Appendix Test Data

Report No.:	18220WC10101001	Test Date:	2021.6.2
Test Engineer:	Tony.He	Auditor:	Edward.Pan
Temperature:	22.3℃	Relative Humidity:	55 %
Pressure:	1012 hPa		

1. Duty Cycle

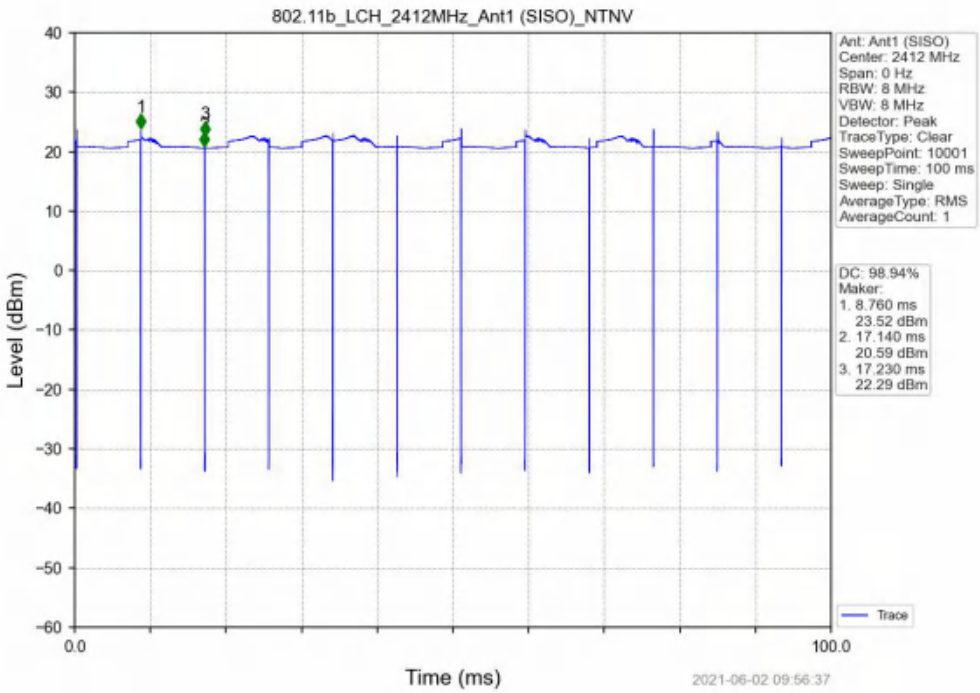
1.1 Ant1

1.1.1 Test Result

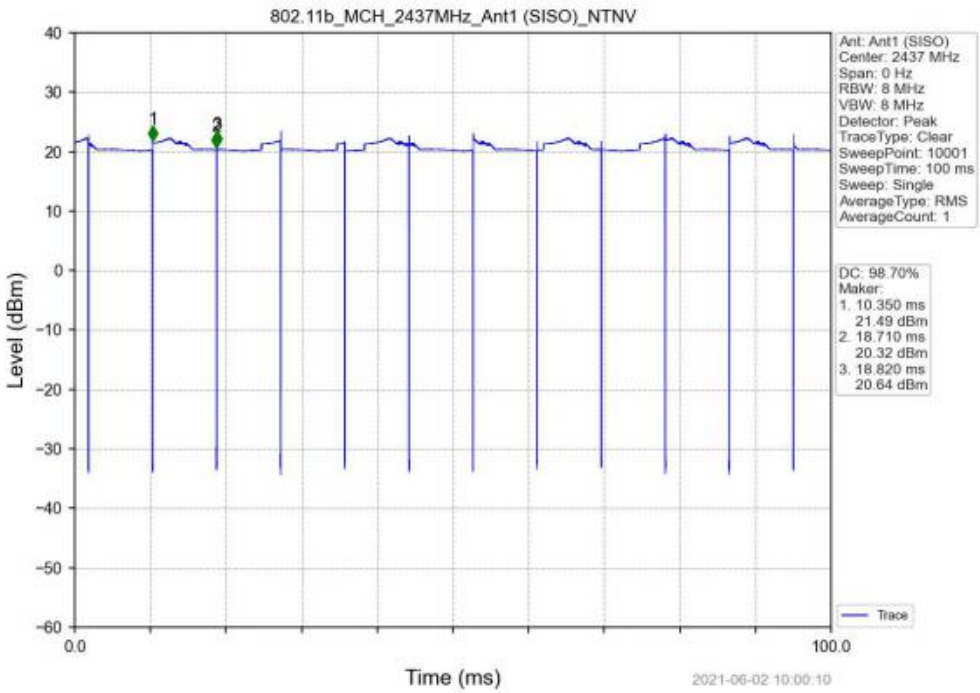
Ant1									
Mode	TX Type	Frequency (MHz)	RU	RU Pos	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	/	/	8.38	8.47	98.94	0.05	0.00
		2437	/	/	8.36	8.47	98.70	0.06	0.12
		2462	/	/	8.38	8.47	98.94	0.05	0.12
802.11g	SISO	2412	/	/	1.39	1.41	98.51	0.07	0.00
		2437	/	/	1.39	1.41	98.51	0.07	0.11
		2462	/	/	1.39	1.41	98.51	0.07	0.10
802.11n (HT20)	SISO	2412	/	/	1.30	1.32	98.56	0.06	0.00
		2437	/	/	1.30	1.32	98.41	0.07	0.12
		2462	/	/	1.30	1.32	98.41	0.07	0.00
802.11n (HT40)	SISO	2422	/	/	100.00	100.00	100.00	0.00	0.00
		2437	/	/	100.00	100.00	100.00	0.00	0.00
		2452	/	/	100.00	100.00	100.00	0.00	0.00

1.1.2 Test Graph

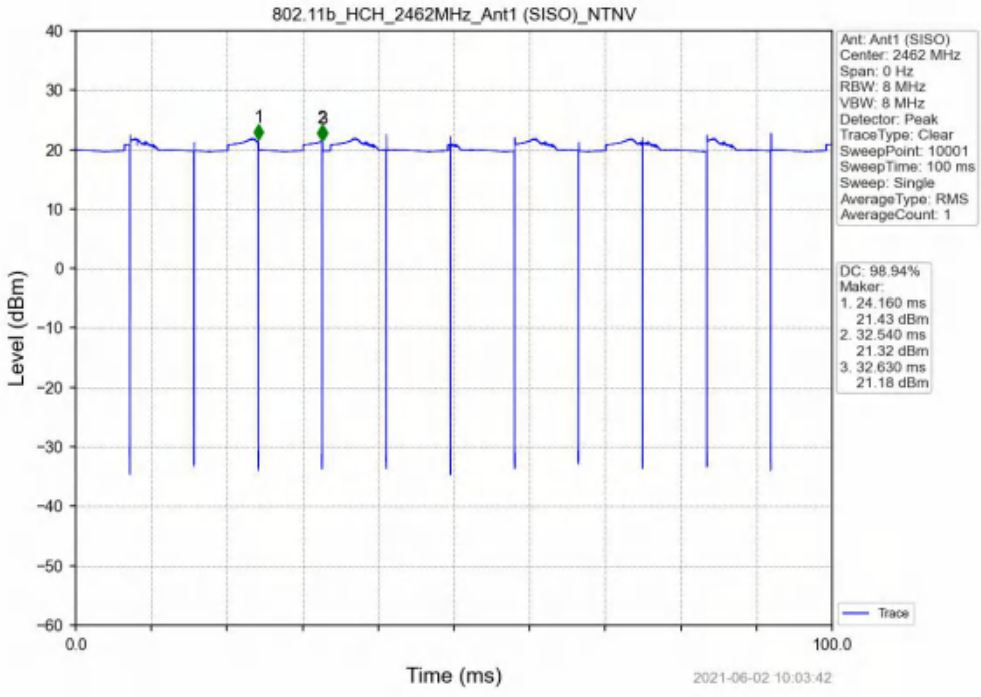
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



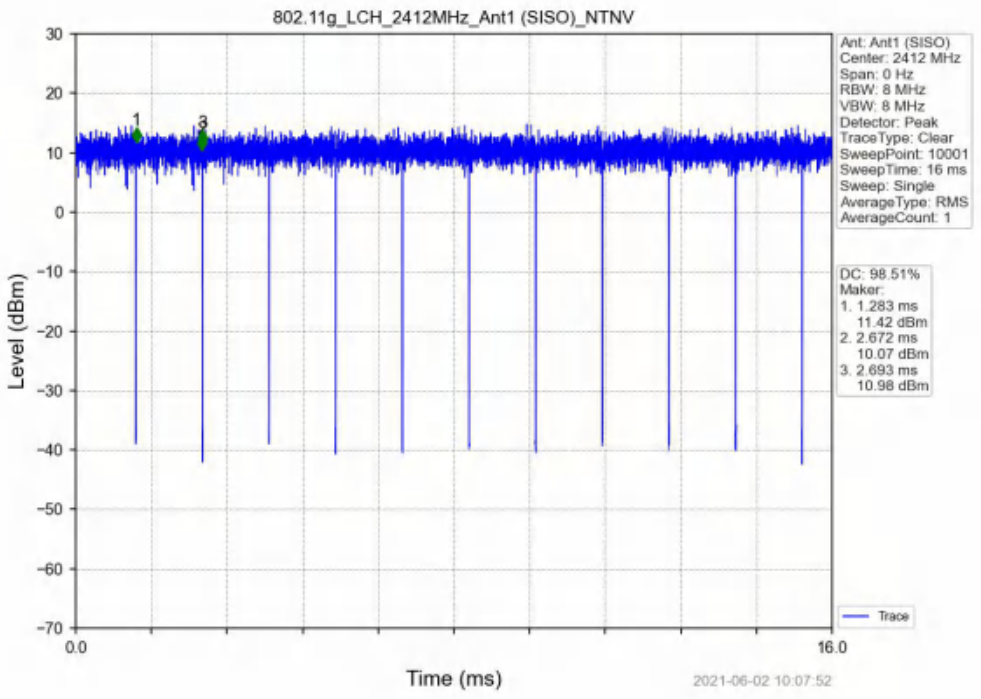
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



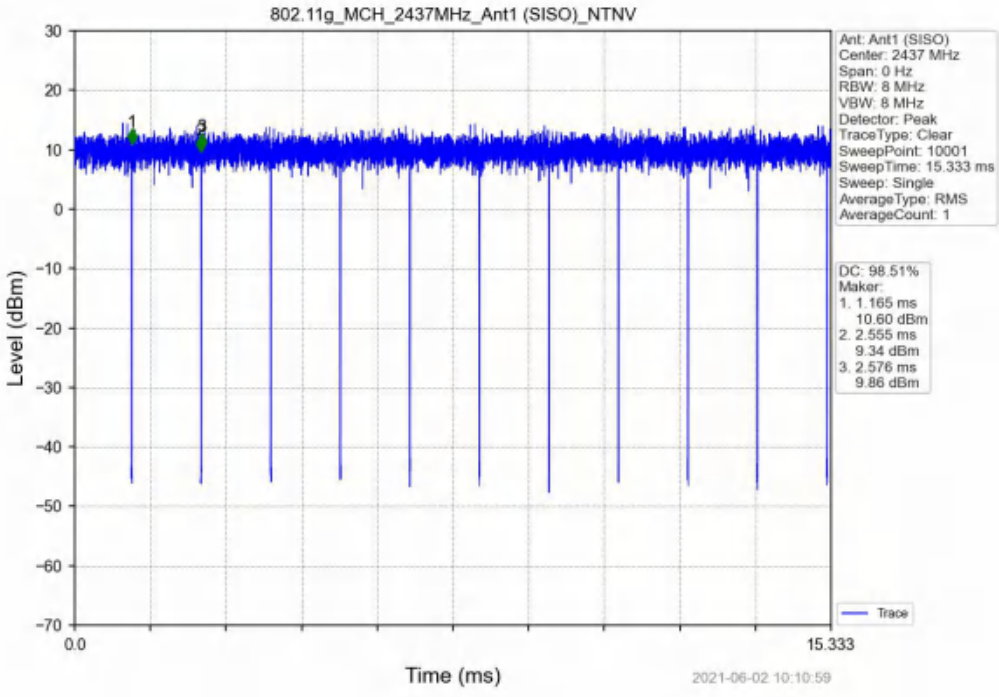
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



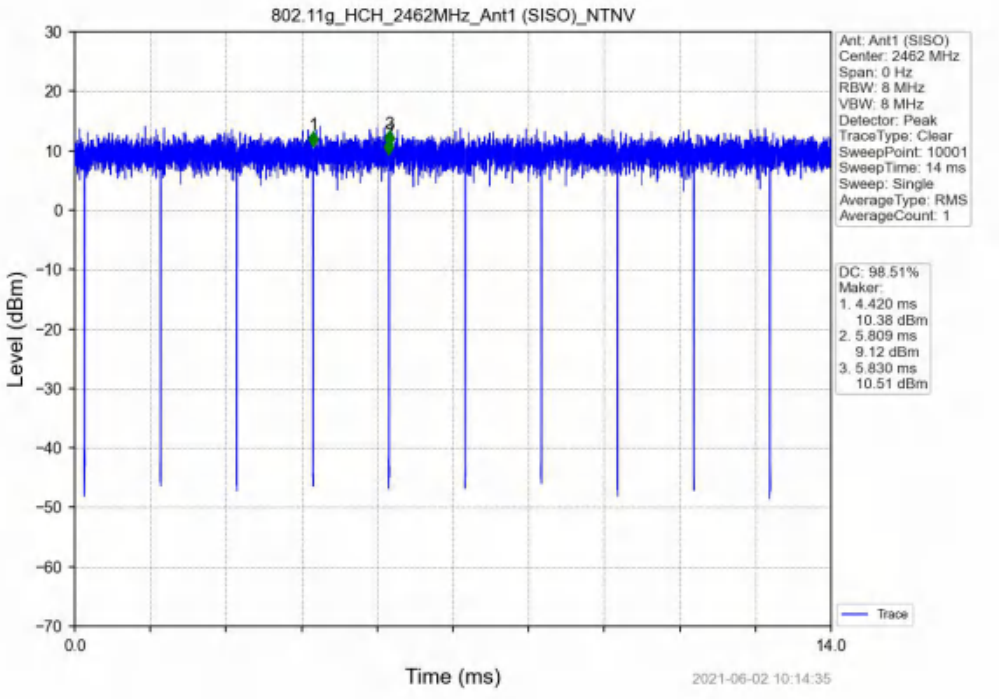
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



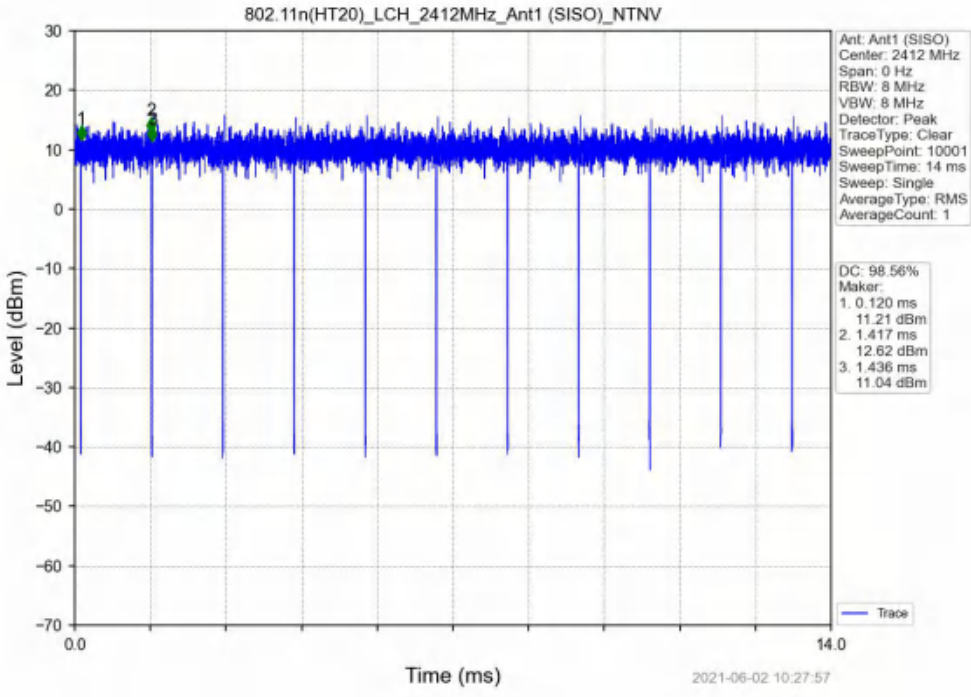
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



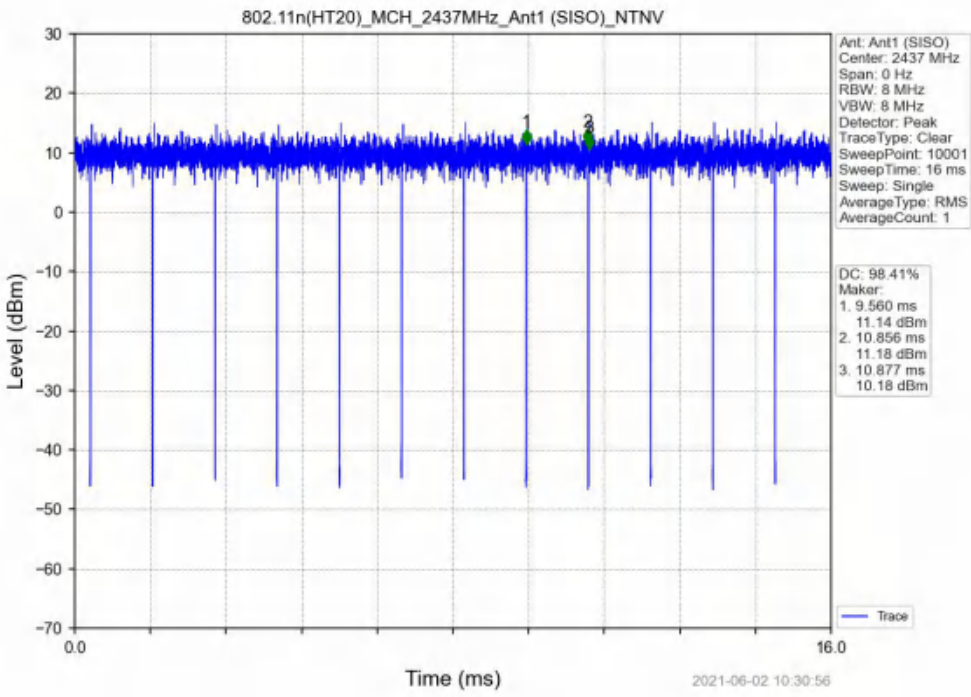
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



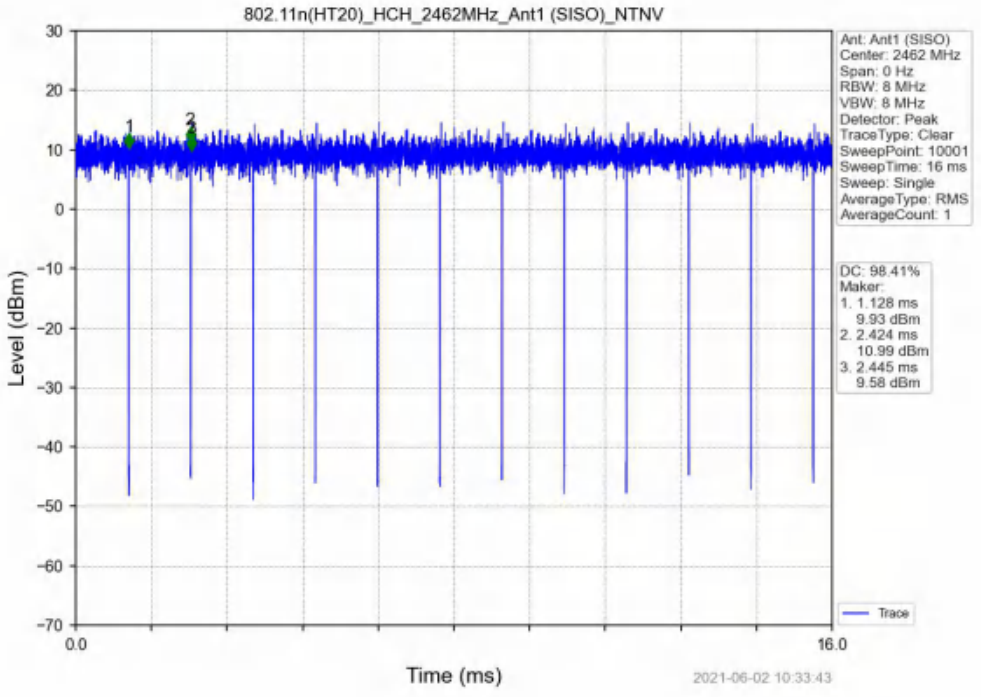
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



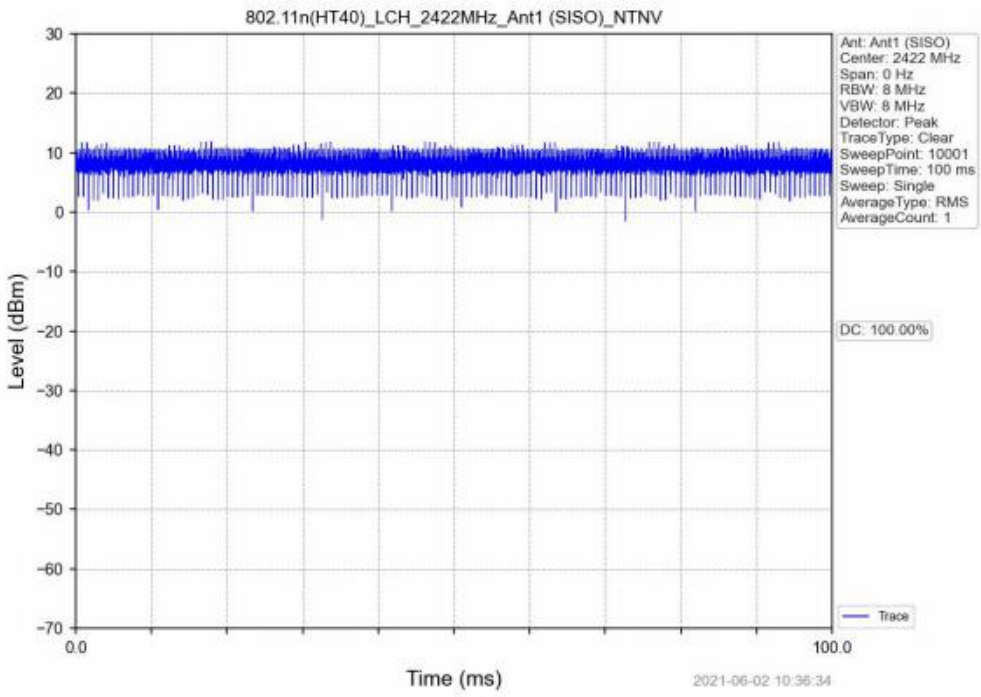
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



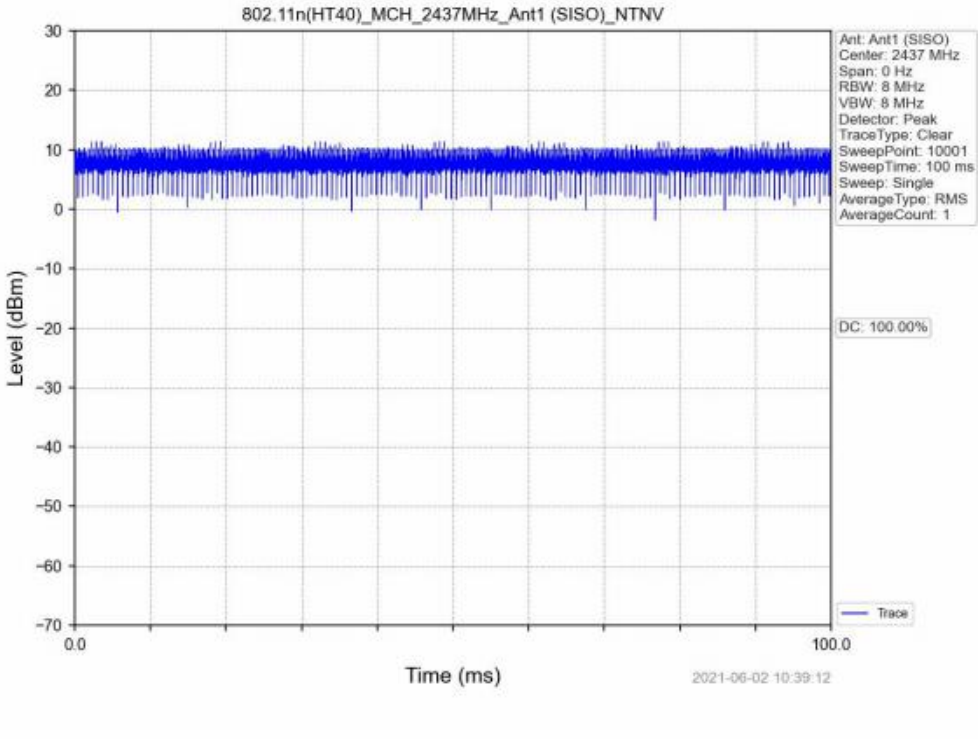
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



