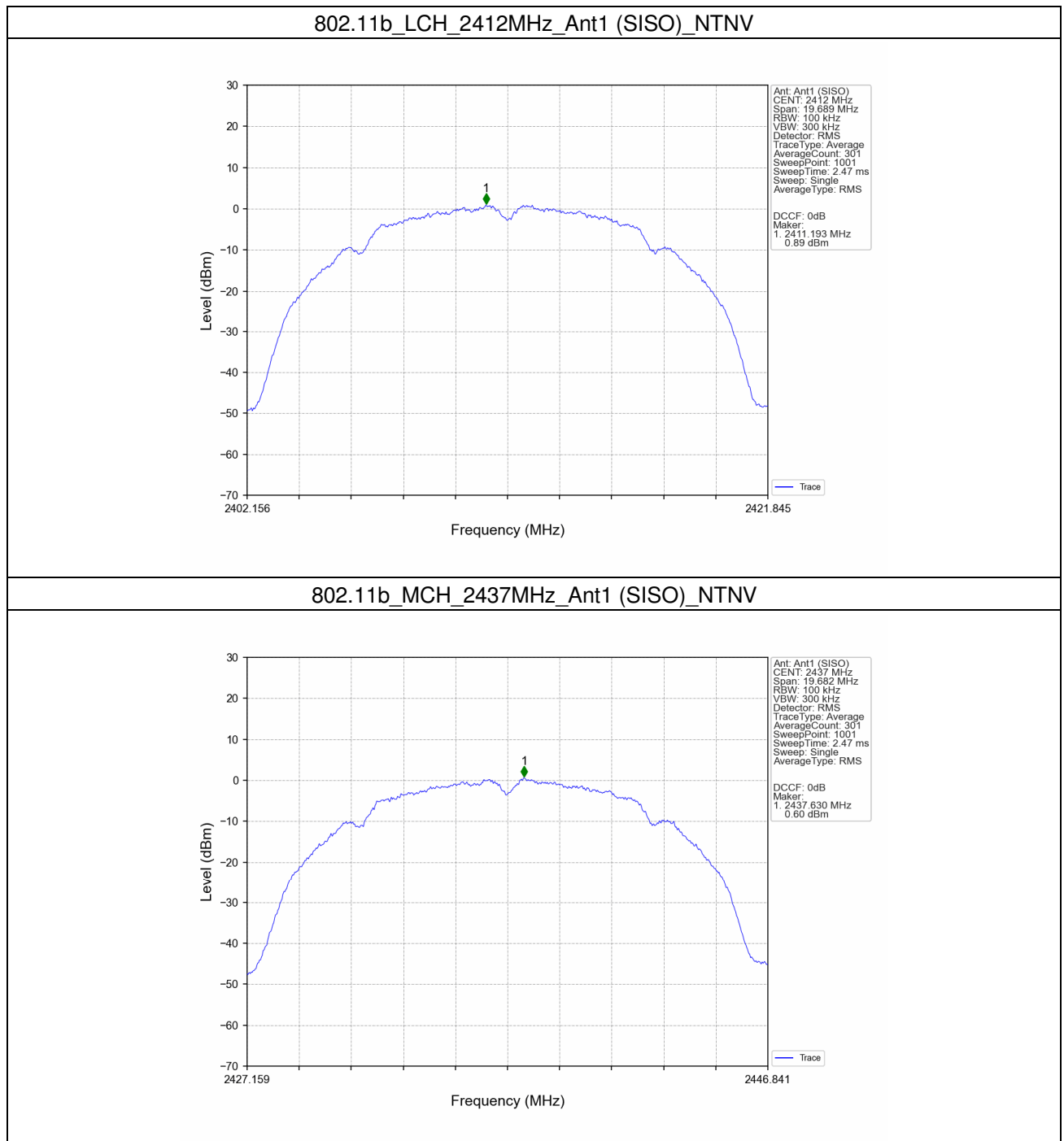
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	0.89	<=8	Pass
		2437	0.60	<=8	Pass
		2462	-0.42	<=8	Pass
802.11g	SISO	2412	-2.64	<=8	Pass
		2437	-2.79	<=8	Pass
		2462	-3.81	<=8	Pass
802.11n (HT20)	SISO	2412	-3.80	<=8	Pass
		2437	-4.18	<=8	Pass
		2462	-4.71	<=8	Pass
802.11n (HT40)	SISO	2422	-7.04	<=8	Pass
		2437	-7.45	<=8	Pass
		2452	-8.05	<=8	Pass

Note1: Antenna Gain: Ant1: 0.90dBi;

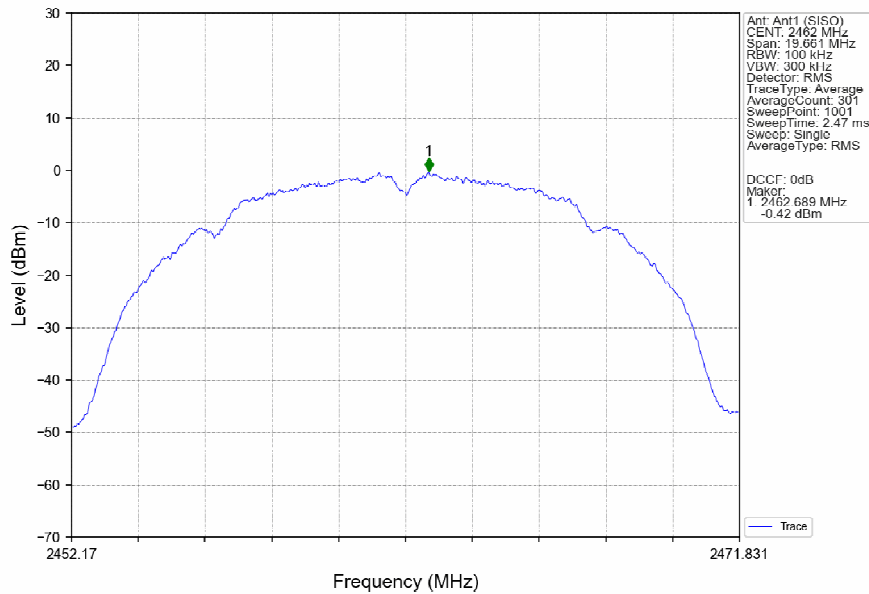


4.2 Test Graph

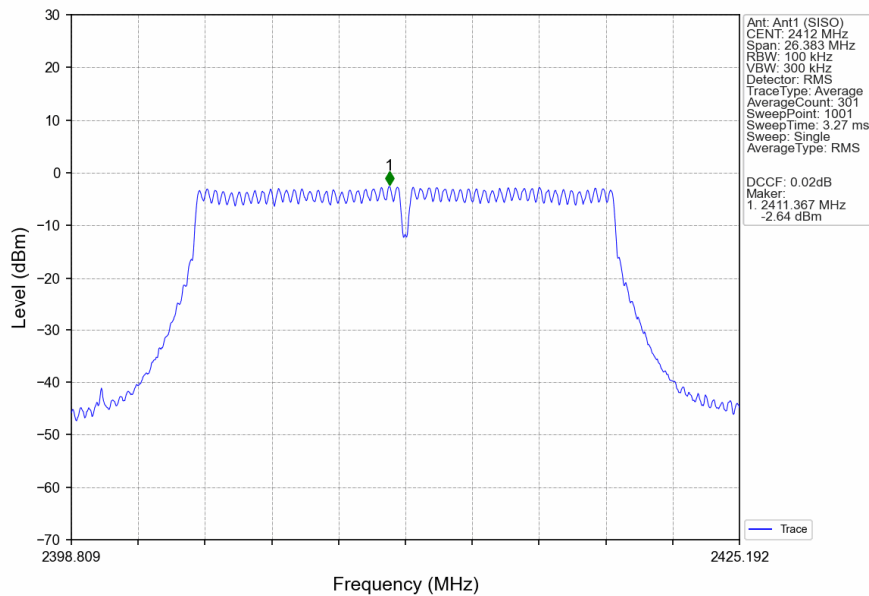
4.2.1 PSD



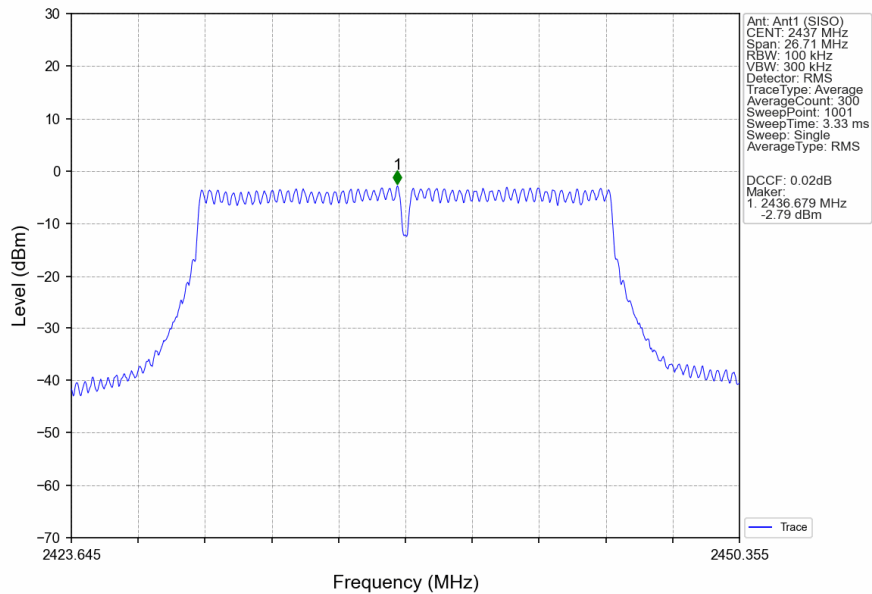
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



