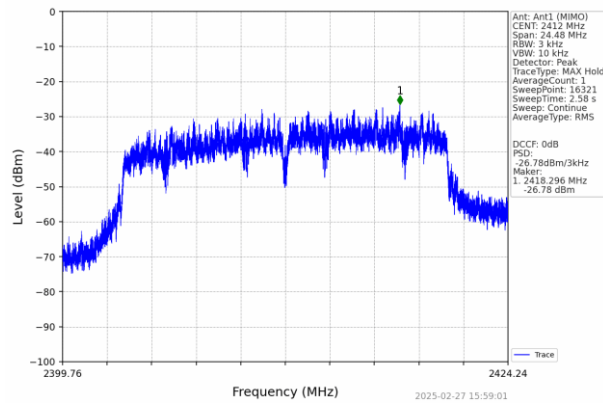


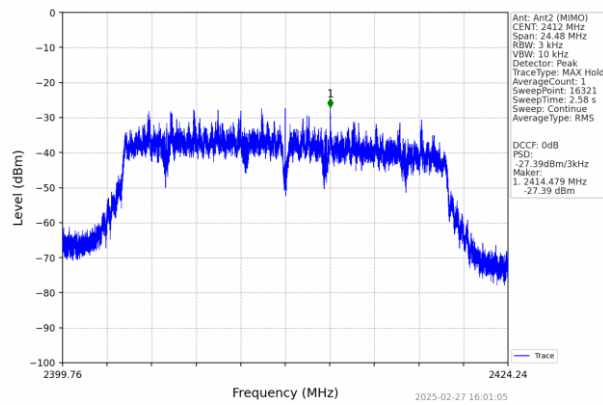


Report No.: HTT202502409F03

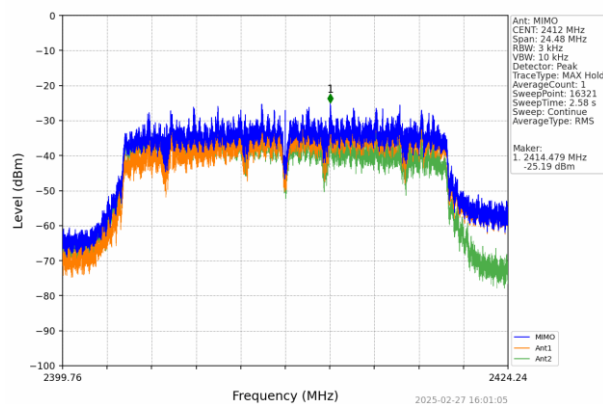
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV

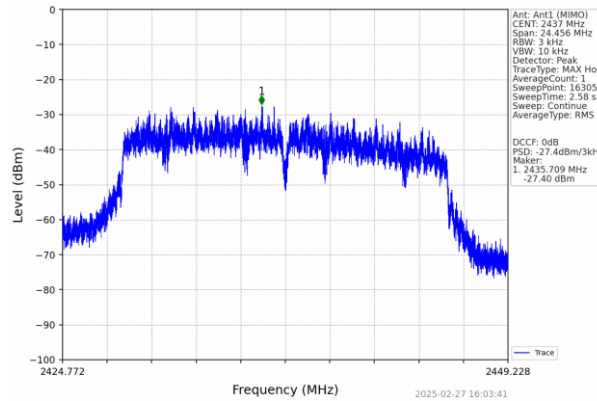


802.11n(HT20)_LCH_2412MHz_MIMO_NTNV

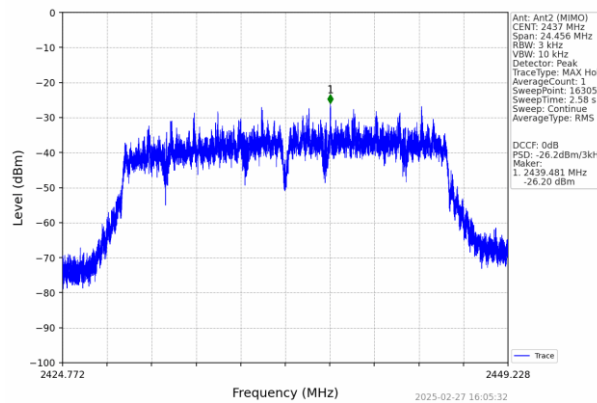




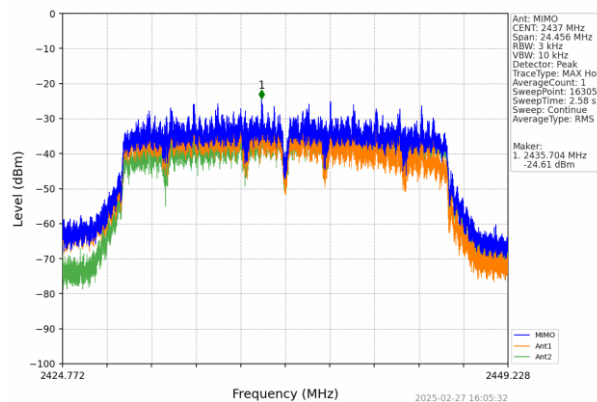
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO) NTN



802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO) NTN

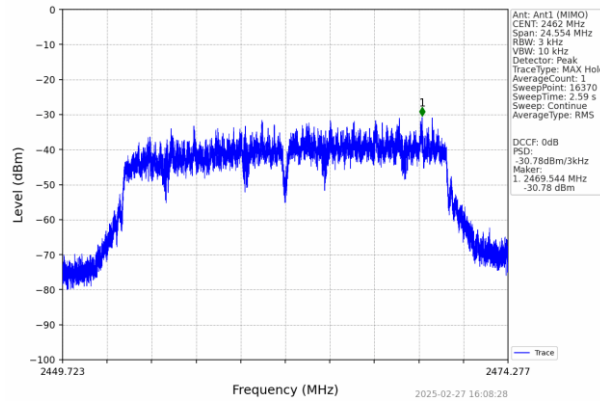


802.11n(HT20)_MCH_2437MHz_MIMO NTN

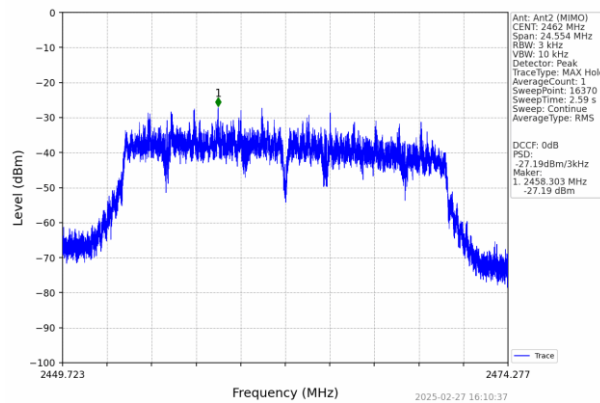




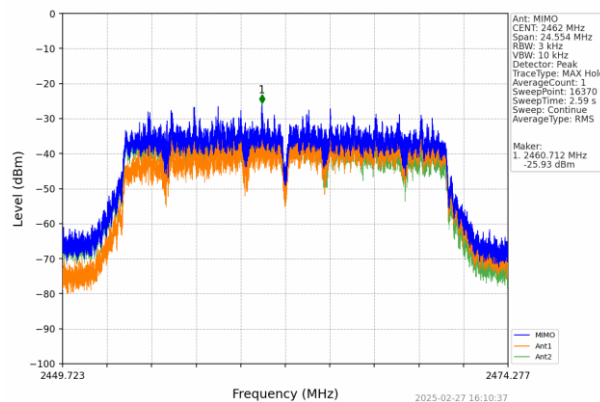
802.11n(HT20) HCH_2462MHz_Ant1 (MIMO) NTN



802.11n(HT20) HCH_2462MHz_Ant2 (MIMO) NTN

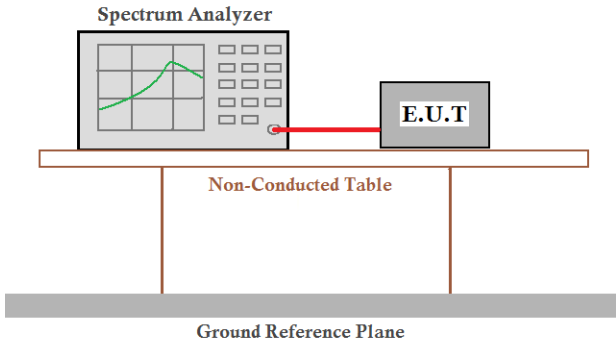


802.11n(HT20) HCH_2462MHz_MIMO NTN



6.5. Band Edge

6.5.1. Conducted Emission Method

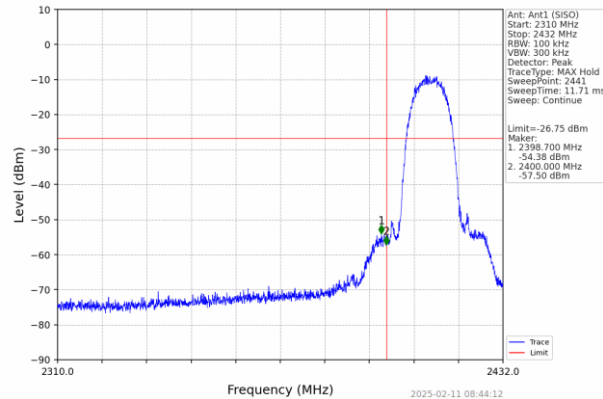
Test Requirement:	FCC Part15 C Section 15.247 (d)					
Test Method:	KDB558074 D01 15.247 Meas Guidance v05r02					
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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.					
Test setup:						
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar



