RF Test Report

Project Number:	**5283294**	**Offer Number:**	**SUW-202501007682**
Report Number:	**SUW5283294EMC02**	**Revision Level:**	**2**
Client:	**Owlet Baby Care Inc.**		

Equipment Under Test:	**Base Station**
Model:	**OBL 3.0-M1**
RF Protocol:	**2.4GHz WLAN (Wi-Fi Chip)**
FCC ID:	**2AIEP-OBL5D**
IC ID:	**21386-OBL5D**
Applicable Standards:	**FCC Part 15 Subpart C, § 15.247; ANSI C63.10:2020**
	RSS-247, Issue 4
	RSS-GEN Issue 5
Report issued on:	**11 June 2025**
Report revised on:	**16 September 2025**
Test Result:	**Compliant**

FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER: 3212.01
Report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the Federal Government.

Tested by: _____
Dan Alvarez, RF/EMC Sr. Staff Engineer

Reviewed by: _____
Martin Taylor, Project Engineer

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1 Summary of Test Results

Test Description	Test Specification		Test Result
Bandwidth	15.247(a)(2)	RSS-247 S5.2 (a) RSS-GEN S6.6	Compliant
Peak Output Power	15.247(b)(3)	RSS-247 S5.4 (d)	Compliant
Power Spectral Density	15.247(e)	RSS-247 S5.2 (b)	Compliant
Conducted Spurious Emissions / Band Edge	15.247(d)	RSS-247 S5.5	Compliant
Field Strength of Spurious Radiation	15.247(d), 15.209	RSS-247 S5.5	Compliant
Emissions in Restricted Frequency Bands	15.205, 15.209	RSS-GEN S8.9, S8.10	Compliant
Antenna Requirement	15.203	RSS-GEN S8.3	Compliant
AC Powerline Conducted Emissions	15.107, 15.207	RSS-GEN S8.8	Compliant

1.1 *Modifications Required for Compliance*

None

2 General Information

2.1 *Client Information*

Name:	Owlet Baby Care Inc.
Address:	2940 West Maple Loop Dr., Suite 203
City, State, Zip, Country:	Lehi, UT 84043, USA

2.2 *Test Laboratory*

Name:	SGS North America, Inc.
Address:	620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country:	Suwanee, GA 30024, USA
Accrediting Body:	A2LA
Type of lab:	Testing Laboratory
Certificate Number:	3212.01

2.3 *General Information of EUT*

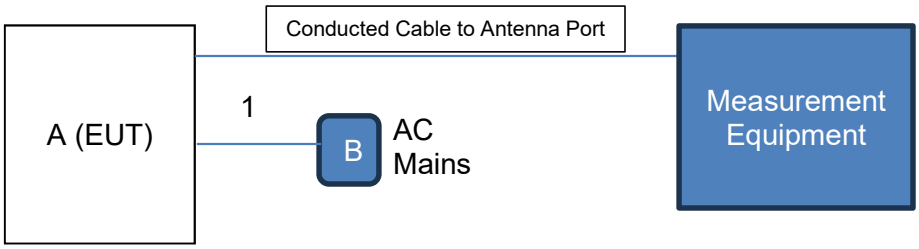
Product Marketing Name (PMN):	Base Station
Model Number (HVIN):	OBL 3.0-M1
Firmware Version ID (FVIN):	3.15.1.0-301251d
Serial Number:	OBT15F408 & OBT15F2F2
Transmitter:	ESP-C3FH4
Frequency Range:	2412 – 2462 MHz
Data Modes:	2.4 GHz WLAN (802.11b; 11g; 11n) (SISO)
* Antenna:	Inverted F PCB Trace Antenna (Gain +1.5 dBi)
Rated Voltage:	100V-240VAC,50/60Hz
Test Voltage:	120VAC,60Hz
Sample Received Date:	24 March 2025
Dates of testing:	27 March 2025 through 08 May 2025

**Data was not measured by SGS laboratory and therefore SGS is not responsible for accuracy. Data obtained via customer, specification sheet, previous regulatory filing or other.*

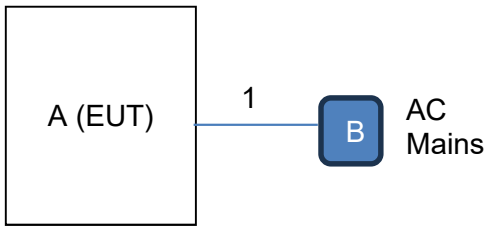
2.4 *Operating Modes and Conditions*

The EUT was programmed by the manufacturer to transmit on low, mid and high channels in all necessary modulation and modes of operation.

2.5 *EUT Connection Block Diagram – Conducted Measurements*



2.6 *EUT Connection Block Diagram – Radiated Measurements*



Inside Chamber

Outside Chamber

2.7 *System Configurations*

Device Reference	Manufacturer	Description	Model Number	Serial Number
A	Owlet Baby Care Inc.	Base station (Conducted Sample)	OBL 3.0-M1	OBT15F2F2
A	Owlet Baby Care Inc.	Base station (Radiated Sample)	OBL 3.0-M1	OBT15F408
B	Shenzhen Key Power Supply Technology Co. LTD.	AC Adapter	KA06E-0501000US	SGS ID: SUW_SP_20250301269

2.8 *Cable List*

Cable reference	Port Name	Start	End	Cable Length (m)	Ferrite installed?	Shielded?
1	AC Power	EUT	AC Adapter	>1.45	N	N

3 Bandwidth

3.1 *Test Result*

Test Description	Test Specification		Test Result
6 dB bandwidth; 99% BW	15.247(a)(2)	RSS-247 S5.2 (a) RSS-GEN S6.6	Compliant

3.2 *Test Method*

The procedures from ANSI C63.10: 2020 clause 11.8 and KDB 558074 D01 15.247 Meas Guidance v05r02 were used to determine the 6 dB bandwidth. The 99% bandwidth function of the receiver was also utilized.

3.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature:	23.69°C
Relative Humidity:	34.9 %
Atmospheric Pressure:	98.01 kPa

3.4 *Test Equipment*

Test End Date: 11-Apr-2025 Tester: SGM

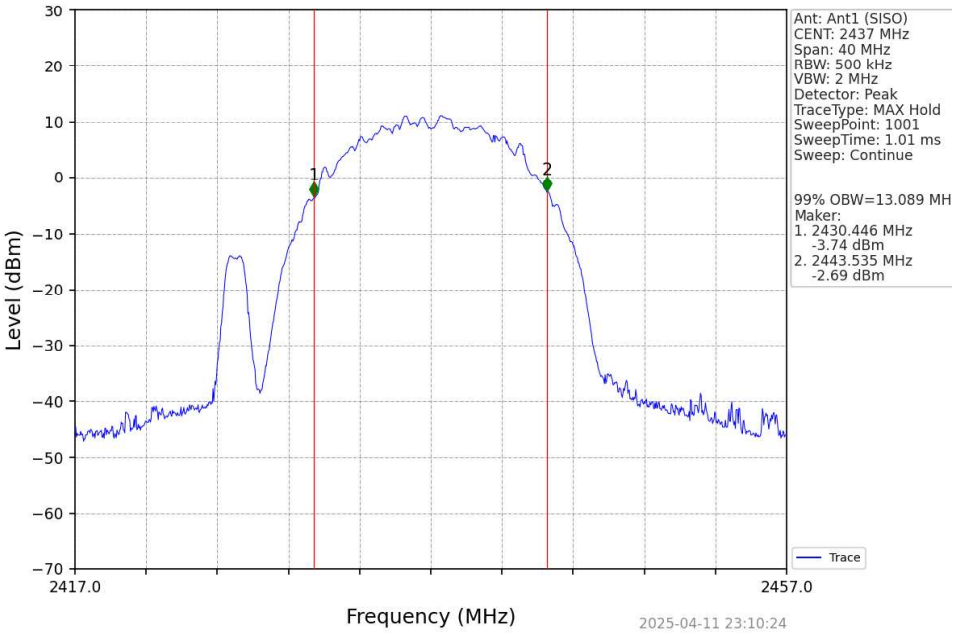
Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	3-Apr-2025	3-Apr-2026
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	4-Apr-2025	4-Apr-2026
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	4-Mar-2025	4-Mar-2026

3.5 *Test Data - 99%OBW*

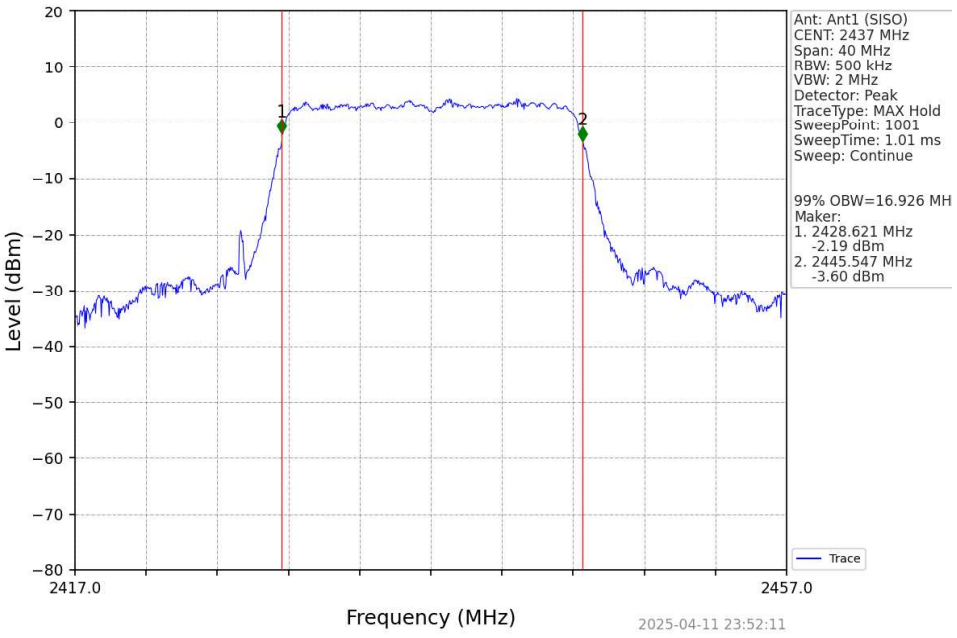
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	13.224	/	Reported
		2437	1	13.089	/	Reported
		2462	1	13.004	/	Reported
802.11g	SISO	2412	1	17.104	/	Reported
		2437	1	16.926	/	Reported
		2462	1	16.985	/	Reported
802.11n (HT20)	SISO	2412	1	17.657	/	Reported
		2437	1	17.556	/	Reported
		2462	1	17.497	/	Reported
802.11n (HT40)	SISO	2422	1	36.212	/	Reported
		2437	1	36.267	/	Reported
		2452	1	36.254	/	Reported

3.5.1 Example Plots

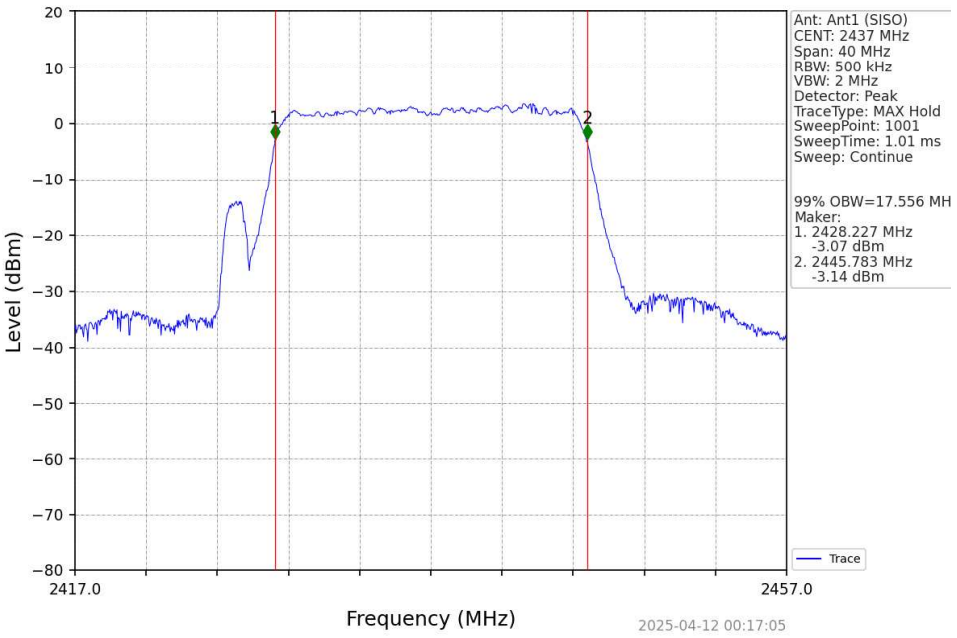
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



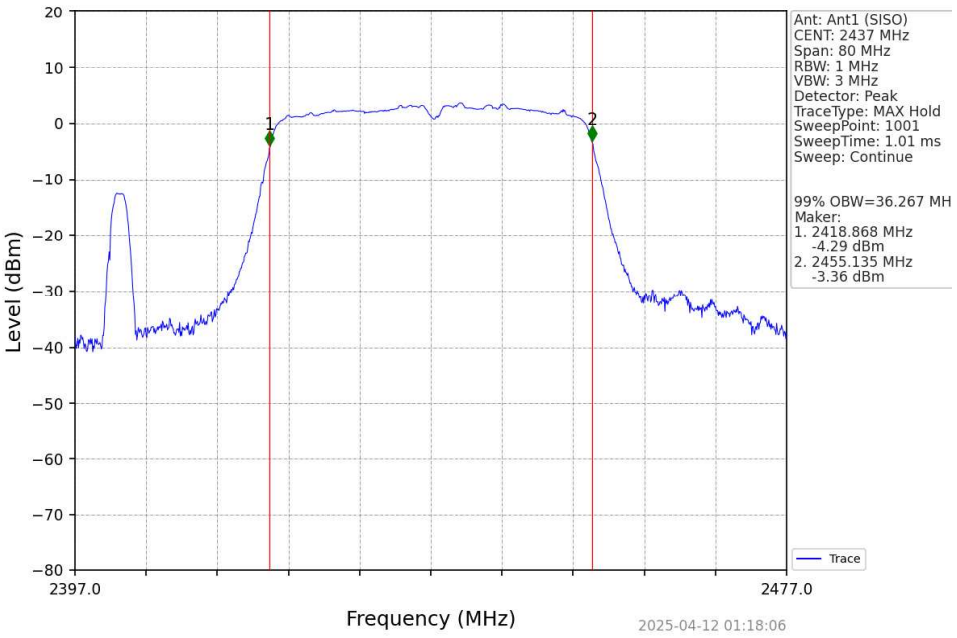
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV

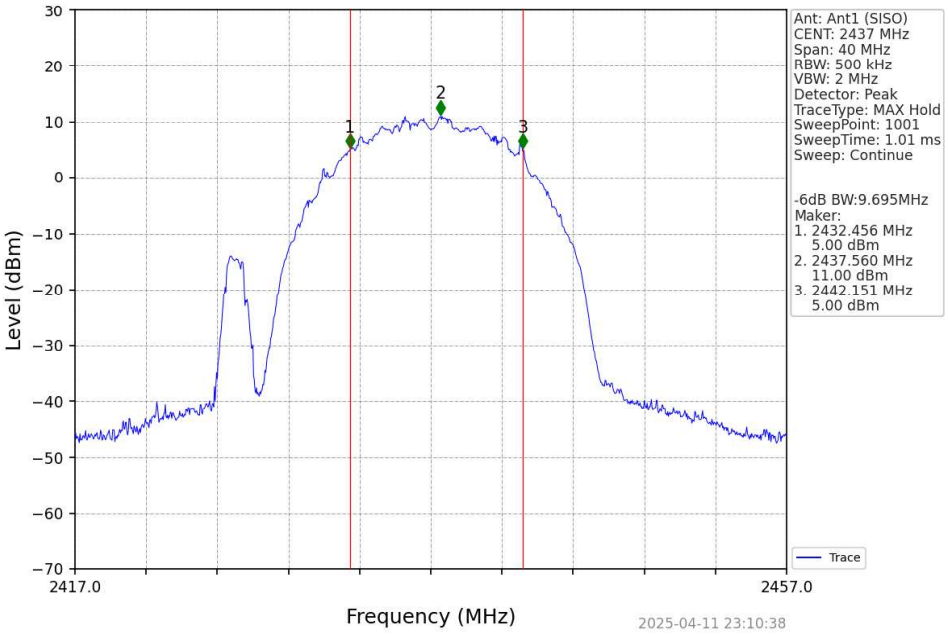


3.5.2 Test Data - 6dB down

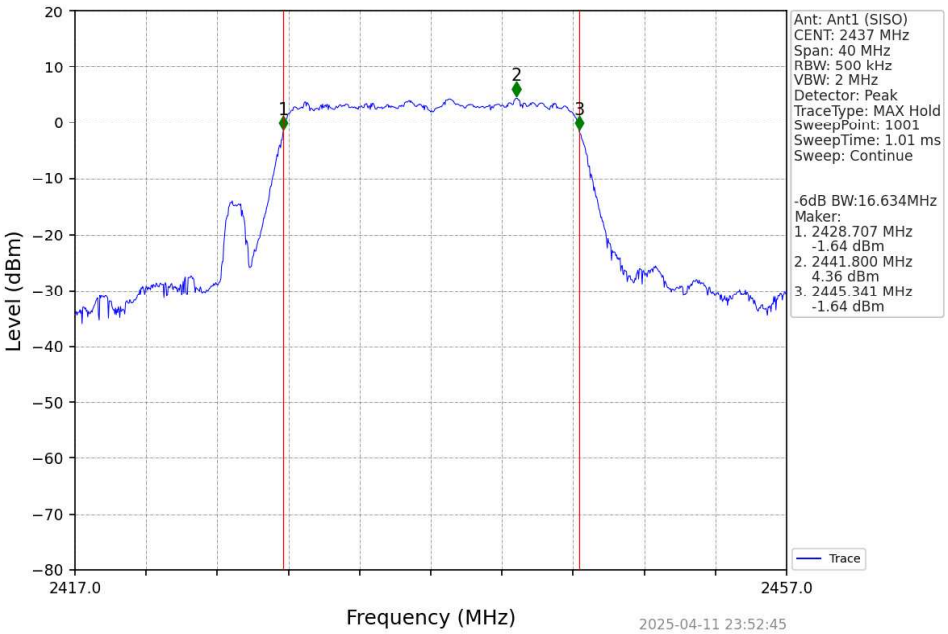
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	9.806	>=0.5	Pass
		2437	1	9.695	>=0.5	Pass
		2462	1	9.747	>=0.5	Pass
802.11g	SISO	2412	1	16.623	>=0.5	Pass
		2437	1	16.634	>=0.5	Pass
		2462	1	16.639	>=0.5	Pass
802.11n (HT20)	SISO	2412	1	17.416	>=0.5	Pass
		2437	1	17.374	>=0.5	Pass
		2462	1	17.380	>=0.5	Pass
802.11n (HT40)	SISO	2422	1	35.940	>=0.5	Pass
		2437	1	35.728	>=0.5	Pass
		2452	1	35.847	>=0.5	Pass

3.5.3 Example Plots

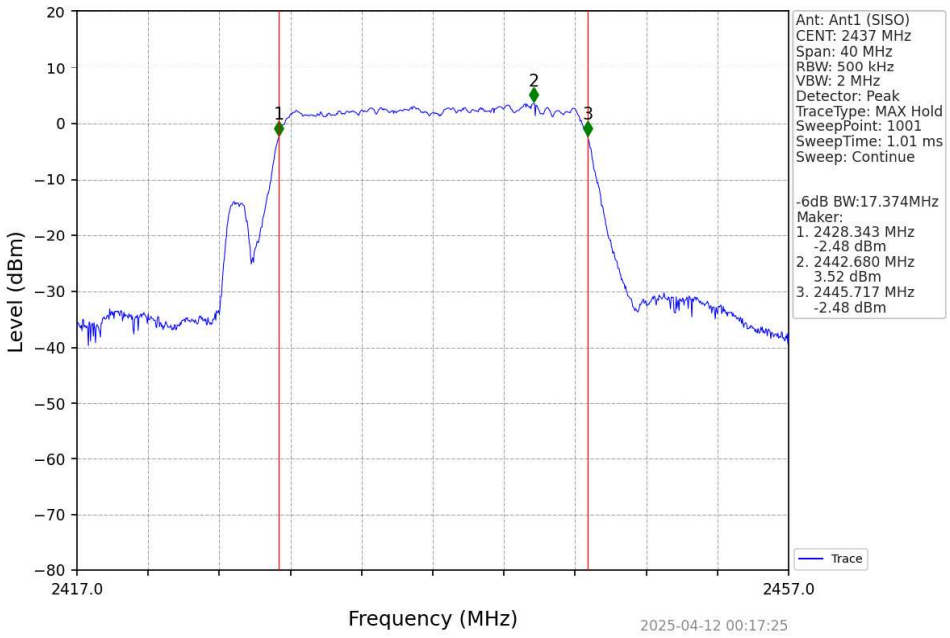
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



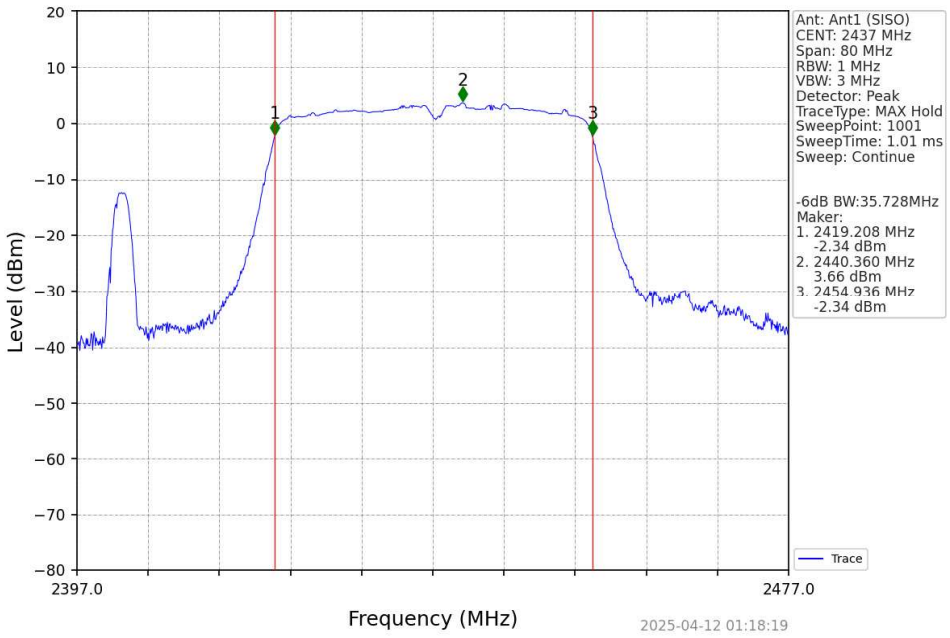
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



4 Peak Output Power

4.1 *Test Result*

Test Description	Test Specification		Test Result
Peak Output Power	15.247(b)(3)	RSS-247 S5.4 (d)	Compliant

4.2 *Test Method*

Fundamental peak power measurements were recorded using the procedures from ANSI C63.10: 2020 clause 11.9 and KDB 558074 D01 15.247 Meas Guidance v05r02.

Limit

(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. For using antennas with greater than 6dBi of gain, the limit is reduced in dB by the amount the gain exceeds 6dBi (e.g. for a 7.4dBi antenna, the limit is reduced from 30dBm to 28.6dBm)

4.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature:	23.69°C
Relative Humidity:	34.9 %
Atmospheric Pressure:	98.01 kPa

4.4 *Test Equipment*

Test End Date: 11-Apr-2025 Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	3-Apr-2025	3-Apr-2026
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	4-Apr-2025	4-Apr-2026
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	4-Mar-2025	4-Mar-2026

4.5 *Test Data*

Maximum Output Power

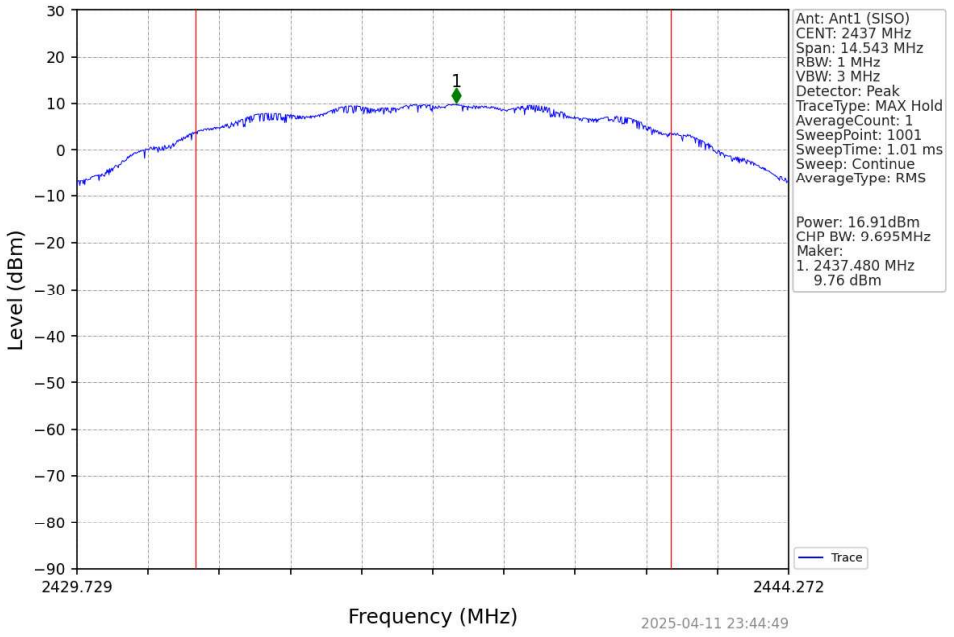
Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	16.94	<=30	Pass
		2437	16.91	<=30	Pass
		2462	17.23	<=30	Pass
802.11g	SISO	2412	18.12	<=30	Pass
		2437	18.12	<=30	Pass
		2462	18.51	<=30	Pass
802.11n (HT20)	SISO	2412	17.12	<=30	Pass
		2437	17.35	<=30	Pass
		2462	17.54	<=30	Pass
802.11n (HT40)	SISO	2422	17.00	<=30	Pass
		2437	16.92	<=30	Pass
		2452	17.33	<=30	Pass
Note1: Antenna Gain: Ant1: 1.50dBi;					

EIRP

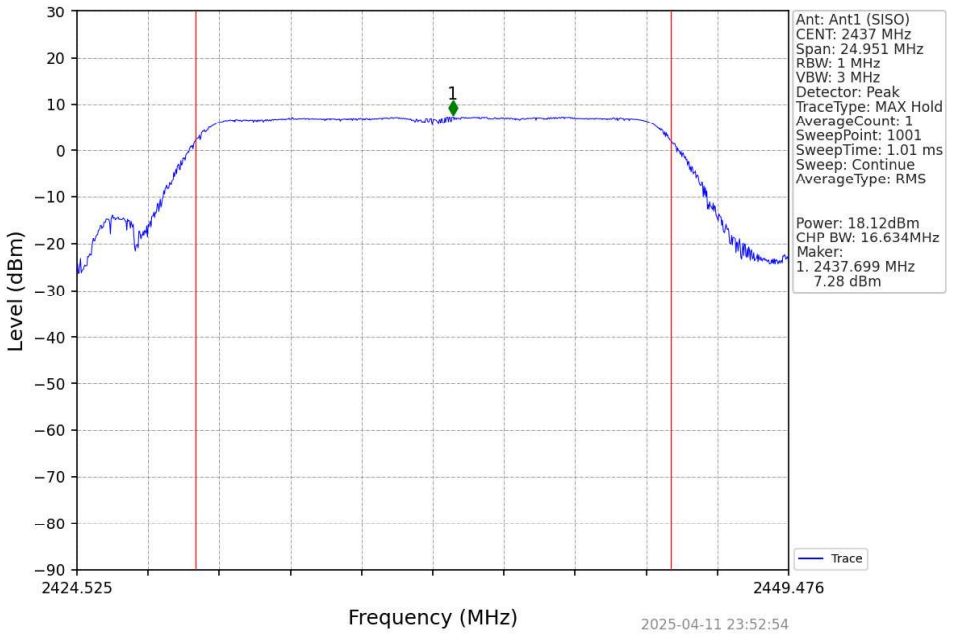
Mode	TX Type	Frequency (MHz)	E.I.R.P (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	18.44	<=36.02	Pass
		2437	18.41	<=36.02	Pass
		2462	18.73	<=36.02	Pass
802.11g	SISO	2412	19.62	<=36.02	Pass
		2437	19.62	<=36.02	Pass
		2462	20.01	<=36.02	Pass
802.11n (HT20)	SISO	2412	18.62	<=36.02	Pass
		2437	18.85	<=36.02	Pass
		2462	19.04	<=36.02	Pass
802.11n (HT40)	SISO	2422	18.5	<=36.02	Pass
		2437	18.42	<=36.02	Pass
		2452	18.83	<=36.02	Pass
Note1: Antenna Gain: Ant1: 1.50dBi; Note2: E.I.R.P = Measured Power + Antenna Gain					

4.5.1 Example Plots

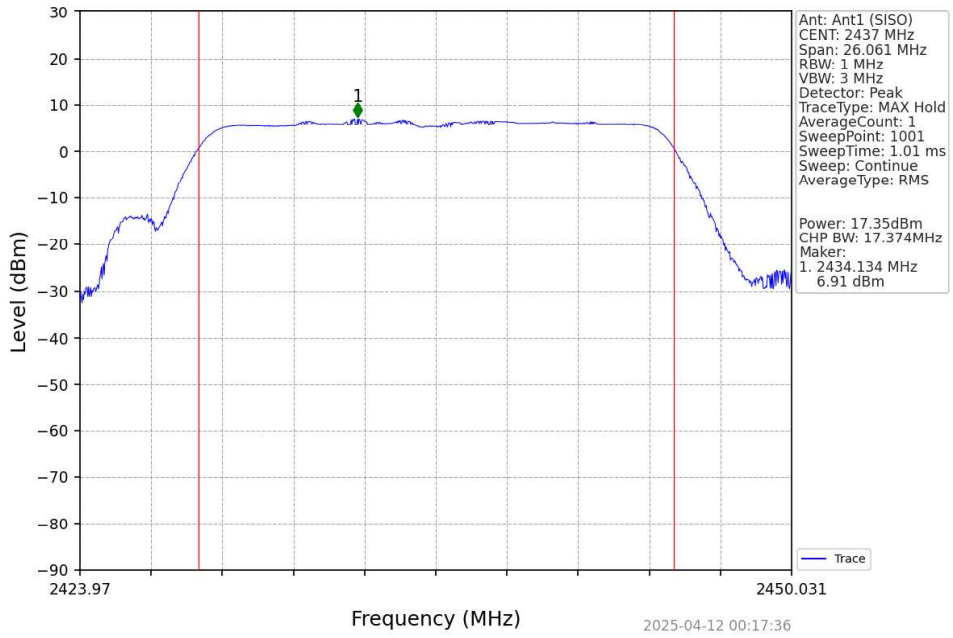
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



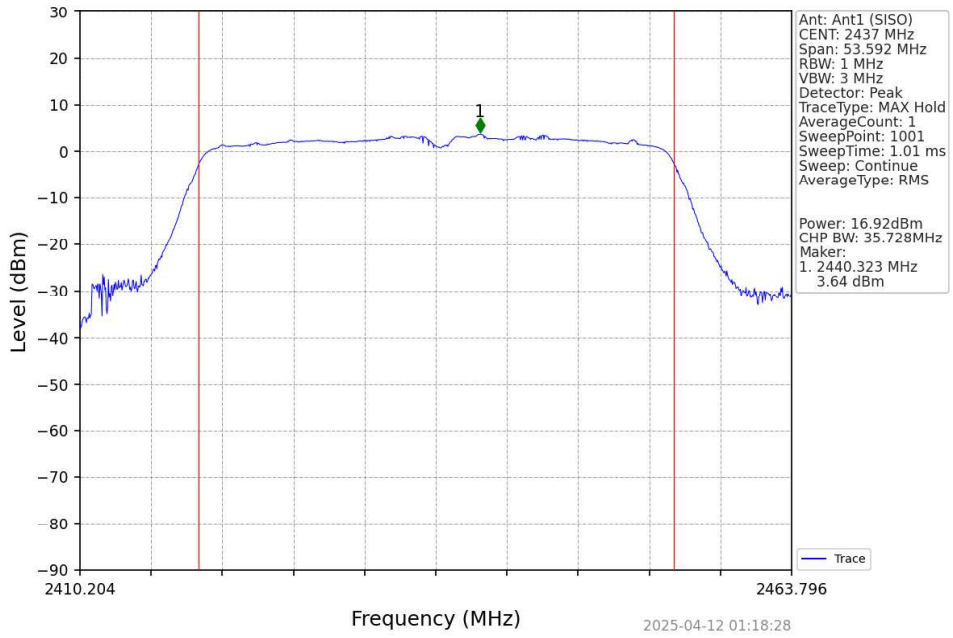
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



5 Power Spectral Density

5.1 *Test Result*

Test Description	Test Specification		Test Result
Power Spectral Density	15.247(e)	RSS-247 S5.2 (b)	Compliant

5.2 *Test Method*

Power spectral density measurements were recorded using the procedures from ANSI C63.10: 2020 clause 11.10 and KDB 558074 D01 15.247 Meas Guidance v05r02.