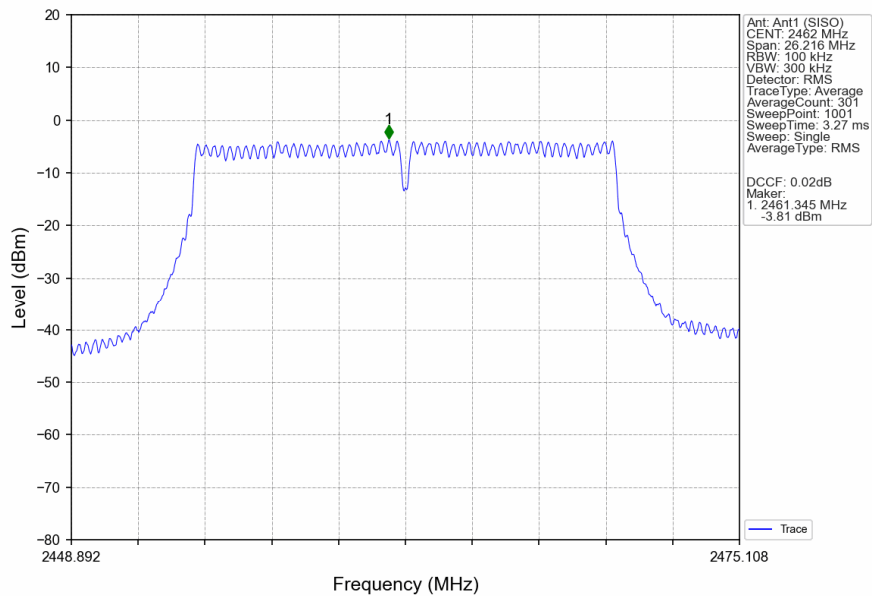
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



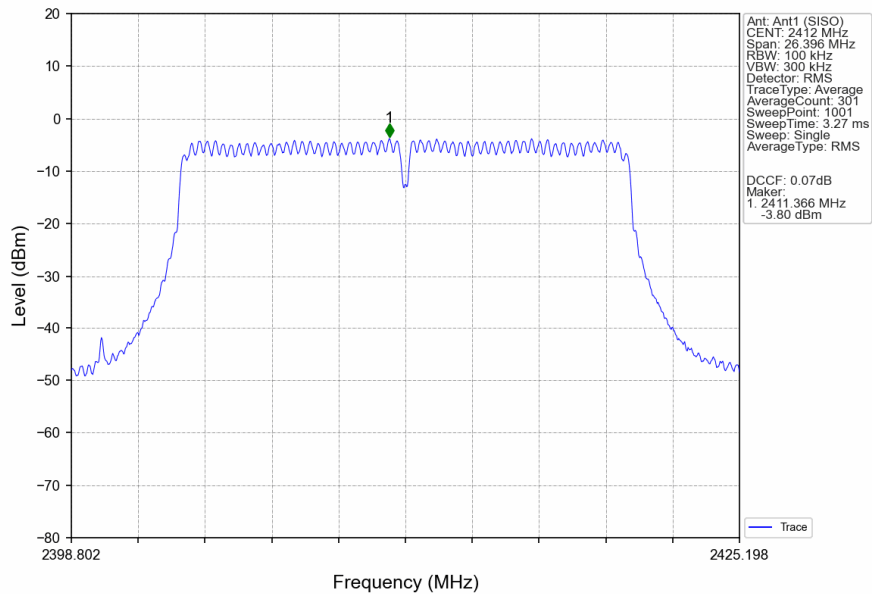
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



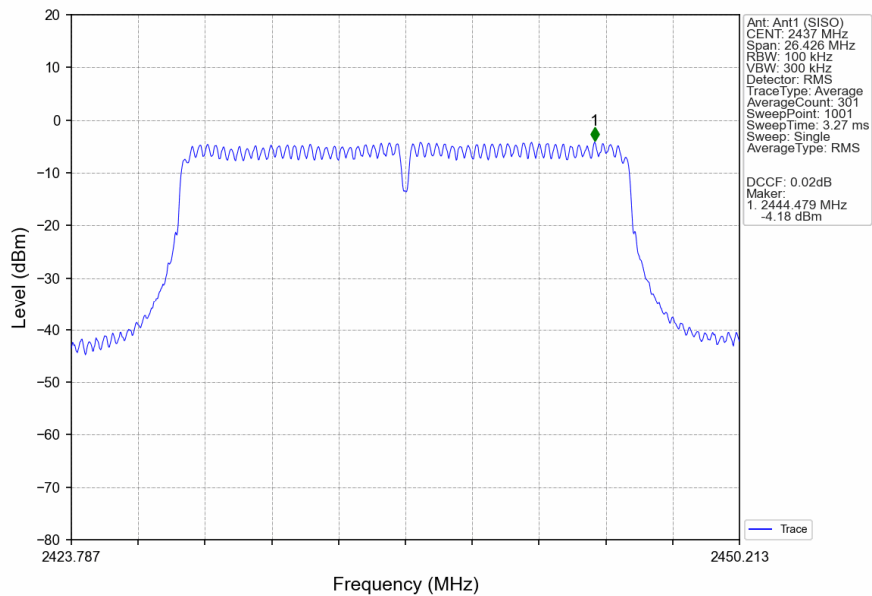
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



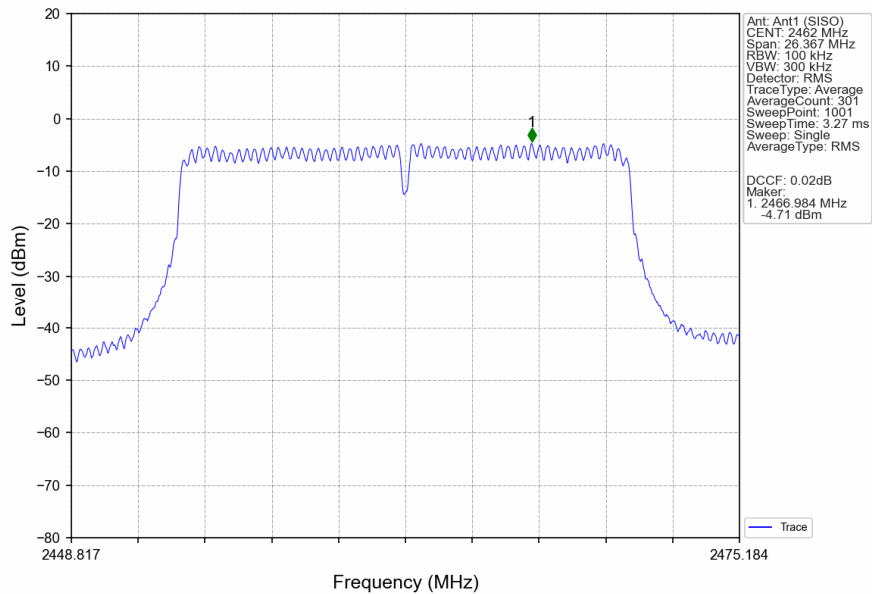
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



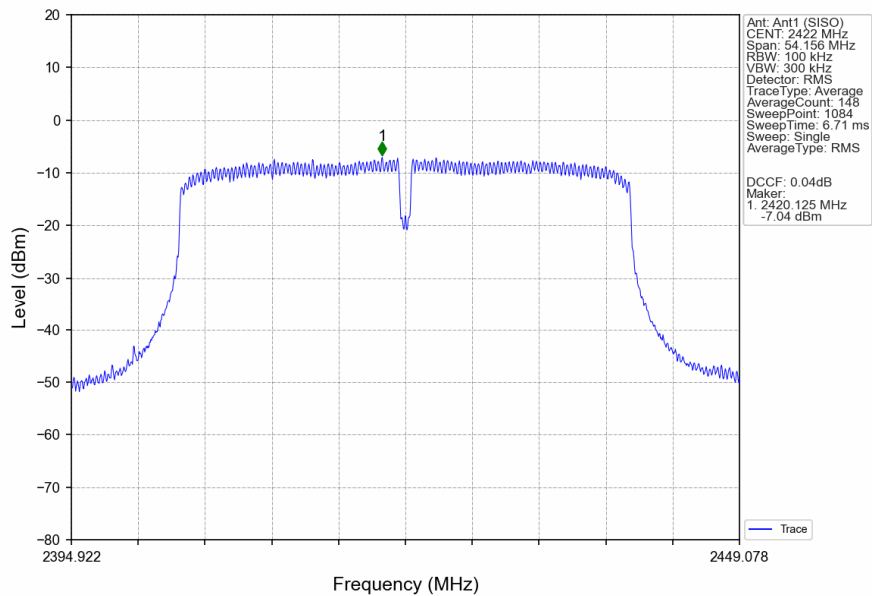
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



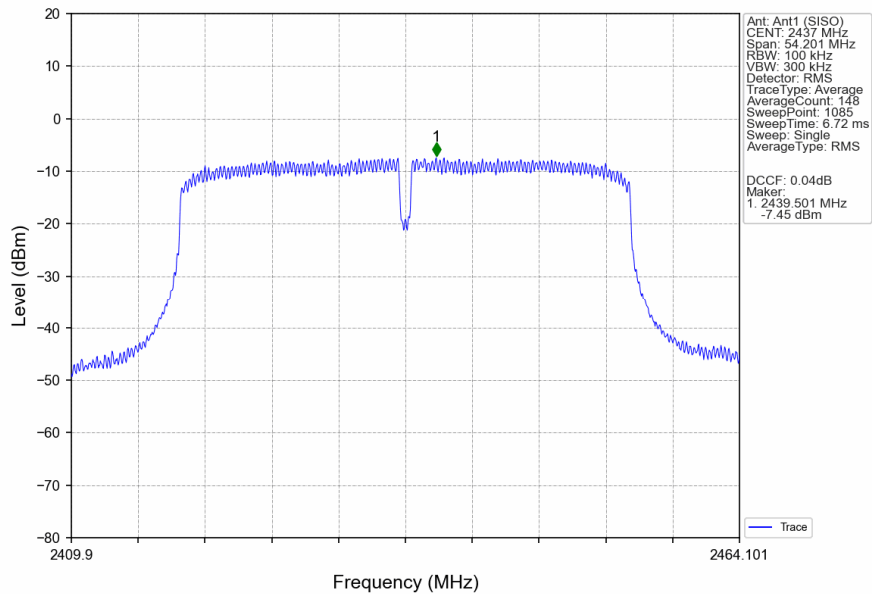
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



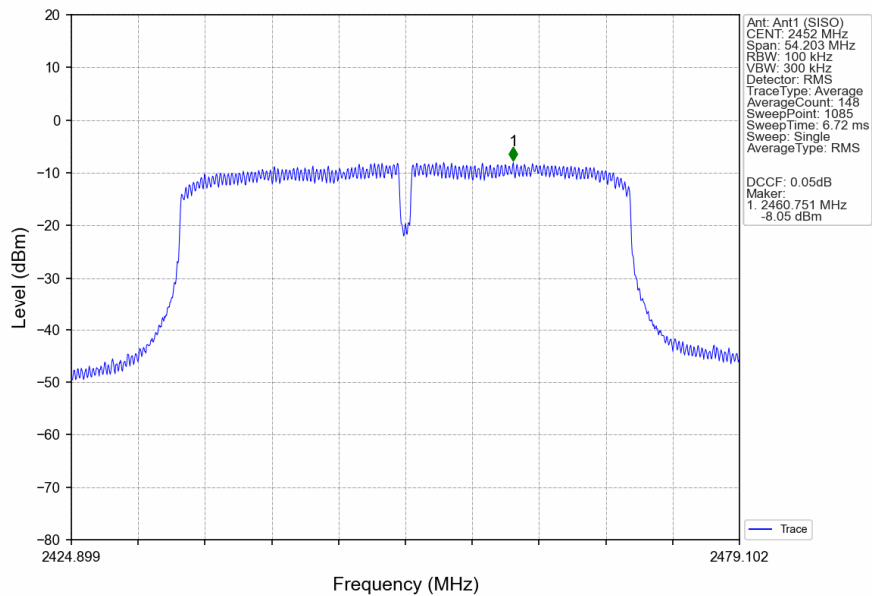
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	10.59
		2437	1	10.41
		2462	1	9.24
802.11g	SISO	2412	1	4.72
		2437	1	6.48
		2462	1	5.34
802.11n (HT20)	SISO	2412	1	6.27
		2437	1	5.16
		2462	1	4.92
802.11n (HT40)	SISO	2422	1	2.82
		2437	1	2.03
		2452	1	1.76

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.