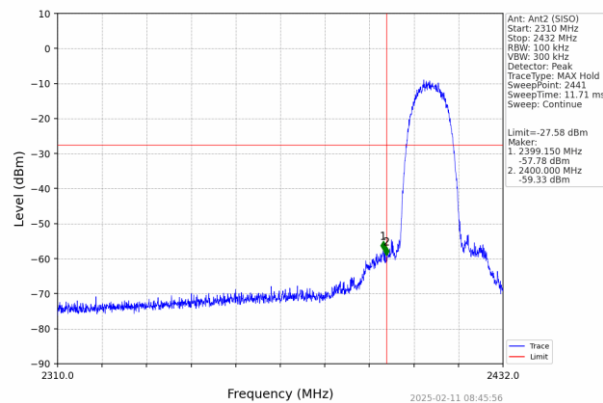
Test plot as follows:

Module 1:

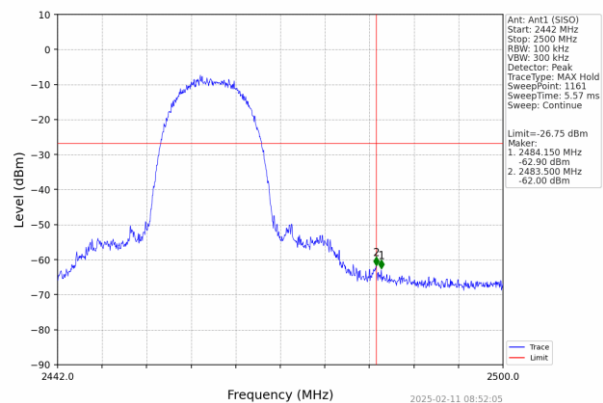
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_LCH_2412MHz_Ant2 (SISO)_NTNV



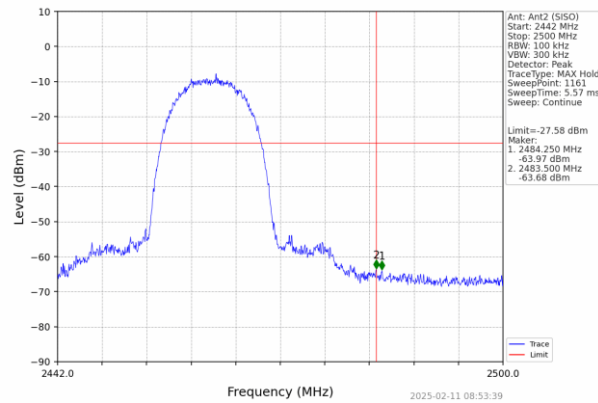
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



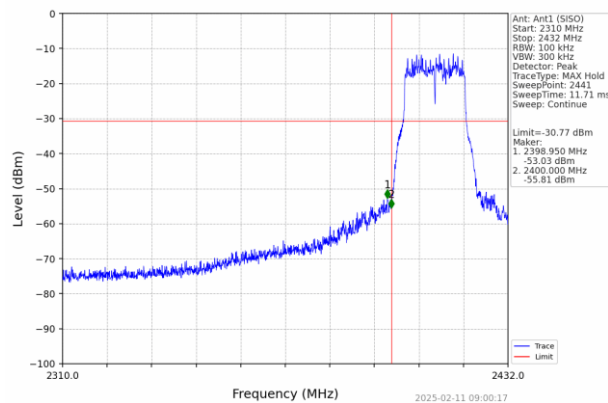


Report No.: HTT202502409F03

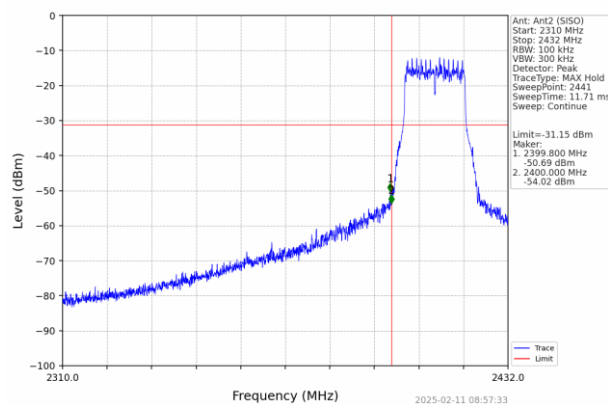
802.11b HCH 2462MHz_Ant2 (SISO) NTNv



802.11g LCH 2412MHz_Ant1 (SISO) NTNv

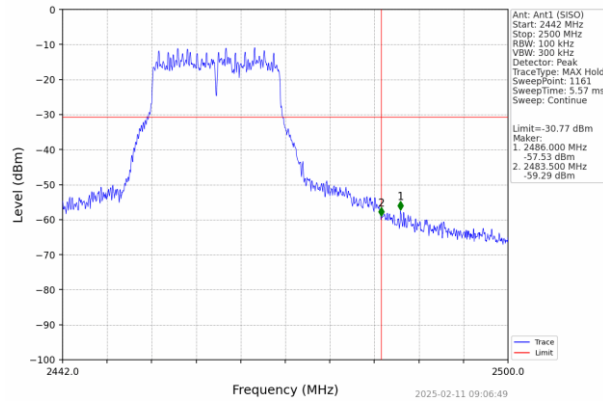


802.11g LCH 2412MHz_Ant2 (SISO) NTNv

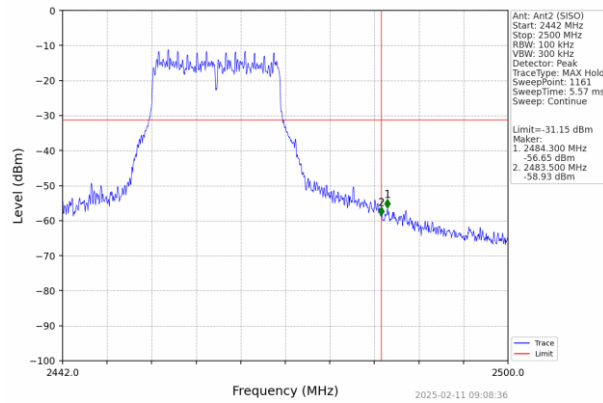




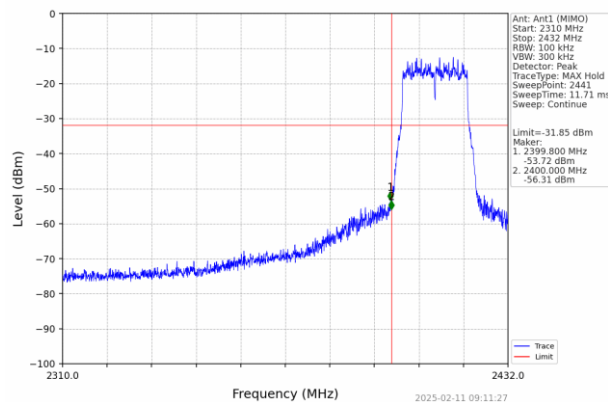
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



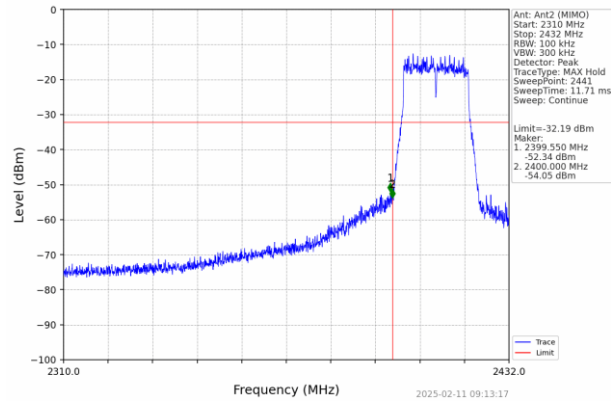
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



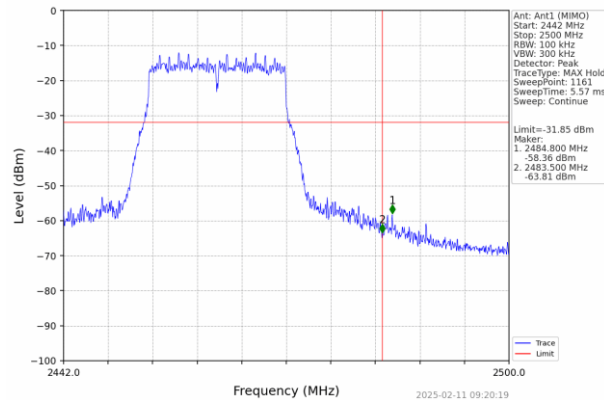


Report No.: HTT202502409F03

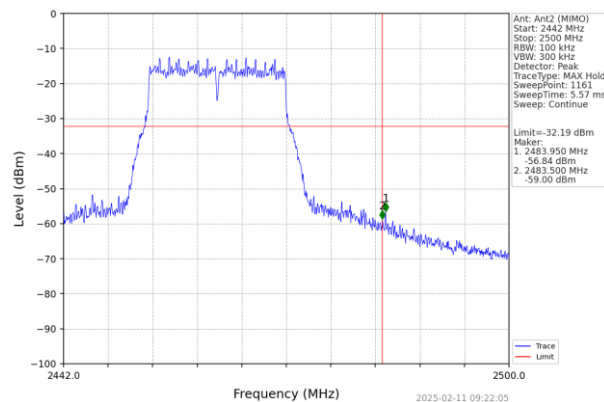
802.11n(HT20) LCH 2412MHz_Ant2 (MIMO) NTN