Limit
The limit is 8 dBm.

5.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature:	23.69°C
Relative Humidity:	34.9 %
Atmospheric Pressure:	98.01 kPa

5.4 *Test Equipment*

Test End Date: 11-Apr-2025 Tester: SGM

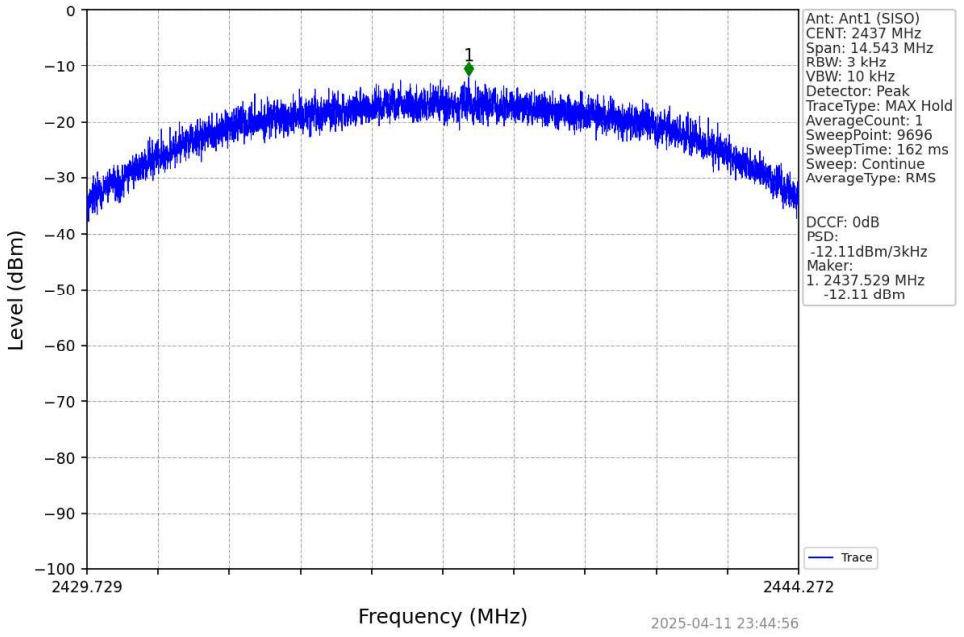
Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	3-Apr-2025	3-Apr-2026
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	4-Apr-2025	4-Apr-2026
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	4-Mar-2025	4-Mar-2026

5.5 *Test Data*

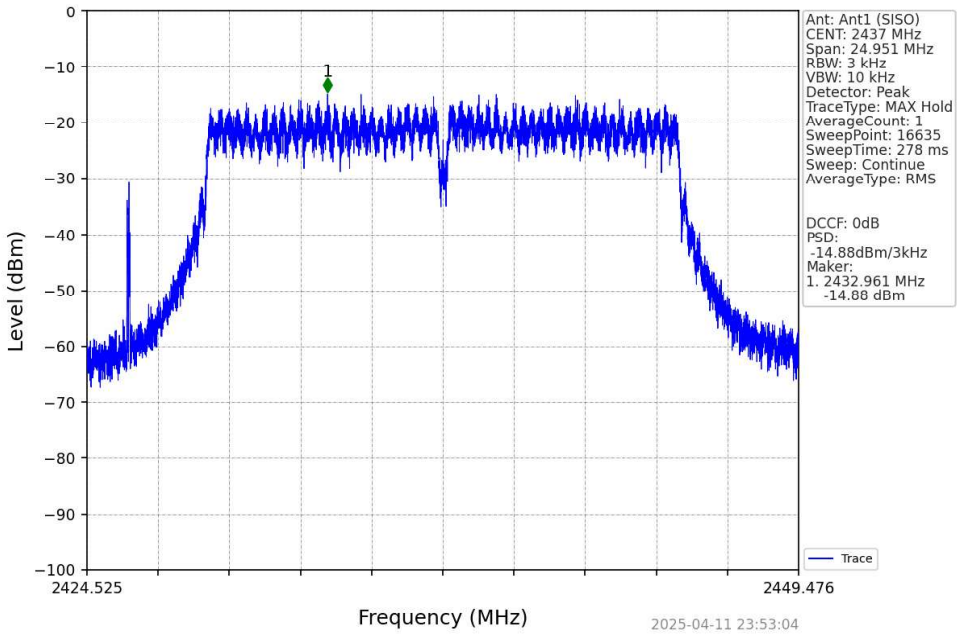
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-12.39	<=8	Pass
		2437	-12.11	<=8	Pass
		2462	-11.35	<=8	Pass
802.11g	SISO	2412	-15.11	<=8	Pass
		2437	-14.88	<=8	Pass
		2462	-14.71	<=8	Pass
802.11n (HT20)	SISO	2412	-14.91	<=8	Pass
		2437	-15.43	<=8	Pass
		2462	-14.26	<=8	Pass
802.11n (HT40)	SISO	2422	-18.65	<=8	Pass
		2437	-18.20	<=8	Pass
		2452	-18.25	<=8	Pass
Note1: Antenna Gain: Ant1: 1.50dBi;					

5.5.1 Example Plots

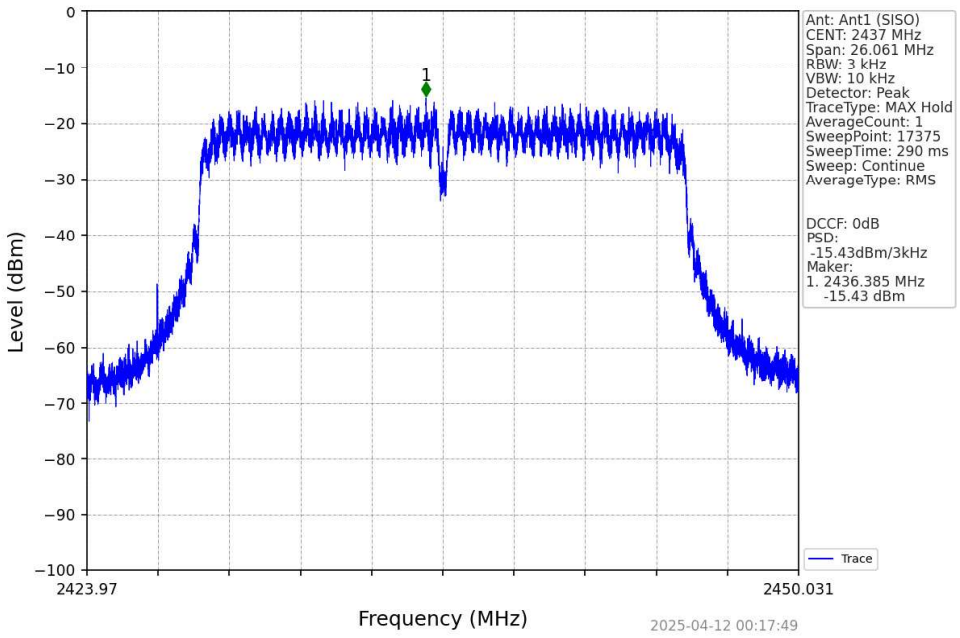
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



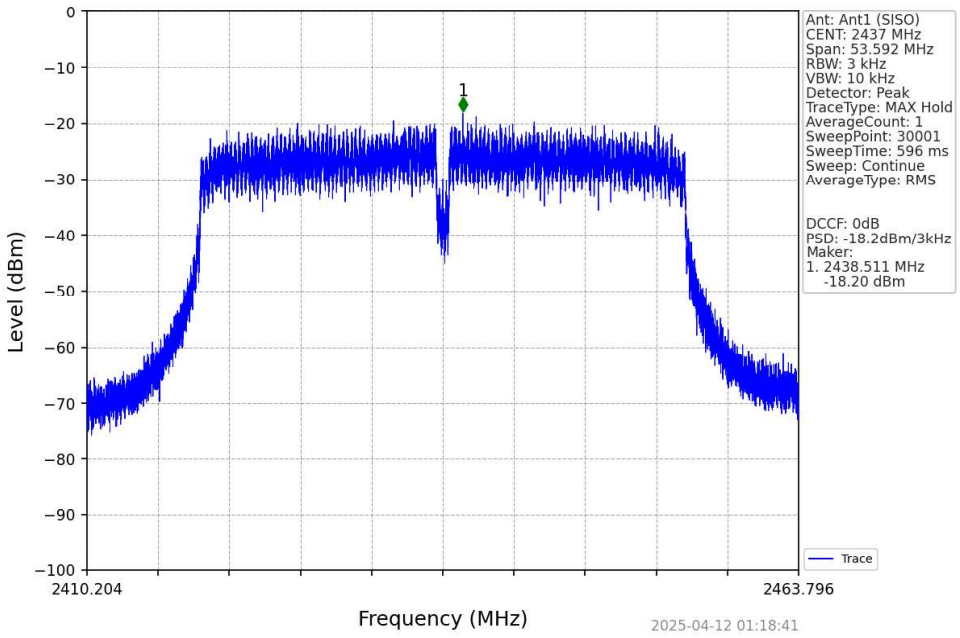
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



6 Conducted Spurious Emissions / Band Edge

6.1 *Test Result*

Test Description	Test Specification		Test Result
Conducted Spurious Emissions	15.247(d)	RSS-247 S5.5	Compliant

6.2 *Test Method*

Spurious emissions in non-restricted frequency bands were recorded using the methods defined in ANSI C63.10: 2020 clause 11.11 and KDB 558074 D01 15.247 Meas Guidance v05r02.

Lowest, middle, and highest channels were investigated.

Because the maximum conducted peak output power was used to determine compliance with the output power limits, the limit in any 100 kHz band outside of the authorized band is 20 dB below the maximum in-band peak level.

6.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature:	23.69°C
Relative Humidity:	34.9 %
Atmospheric Pressure:	98.01 kPa

6.4 *Test Equipment*

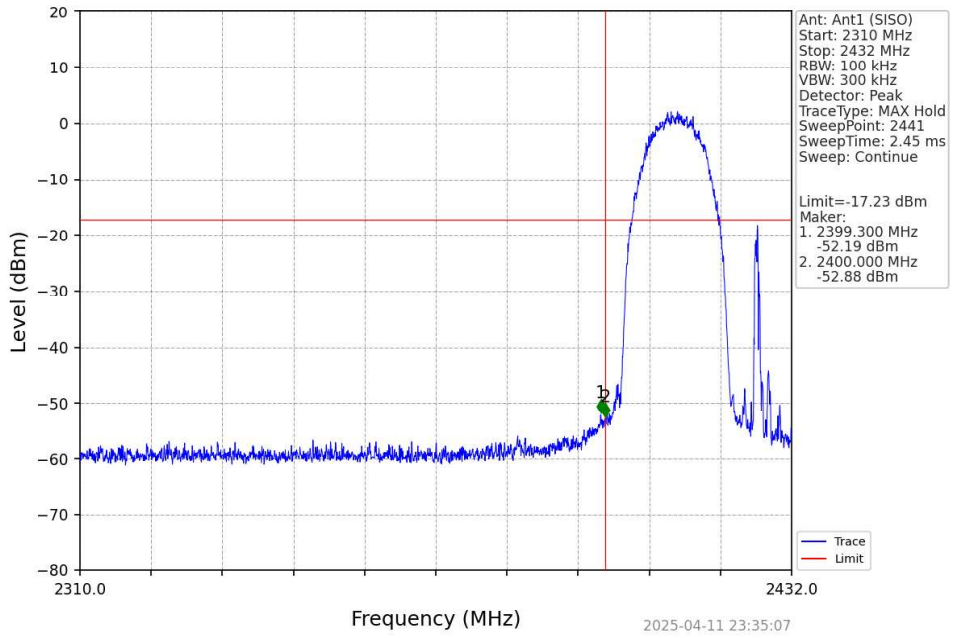
Test End Date: 11-Apr-2025 Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	3-Apr-2025	3-Apr-2026
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	4-Apr-2025	4-Apr-2026
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	4-Mar-2025	4-Mar-2026

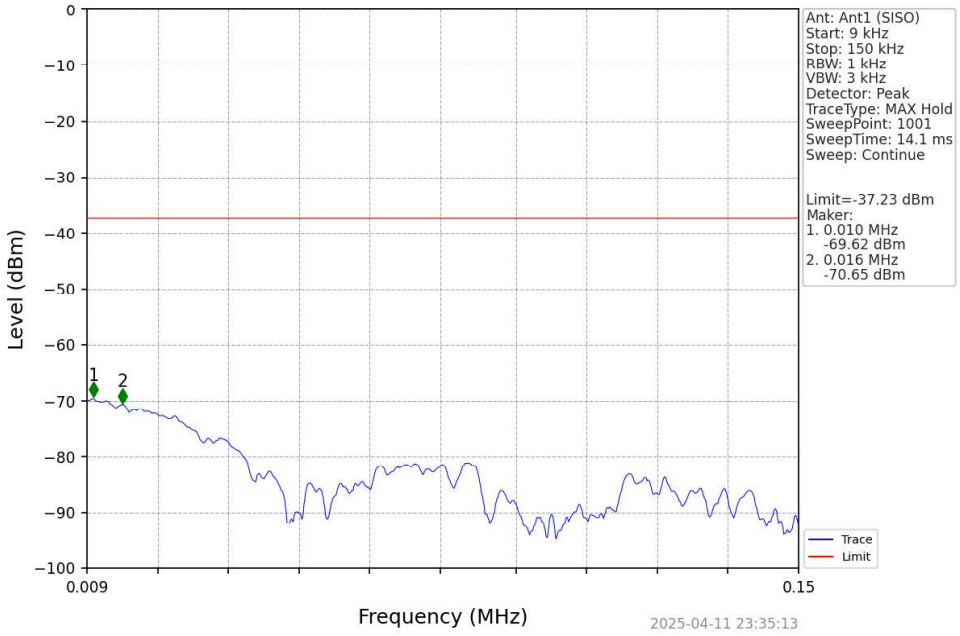
6.5 *Test Data – DTS Band Edge*

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	2.77	-17.23	Pass
		2437	1	2.77	-17.23	Pass
		2462	1	2.77	-17.23	Pass
802.11g	SISO	2412	1	-0.37	-20.37	Pass
		2437	1	-0.37	-20.37	Pass
		2462	1	-0.37	-20.37	Pass
802.11n (HT20)	SISO	2412	1	-1.79	-21.79	Pass
		2437	1	-1.79	-21.79	Pass
		2462	1	-1.79	-21.79	Pass
802.11n (HT40)	SISO	2422	1	-4.48	-24.48	Pass
		2437	1	-4.48	-24.48	Pass
		2452	1	-4.48	-24.48	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.						