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5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	10.59	-19.41	Pass
		2437	1	10.59	-19.41	Pass
		2462	1	10.59	-19.41	Pass
802.11g	SISO	2412	1	6.48	-23.52	Pass
		2437	1	6.48	-23.52	Pass
		2462	1	6.48	-23.52	Pass
802.11n (HT20)	SISO	2412	1	6.27	-23.73	Pass
		2437	1	6.27	-23.73	Pass
		2462	1	6.27	-23.73	Pass
802.11n (HT40)	SISO	2422	1	2.82	-27.18	Pass
		2437	1	2.82	-27.18	Pass
		2452	1	2.82	-27.18	Pass

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.



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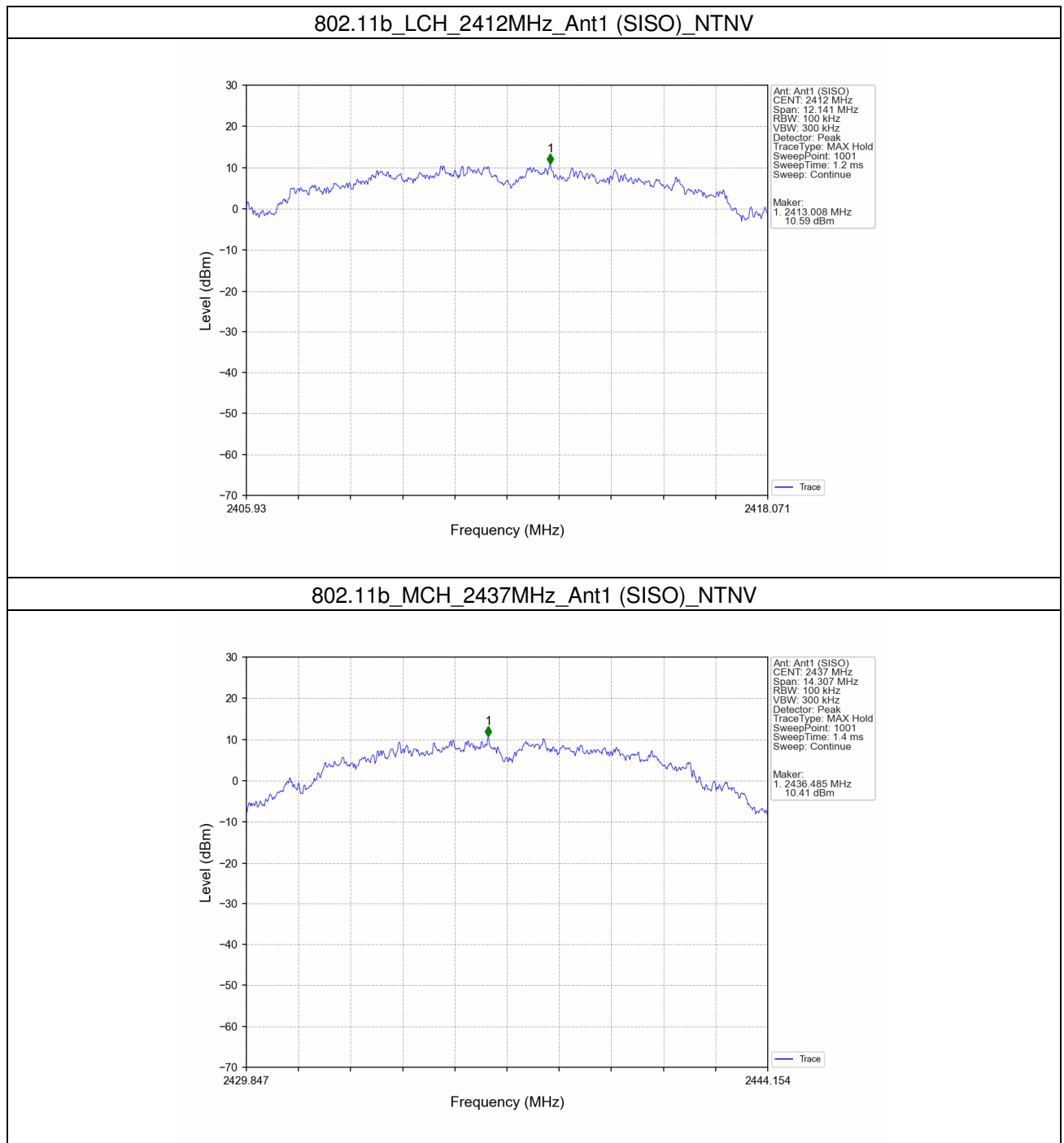
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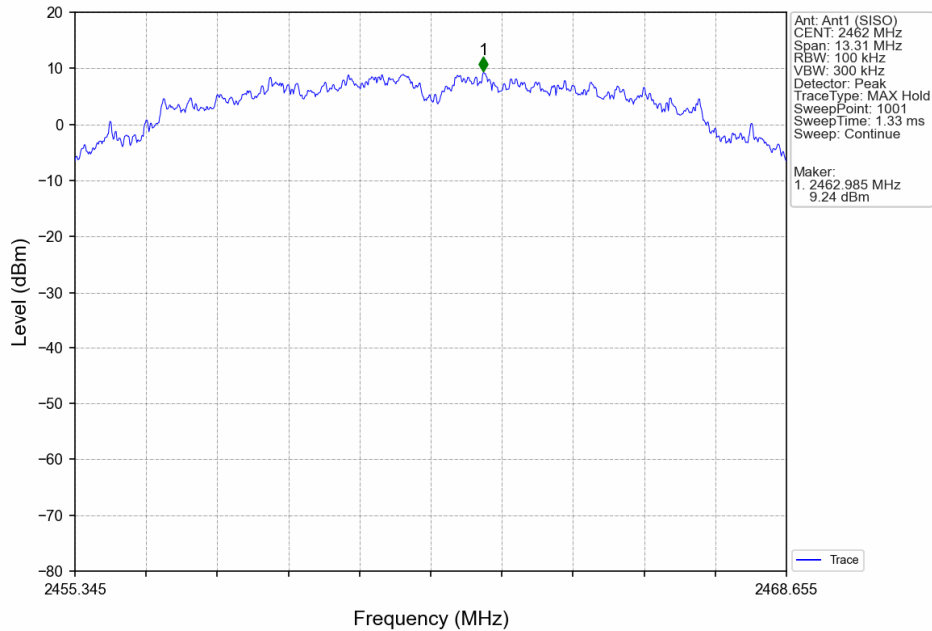
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5.2 Test Graph

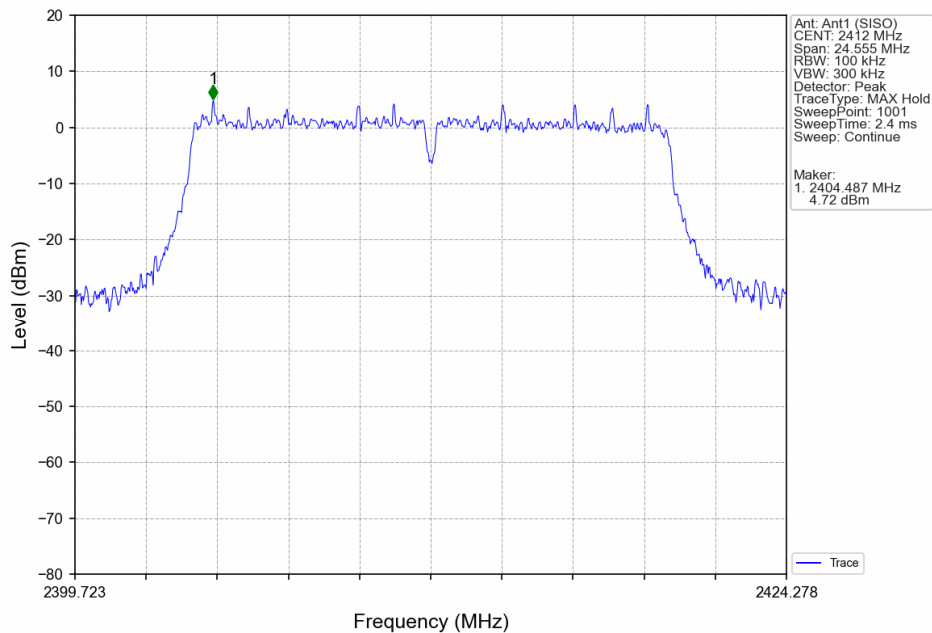
5.2.1 Ref



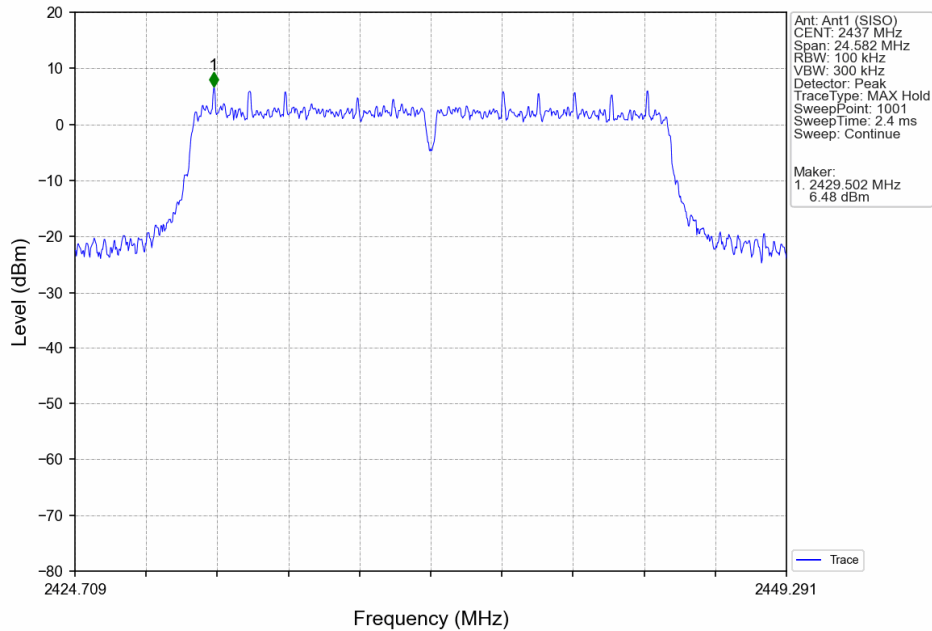
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