802.11n(HT20) HCH 2462MHz_Ant1 (MIMO) NTN



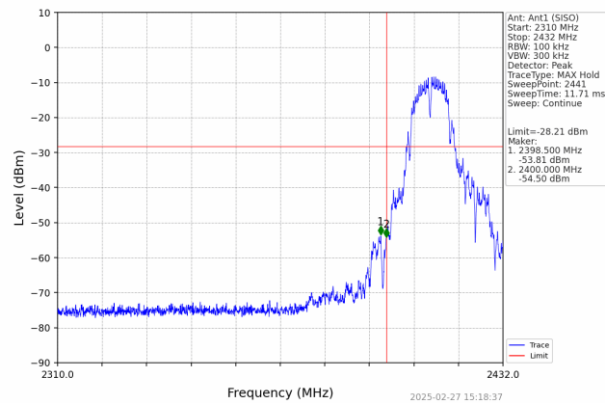
802.11n(HT20) HCH 2462MHz_Ant2 (MIMO) NTN



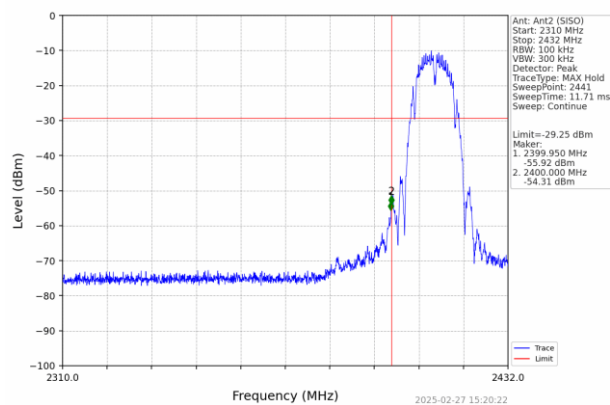


Module 1:

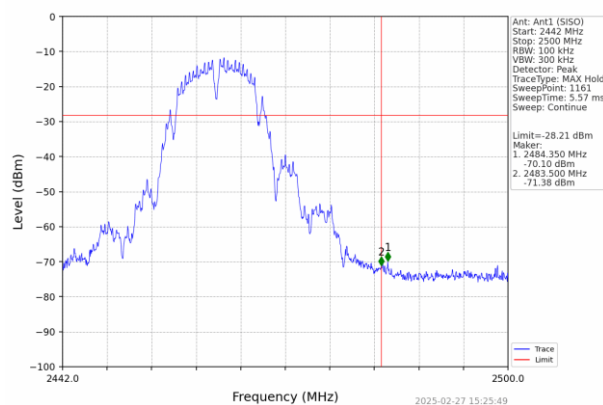
802.11b LCH 2412MHz Ant1 (SISO) NTNv



802.11b LCH 2412MHz Ant2 (SISO) NTNv



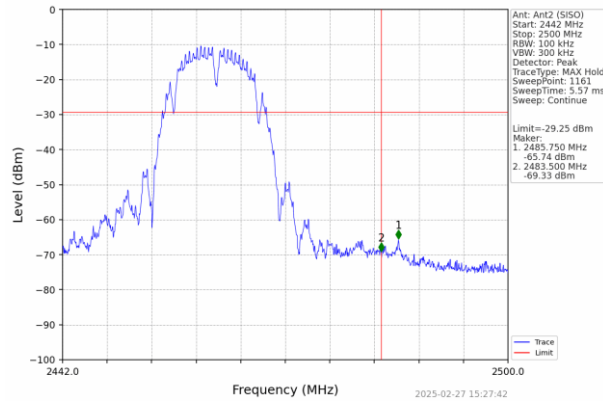
802.11b HCH 2462MHz Ant1 (SISO) NTNv



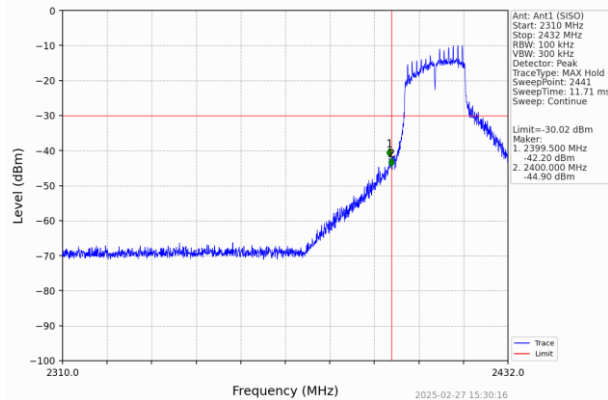


Report No.: HTT202502409F03

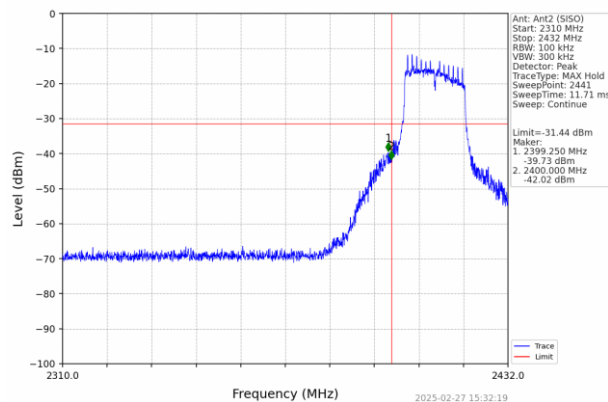
802.11b HCH 2462MHz_Ant2 (SISO)_NTNV



802.11g LCH 2412MHz_Ant1 (SISO)_NTNV

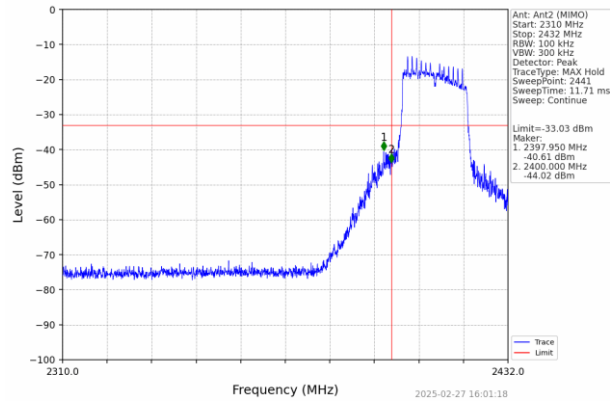


802.11g LCH 2412MHz_Ant2 (SISO)_NTNV

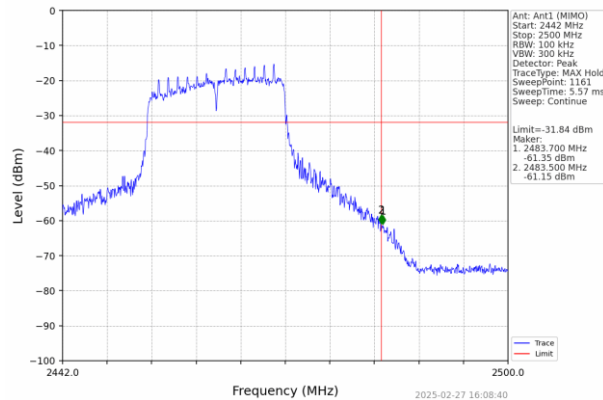




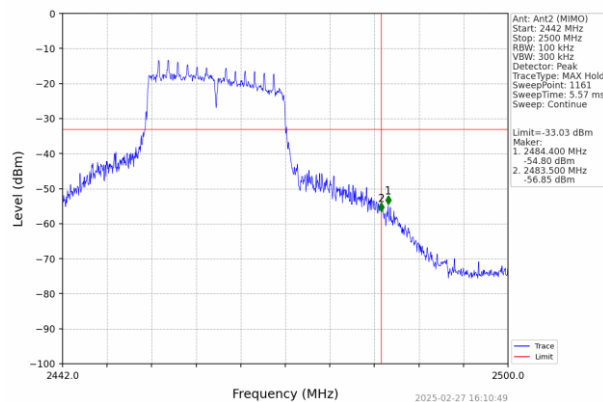
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO) NTNv



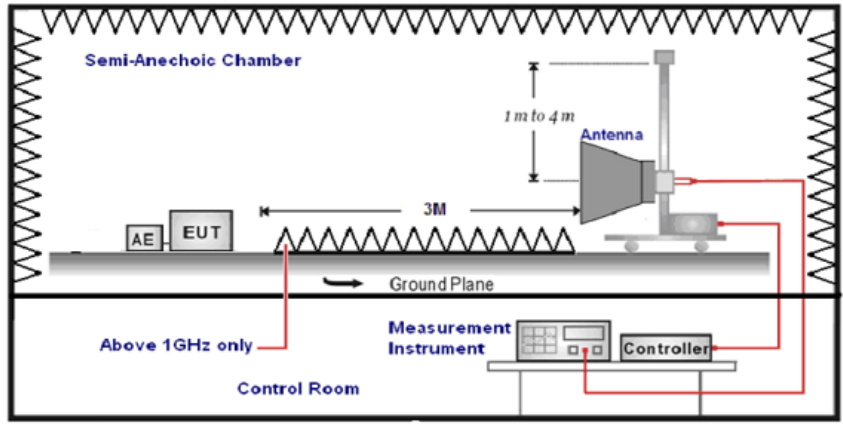
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO) NTNv



802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO) NTNv



6.5.2. Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit:	Frequency		Limit (dBuV/m @3m)		Remark
	Above 1GHz		54.00		Average Value
			74.00		Peak Value
Test setup:					
Test Procedure:	1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. 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. 4. 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 and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. 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.				
Test Instruments:	Refer to section 6.0 for details				
Test mode:	Refer to section 5.2 for details				
Test results:	Pass				



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Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
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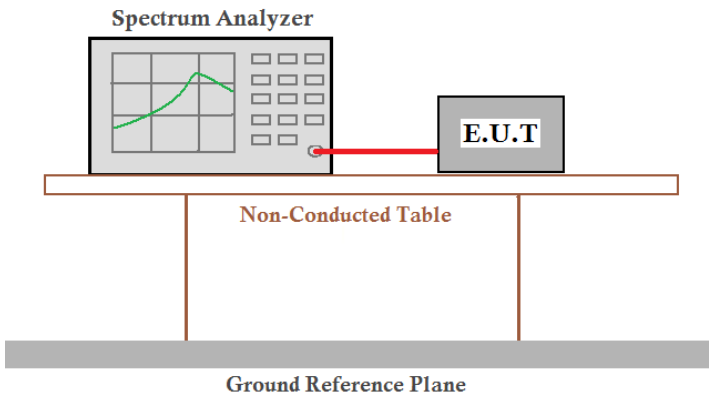
Measurement Data

Remark: During the test, pre-scan the 802.11b/802.11g/802.11n (H20) modulation, and found the 802.11b modulation of module 1: which it is worse case.

