

FCC/ISED - TEST REPORT

Report Number : **68.950.23.0970.01** Date of Issue: **2023-12-06**

Model/HVIN : **EF-MT-H10-1**

Product Type : **EcoFlow PowerInsight**

Applicant : **EcoFlow Inc.**

Address : **1st Floor, Building 1, Plant E, Jiehe Industrial City, Shuitian**
Community, Shiyan Street, Bao'an District, Shenzhen City,
Guangdong 518000, China

Manufacturer : **EcoFlow Inc.**

Address : **1st Floor, Building 1, Plant E, Jiehe Industrial City, Shuitian**
Community, Shiyan Street, Bao'an District, Shenzhen City,
Guangdong 518000, China

Test Result : ☒ **Positive** ☐ Negative

Total pages including Appendices : **74**

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2 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12 & 13, Zhiheng Wisdomland Business Park, Guankou Erlu,
Nantou, Nanshan District
Shenzhen 518052
P.R. China

Telephone: 86 755 8828 6998

Fax: 86 755 8828 5299

FCC Registration 514049

No.:

FCC Designation CN5009
Number:

ISED CAB CN0077
identifier

IC Registration 10320A
No.:

3 Description of the Equipment Under Test

Product:	EcoFlow PowerInsight
Model no.:	EF-MT-H10-1
Brand name:	
PMN:	EcoFlow PowerInsight
Hardware Version Identification No. (HVIN)	EF-MT-H10-1
FCC ID:	2A2P9-MTH101
IC:	27618-MTH101
Rating:	3.8VDC, 3000mAh, 11.4Wh rechargeable Li-ion battery or 5VDC, 2A supplied by external adapter or 5VDC, 2A supplied by charging base
RF Transmission Frequency:	2402MHz-2480MHz
No. of Operated Channel:	40
Modulation:	GFSK
Antenna Type:	For ESP32-S3-WROOM-1U Module: FPCB For MT7663BSN Module: FPCB
Antenna B Gain:	1.34dBi (MT7663BSN Module Antenna, Antenna model No.: X4-AUX)
Antenna C Gain:	0.81dBi (ESP32-S3-WROOM-1U Module Antenna, Antenna model No.: X4)
Description of the EUT:	The EUT is an EcoFlow PowerInsight. It has two wireless modules. The module ESP32-S3-WROOM-1U supports Bluetooth Low Energy, 2.4G Wi-Fi functions. And the module MT7663BSN supports Bluetooth Low Energy/Bluetooth BDR+EDR, 2.4G Wi-Fi & 5G Wi-Fi functions.

Only Bluetooth Low Energy included in this report.

NOTE:

1. The above EUT's information is declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2021 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators
RSS-Gen Issue 5 April 2018 + Amendment 1 (March 2019) + Amendment 2 (February 2021)	General Requirements for Compliance of Radio Apparatus
RSS-247 Issue 3 August 2023	Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSS) and License-Exempt Local Area Network (LE-LAN) Devices

All the test methods were according to KDB 558074 D01 15.247 Meas Guidance v05r02 Measurement Guidance and ANSI C63.10-2020.

5 Summary of Test Results

Technical Requirements			
FCC Part 15 Subpart C/ RSS-247 Issue 3/ RSS-Gen Issue 5			
Test Condition		Test Result	Test Site
§15.207 RSS-GEN 8.8	Conducted emission AC power port	Pass	Site 1
§15.247 (b) (3)	Conducted output power	Pass	Site 1
RSS-247 5.4(d)	Equivalent Isotropic Radiated Power	Pass	Site 1
§15.247(e) RSS-247 5.2(b)	Power spectral density	Pass	Site 1
§15.247(a)(2) RSS-247 5.2(a) & RSS-GEN 6.7	6dB bandwidth	Pass	Site 1
§15.247(a)(1) RSS-247 5.1(b)	20dB Occupied bandwidth	N/A	--
RSS-GEN 6.7	99% Occupied Bandwidth	Pass	Site 1
§15.247(a)(1) RSS-247 5.1(b)	Carrier frequency separation	N/A	--
§15.247(a)(1)(iii) RSS-247 5.1(d)	Number of hopping frequencies	N/A	--
§15.247(a)(1)(iii) RSS-247 5.1(d)	Dwell Time	N/A	--
§15.247(d) RSS-247 5.5	Spurious RF conducted emissions	Pass	Site 1
§15.247(d) RSS-247 5.5	Band edge	Pass	Site 1
§15.247(d) & §15.209 & §15.205 RSS-247 5.5 & RSS-Gen 6.13	Spurious radiated emissions for transmitter	Pass	Site 1
§15.203 RSS-Gen 6.8	Antenna requirement	Pass See note 2	--

Note 1: N/A=Not Applicable.

Note 2: The EUT uses a FPCB antenna (ANT_B & ANT_C), which gain are 1.34dBi (ANT_B) and 0.81dBi (ANT_C). In accordance to §15.203 & RSS-Gen 6.8, it is considered sufficiently to comply with the provisions of this section.

6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2A2P9-MTH101, IC: 27618-MTH101, complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C rules and RSS-247, RSS-GEN.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

□ - Not Performed

The Equipment under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: 2023-11-17

Testing Start Date: 2023-11-17

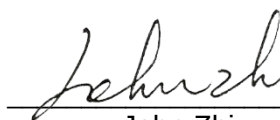
Testing End Date: 2023-11-24

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

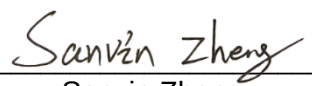
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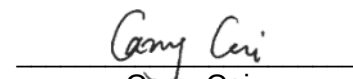
Prepared by:

Tested by:


John Zhi
Project Manager

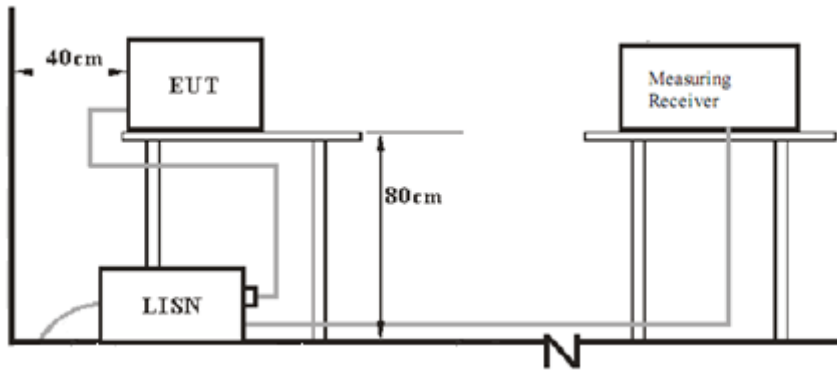



Sanvin Zheng
Project Engineer


Carry Cai
Test Engineer

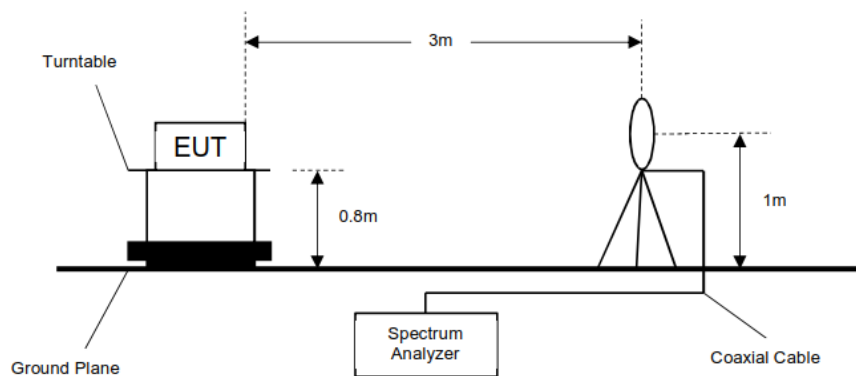
7 Test Setups

7.1 AC Power Line Conducted Emission test setups

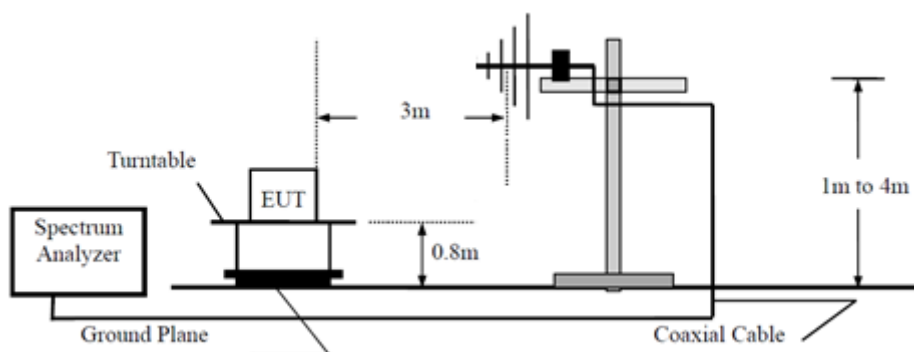


7.2 Radiated test setups

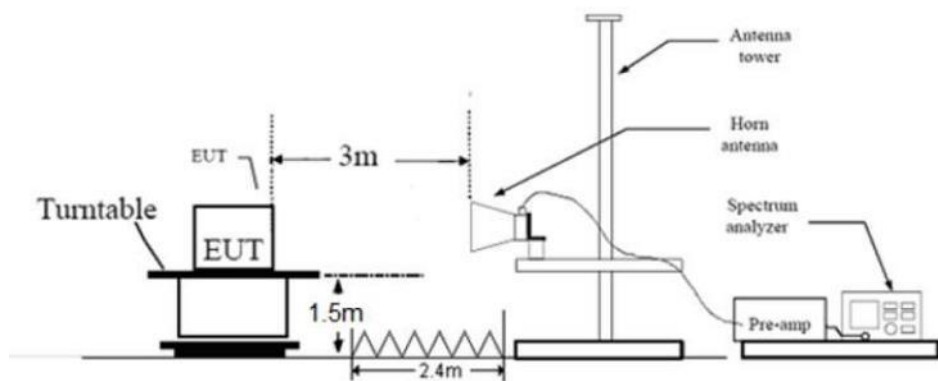
9kHz - 30MHz



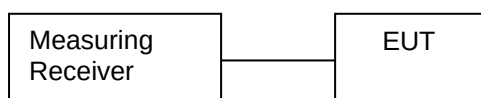
30MHz - 1GHz



Above 1GHz



7.3 Conducted RF test setup



8 Systems Test Configuration

Auxiliary Equipment Used during Test:

Description	Manufacturer	Model NO.	S/N
Notebook	LENOVO	X220	429044C

Cables Used During Test:

Cable	Length	Shielded/unshielded	With / without ferrite
USB Cable	100cm	Unshielded	without ferrite

Test software information:

1. For MT7663BSN Module:

Test Software Version	cmd.exe	
Modulation	Setting TX Power	Packet Type
GFSK_1M	0	PRBS9
GFSK_2M	0	PRBS9

2. For ESP32-S3-WROOM-1U Module:

Test Software Version	EspRFTTestTool_v3.6_Manual.exe	
Modulation	Setting TX Attenuation Level	Packet Type
GFSK_1M	10	PRBS9
GFSK_2M	10	PRBS9

The system was configured to non-hopping mode, testing channel 0, 19, 39.

9 Technical Requirement

9.1 Conducted Emission

Test Method

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. Both sides of AC line were checked for maximum conducted interference.
6. The frequency range from 150 kHz to 30 MHz was searched.
7. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

Limit

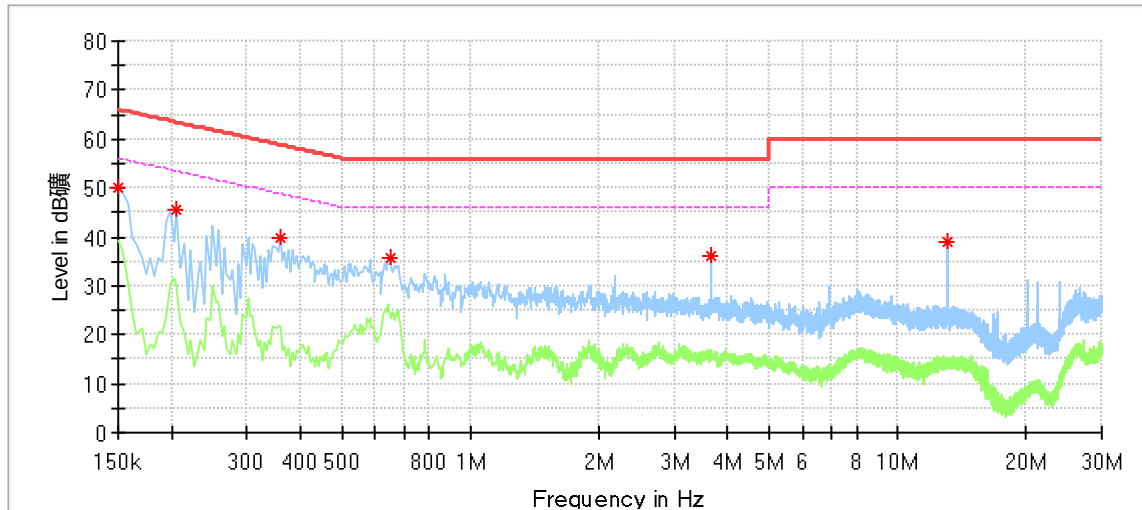
According to §15.207 & RSS-GEN 8.8, conducted emissions limit as below:

Frequency MHz	QP Limit dB μ V	AV Limit dB μ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

*Decreasing linearly with logarithm of the frequency

Conducted Emission

Product Type : EcoFlow PowerInsight
 M/N : EF-MT-H10-1
 Operating Condition : Transmit mode
 Test Specification : Line
 Comment : AC 120V/60Hz



Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.150000	49.89	---	66.00	16.11	L1	9.52
0.206000	45.46	---	63.37	17.90	L1	9.55
0.358000	39.71	---	58.78	19.07	L1	9.57
0.650000	35.49	---	56.00	20.51	L1	9.60
3.662000	35.98	---	56.00	20.02	L1	9.68
13.078000	38.83	---	60.00	21.17	L1	9.98

Remark:

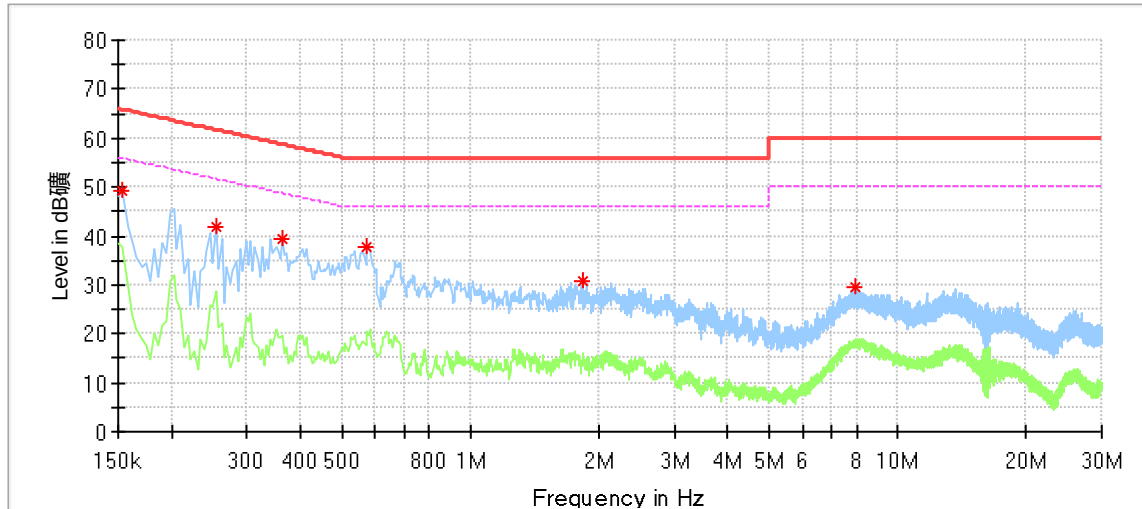
Max Peak=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

Conducted Emission

Product Type : EcoFlow PowerInsight
 M/N : EF-MT-H10-1
 Operating Condition : Transmit mode
 Test Specification : Neutral
 Comment : AC 120V/60Hz



Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.154000	49.05	---	65.78	16.73	N	9.55
0.254000	41.92	---	61.63	19.70	N	9.59
0.362000	39.20	---	58.68	19.48	N	9.61
0.574000	37.60	---	56.00	18.40	N	9.63
1.830000	30.66	---	56.00	25.34	N	9.65
7.942000	29.34	---	60.00	30.66	N	9.90

Remark:

Max Peak=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

9.2 Conducted Peak Output Power & EIRP

Test Method

1. The EUT was placed on 0.8m height table, the RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Use the following test receiver settings:
Span = approximately 5 times the 20dB bandwidth, centered on a hopping channel
RBW > the 20dB bandwidth of the emission being measured, VBW ≥ RBW,
Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power and record the results in the test report.
5. Repeat above procedures until all frequencies measured were complete.

Limits

According to §15.247 (b) (3) & RSS-247 5.4(d), conducted output power limit as below:

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤1	≤30

According to & RSS-247 5.4(d), EIRP limit as below:

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤4	≤36.2

Conducted Peak Output Power & EIRP

For MT7663BSN Module:

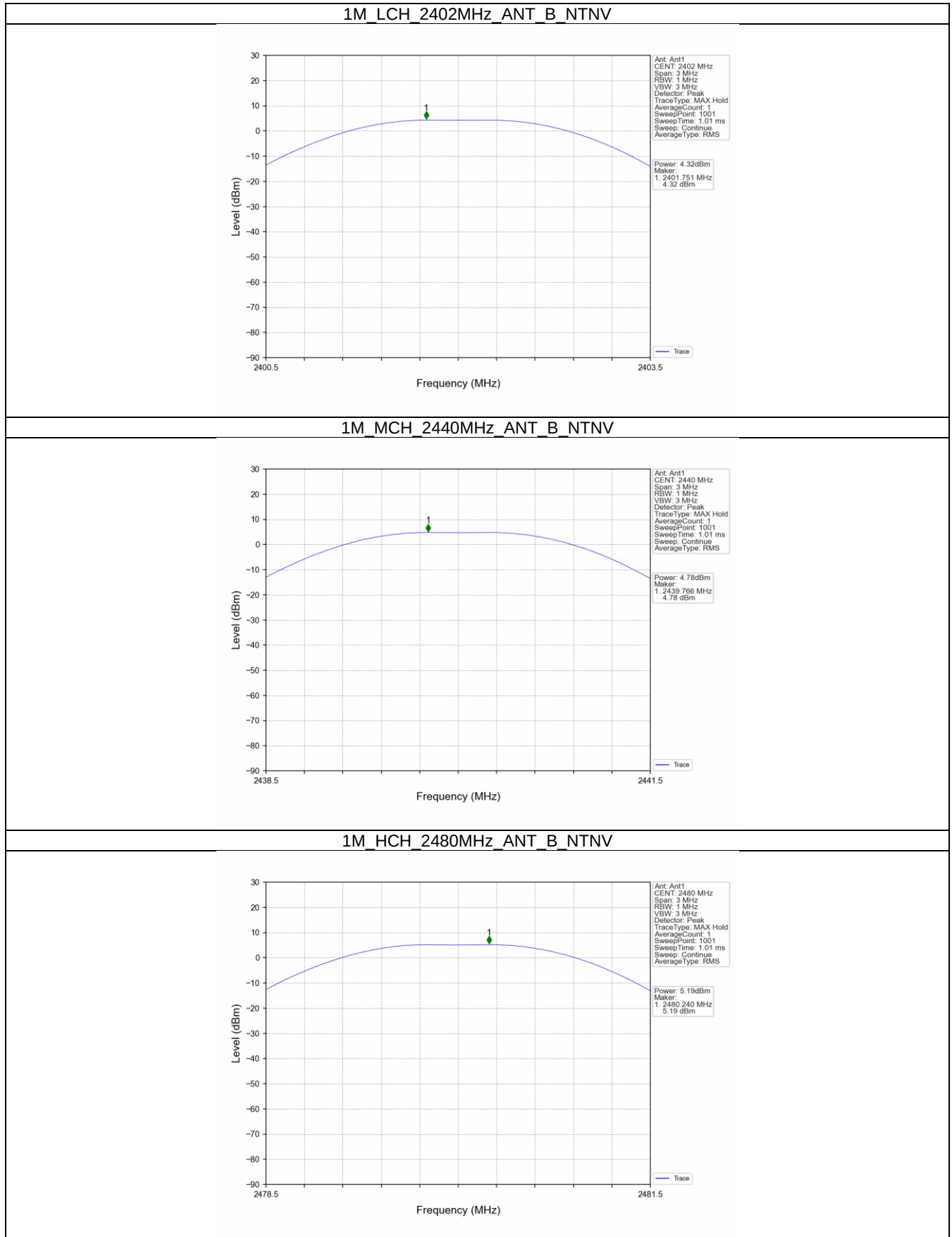
Frequency MHz	Mode	Conducted Peak Output Power dBm	Antenna Gain dBi	EIRP dBm	Result
Bottom channel 2402MHz	LE 1M	4.32	1.34	5.66	Pass
Middle channel 2440MHz	LE 1M	4.78	1.34	6.12	Pass
Top channel 2480MHz	LE 1M	5.19	1.34	6.53	Pass
Bottom channel 2402MHz	LE 2M	4.34	1.34	5.68	Pass
Middle channel 2440MHz	LE 2M	4.82	1.34	6.16	Pass
Top channel 2480MHz	LE 2M	5.25	1.34	6.59	Pass

For ESP32-S3-WROOM-1U Module:

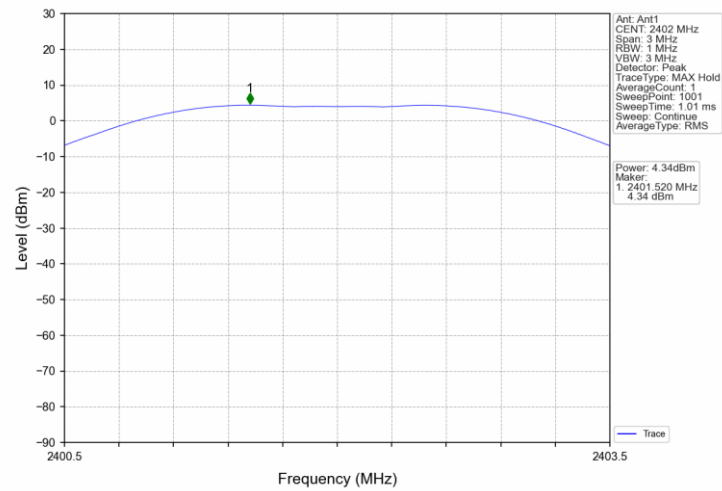
Frequency MHz	Mode	Conducted Peak Output Power dBm	Antenna Gain dBi	EIRP dBm	Result
Bottom channel 2402MHz	LE 1M	5.38	0.81	6.19	Pass
Middle channel 2440MHz	LE 1M	5.99	0.81	6.80	Pass
Top channel 2480MHz	LE 1M	7.48	0.81	8.29	Pass
Bottom channel 2402MHz	LE 2M	5.65	0.81	6.46	Pass
Middle channel 2440MHz	LE 2M	6.10	0.81	6.91	Pass
Top channel 2480MHz	LE 2M	7.69	0.81	8.50	Pass

Test Graphs:

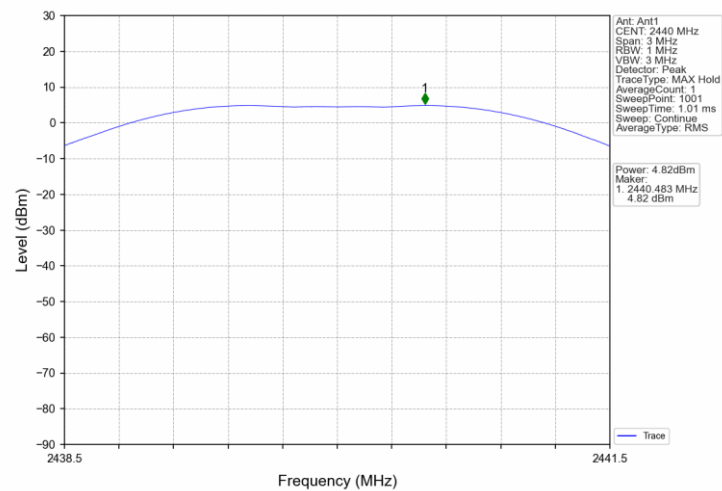
For MT7663BSN Module:



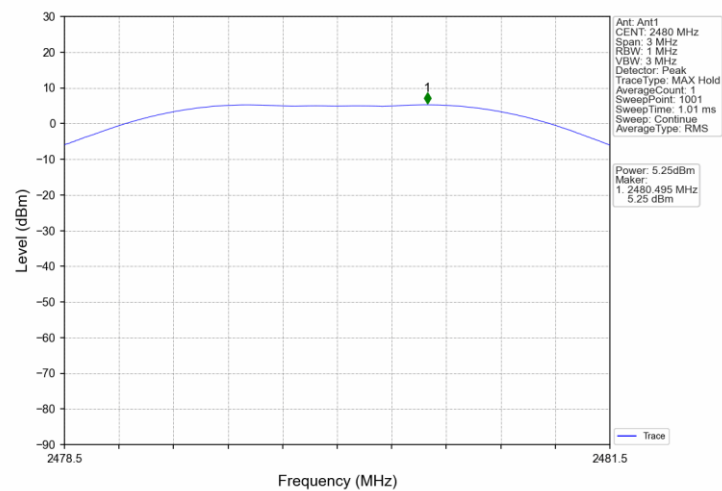
2M_LCH_2402MHz_ANT_B_NTNV



2M_MCH_2440MHz_ANT_B_NTNV

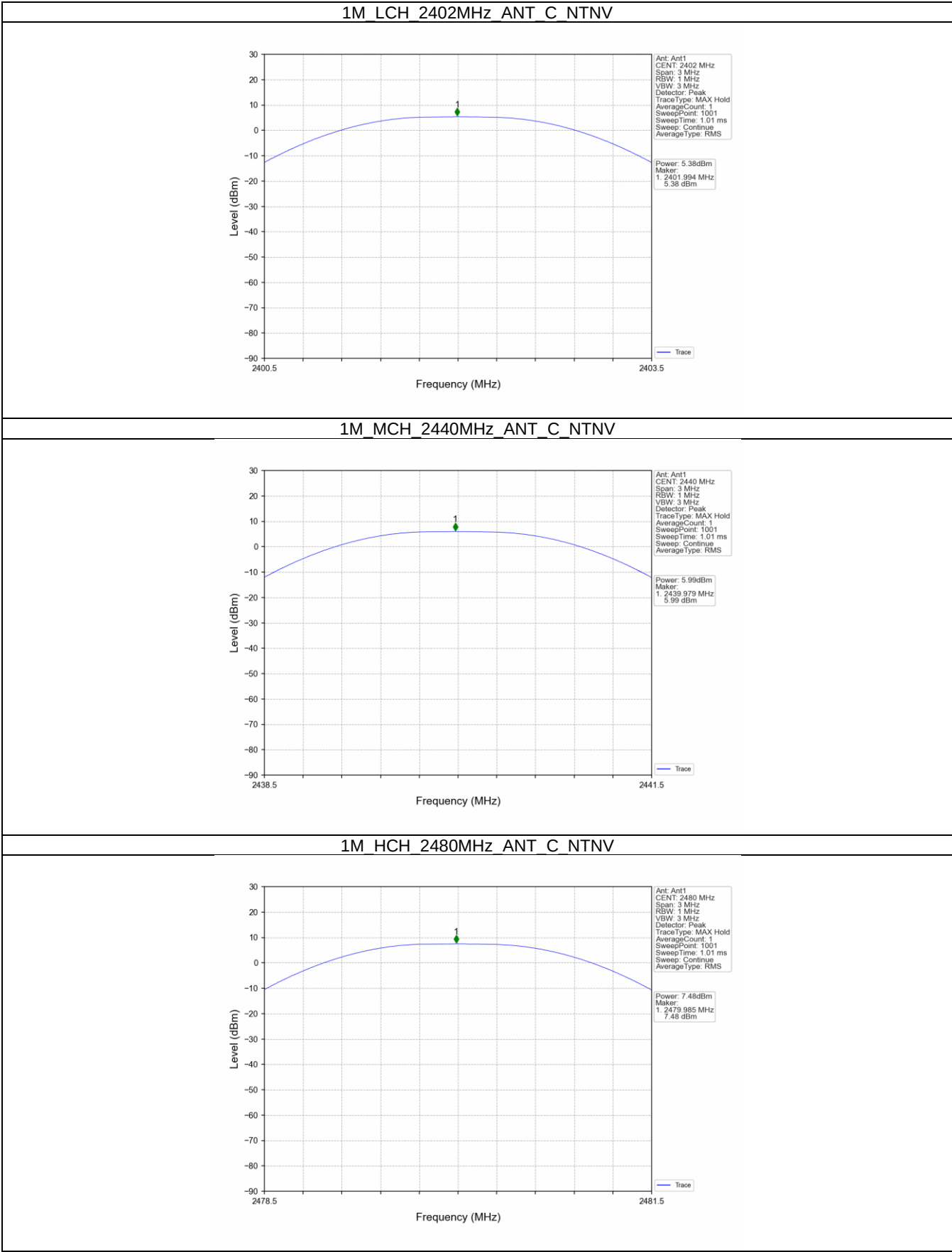


2M_HCH_2480MHz_ANT_B_NTNV

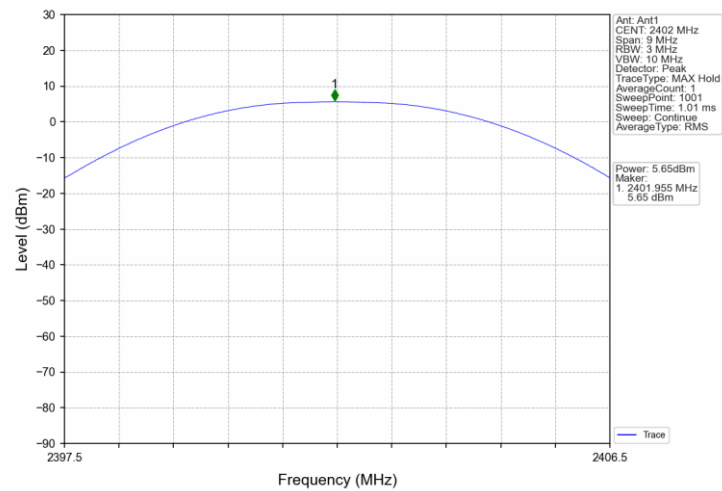




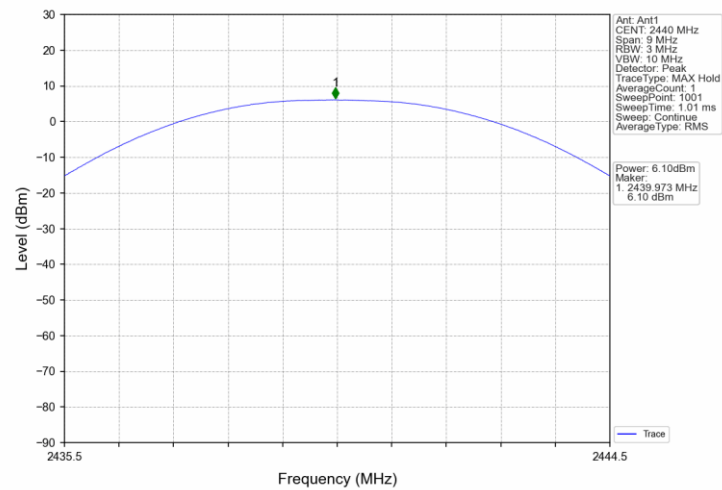
For ESP32-S3-WROOM-1U Module:



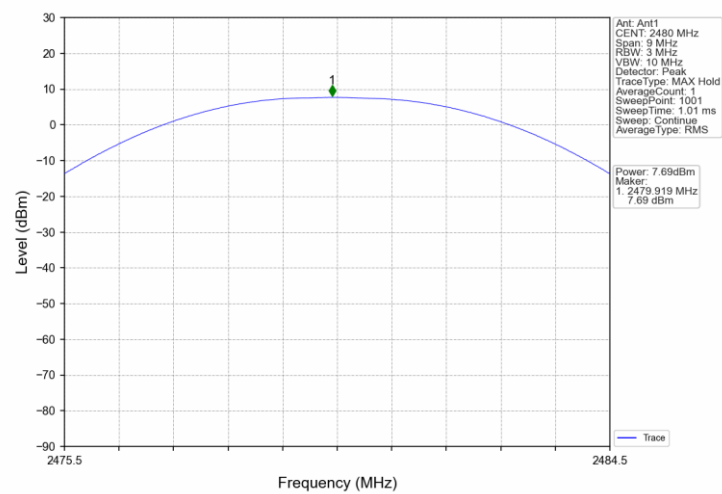
2M_LCH_2402MHz_ANT_C_NTNV



2M_MCH_2440MHz_ANT_C_NTNV



2M_HCH_2480MHz_ANT_C_NTNV



9.3 Power Spectral Density

Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
4. Set analyzer center frequency to DTS channel center frequency. RBW=3kHz, VBW $\geq$ 3RBW, Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
5. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
6. Repeat above procedures until other frequencies measured were completed.

Limit

According to §15.247(e) & RSS-247 5.2(b), power spectral density limit as below:

Limit [dBm]

≤ 8

Test result

For MT7663BSN Module:

Frequency MHz	Mode	Power spectral density dBm/3kHz	Result
Bottom channel 2402MHz	LE 1M	-10.25	Pass
Middle channel 2440MHz	LE 1M	-9.62	Pass
Top channel 2480MHz	LE 1M	-8.13	Pass
Bottom channel 2402MHz	LE 2M	-12.09	Pass
Middle channel 2440MHz	LE 2M	-11.69	Pass
Top channel 2480MHz	LE 2M	-10.06	Pass

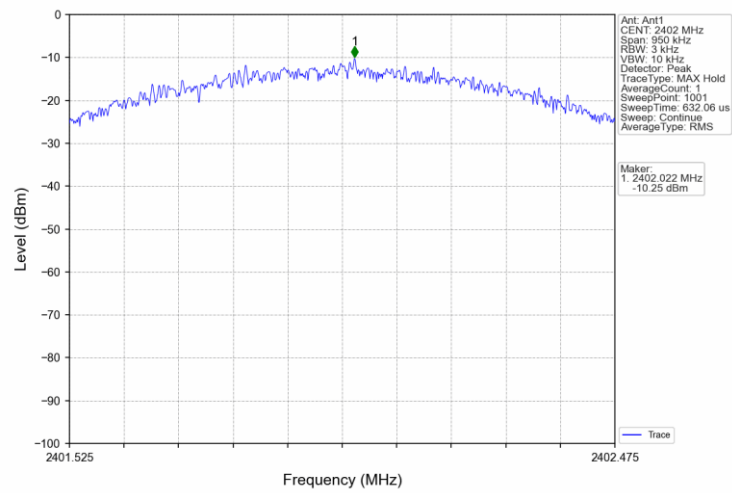
For ESP32-S3-WROOM-1U Module:

Frequency MHz	Mode	Power spectral density dBm/3kHz	Result
Bottom channel 2402MHz	LE 1M	-10.79	Pass
Middle channel 2440MHz	LE 1M	-10.34	Pass
Top channel 2480MHz	LE 1M	-9.95	Pass
Bottom channel 2402MHz	LE 2M	-18.07	Pass
Middle channel 2440MHz	LE 2M	-17.62	Pass
Top channel 2480MHz	LE 2M	-17.17	Pass

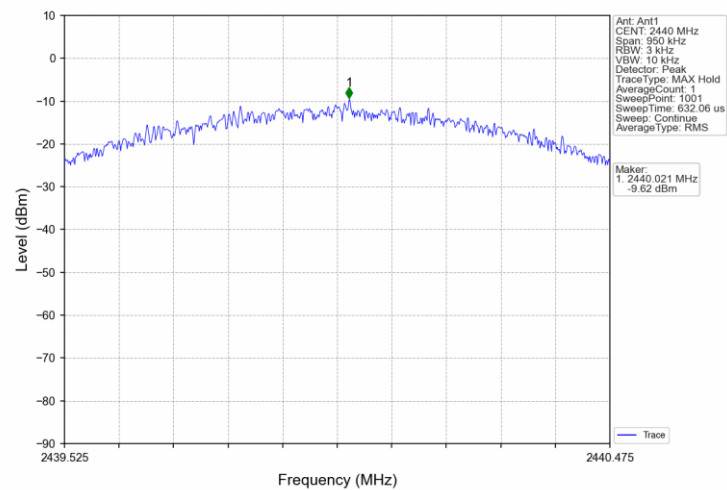
Test Graphs:

For MT7663BSN Module:

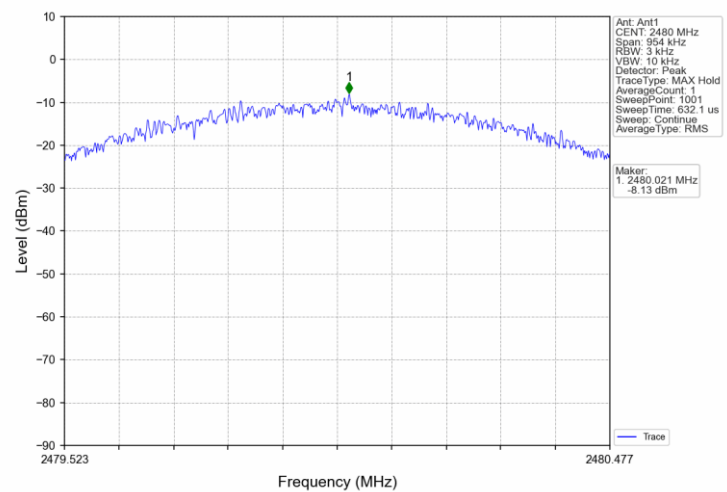
1M_LCH_2402MHz_ANT_B_NTNV



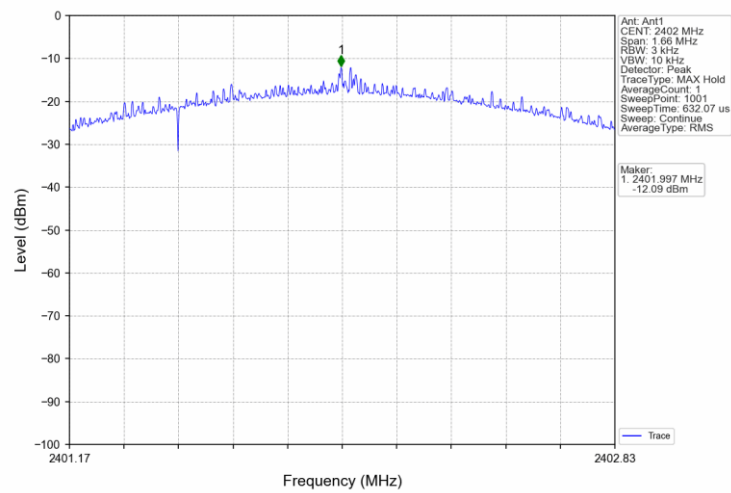
1M_MCH_2440MHz_ANT_B_NTNV



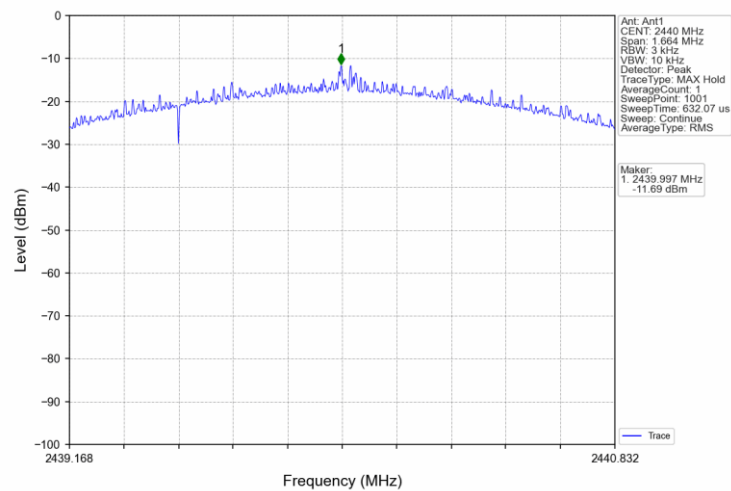
1M_HCH_2480MHz_ANT_B_NTNV



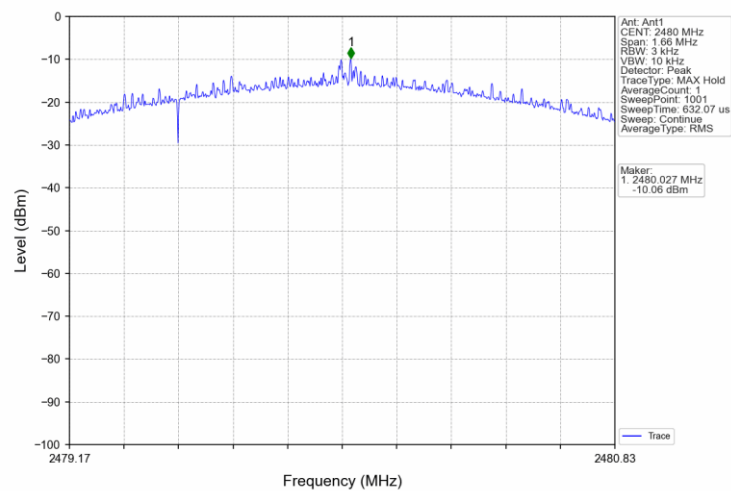
2M_LCH_2402MHz_ANT_B_NTNV



2M_MCH_2440MHz_ANT_B_NTNV

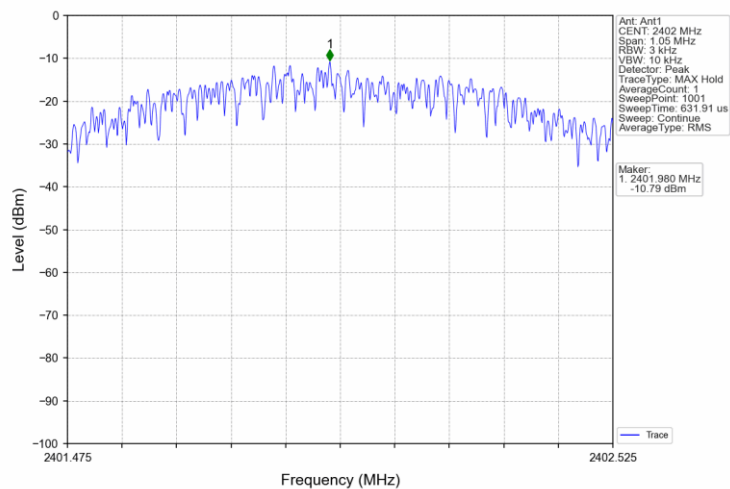


2M_HCH_2480MHz_ANT_B_NTNV

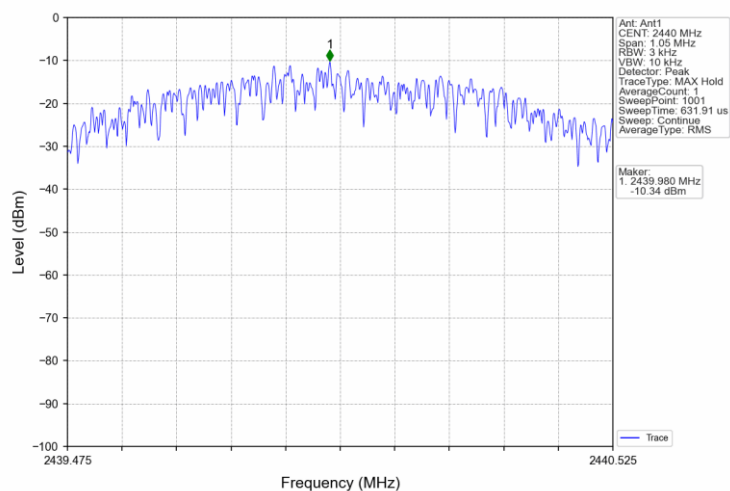


For ESP32-S3-WROOM-1U Module:

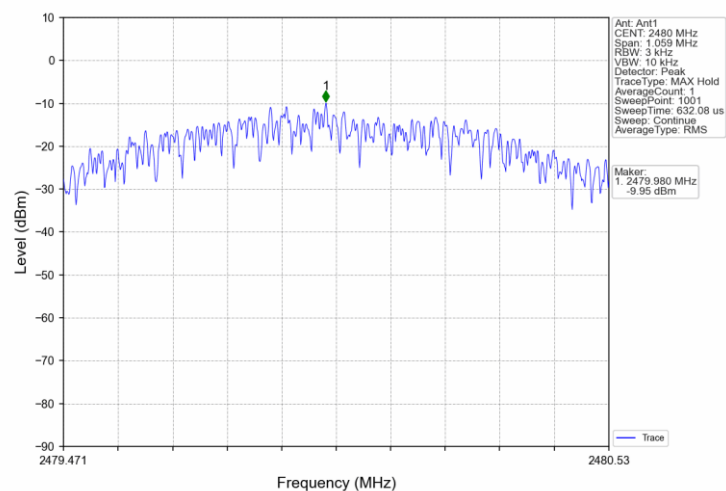
1M LCH 2402MHz ANT C NTVN



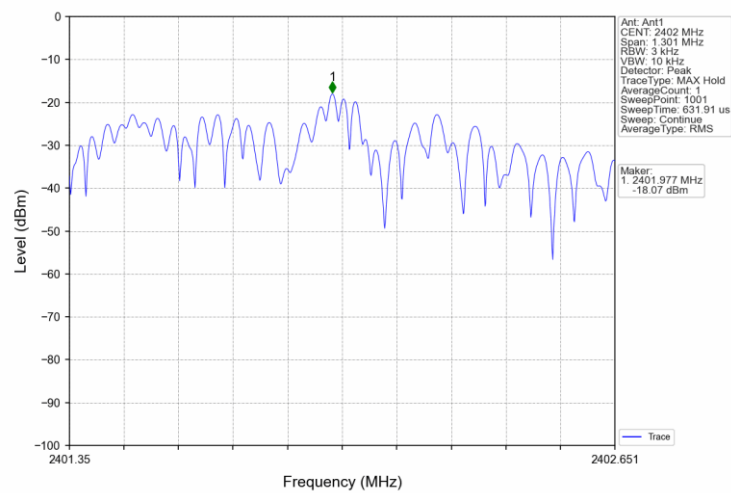
1M_MCH_2440MHz_ANT_C_NTVN



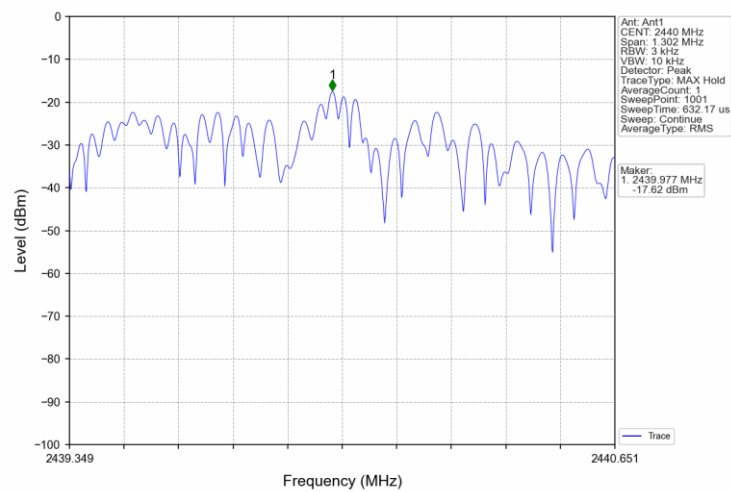
1M HCH 2480MHz ANT C NTVN



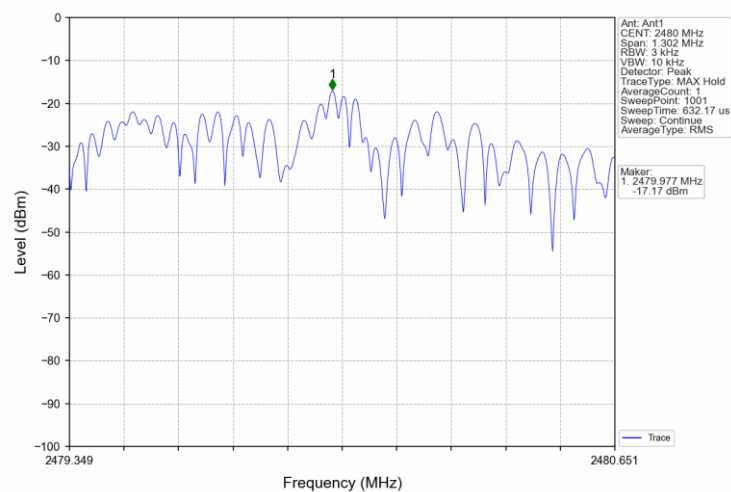
2M_LCH_2402MHz_ANT_C_NTNV



2M_MCH_2440MHz_ANT_C_NTNV



2M_HCH_2480MHz_ANT_C_NTNV



9.4 6 dB Bandwidth

Test Method

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
RBW=100KHz, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Use the automatic bandwidth measurement capability of an instrument, use the X dB bandwidth mode with X set to 6 dB.
5. Allow the trace to stabilize, record the 6 dB Bandwidth value.

Limit

According to §15.247(a)(2) & RSS-247 5.2(a) & RSS-GEN 6.7, 6 dB Bandwidth limit as below:

Limit [kHz]

≥500

Test result

For MT7663BSN Module:

Frequency MHz	Mode	6dB bandwidth MHz	Result
Bottom channel 2402MHz	LE 1M	0.633	Pass
Middle channel 2440MHz	LE 1M	0.633	Pass
Top channel 2480MHz	LE 1M	0.636	Pass
Bottom channel 2402MHz	LE 2M	1.107	Pass
Middle channel 2440MHz	LE 2M	1.109	Pass
Top channel 2480MHz	LE 2M	1.107	Pass

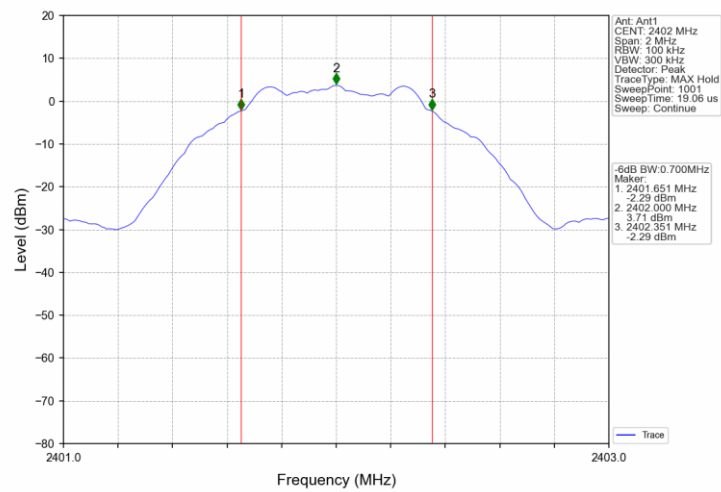
For ESP32-S3-WROOM-1U Module:

Frequency MHz	Mode	6dB bandwidth MHz	Result
Bottom channel 2402MHz	LE 1M	0.700	Pass
Middle channel 2440MHz	LE 1M	0.700	Pass
Top channel 2480MHz	LE 1M	0.706	Pass
Bottom channel 2402MHz	LE 2M	0.867	Pass
Middle channel 2440MHz	LE 2M	0.868	Pass
Top channel 2480MHz	LE 2M	0.868	Pass

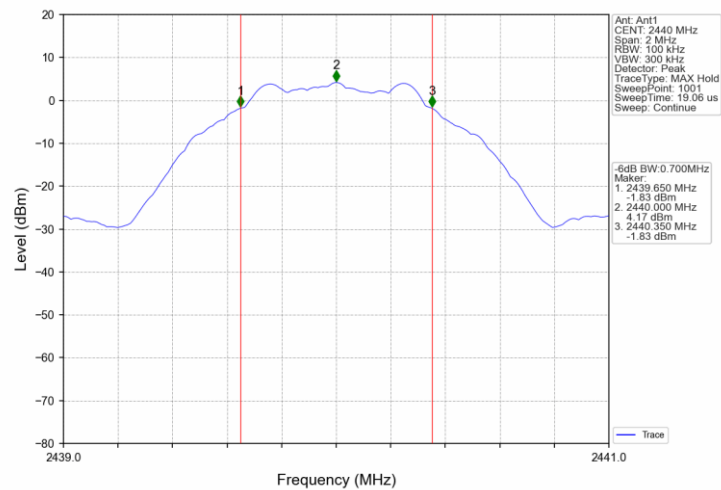
Test Graphs:

For MT7663BSN Module:

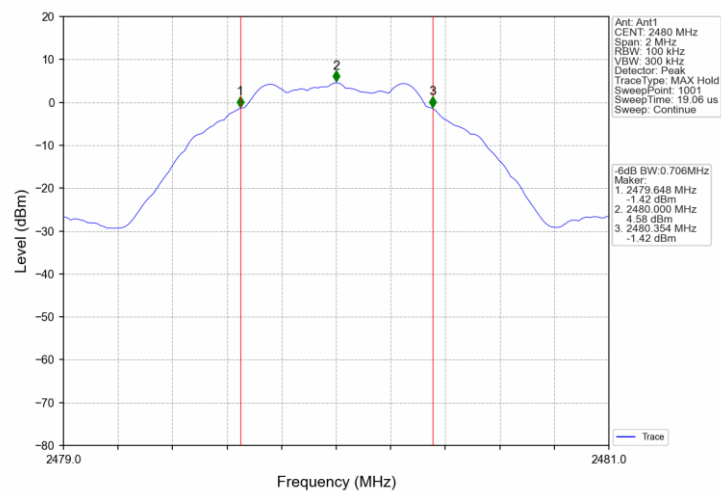
1M_LCH_2402MHz_ANT B_NTNV



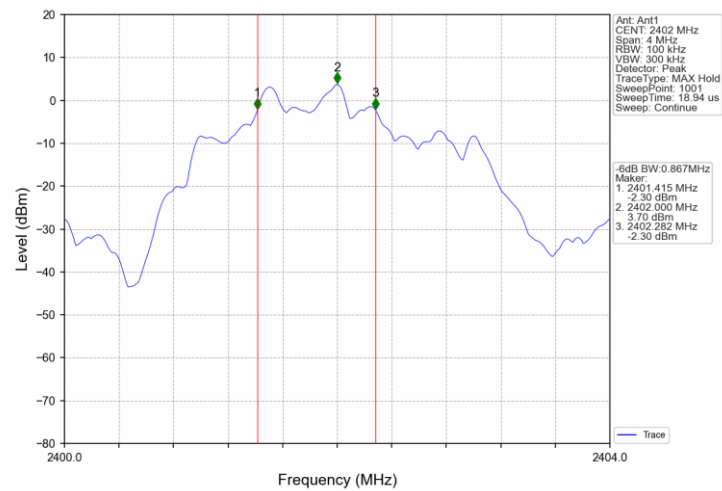
1M_MCH_2440MHz_ANT B_NTNV



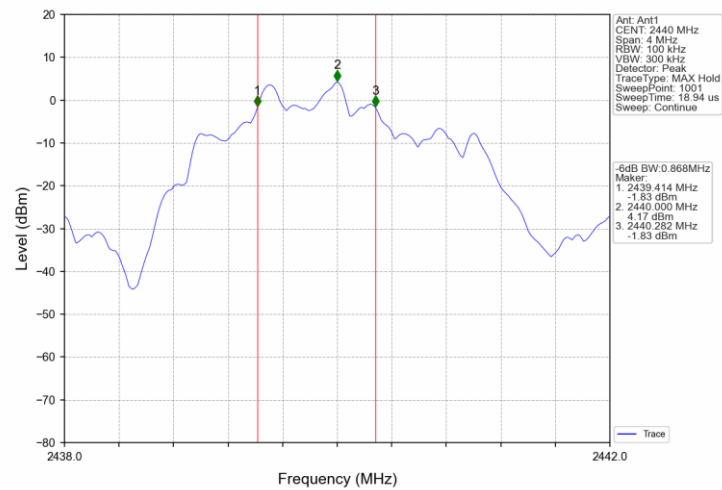
1M_HCH_2480MHz_ANT B_NTNV



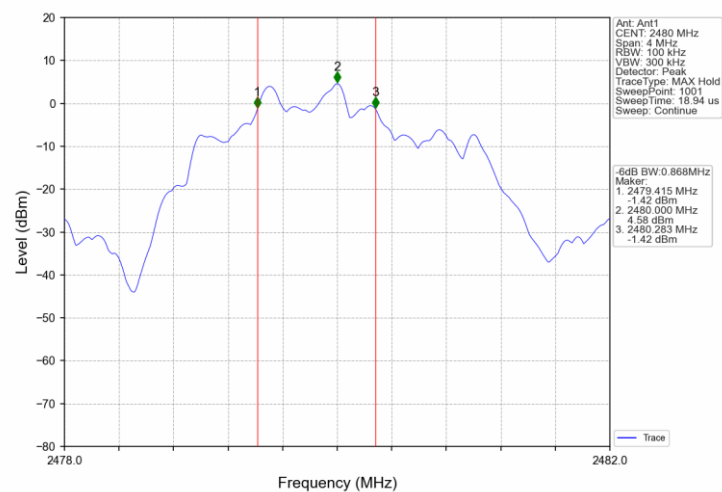
2M_LCH_2402MHz_ANT_B_NTNV



2M_MCH_2440MHz_ANT_B_NTNV

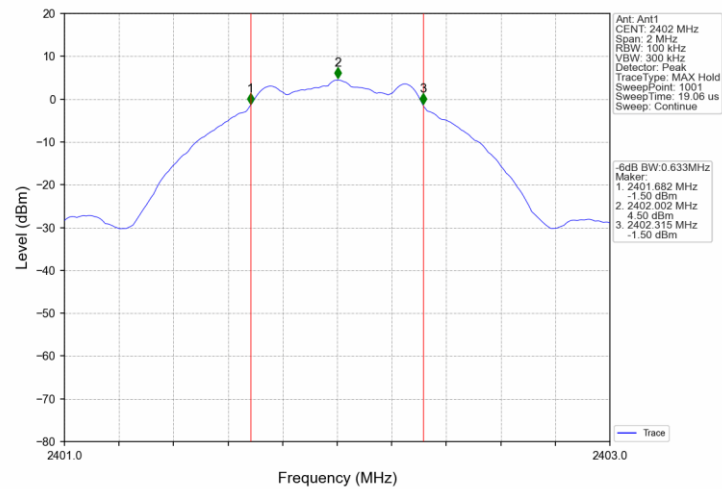


2M_HCH_2480MHz_ANT_B_NTNV

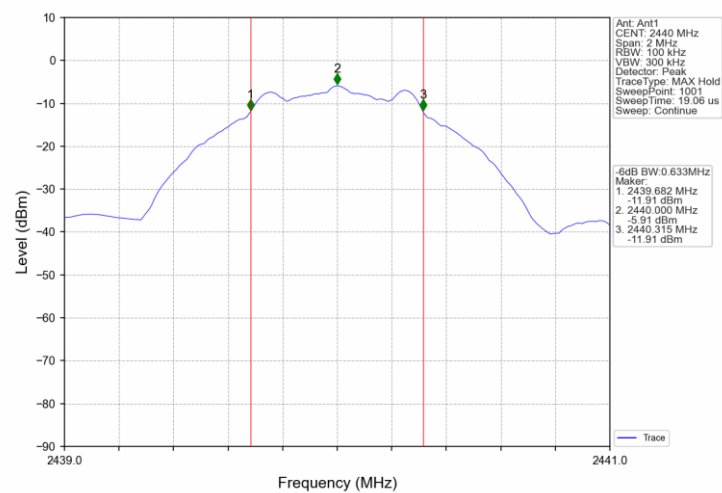


For ESP32-S3-WROOM-1U Module:

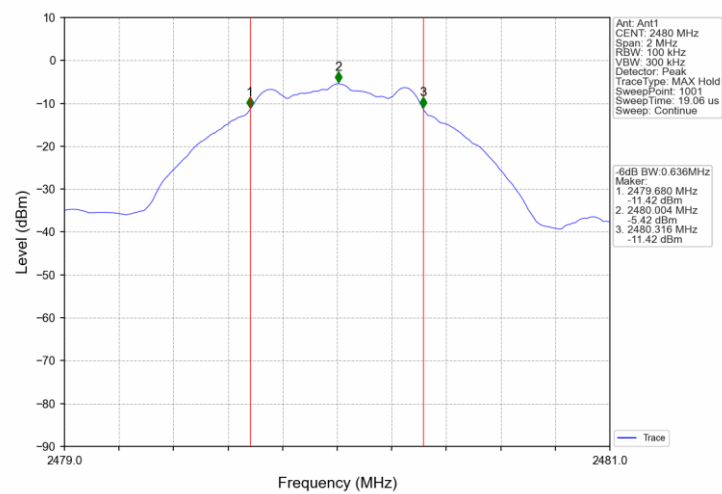
1M LCH 2402MHz ANT C NTV



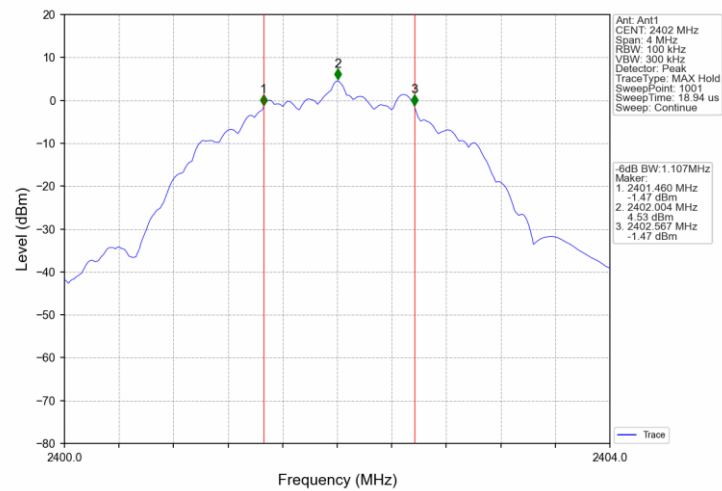
1M MCH 2440MHz ANT C NTV



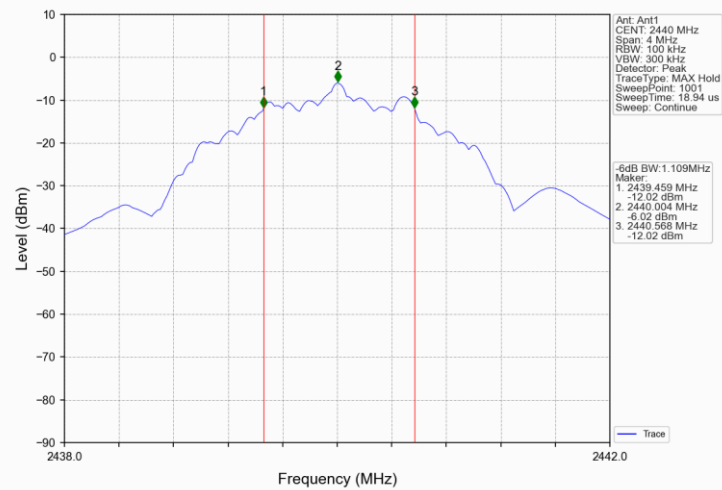
1M HCH 2480MHz ANT C NTV



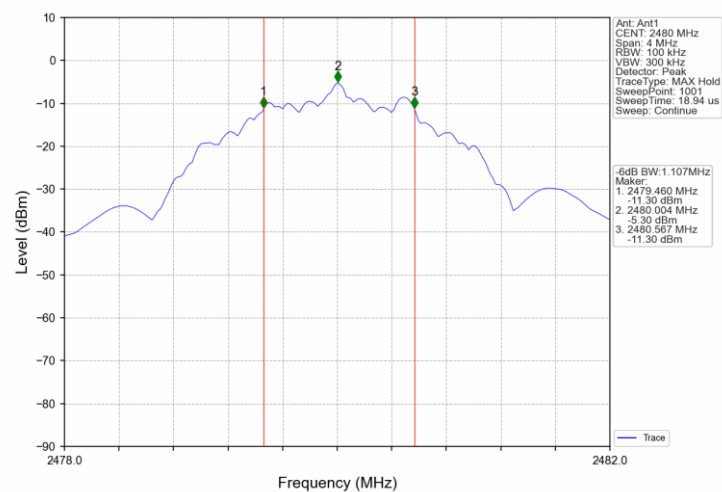
2M_LCH_2402MHz_ANT_C_NTNV



2M_MCH_2440MHz_ANT_C_NTNV



2M_HCH_2480MHz_ANT_C_NTNV



9.5 99% Bandwidth

Test Method

1. Connect EUT test port to spectrum analyzer.
2. Use the following spectrum analyzer settings:
RBW=1% to 5% of the actual occupied, VBW $\geq$ 3RBW, Sweep = auto,
Detector function = peak, Trace = max hold
3. Use the occupied bandwidth measurement capability of test receiver.
4. Allow the trace to stabilize, record the occupied bandwidth value.

Limit

According to RSS-GEN 6.7, 99% Bandwidth limit as below:

Limit [kHz]

--

Test result

For MT7663BSN Module:

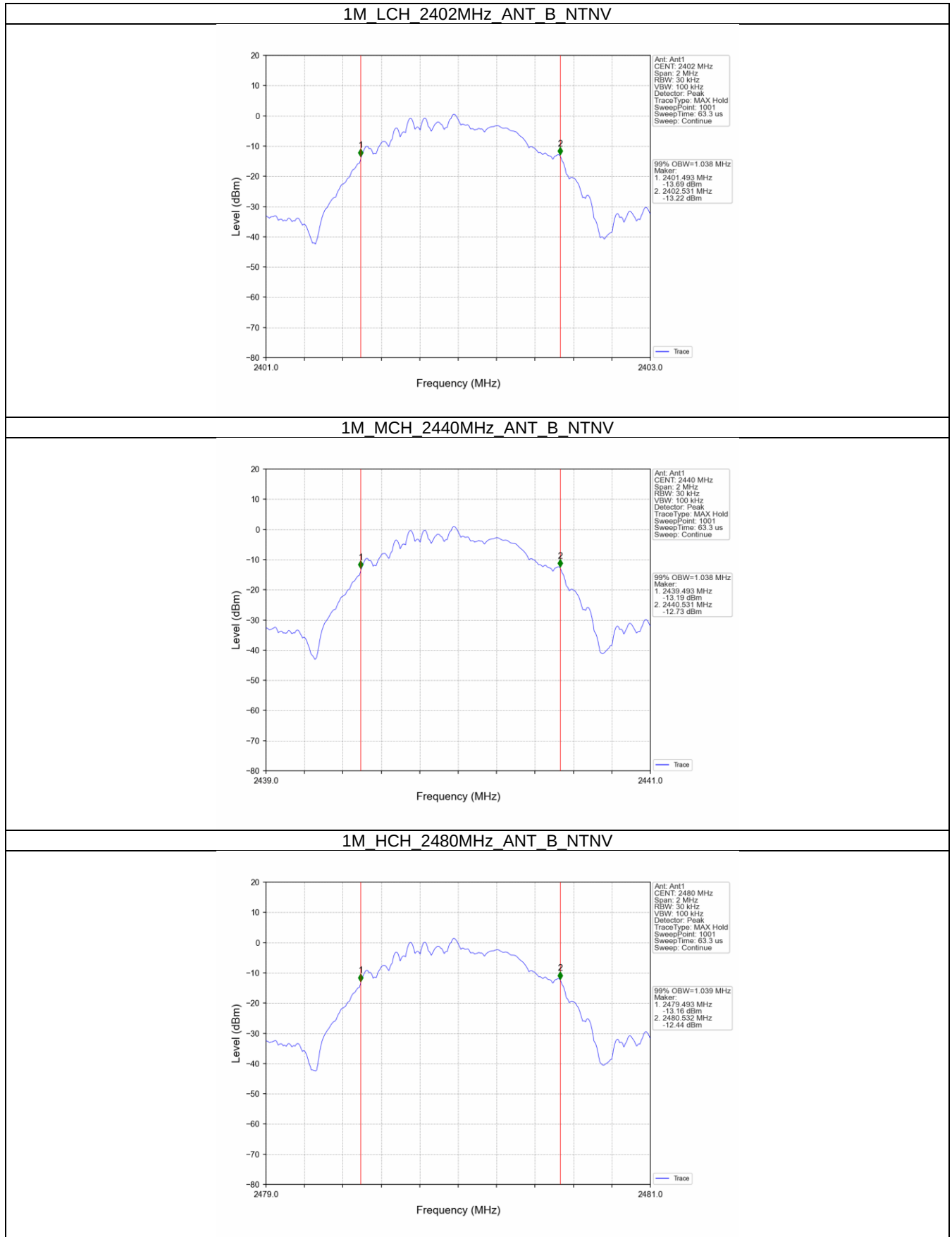
Frequency MHz	Mode	99% bandwidth MHz	Result
Bottom channel 2402MHz	LE 1M	1.038	Pass
Middle channel 2440MHz	LE 1M	1.038	Pass
Top channel 2480MHz	LE 1M	1.039	Pass
Bottom channel 2402MHz	LE 2M	2.098	Pass
Middle channel 2440MHz	LE 2M	2.098	Pass
Top channel 2480MHz	LE 2M	2.099	Pass