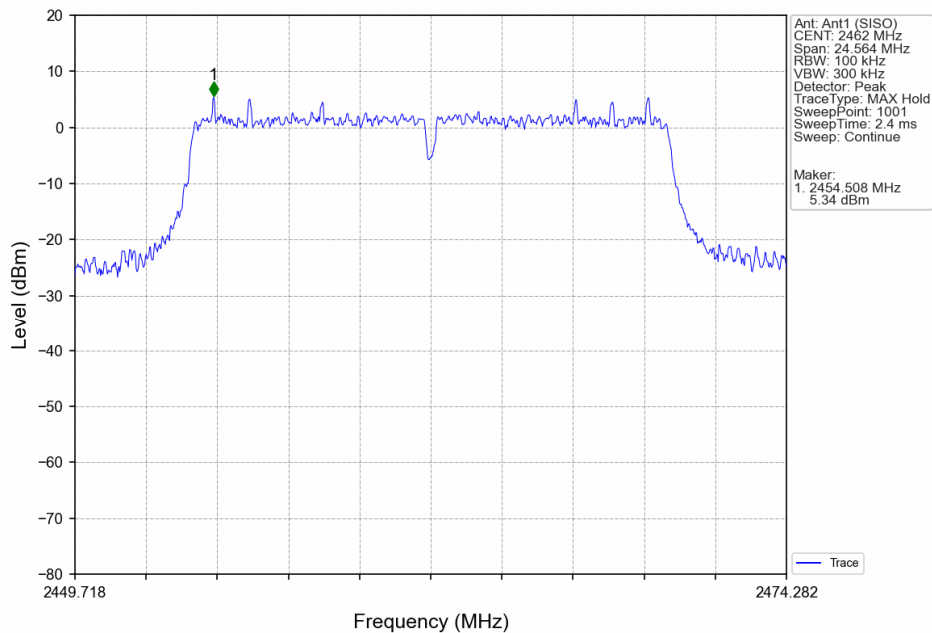
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



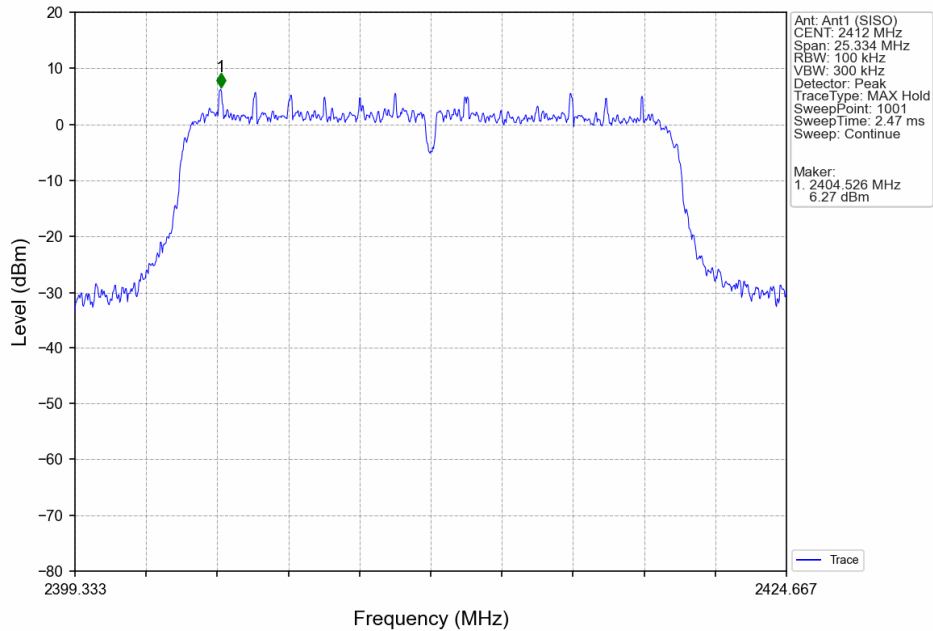
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



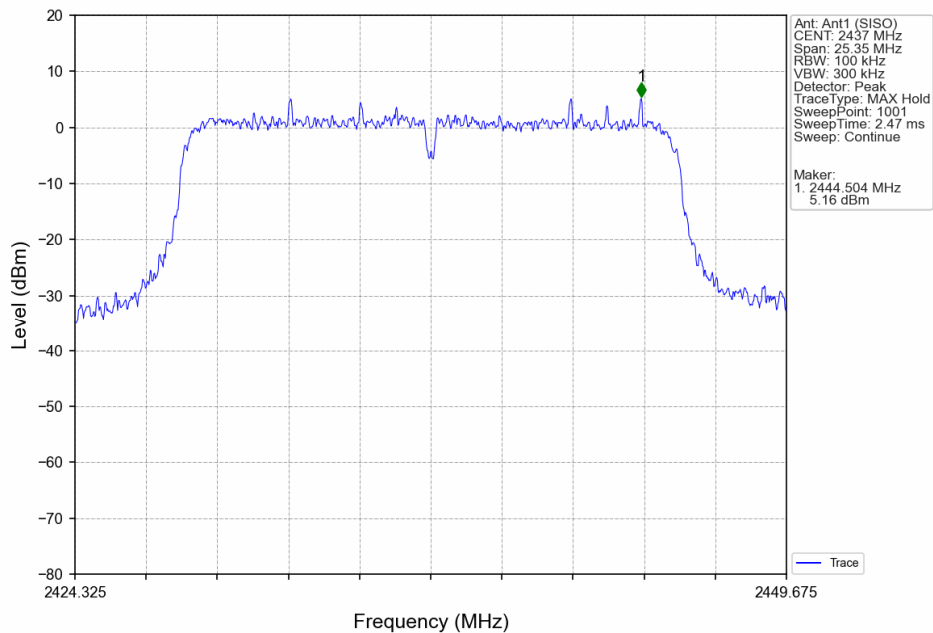
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802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



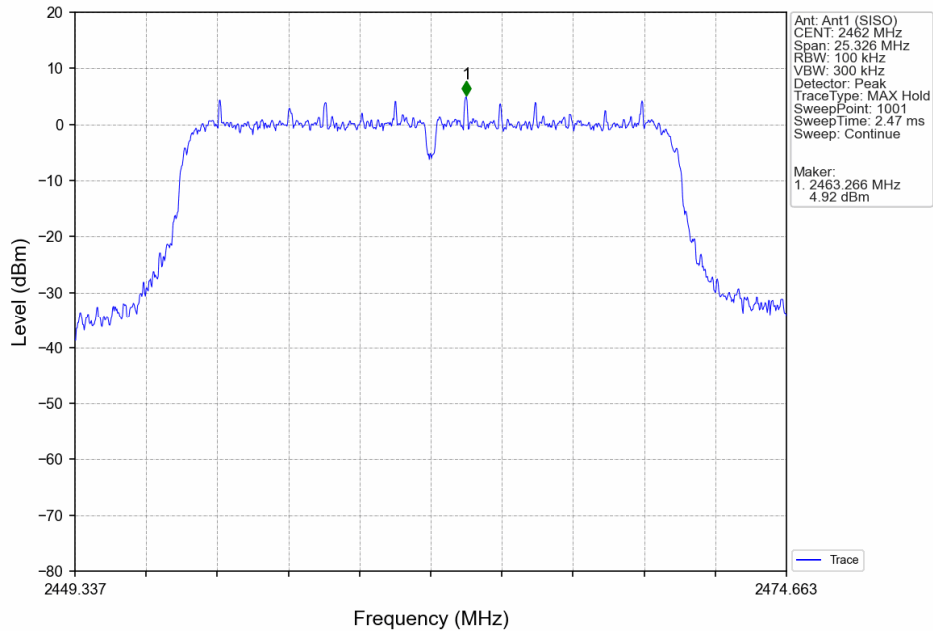
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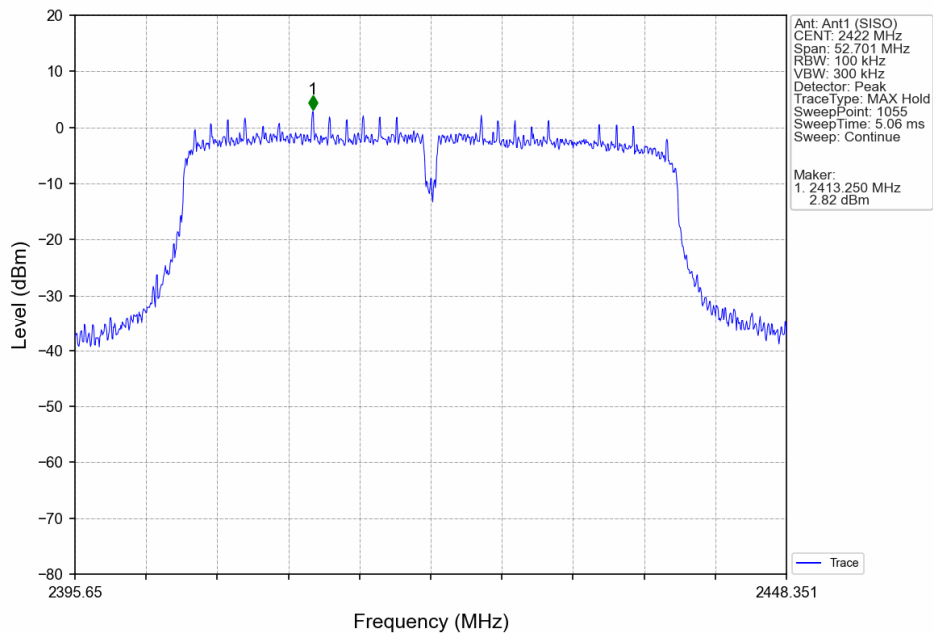
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802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