Frequency(MHz):			2412		Polarity:		HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	61.99	PK	74	12.01	63.38	27.2	4.31	32.9	-1.39
2390.00	44.25	AV	54	9.75	45.64	27.2	4.31	32.9	-1.39
Frequency(MHz):			2412		Polarity:		VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2390.00	59.19	PK	74	14.81	60.58	27.2	4.31	32.9	-1.39
2390.00	45.09	AV	54	8.91	46.48	27.2	4.31	32.9	-1.39
Frequency(MHz):			2462		Polarity:		HORIZONTAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	56.02	PK	74	17.98	56.95	27.4	4.47	32.8	-0.93
2483.50	43.33	AV	54	10.67	44.26	27.4	4.47	32.8	-0.93
Frequency(MHz):			2462		Polarity:		VERTICAL		
Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)
2483.50	54.12	PK	74	19.88	55.05	27.4	4.47	32.8	-0.93
2483.50	44.53	AV	54	9.47	45.46	27.4	4.47	32.8	-0.93

6.6. Spurious Emission

6.6.1. Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)					
Test Method:	KDB558074 D01 15.247 Meas Guidance v05r02					
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.					
Test setup:	 The diagram illustrates the test setup for conducted emission measurement. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.					
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar



Module 1:

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	-8.20
			2	-8.71
		2437	1	-7.61
			2	-7.58
		2462	1	-6.75
			2	-8.17
802.11g	SISO	2412	1	-11.41
			2	-11.92
		2437	1	-10.77
			2	-11.20
		2462	1	-10.96
			2	-11.15
802.11n (HT20)	MIMO	2412	1	-12.51
			2	-12.63
		2437	1	-11.85
			2	-12.54
		2462	1	-12.10
			2	-12.19

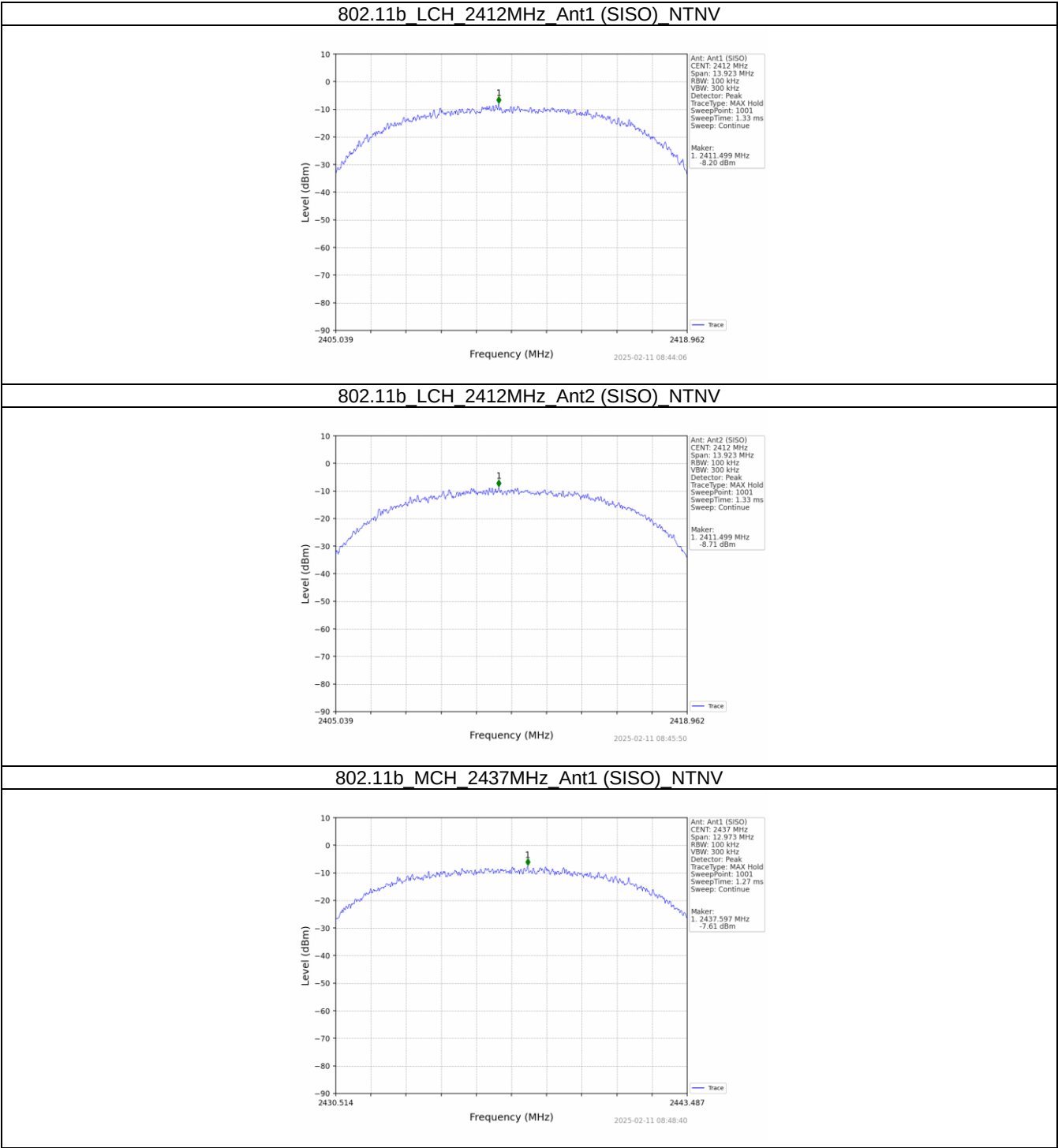
Module 2:

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	-8.21
			2	-10.08
		2437	1	-8.93
			2	-9.25
		2462	1	-11.93
			2	-10.66
802.11g	SISO	2412	1	-10.02
			2	-11.68
		2437	1	-10.72
			2	-11.63
		2462	1	-13.60
			2	-11.44
802.11n (HT20)	MIMO	2412	1	-11.84
			2	-13.33
		2437	1	-12.33
			2	-13.03
		2462	1	-15.33
			2	-13.36



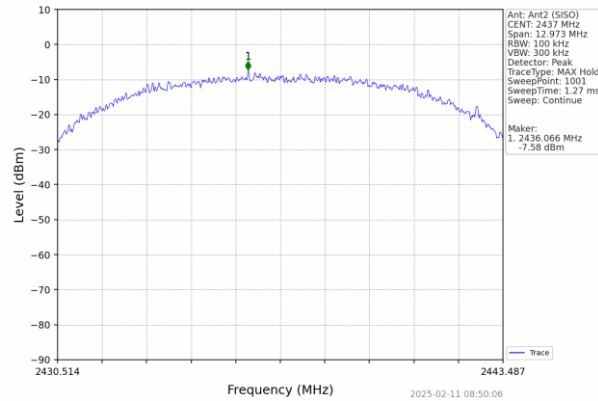
Measurement Data:

Module 1:

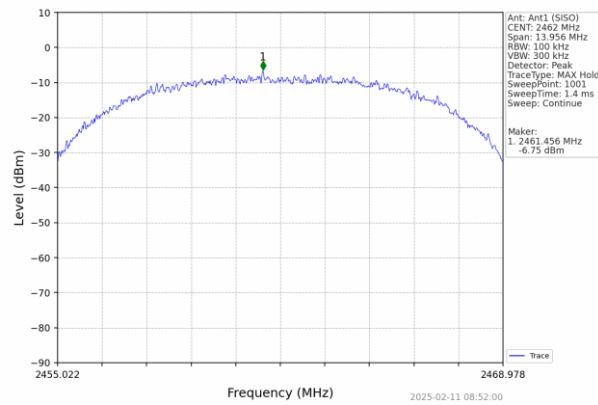




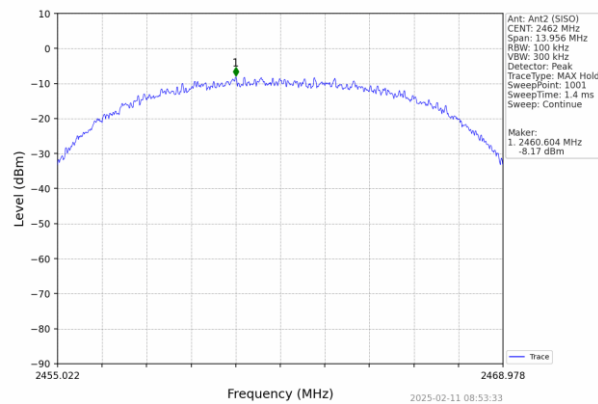
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