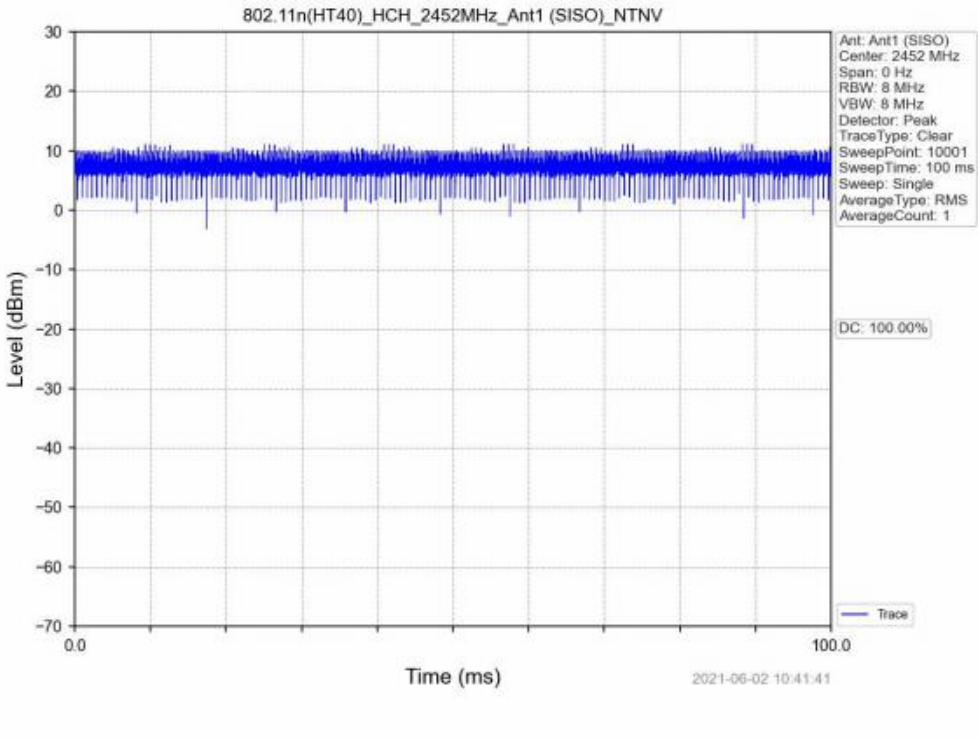
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



2. Bandwidth

2.1 OBW

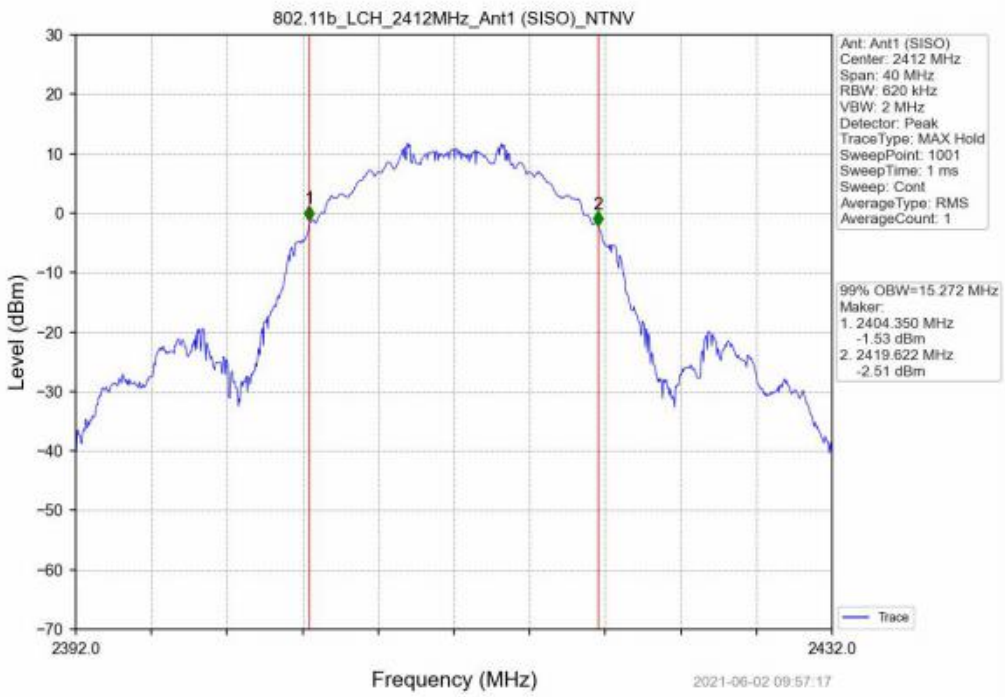
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	RU	RU Pos	99% Occupied Bandwidth (MHz)	Limit (MHz)	Verdict
					Ant1		
802.11b	SISO	2412	/	/	15.272	/	Note1
		2437	/	/	15.288	/	Note1
		2462	/	/	15.313	/	Note1
802.11g	SISO	2412	/	/	17.553	/	Note1
		2437	/	/	17.549	/	Note1
		2462	/	/	17.552	/	Note1
802.11n (HT20)	SISO	2412	/	/	18.438	/	Note1
		2437	/	/	18.429	/	Note1
		2462	/	/	18.434	/	Note1
802.11n (HT40)	SISO	2422	/	/	35.764	/	Note1
		2437	/	/	35.764	/	Note1
		2452	/	/	35.759	/	Note1

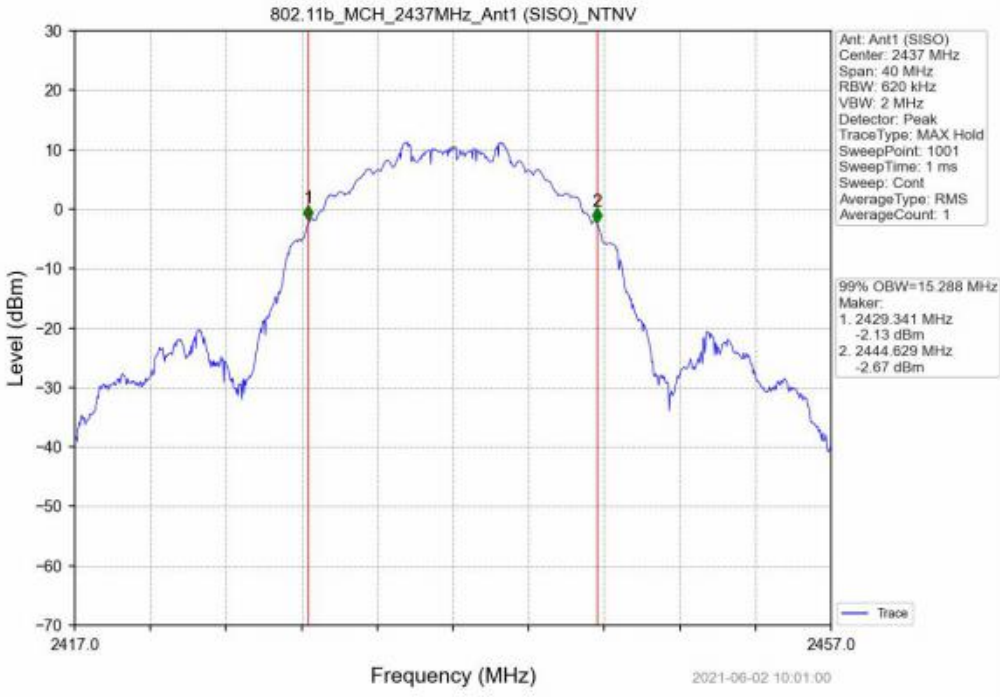
Note1: Only for Report Use

2.1.2 Test Graph

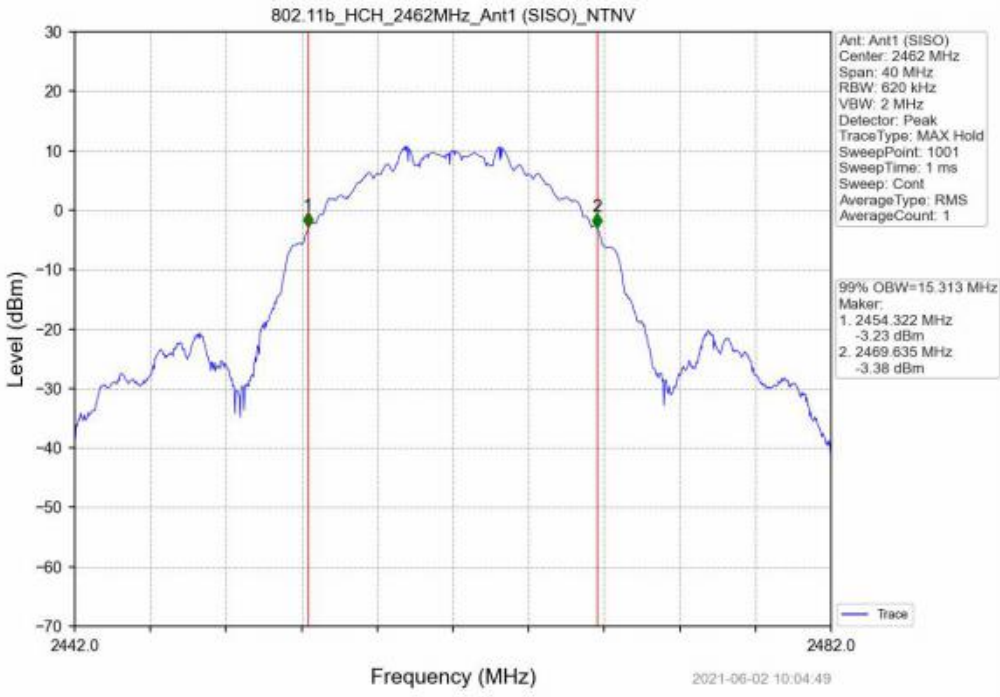
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



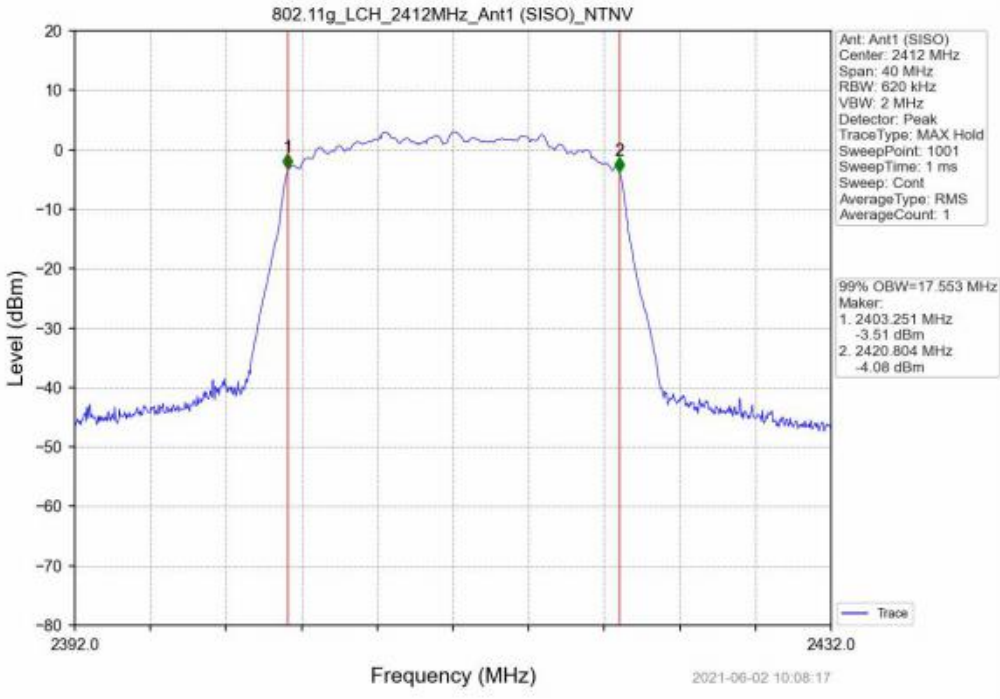
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



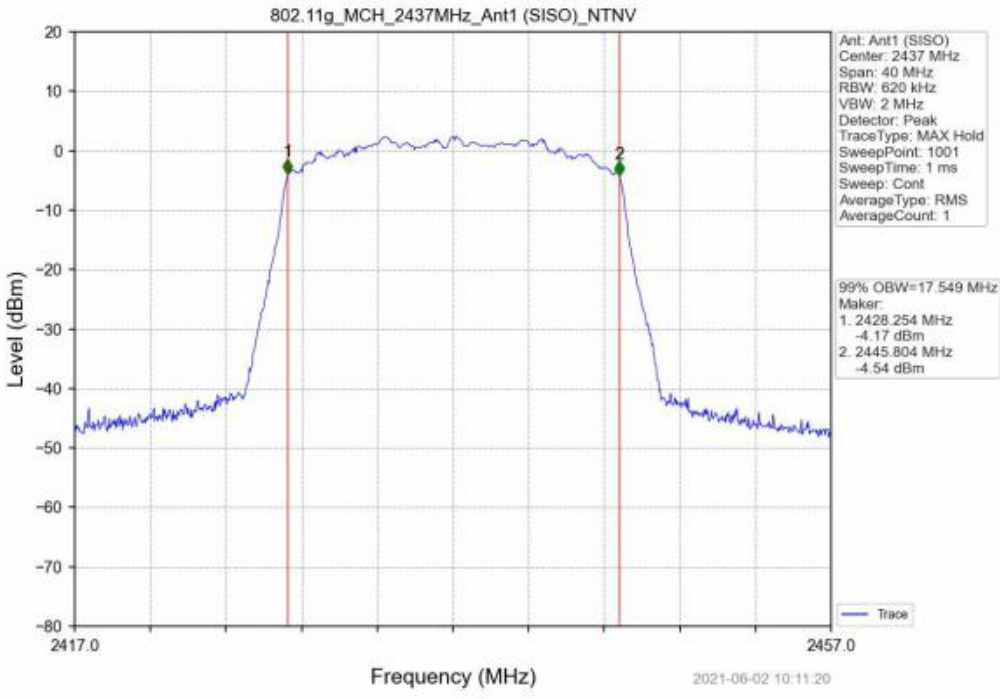
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



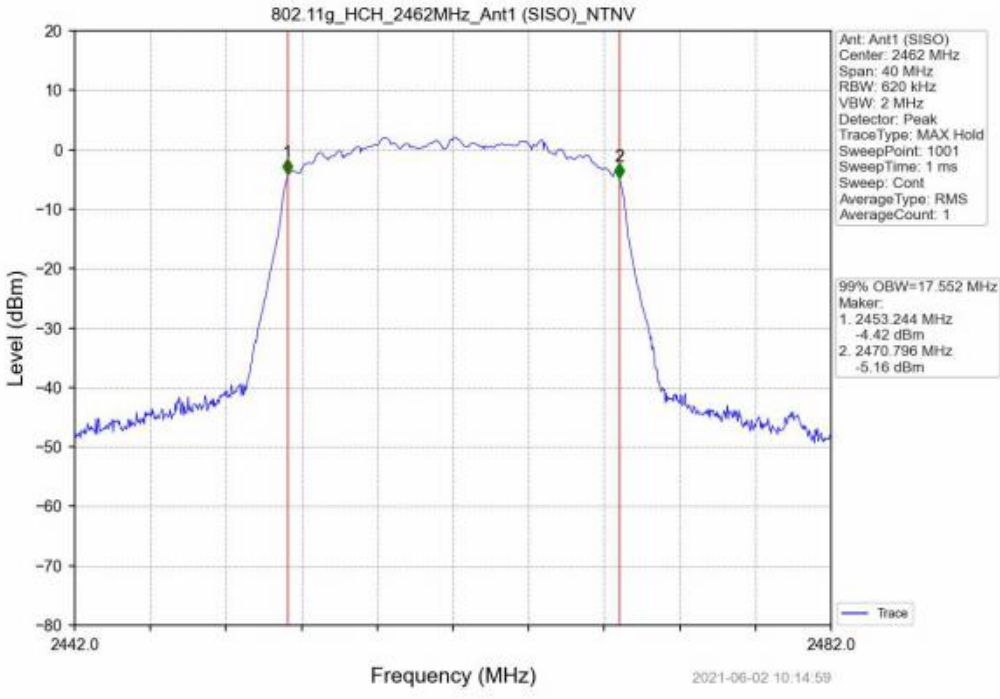
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



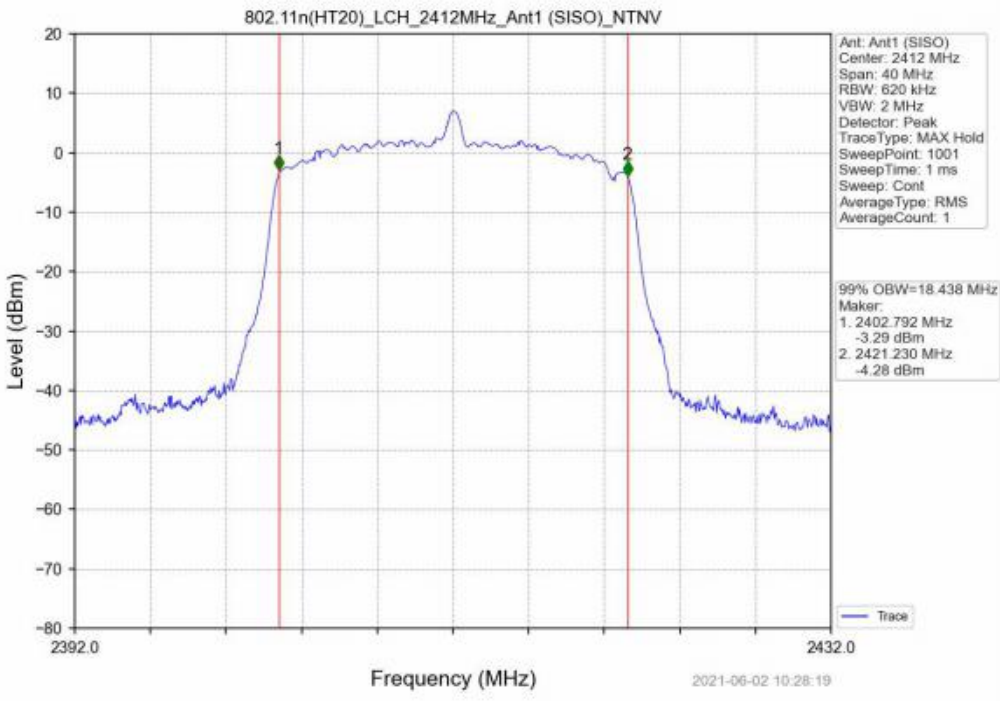
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



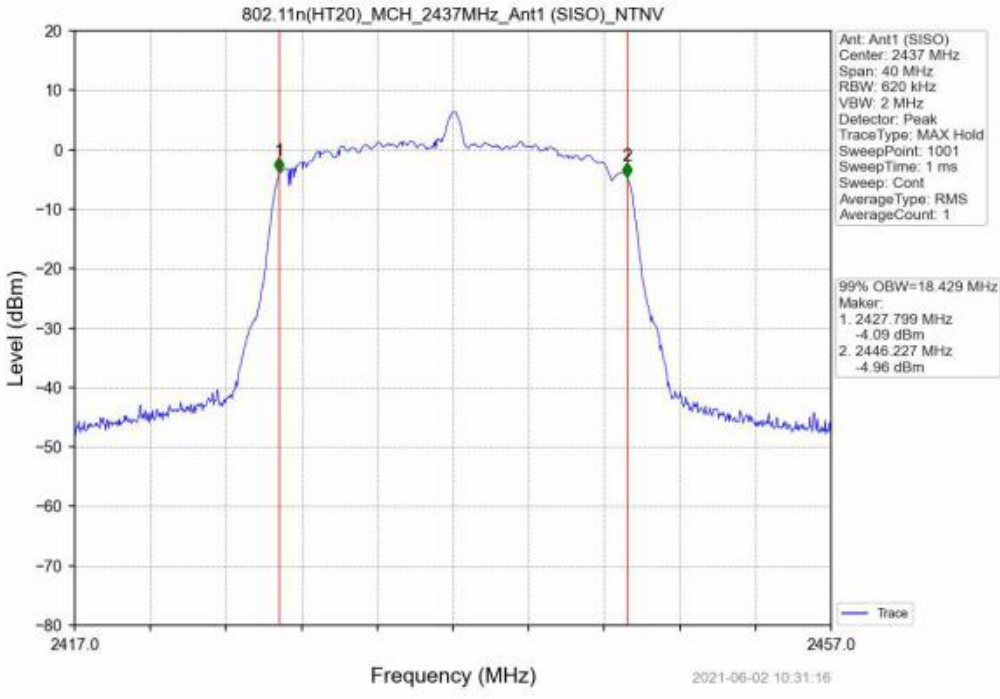
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



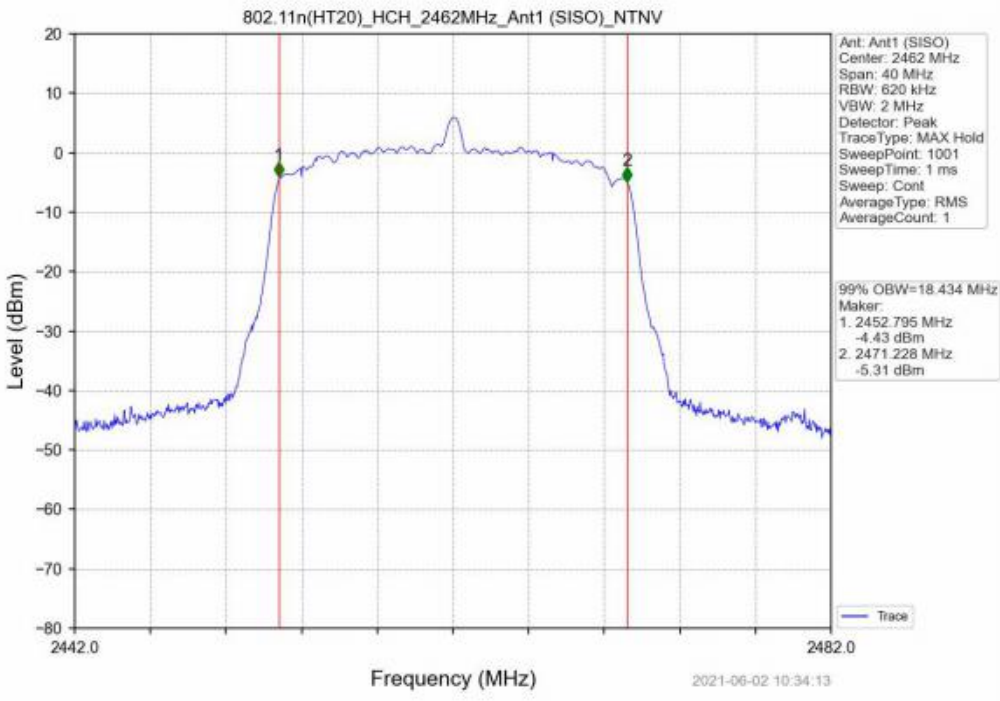
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