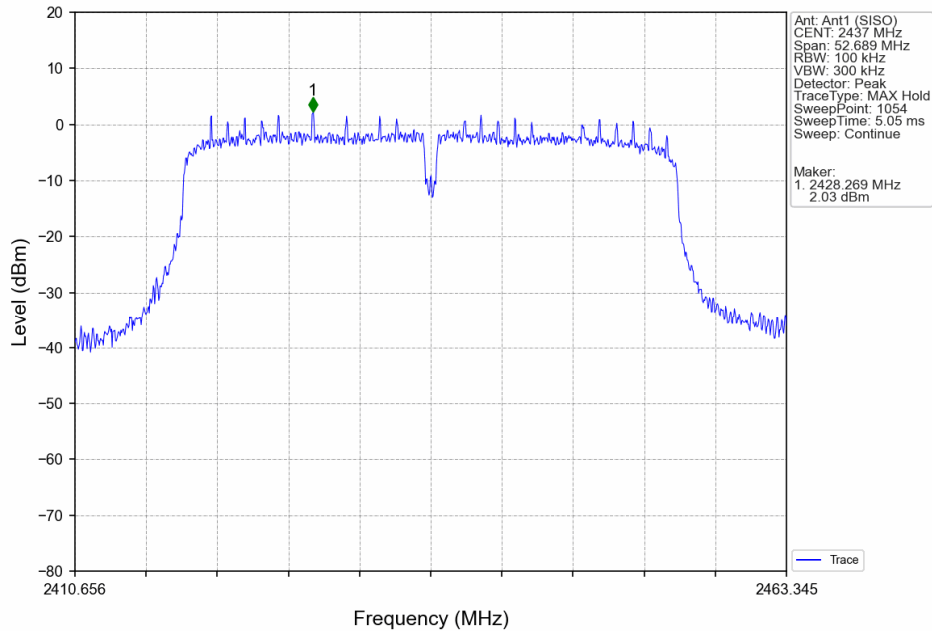
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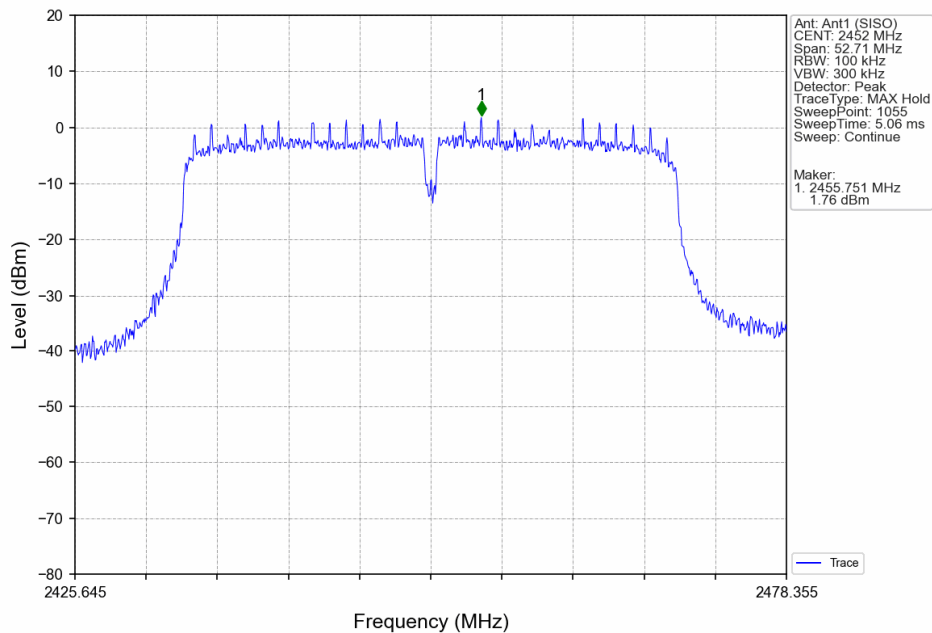
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802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV

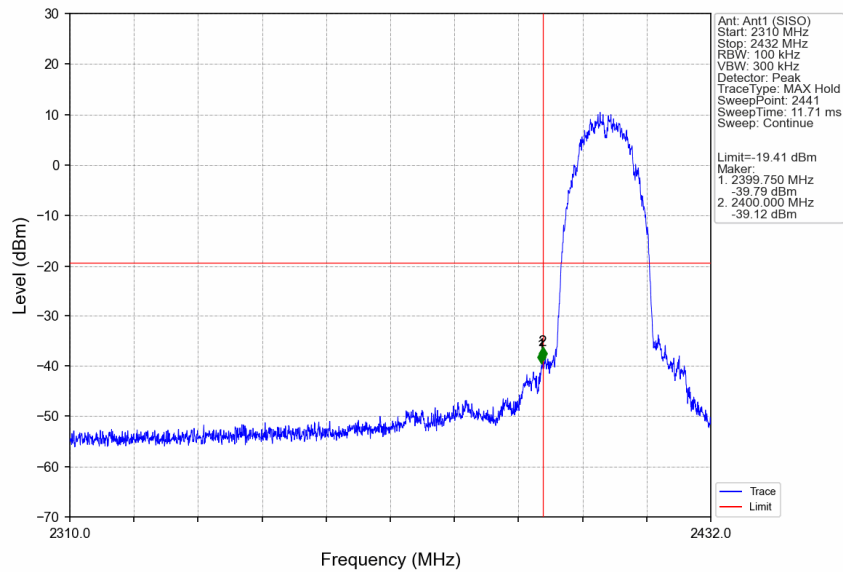


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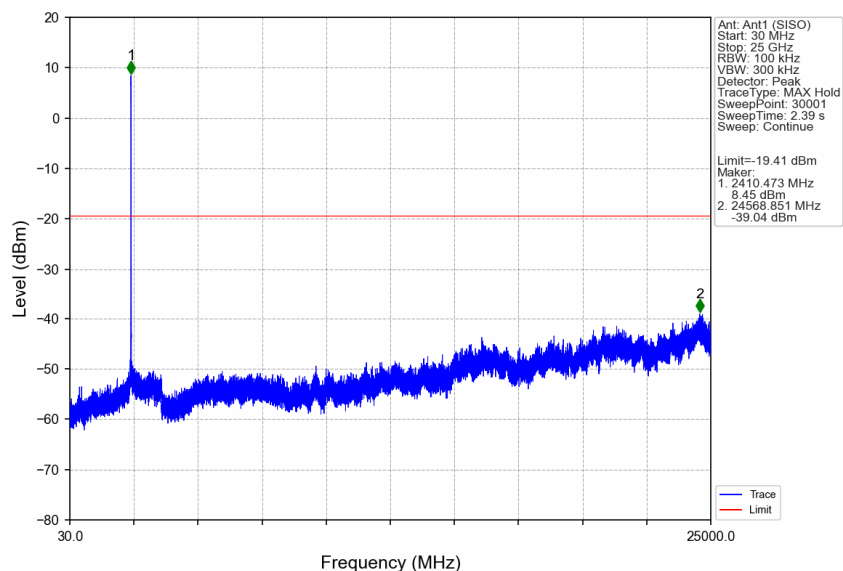