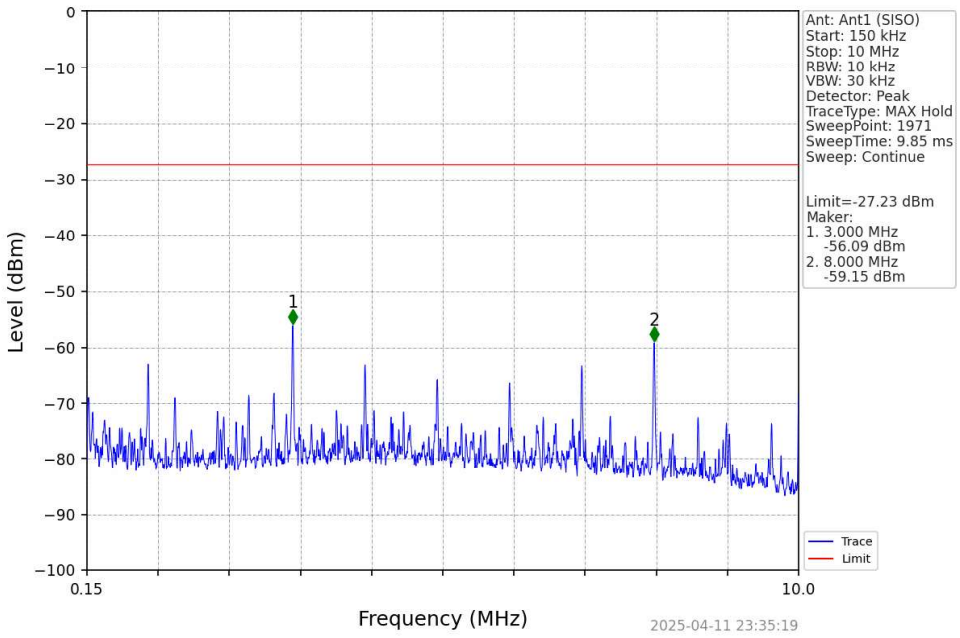
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



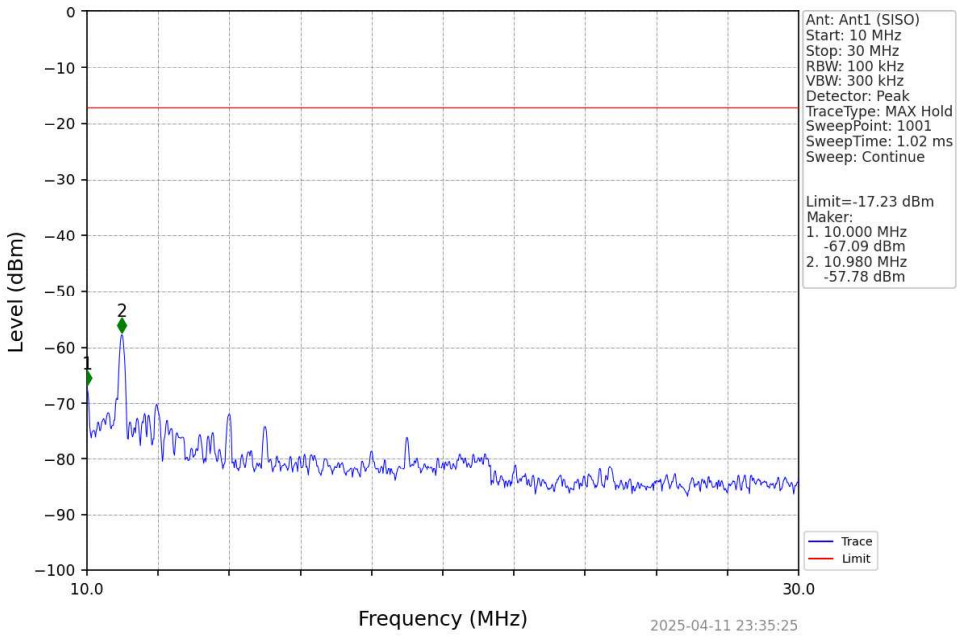
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



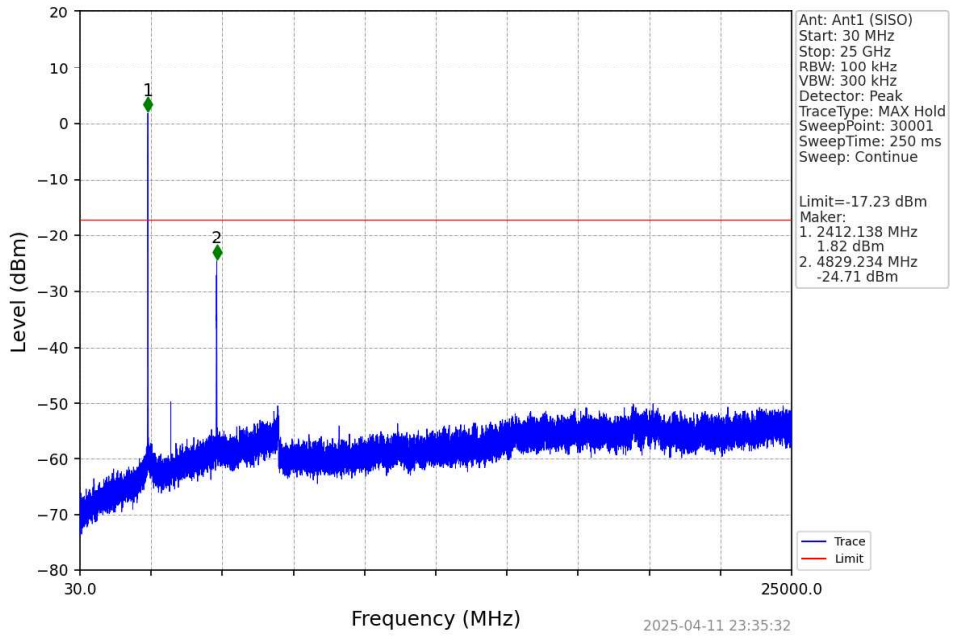
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



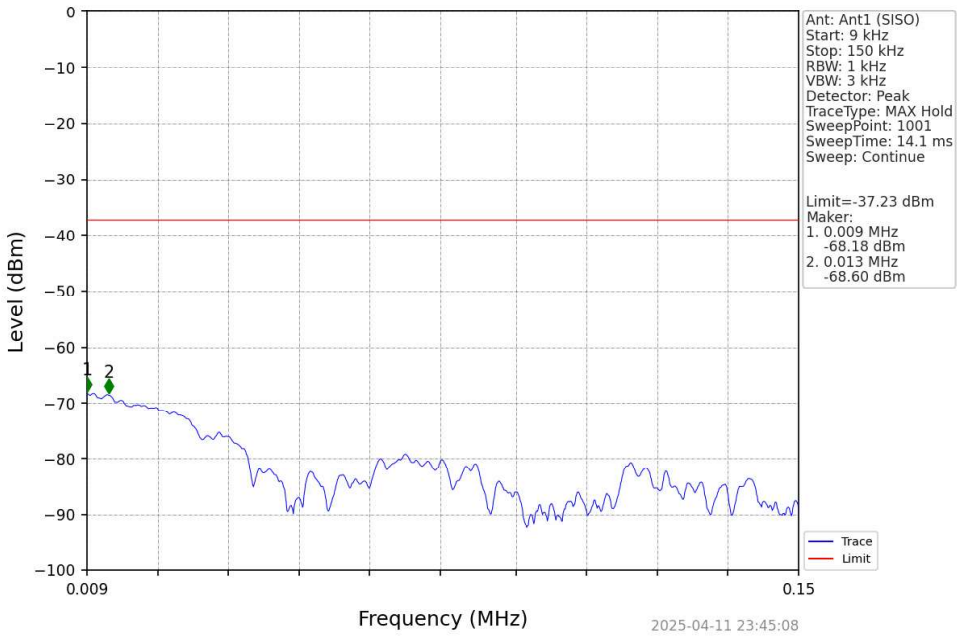
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



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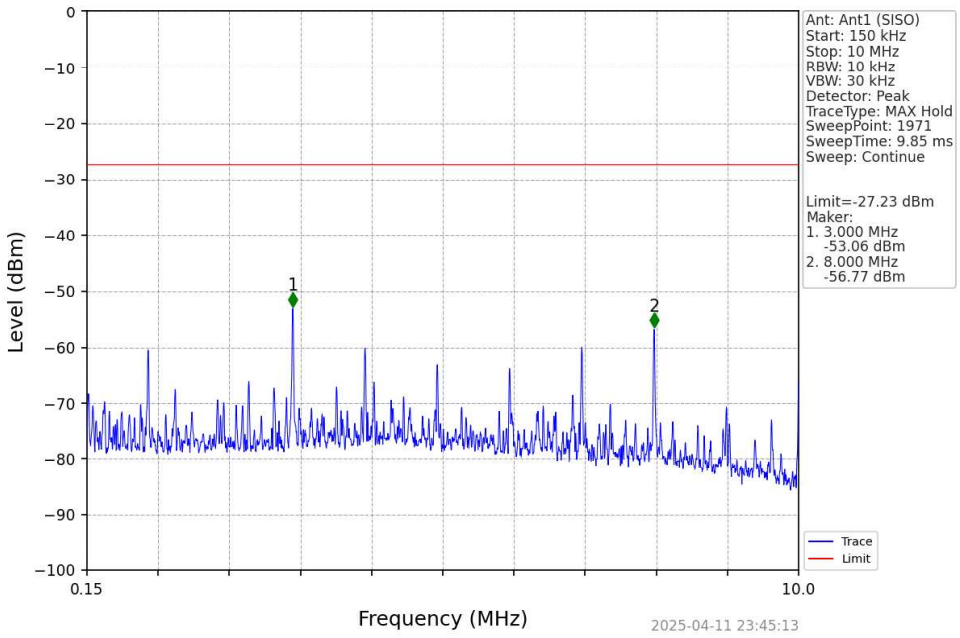

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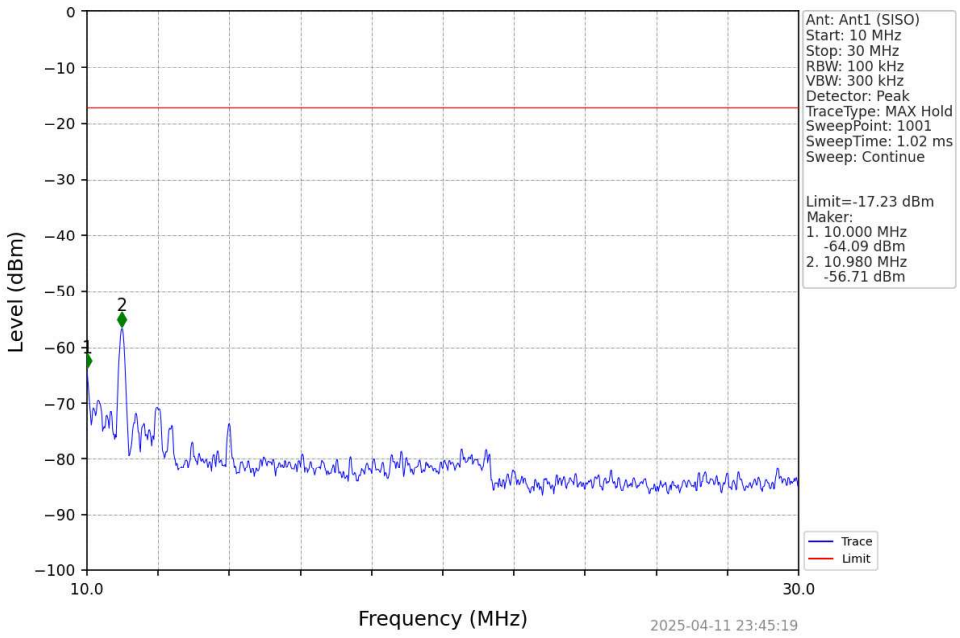
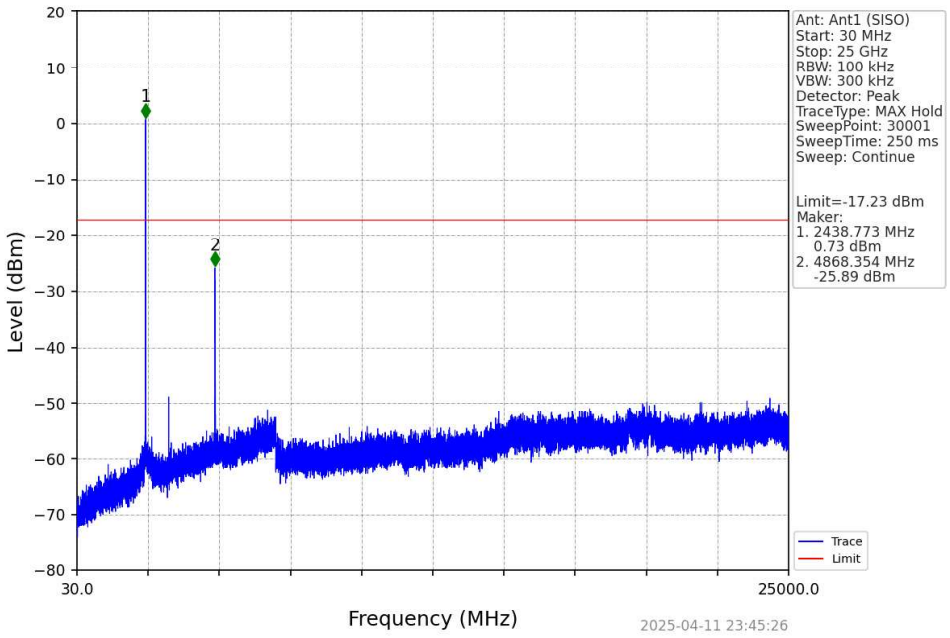
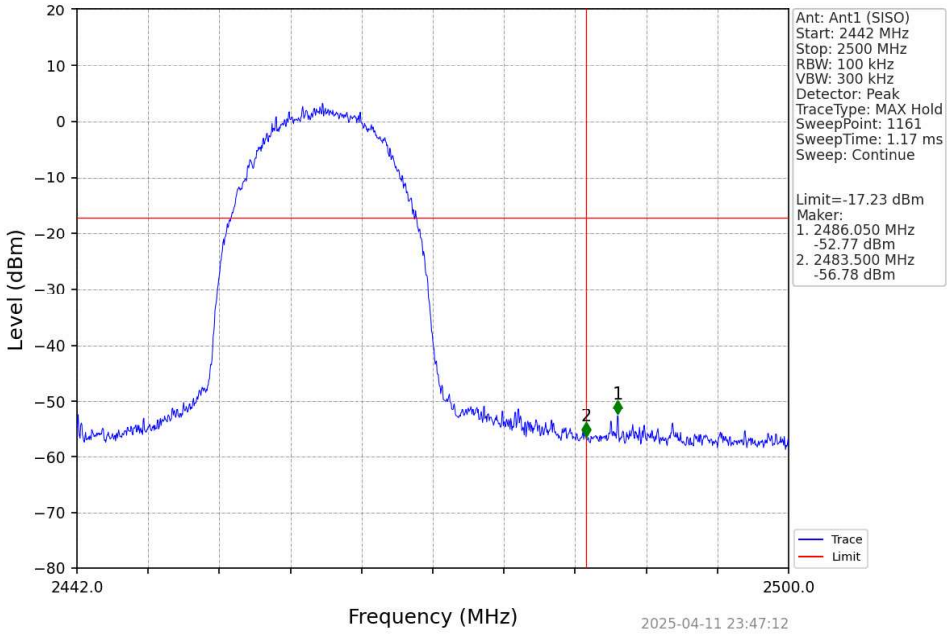