For ESP32-S3-WROOM-1U Module:

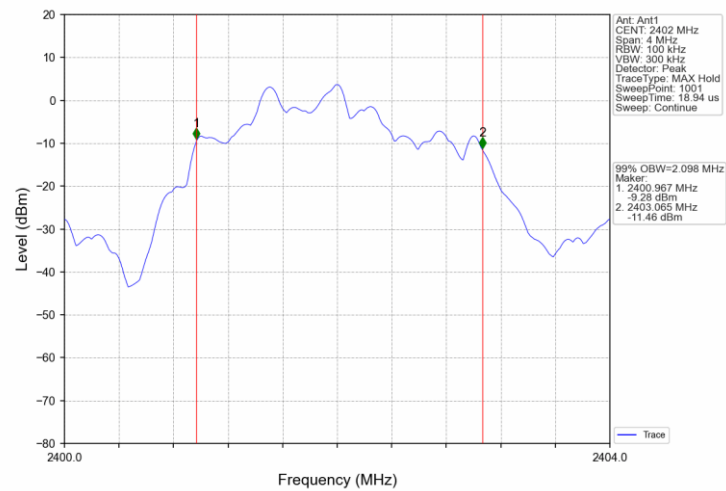
Frequency MHz	Mode	99% bandwidth MHz	Result
Bottom channel 2402MHz	LE 1M	1.026	Pass
Middle channel 2440MHz	LE 1M	1.025	Pass
Top channel 2480MHz	LE 1M	1.025	Pass
Bottom channel 2402MHz	LE 2M	2.050	Pass
Middle channel 2440MHz	LE 2M	2.124	Pass
Top channel 2480MHz	LE 2M	2.118	Pass

Test Graphs:

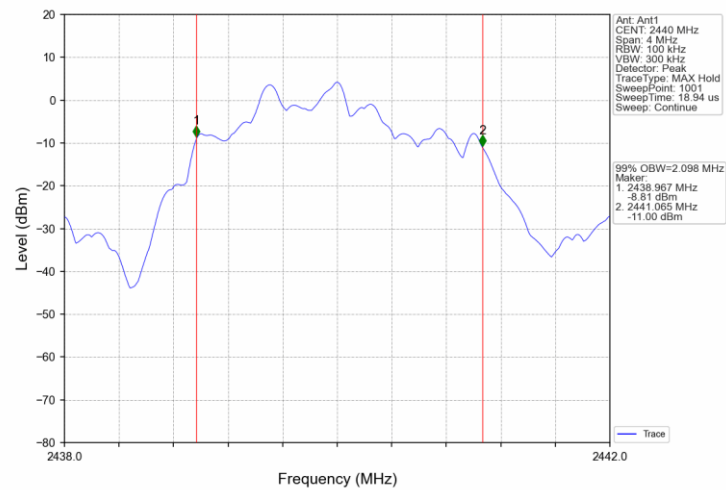
For MT7663BSN Module:



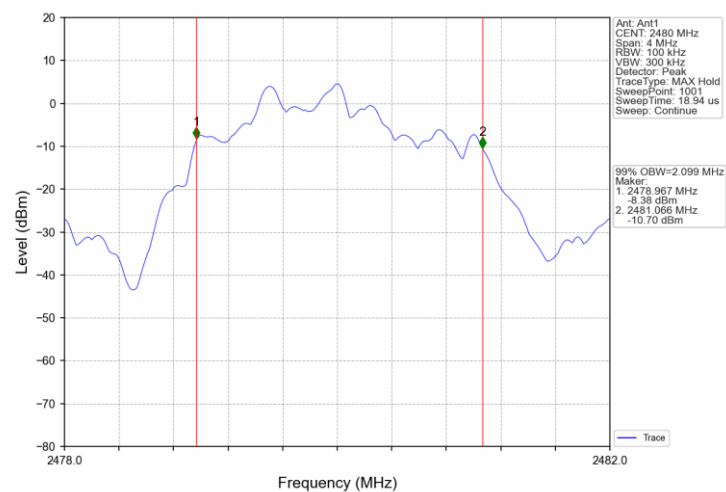
2M_LCH_2402MHz_ANT_B_NTNV



2M_MCH_2440MHz_ANT_B_NTNV

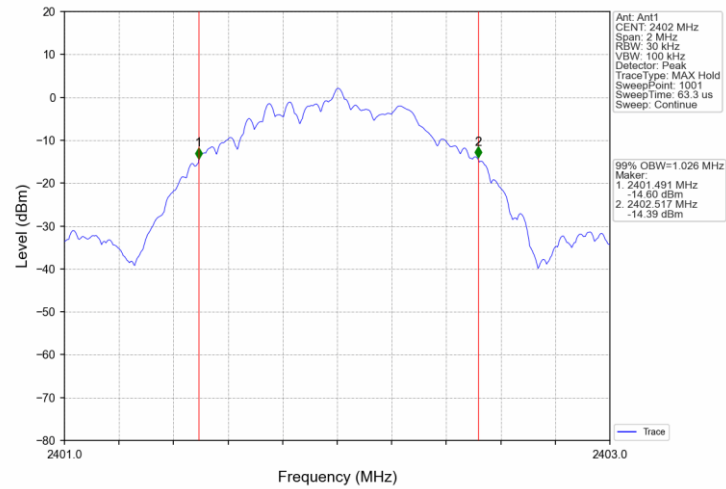


2M_HCH_2480MHz_ANT_B_NTNV

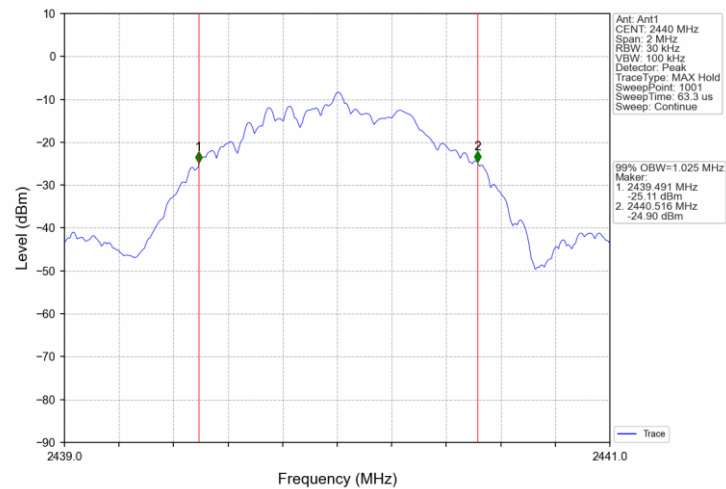


For ESP32-S3-WROOM-1U Module:

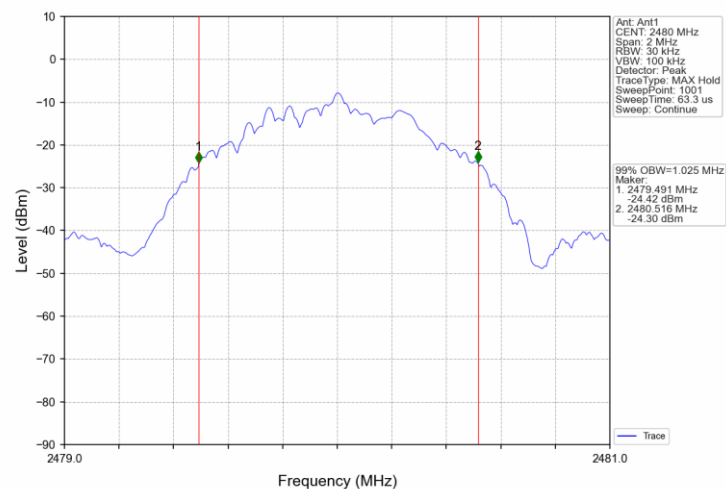
1M_LCH_2402MHz_ANT_C_NTNV



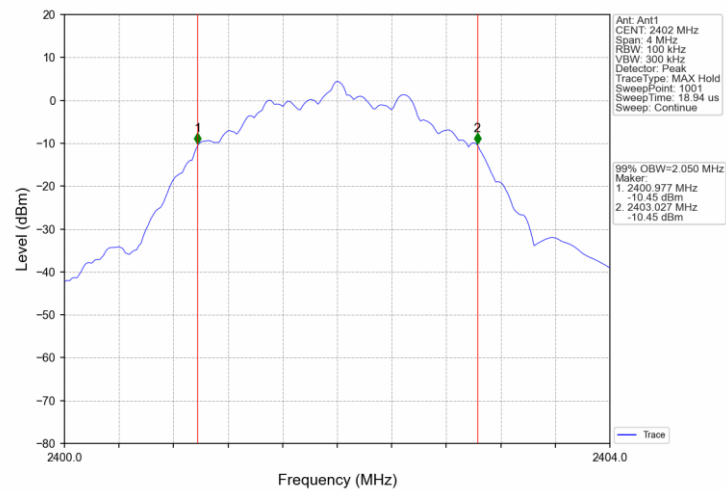
1M_MCH_2440MHz_ANT_C_NTNV



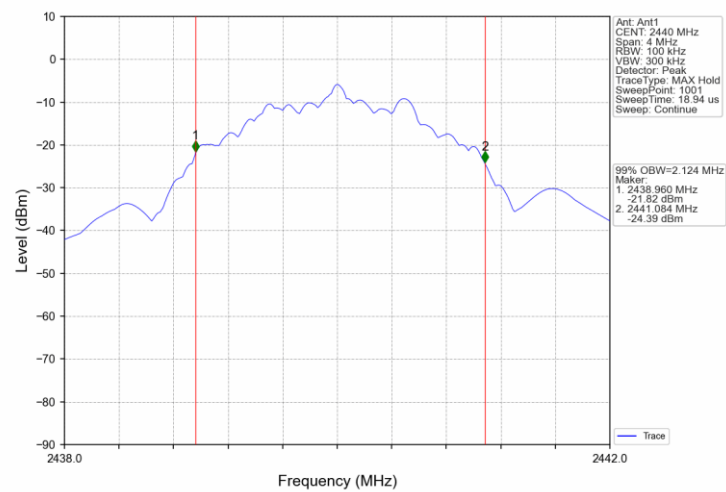
1M_HCH_2480MHz_ANT_C_NTNV



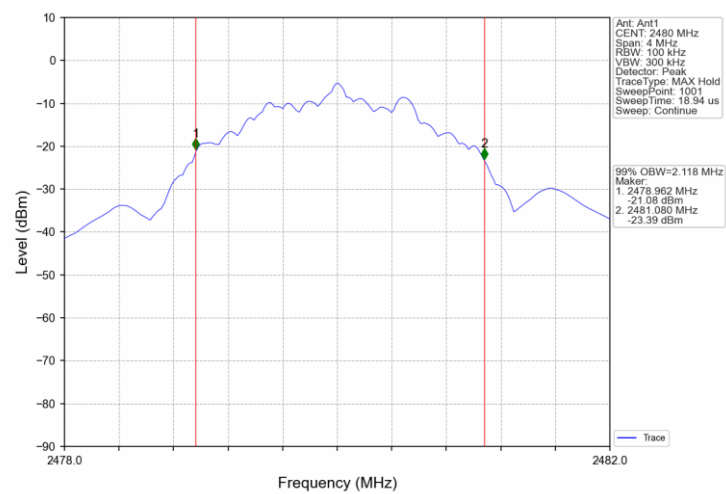
2M_LCH_2402MHz_ANT_C_NTNV



2M_MCH_2440MHz_ANT_C_NTNV



2M_HCH_2480MHz_ANT_C_NTNV



9.6 Spurious RF Conducted Emissions

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
RBW = 100 kHz, VBW $\geq$ 3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded.
5. The level displayed must comply with the limit specified in this Section. Submit these plots.
6. Repeat above procedures until all frequencies measured were complete.

Limit

According to §15.247(d) & RSS-247 5.5, Spurious RF Conducted Emissions limit as below:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that 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 § 15.247(b)(3) and RSS 247 section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB.

Frequency Range MHz	Limit (dBc)
30-25000	-20

Spurious RF conducted emissions

For MT7663BSN Module:

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	B	3.71
		2440	B	4.17
		2480	B	4.57
2M	SISO	2402	B	3.71
		2440	B	4.16
		2480	B	4.57

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.

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	B	4.57	<=-15.43	Pass
		2440	B	4.57	<=-15.43	Pass
		2480	B	4.57	<=-15.43	Pass
2M	SISO	2402	B	4.57	<=-15.43	Pass
		2440	B	4.57	<=-15.43	Pass
		2480	B	4.57	<=-15.43	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.

For ESP32-S3-WROOM-1U Module:

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	C	5.22
		2440	C	5.86
		2480	C	7.36
2M	SISO	2402	C	5.42
		2440	C	5.84
		2480	C	7.46

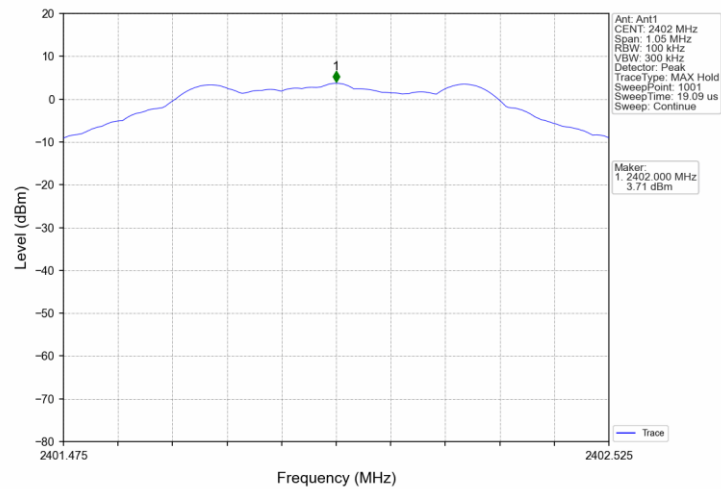
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	C	7.36	<=-12.64	Pass
		2440	C	7.36	<=-12.64	Pass
		2480	C	7.36	<=-12.64	Pass
2M	SISO	2402	C	7.46	<=-12.54	Pass
		2440	C	7.46	<=-12.54	Pass
		2480	C	7.46	<=-12.54	Pass

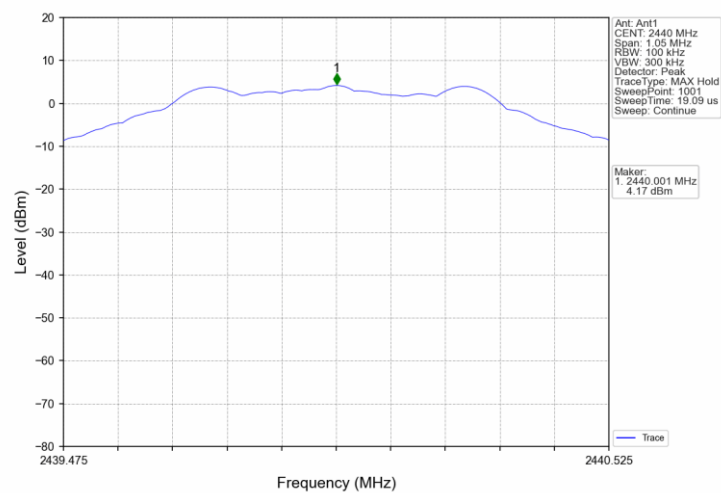
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

For MT7663BSN Module:

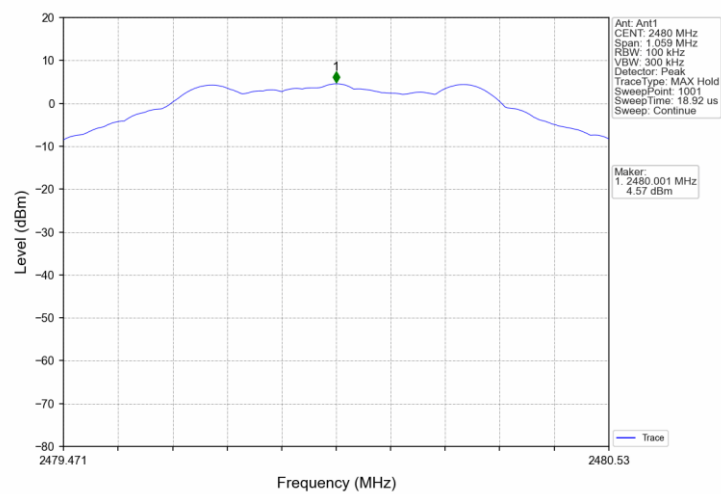
1M LCH 2402MHz ANT B NTN



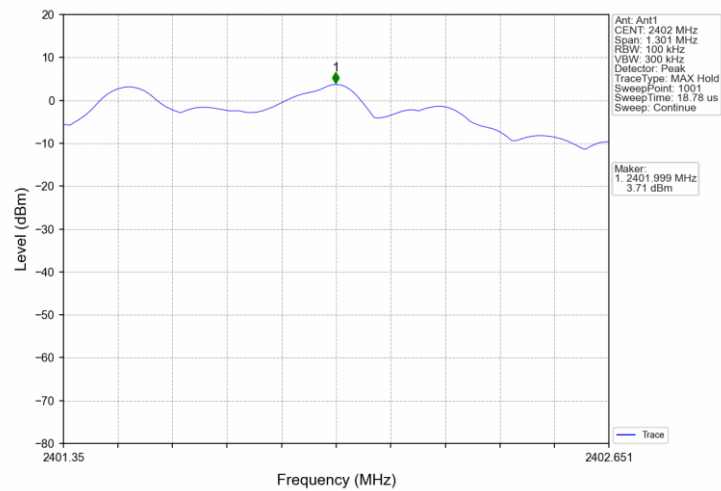
1M MCH 2440MHz ANT B NTN



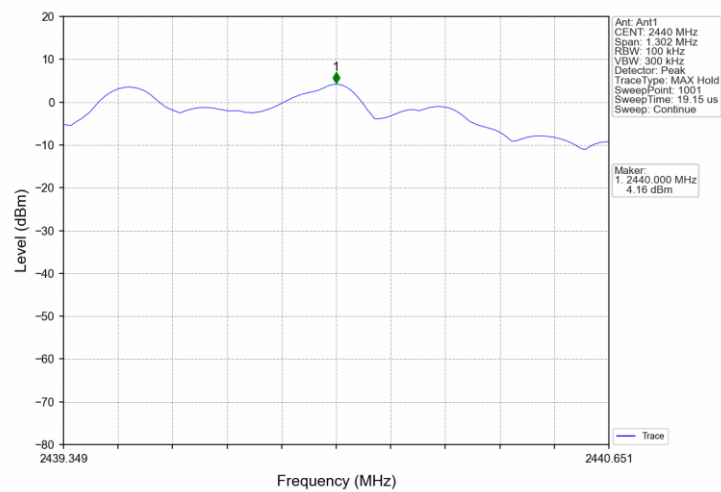
1M HCH 2480MHz ANT B NTN



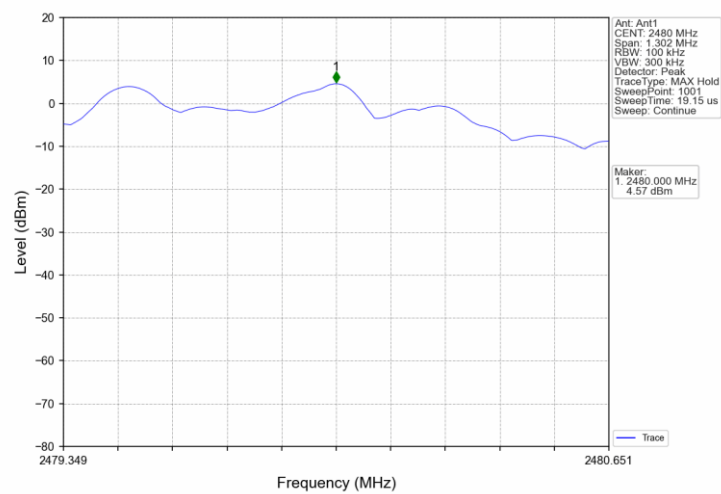
2M LCH 2402MHz ANT B NTN



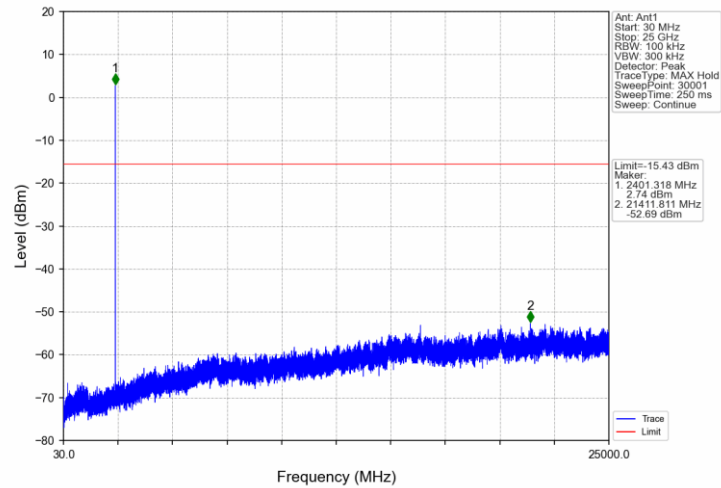
2M_MCH_2440MHz_ANT_B_NTNV



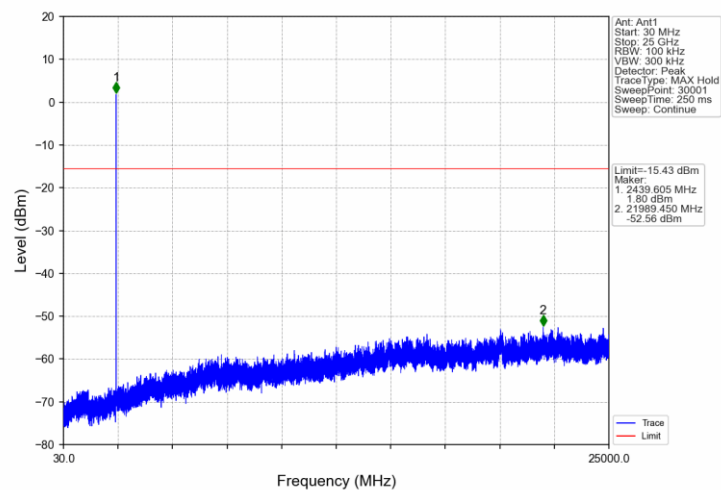
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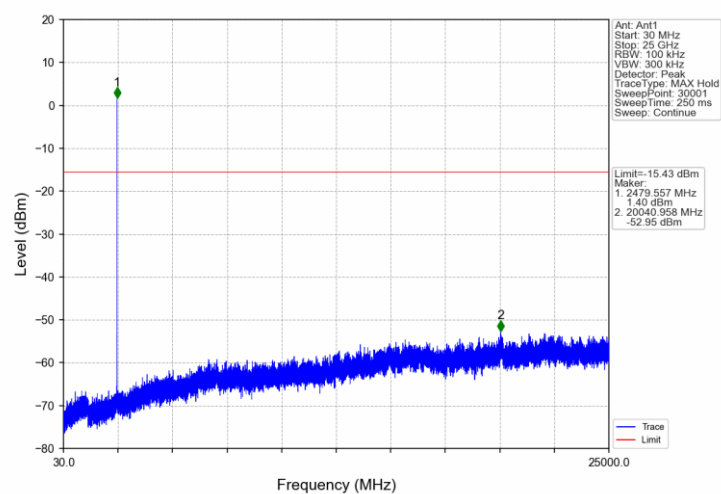
1M_LCH_2402MHz_ANT_B_NTNV



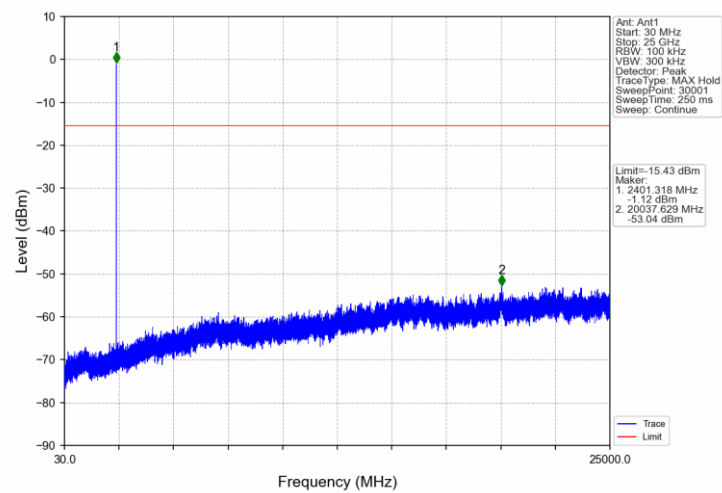
1M_MCH_2440MHz_ANT_B_NTNV



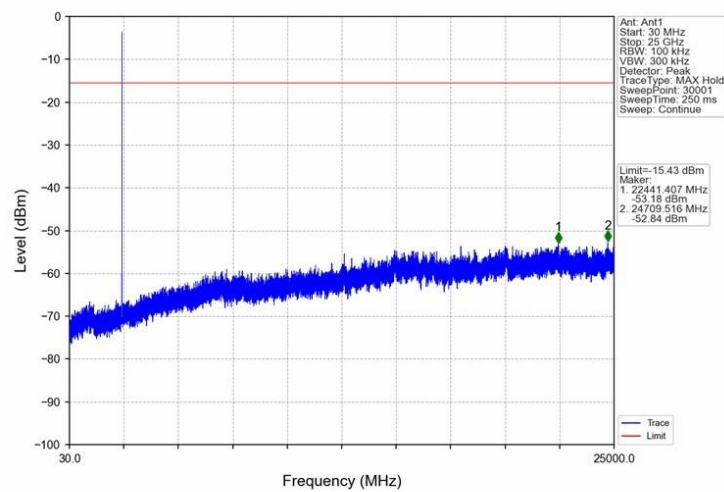
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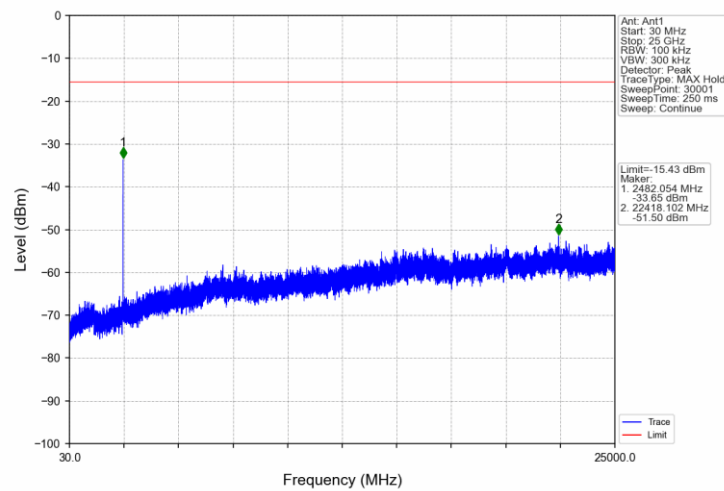
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2M_MCH_2440MHz_ANT_B_NTNV

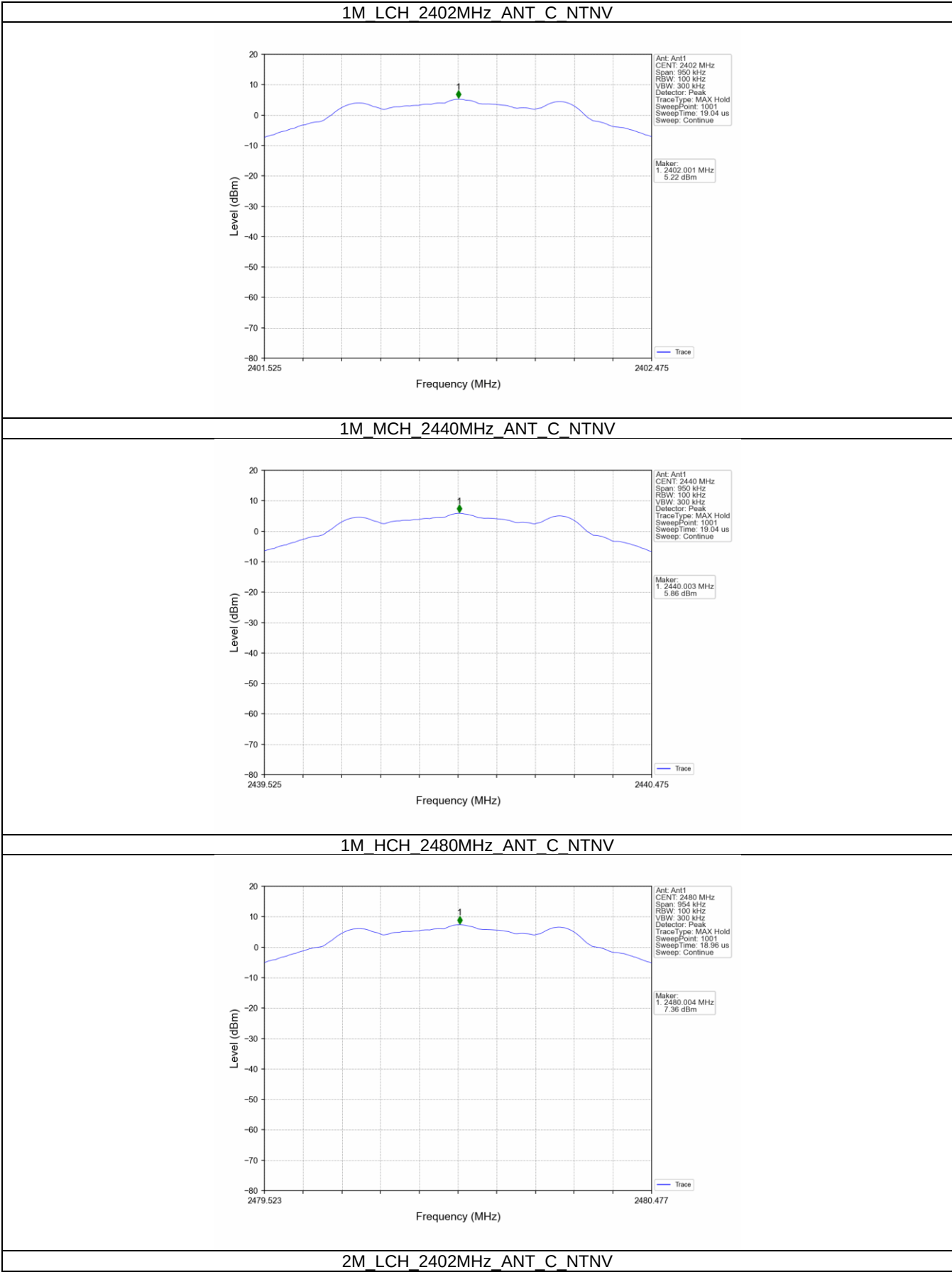


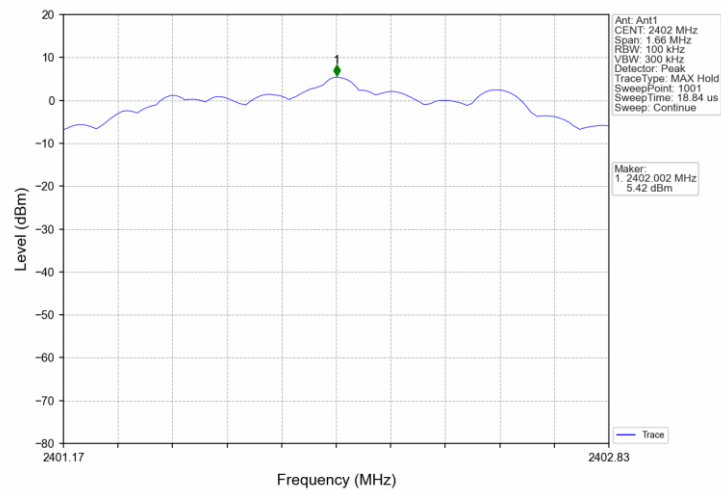
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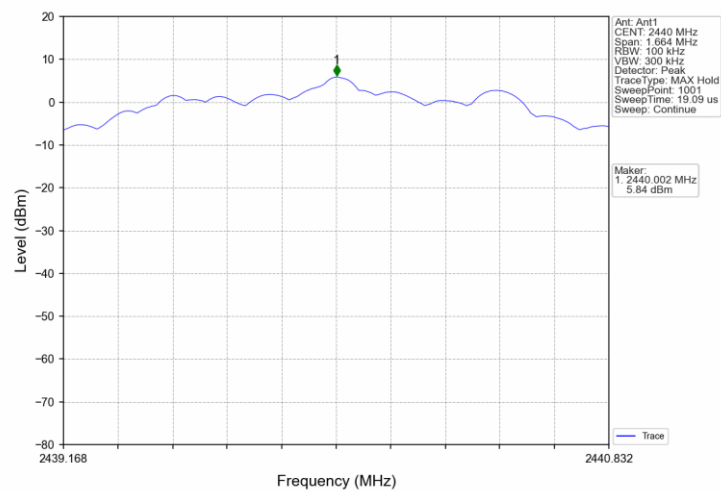


For ESP32-S3-WROOM-1U Module:

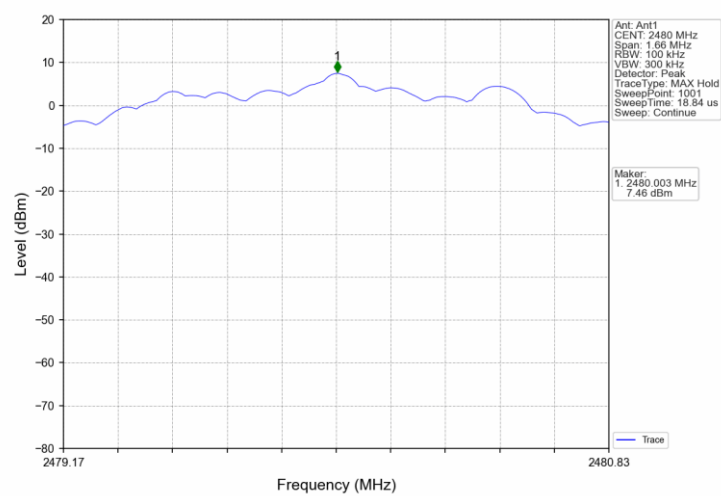




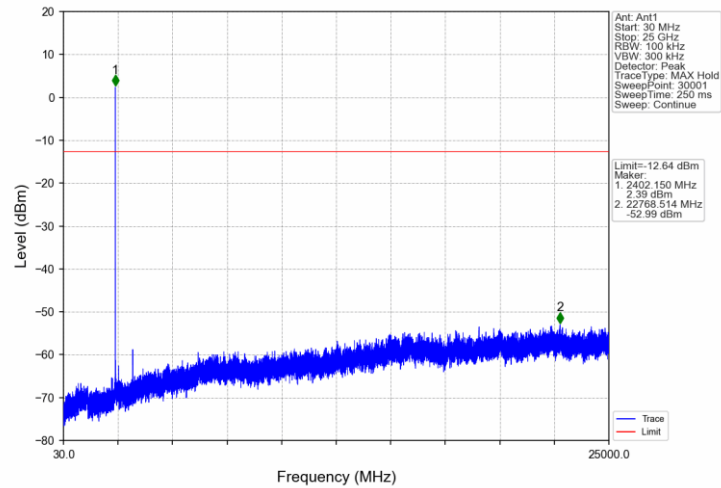
2M_MCH_2440MHz_ANT_C_NTNV



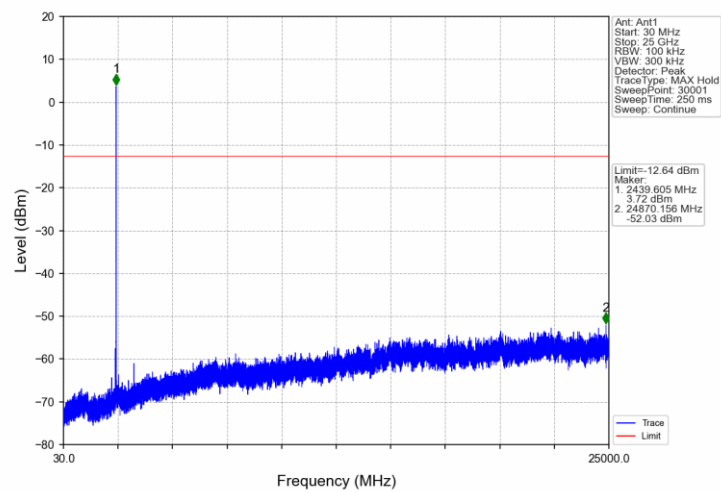
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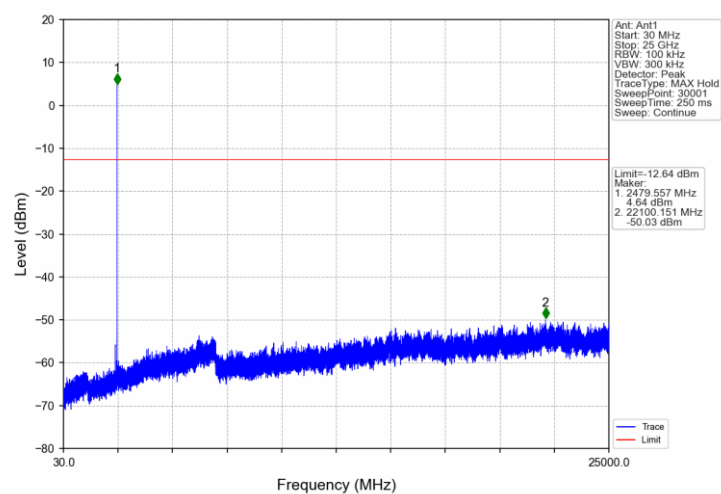
1M_LCH_2402MHz_ANT_C_NTNV



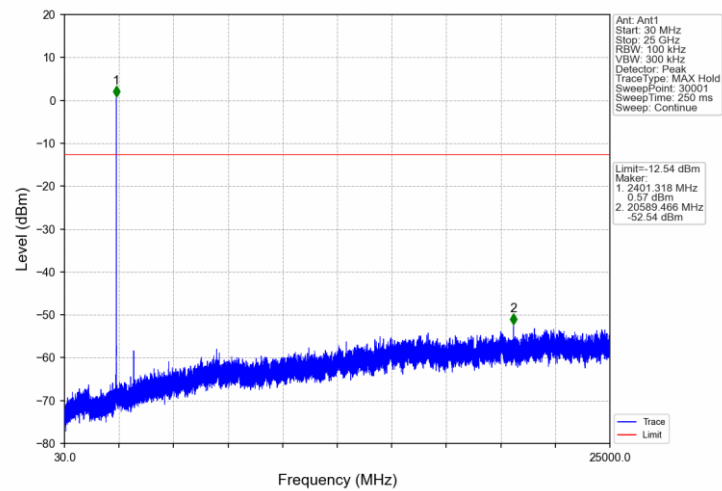
1M_MCH_2440MHz_ANT_C_NTNV



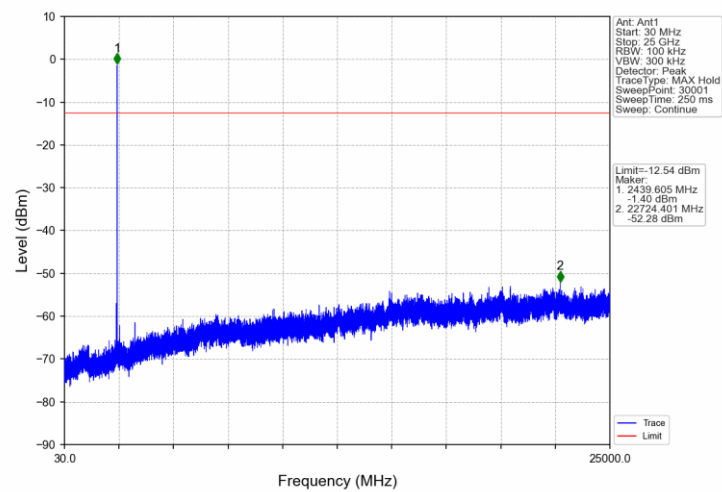
1M_HCH_2480MHz_ANT_C_NTNV



2M_LCH_2402MHz_ANT_C_NTNV



2M_MCH_2440MHz_ANT_C_NTNV



2M_HCH_2480MHz_ANT_C_NTNV