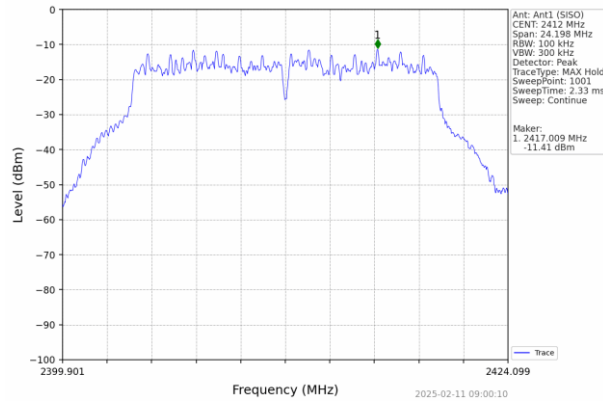


802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV

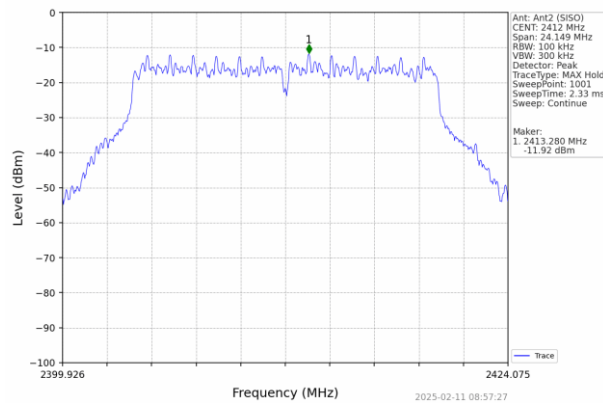




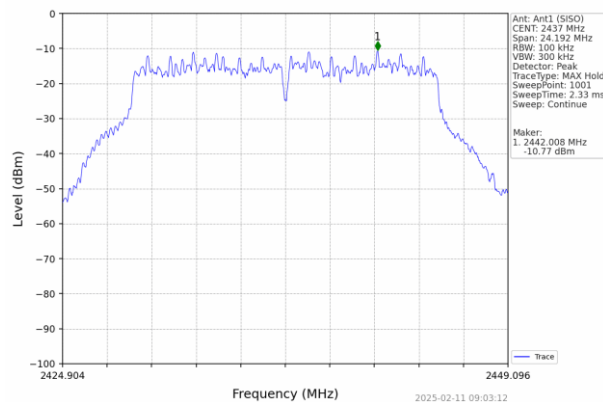
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



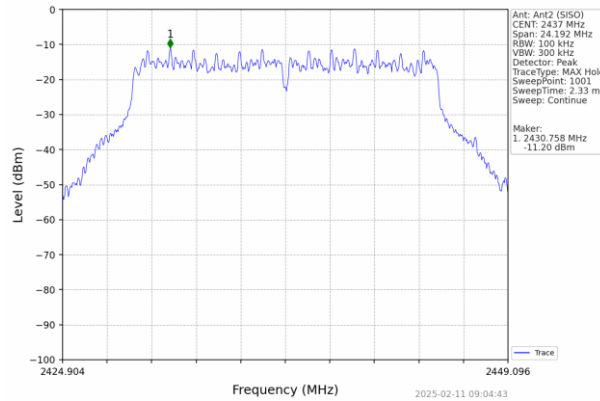
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



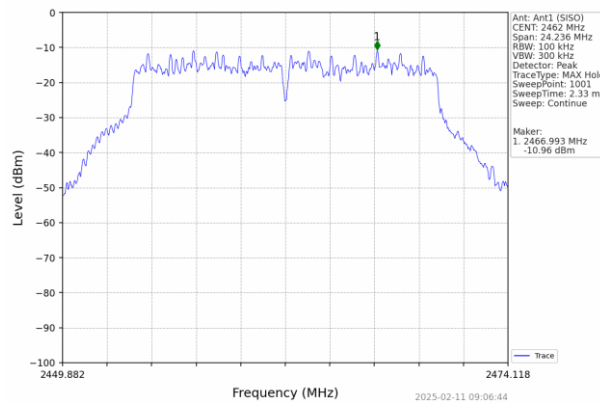


Report No.: HTT202502409F03

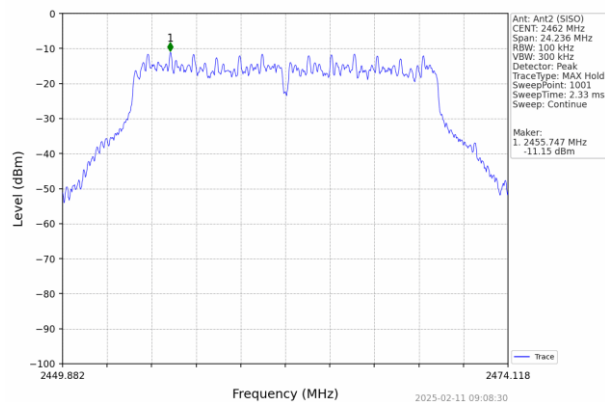
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



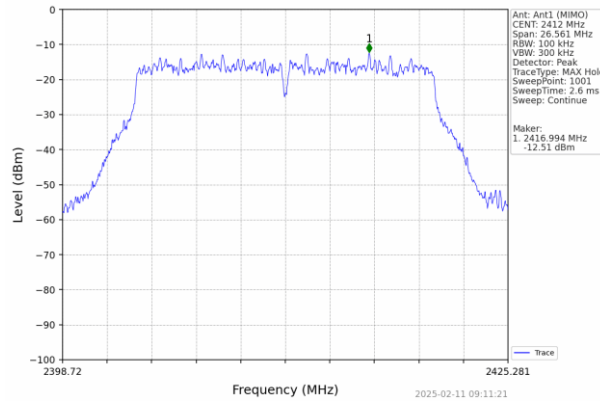
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



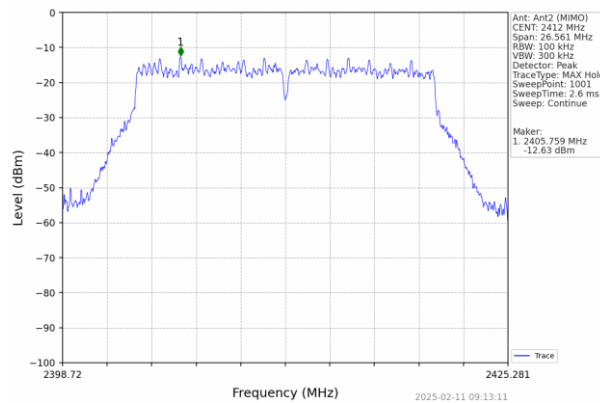


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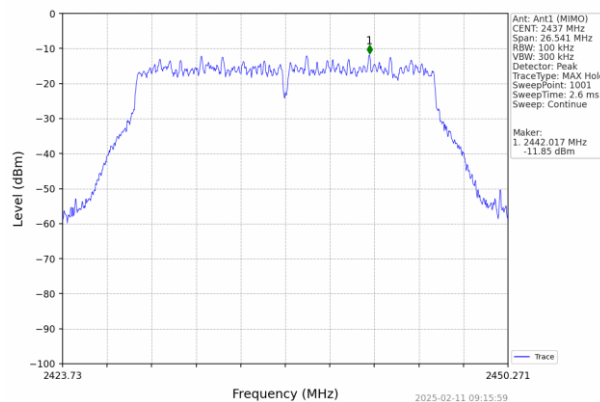
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV

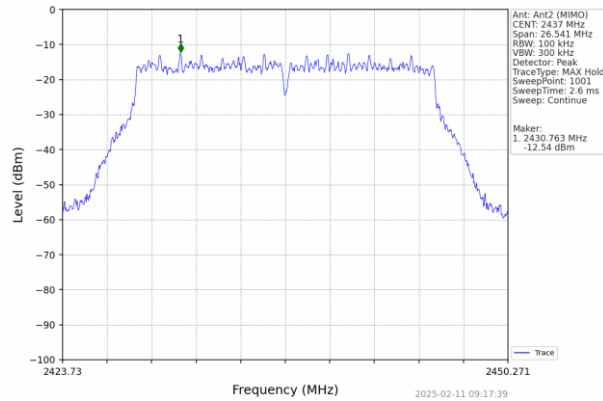


802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV

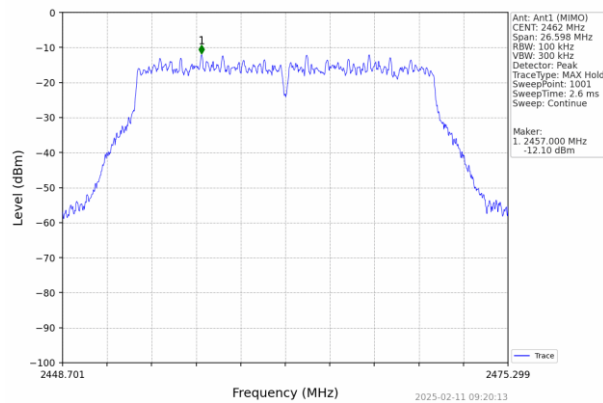




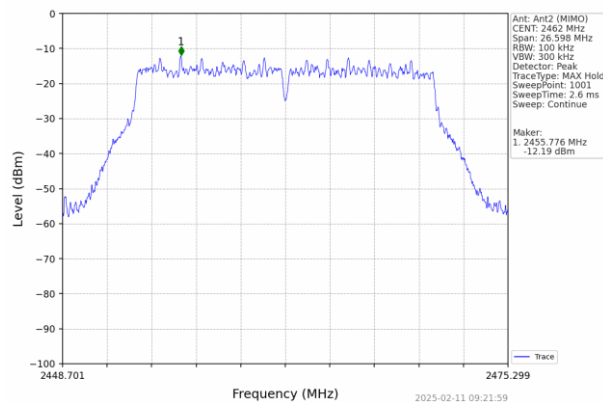
802.11n(HT20) MCH_2437MHz_Ant2 (MIMO) NTN



802.11n(HT20) HCH_2462MHz_Ant1 (MIMO) NTN



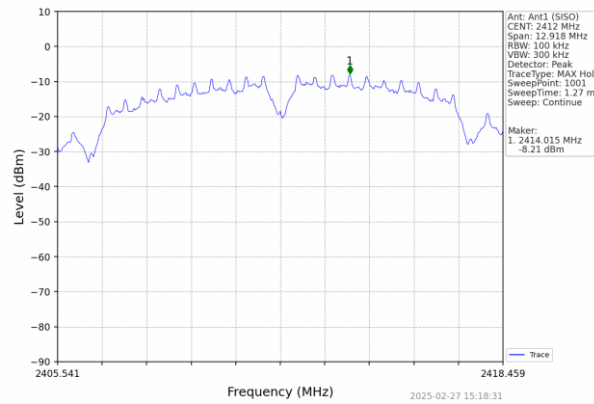
802.11n(HT20) HCH_2462MHz_Ant2 (MIMO) NTN



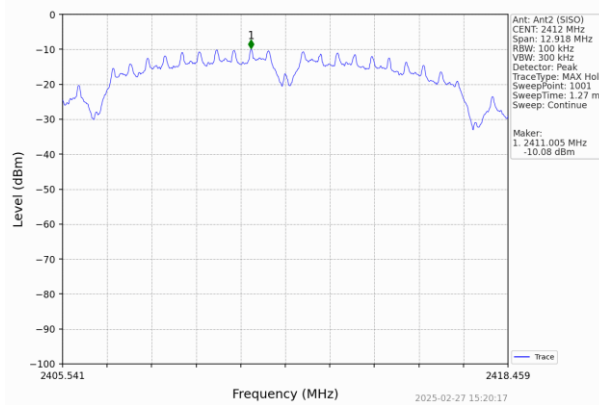


Module 2:

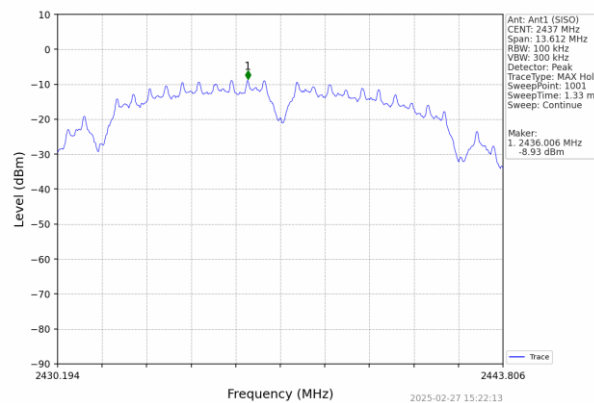
802.11b LCH 2412MHz_Ant1 (SISO) NTN



802.11b LCH 2412MHz_Ant2 (SISO) NTN

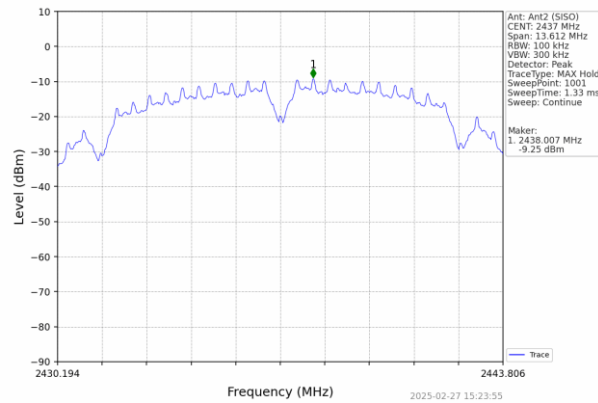


802.11b MCH 2437MHz_Ant1 (SISO) NTN

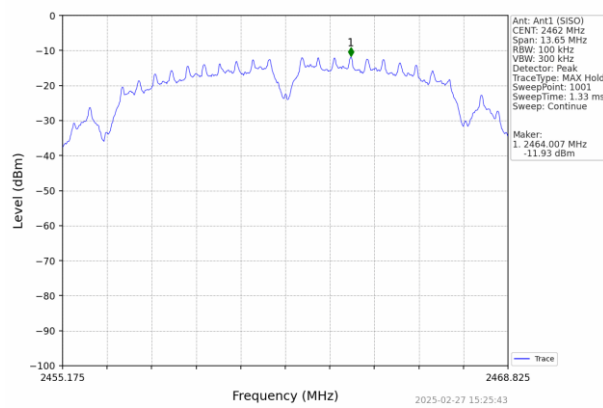




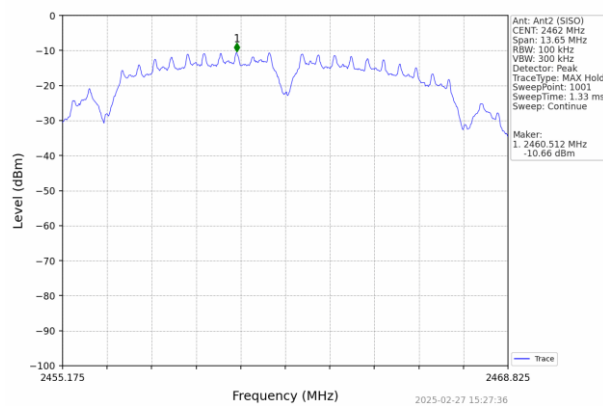
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

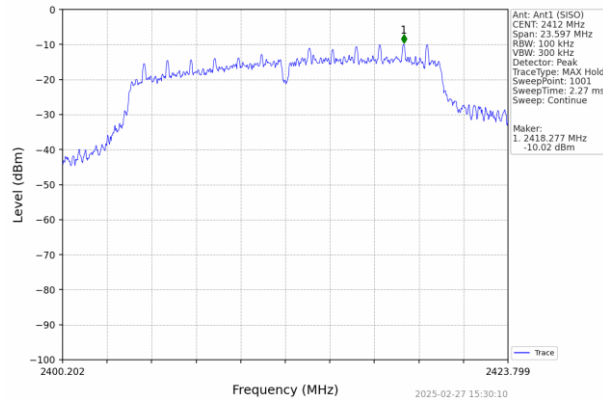


802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV

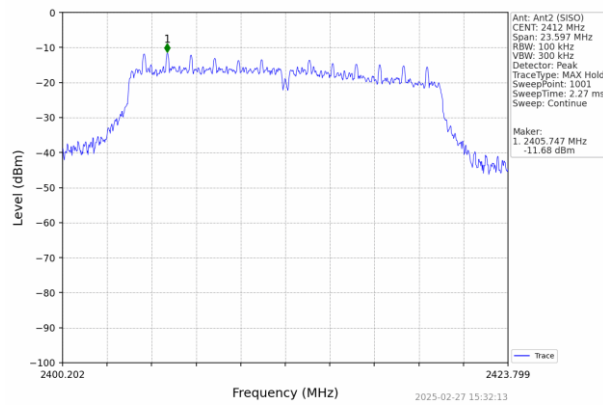




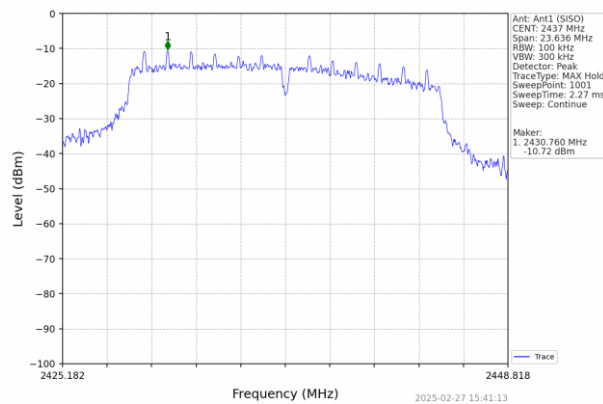
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



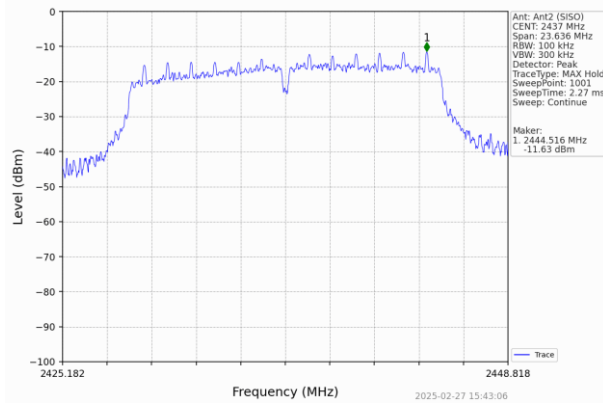
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



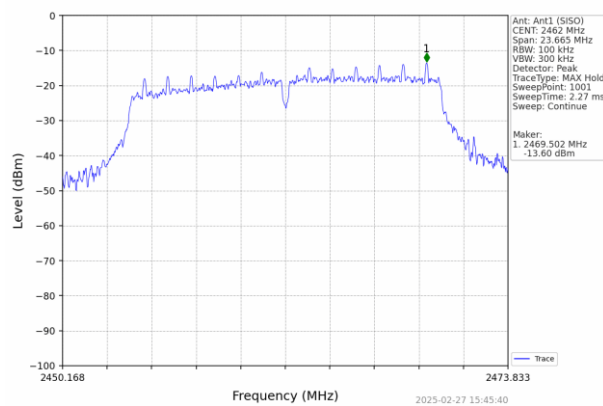


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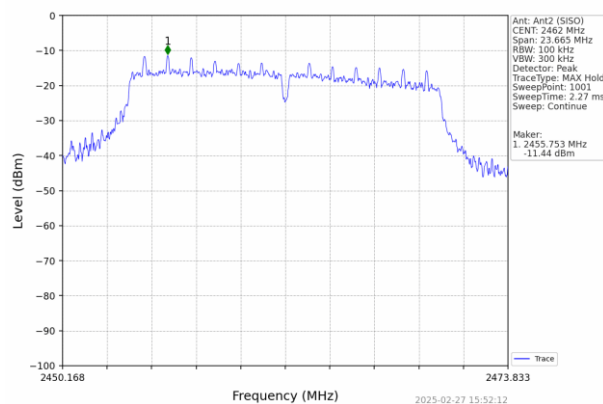
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

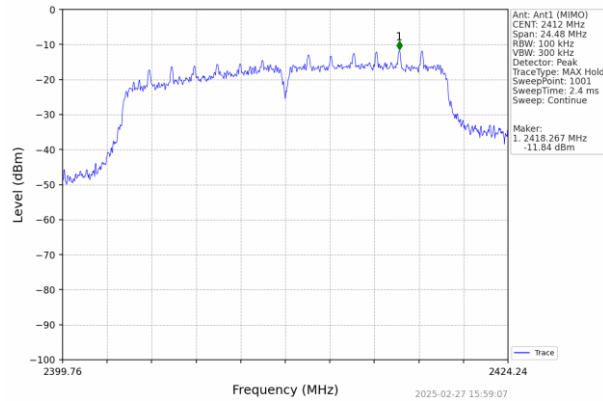


802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV

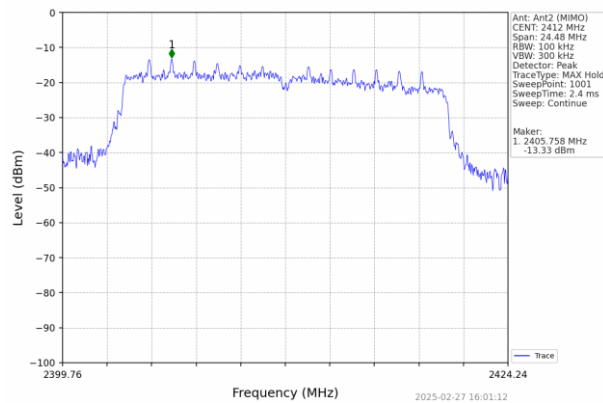




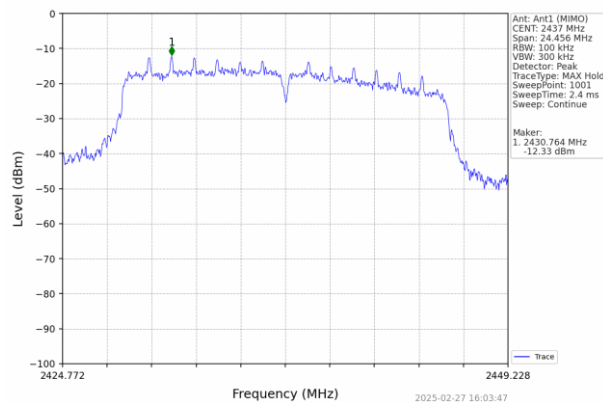
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV

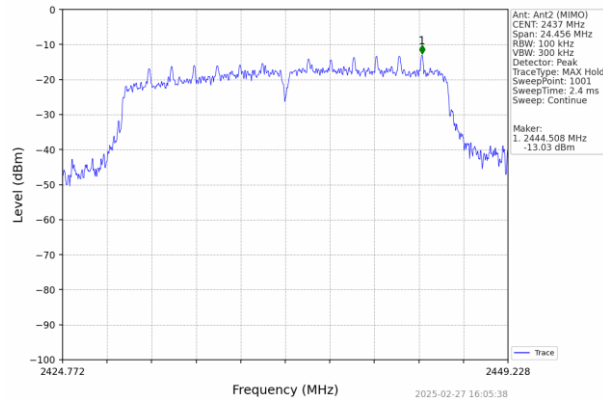


802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV

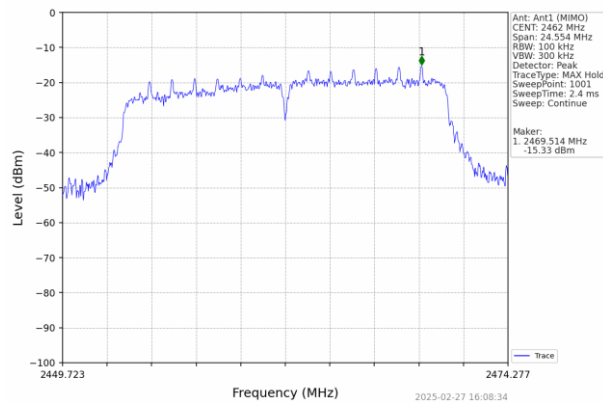




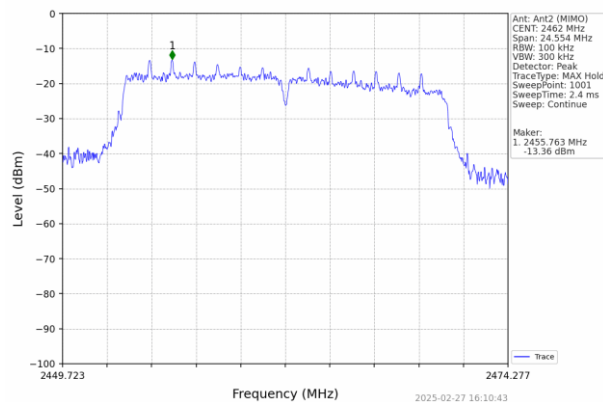
802.11n(HT20) MCH_2437MHz_Ant2 (MIMO) NTN



802.11n(HT20) HCH_2462MHz_Ant1 (MIMO) NTN



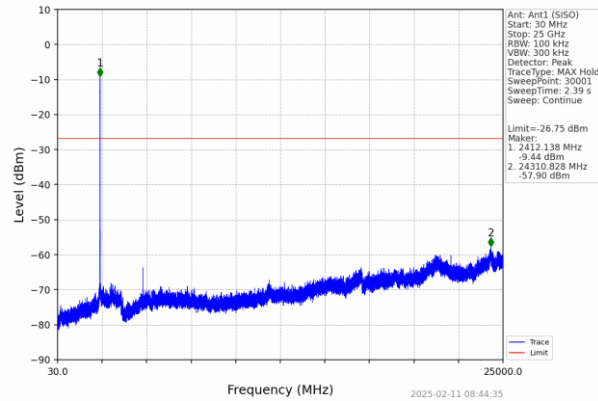
802.11n(HT20) HCH_2462MHz_Ant2 (MIMO) NTN



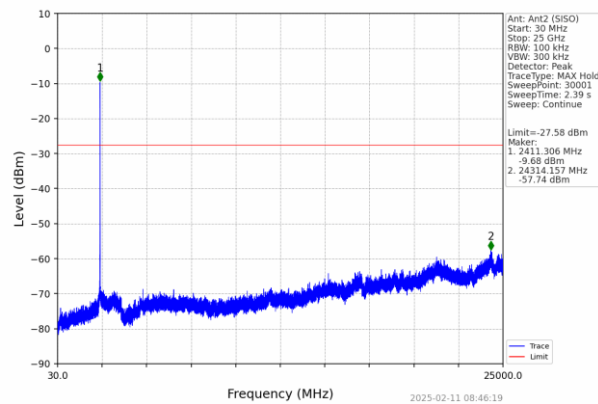


Module 1:

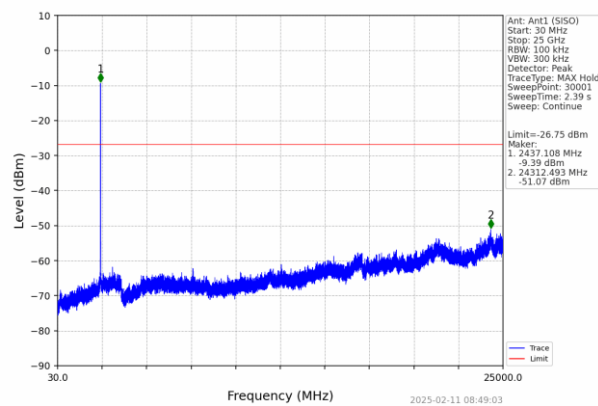
802.11b LCH 2412MHz Ant1 (SISO) NTN



802.11b LCH 2412MHz Ant2 (SISO) NTN



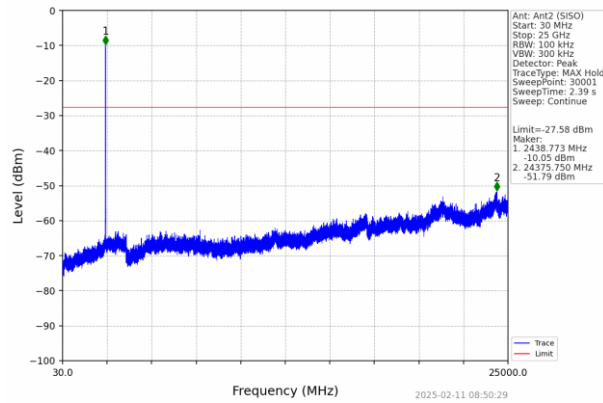
802.11b MCH 2437MHz Ant1 (SISO) NTN



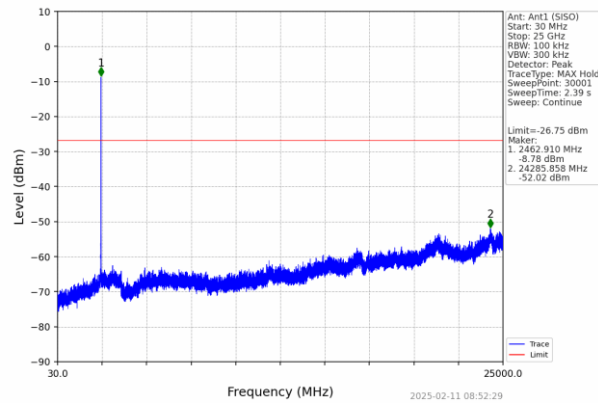


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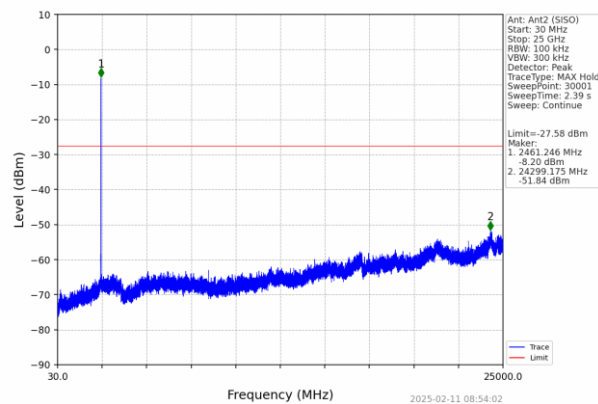
802.11b MCH 2437MHz_Ant2 (SISO) NTNv



802.11b HCH 2462MHz_Ant1 (SISO) NTNv



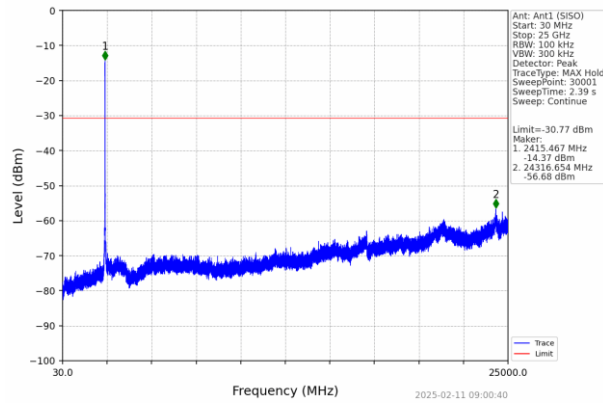
802.11b HCH 2462MHz_Ant2 (SISO) NTNv



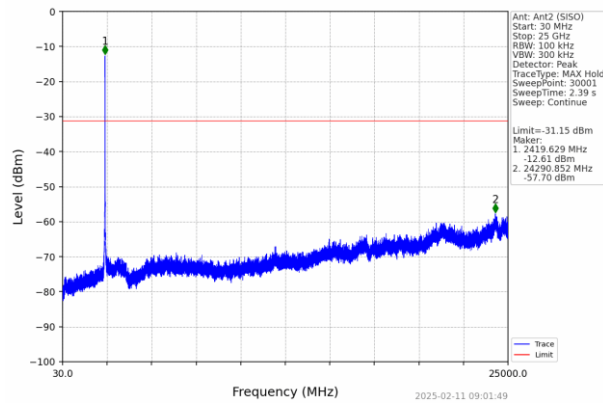


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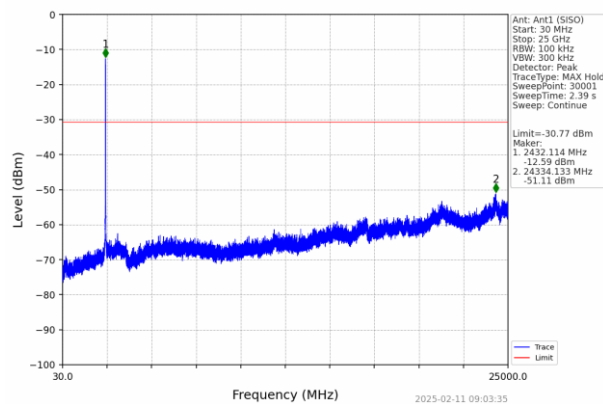
802.11g LCH 2412MHz_Ant1 (SISO) NTNv



802.11g LCH 2412MHz_Ant2 (SISO) NTNv



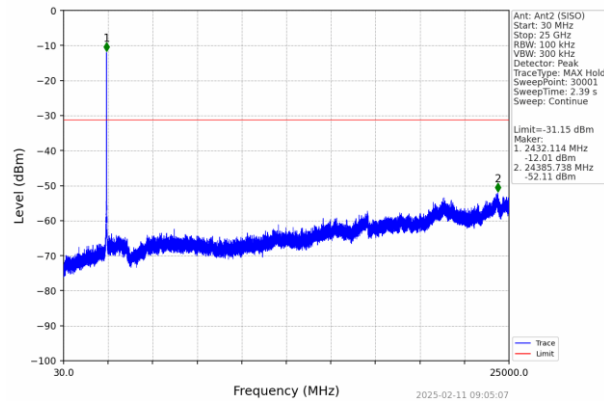
802.11g MCH 2437MHz_Ant1 (SISO) NTNv



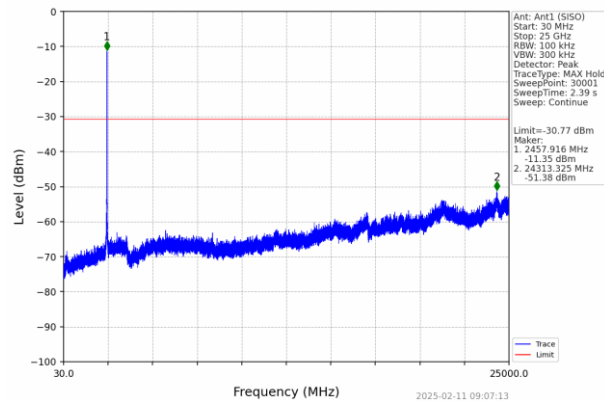


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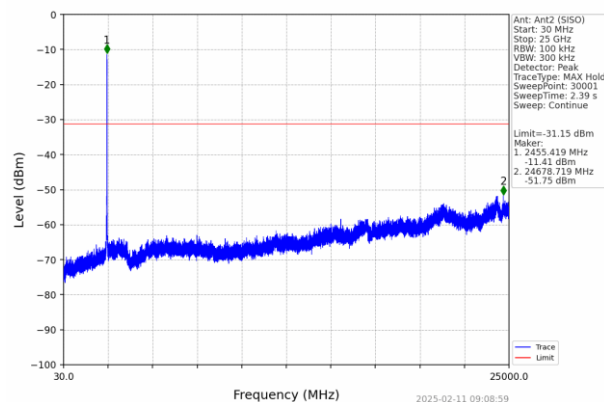
802.11g MCH 2437MHz_Ant2 (SISO) NTNv



802.11g HCH 2462MHz_Ant1 (SISO) NTNv



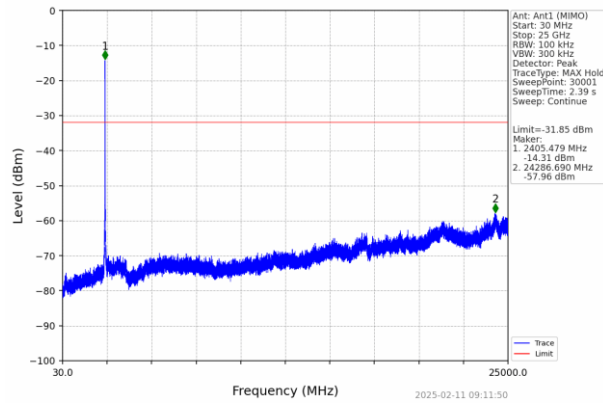
802.11g HCH 2462MHz_Ant2 (SISO) NTNv



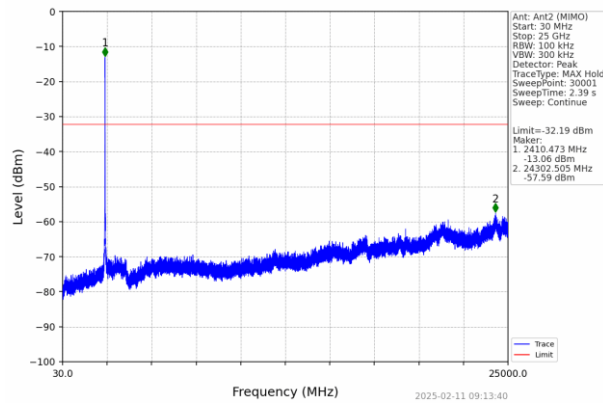


Report No.: HTT202502409F03

802.11n(HT20) LCH 2412MHz_Ant1 (MIMO) NTNv



802.11n(HT20) LCH 2412MHz_Ant2 (MIMO) NTNv



802.11n(HT20) MCH 2437MHz_Ant1 (MIMO) NTNv