802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



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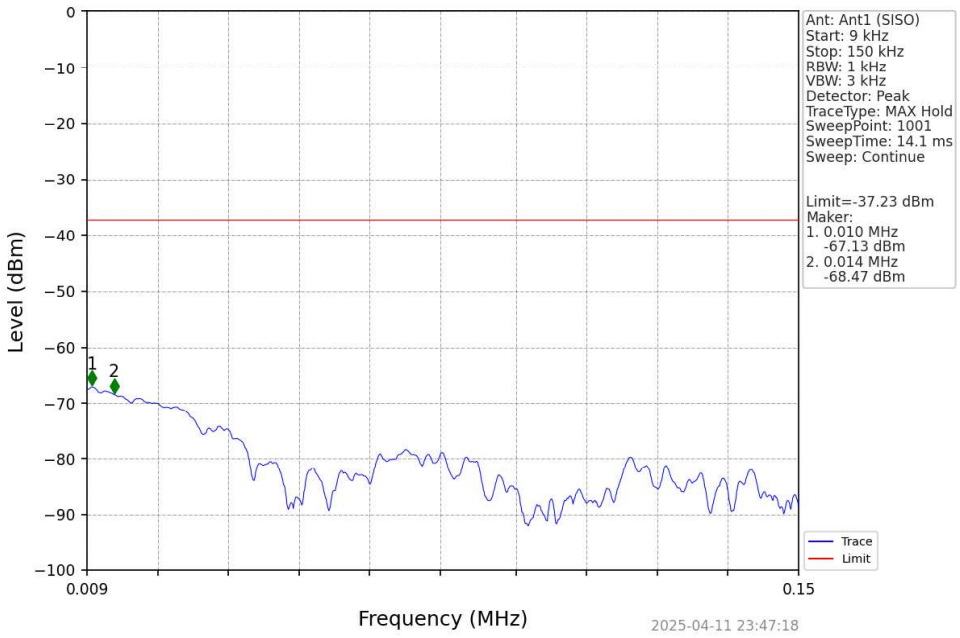

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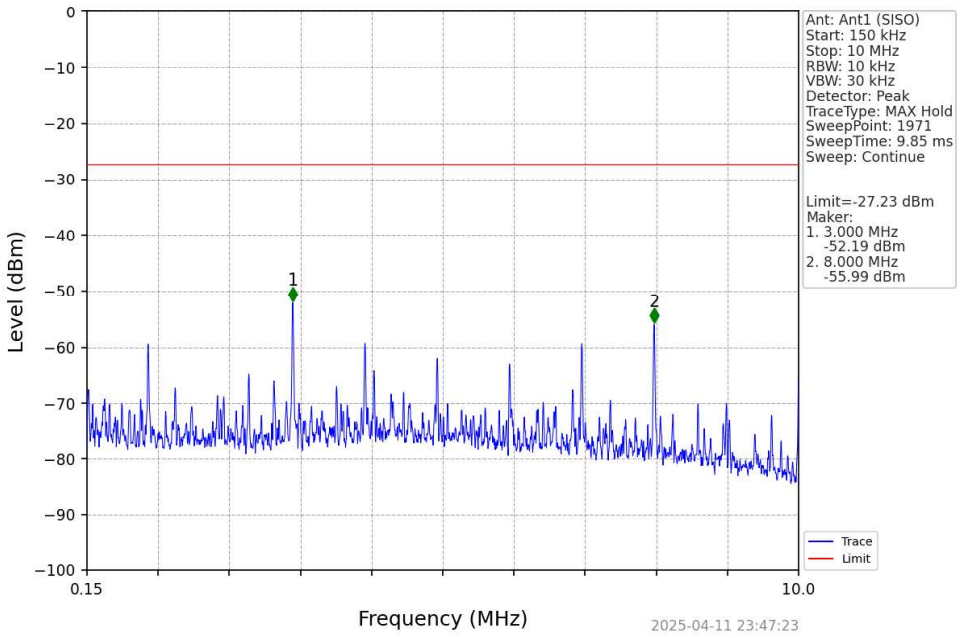

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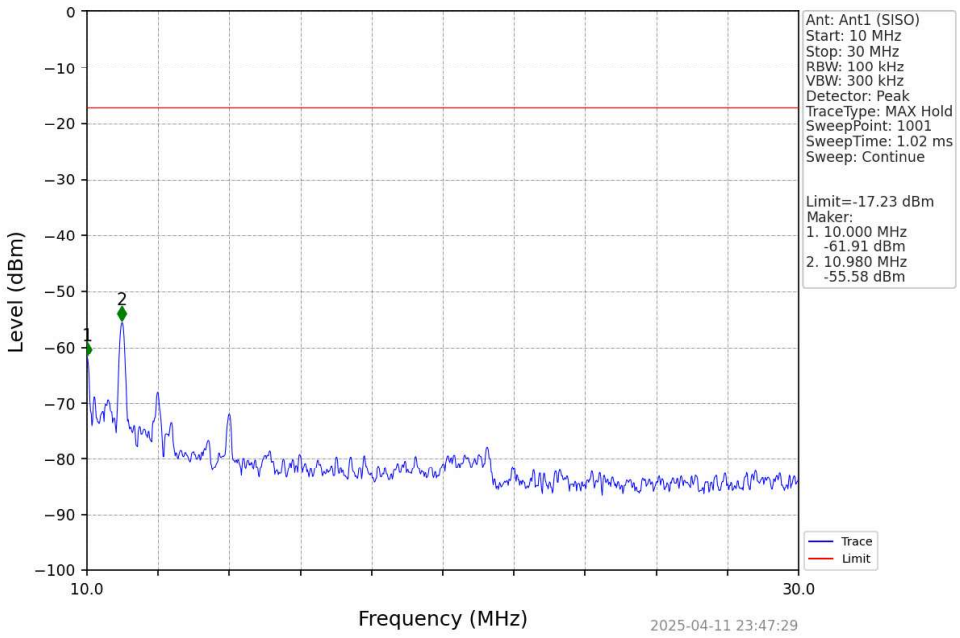
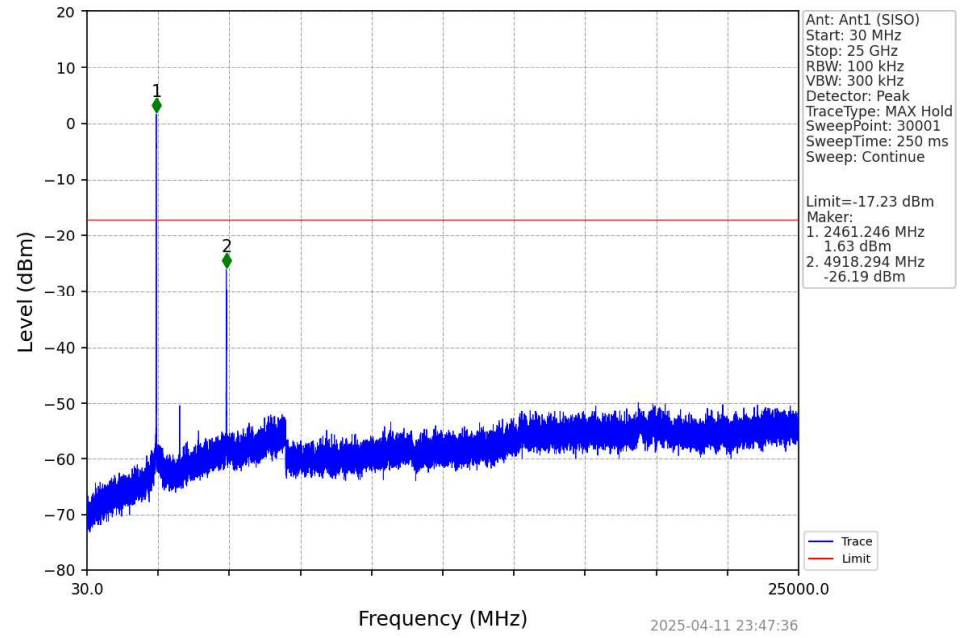
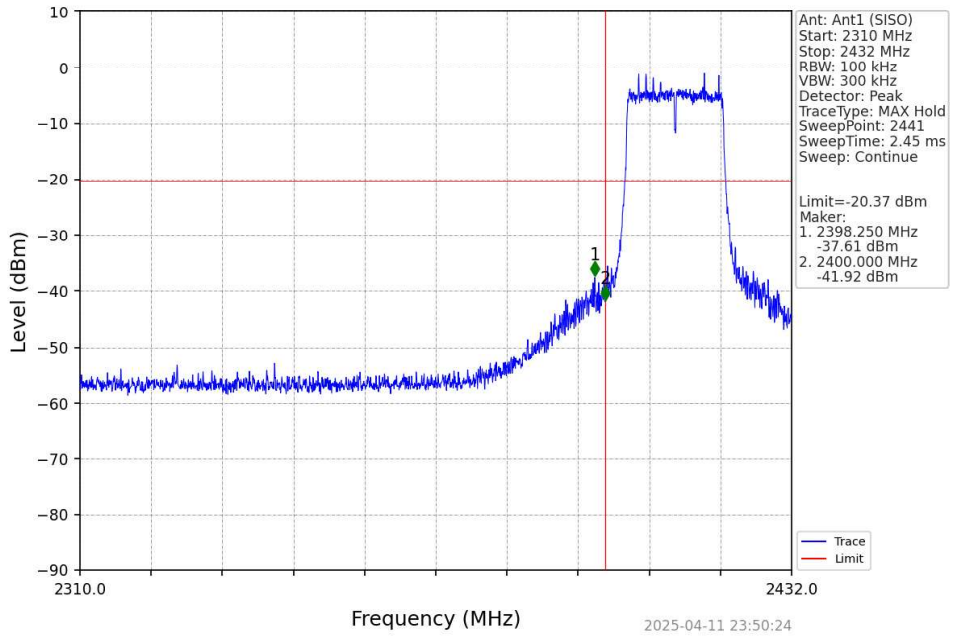


802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



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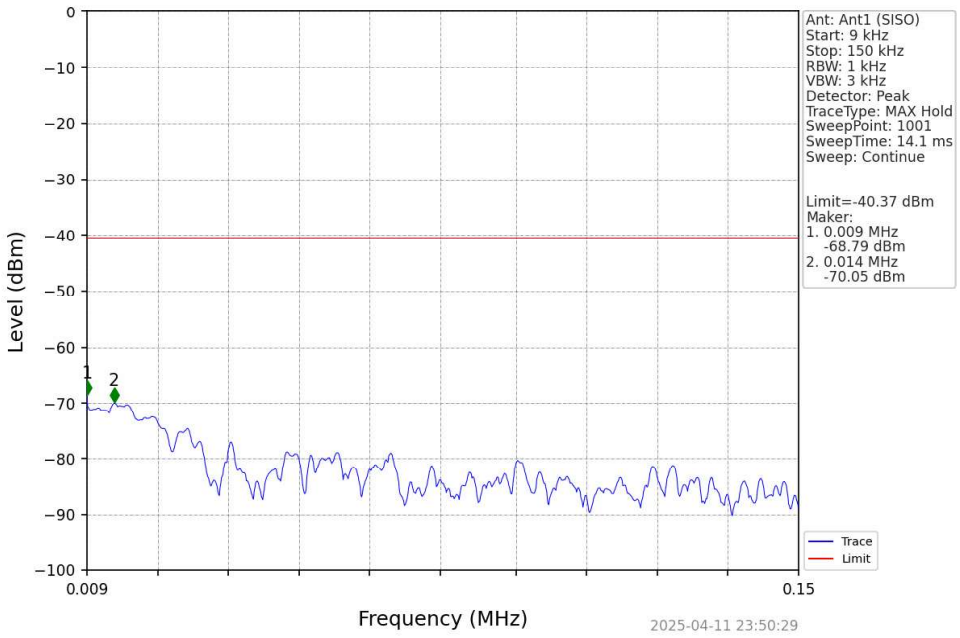
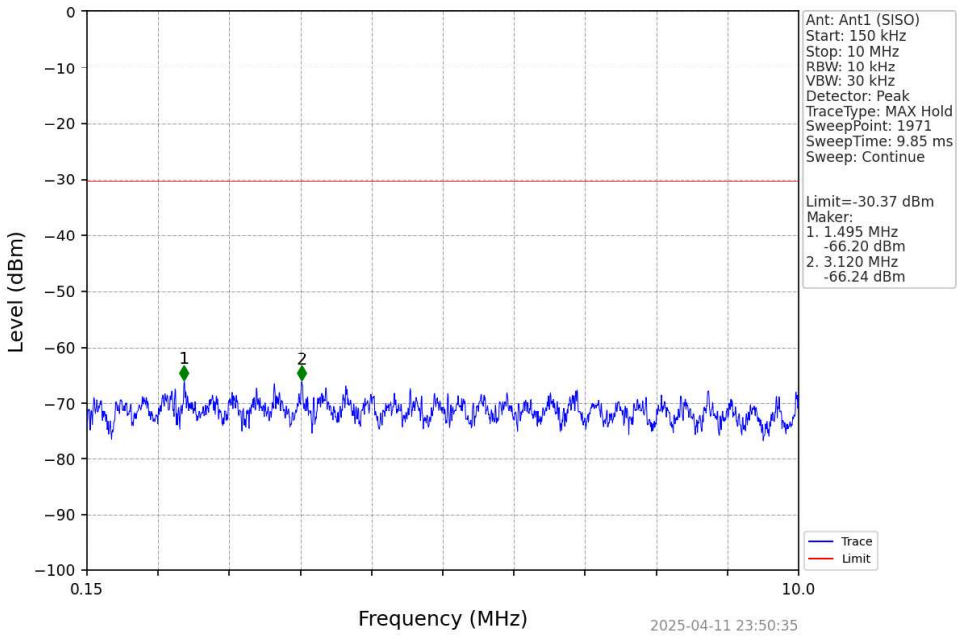
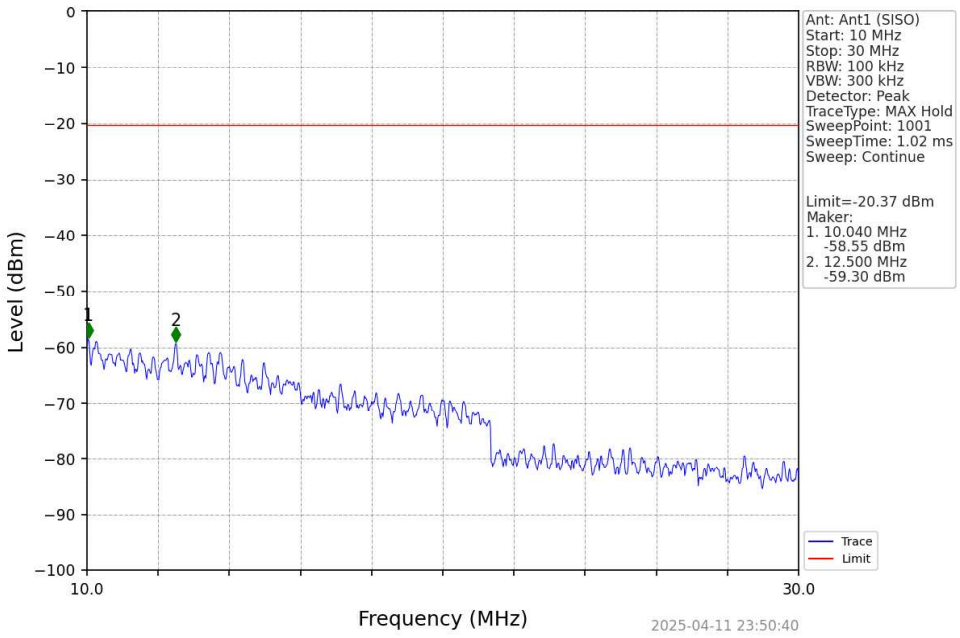