5.2.2 CSE

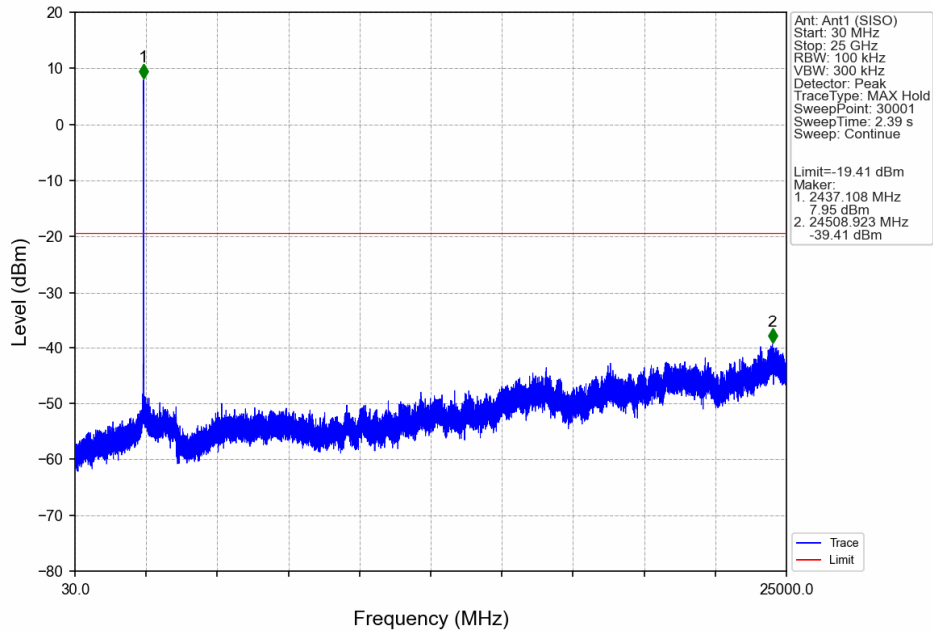
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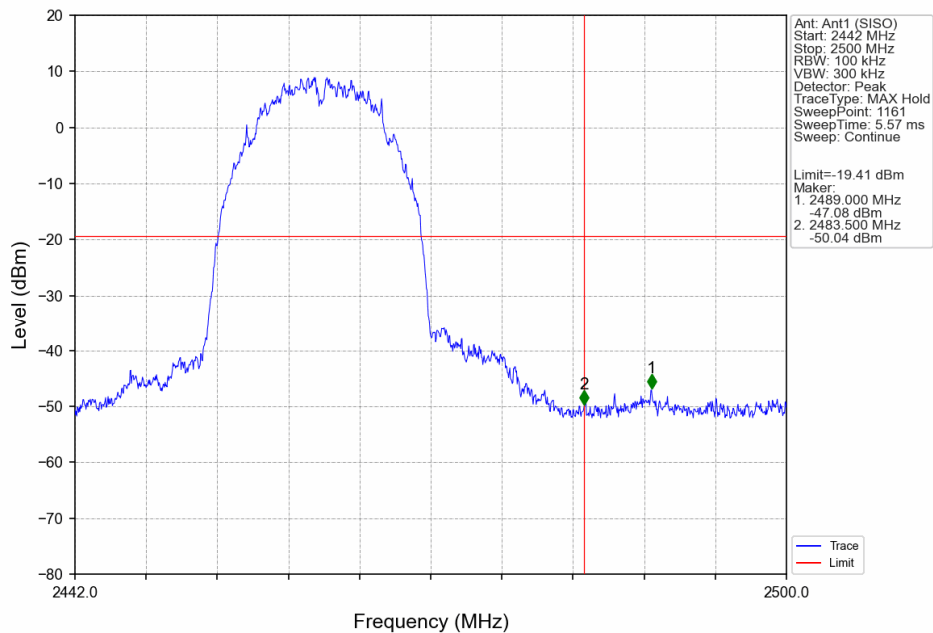
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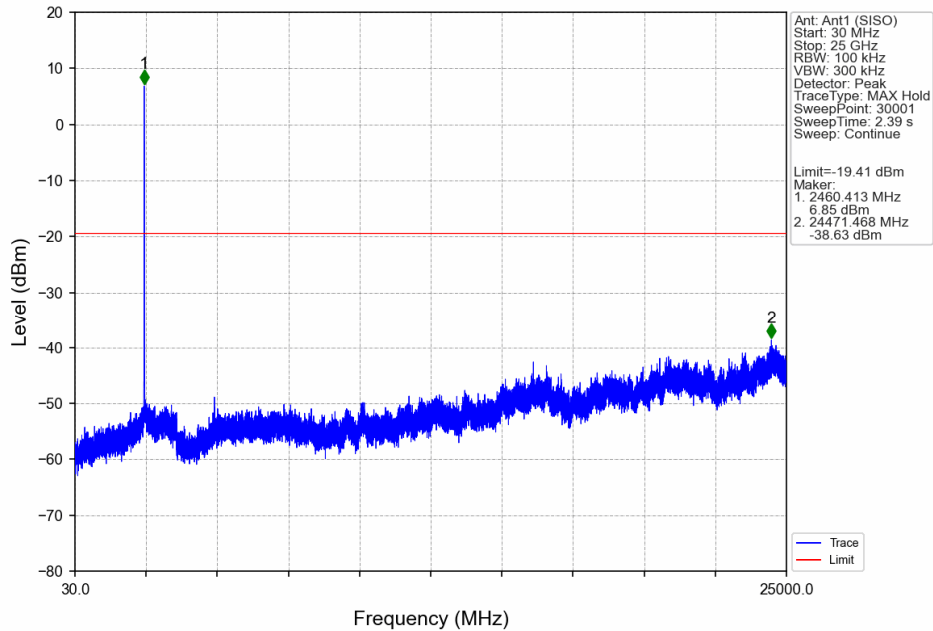
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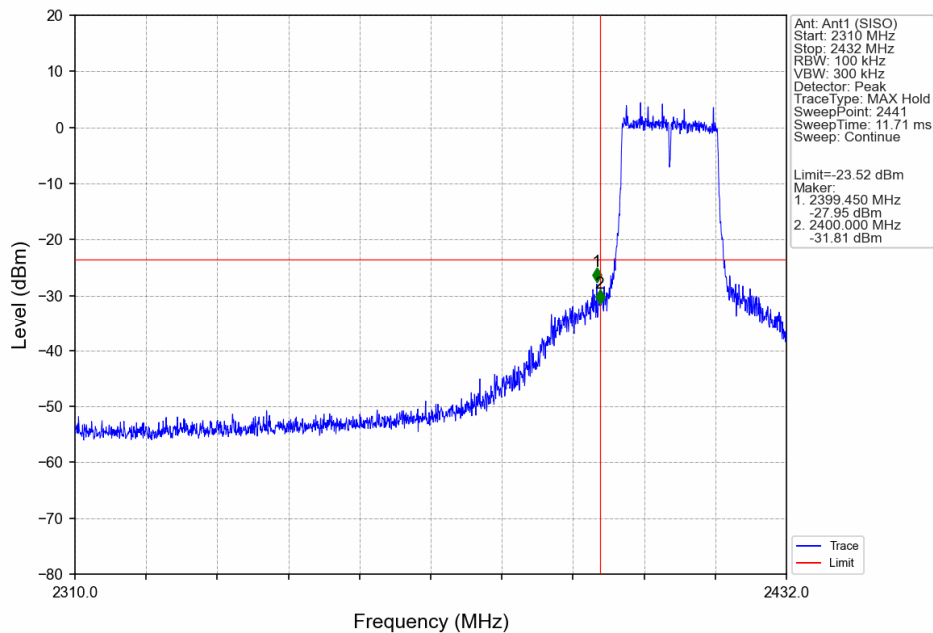
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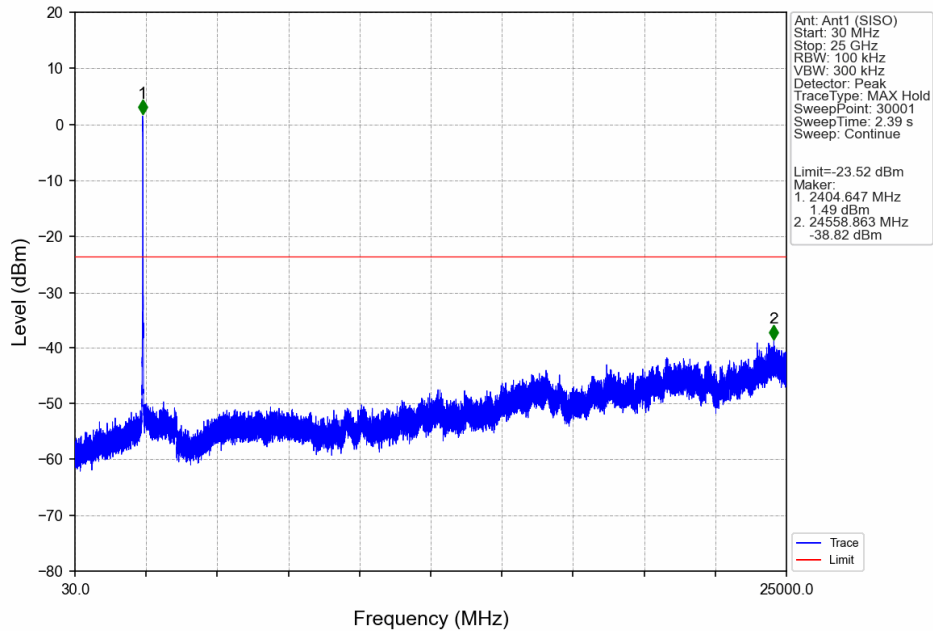
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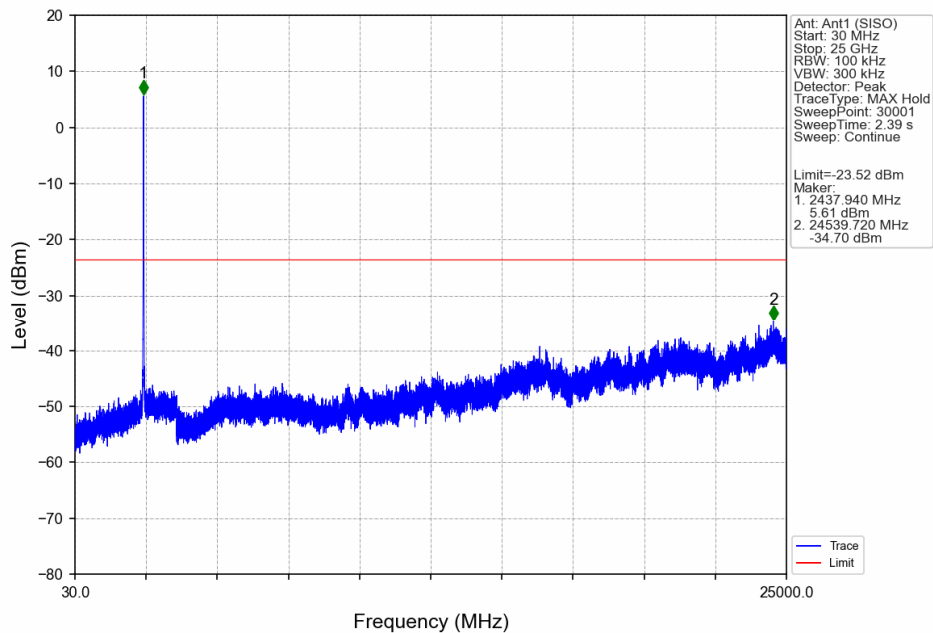
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