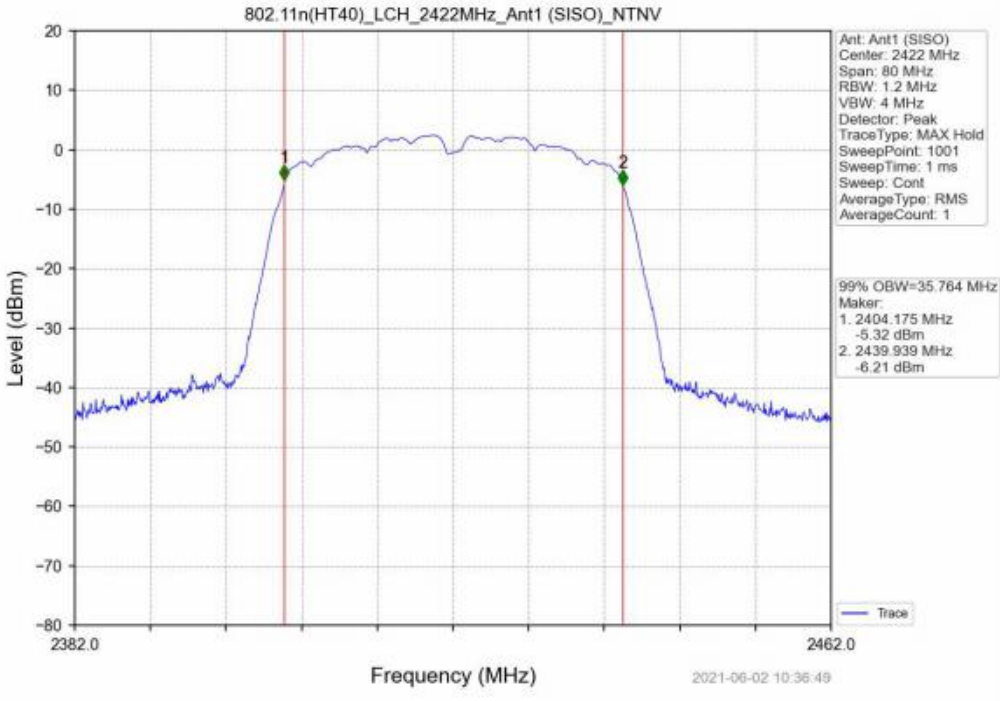
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



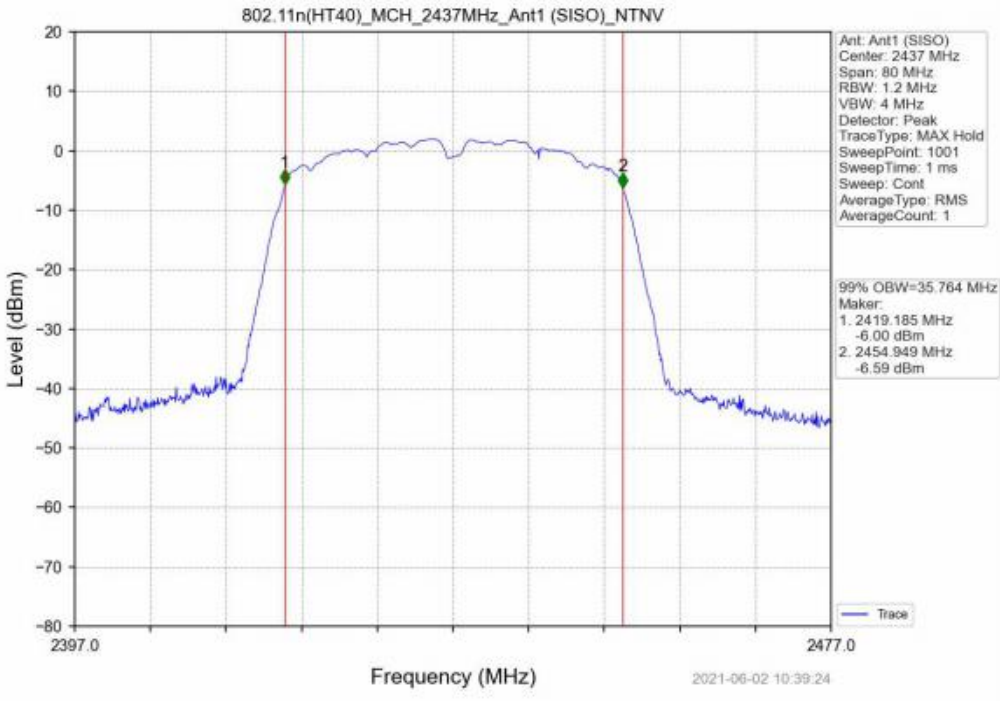
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



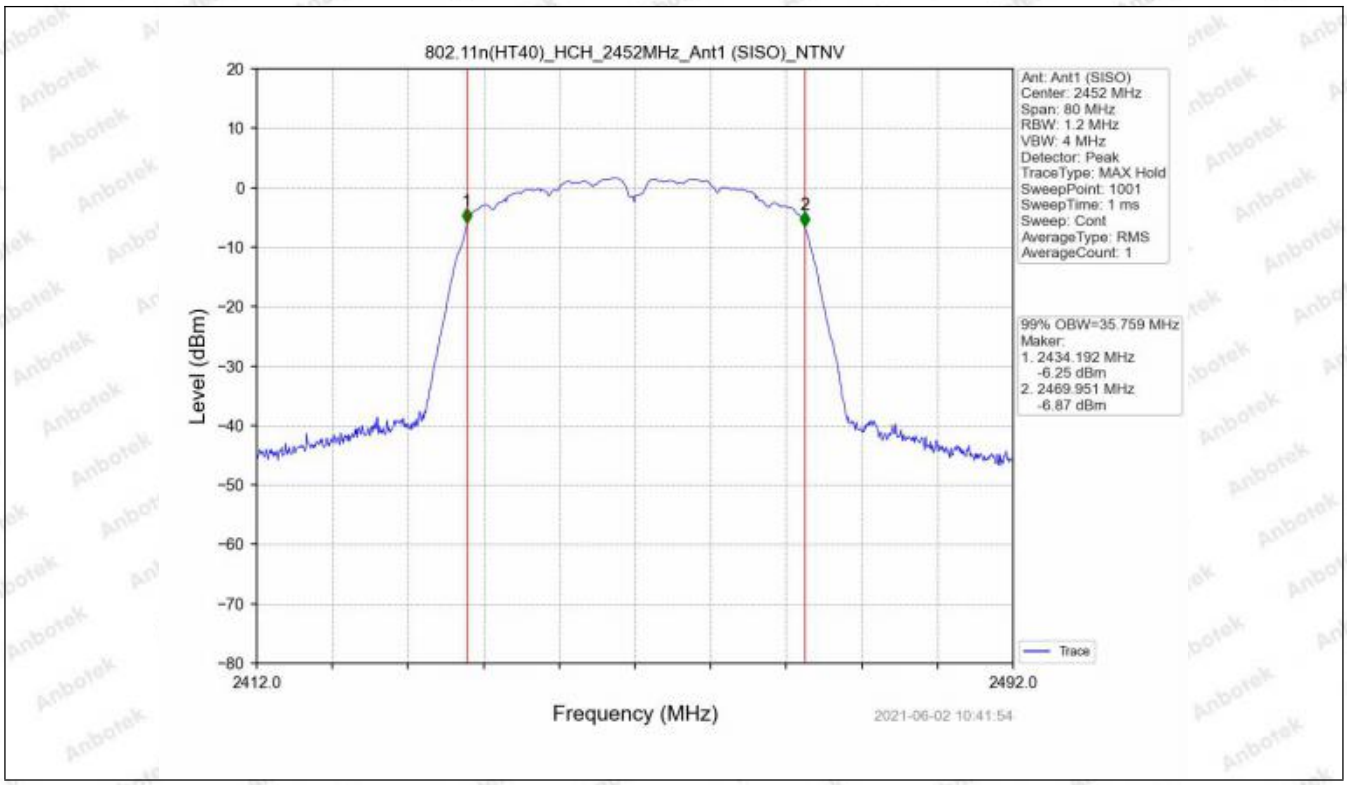
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV


802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV
Ant: Ant1 (SISO)
Center: 2452 MHz
Span: 80 MHz
RBW: 1.2 MHz
VBW: 4 MHz
Detector: Peak
TraceType: MAX Hold
SweepPoint: 1001
SweepTime: 1 ms
Sweep: Cont
AverageType: RMS
AverageCount: 1
99% OBW=35.759 MHz
Maker:
1. 2434.192 MHz
-6.25 dBm
2. 2469.951 MHz
-6.87 dBm
Trace
Level (dBm)
Frequency (MHz)
2412.0
2492.0
2021-06-02 10:41:54

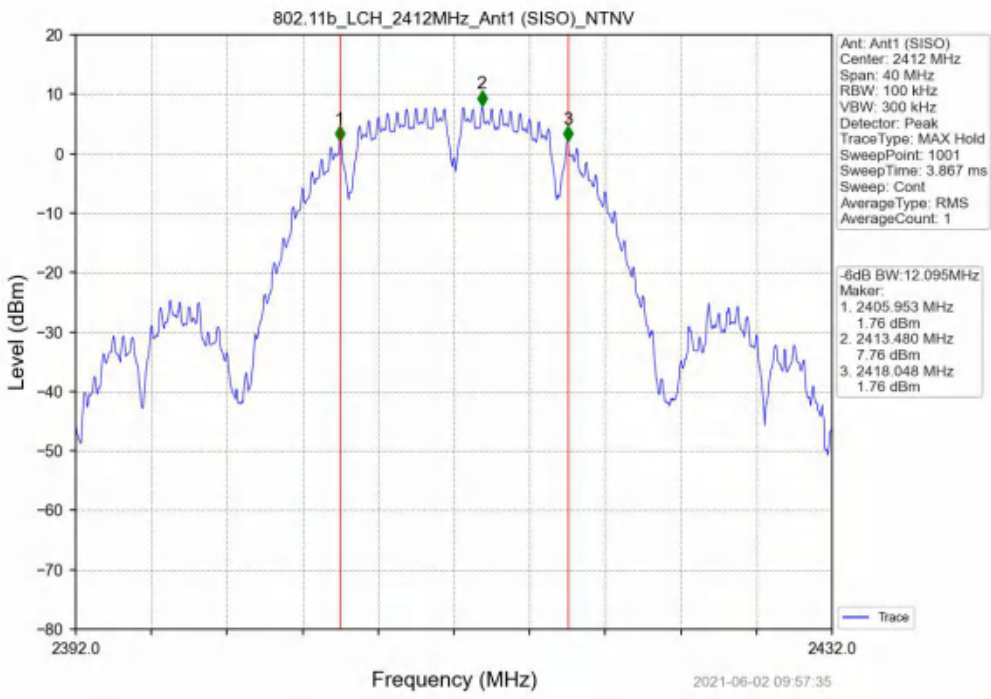
2.2 XDB

2.2.1 Test Result

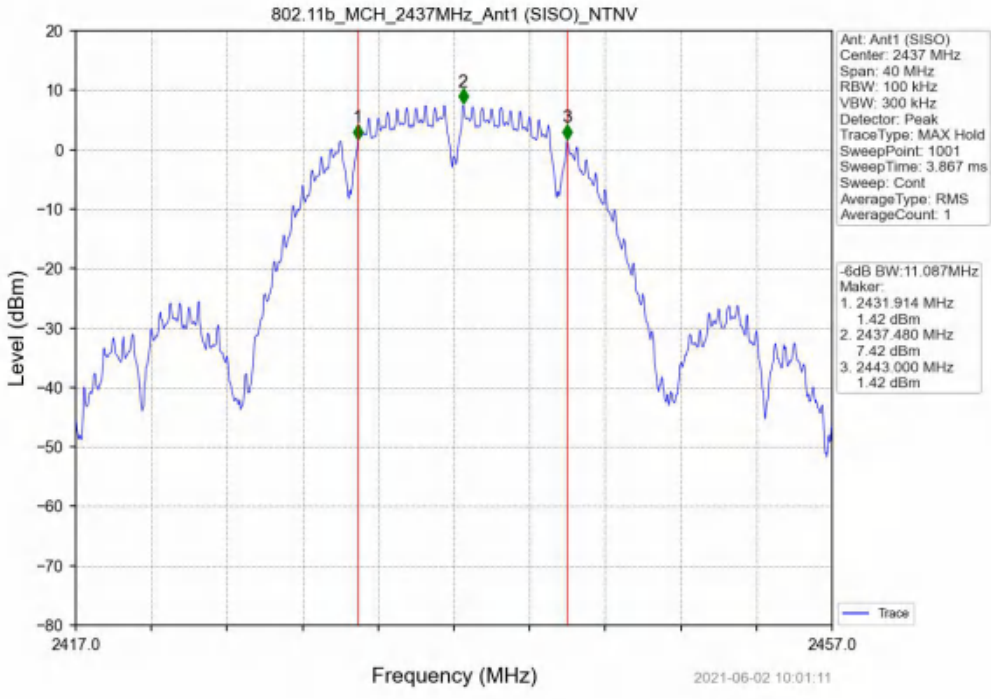
Mode	TX Type	Frequency (MHz)	RU	RU Pos	6dB Bandwidth (MHz)	Limit (MHz)	Verdict
					Ant1		
802.11b	SISO	2412	/	/	12.095	>=0.5	Pass
		2437	/	/	11.087	>=0.5	Pass
		2462	/	/	11.131	>=0.5	Pass
802.11g	SISO	2412	/	/	15.181	>=0.5	Pass
		2437	/	/	15.179	>=0.5	Pass
		2462	/	/	15.179	>=0.5	Pass
802.11n (HT20)	SISO	2412	/	/	15.027	>=0.5	Pass
		2437	/	/	13.829	>=0.5	Pass
		2462	/	/	15.029	>=0.5	Pass
802.11n (HT40)	SISO	2422	/	/	35.109	>=0.5	Pass
		2437	/	/	35.114	>=0.5	Pass
		2452	/	/	35.108	>=0.5	Pass

2.2.2 Test Graph

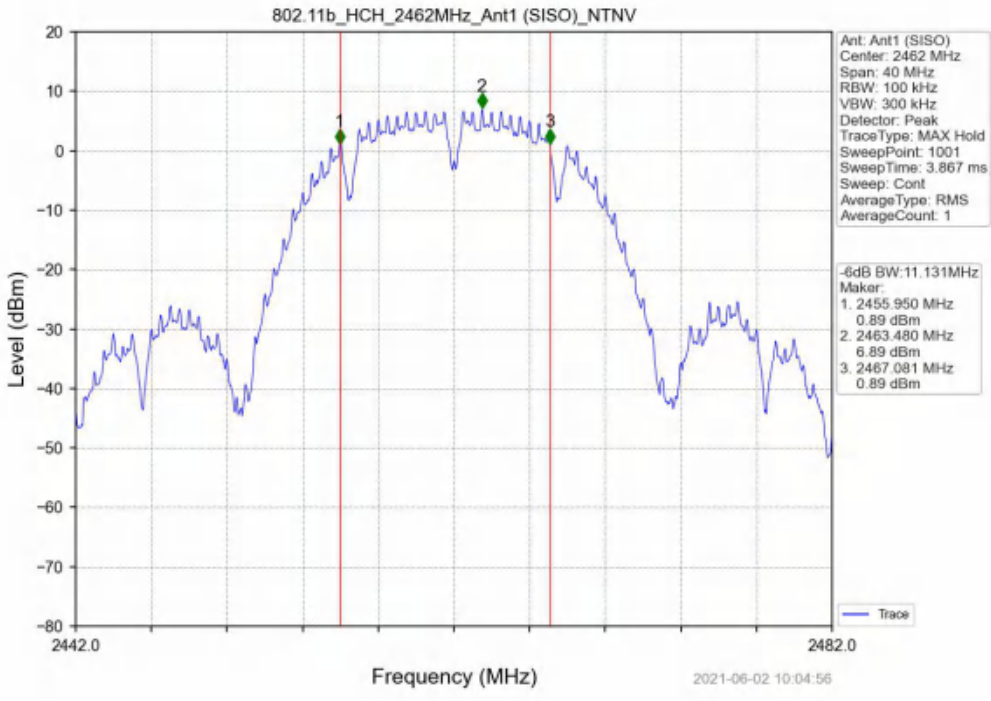
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



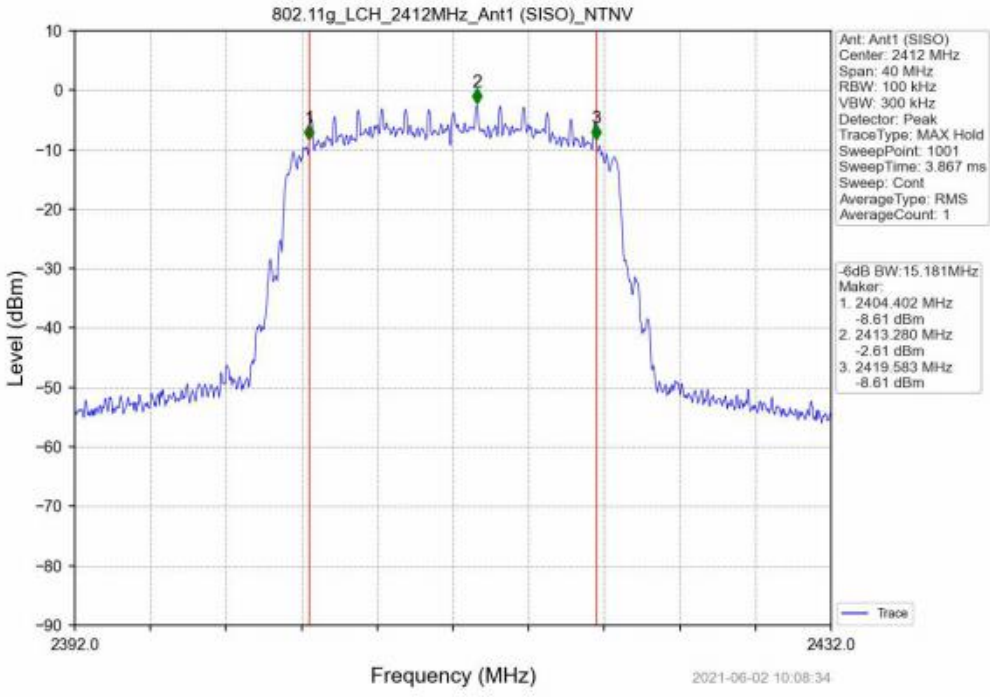
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



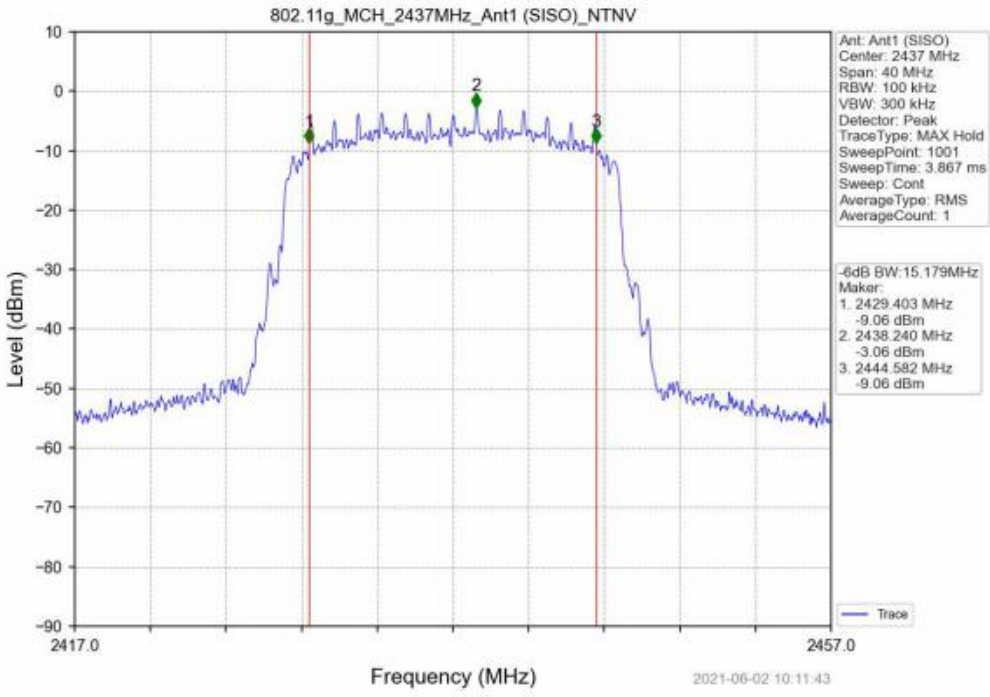
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



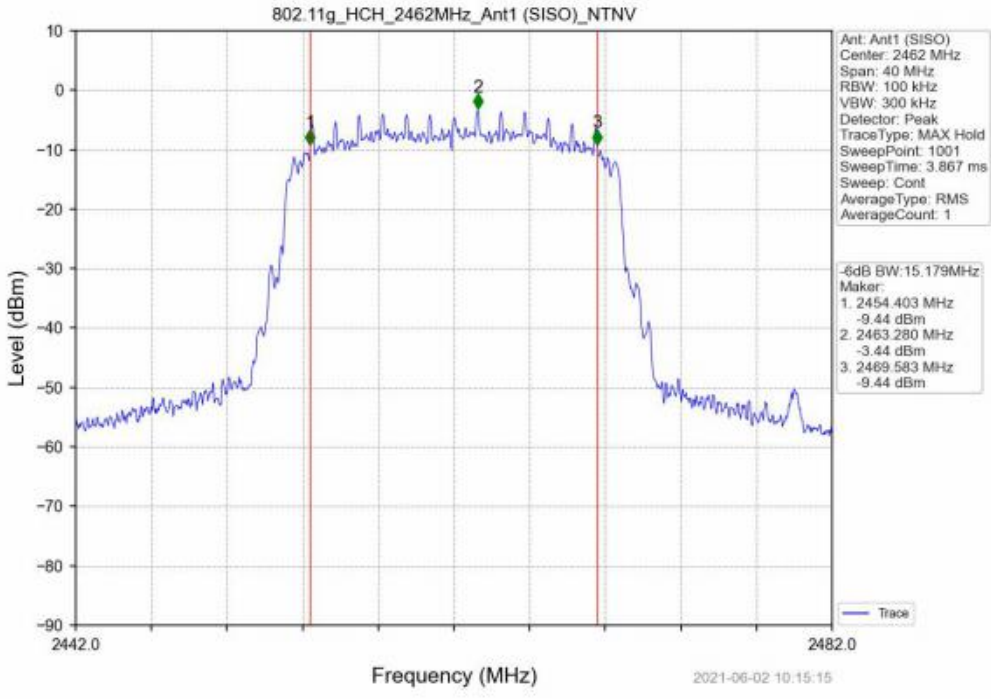
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



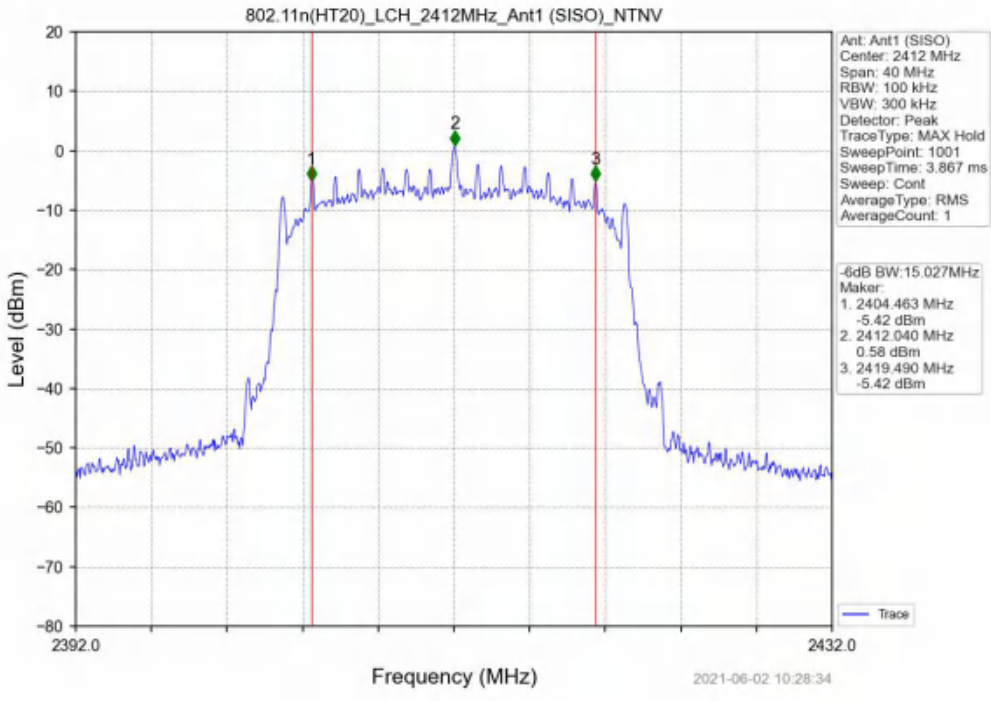
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



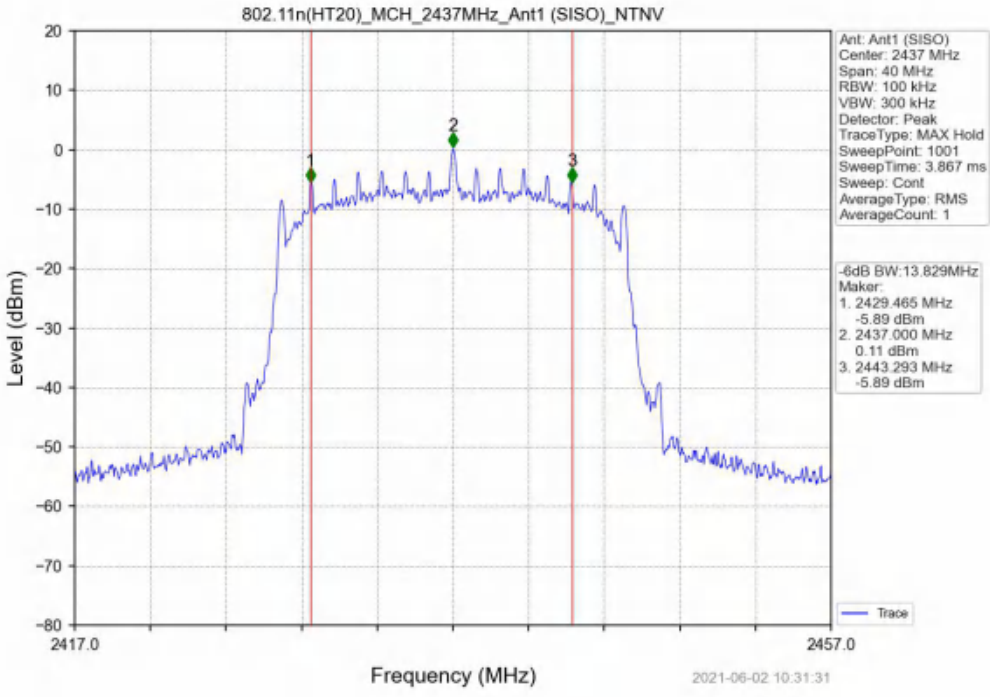
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



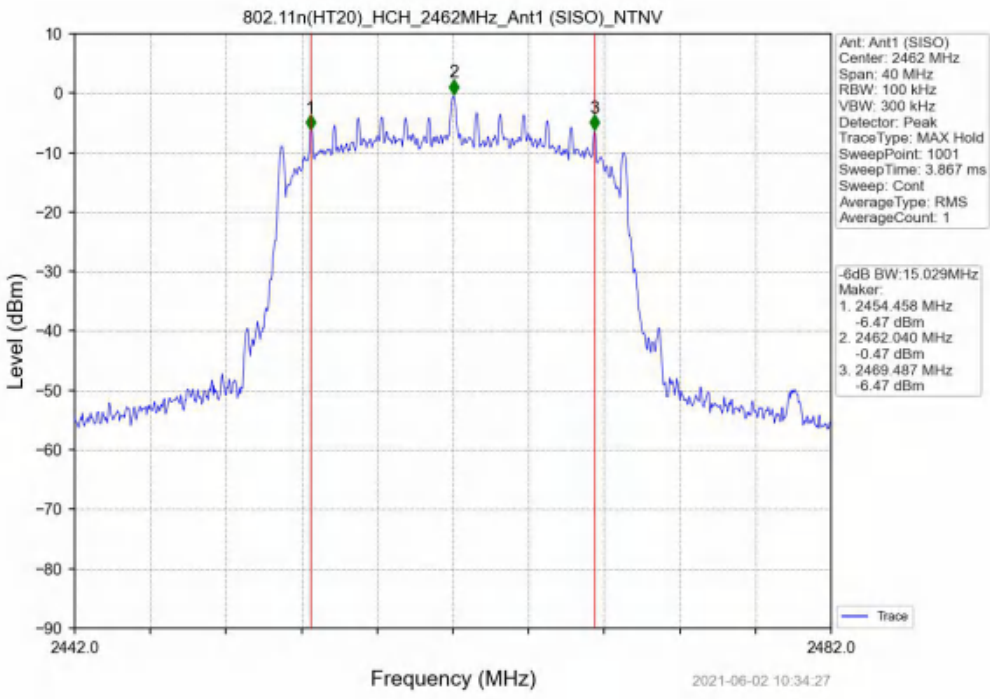
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



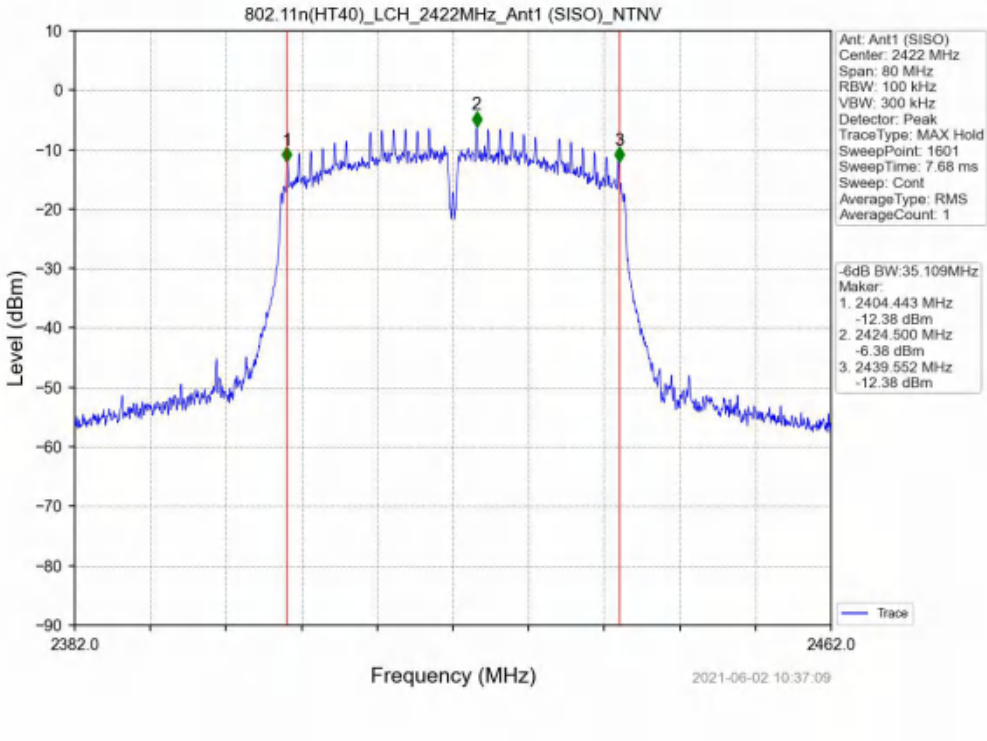
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



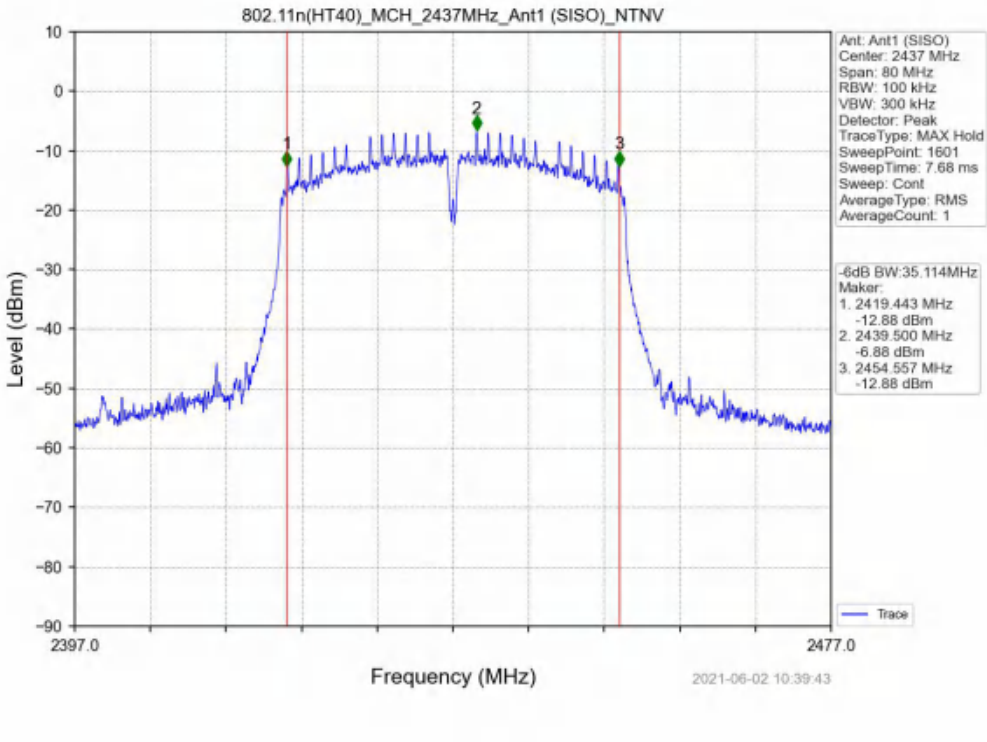
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



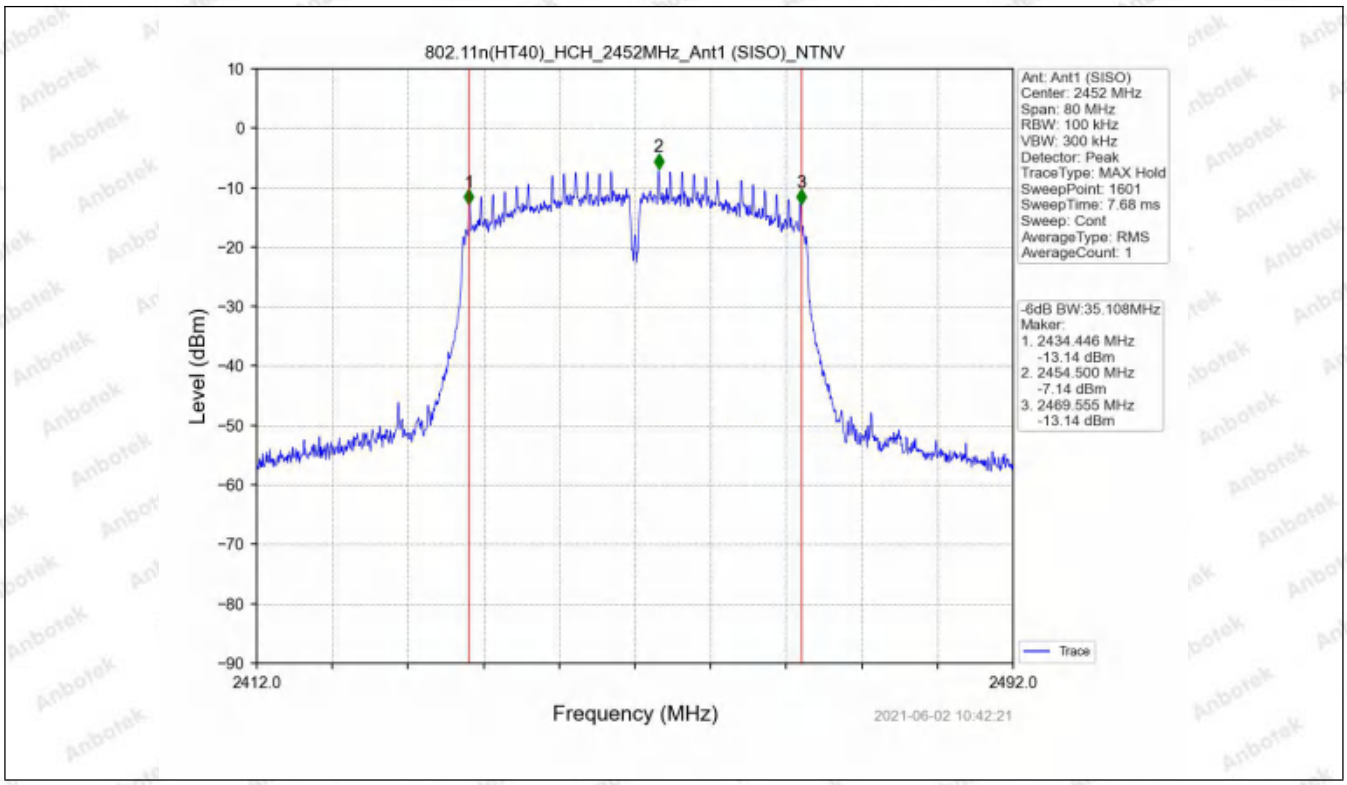
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV


802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV
Ant: Ant1 (SISO)
Center: 2452 MHz
Span: 80 MHz
RBW: 100 kHz
VBW: 300 kHz
Detector: Peak
TraceType: MAX Hold
SweepPoint: 1601
SweepTime: 7.68 ms
Sweep: Cont
AverageType: RMS
AverageCount: 1
-6dB BW:35.108MHz
Maker:
1. 2434.446 MHz
-13.14 dBm
2. 2454.500 MHz
-7.14 dBm
3. 2469.555 MHz
-13.14 dBm
Trace
Level (dBm)
Frequency (MHz)
2412.0
2492.0
2021-06-02 10:42:21

3. Maximum Conducted Output Power

3.1 Power

3.1.1 Test Result

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Measured Peak Output Power (dBm)	Limit (dBm)	Verdict
					Ant1		
802.11b	SISO	2412	/	/	20.95	<=30	Pass
		2437	/	/	20.70	<=30	Pass
		2462	/	/	20.12	<=30	Pass
802.11g	SISO	2412	/	/	15.45	<=30	Pass
		2437	/	/	14.98	<=30	Pass
		2462	/	/	14.63	<=30	Pass
802.11n (HT20)	SISO	2412	/	/	15.65	<=30	Pass
		2437	/	/	15.11	<=30	Pass
		2462	/	/	14.65	<=30	Pass
802.11n (HT40)	SISO	2422	/	/	14.18	<=30	Pass
		2437	/	/	13.80	<=30	Pass
		2452	/	/	13.39	<=30	Pass
Note1: Antenna Gain: 0 dBi;							

4. Maximum Power Spectral Density

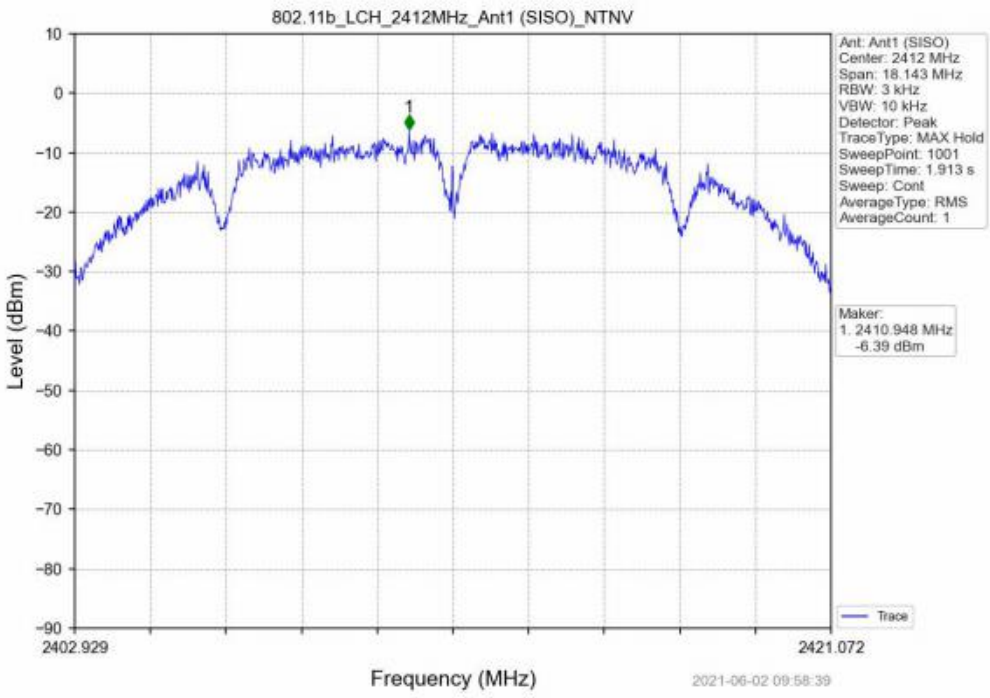
4.1 PSD

4.1.1 Test Result

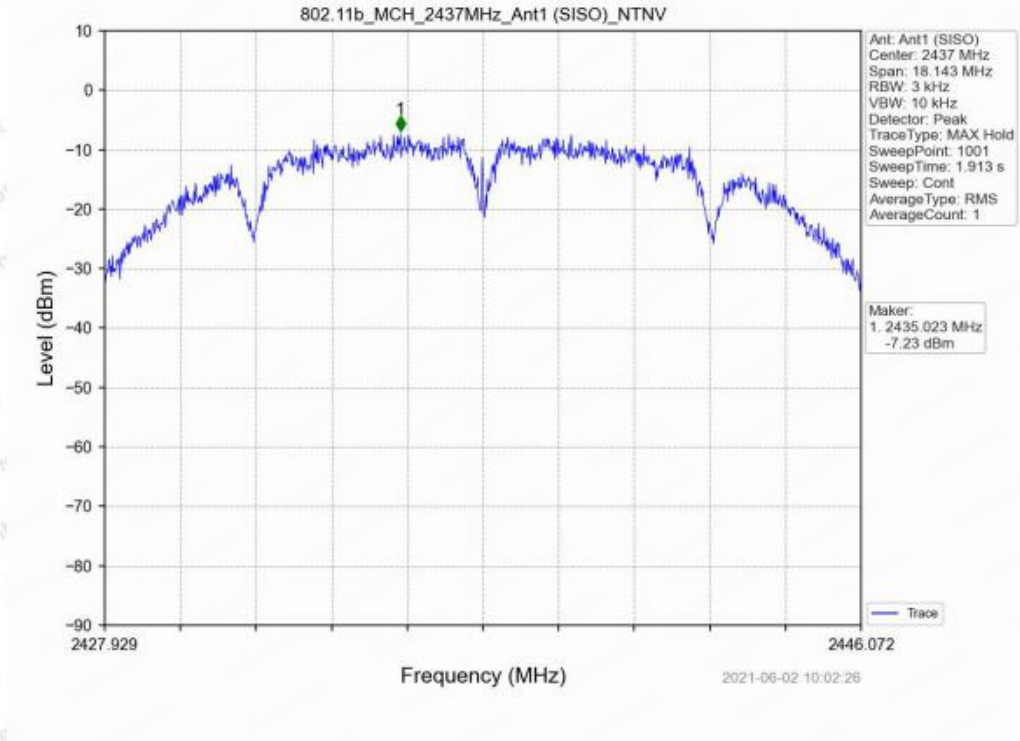
Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
					Ant1		
802.11b	SISO	2412	/	/	-6.39	<=8	Pass
		2437	/	/	-7.23	<=8	Pass
		2462	/	/	-7.01	<=8	Pass
802.11g	SISO	2412	/	/	-16.74	<=8	Pass
		2437	/	/	-16.97	<=8	Pass
		2462	/	/	-18.03	<=8	Pass
802.11n (HT20)	SISO	2412	/	/	-16.32	<=8	Pass
		2437	/	/	-17.57	<=8	Pass
		2462	/	/	-17.30	<=8	Pass
802.11n (HT40)	SISO	2422	/	/	-20.87	<=8	Pass
		2437	/	/	-21.41	<=8	Pass
		2452	/	/	-21.86	<=8	Pass
Note1: Antenna Gain: 0 dBi;							

4.1.2 Test Graph

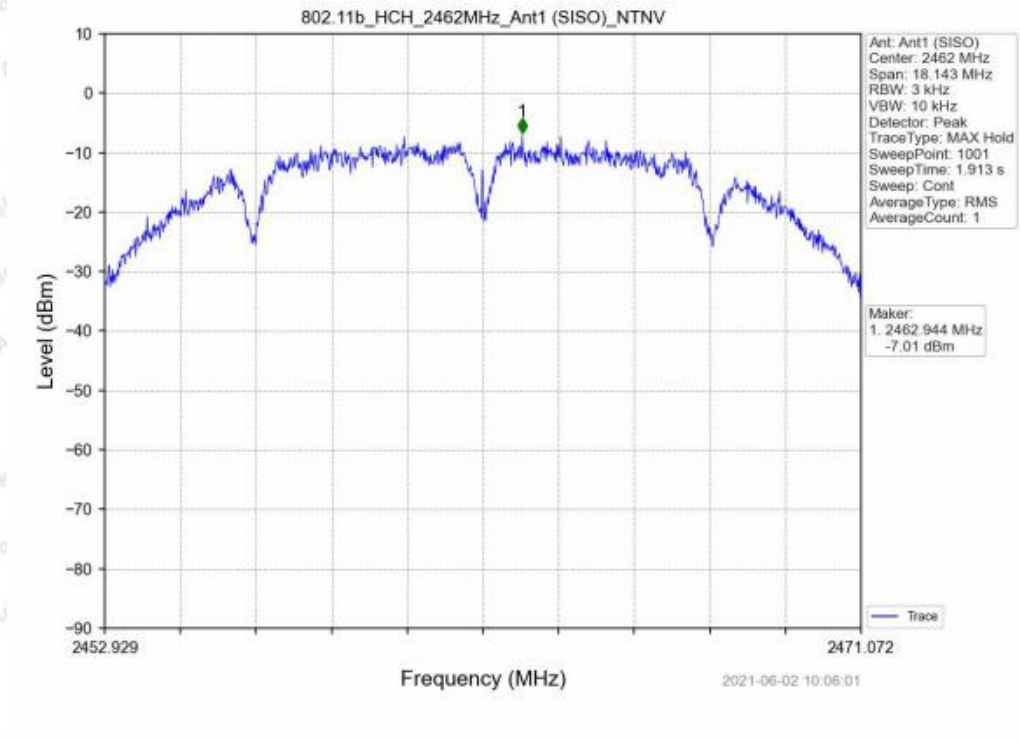
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



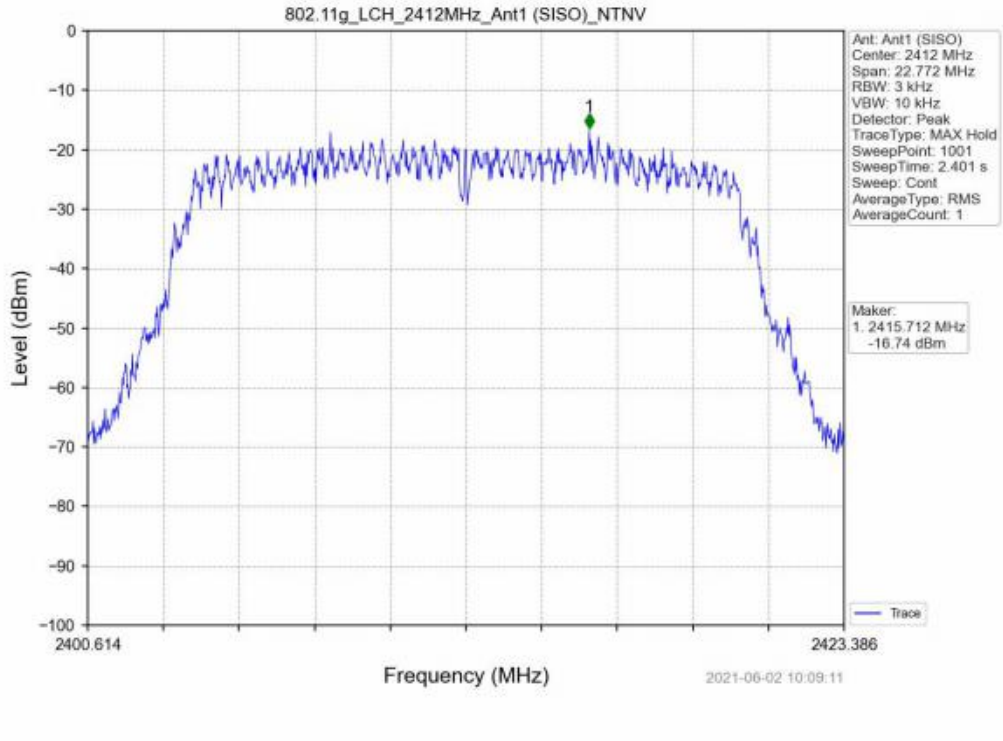
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



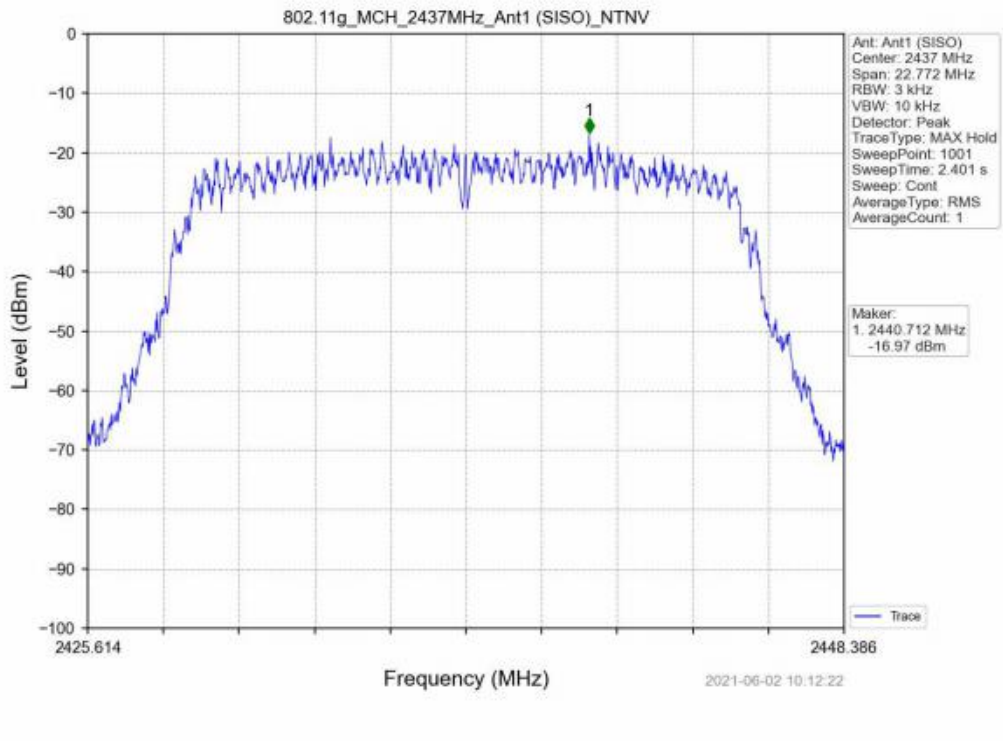
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



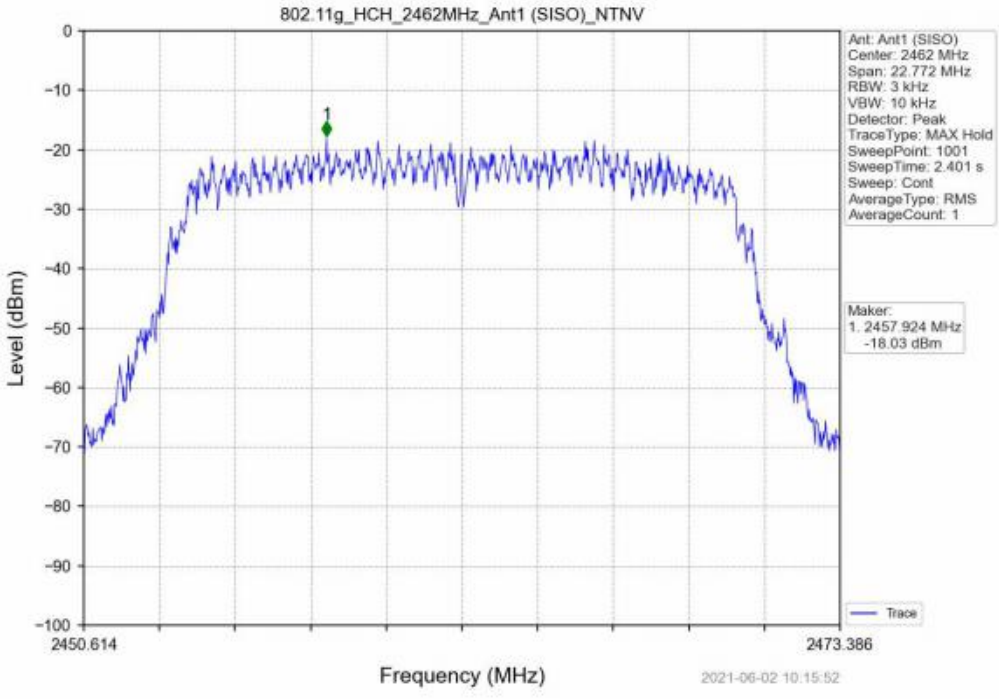
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



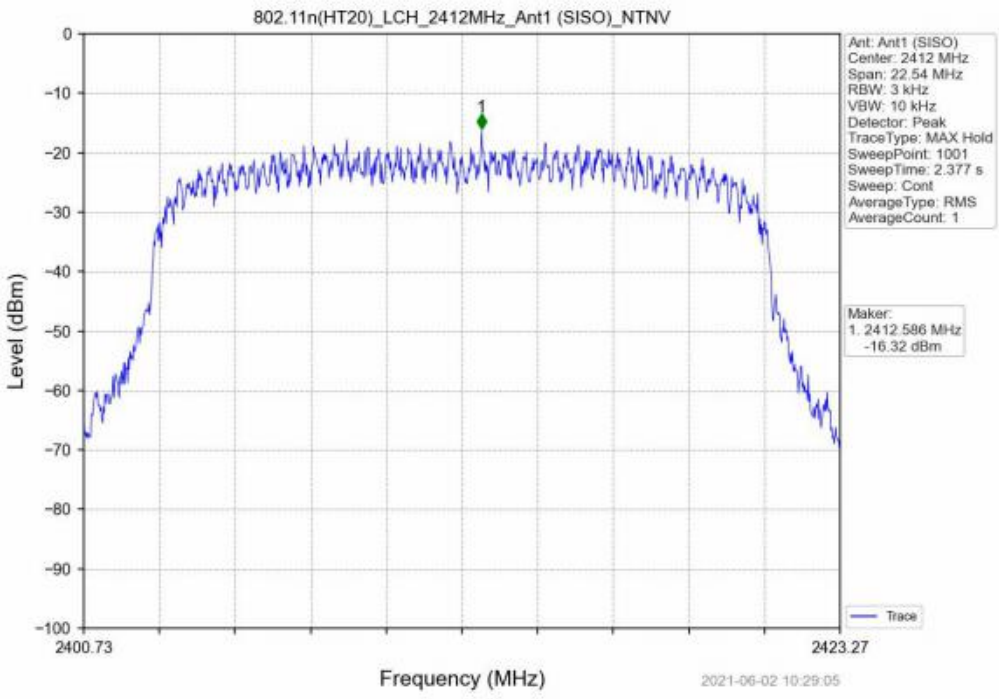
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



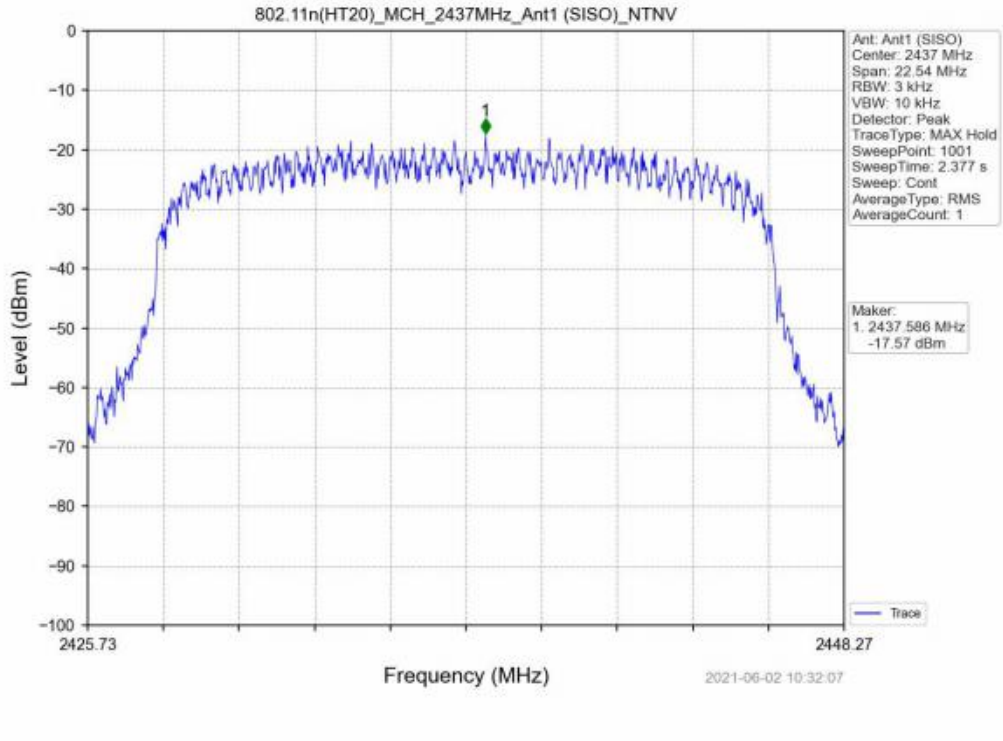
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



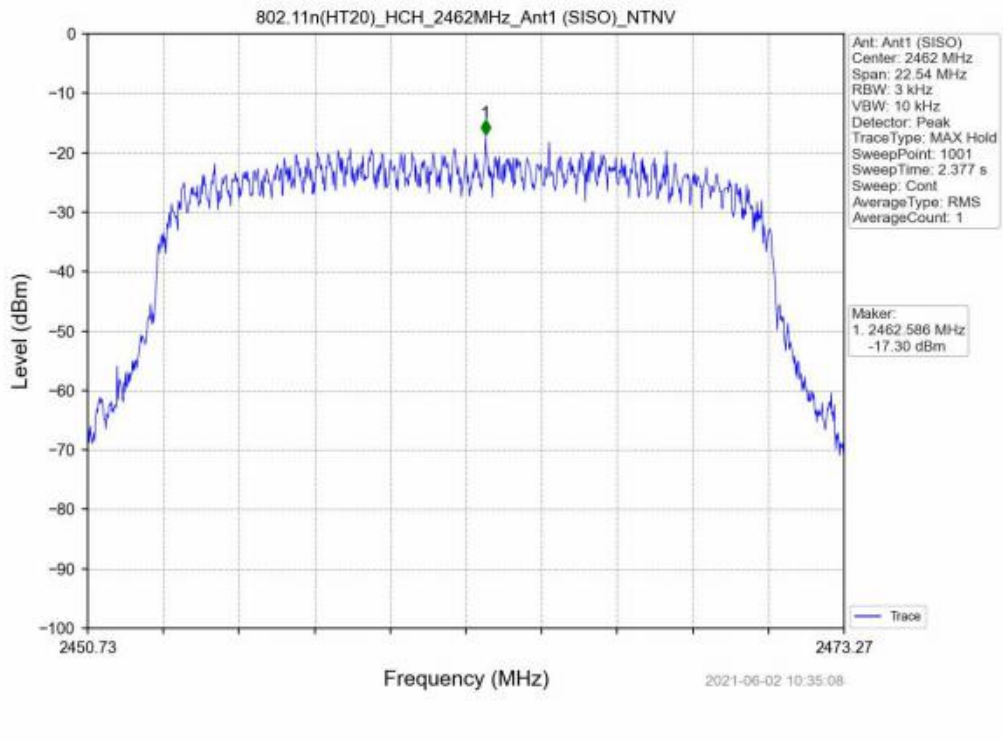
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



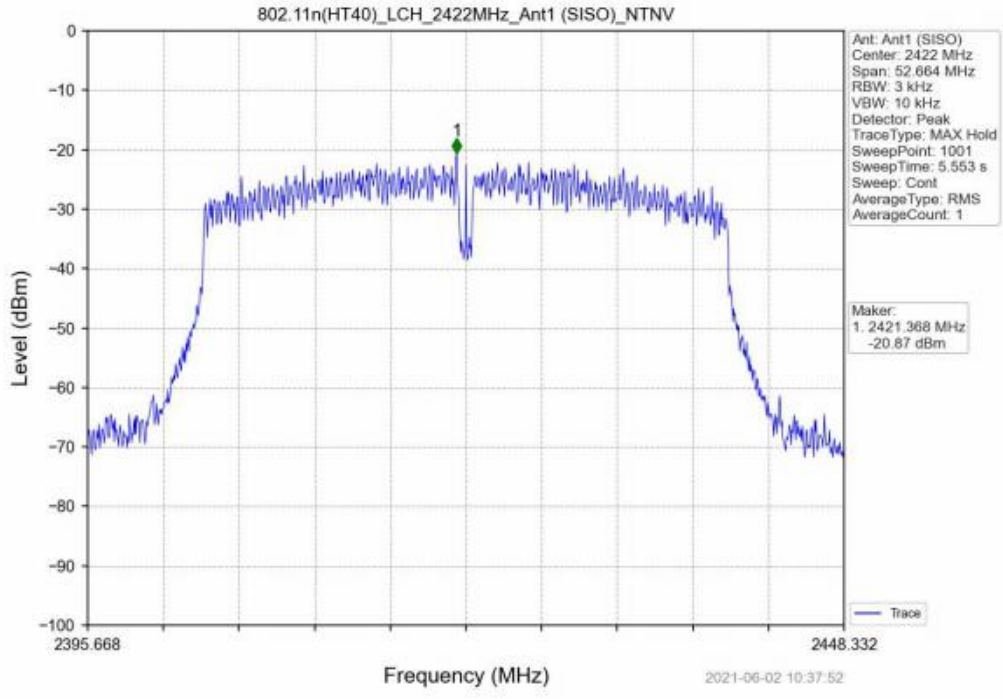
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



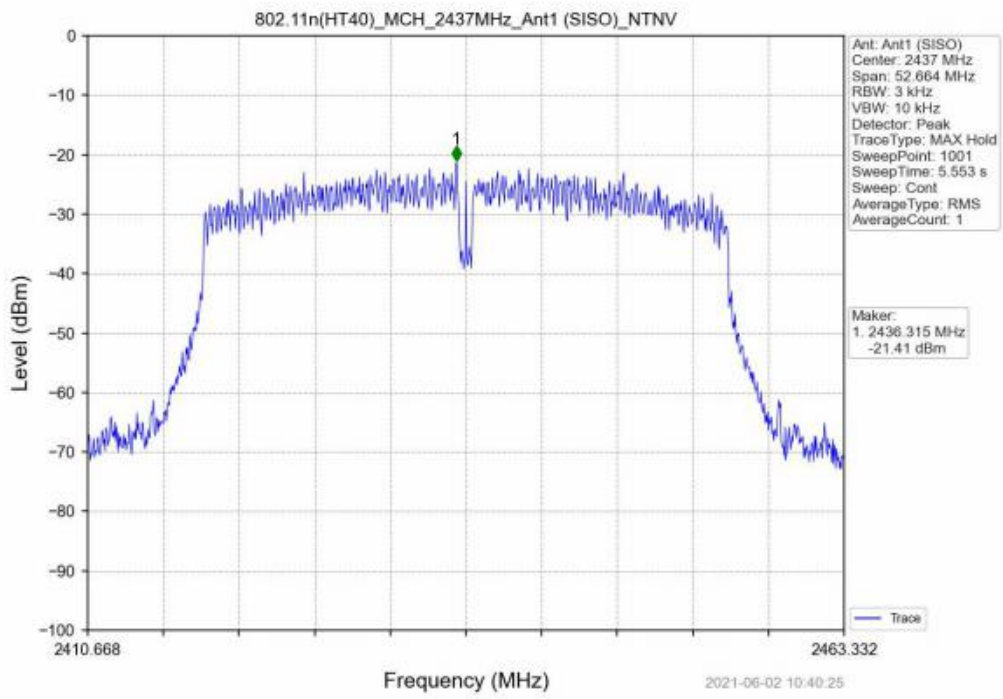
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



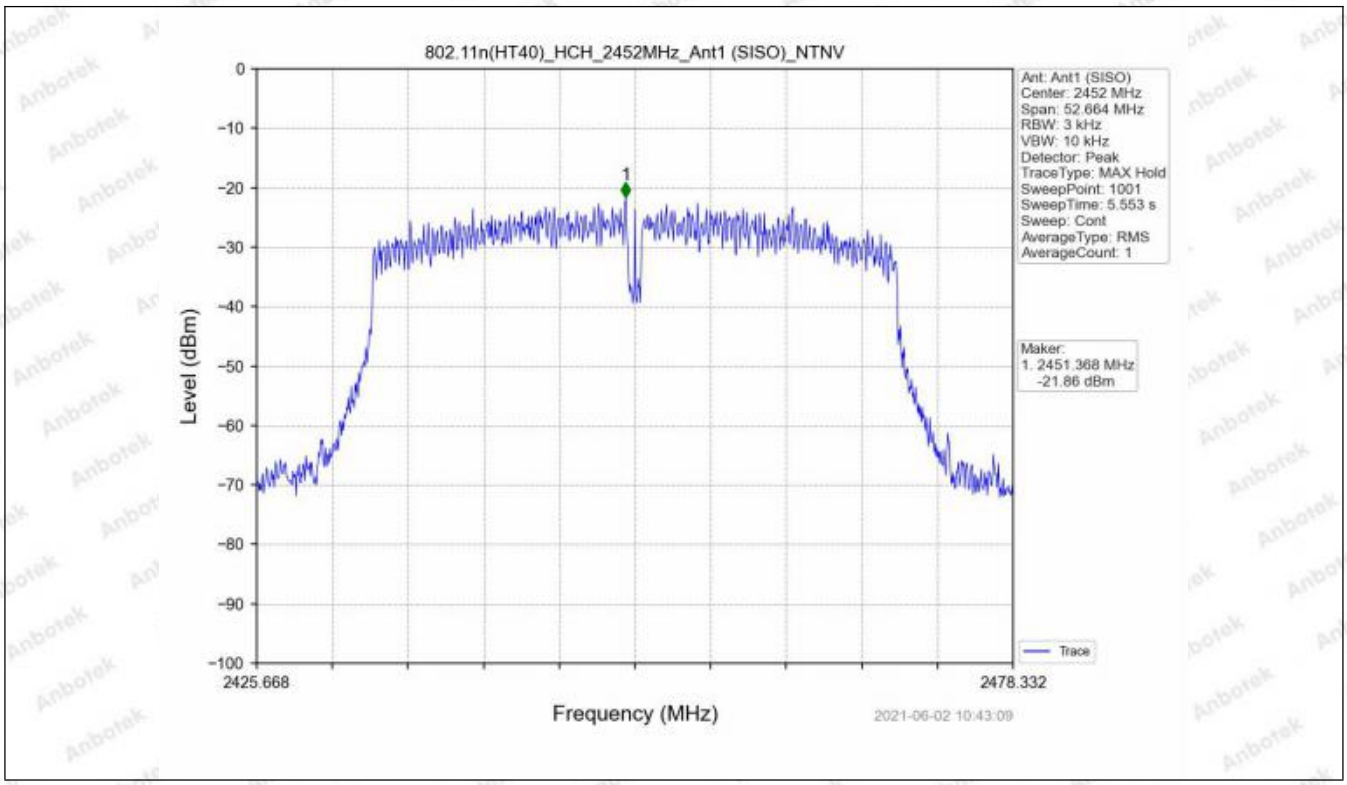
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV


802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV
Ant: Ant1 (SISO)
Center: 2452 MHz
Span: 52.664 MHz
RBW: 3 kHz
VBW: 10 kHz
Detector: Peak
TraceType: MAX Hold
SweepPoint: 1001
SweepTime: 5.553 s
Sweep: Cont
AverageType: RMS
AverageCount: 1
Maker:
1. 2451.368 MHz
-21.86 dBm
Trace
Level (dBm)
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
2425.668
2478.332
Frequency (MHz)
2021-06-02 10:43:09

5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Ref

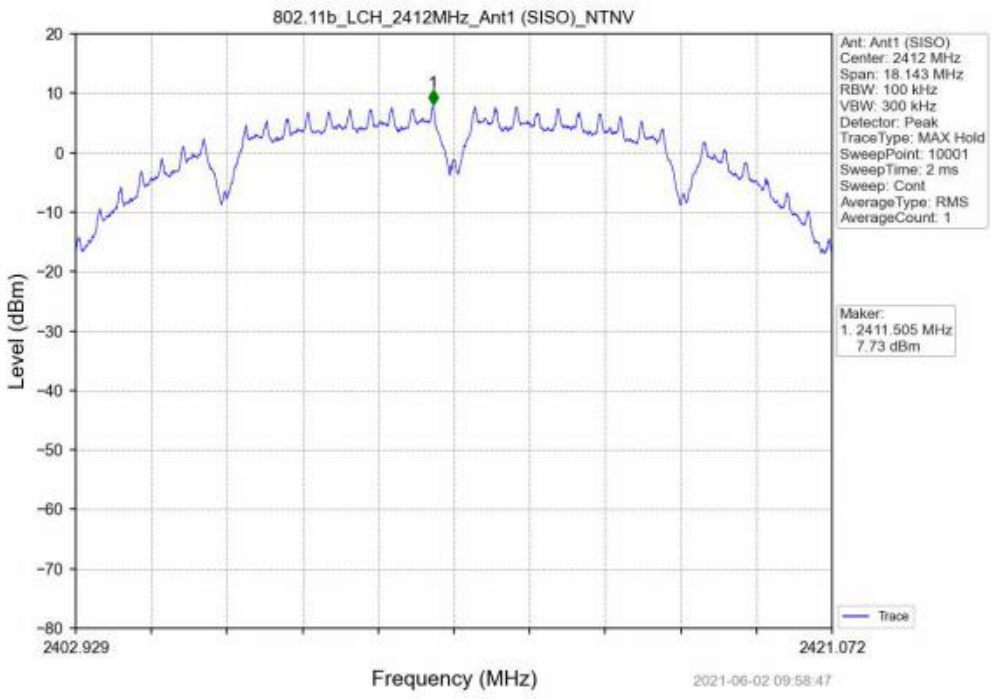
5.1.1 Test Result

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Ant	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	/	/	1	7.73	/	/
		2437	/	/	1	7.28	/	/
		2462	/	/	1	6.85	/	/
802.11g	SISO	2412	/	/	1	-2.73	/	/
		2437	/	/	1	-3.35	/	/
		2462	/	/	1	-3.70	/	/
802.11n (HT20)	SISO	2412	/	/	1	0.31	/	/
		2437	/	/	1	-0.38	/	/
		2462	/	/	1	-0.68	/	/
802.11n (HT40)	SISO	2422	/	/	1	-6.46	/	/
		2437	/	/	1	-6.90	/	/
		2452	/	/	1	-7.32	/	/

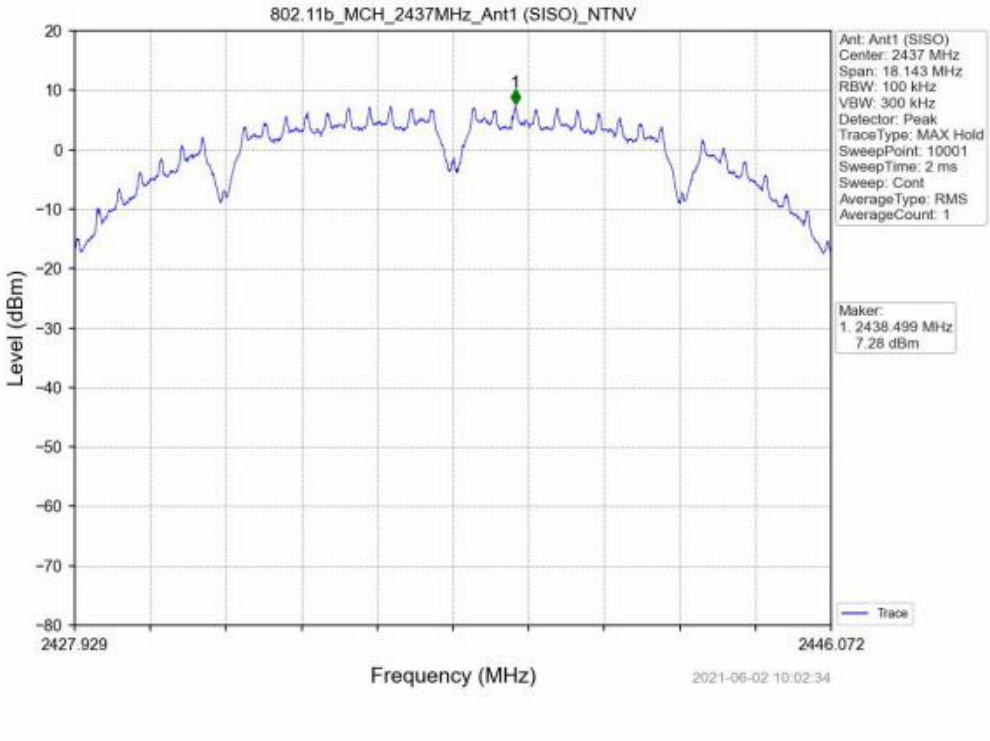
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