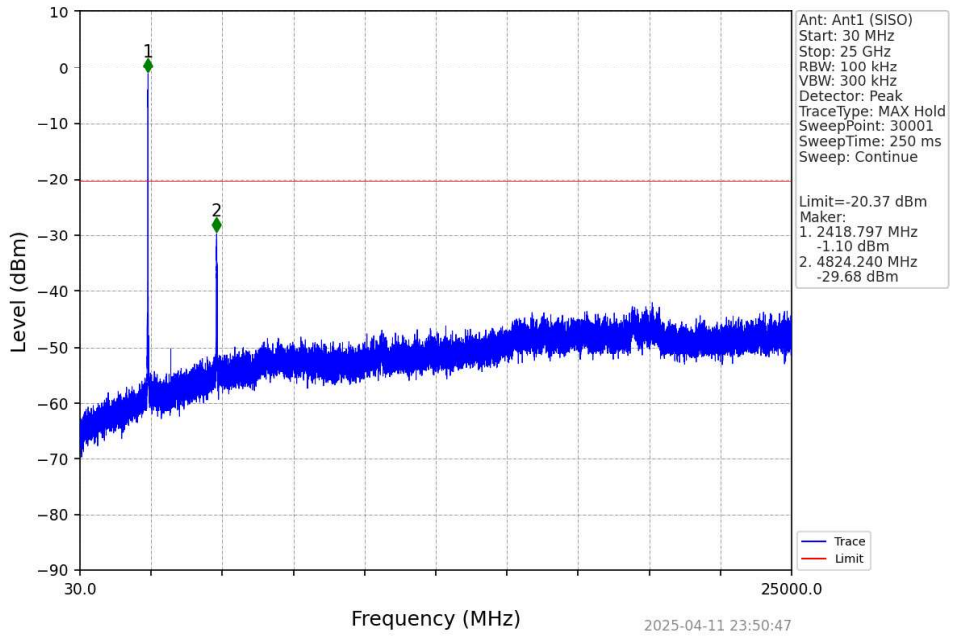
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



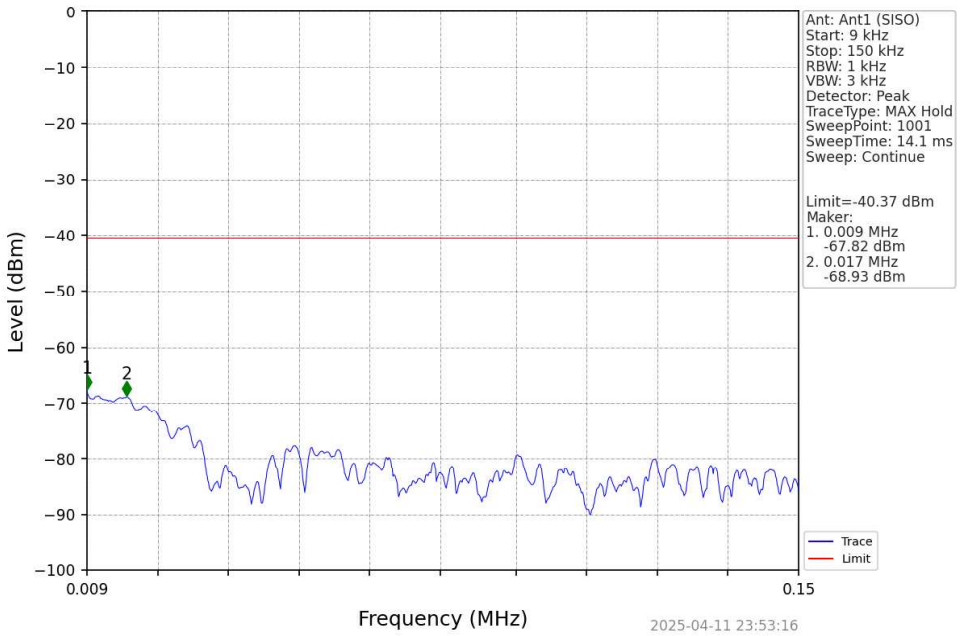
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



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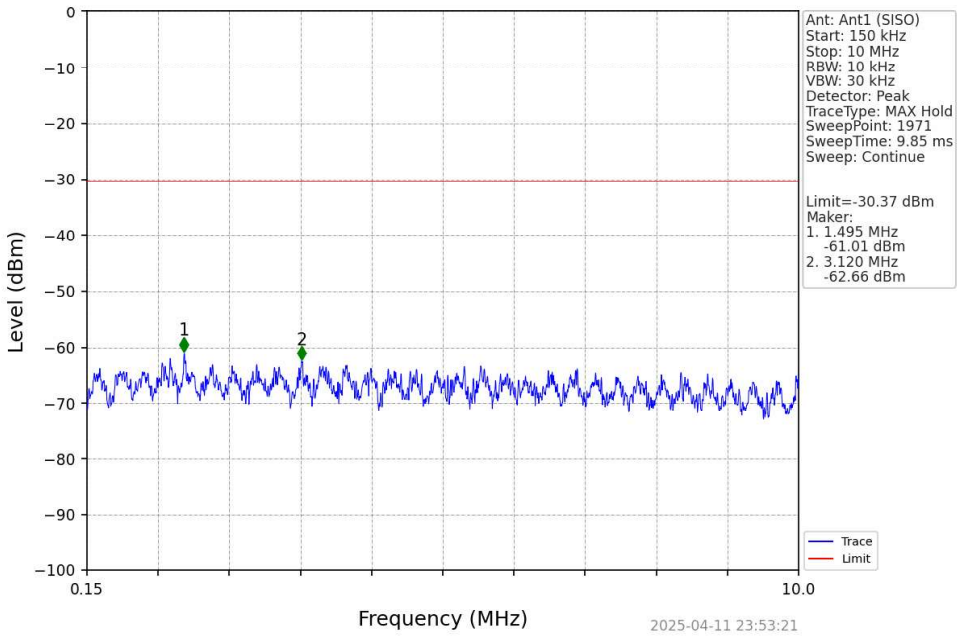

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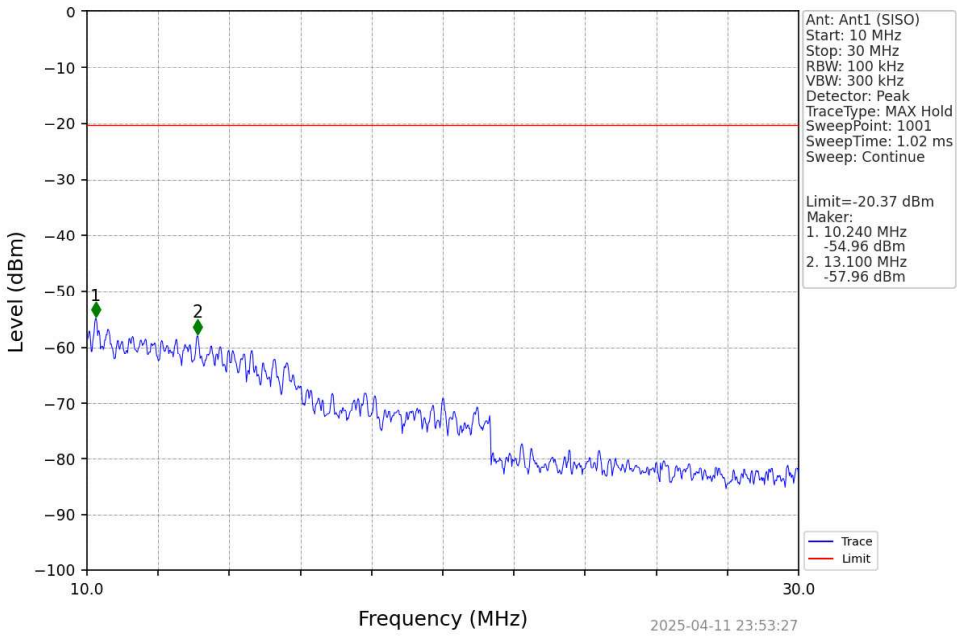
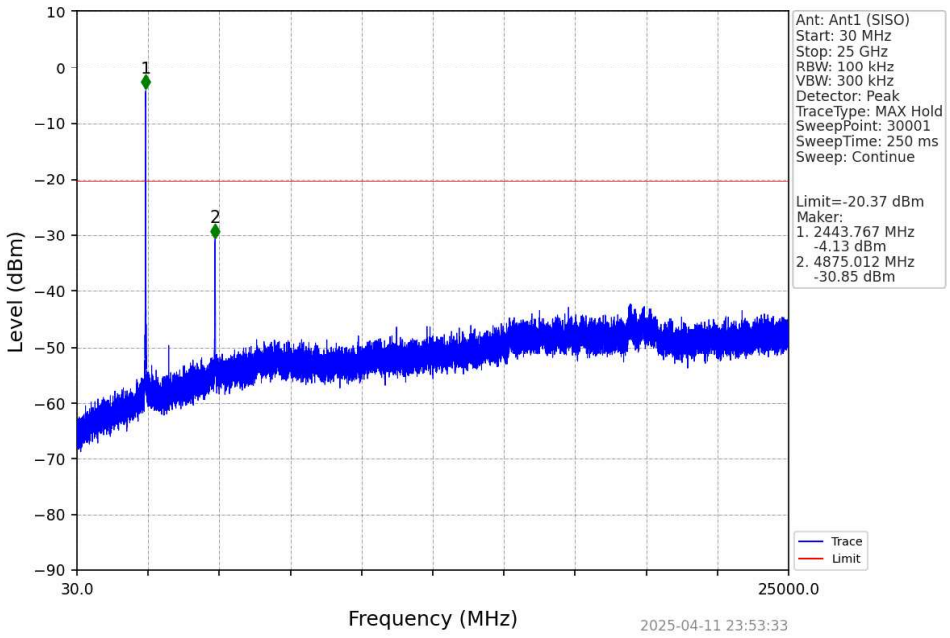
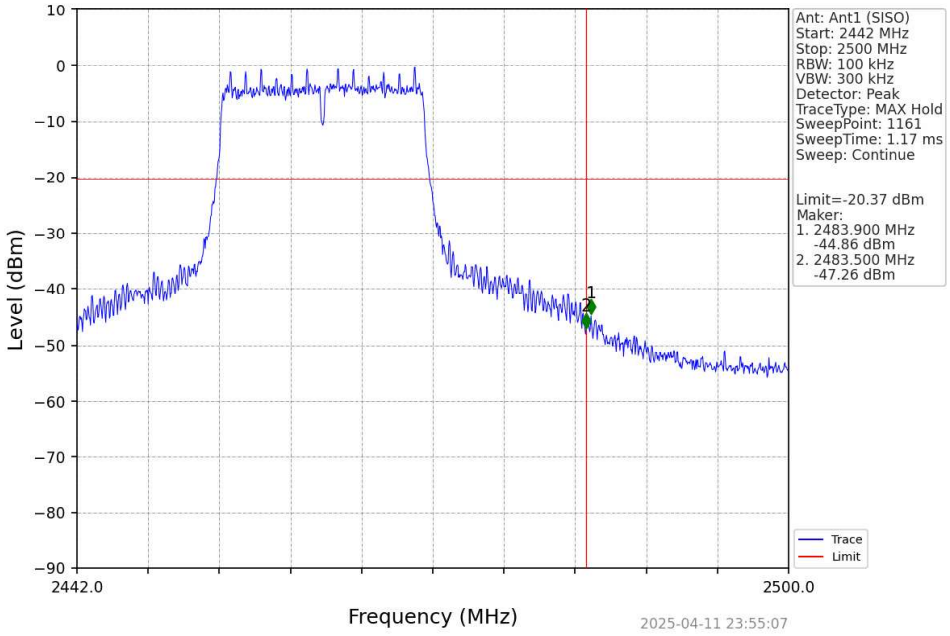


802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



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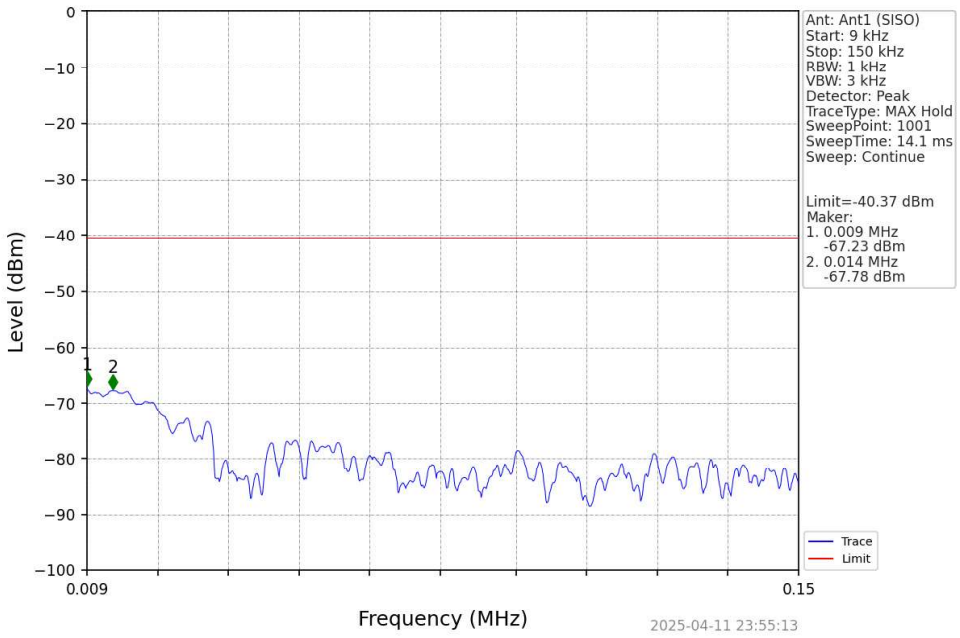

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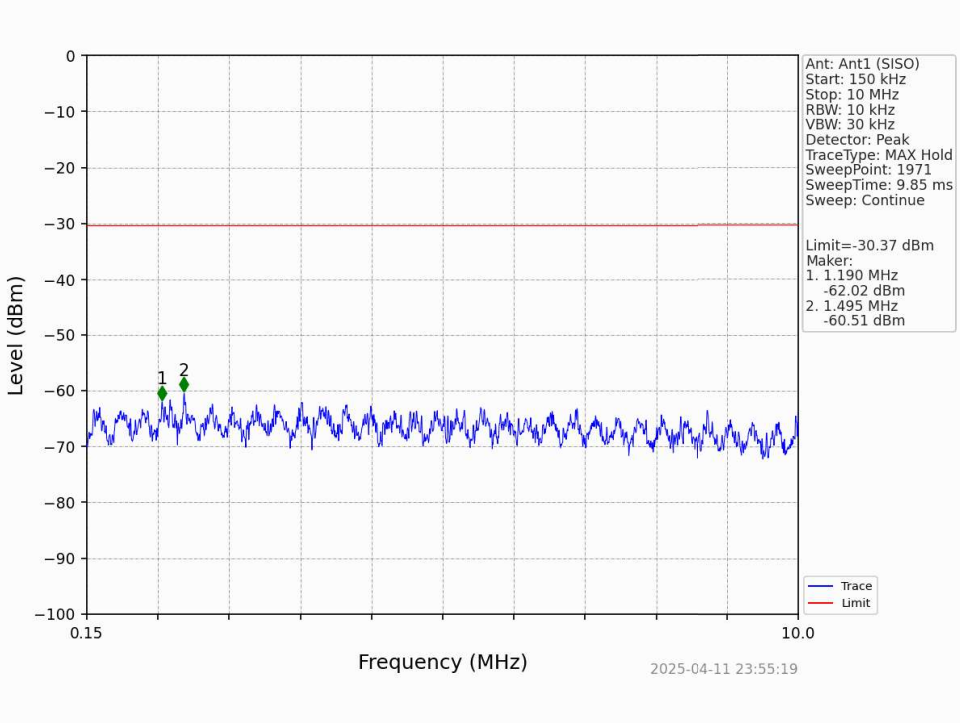