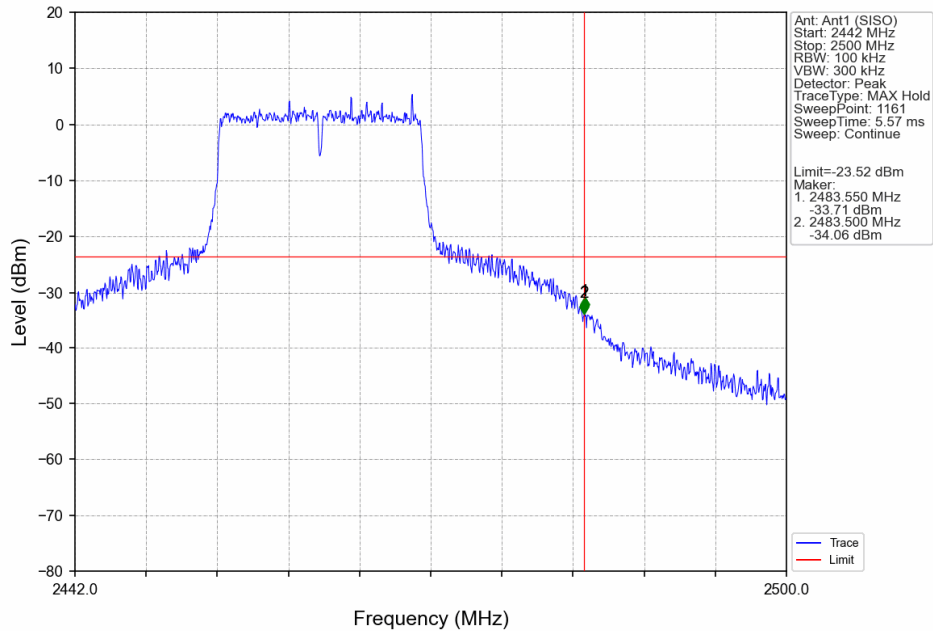
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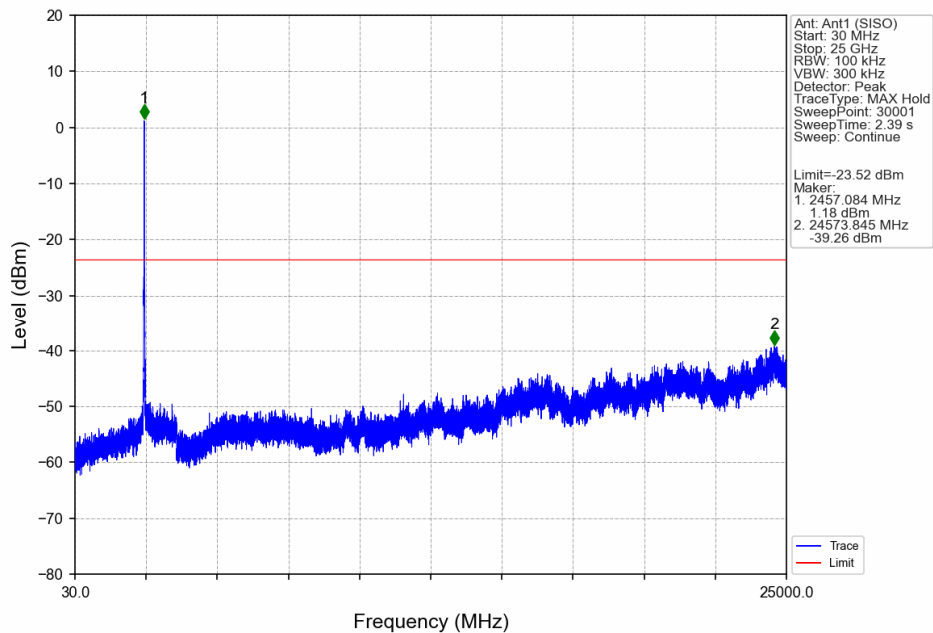
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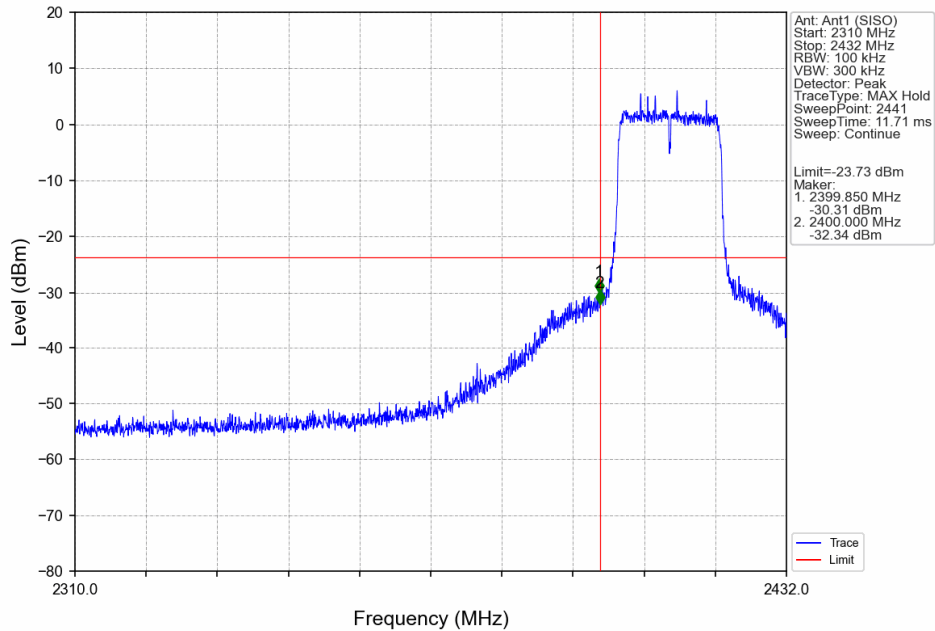
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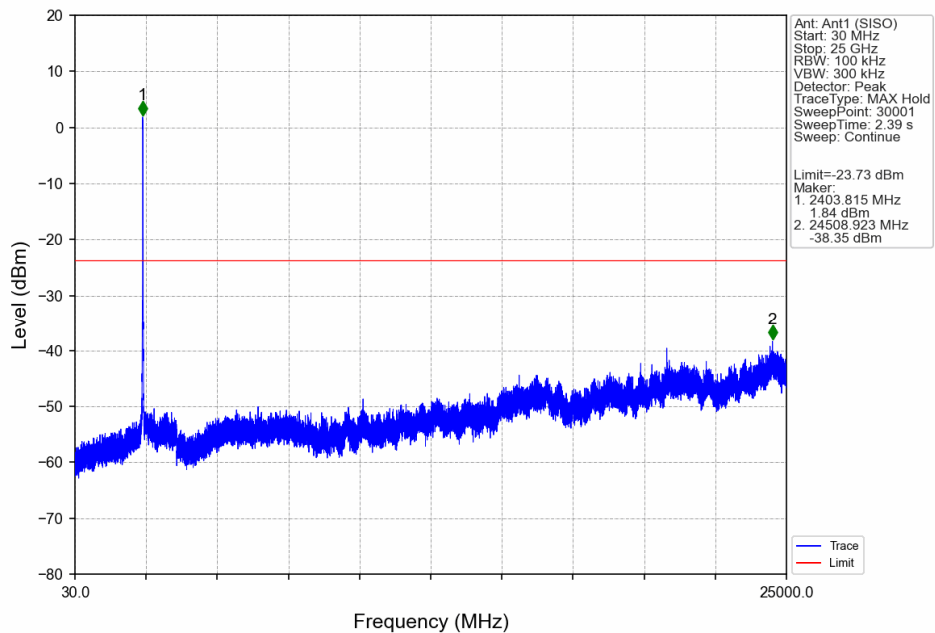
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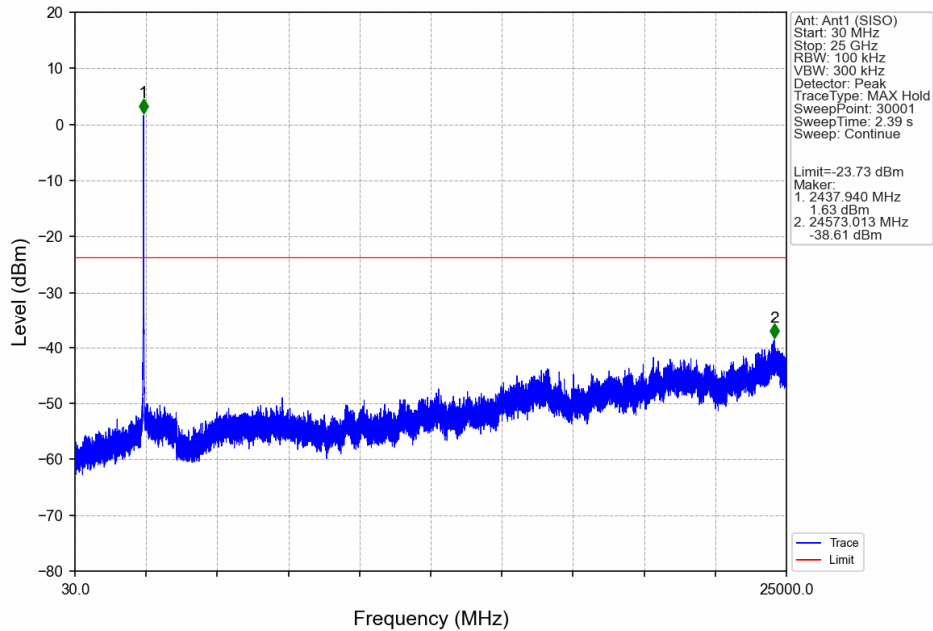
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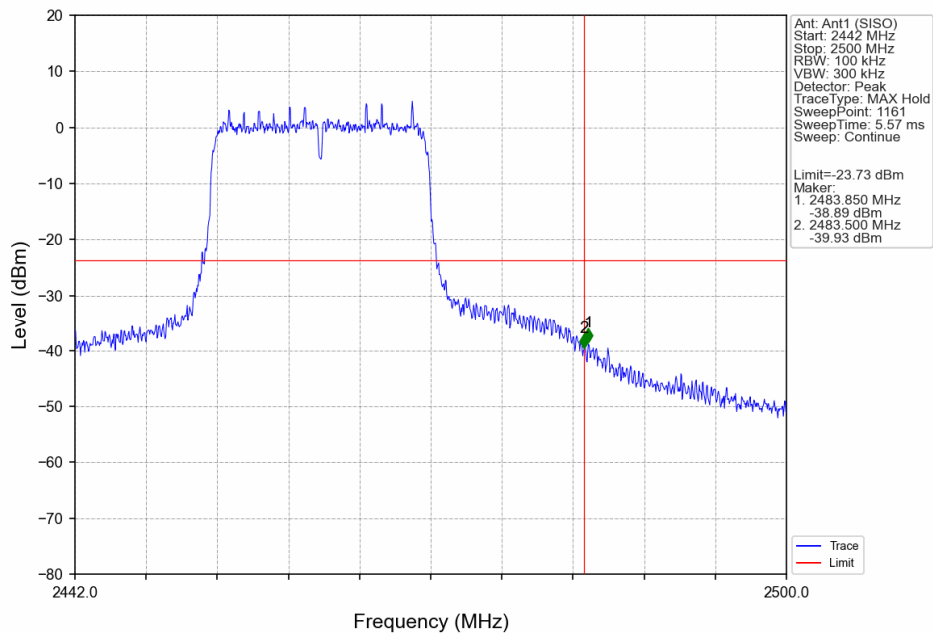
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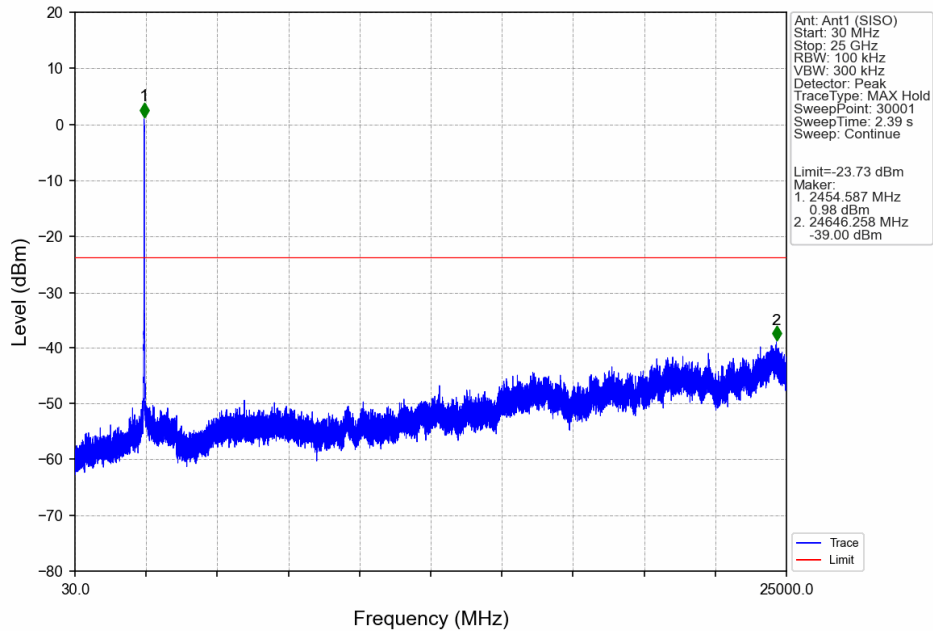
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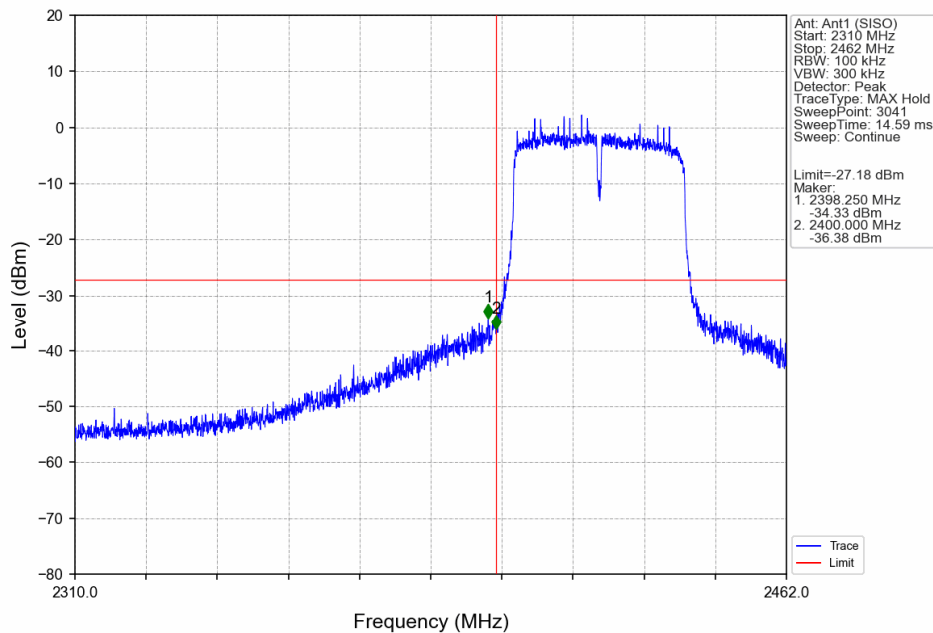
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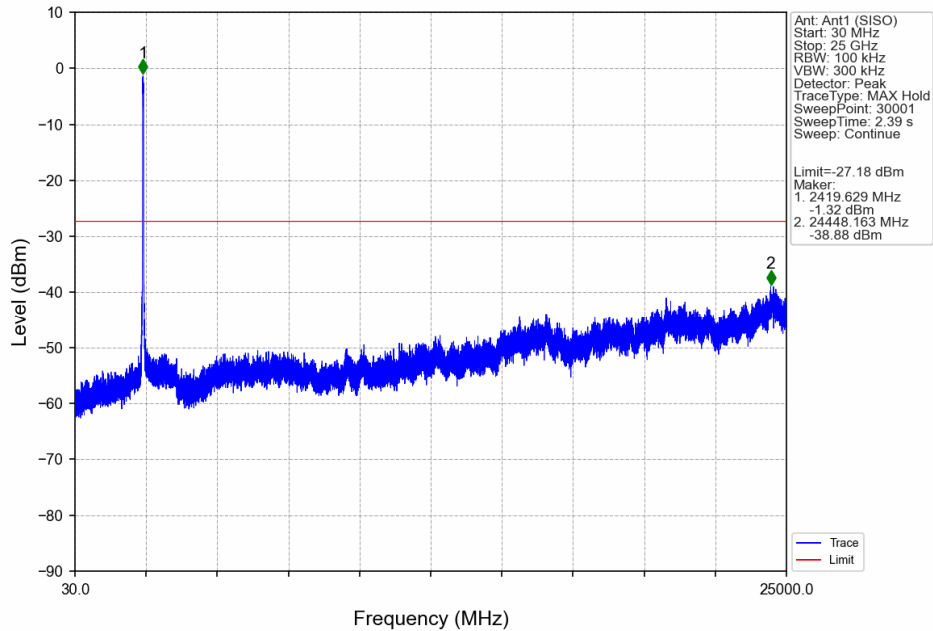
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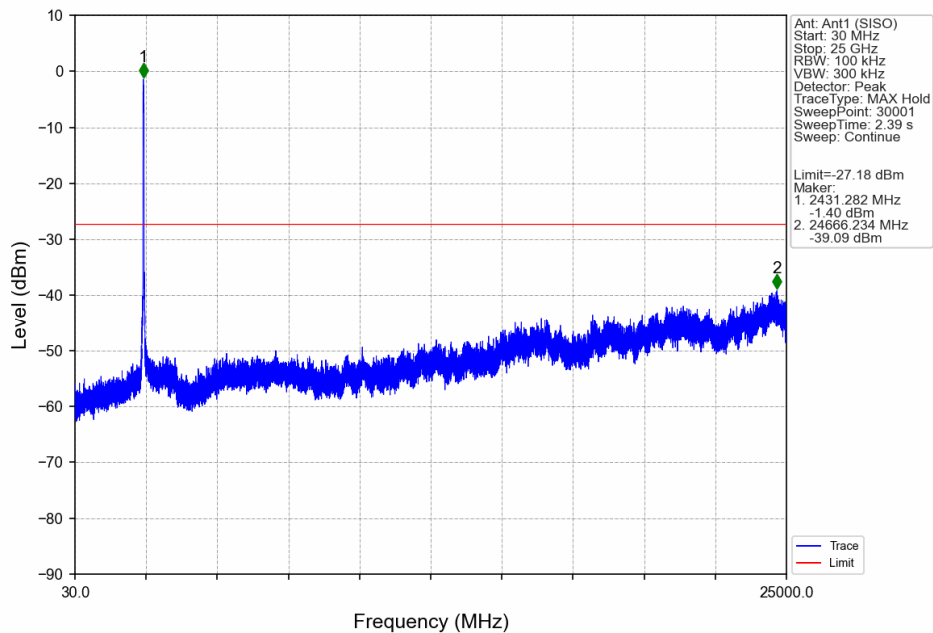
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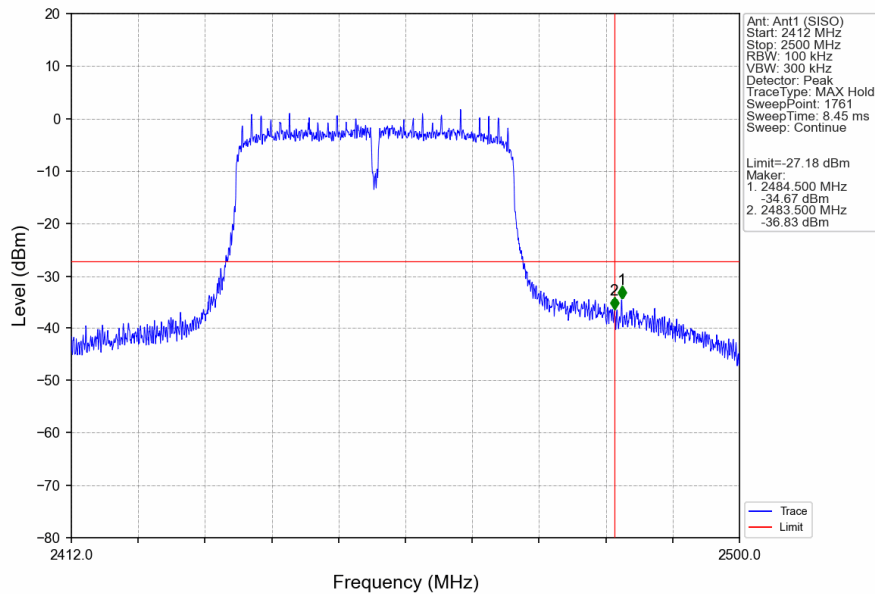
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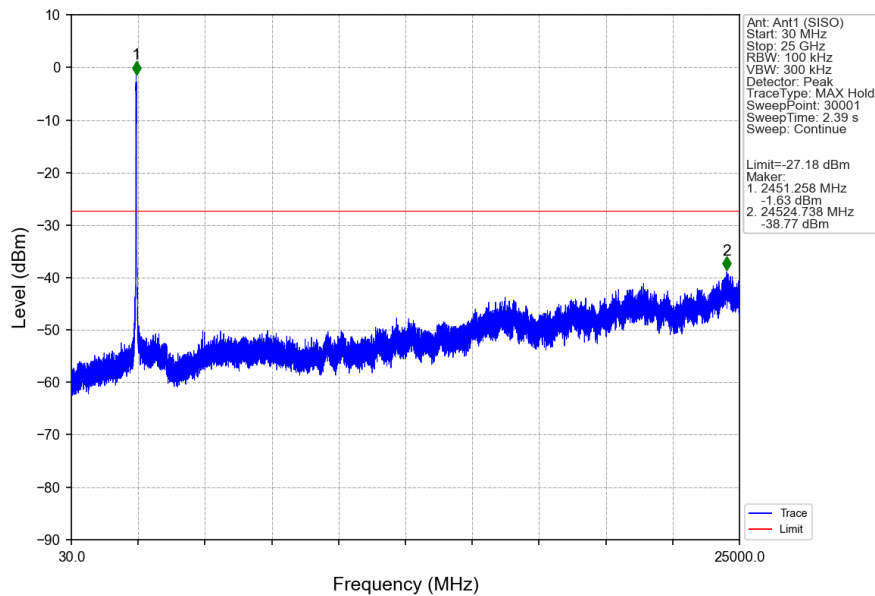
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



- End of the Report -