5.1.2 Test Graph

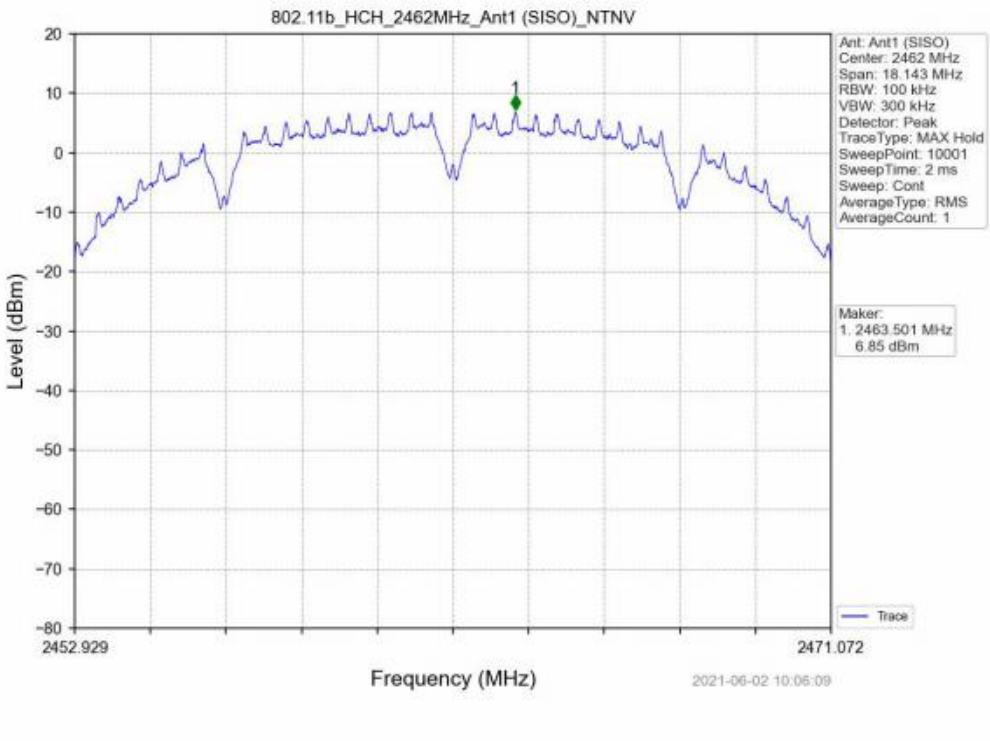
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



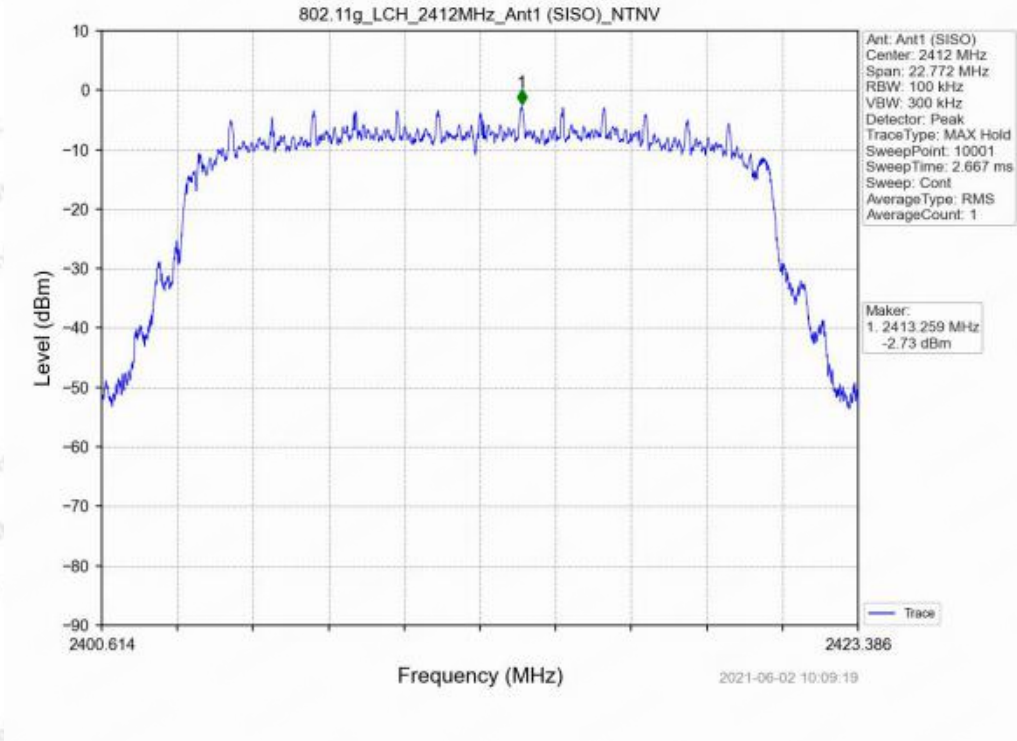
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



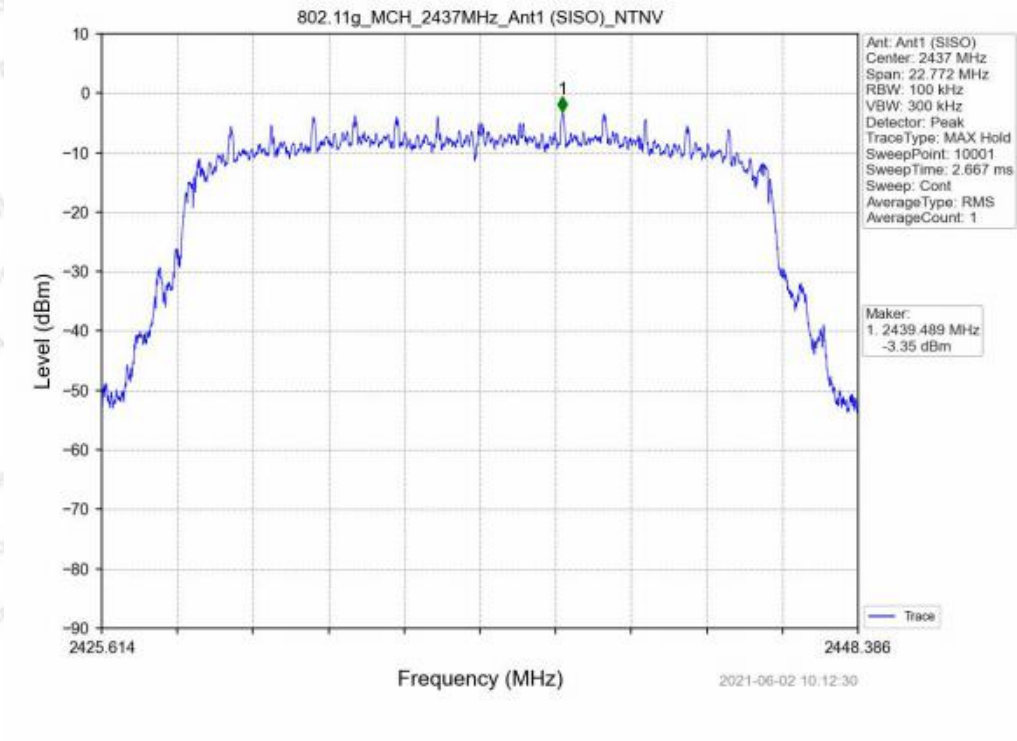
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



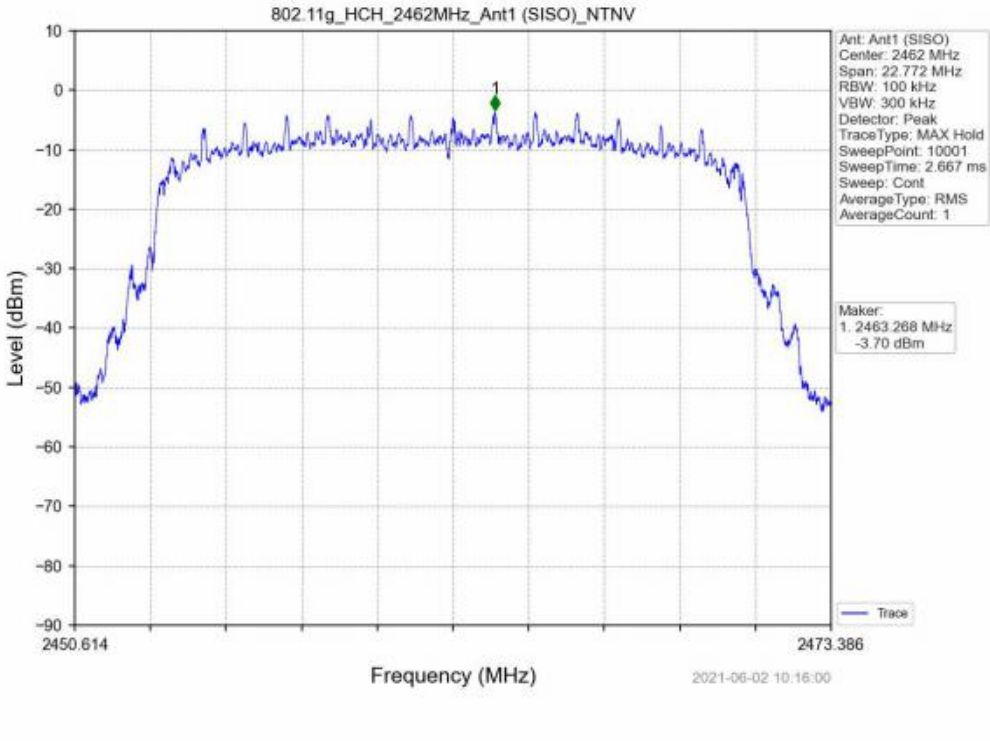
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



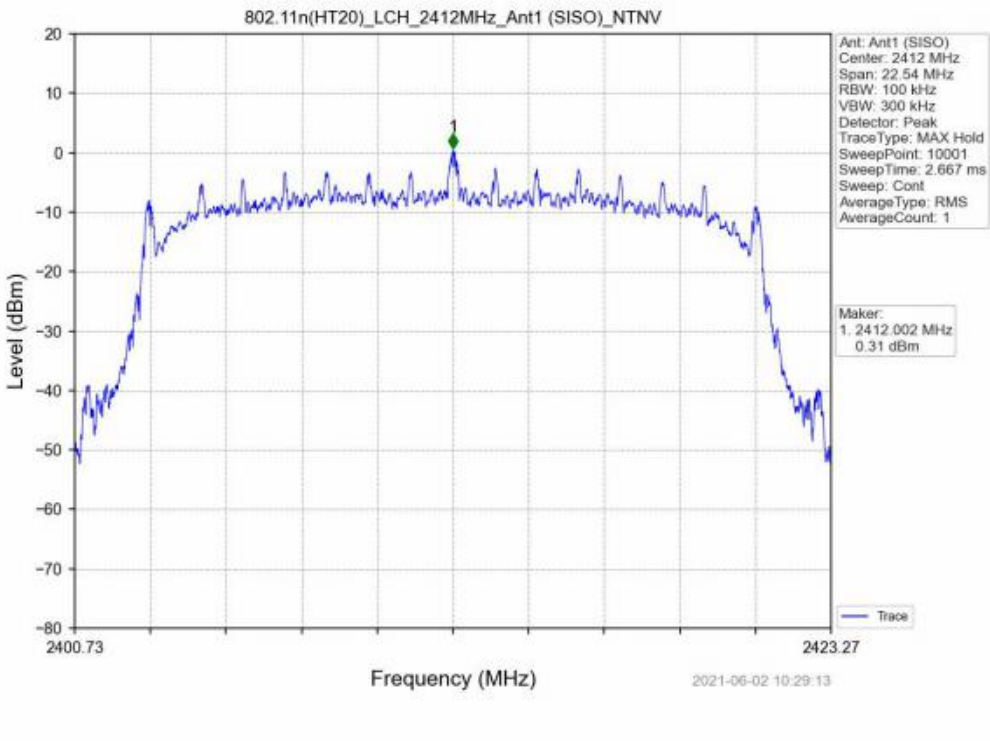
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



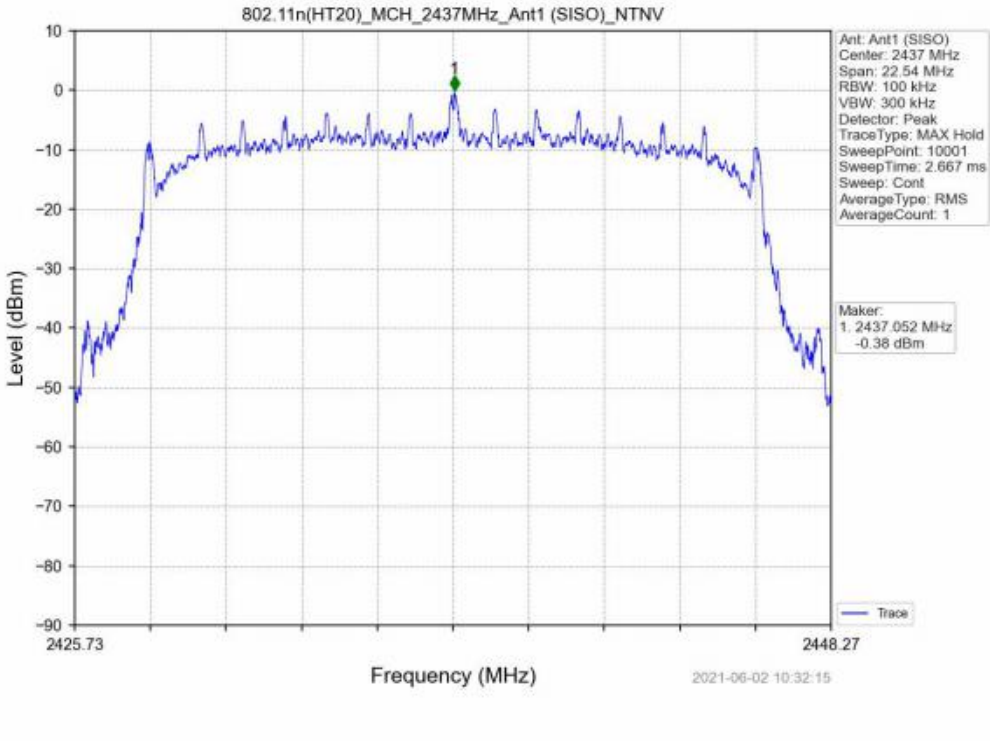
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



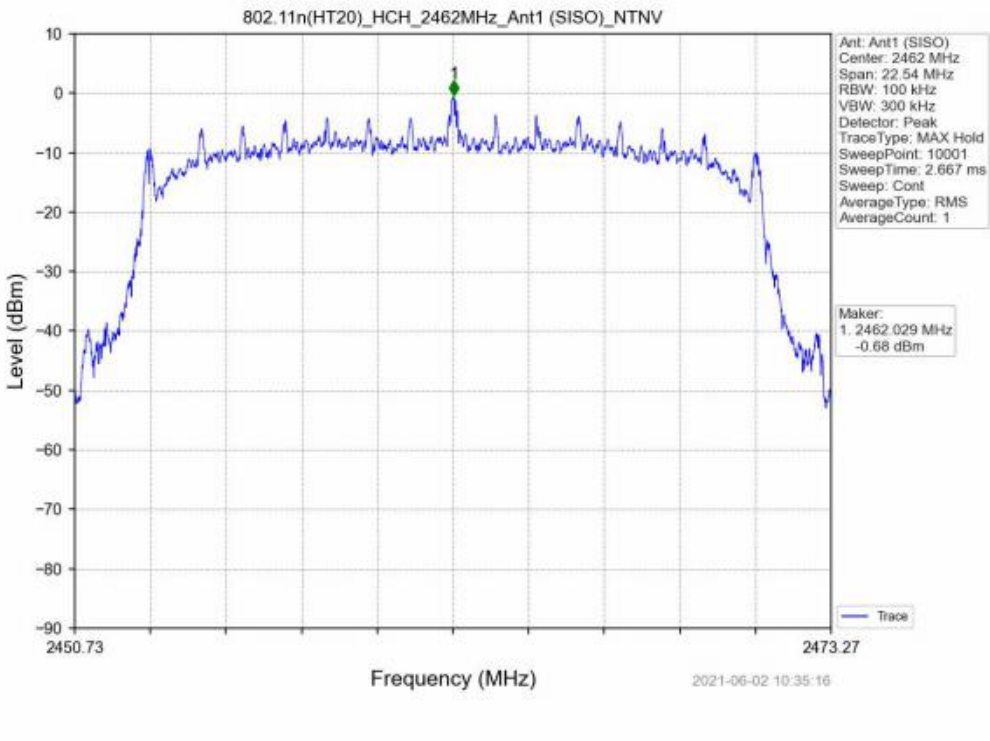
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



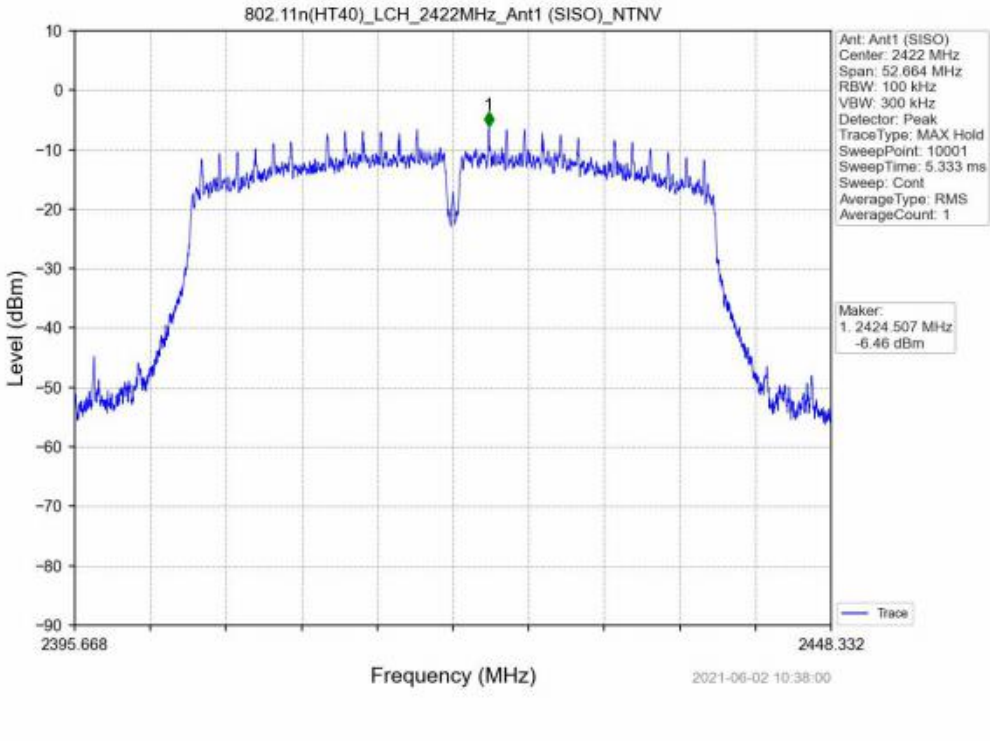
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



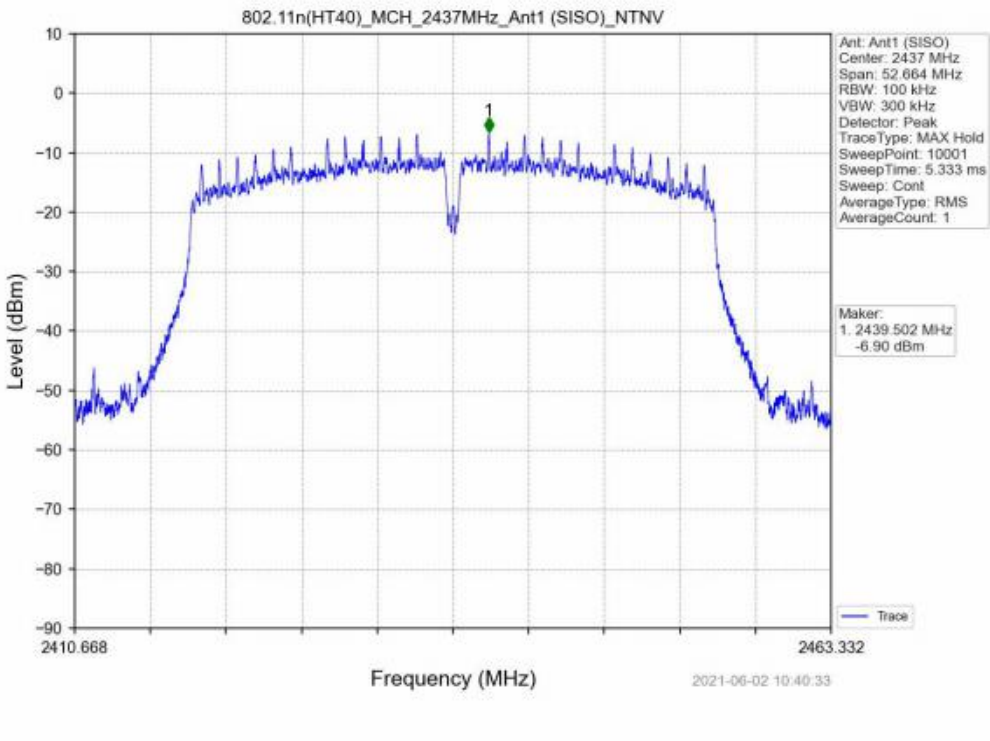
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



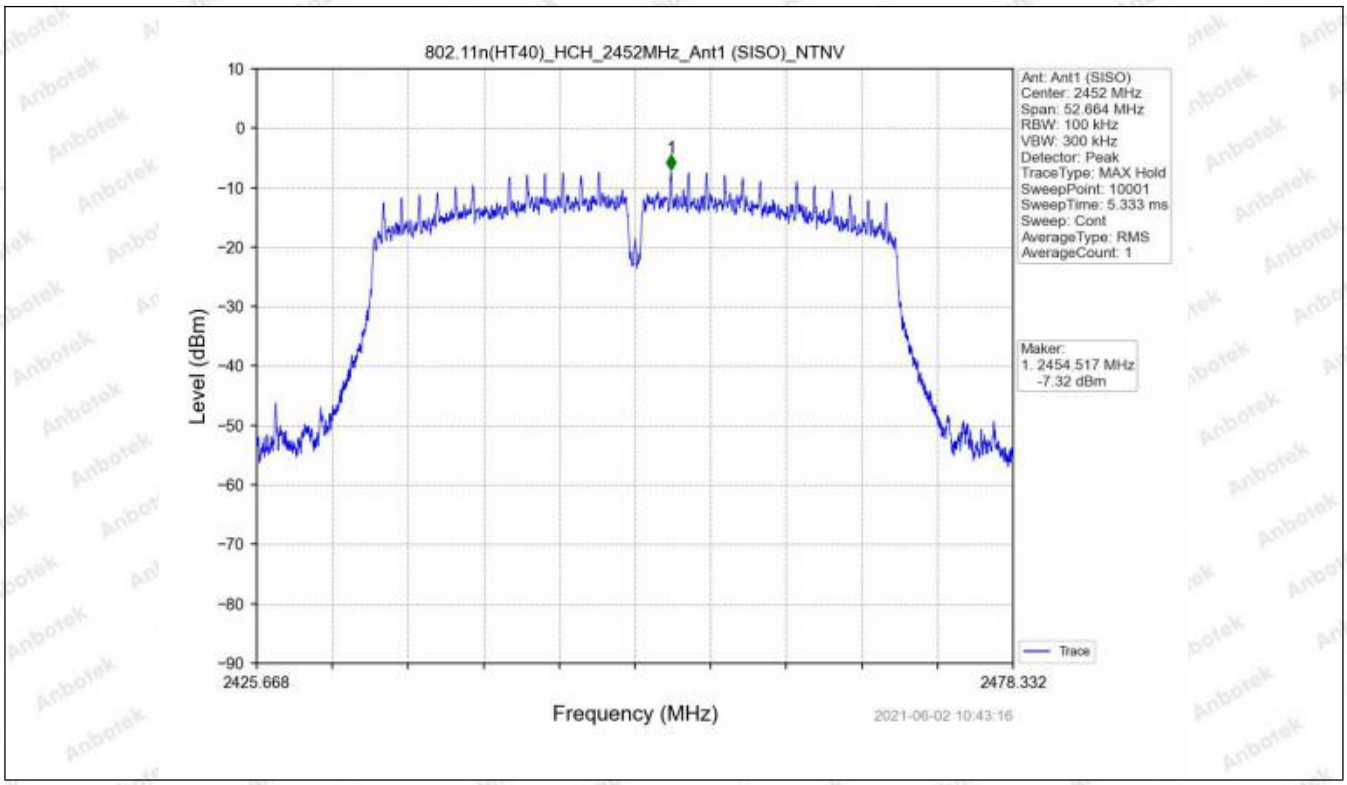
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV


802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV
Ant: Ant1 (SISO)
Center: 2452 MHz
Span: 52.664 MHz
RBW: 100 kHz
VBW: 300 kHz
Detector: Peak
TraceType: MAX Hold
SweepPoint: 10001
SweepTime: 5.333 ms
Sweep: Cont
AverageType: RMS
AverageCount: 1
Maker:
1. 2454.517 MHz
-7.32 dBm
Trace
Level (dBm)
Frequency (MHz)
2425.668
2478.332
2021-06-02 10:43:16

5.2 CSE

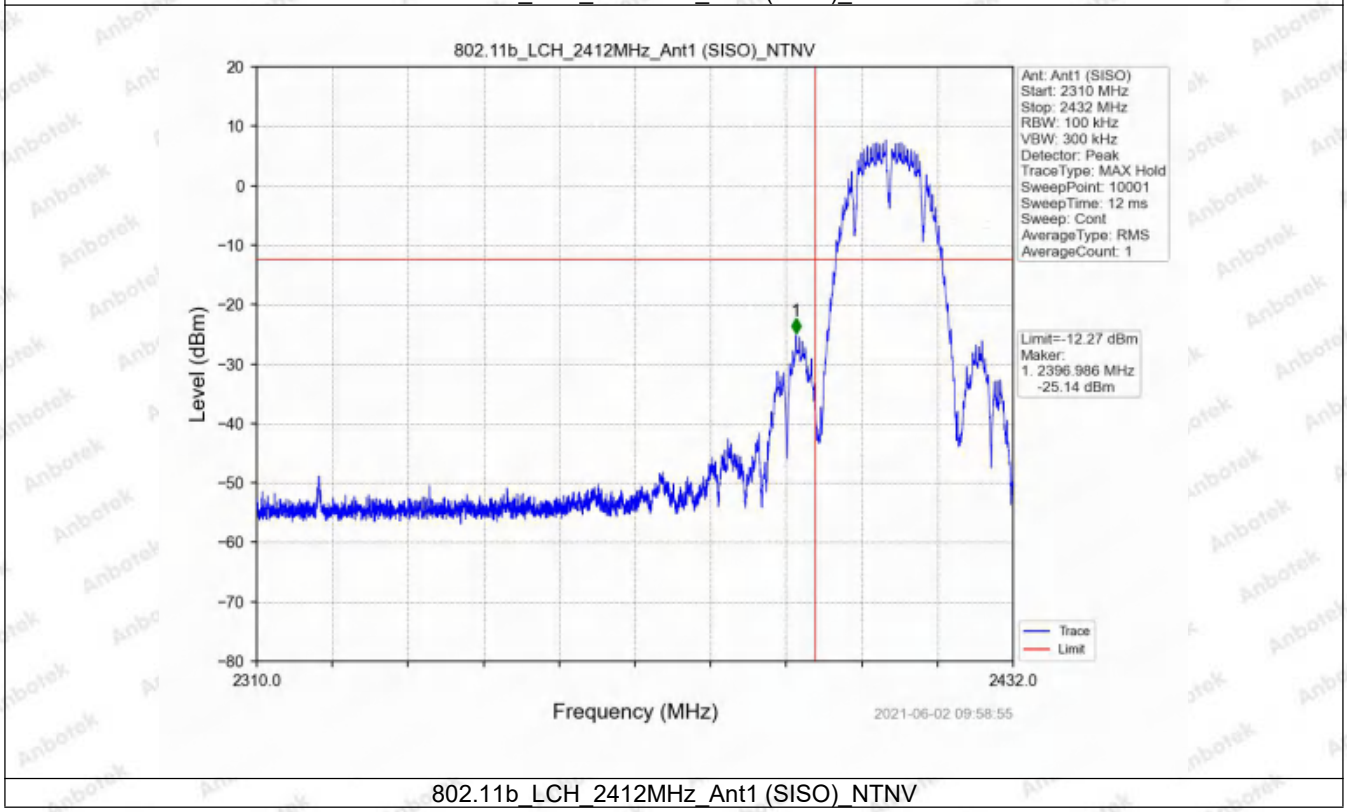
5.2.1 Test Result

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Ant	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	/	/	1	Refer To Test Graph	<=-12.27	Pass
		2437	/	/	1	Refer To Test Graph	<=-12.27	Pass
		2462	/	/	1	Refer To Test Graph	<=-12.27	Pass
802.11g	SISO	2412	/	/	1	Refer To Test Graph	<=-22.73	Pass
		2437	/	/	1	Refer To Test Graph	<=-22.73	Pass
		2462	/	/	1	Refer To Test Graph	<=-22.73	Pass
802.11n (HT20)	SISO	2412	/	/	1	Refer To Test Graph	<=-19.69	Pass
		2437	/	/	1	Refer To Test Graph	<=-19.69	Pass
		2462	/	/	1	Refer To Test Graph	<=-19.69	Pass
802.11n (HT40)	SISO	2422	/	/	1	Refer To Test Graph	<=-19.69	Pass
		2437	/	/	1	Refer To Test Graph	<=-19.69	Pass
		2452	/	/	1	Refer To Test Graph	<=-19.69	Pass

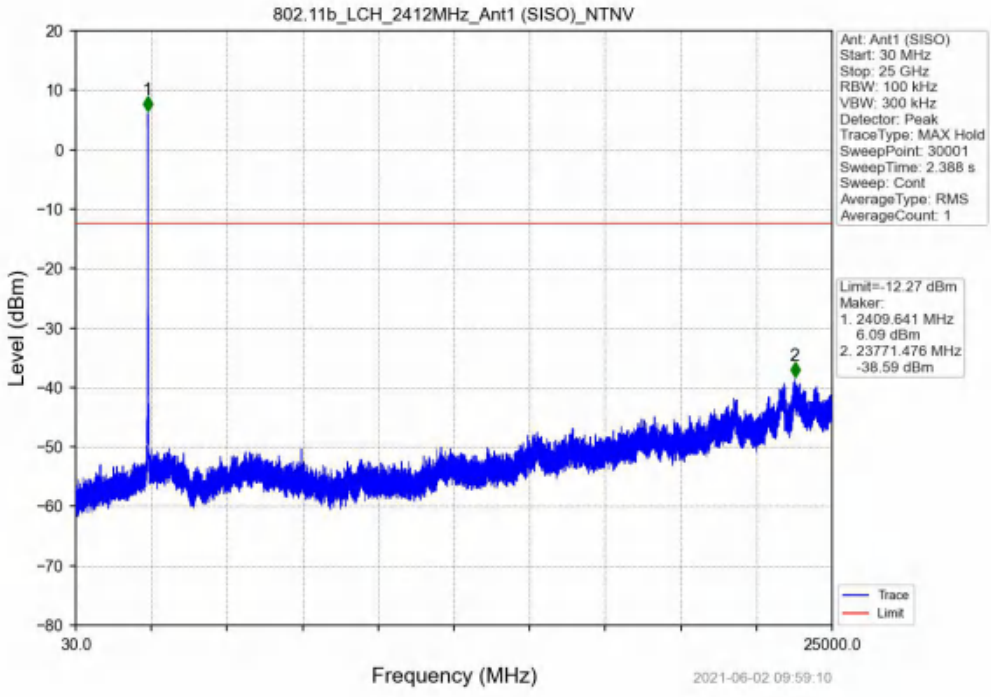
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

5.2.2 Test Graph

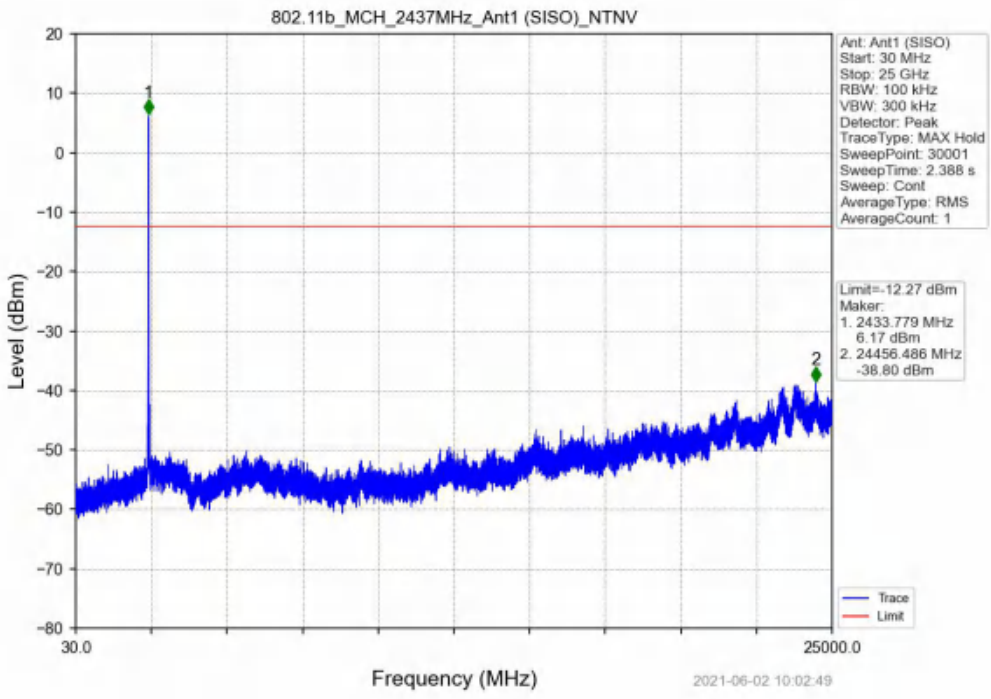
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



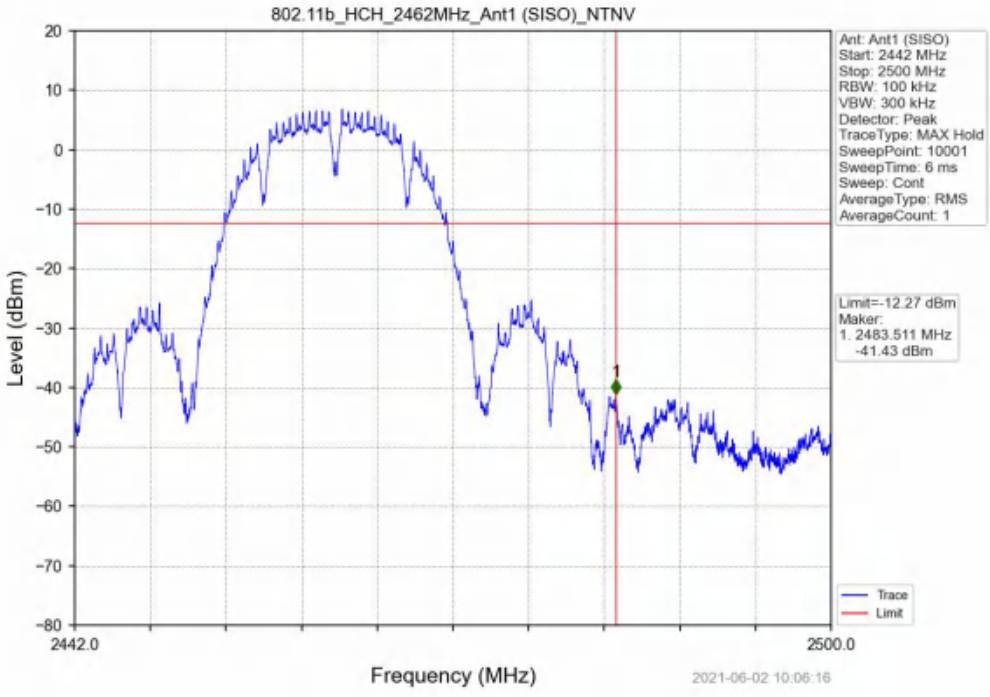
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



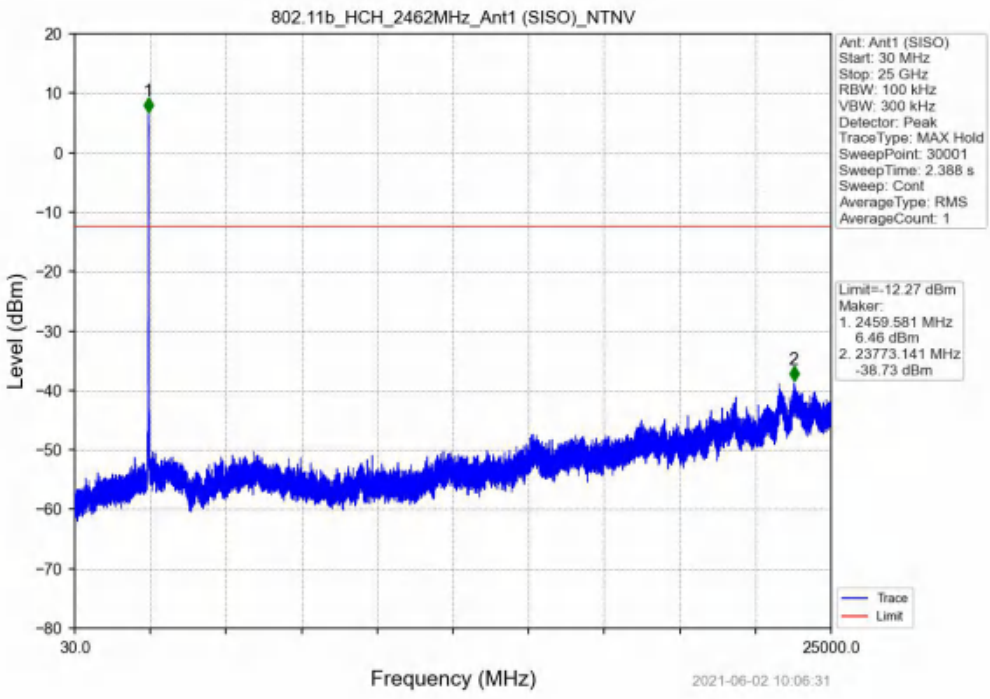
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



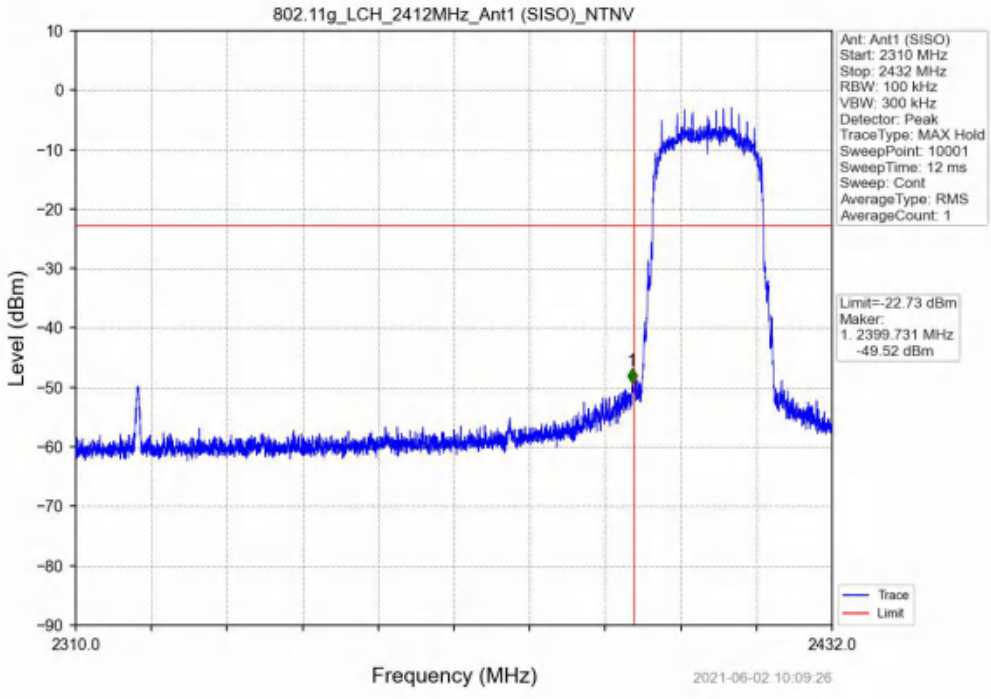
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



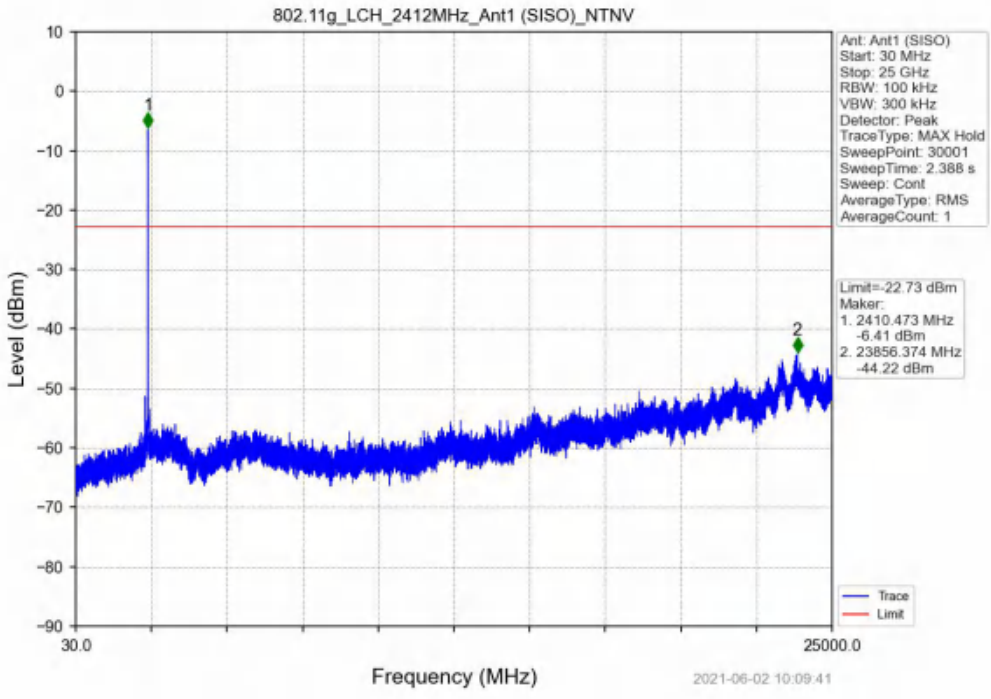
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



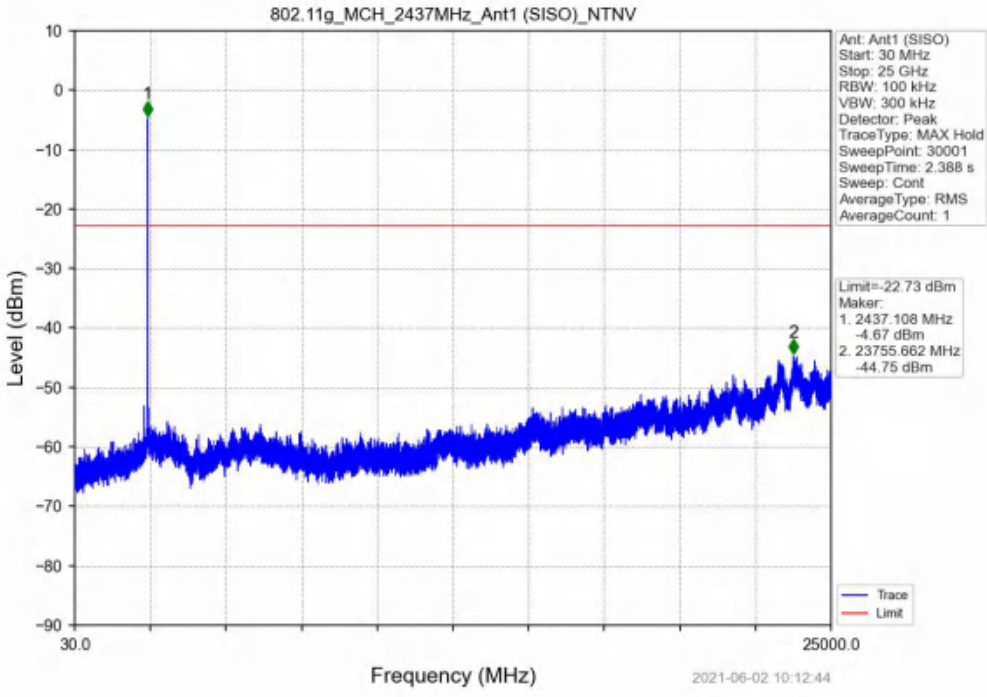
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



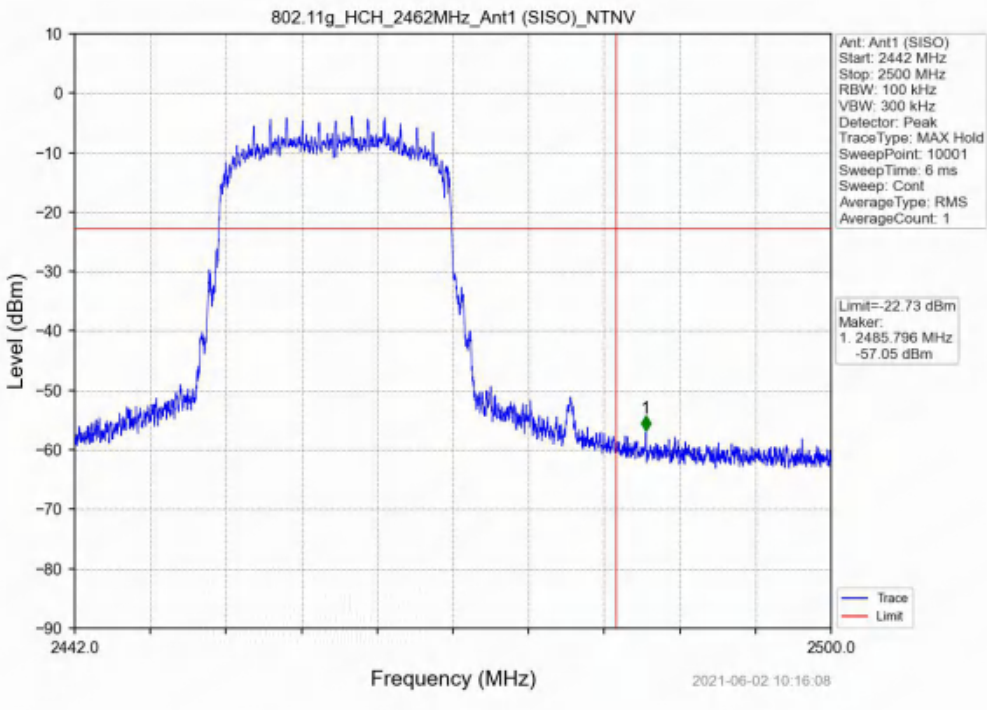
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



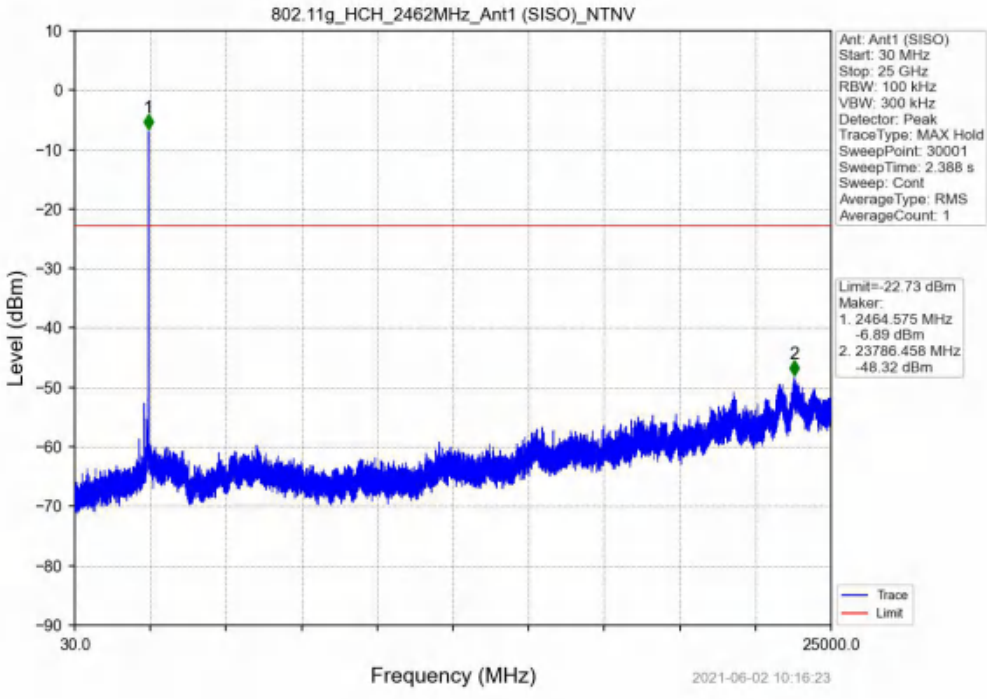
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



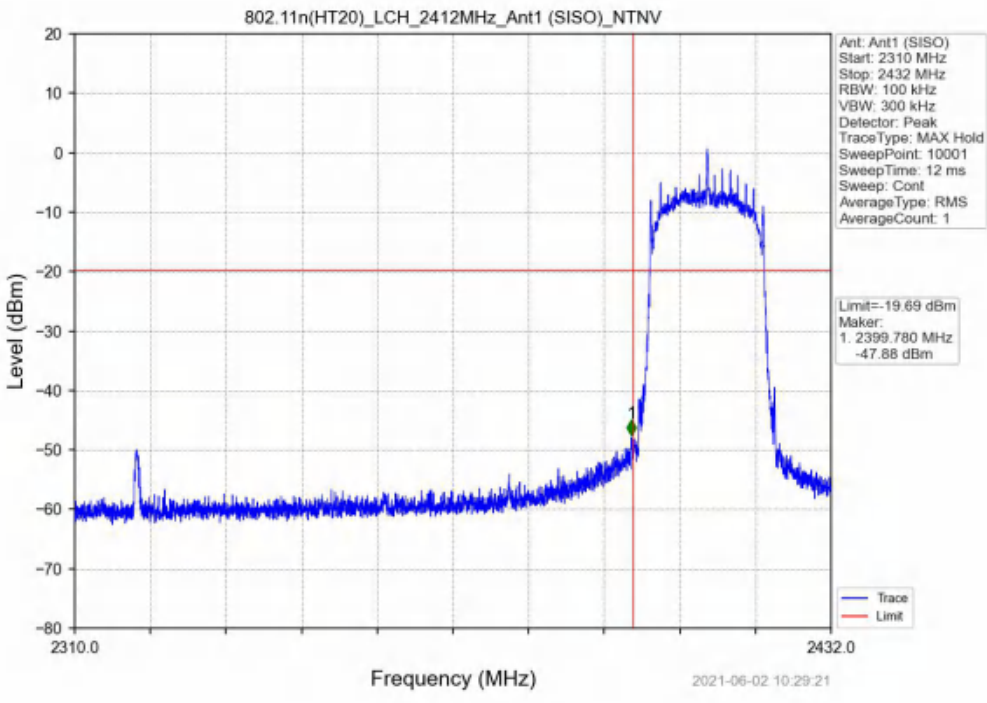
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



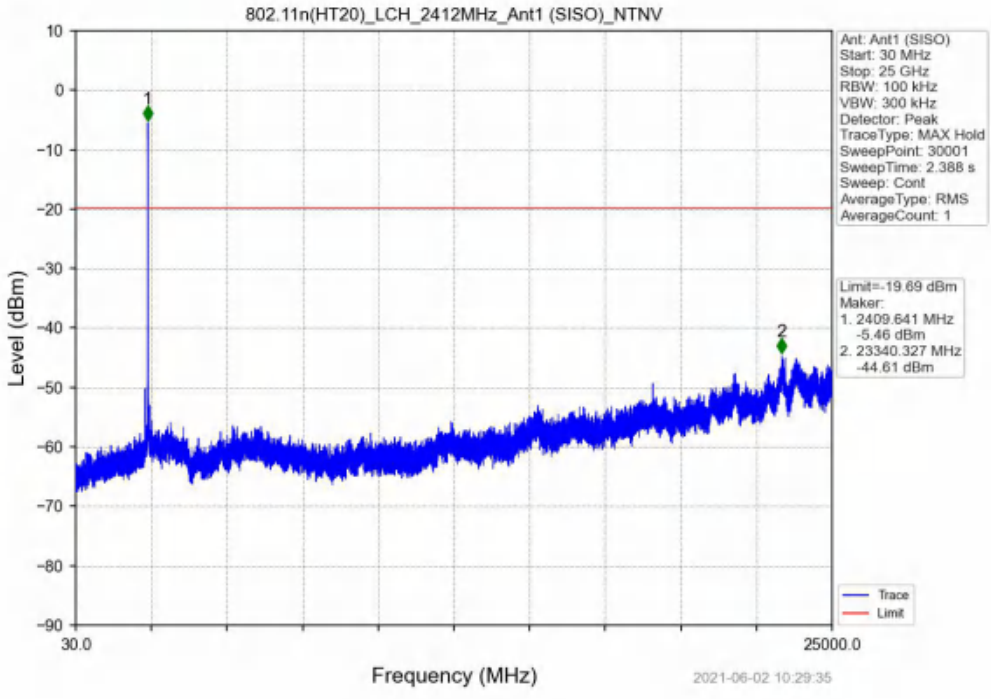
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



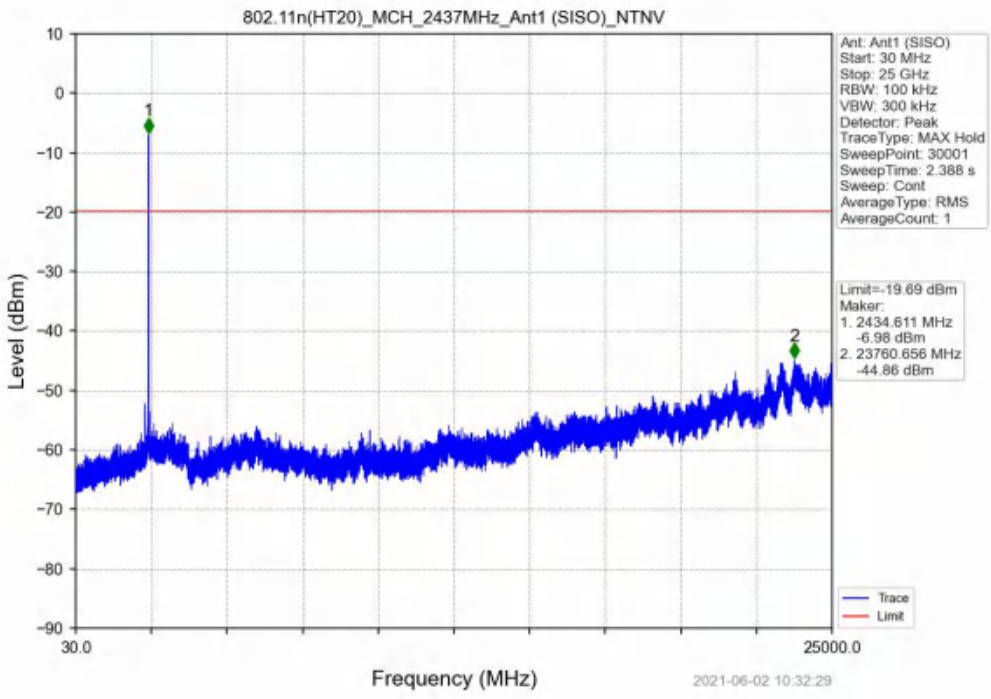
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



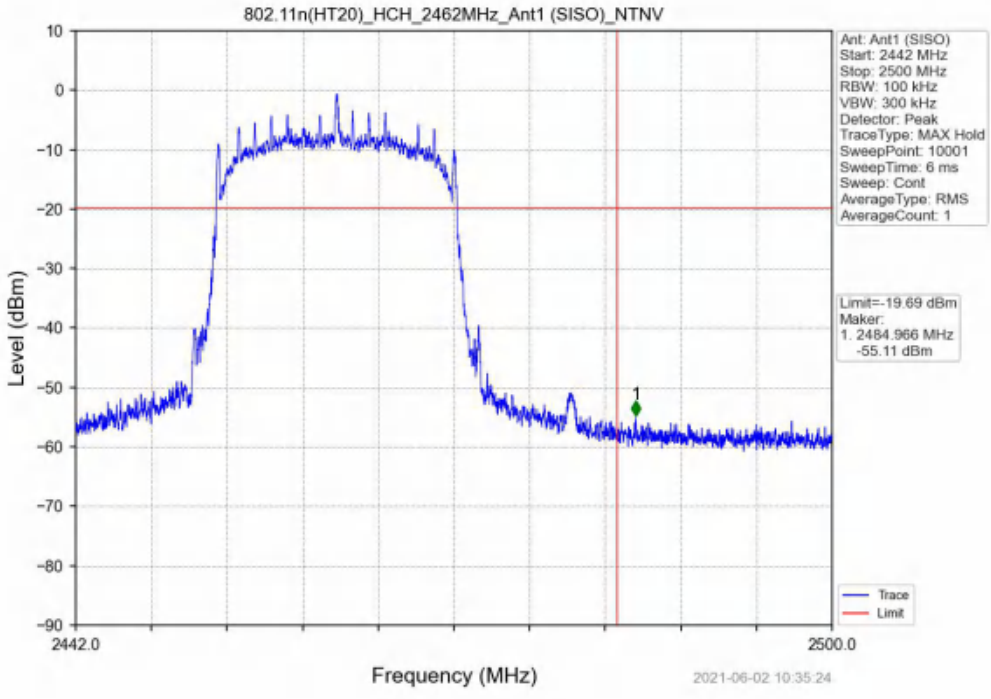
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



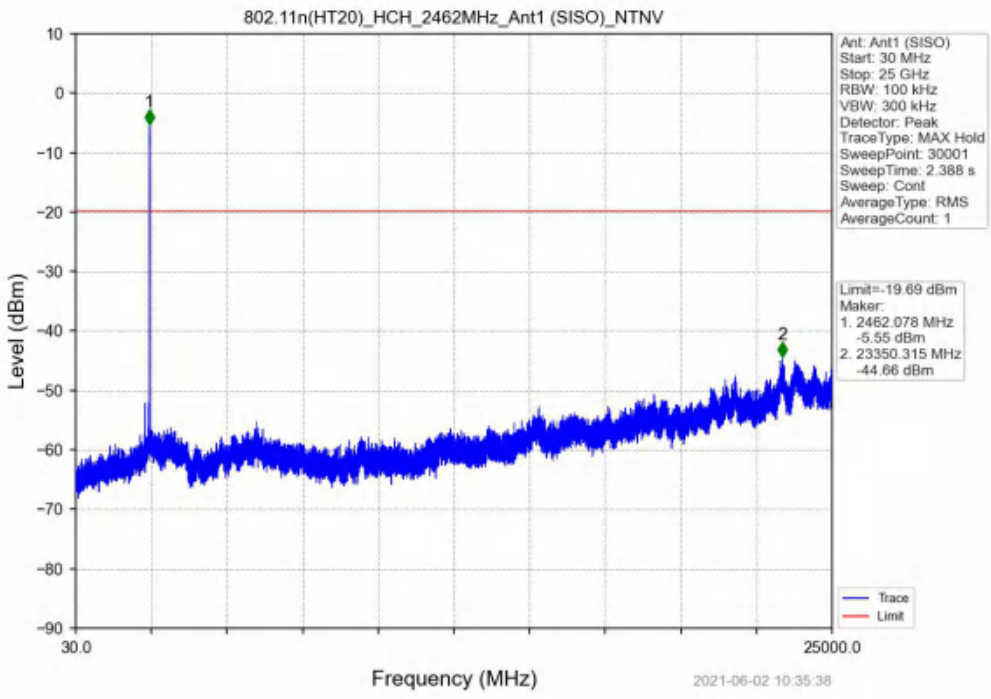
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



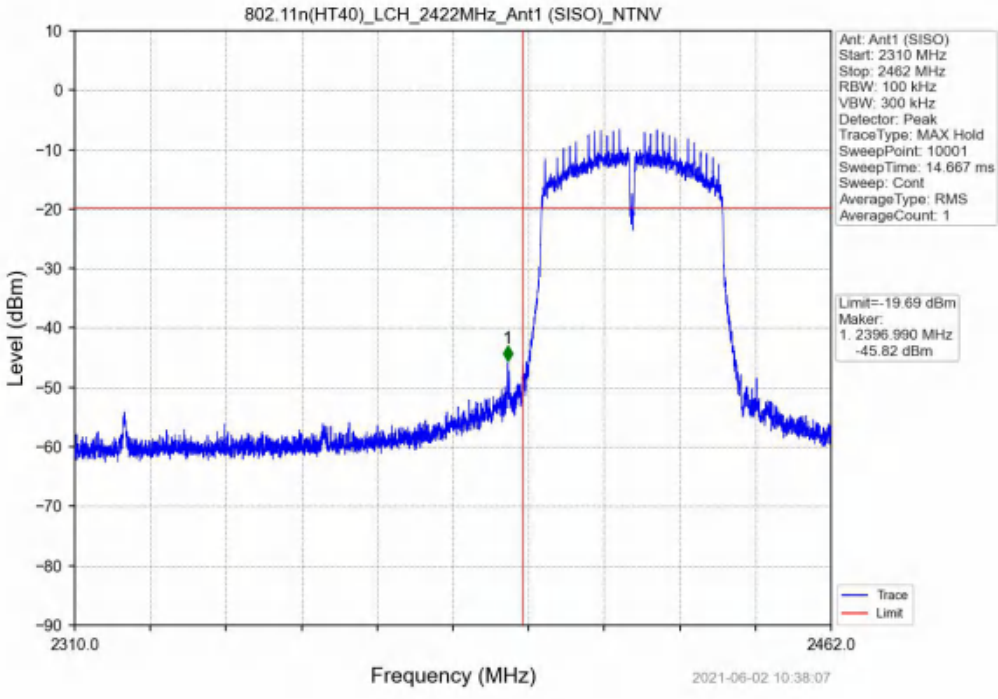
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



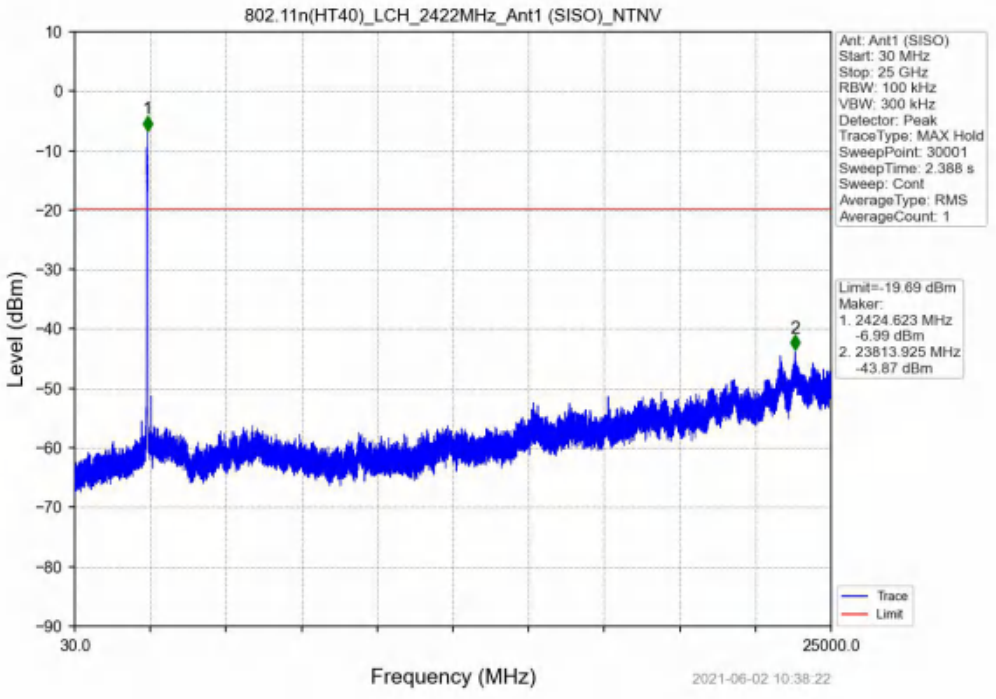
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



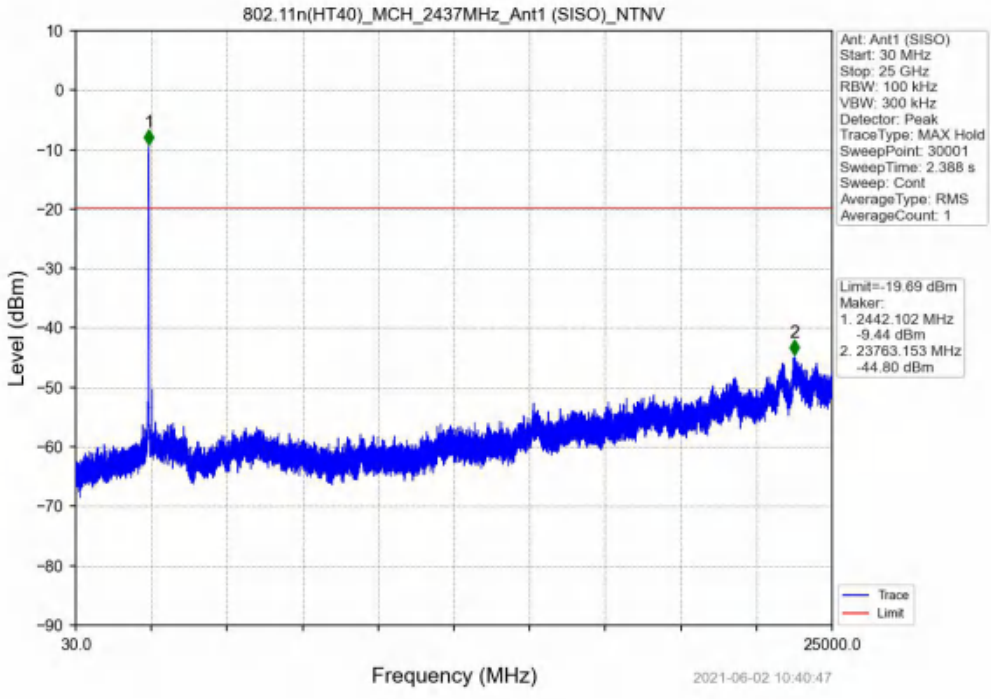
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



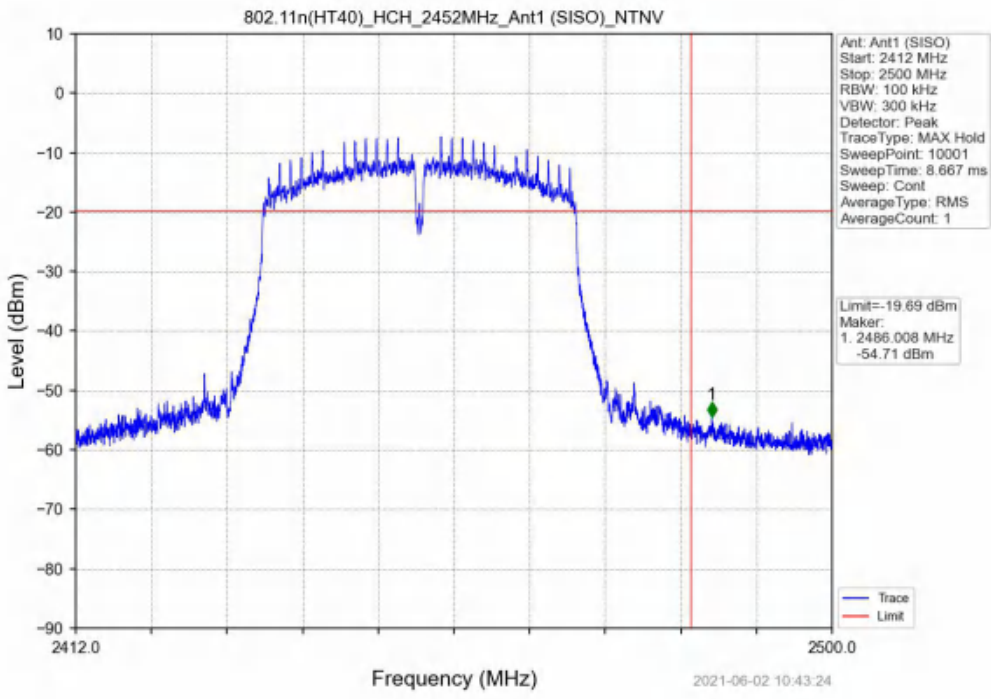
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



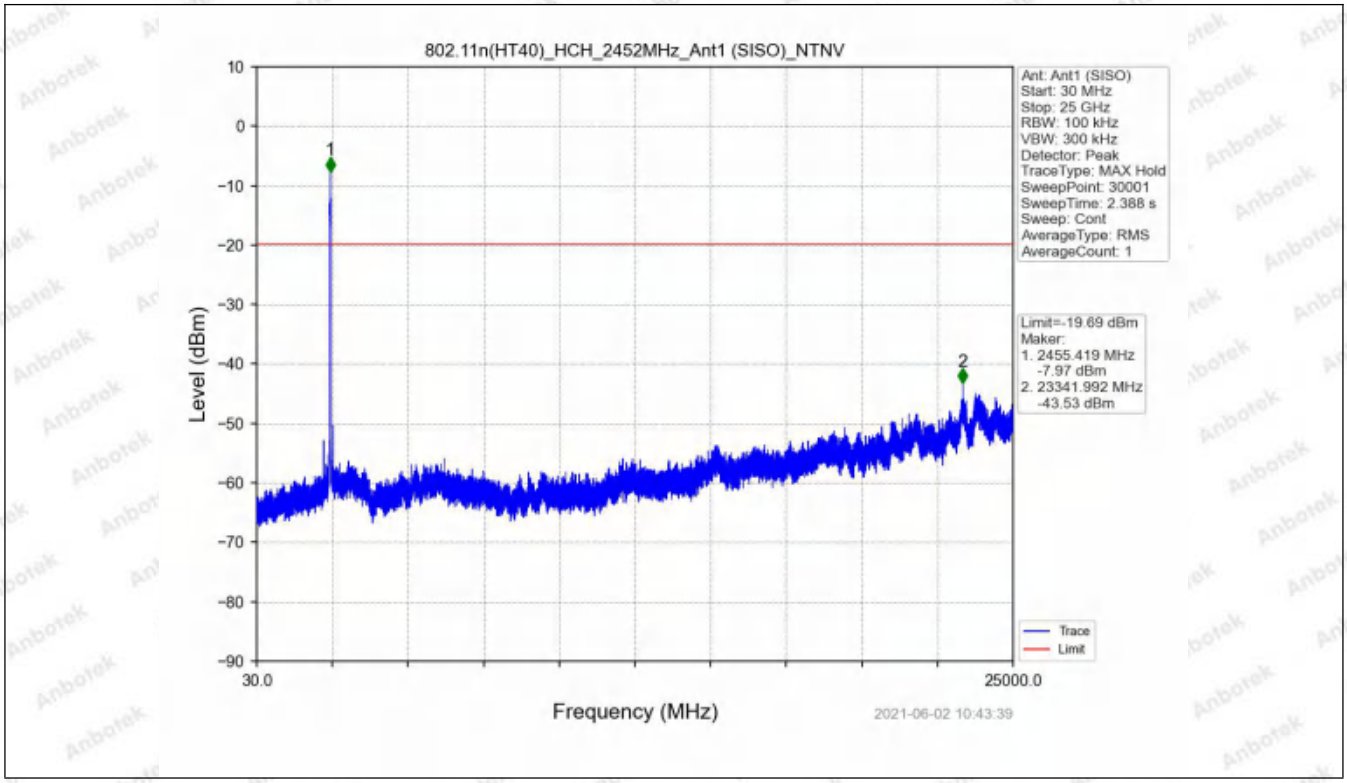
802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV


802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV
Ant: Ant1 (SISO)
Start: 30 MHz
Stop: 25 GHz
RBW: 100 kHz
VBW: 300 kHz
Detector: Peak
TraceType: MAX Hold
SweepPoint: 30001
SweepTime: 2.388 s
Sweep: Cont
AverageType: RMS
AverageCount: 1
Limit=-19.69 dBm
Maker:
1. 2455.419 MHz
-7.97 dBm
2. 23341.992 MHz
-43.53 dBm
Trace
Limit
Level (dBm)
Frequency (MHz)
30.0
25000.0
2021-06-02 10:43:39

---End---