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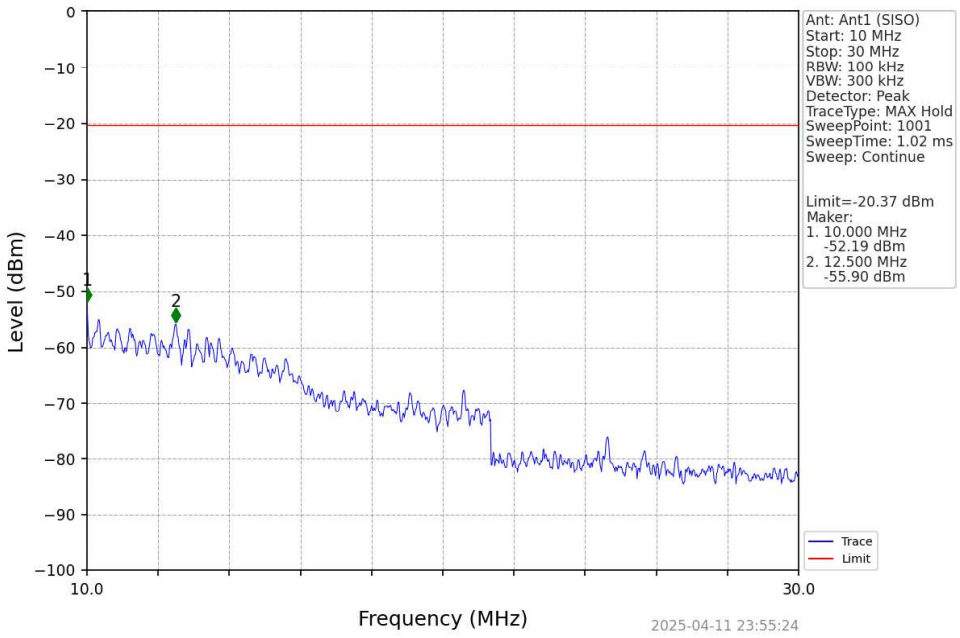
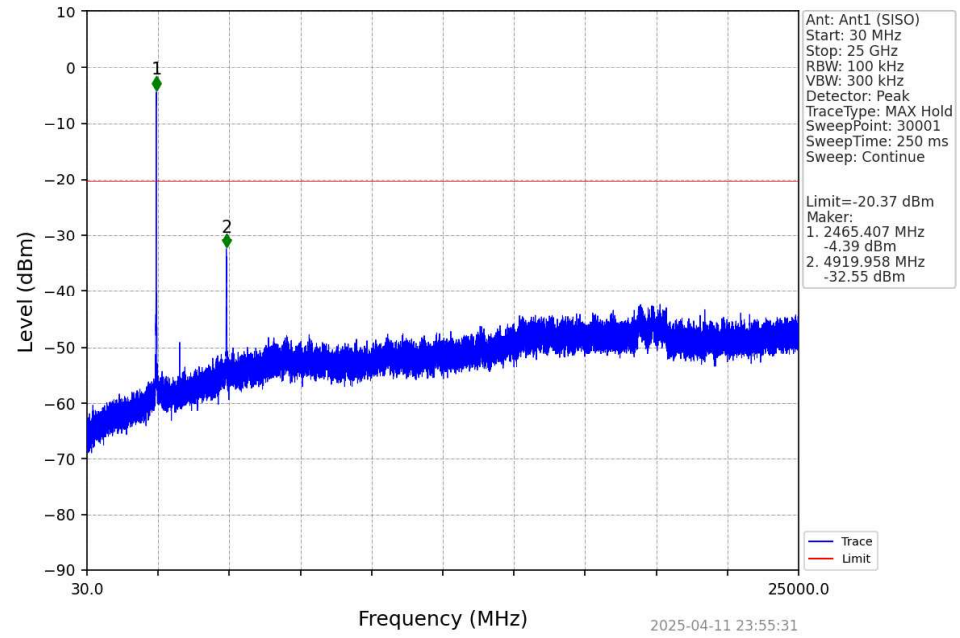
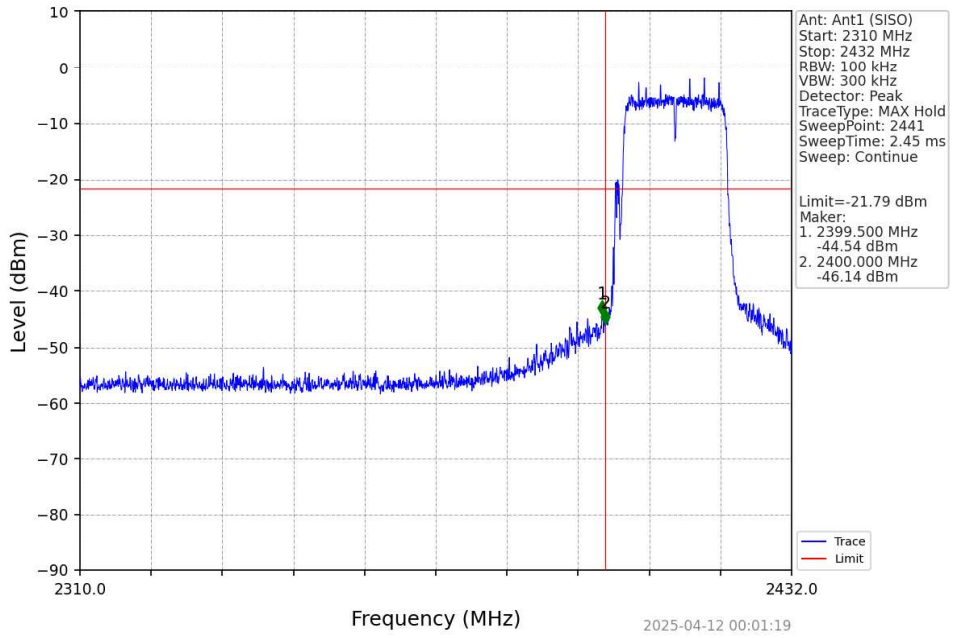


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



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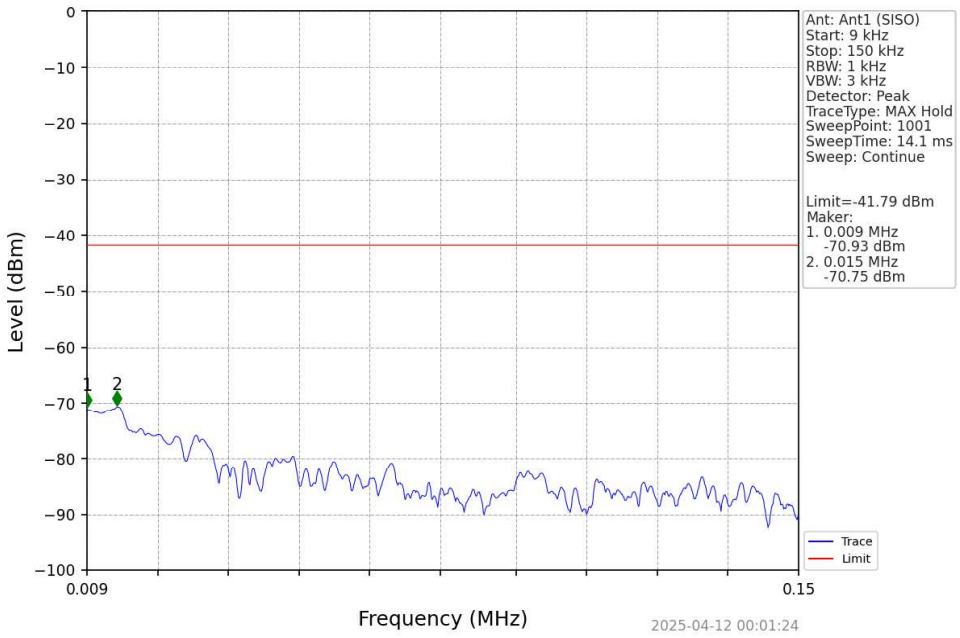

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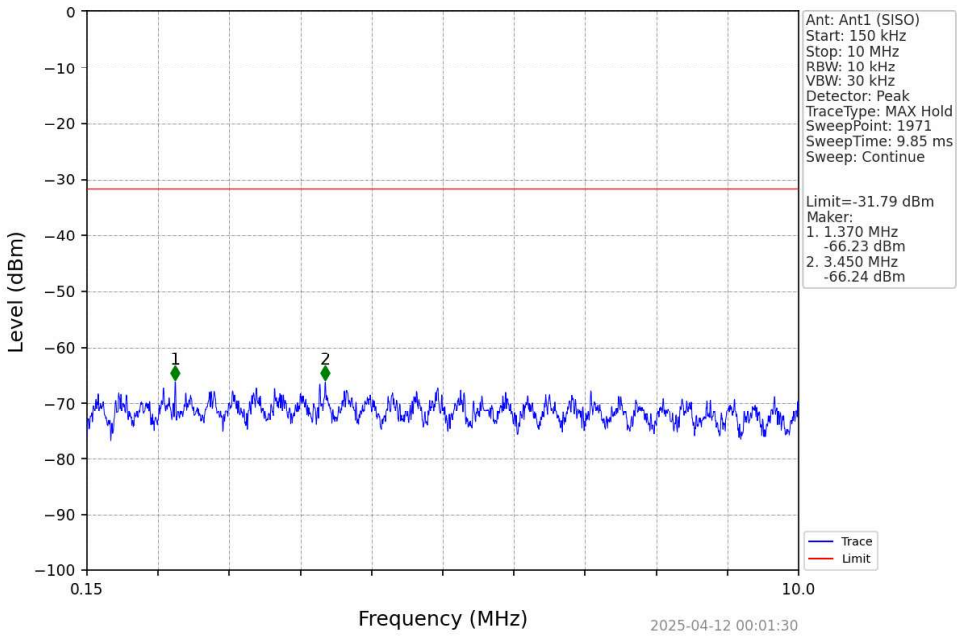

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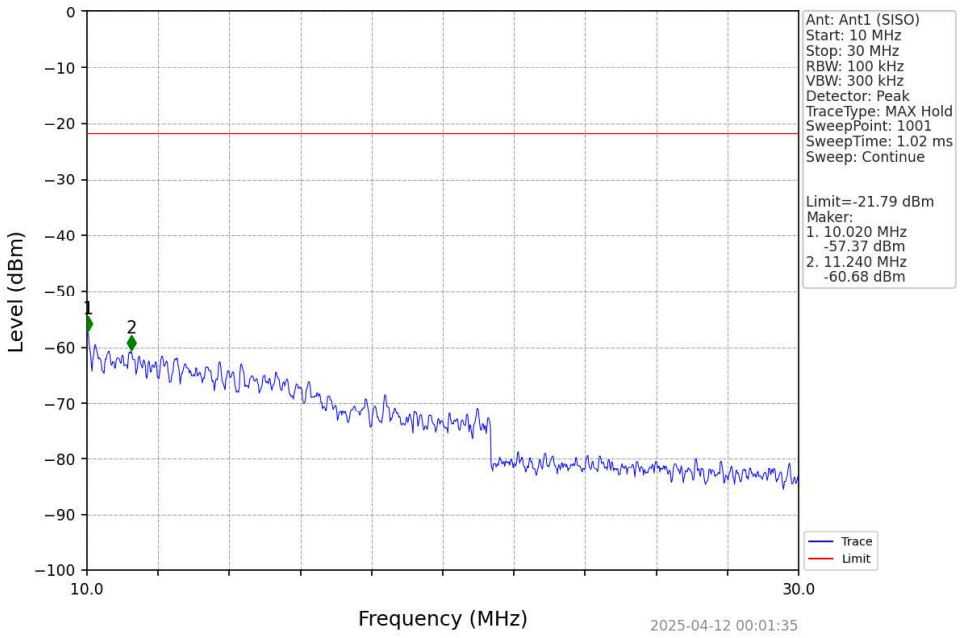

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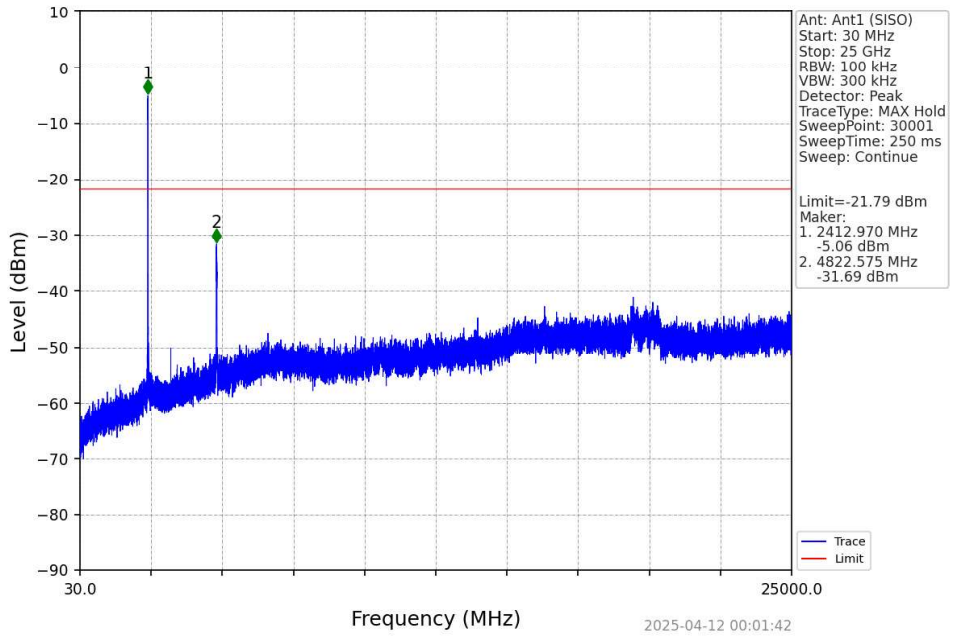
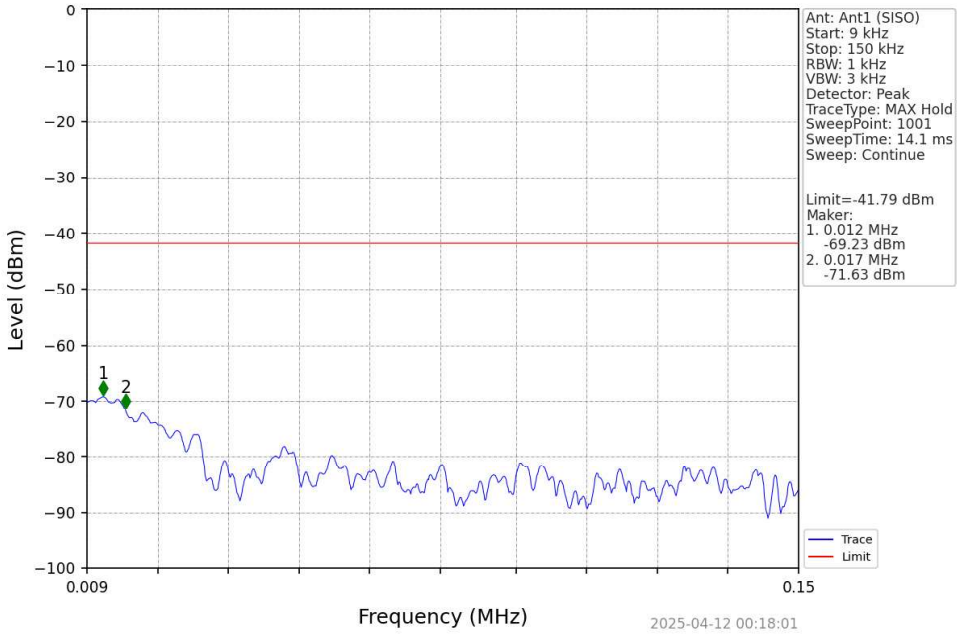


802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



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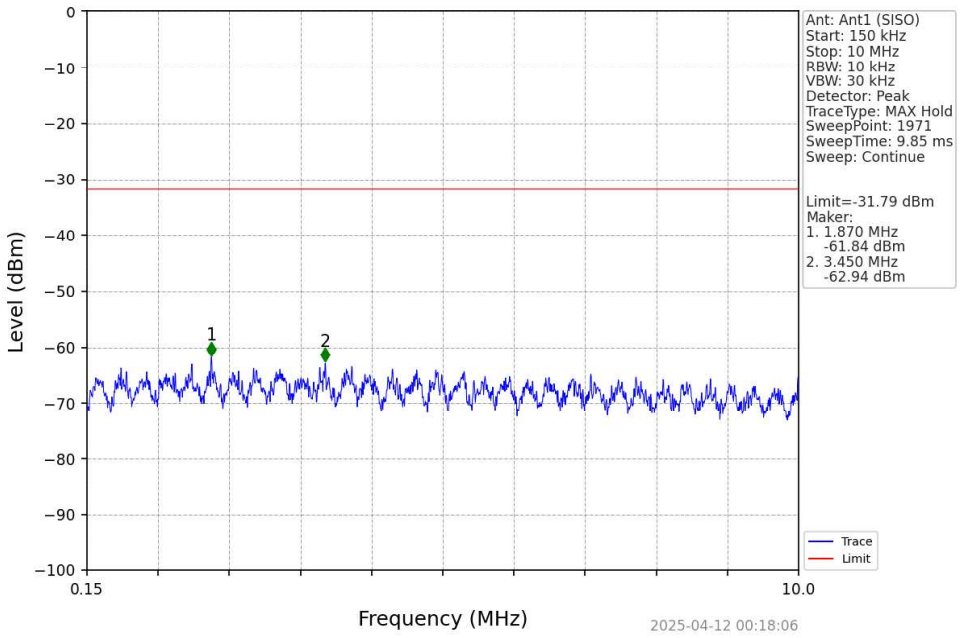

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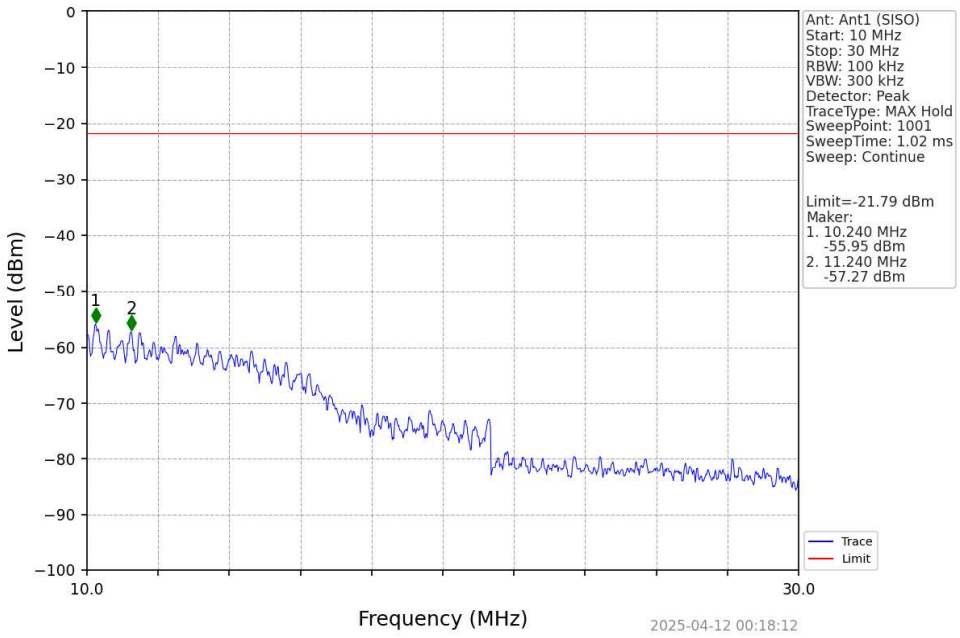
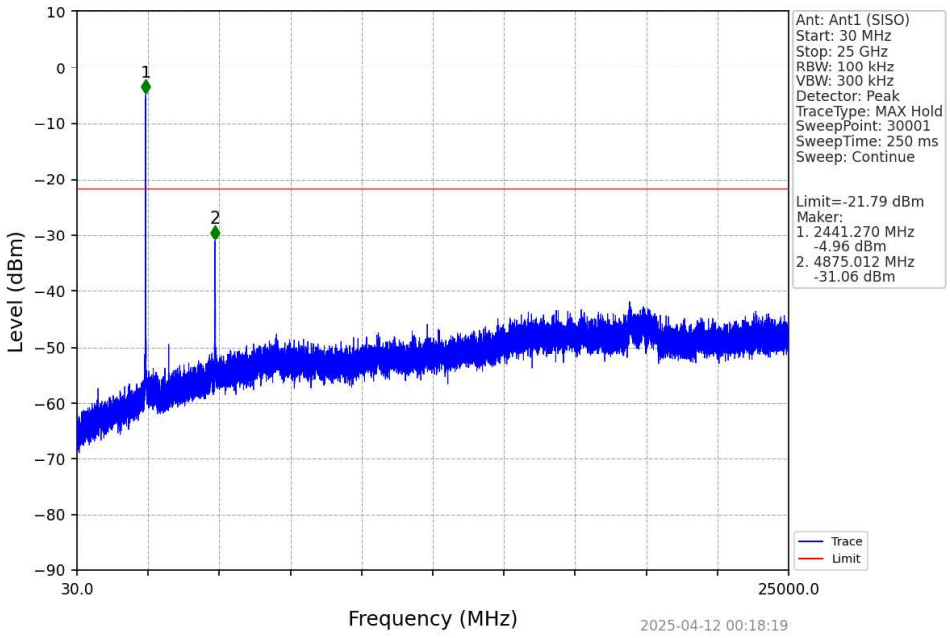
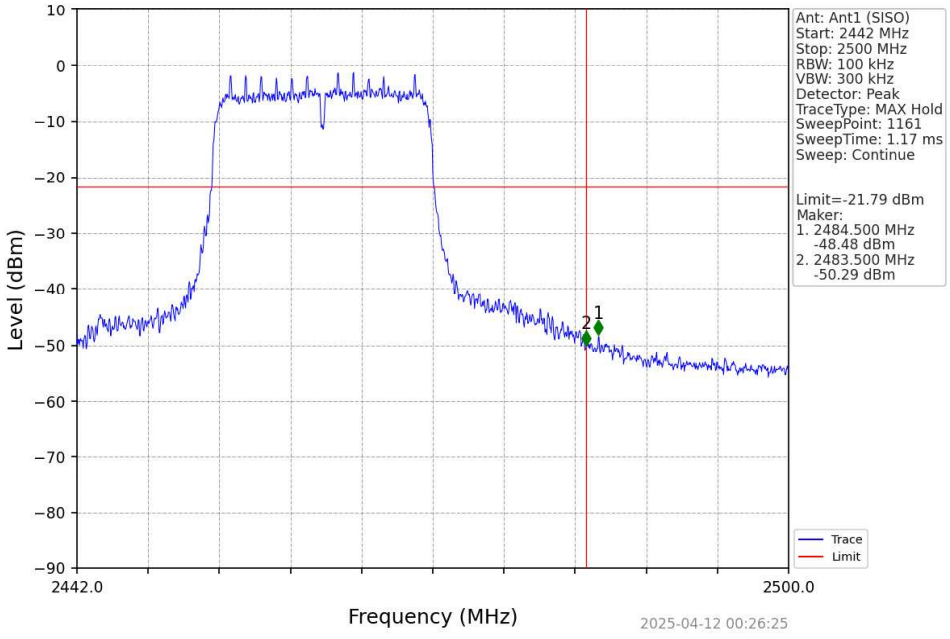


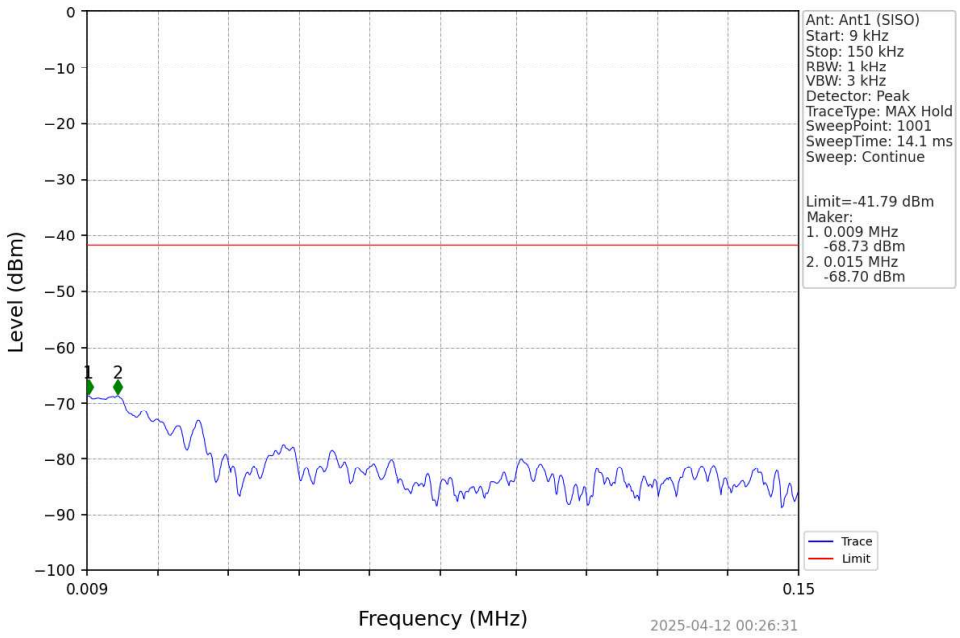
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



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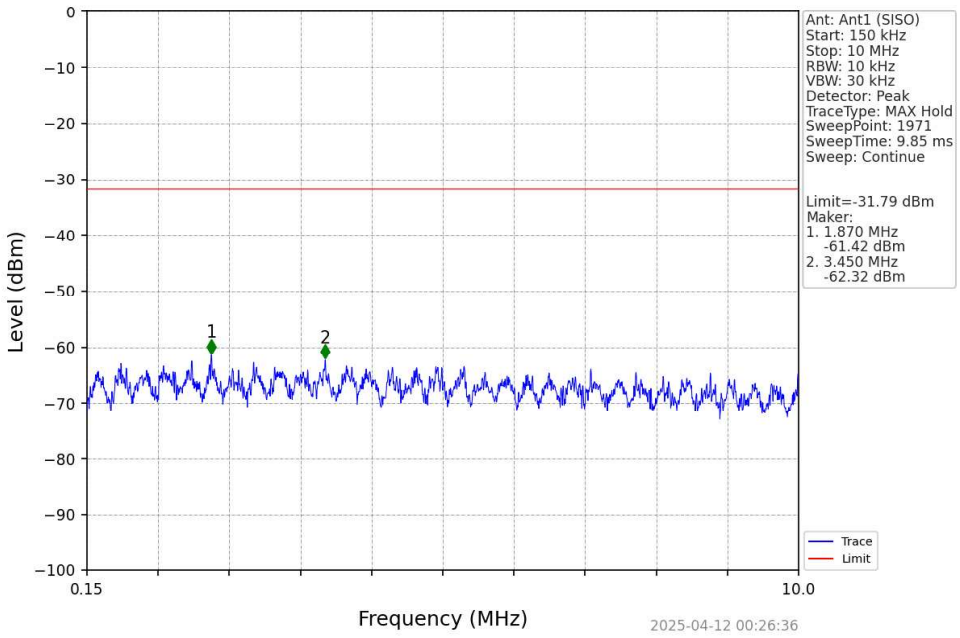

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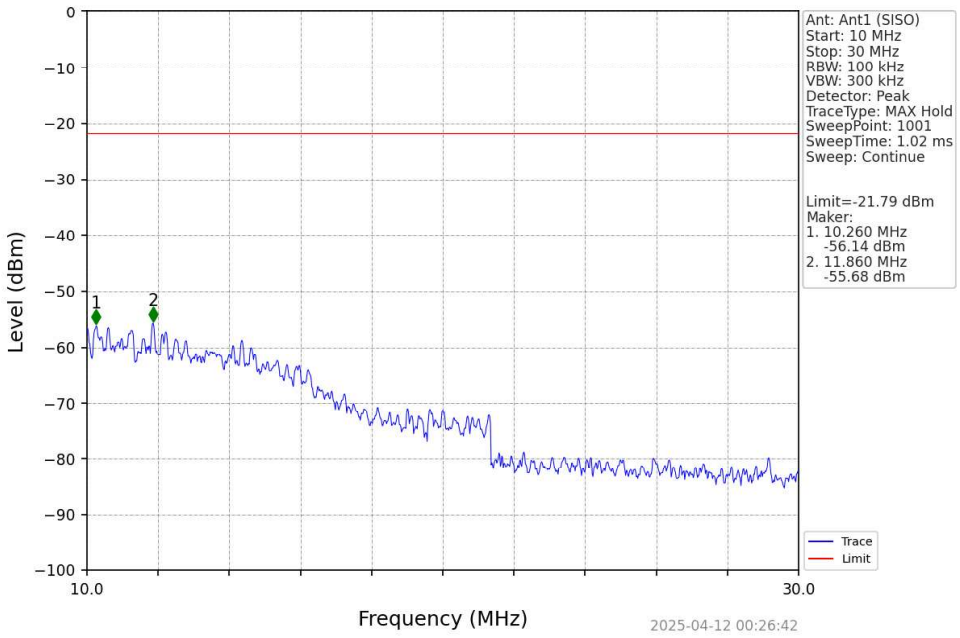
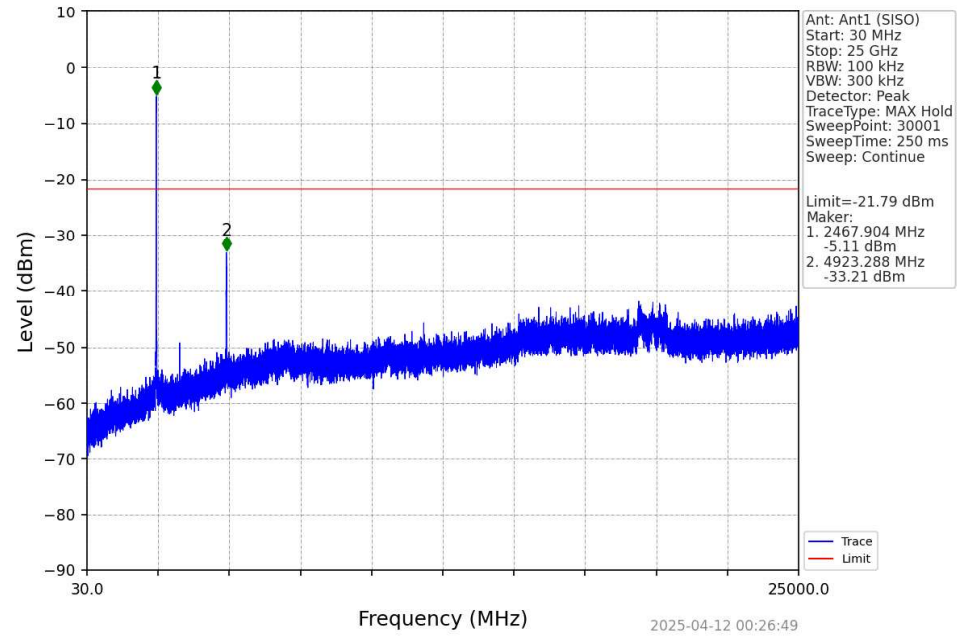
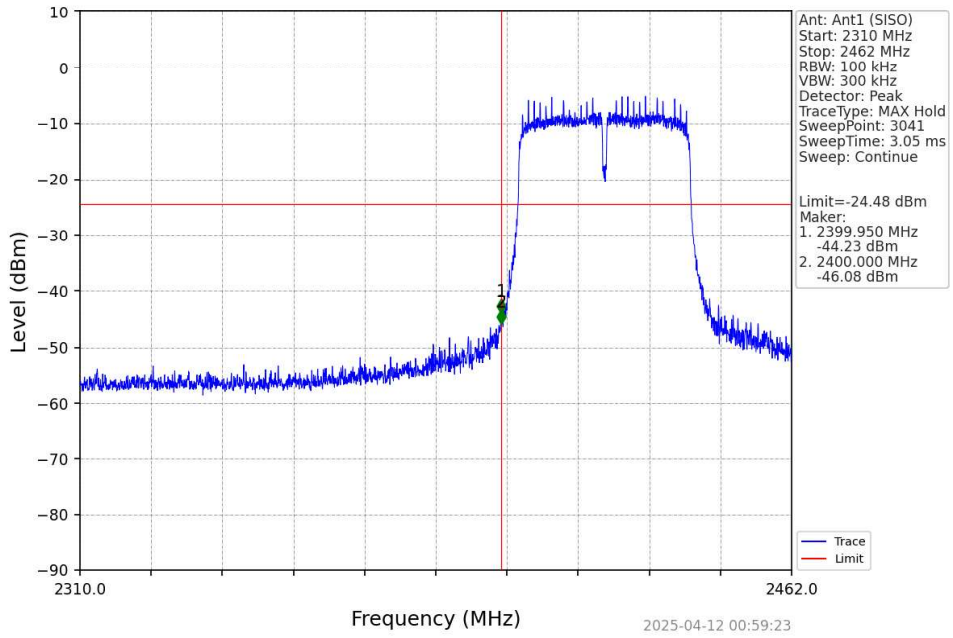


802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV