



Product Name: Tablet	Report No: FCC2022-06452RF4
Product Model: T20	Security Classification: Open
Version: V1.0	Total Page: 159

TIRT Testing Report

Prepared By:	Checked By:	Approved By:	
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RF TEST REPORT

FCC ID: 2AX4YT20

According to

47 CFR FCC Part 15, Subpart E(Section 15.407)

Equipment : Tablet
: T20, T20Pro, T20S , T20E
Model No. All models are with same schematic, The only differences are model no.
T20 is main test model, T20Pro, T20S , T20E is the adding model. No
other differences.
Trademark : DOOGEE
Product No. : 20221220021902
Applicant : Shenzhen DOOGEE Hengtong Technology CO.,LTD

- The test result referred exclusively to the presented test model /sample.
- Without written approval of TIRT Inc. the test report shall not reproduced except in full.
- Test Date: 2022.12.13-2023.1.8

Lab: Beijing TIRT Technology Service Co.,Ltd Shenzhen

Add: 101, 3 # Factory Building, Gongjin Electronics Shatin Community, Kengzi Street,
Pingshan District, Shenzhen, China

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History of this test report

Original Report Issue Date: 2023.01.09

- ☒ No additional attachment
- ☐ Additional attachments were issued following record

Attachment No.	Issue Date	Description

1. General Information

1.1 Applicant

Shenzhen DOOGEE Hengtong Technology CO.,LTD

B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No.22, Longhua New District, Shenzhen, China

1.2 Manufacturer

Shenzhen DOOGEE Hengtong Technology CO.,LTD

B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No.22, Longhua New District, Shenzhen, China

1.3 Basic Description of Equipment Under Test

Equipment Name	Tablet			
Model Number	T20, T20Pro, T20S, T20E			
	All models are with same schematic, The only differences are model no. T20 is main test model, T20Pro, T20S, T20E is the adding model. No other differences.			
Trademark	DOOGEE			
Power Supply	Input: 100~240V, 50/60Hz			
Operating Temperature	0℃-40℃			
EUT Stage	☐ Product Unit		☒ Final-Sample	
Operating Band	5150MHz ~5250MHz 5725MHz ~5850MHz		☒ IEEE 802.11a/n/ac(20MHz)	
			☒ IEEE 802.11n/ac(40MHz)	
			☒ IEEE 802.11ac(80MHz)	
Product Type	IEEE 802.11a: WLAN (1TX, 1RX) IEEE 802.11n: WLAN (1TX, 1RX) IEEE 802.11ac: WLAN (1TX, 1RX)			
Nominal Bandwidth	20MHz / 40MHz / 80MHz			
Modulation	IEEE 802.11a: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11n: (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: (BPSK / QPSK / 16QAM / 64QAM / 256QAM)			
Data Rate (Mbps)	IEEE 11a mode : OFDM (6/9/12/18/24/36/48/54) IEEE 11n mode : MCS0~MCS7 IEEE 11ac mode : MCS0~MCS9			
Type of Device	Client device without Radar detection			
TPC Function	☐	With TPC	☒	Without TPC
Beamforming Function	☐	With Beamforming	☒	Without Beamforming
DFS Function (Client devices)	N/A			

Antenna Type:	ANT 1	PIFA Antenna
Antenna Gain:	ANT 1	0.23 dBi

Note:

All model:

Only the model V Max was tested, All the EUTs have the same wifi module and antenna, the only difference between them is the software function for seminal vesical measurement and testis measurement, so select V Max as the test model to cover the other EUTs.

Channel Information			
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	802.11a /n /ac (20MHz)	5180-5240	36-48
5725-5850		5745-5825	149-165
5150-5250	802.11n /ac (40MHz)	5190-5230	38-46
5725-5850		5755-5795	151-159
5150-5250	802.11ac (80MHz)	5210	42
5725-5850		5775	155

1.4 Description Of Support Units

Description	Manufacturer	Model No.	Serial Number	FCC ID	Supplied by
Wireless Router	N/A	N/A	N/A	KA2IRX5460A1	Lab

2. Summary of Test Results

2.1 Summary of Test Items

47 CFR FCC Part 15, Subpart E			
Test item	FCC Clause	Results	Remarks
AC Power Conducted Emission	15.207 15.407(b)	Pass	Meet the requirement of the limit
Radiated Emission	15.205(a) 15.209(a) 15.407(b)	Pass	Meet the requirement of the limit
Antenna Requirements	15.203	Compliance	The EUT has 2 internal PCB antennas arrangement which was permanently attached
Transmission in the Absence of Data	15.407 (c)	N/A	NA
Spectrum Bandwidth	15.407(a) 15.407(e)	Pass	Meet the requirement of the limit
Conducted Power	15.407(a)	Pass	Meet the requirement of the limit
Power Spectral Density	15.407(a)	Pass	Meet the requirement of the limit
Dynamic Frequency Selection (DFS)	15.407(h)	N/A	N/A
Note: NA denotes Not Applicable in this part			

2.2 Application of Standard

47 CFR FCC Part 15, Subpart E

KDB 662911 D01 Multiple Transmitter Output v02r01

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

KDB 905462 D03 UNII Clients Without Radar Detection New Rules v01r02

ANSI C63.10:2013

2.3 Test Instruments

No.	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
Nominal Centre Frequency					
1	Spectrum Analyzer	Agilent	N9010A	MY52221119	2023/11/08
2	Power Collection Unit	Tonscend	JS0806-2	188060134	2023/11/08
3	Tonscend Test System	Tonscend	EN301893 V2.1.1	NA	NA
4	Temp&Humidity Recorder	Anymetre	JR900	NA	2023/11/08
5	Temp&Humidity Chamber	ETOMA	NTH1100-30 A	16080628	2023/11/08
6	Spectrum Analyzer	Rohde & Schwarz	FSV30	103741	2023/11/08
7	Integral antenna	SCHWARZBECK	VULB9163	9163-868	2023/11/08
8	Broadband Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-123	2023/11/08
9	Horn antenna	SCHWARZBECK	BBHA 9170	9170#685	2023/11/08
10	Broadband amplifier	SCHWARZBECK	BBV9745	9745#46	2023/11/08

2.4 Operation Mode

The EUT was supplied by and it was run in TX mode that was controlled by client provided RF testing program.

The EUT was transmitted continuously during the test. The worst case test result was showed in the report.

2.5 Test Condition

Applicable to	Environmental conditions	Input Power	Tested by
AC Power Conducted Emission	24.6°C, 56 % RH	120V AC	Stone Tang
Radiated Emission	24.2°C, 55 % RH	120V AC	Stone Tang
Spectrum Bandwidth	24.6°C, 55 % RH	120V AC	Stone Tang
Conducted Power	24.7°C, 56 % RH	120V AC	Stone Tang
Power Spectral Density	24.6°C, 56 % RH	120V AC	Stone Tang
Frequency Stability	20.0°C, 56 % RH	120V AC	Stone Tang

The applicant declare the operating environment of EUT as below:

Normal conditions: 120V AC ,15~35°C

2.6 Duty Cycle of Test Signal

Please Refer to Appendix for Details.

2.7 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Uncertainty	
Parameter	Uncertainty
Occupied Channel Bandwidth	± 142.12 KHz
RF power conducted	± 0.74 dB
RF power radiated	± 3.25 dB
Spurious emissions, conducted	± 1.78 dB
Spurious emissions, radiated (9KHz~30MHz)	± 2.56 dB
Spurious emissions, radiated (30MHz~1GHz)	± 4.6 dB
Spurious emissions, radiated (Above 1GHz)	± 4.9 dB
Conduction Emissions(150kHz~30MHz)	± 3.1 dB
Humidity	$\pm 4.6\%$
Temperature	$\pm 0.7^{\circ}\text{C}$
Time	$\pm 1.25\%$

2.8 Test Location

Company:	Beijing TIRT Technology Service Co.,Ltd Shenzhen
Address:	101, 3 # Factory Building, Gongjin Electronics Shatin Community, Kengzi Street, Pingshan District, Shenzhen, China
CNAS Registration Number:	CNAS L14158
A2LA Registration Number	6049.01
FCC Designation Number	CN1309
Test Firm Registration Number	825524
Telephone:	+86-0755-27087573

2.9 Deviation from Standards

None

2.10 Abnormalities from Standard Conditions

None

3. Test Procedure And Results

3.1 AC Power Line Conducted Emission

3.1.1 Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.

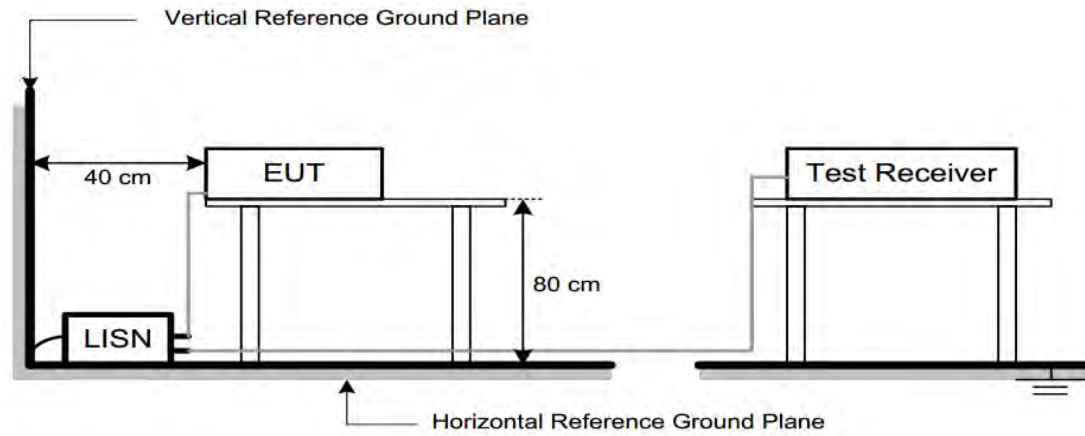
2. The lower limit shall apply at the transition frequencies.

3.1.2 Test Procedure

Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☐ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ● : Test ○ : No Test	

- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

3.1.3 Test Setup



3.1.4 Test Result

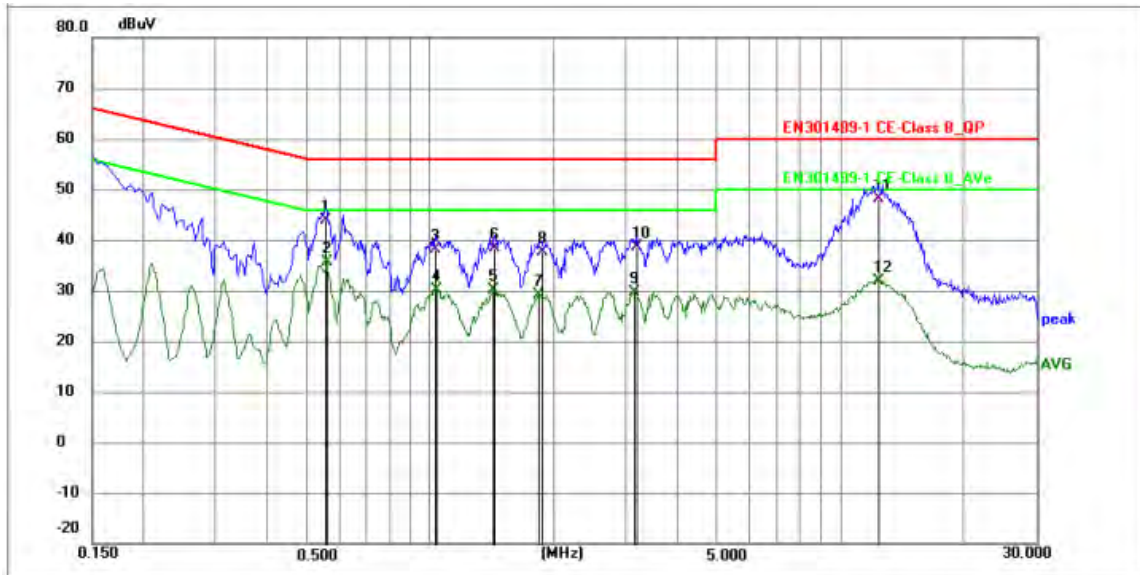
Note:

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Measurement = Reading + Correct Factor.
3. Over = Measurement - Limit

150kHz~30MHz

Worst Case Operating Mode: Simultaneous transmission

Line

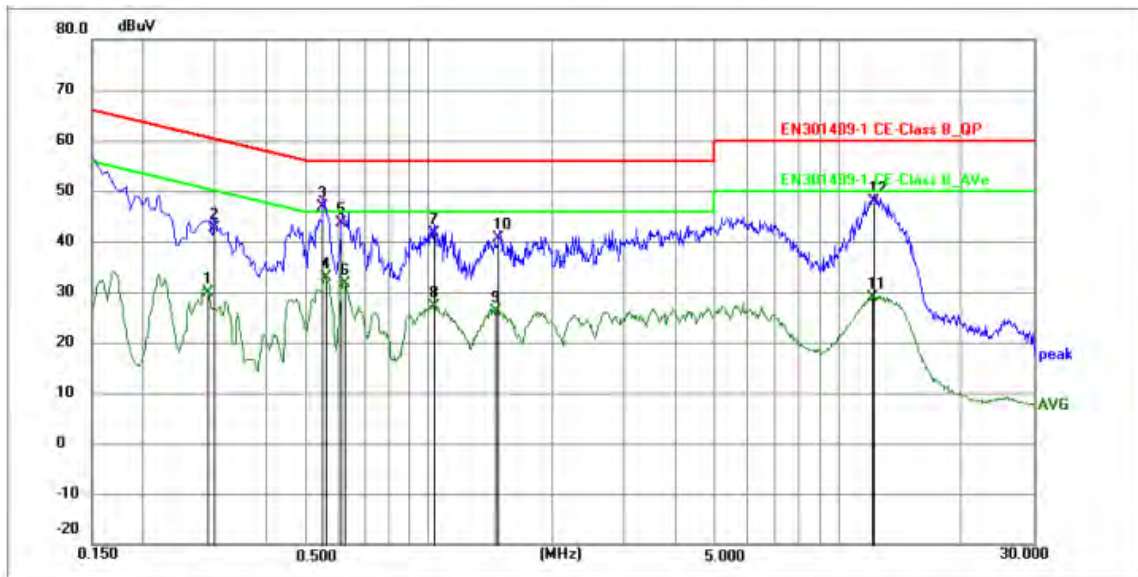


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.5550	33.59	10.26	43.85	56.00	-12.15	QP	P	
2 *	0.5595	25.33	10.26	35.59	46.00	-10.41	AVG	P	
3	1.0275	27.89	10.25	38.14	56.00	-17.86	QP	P	
4	1.0365	19.93	10.25	30.18	46.00	-15.82	AVG	P	
5	1.4325	20.00	10.25	30.25	46.00	-15.75	AVG	P	
6	1.4370	28.17	10.25	38.42	56.00	-17.58	QP	P	
7	1.8465	18.89	10.24	29.13	46.00	-16.87	AVG	P	
8	1.8690	27.27	10.24	37.51	56.00	-18.49	QP	P	
9	3.1560	19.33	10.28	29.61	46.00	-16.39	AVG	P	
10	3.1740	28.34	10.28	38.62	56.00	-17.38	QP	P	
11	12.3450	37.97	10.17	48.14	60.00	-11.86	QP	P	
12	12.3450	21.82	10.17	31.99	50.00	-18.01	AVG	P	

150kHz~30MHz

Worst Case Operating Mode: Simultaneous transmission

Neutral



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2878	19.64	10.14	29.78	50.59	-20.81	AVG	P	
2	0.2983	32.62	10.13	42.75	60.29	-17.54	QP	P	
3 *	0.5503	36.59	10.26	46.85	56.00	-9.15	QP	P	
4	0.5594	22.63	10.26	32.89	46.00	-13.11	AVG	P	
5	0.6134	33.49	10.26	43.75	56.00	-12.25	QP	P	
6	0.6238	21.37	10.26	31.63	46.00	-14.37	AVG	P	
7	1.0275	31.36	10.26	41.62	56.00	-14.38	QP	P	
8	1.0275	16.87	10.26	27.13	46.00	-18.87	AVG	P	
9	1.4595	15.77	10.28	26.05	46.00	-19.95	AVG	P	
10	1.4819	30.24	10.28	40.52	56.00	-15.48	QP	P	
11	12.1560	18.80	10.19	28.99	50.00	-21.01	AVG	P	
12	12.2010	37.79	10.19	47.98	60.00	-12.02	QP	P	

3.2 Radiated Emission

3.2.1 Limit

1) Limit of radiated emission measurement:

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequency (MHz)	Distance Meters(m)	Field Strength Limit	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 – 0.49	300	2400/F(kHz)	-
0.490 – 1.705	30	24000/F(kHz)	-
1.705 – 30	30	30	-
30~88	3	100	40.0
88~216	3	150	43.5
216~960	3	200	46.0
960~1000	3	500	54.0
Above 1000	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

Note: (1) Emission level $\text{dB}\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

2) Limit of unwanted emission out of the restricted bands:

FREQUENCY/ MHz	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m ($\text{dB}\mu\text{V/m}$)
5150-5250	-27	68.3
5250-5350	-27	68.3
5470-5725	-27	68.3
5725-5850	-27 NOTE (2)	68.3
	10 NOTE (2)	105.3
	15.6 NOTE (2)	110.9
	27 NOTE (2)	122.3

Note: (1) The following formula is used to convert the equipment isotropic radiated power (eirp) to

$$E = \frac{1000000\sqrt{30P}}{3}$$

field strength: $\mu\text{V/m}$, where P is the eirp (Watts)

(2) According to 15.407(b)(4)(i), all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing

linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

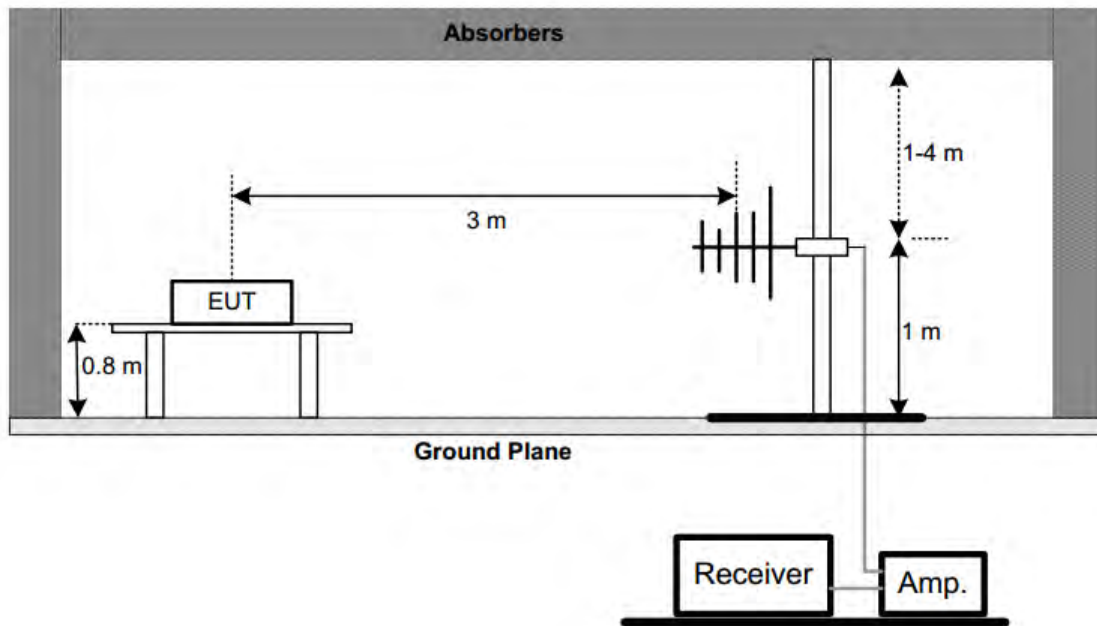
3.2.2 Test Procedure

Test Method	
☐ Conducted Measurement	☒ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ☒ : Test ☐ : No Test	

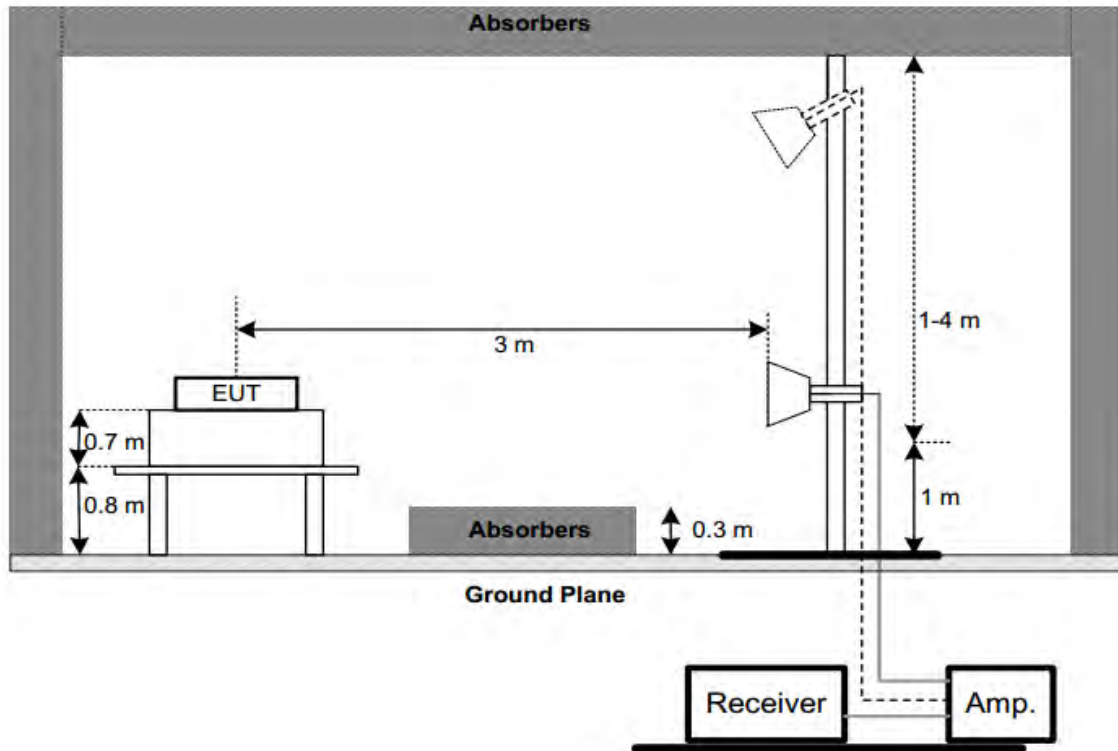
- a) The measuring distance of 3 m shall be used for measurements. The EUT was placed on the
- b) top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The
- c) table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
- d) The measuring distance of 3 m or 1.5m shall be used for measurements. The EUT was placed
- e) on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber.
- f) The table was rotated 360 degrees to determine the position of the highest radiation.(above
- g) 1GHz)
- h) The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of
- i) the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of
- j) the antenna are set to make the measurement.
- k) For each suspected emission, the EUT was arranged to its worst case and then the antenna
- l) was tuned to heights find the maximum reading (used Bore sight function).
- m)The receiver system was set to peak and average detect function and specified bandwidth
- n) with maximum hold mode when the test frequency is above 1 GHz.
- o) The initial step in collecting radiated emission data is a receiver peak detector mode
- p) pre-scanning the measurement frequency range. Significant peaks are then marked and then
- q) Quasi Peak detector mode re-measured.
- r) All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the
- s) Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- t) (below 1 GHz)
- u) All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak
- v) Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT
- w) shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured,
- x) but AVG Mode didn't perform. (above 1 GHz)
- y) For the actual test configuration, please refer to the related Item -EUT Test Photos.

3.2.3 Test Setup

(A) Radiated Emission Test Set-Up Frequency 30 MHz-1000 MHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



3.2.4 Test Result

1) Radiated emission: 9KHz-30MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

2) Radiated emission: 30MHz-1G

Note:

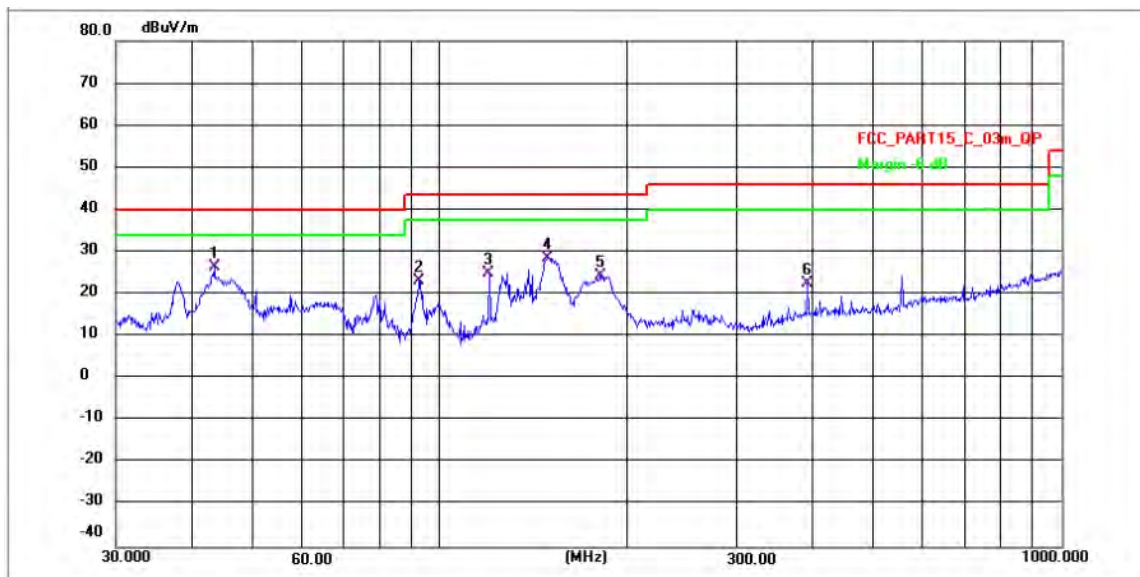
1. Measurement = Reading + Correct Factor.
2. Over = Measurement - Limit

Below 1G (30MHz~1GHz)

Test mode: AC 80

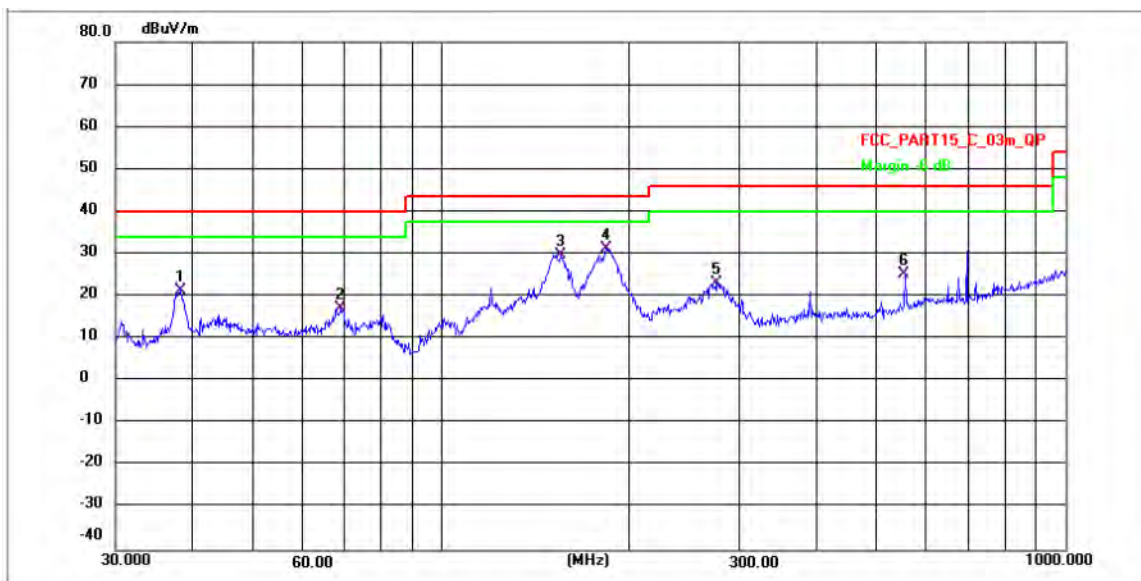
Test Channel:42

VERTICAL



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	43.2017	41.50	-15.13	26.37	40.00	-13.63	QP	P
2	92.6247	50.86	-27.81	23.05	43.50	-20.45	QP	P
3	120.0659	52.47	-27.50	24.97	43.50	-18.53	QP	P
4	148.9625	55.81	-27.26	28.55	43.50	-14.95	QP	P
5	181.2834	51.54	-27.13	24.41	43.50	-19.09	QP	P
6	390.0381	48.37	-25.82	22.55	46.00	-23.45	QP	P

HORIZONTAL

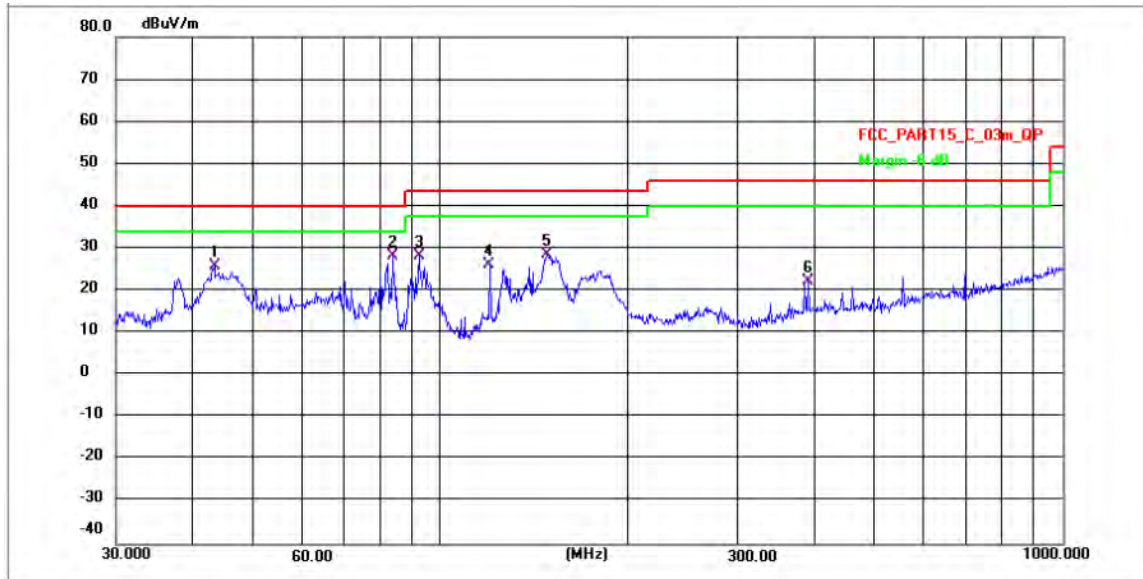


Below 1G (30MHz~1GHz)

Test mode: AC 80

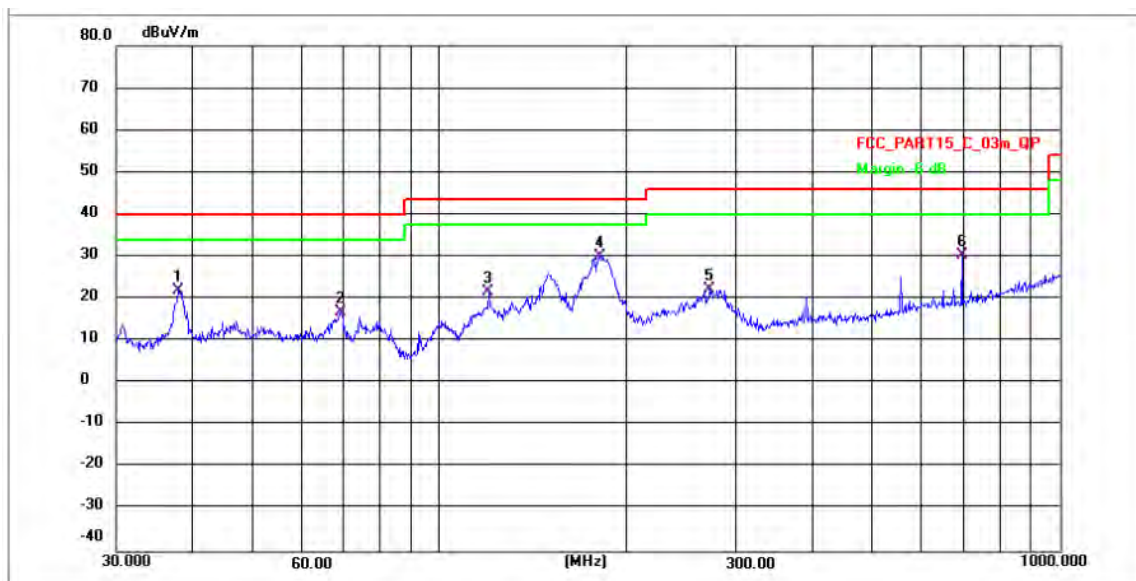
Test Channel:155

VERTICAL



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	43.2017	41.12	-15.13	25.99	40.00	-14.01	QP	P
2 *	83.6688	56.01	-27.86	28.15	40.00	-11.85	QP	P
3	92.4624	56.06	-27.81	28.25	43.50	-15.25	QP	P
4	120.0659	53.55	-27.50	26.05	43.50	-17.45	QP	P
5	148.4410	55.70	-27.26	28.44	43.50	-15.06	QP	P
6	390.0381	48.13	-25.82	22.31	46.00	-23.69	QP	P

HORIZONTAL



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	37.8121	36.67	-14.71	21.96	40.00	-18.04	QP	P
2	69.3568	31.28	-14.44	16.84	40.00	-23.16	QP	P
3	120.0659	49.02	-27.50	21.52	43.50	-21.98	QP	P
4 *	181.9202	57.28	-27.13	30.15	43.50	-13.35	QP	P
5	273.2341	48.81	-26.57	22.24	46.00	-23.76	QP	P
6	696.8567	55.00	-24.79	30.21	46.00	-15.79	QP	P

3) Radiated emission: Above 1G

Note:

1. Measurement = Reading + Correct Factor.
2. Over = Measurement - Limit

Above 1G (1GHz~40GHz)	Test mode:11a	Test Channel:36
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1433.116	68.83	-30.17	38.66	68.20	-29.54	peak	P
2	2126.308	72.20	-30.68	41.52	68.20	-26.68	peak	P
3	2999.187	74.47	-30.90	43.57	68.20	-24.63	peak	P
4	4411.461	77.19	-31.68	45.51	68.20	-22.69	peak	P
5	6602.265	80.34	-32.17	48.17	68.20	-20.03	peak	P
6 *	10185.534	84.79	-34.56	50.23	68.20	-17.97	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1500.948	68.51	-30.40	38.11	68.20	-30.09	peak	P
2	2204.535	71.81	-31.04	40.77	68.20	-27.43	peak	P
3	3261.418	74.37	-31.11	43.26	68.20	-24.94	peak	P
4	4613.592	76.80	-31.68	45.12	68.20	-23.08	peak	P
5	6602.265	79.84	-32.17	47.67	68.20	-20.53	peak	P
6 *	10484.230	83.59	-35.21	48.38	68.20	-19.82	peak	P

Above 1G (1GHz~40GHz)	Test mode:11a	Test Channel:40
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1404.412	67.95	-30.08	37.87	68.20	-30.33	peak	P
2	2373.157	69.55	-31.45	38.10	68.20	-30.10	peak	P
3	3593.007	73.93	-31.36	42.57	68.20	-25.63	peak	P
4	7231.594	81.73	-33.27	48.46	68.20	-19.74	peak	P
5	10185.534	83.79	-34.56	49.23	68.20	-18.97	peak	P
6 *	11769.214	85.39	-34.36	51.03	68.20	-17.17	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1261.971	68.39	-29.59	38.80	68.20	-29.40	peak	P
2	1955.344	71.04	-30.13	40.91	68.20	-27.29	peak	P
3	3168.500	74.87	-31.04	43.83	68.20	-24.37	peak	P
4	4613.592	76.80	-31.68	45.12	68.20	-23.08	peak	P
5	7231.594	81.73	-33.27	48.46	68.20	-19.74	peak	P
6 *	10729.481	84.20	-34.99	49.21	68.20	-18.99	peak	P

Above 1G (1GHz~40GHz)	Test mode:11a	Test Channel:48
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1500.948	67.01	-30.40	36.61	68.20	-31.59	peak	P
2	2539.951	71.48	-31.36	40.12	68.20	-28.08	peak	P
3	3521.042	75.08	-31.31	43.77	68.20	-24.43	peak	P
4	4613.592	76.80	-31.68	45.12	68.20	-23.08	peak	P
5	6386.418	80.65	-31.85	48.80	68.20	-19.40	peak	P
6 *	10185.534	83.79	-34.56	49.23	68.20	-18.97	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1500.948	68.01	-30.40	37.61	68.20	-30.59	peak	P
2	2373.157	71.55	-31.45	40.10	68.20	-28.10	peak	P
3	3396.098	75.27	-31.22	44.05	68.20	-24.15	peak	P
4	6602.265	80.34	-32.17	48.17	68.20	-20.03	peak	P
5	9285.710	82.76	-33.25	49.51	68.20	-18.69	peak	P
6 *	12326.274	85.74	-33.93	51.81	68.20	-16.39	peak	P

Above 1G (1GHz~40GHz)	Test mode:11a	Test Channel:149
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1370.329	67.45	-29.96	37.49	68.20	-30.71	peak	P
2	1955.344	72.04	-30.13	41.91	68.20	-26.29	peak	P
3	2880.247	74.75	-31.02	43.73	68.20	-24.47	peak	P
4	4010.130	75.12	-31.60	43.52	68.20	-24.68	peak	P
5	6053.893	78.52	-31.72	46.80	68.20	-21.40	peak	P
6 *	9558.018	82.95	-33.02	49.93	68.20	-18.27	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1158.828	69.08	-29.24	39.84	68.20	-28.36	peak	P
2	1826.940	68.88	-30.20	38.68	68.20	-29.52	peak	P
3	3475.541	75.19	-31.28	43.91	68.20	-24.29	peak	P
4	6602.265	79.84	-32.17	47.67	68.20	-20.53	peak	P
5	8259.934	82.52	-34.48	48.04	68.20	-20.16	peak	P
6 *	13423.394	87.09	-33.65	53.44	68.20	-14.76	peak	P

Above 1G (1GHz~40GHz)	Test mode:11a	Test Channel:157
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1300.858	68.29	-29.73	38.56	68.20	-29.64	peak	P
2	2047.895	72.43	-30.32	42.11	68.20	-26.09	peak	P
3	3342.537	73.87	-31.17	42.70	68.20	-25.50	peak	P
4	6285.695	78.56	-31.81	46.75	68.20	-21.45	peak	P
5	8701.046	82.67	-34.23	48.44	68.20	-19.76	peak	P
6 *	12651.128	83.30	-33.87	49.43	68.20	-18.77	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1243.865	70.27	-29.53	40.74	68.20	-27.46	peak	P
2	1845.516	69.99	-30.19	39.80	68.20	-28.40	peak	P
3	2539.951	70.48	-31.36	39.12	68.20	-29.08	peak	P
4	3719.815	74.87	-31.43	43.44	68.20	-24.76	peak	P
5	6386.418	79.15	-31.85	47.30	68.20	-20.90	peak	P
6 *	10729.481	83.70	-34.99	48.71	68.20	-19.49	peak	P

Above 1G (1GHz~40GHz)	Test mode:11a	Test Channel:165
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1185.936	70.64	-29.33	41.31	68.20	-26.89	peak	P
2	1885.959	70.24	-30.17	40.07	68.20	-28.13	peak	P
3	3396.098	75.77	-31.22	44.55	68.20	-23.65	peak	P
4	6386.418	80.65	-31.85	48.80	68.20	-19.40	peak	P
5	9558.018	83.45	-33.02	50.43	68.20	-17.77	peak	P
6 *	12947.068	85.93	-33.89	52.04	68.20	-16.16	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1300.858	68.79	-29.73	39.06	68.20	-29.14	peak	P
2	1885.959	69.74	-30.17	39.57	68.20	-28.63	peak	P
3	3261.418	73.87	-31.11	42.76	68.20	-25.44	peak	P
4	4323.102	75.72	-31.66	44.06	68.20	-24.14	peak	P
5	6602.265	79.84	-32.17	47.67	68.20	-20.53	peak	P
6 *	9558.018	82.95	-33.02	49.93	68.20	-18.27	peak	P

Above 1G (1GHz~40GHz)	Test mode:11n 40	Test Channel:38
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1622.774	68.04	-30.33	37.71	68.20	-30.49	peak	P
2	2528.963	71.05	-31.37	39.68	68.20	-28.52	peak	P
3	3784.888	74.47	-31.47	43.00	68.20	-25.20	peak	P
4	6423.443	79.11	-31.87	47.24	68.20	-20.96	peak	P
5	9139.261	82.75	-33.51	49.24	68.20	-18.96	peak	P
6 *	14038.447	86.21	-32.35	53.86	68.20	-14.34	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1352.621	68.55	-29.90	38.65	68.20	-29.55	peak	P
2	2050.856	71.00	-30.33	40.67	68.20	-27.53	peak	P
3	3289.821	75.90	-31.13	44.77	68.20	-23.43	peak	P
4	4790.245	78.16	-31.64	46.52	68.20	-21.68	peak	P
5	7541.114	81.29	-33.43	47.86	68.20	-20.34	peak	P
6 *	11667.603	85.97	-34.47	51.50	68.20	-16.70	peak	P

Above 1G (1GHz~40GHz)	Test mode:11n 40	Test Channel:46
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1352.621	69.05	-29.90	39.15	68.20	-29.05	peak	P
2	1885.959	71.56	-30.17	41.39	68.20	-26.81	peak	P
3	2880.247	76.74	-31.02	45.72	68.20	-22.48	peak	P
4	3757.637	76.20	-31.45	44.75	68.20	-23.45	peak	P
5	6727.477	80.68	-32.49	48.19	68.20	-20.01	peak	P
6 *	9725.221	83.79	-33.45	50.34	68.20	-17.86	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1291.492	66.22	-29.70	36.52	68.20	-31.68	peak	P
2	1885.959	68.56	-30.17	38.39	68.20	-29.81	peak	P
3	2667.872	70.68	-31.23	39.45	68.20	-28.75	peak	P
4	3608.619	72.97	-31.37	41.60	68.20	-26.60	peak	P
5	6222.428	77.04	-31.79	45.25	68.20	-22.95	peak	P
6 *	12344.100	83.25	-33.93	49.32	68.20	-18.88	peak	P

Above 1G (1GHz~40GHz)	Test mode:11n 40	Test Channel:151
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1265.624	69.12	-29.60	39.52	68.20	-28.68	peak	P
2	1921.727	72.12	-30.15	41.97	68.20	-26.23	peak	P
3	2790.113	72.25	-31.11	41.14	68.20	-27.06	peak	P
4	3757.637	75.20	-31.45	43.75	68.20	-24.45	peak	P
5	6659.763	80.13	-32.31	47.82	68.20	-20.38	peak	P
6 *	10980.469	83.94	-34.72	49.22	68.20	-18.98	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1291.492	67.72	-29.70	38.02	68.20	-30.18	peak	P
2	1921.727	70.12	-30.15	39.97	68.20	-28.23	peak	P
3	3270.858	73.43	-31.12	42.31	68.20	-25.89	peak	P
4	4667.241	76.46	-31.66	44.80	68.20	-23.40	peak	P
5	8271.880	81.05	-34.48	46.57	68.20	-21.63	peak	P
6 *	13462.249	85.59	-33.62	51.97	68.20	-16.23	peak	P

Above 1G (1GHz~40GHz)	Test mode:11n 40	Test Channel:159
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1252.885	68.63	-29.56	39.07	68.20	-29.13	peak	P
2	1921.727	70.62	-30.15	40.47	68.20	-27.73	peak	P
3	3270.858	73.93	-31.12	42.81	68.20	-25.39	peak	P
4	4633.638	76.28	-31.68	44.60	68.20	-23.60	peak	P
5	7695.244	81.58	-33.76	47.82	68.20	-20.38	peak	P
6 *	13249.931	83.85	-33.75	50.10	68.20	-18.10	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1252.885	72.13	-29.56	42.57	68.20	-25.63	peak	P
2	2001.084	70.85	-30.11	40.74	68.20	-27.46	peak	P
3	2855.380	75.20	-31.04	44.16	68.20	-24.04	peak	P
4	4811.058	77.09	-31.64	45.45	68.20	-22.75	peak	P
5	7695.244	82.08	-33.76	48.32	68.20	-19.88	peak	P
6 *	12835.288	86.96	-33.89	53.07	68.20	-15.13	peak	P

Above 1G (1GHz~40GHz)	Test mode:11ac 80	Test Channel:42
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1192.811	68.33	-29.35	38.98	68.20	-29.22	peak	P
2	2053.822	67.81	-30.35	37.46	68.20	-30.74	peak	P
3	3132.079	71.73	-31.00	40.73	68.20	-27.47	peak	P
4	4386.033	72.36	-31.68	40.68	68.20	-27.52	peak	P
5	7169.159	76.95	-33.25	43.70	68.20	-24.50	peak	P
6 *	12928.371	83.62	-33.89	49.73	68.20	-18.47	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1424.856	66.89	-30.15	36.74	68.20	-31.46	peak	P
2	2147.927	70.47	-30.78	39.69	68.20	-28.51	peak	P
3	3256.708	74.13	-31.11	43.02	68.20	-25.18	peak	P
4	4482.150	74.35	-31.70	42.65	68.20	-25.55	peak	P
5	8453.153	80.90	-34.54	46.36	68.20	-21.84	peak	P
6 *	12505.705	84.14	-33.85	50.29	68.20	-17.91	peak	P

Above 1G (1GHz~40GHz)	Test mode:11ac 80	Test Channel:155
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1362.430	67.53	-29.93	37.60	68.20	-30.60	peak	P
2	2107.950	70.80	-30.60	40.20	68.20	-28.00	peak	P
3	3884.637	73.78	-31.53	42.25	68.20	-25.95	peak	P
4	6516.947	78.50	-31.94	46.56	68.20	-21.64	peak	P
5	9126.063	82.19	-33.52	48.67	68.20	-19.53	peak	P
6 *	13423.394	86.32	-33.65	52.67	68.20	-15.53	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1287.764	69.72	-29.68	40.04	68.20	-28.16	peak	P
2	2001.084	73.85	-30.11	43.74	68.20	-24.46	peak	P
3	3275.589	75.50	-31.12	44.38	68.20	-23.82	peak	P
4	4707.887	77.27	-31.66	45.61	68.20	-22.59	peak	P
5	7584.833	81.42	-33.53	47.89	68.20	-20.31	peak	P
6 *	12687.748	86.03	-33.86	52.17	68.20	-16.03	peak	P

4) Band Edge

Above 1G (1GHz~40GHz)	Test mode:11a 20	Test Channel:36
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5106.500	80.75	-31.90	48.85	68.20	-19.35	peak	P
2 *	5150.000	82.87	-32.02	50.85	68.20	-17.35	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5075.200	-4997.13	5043.39	46.26	68.20	-21.94	peak	P
2 *	5150.000	-5067.13	5117.98	50.85	68.20	-17.35	peak	P

Above 1G (1GHz~40GHz)	Test mode:11a 20	Test Channel:48
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5350.000	42.56	0.87	43.43	68.20	-24.77	peak	P
2 *	5460.000	44.17	0.67	44.84	68.20	-23.36	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	5350.000	47.80	-0.87	46.93	68.20	-21.27	peak	P
2	5460.000	47.95	-1.11	46.84	68.20	-21.36	peak	P

Above 1G (1GHz~40GHz)	Test mode:11a 20	Test Channel:149
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	5672.935	43.86	1.65	45.51	85.40	-39.89	peak	P
2	5712.590	53.09	1.75	54.84	108.88	-54.04	peak	P
3	5722.325	62.86	1.78	64.64	116.10	-51.46	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	5674.585	41.37	4.35	45.72	86.63	-40.91	peak	P
2	5709.015	48.21	4.44	52.65	107.95	-55.30	peak	P
3	5722.325	62.16	4.48	66.64	116.10	-49.46	peak	P

Above 1G (1GHz~40GHz)	Test mode:11a 20	Test Channel:165
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5853.600	52.95	2.12	55.07	113.99	-58.92	peak	P
2	5860.700	47.56	2.14	49.70	109.32	-59.62	peak	P
3	5894.100	43.59	2.22	45.81	91.28	-45.47	peak	P
4 *	5950.700	44.24	2.37	46.61	68.20	-21.59	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5853.600	52.25	4.82	57.07	113.99	-56.92	peak	P
2	5863.300	46.36	4.84	51.20	108.64	-57.44	peak	P
3	5895.700	43.05	4.93	47.98	90.08	-42.10	peak	P
4 *	5945.100	42.12	5.06	47.18	68.20	-21.02	peak	P

Above 1G (1GHz~40GHz)	Test mode:11n 40	Test Channel:38
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5129.800	-5046.74	5097.84	51.10	68.20	-17.10	peak	P
2 *	5150.000	-5066.29	5117.98	51.69	68.20	-16.51	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	5144.800	-5060.74	5112.80	52.06	68.20	-16.14	peak	P
2	5150.000	-5067.29	5117.98	50.69	68.20	-17.51	peak	P

Above 1G (1GHz~40GHz)	Test mode:11n 40	Test Channel:46
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5350.000	41.92	0.87	42.79	68.20	-25.41	peak	P
2 *	5460.000	43.79	0.67	44.46	68.20	-23.74	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5350.000	43.66	-0.87	42.79	68.20	-25.41	peak	P
2 *	5460.000	45.57	-1.11	44.46	68.20	-23.74	peak	P

Above 1G (1GHz~40GHz)	Test mode:11n 40	Test Channel:151
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	5668.480	42.72	1.64	44.36	82.06	-37.70	peak	P
2	5713.580	67.38	1.76	69.14	109.13	-39.99	peak	P
3	5721.335	68.06	1.78	69.84	113.84	-44.00	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5694.220	50.58	4.41	54.99	101.29	-46.30	peak	P
2 *	5713.580	61.68	4.46	66.14	109.13	-42.99	peak	P
3	5722.710	64.57	4.48	69.05	116.98	-47.93	peak	P

Above 1G (1GHz~40GHz)	Test mode:11n 40	Test Channel:159
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5853.100	54.97	2.12	57.09	115.13	-58.04	peak	P
2	5867.100	49.09	2.15	51.24	107.65	-56.41	peak	P
3	5900.100	41.17	2.24	43.41	86.79	-43.38	peak	P
4 *	5955.000	42.51	2.38	44.89	68.20	-23.31	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5852.200	52.09	4.82	56.91	117.18	-60.27	peak	P
2	5864.300	47.73	4.85	52.58	108.38	-55.80	peak	P
3	5893.300	41.12	4.92	46.04	91.87	-45.83	peak	P
4 *	5956.000	38.65	5.09	43.74	68.20	-24.46	peak	P

Above 1G (1GHz~40GHz)	Test mode:11ac 80	Test Channel:42
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HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	5139.200	-5055.27	5107.21	51.94	68.20	-16.26	peak	P
2	5150.000	-5066.88	5117.98	51.10	68.20	-17.10	peak	P

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	5350.000	42.62	0.87	43.49	68.20	-24.71	peak	P
2	5460.000	40.39	0.67	41.06	68.20	-27.14	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5114.200	-5032.15	5082.28	50.13	68.20	-18.07	peak	P
2 *	5150.000	-5066.88	5117.98	51.10	68.20	-17.10	peak	P

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	5350.000	46.36	-0.87	45.49	68.20	-22.71	peak	P
2	5460.000	43.67	-1.11	42.56	68.20	-25.64	peak	P

Above 1G (1GHz~40GHz)

Test mode:11ac 80

Test Channel:155

HORIZONTAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	5679.425	60.97	1.67	62.64	90.25	-27.61	peak	P
2	5712.150	60.75	1.75	62.50	108.76	-46.26	peak	P
3	5723.480	62.56	1.78	64.34	118.74	-54.40	peak	P

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5853.100	59.15	2.12	61.27	115.13	-53.86	peak	P
2	5861.300	60.64	2.14	62.78	109.16	-46.38	peak	P
3	5888.000	44.33	2.21	46.54	95.85	-49.31	peak	P
4 *	5958.500	41.03	2.39	43.42	68.20	-24.78	peak	P

VERTICAL

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	5679.425	53.23	4.37	57.60	90.25	-32.65	peak	P
2	5719.685	60.71	4.47	65.18	110.72	-45.54	peak	P
3	5723.920	56.83	4.48	61.31	119.74	-58.43	peak	P

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5852.200	63.90	4.82	68.72	117.18	-48.46	peak	P
2	5863.900	60.60	4.85	65.45	108.48	-43.03	peak	P
3	5896.500	43.27	4.93	48.20	89.48	-41.28	peak	P
4 *	5959.500	40.25	5.09	45.34	68.20	-22.86	peak	P

3.3 Spectrum Bandwidth

3.3.1 Limit

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	26 dB Bandwidth	-	5150-5250
	26 dB Bandwidth	-	5250-5350
15.407(e)	26 dB Bandwidth	-	5470-5725
	6 dB Bandwidth	Minimum 500 kHz	5725-5850

3.3.2 Test Peripherals

Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	Type-C Cable	AWM	E101344	0.9m, No Shielding
2	Record PC	Lenovo	M4500T	NA

3.3.3 Test Procedure

Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ● : Test ○ : No Test	

a) The EUT shall be connected to the spectrum analyser, and the spectrum analyser is set as follow:

For 26 dB Bandwidth

Centre Frequency	The centre frequency of the channel under test
RBW	$\geq 1\% \times \text{Nominal Channel Bandwidth}$
VBW	$\geq 3 \times \text{RBW}$
Frequency span	2 x Nominal Channel Bandwidth
Detector Mode	Peak
Trace Mode	Max Hold
Sweep Time	Auto Couple

For 6 dB Bandwidth

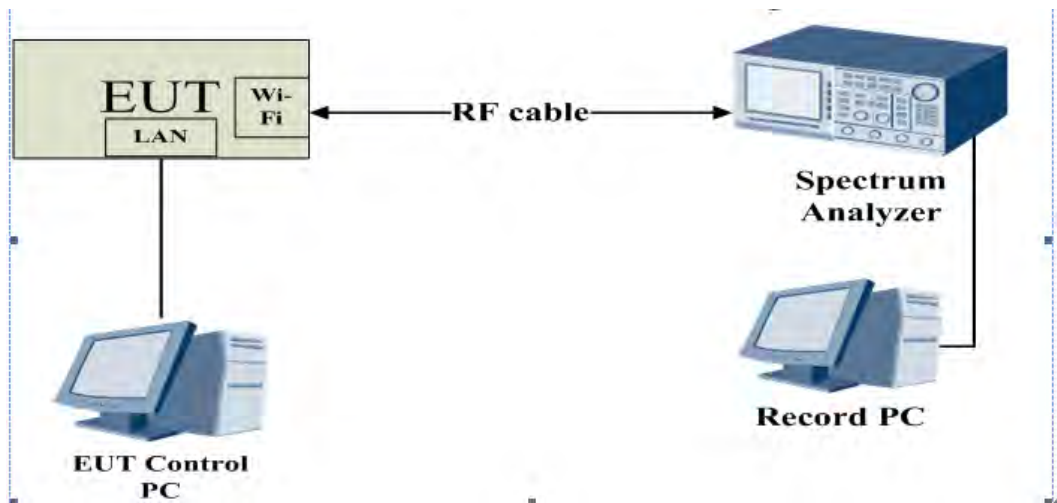
Centre Frequency	The centre frequency of the channel under test
RBW	100 kHz
VBW	300 kHz
Frequency span	2 x Nominal Channel Bandwidth
Detector Mode	Peak
Trace Mode	Max Hold

Sweep Time

Auto Couple

- b) Wait for the trace to stabilize then find the peak value of the trace and place the analyser marker on this peak.
- c) Use the -26/-6dB bandwidth function of the spectrum analyser to measure the -26/-6dB Bandwidth of the EUT. This value shall be recorded.
- d) Make sure that the power envelope is sufficiently above the noise floor of the analyser to avoid the noise signals left and right from the power envelope being taken into account by this measurement.

3.3.4 Test Setup



3.3.5 Test Result

3.3.5.1 26 dB Bandwidth

Please Refer to Appendix for Details.

3.3.5.2 6 dB Bandwidth

Please Refer to Appendix for Details.

3.3.5.3 Occupied channel bandwidth

Please Refer to Appendix for Details.

3.4 Conducted Output Power

3.4.1 Limit

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	Conducted Output Power	AP device: 1 Watt (30 dBm) Client device: 250 mW (24 dBm)	5150-5250
		250 mW (24 dBm)	5250-5350
		250 mW (24 dBm)	5470-5725
		1 Watt (30dBm)	5725-5850

Note:

a. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

b. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26dB Bandwidth in megahertz.

3.4.2 Test Peripherals

Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	Record PC	Lenovo	M4500T	NA
2	Control PC	Lenovo	M4500T	NA

3.4.3 Test Procedure

Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ● : Test ○ : No Test	

a) The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.

b) Test test was performed in accordance with method of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

3.4.4 Test Setup



3.4.5 The Result

Please Refer to Appendix for Details.

3.5 Power Spectral Density

3.5.1 Limit

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	Power Spectral Density	AP device: 17 dBm/MHz Client device: 11 dBm/MHz	5150-5250
		11 dBm/MHz	5250-5350
		11 dBm/MHz	5470-5725
		30 dBm/500 kHz	5725-5850

3.5.2 Test Peripherals

Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	Record PC	Lenovo	M4500T	NA
2	Control PC	Lenovo	M4500T	NA

3.5.3 Test Procedure

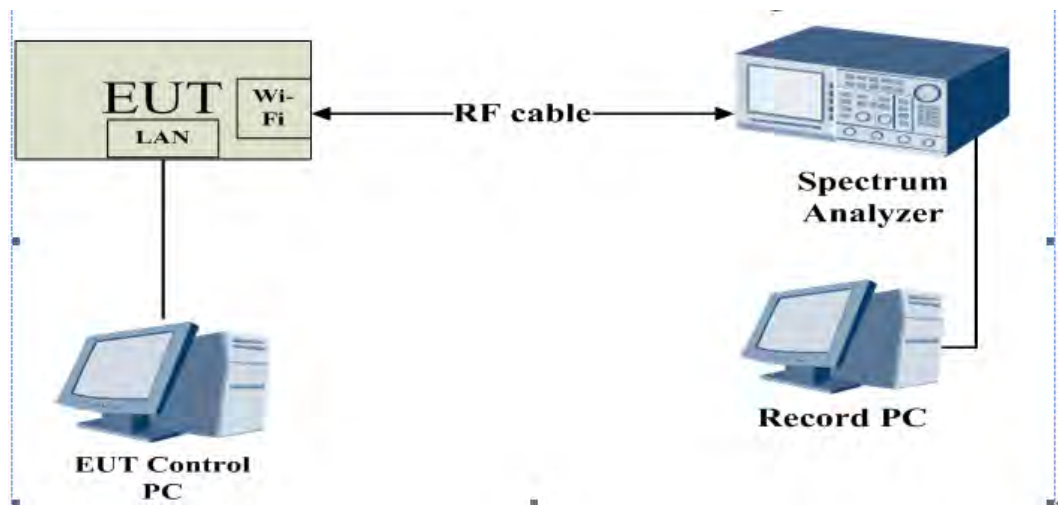
Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ● : Test ○ : No Test	

- a) The EUT was directly connected to the spectrum analyzer and antenna output port as show in
b) the block diagram below. Spectrum analyser settings as following:

Centre Frequency	The centre frequency of the channel under test
RBW	= 1 MHz (Band1/2/3) = 500 KHz (Band4)
VBW	≥ 3 x RBW
Frequency span	2 x Nominal Channel Bandwidth
Detector Mode	RMS
Trace Mode	Max Hold
Sweep Time	Auto Couple

- c) Wait for the trace to stabilize. Use the peak marker function to determine the maximum amplitude level within the RBW.
d) The value defined in step b shall be compared to the limits and be recorded .

3.5.4 Test Setup



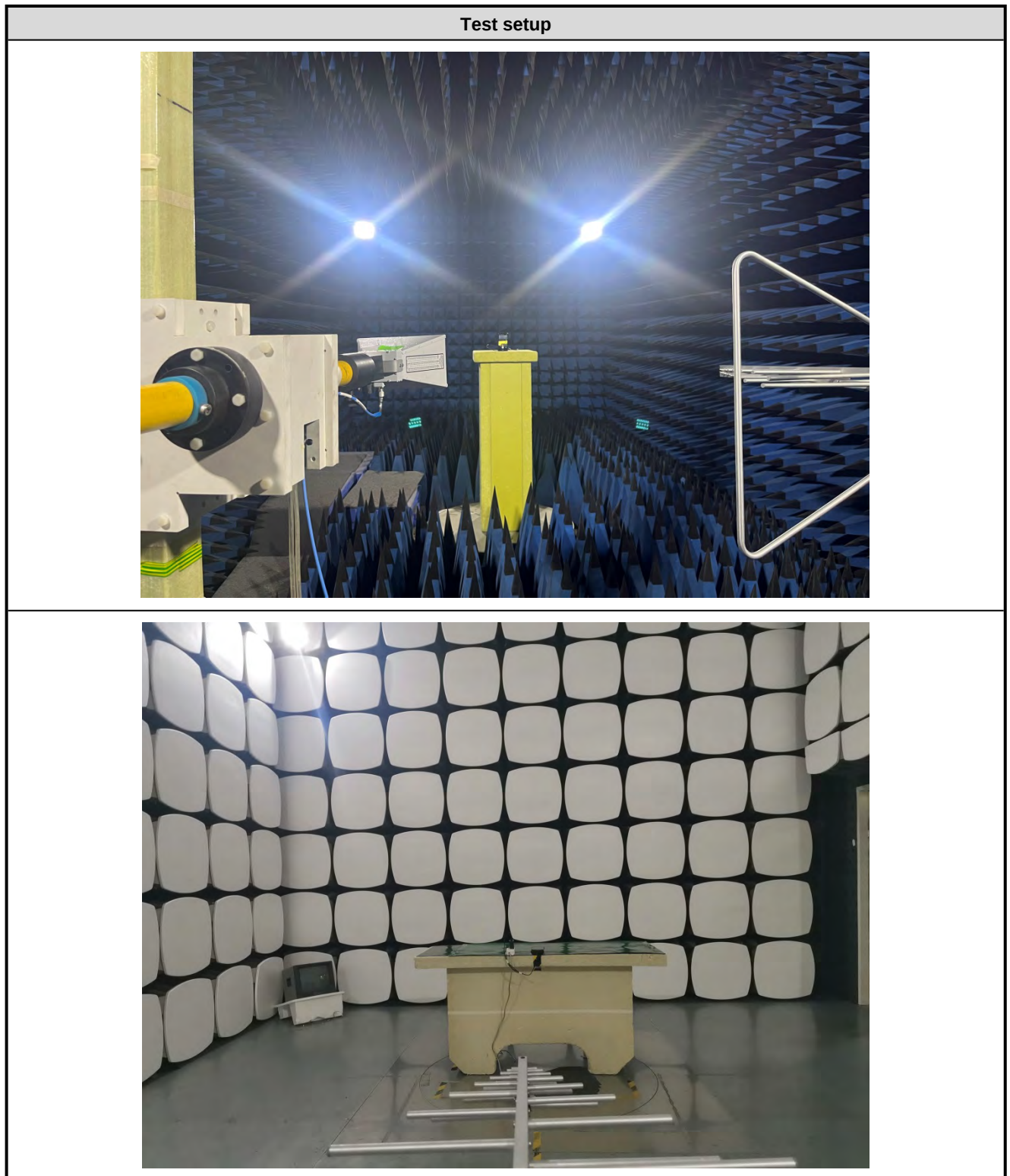
3.5.5 The Result

Please Refer to Appendix for Details.

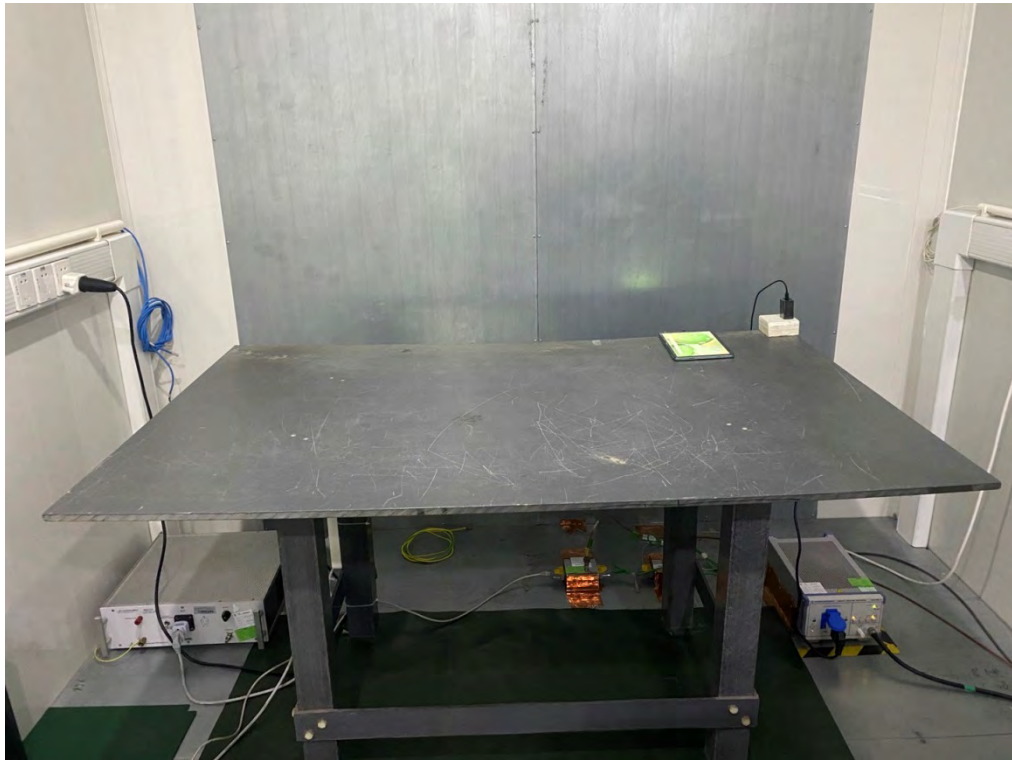
4. Photographs of EUT

Refer to Report No: FCC2022-06452RF1 for EUT external and internal photos.

5. Photographs of Test Set-up



CE



Appendix

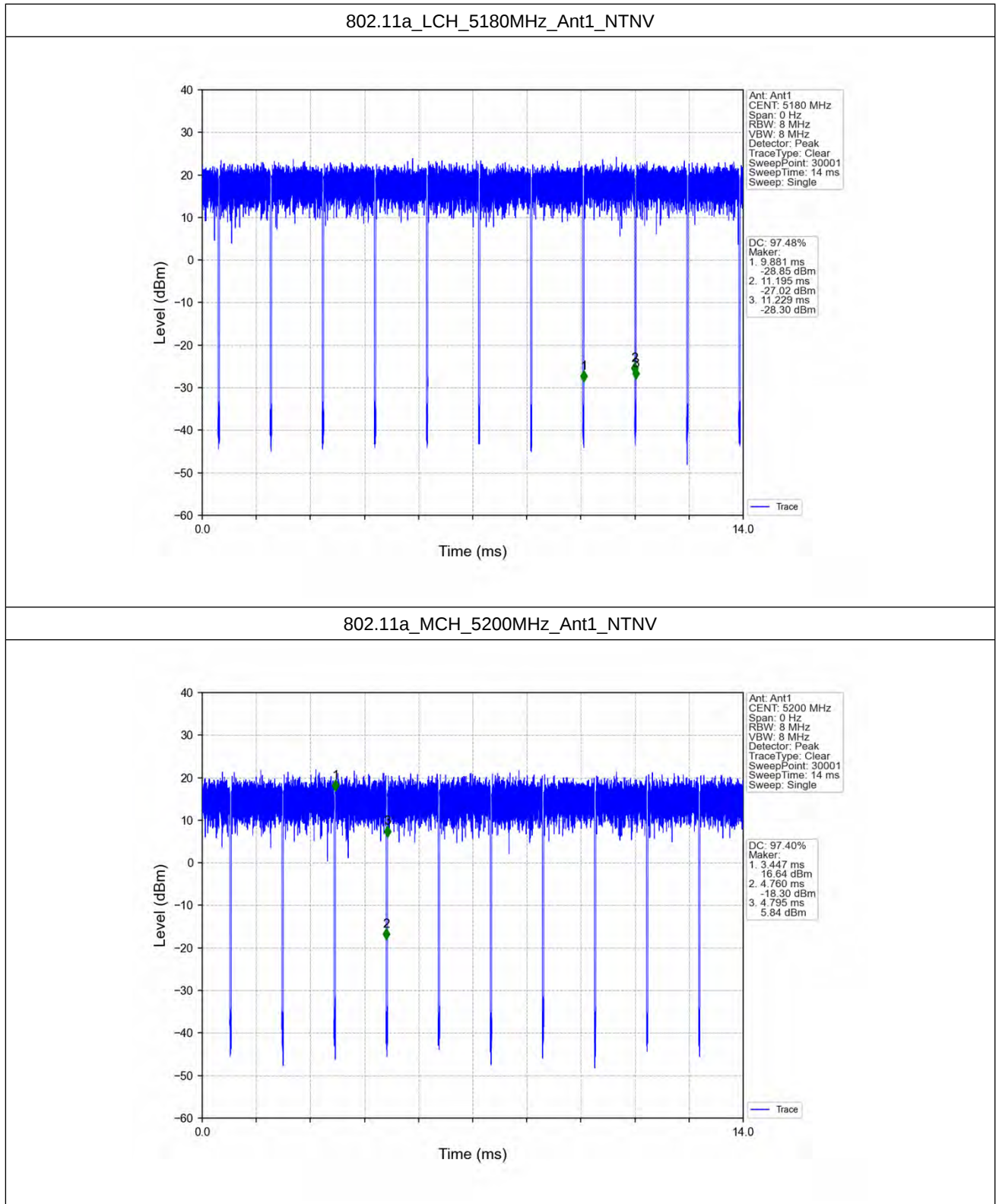
1. Duty Cycle

1.1 Ant1

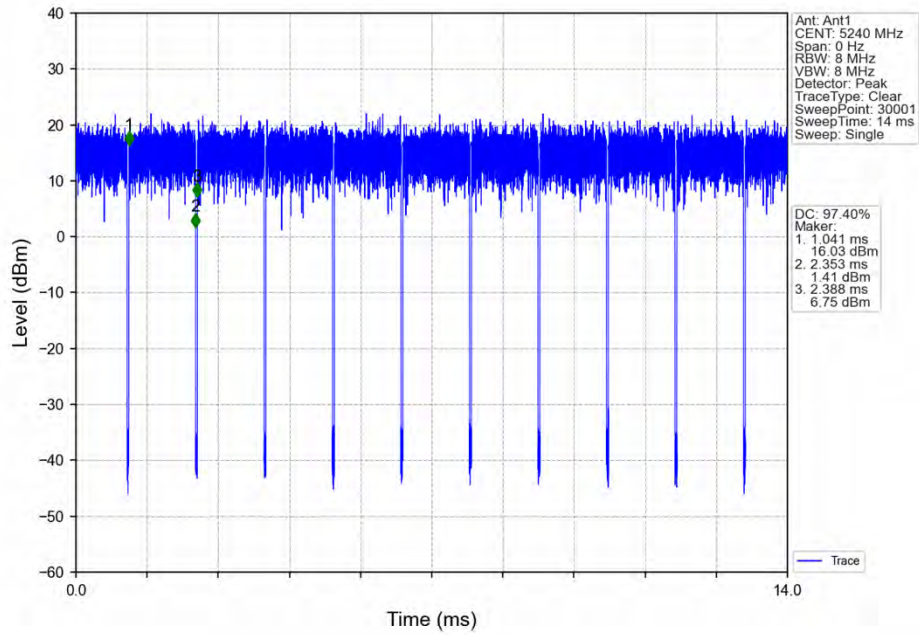
1.1.1 Test Result

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5180	1.314	1.348	97.48	0.11	0.07
		5200	1.313	1.348	97.40	0.11	0.03
		5240	1.312	1.347	97.40	0.11	0.03
		5745	1.313	1.348	97.40	0.11	0.00
		5785	1.312	1.347	97.40	0.11	0.03
		5825	1.313	1.348	97.40	0.11	0.03
802.11n (HT20)	SISO	5180	1.300	1.335	97.38	0.12	0.04
		5200	1.301	1.336	97.38	0.12	0.03
		5240	1.300	1.335	97.38	0.12	0.03
		5745	1.300	1.336	97.31	0.12	0.07
		5785	1.300	1.336	97.31	0.12	0.07
		5825	1.300	1.336	97.31	0.12	0.04
802.11n (HT40)	SISO	5190	0.649	0.683	95.02	0.22	0.03
		5230	0.649	0.683	95.02	0.22	0.03
		5755	0.648	0.683	94.88	0.23	0.04
		5795	0.648	0.683	94.88	0.23	0.04
802.11ac (VHT20)	SISO	5180	1.288	1.324	97.28	0.12	0.03
		5200	1.288	1.324	97.28	0.12	0.03
		5240	1.289	1.325	97.28	0.12	0.06
		5745	1.288	1.324	97.28	0.12	0.06
		5785	1.288	1.324	97.28	0.12	0.04
		5825	1.289	1.324	97.36	0.12	0.03
802.11ac (VHT40)	SISO	5190	0.636	0.671	94.78	0.23	0.07
		5230	0.636	0.671	94.78	0.23	0.03
		5755	0.636	0.671	94.78	0.23	0.03
		5795	0.636	0.671	94.78	0.23	0.04
802.11ac (VHT80)	SISO	5210	1.048	1.076	97.40	0.11	0.03
		5775	1.047	1.076	97.30	0.12	0.07

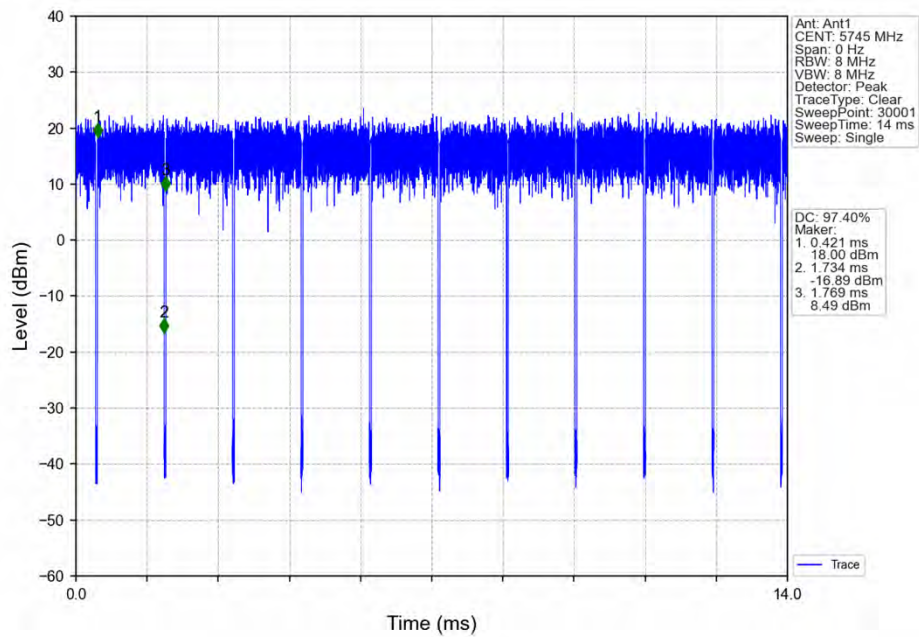
1.1.2 Test Graph



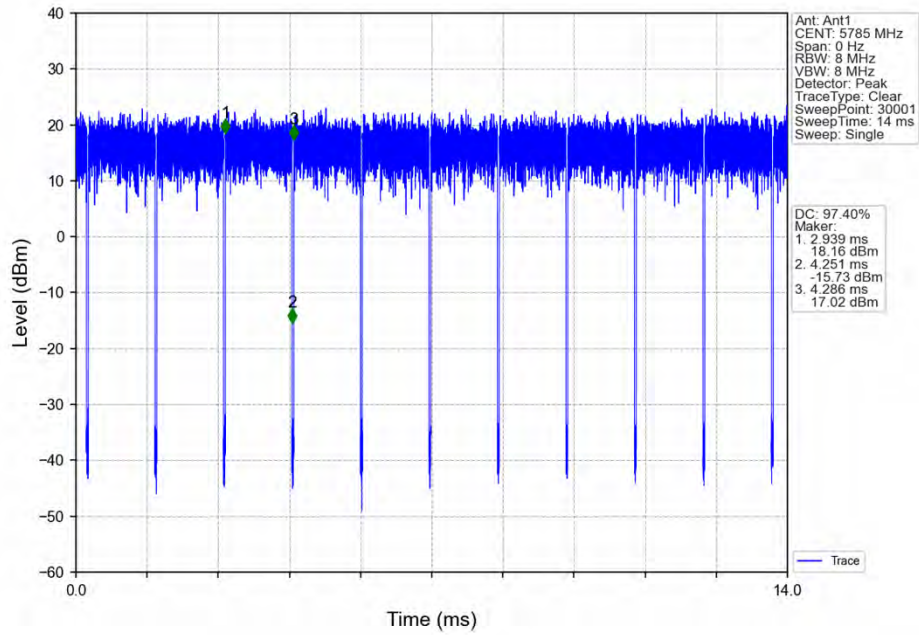
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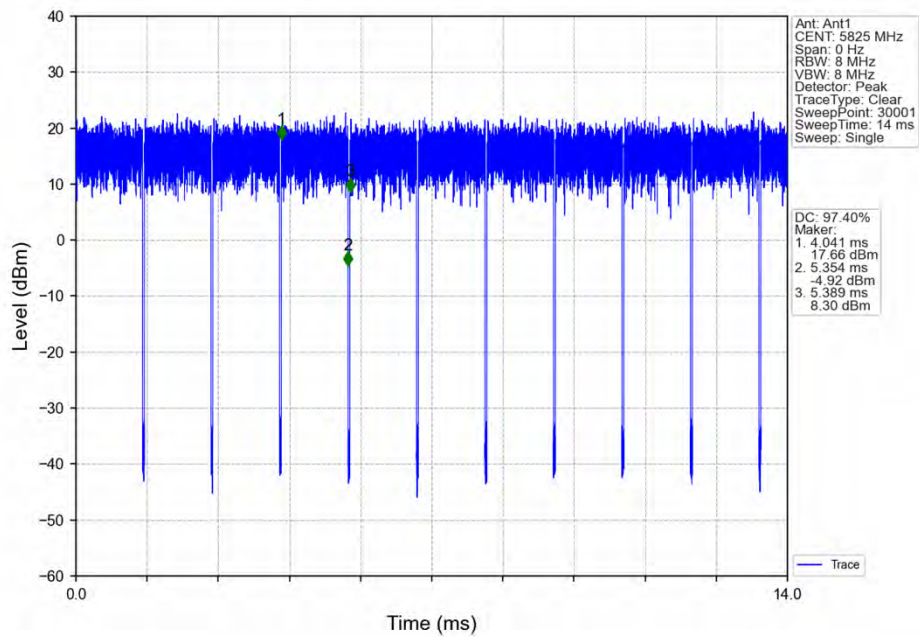
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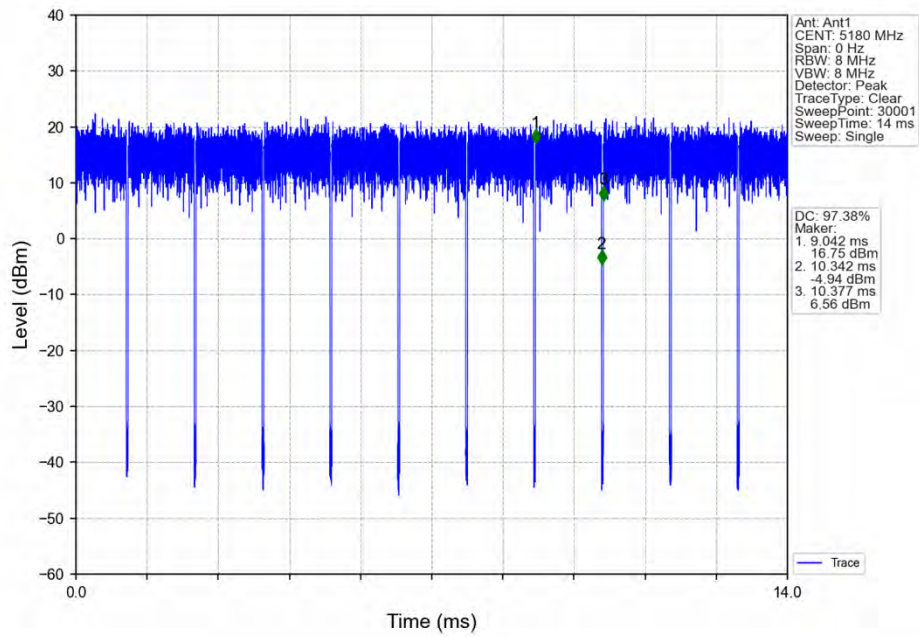
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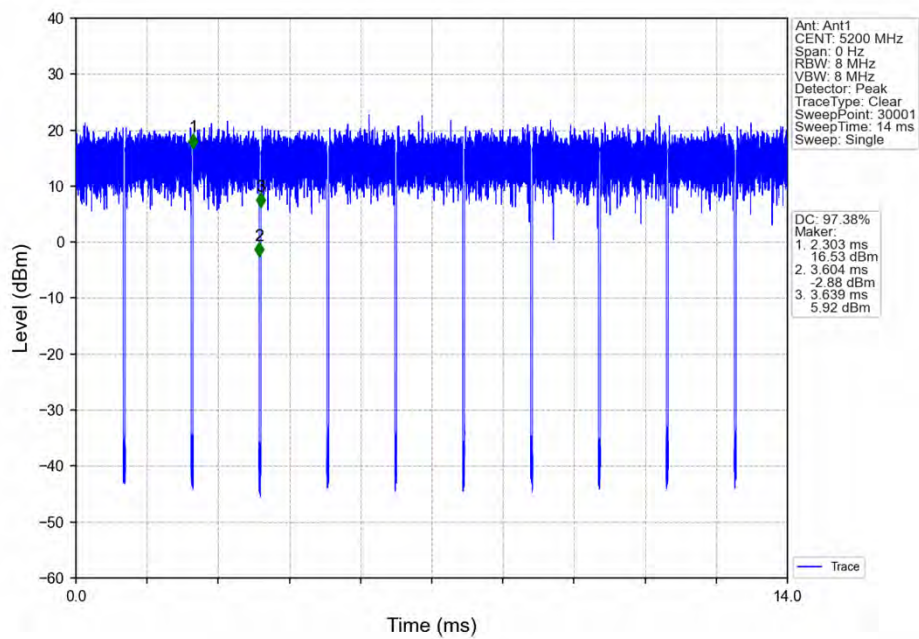
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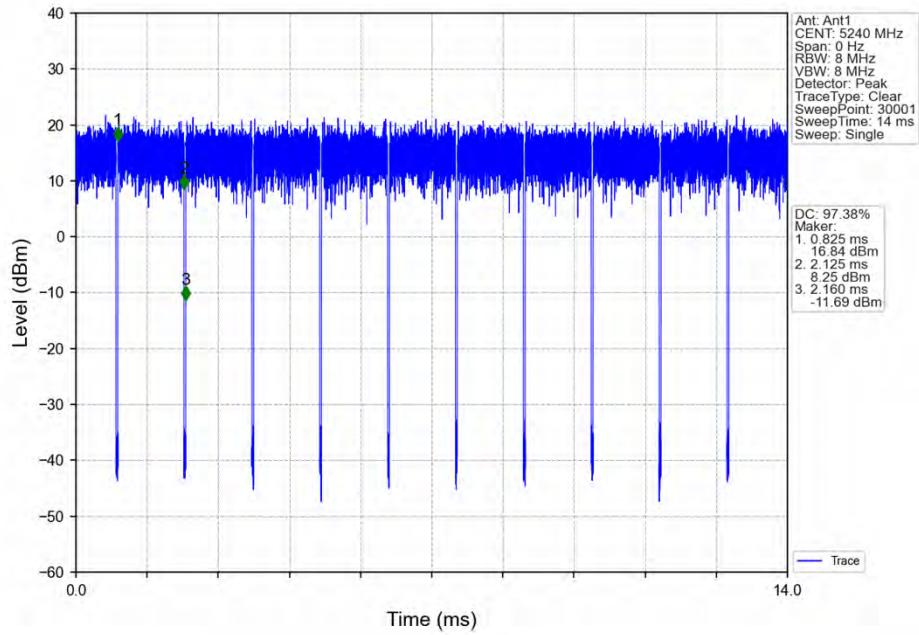
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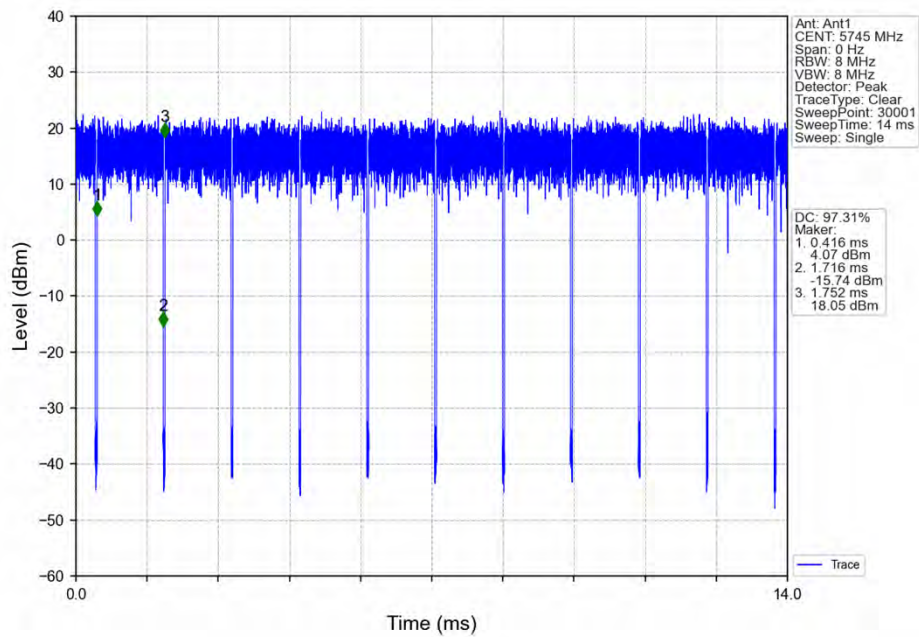
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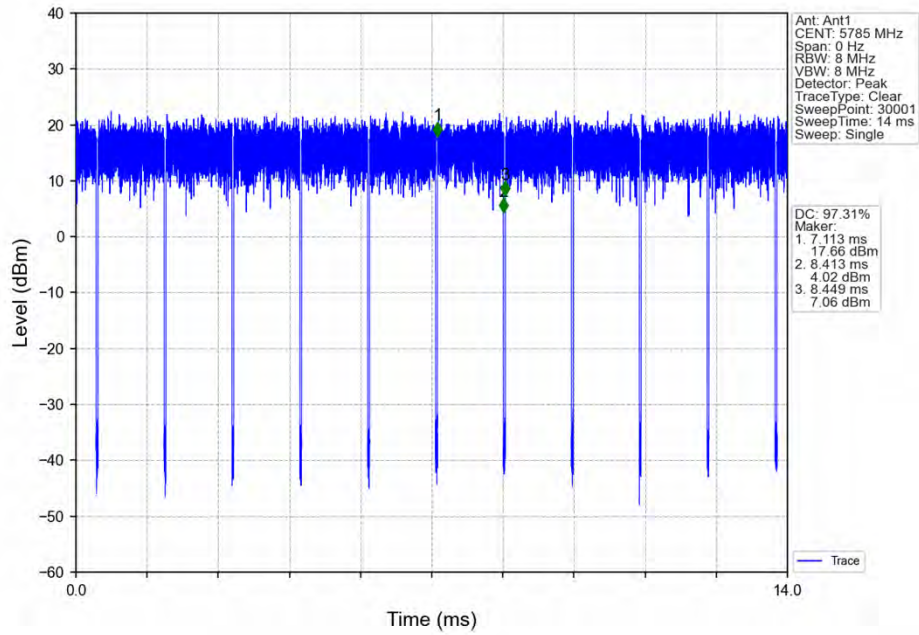
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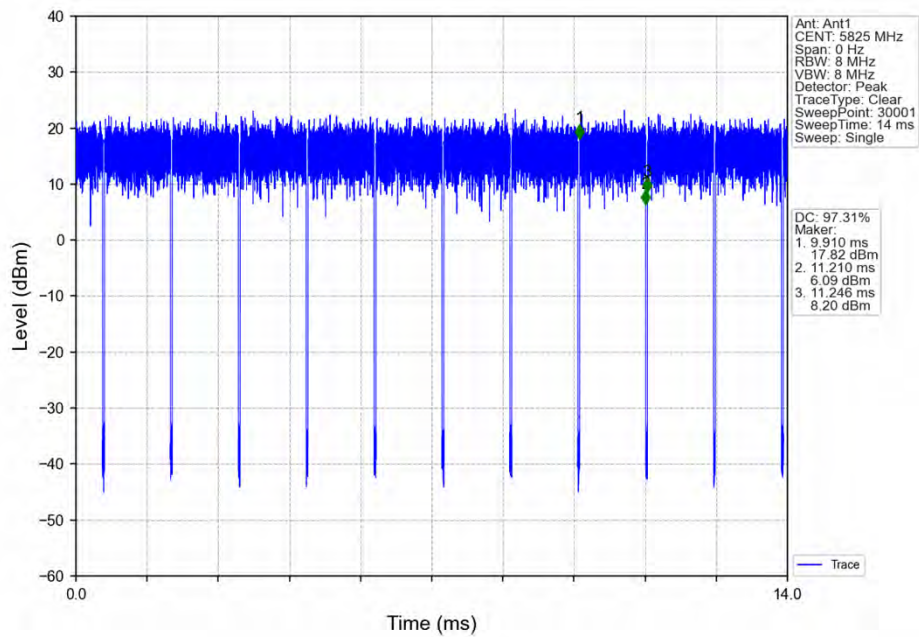
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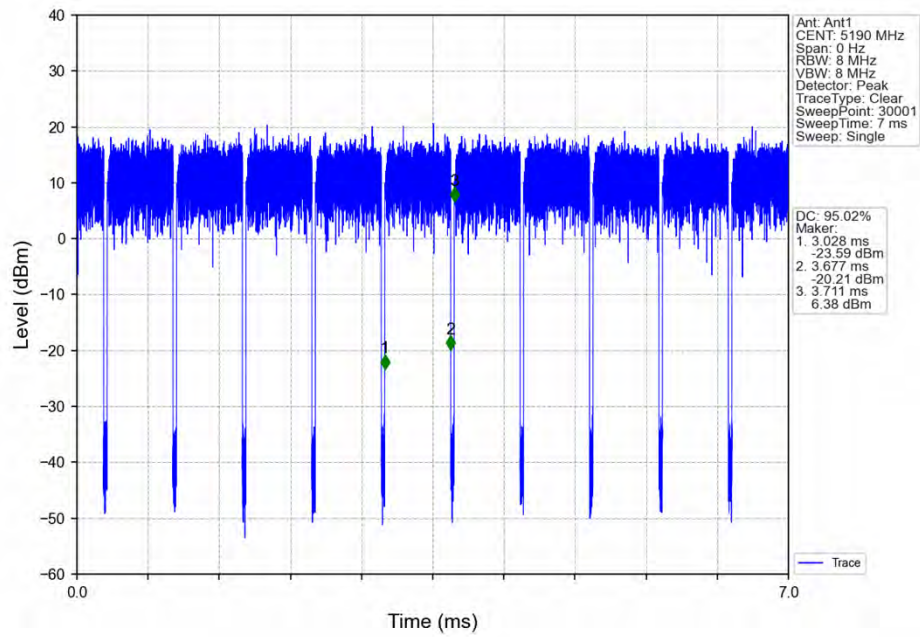
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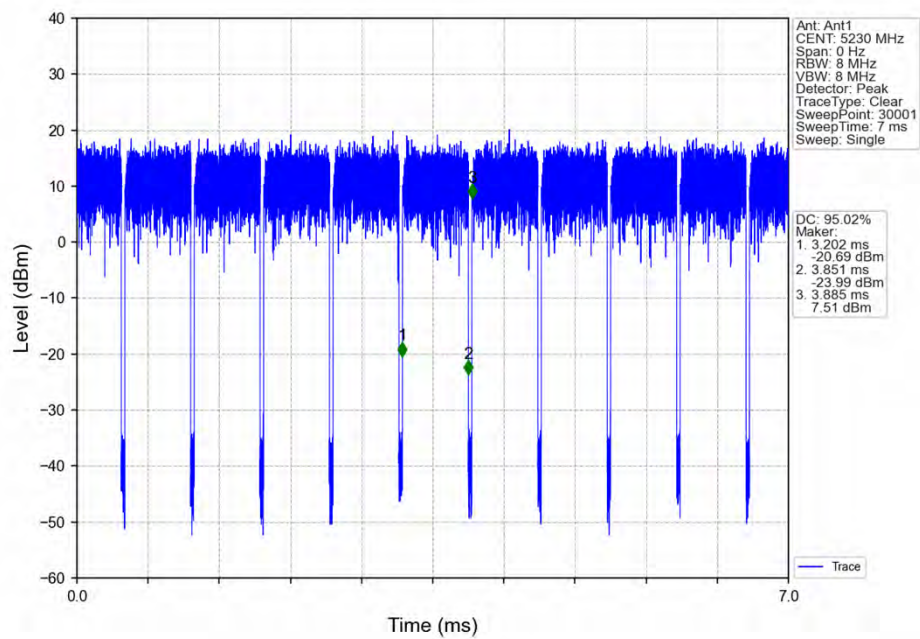
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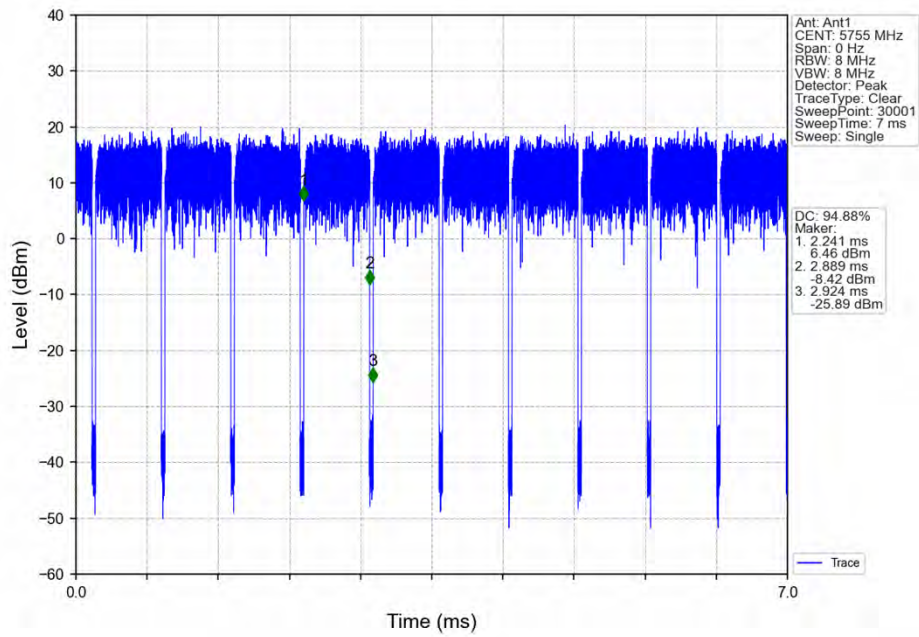
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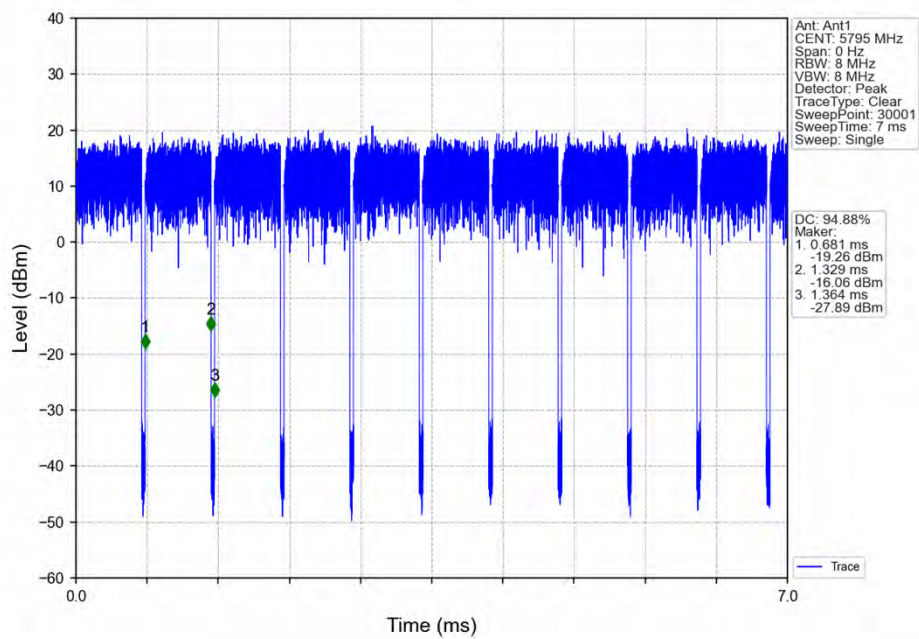
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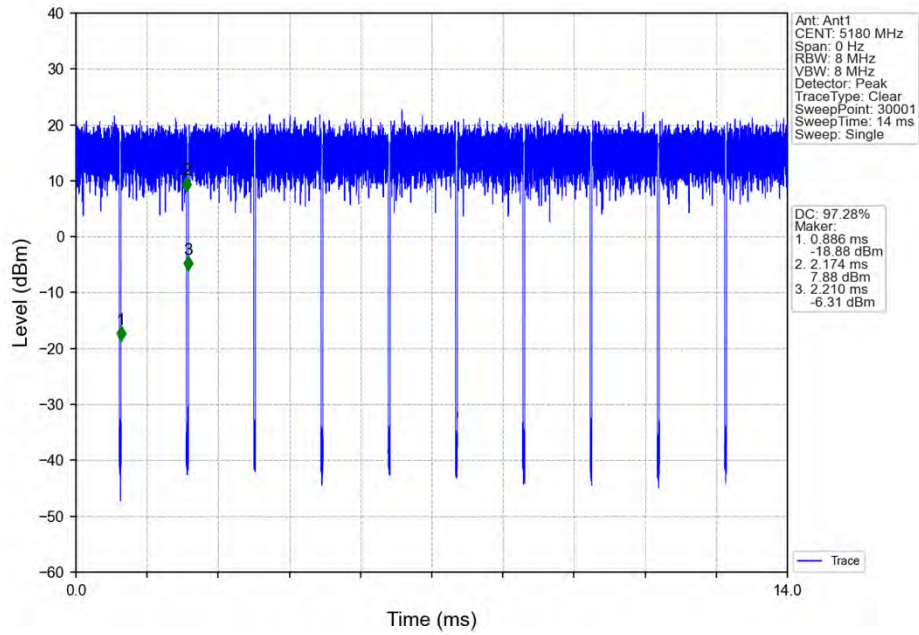
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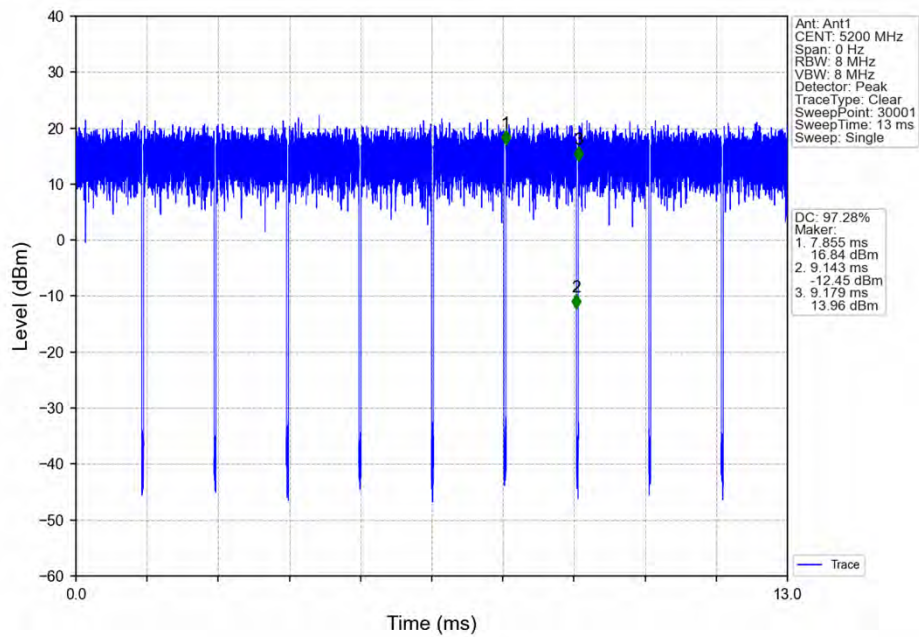
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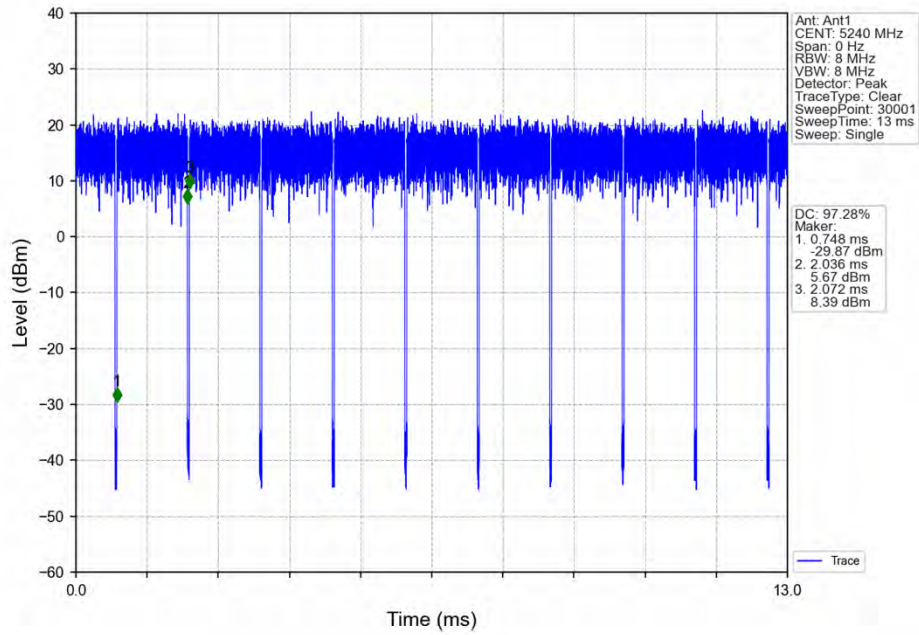
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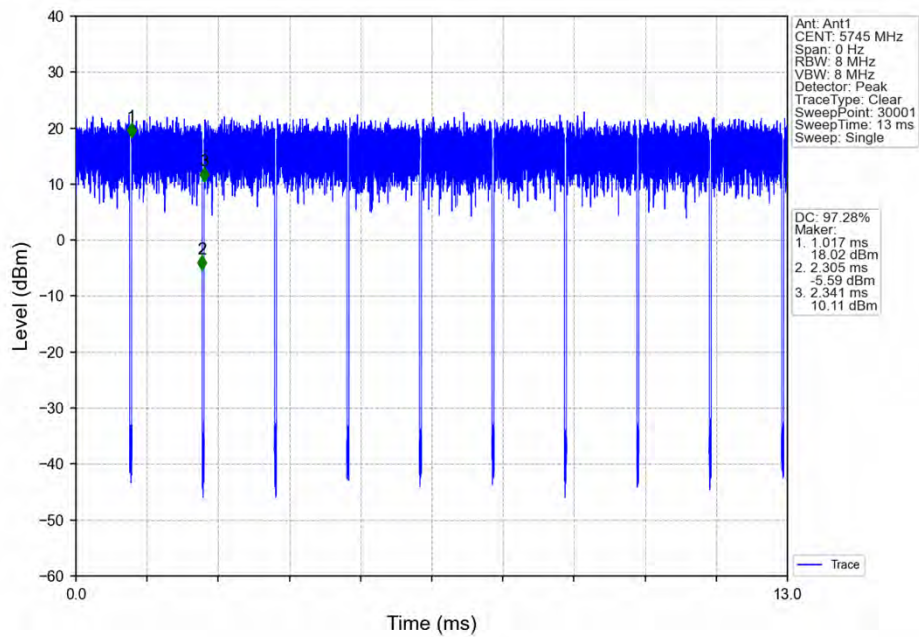
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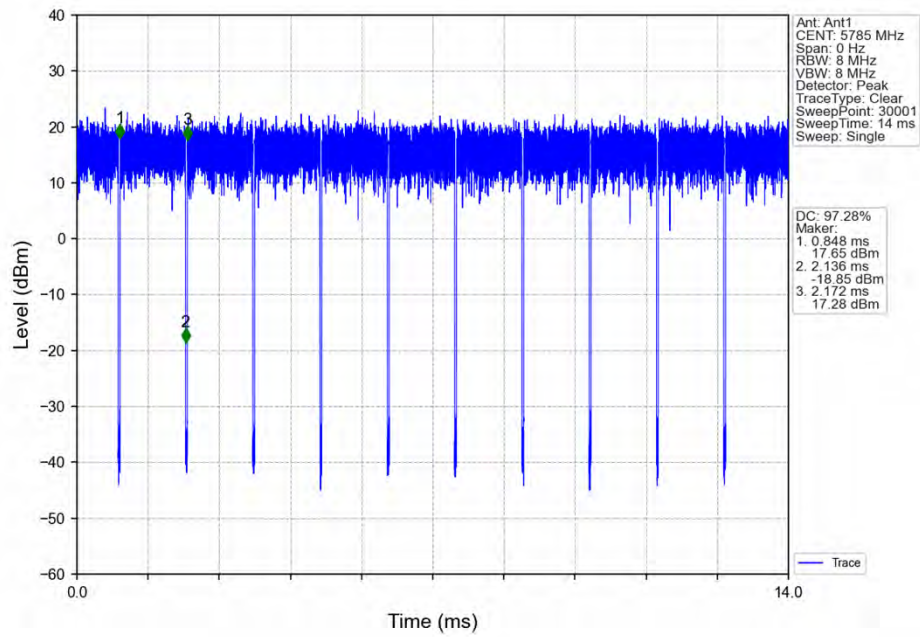
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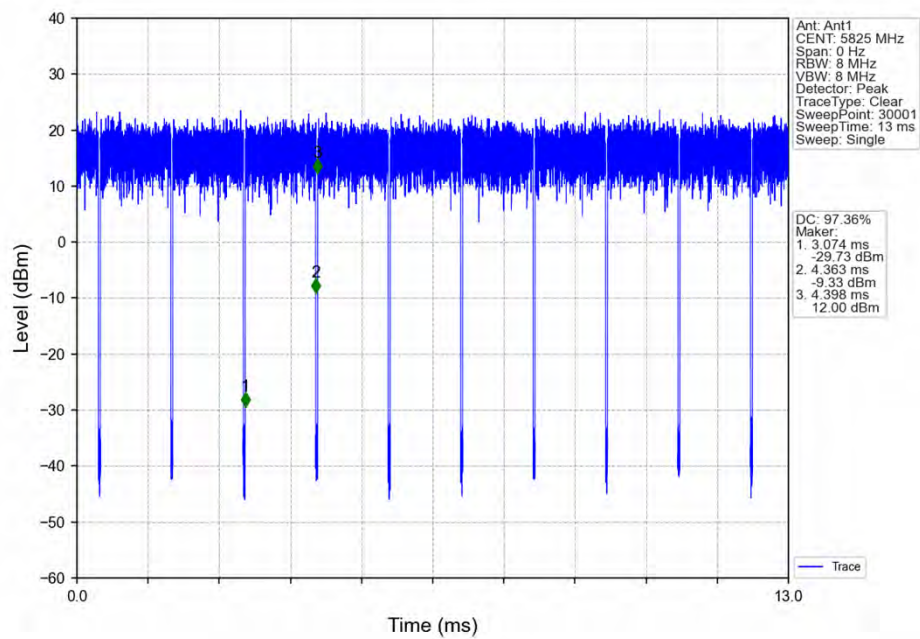
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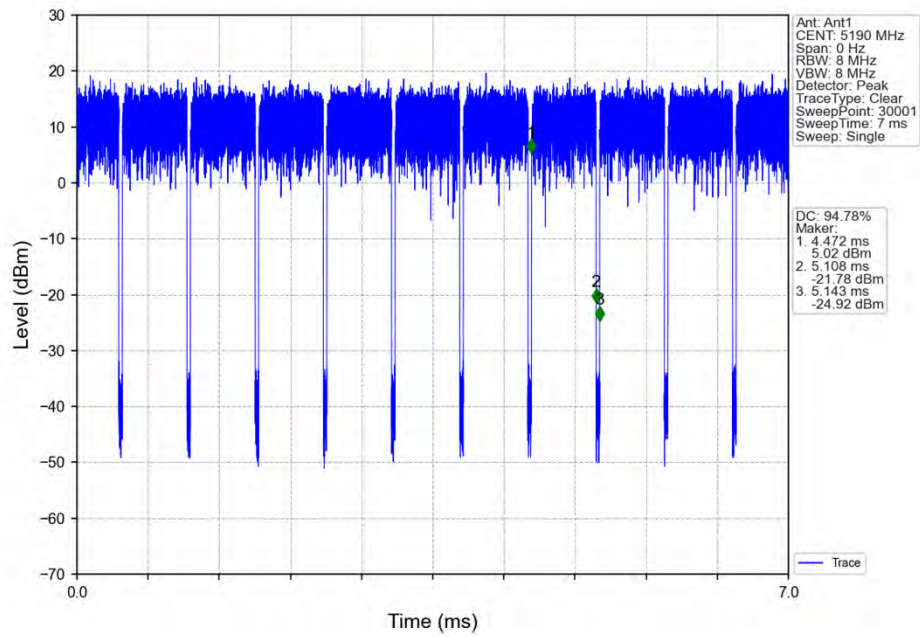
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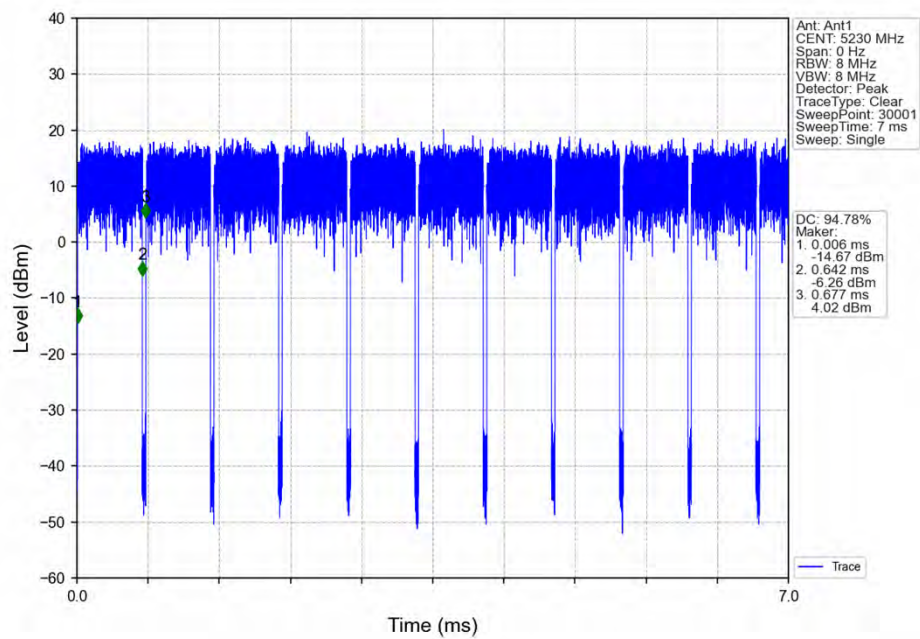
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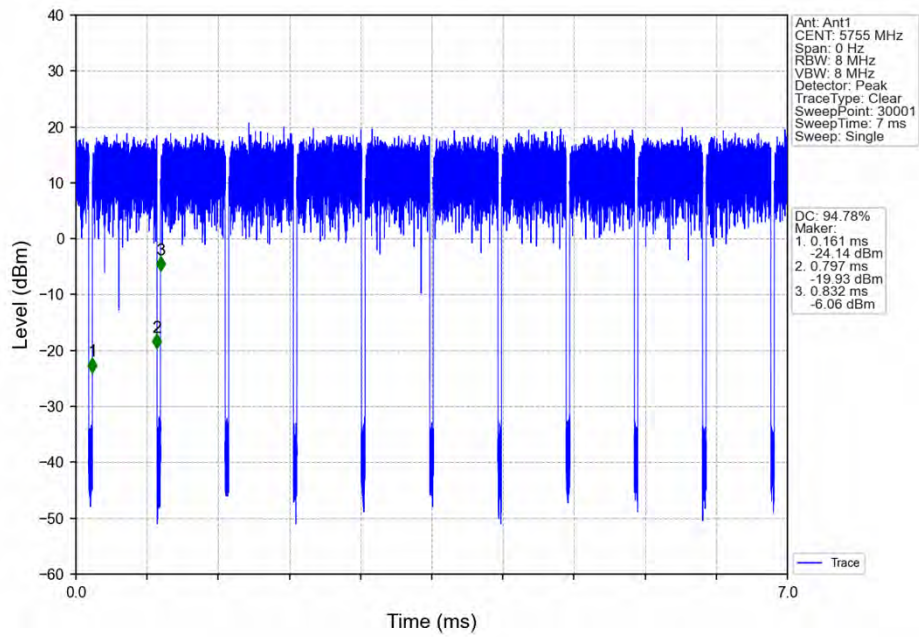
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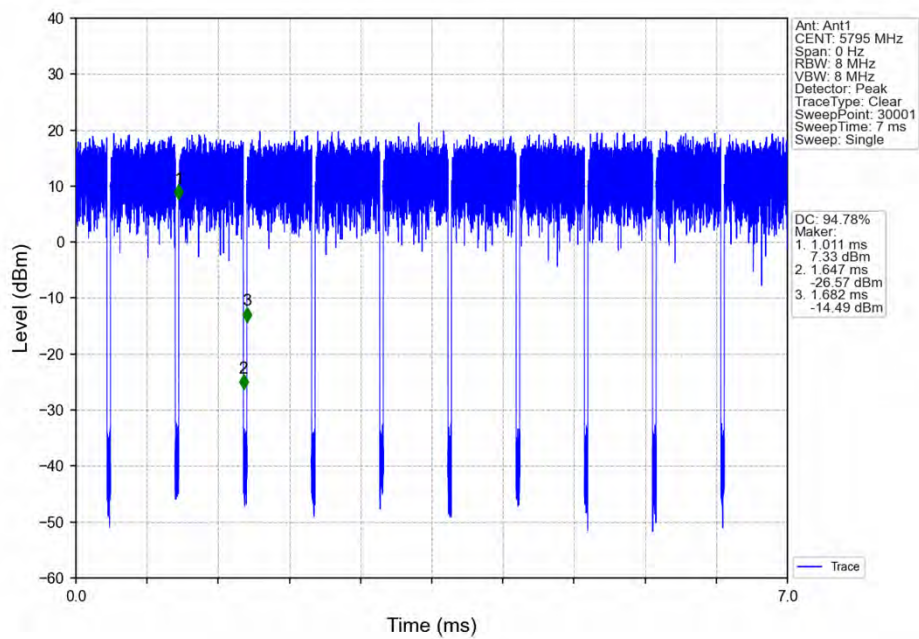
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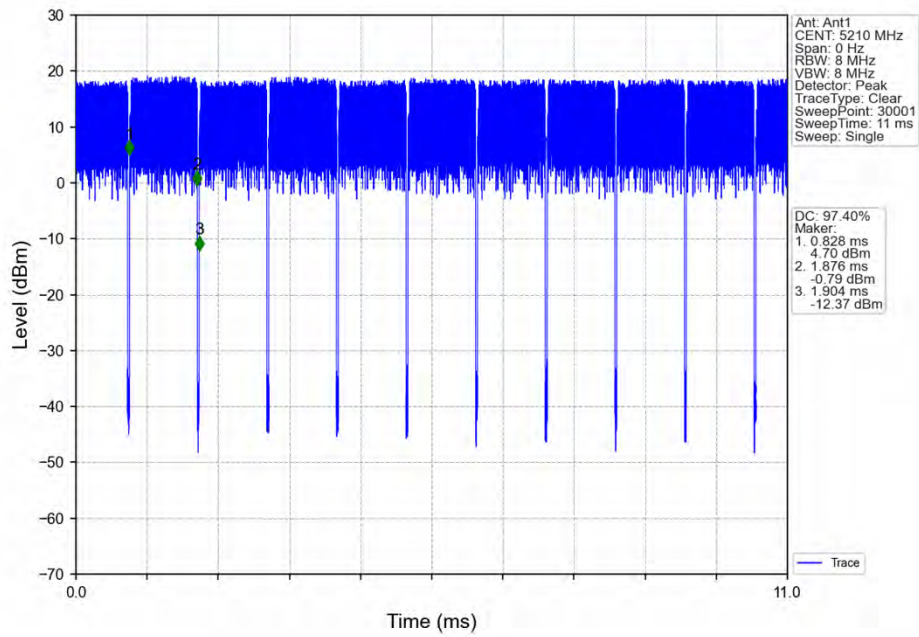
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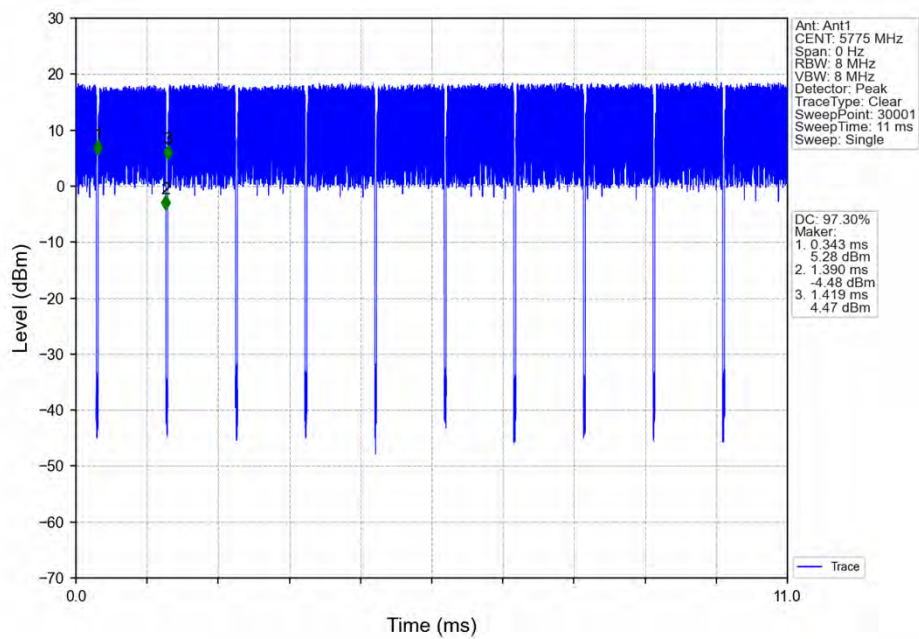
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802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



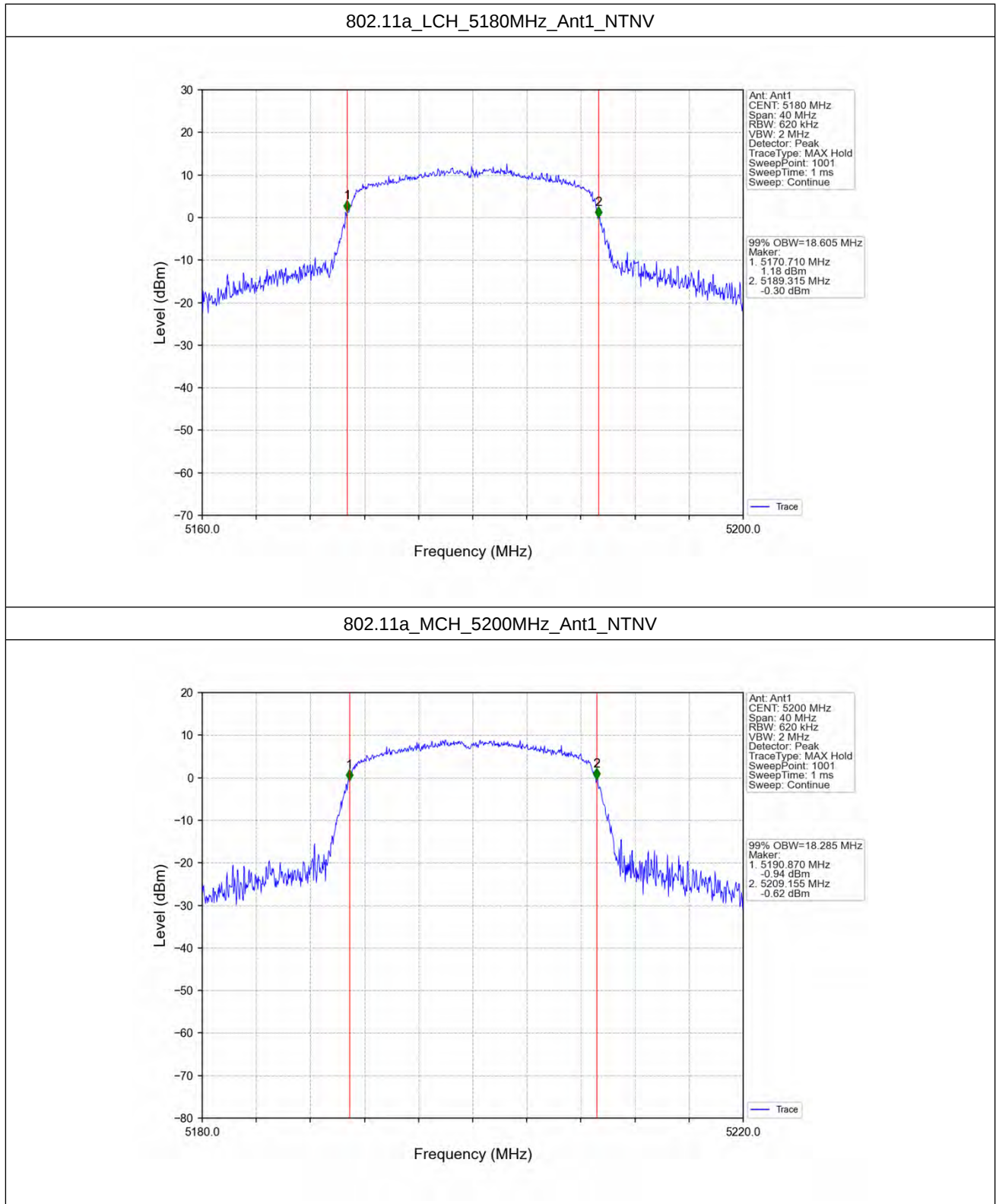
2. Bandwidth

2.1 OBW

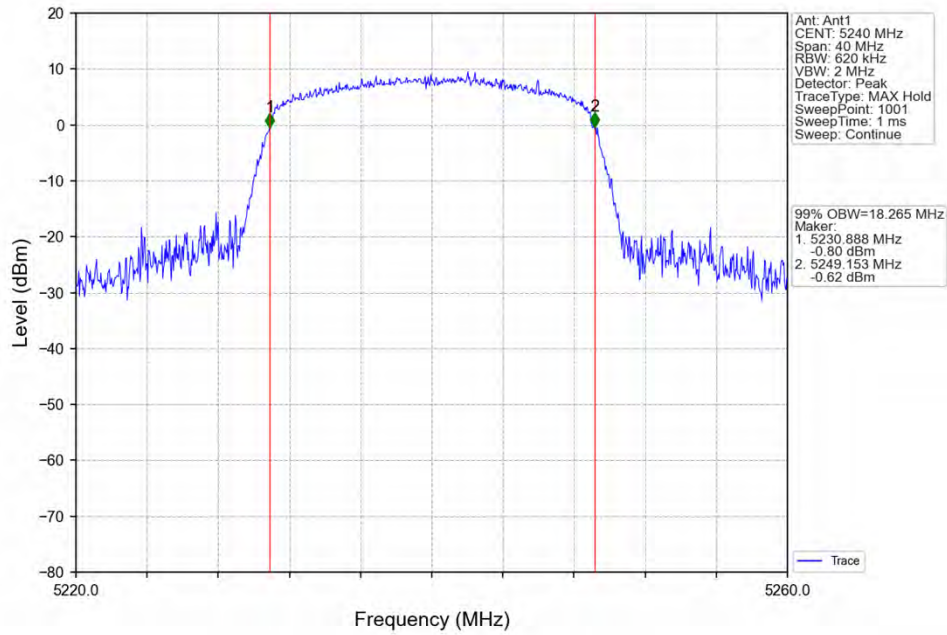
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11a	SISO	5180	1	18.605	Pass
		5200	1	18.285	Pass
		5240	1	18.265	Pass
		5745	1	18.269	Pass
		5785	1	18.298	Pass
		5825	1	18.240	Pass
802.11n (HT20)	SISO	5180	1	18.497	Pass
		5200	1	18.463	Pass
		5240	1	18.425	Pass
		5745	1	18.535	Pass
		5785	1	18.451	Pass
		5825	1	18.487	Pass
802.11n (HT40)	SISO	5190	1	36.899	Pass
		5230	1	36.920	Pass
		5755	1	37.149	Pass
		5795	1	37.164	Pass
802.11ac (VHT20)	SISO	5180	1	18.392	Pass
		5200	1	18.358	Pass
		5240	1	18.451	Pass
		5745	1	18.533	Pass
		5785	1	18.403	Pass
		5825	1	18.453	Pass
802.11ac (VHT40)	SISO	5190	1	36.891	Pass
		5230	1	36.810	Pass
		5755	1	36.922	Pass
		5795	1	37.049	Pass
802.11ac (VHT80)	SISO	5210	1	77.886	Pass
		5775	1	78.690	Pass

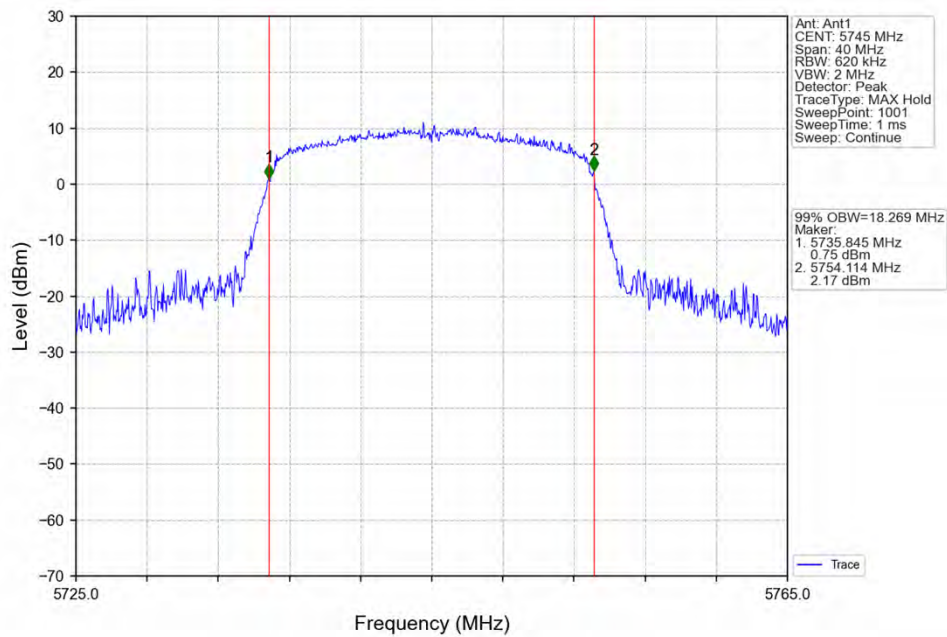
2.1.2 Test Graph



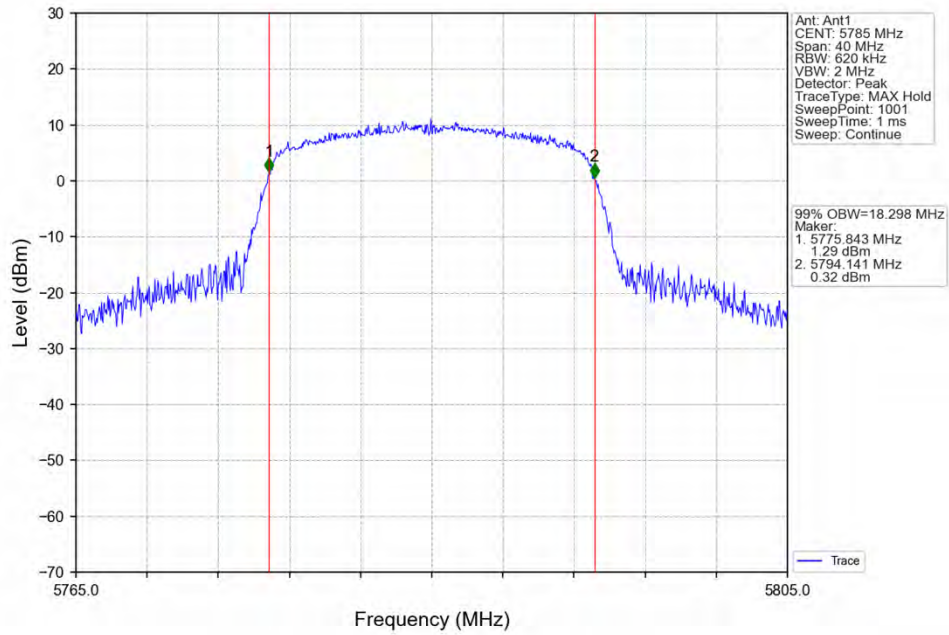
802.11a_HCH_5240MHz_Ant1_NTNV



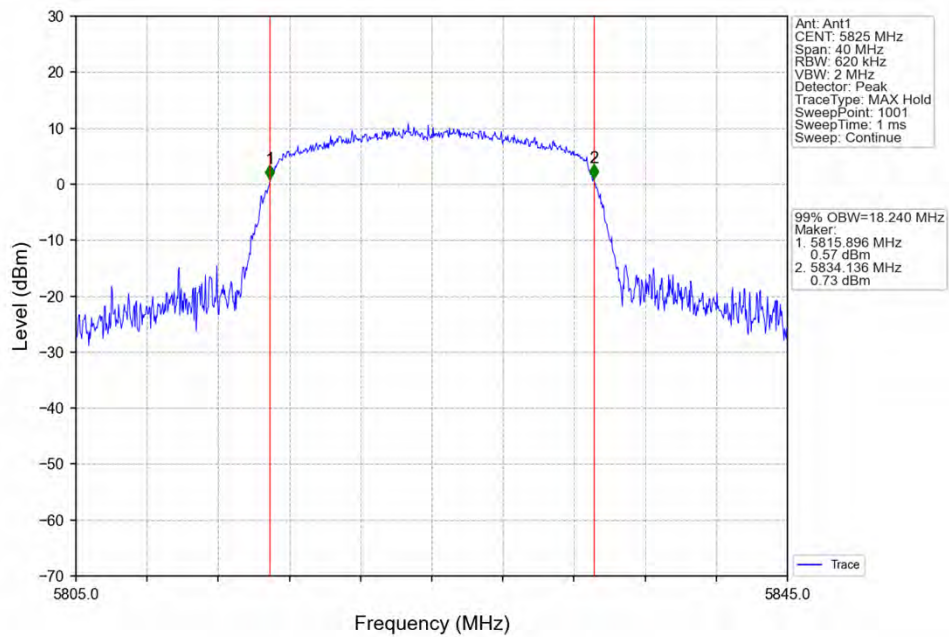
802.11a_LCH_5745MHz_Ant1_NTNV



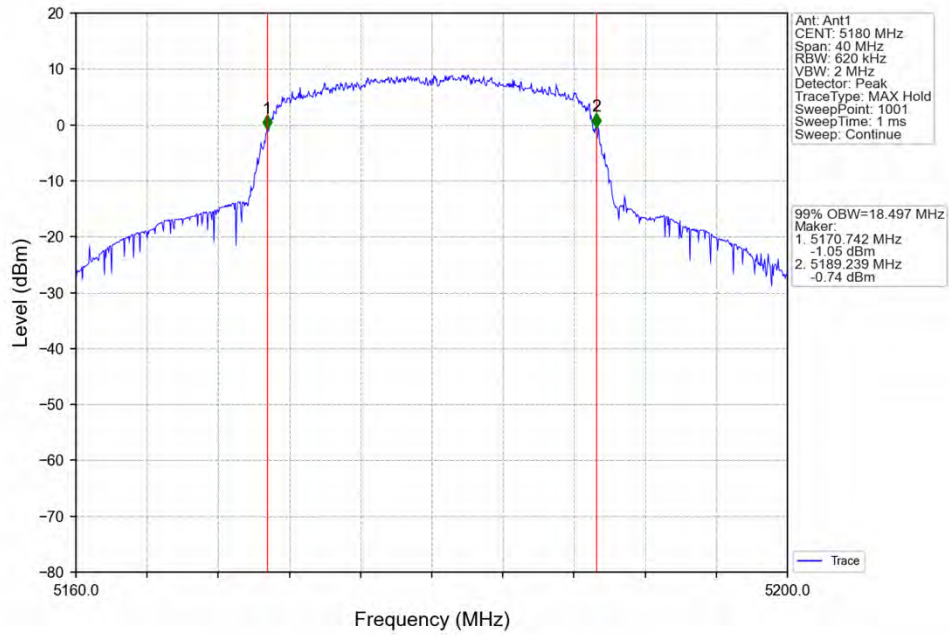
802.11a_MCH_5785MHz_Ant1_NTNV



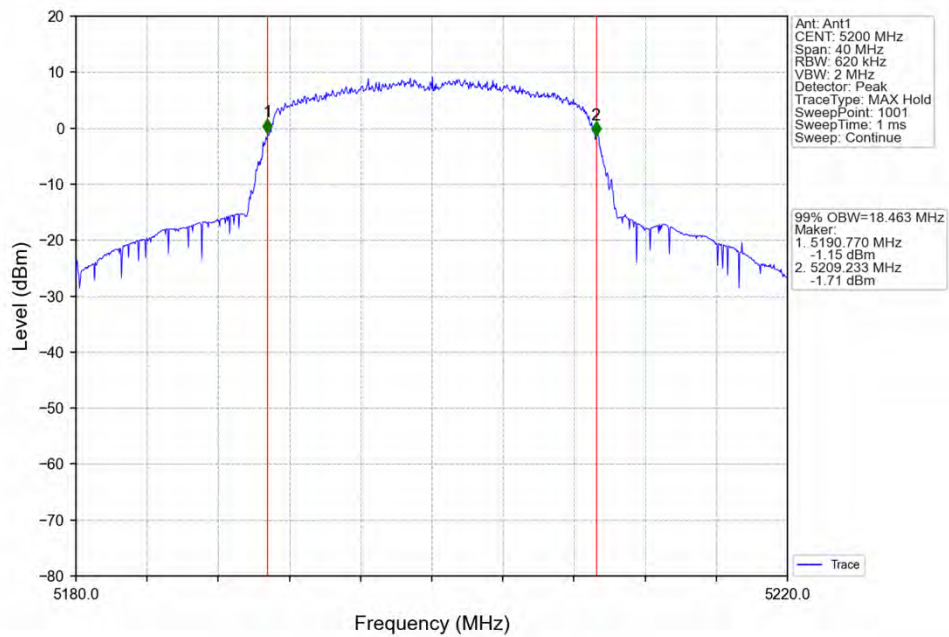
802.11a_HCH_5825MHz_Ant1_NTNV



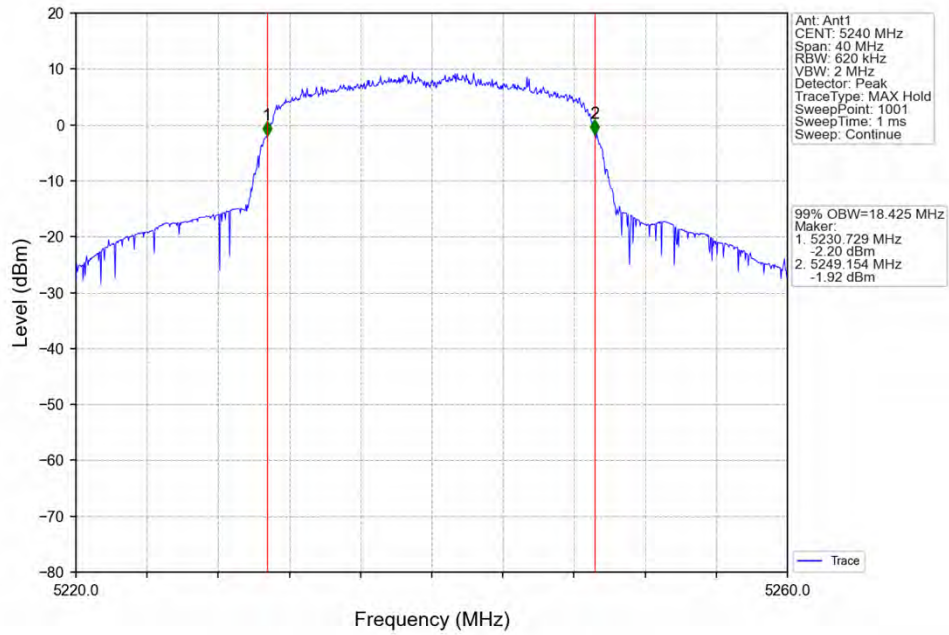
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



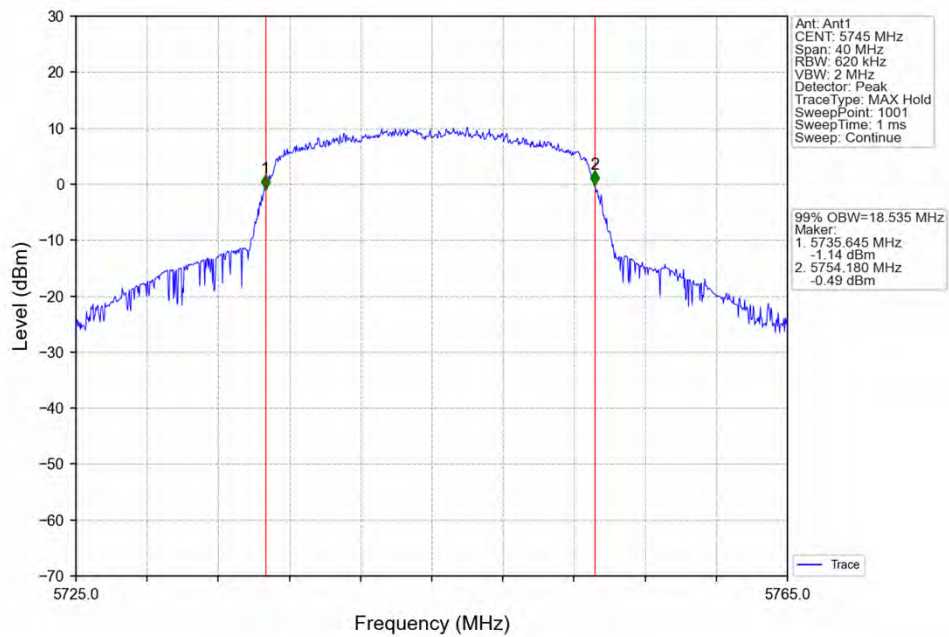
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



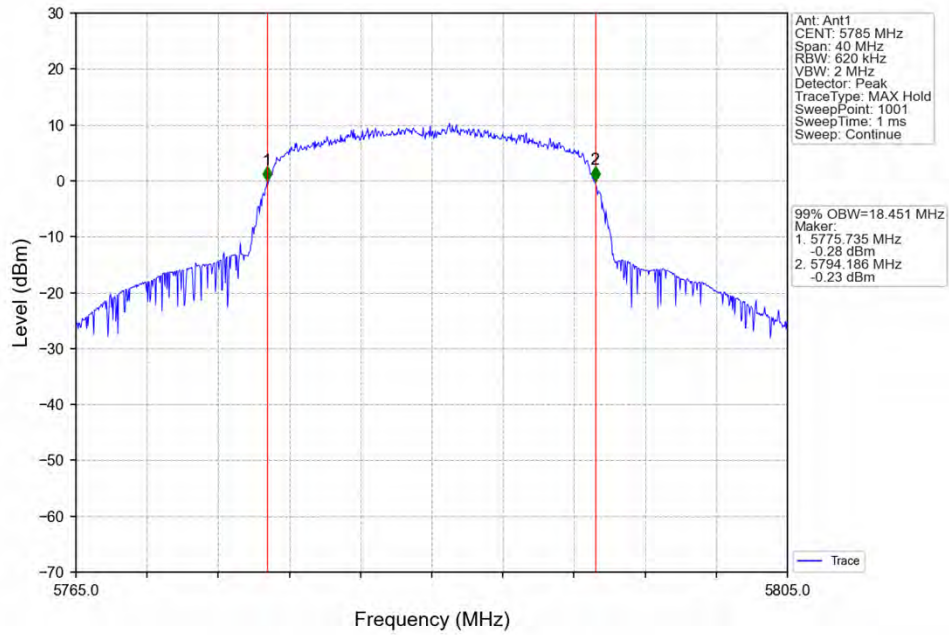
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



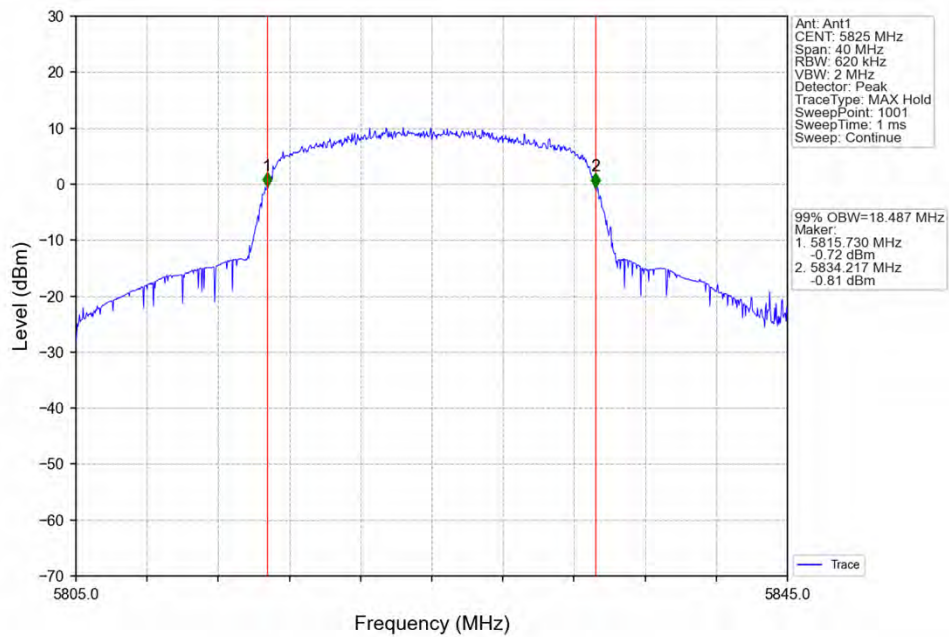
802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



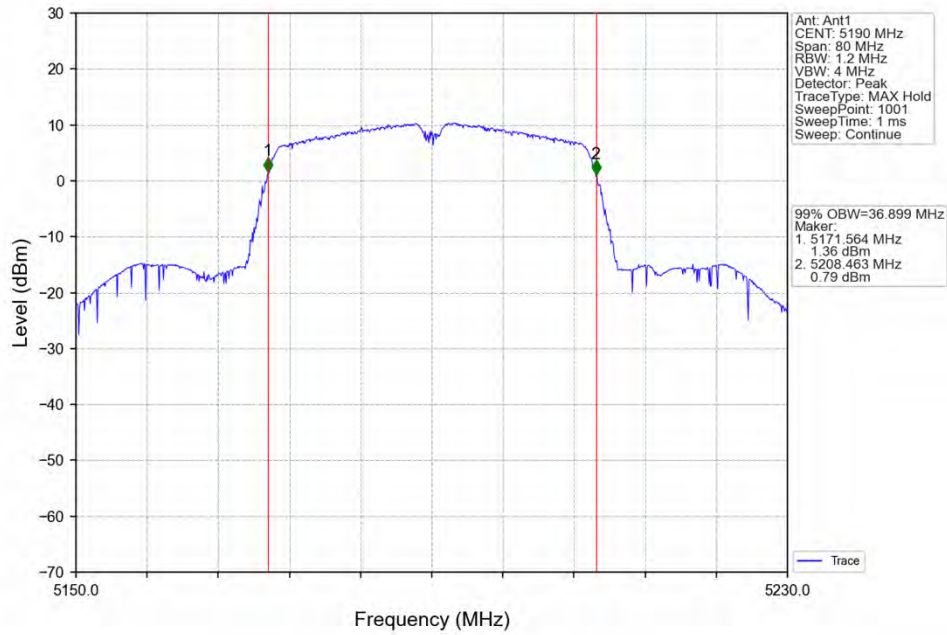
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



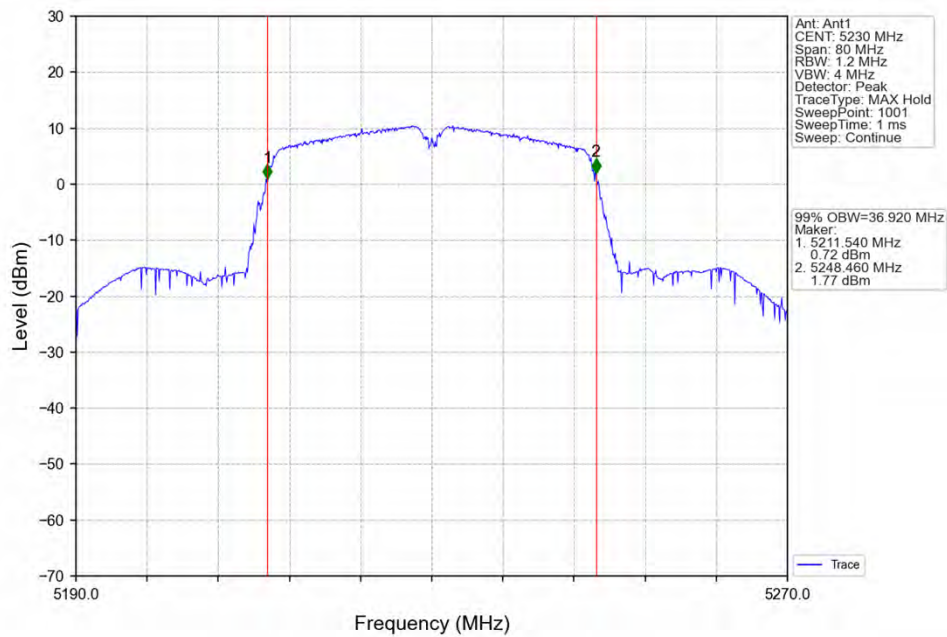
802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



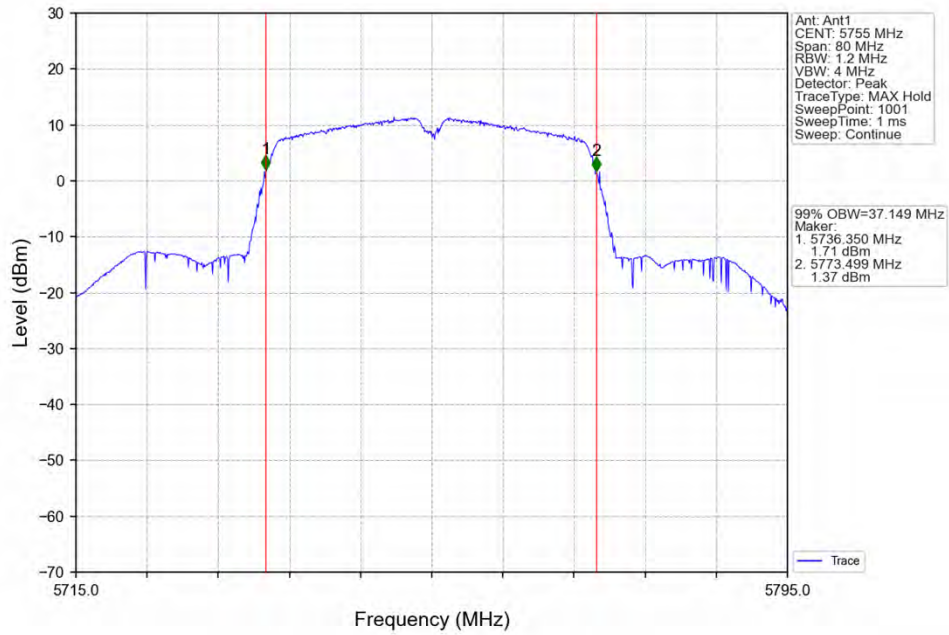
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



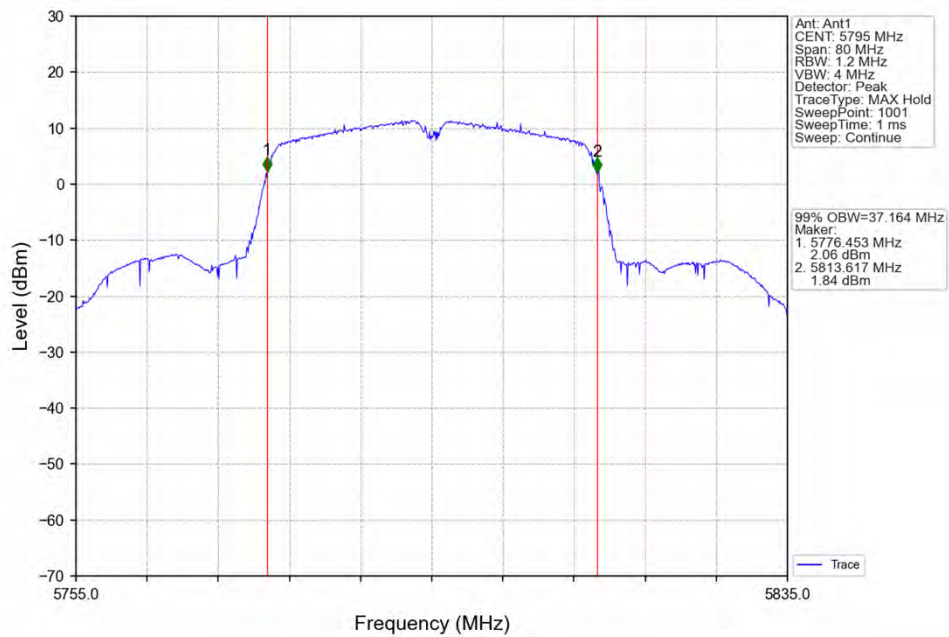
802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



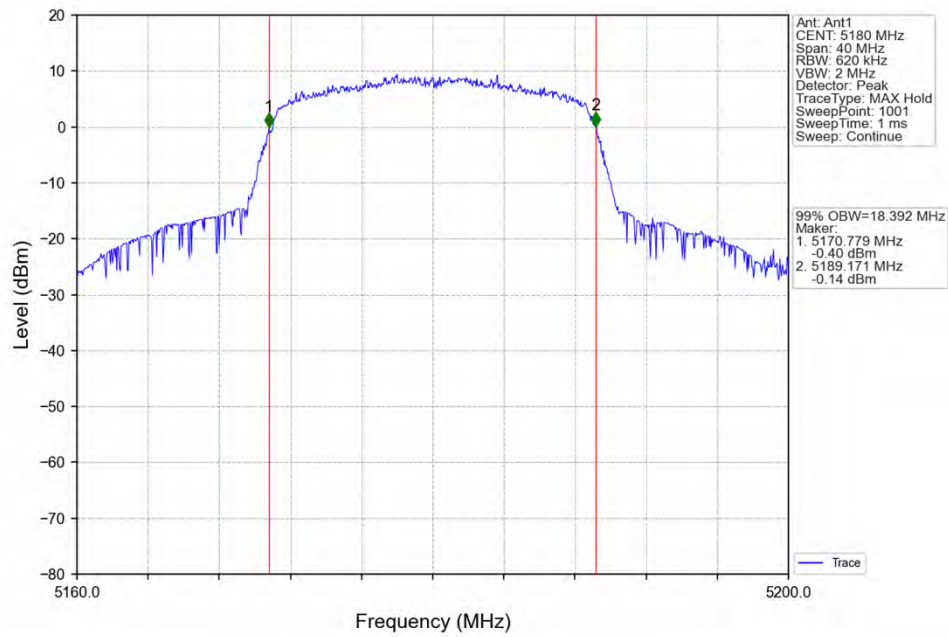
802.11n(HT40)_LCH_5755MHz_Ant1_NTNV



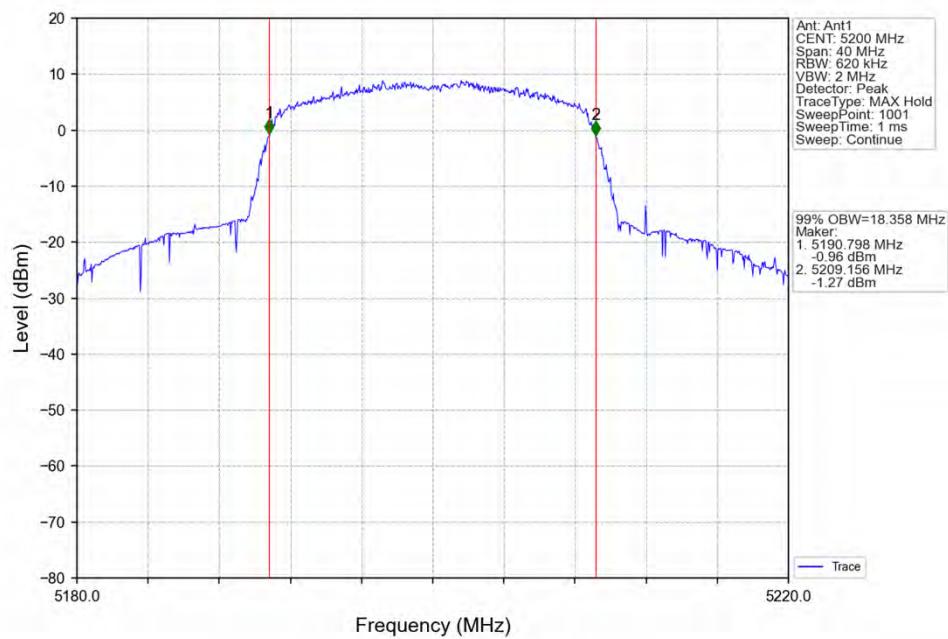
802.11n(HT40)_HCH_5795MHz_Ant1_NTNV



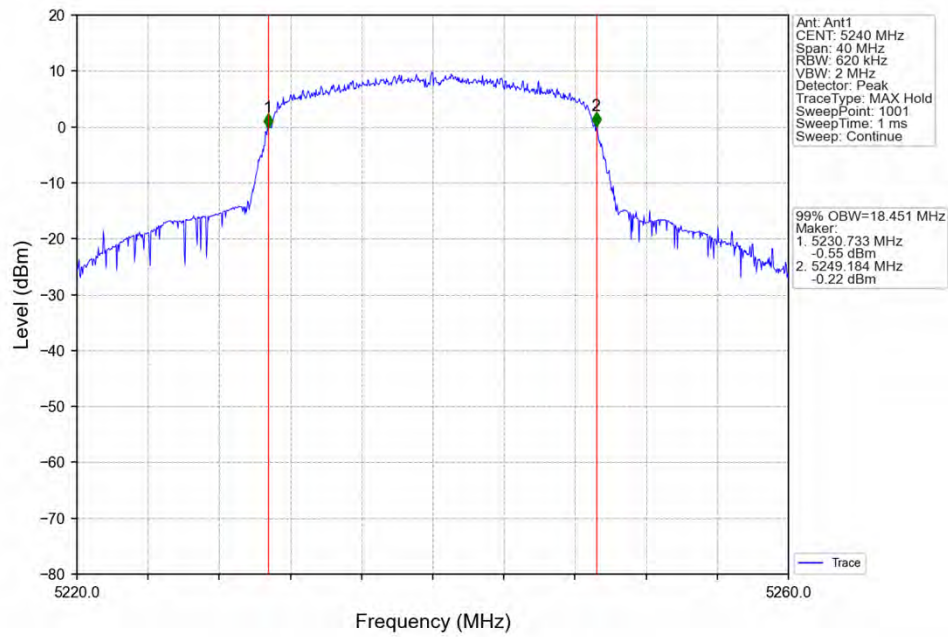
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



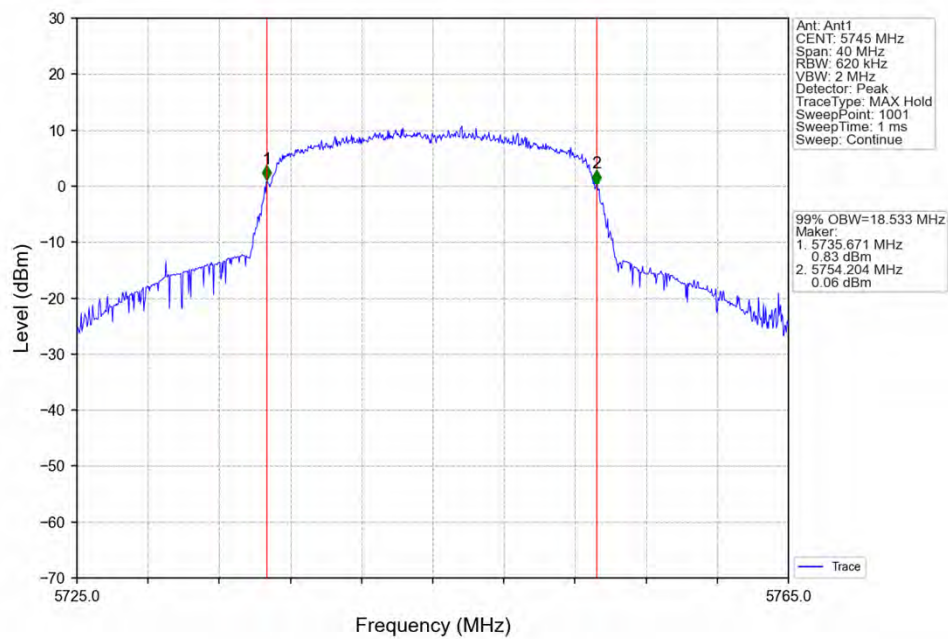
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



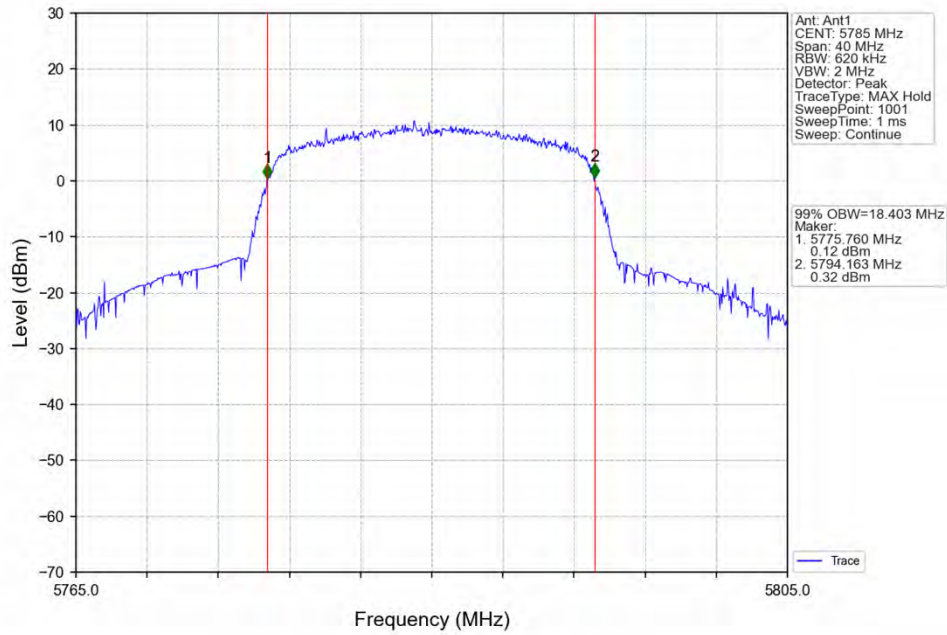
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



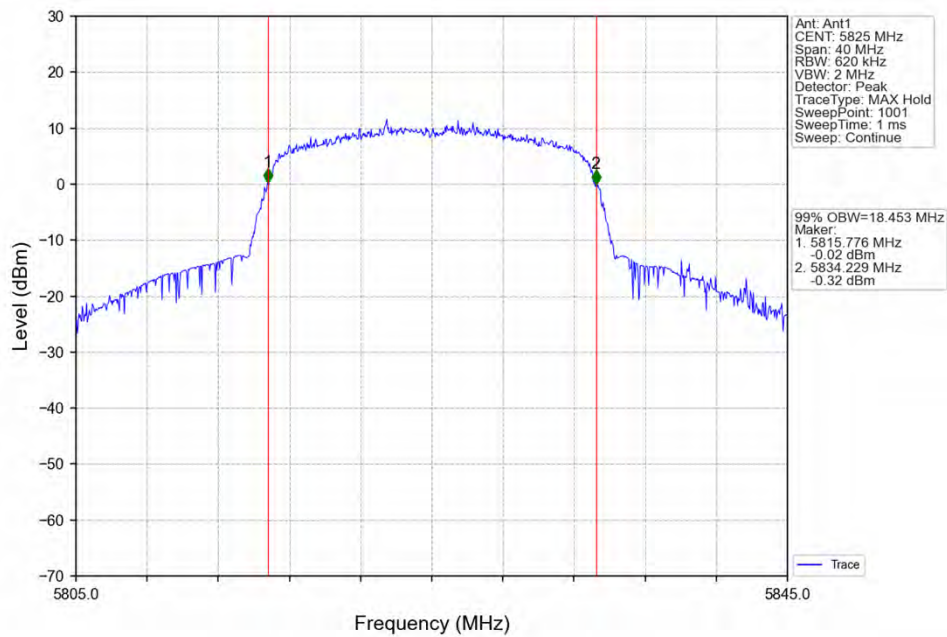
802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



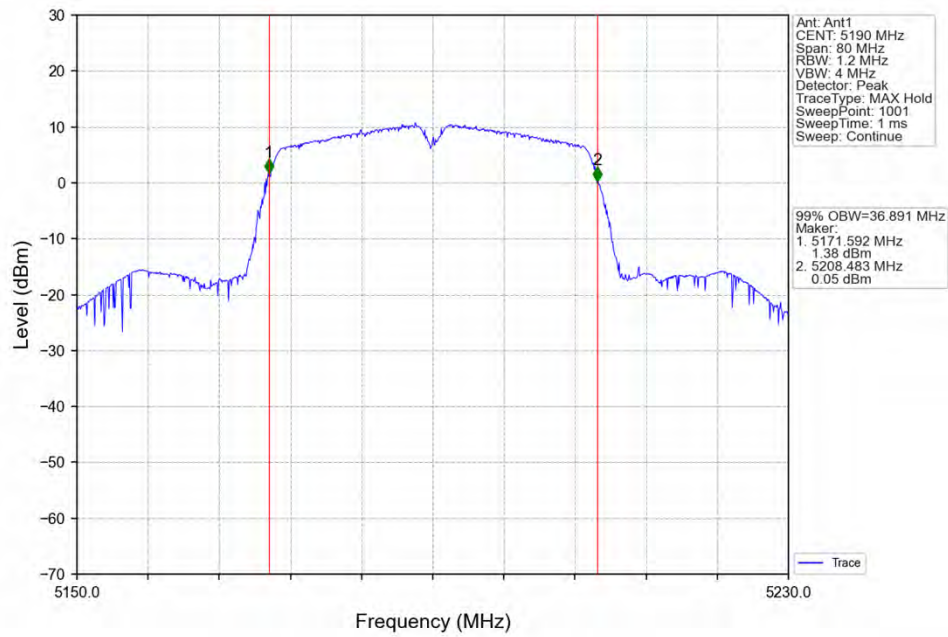
802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV



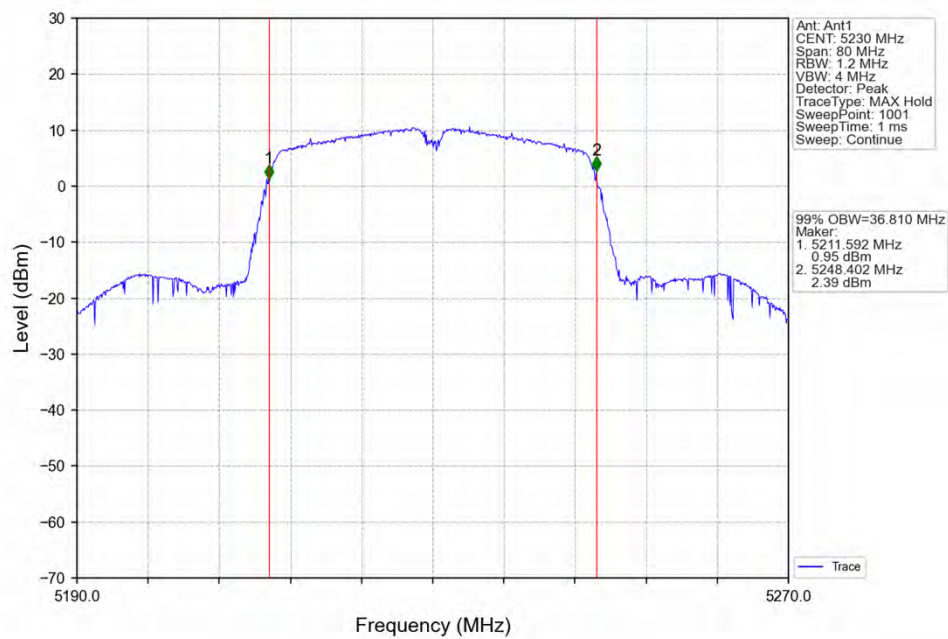
802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV



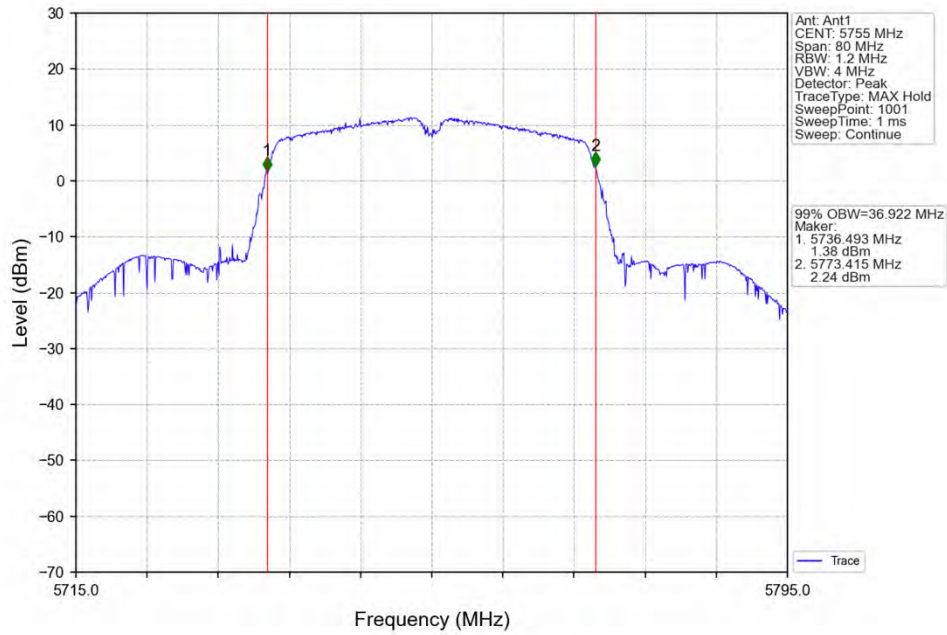
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



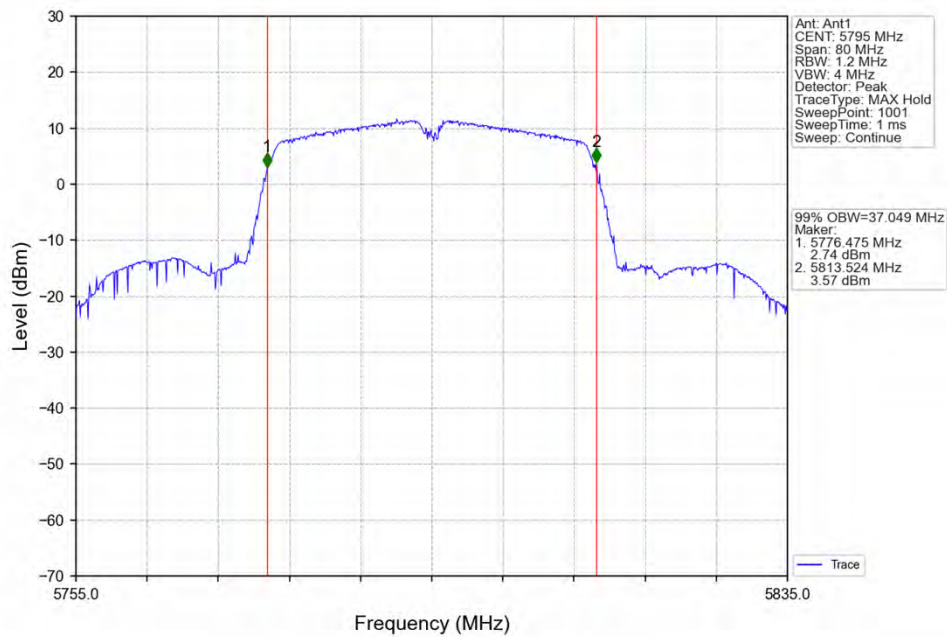
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



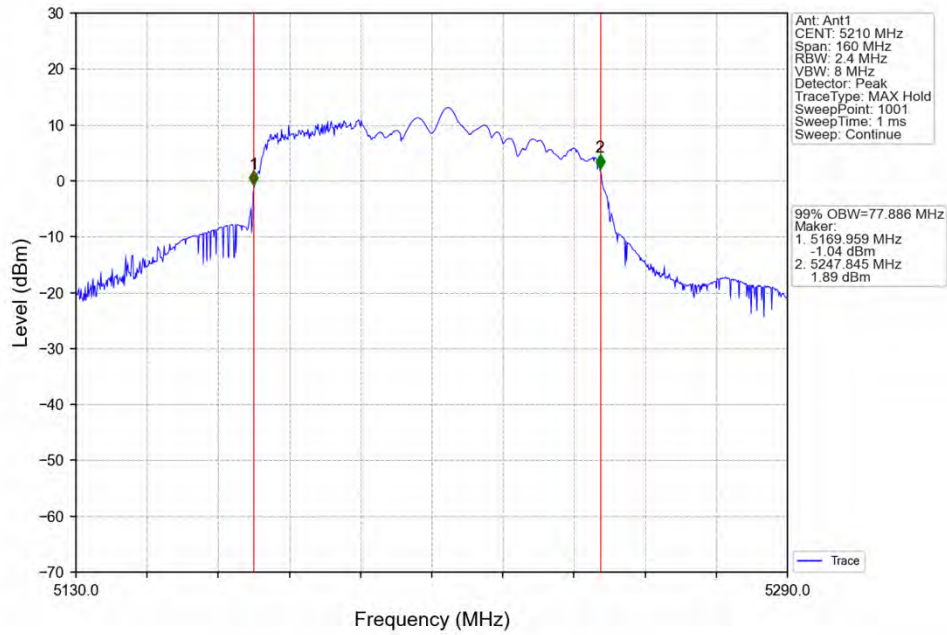
802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV



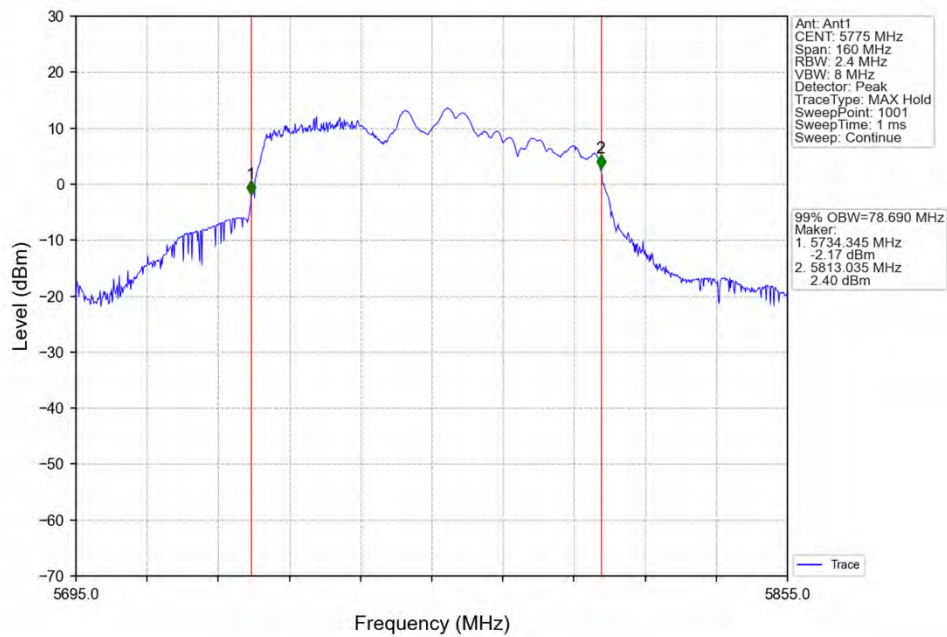
802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV

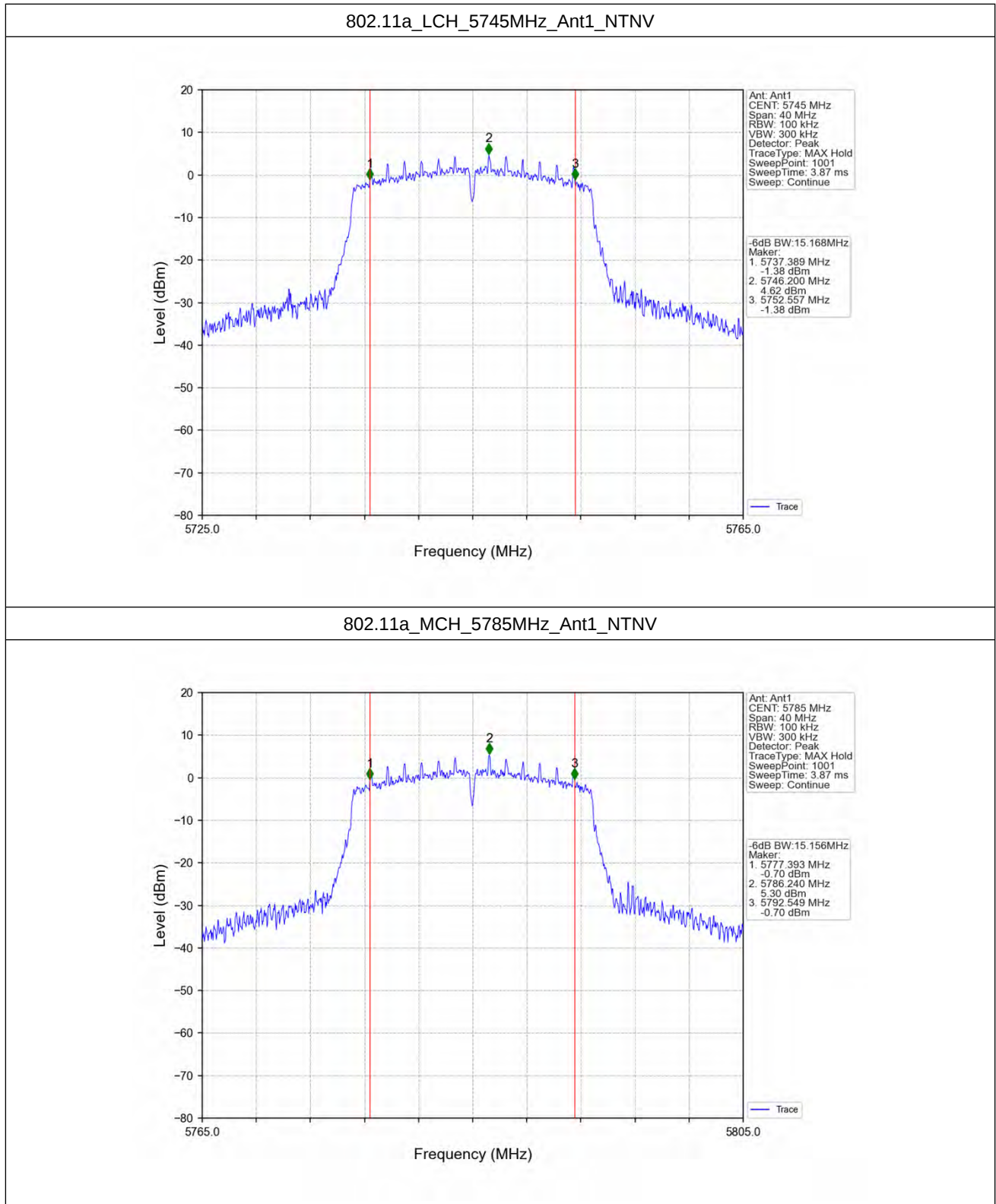


2.2 6dB BW

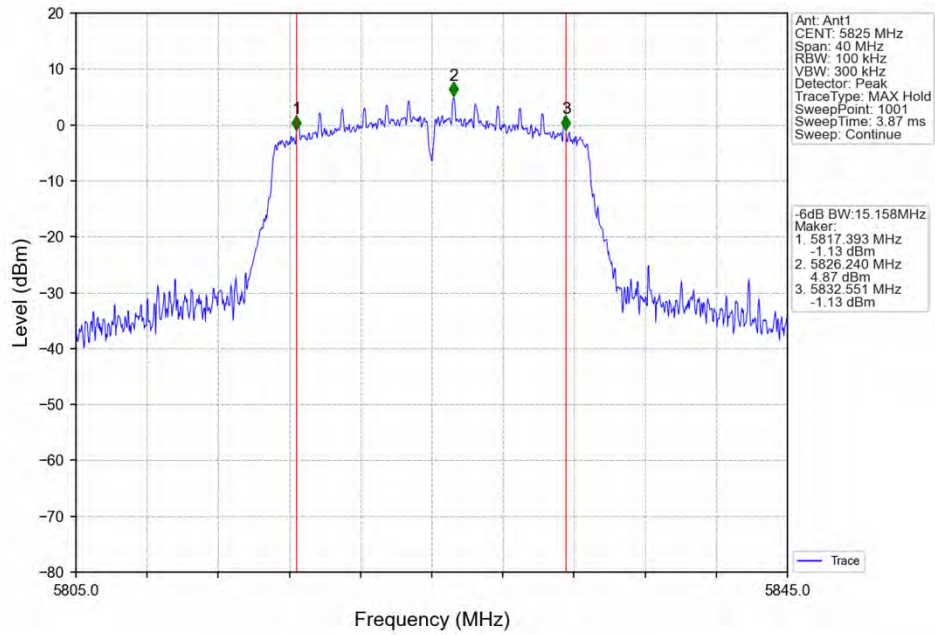
2.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5745	1	15.168	≥ 0.5	Pass
		5785	1	15.156	≥ 0.5	Pass
		5825	1	15.158	≥ 0.5	Pass
802.11n (HT20)	SISO	5745	1	15.120	≥ 0.5	Pass
		5785	1	15.147	≥ 0.5	Pass
		5825	1	15.080	≥ 0.5	Pass
802.11n (HT40)	SISO	5755	1	35.142	≥ 0.5	Pass
		5795	1	35.152	≥ 0.5	Pass
802.11ac (VHT20)	SISO	5745	1	15.143	≥ 0.5	Pass
		5785	1	15.158	≥ 0.5	Pass
		5825	1	15.153	≥ 0.5	Pass
802.11ac (VHT40)	SISO	5755	1	35.149	≥ 0.5	Pass
		5795	1	35.169	≥ 0.5	Pass
802.11ac (VHT80)	SISO	5775	1	75.165	≥ 0.5	Pass

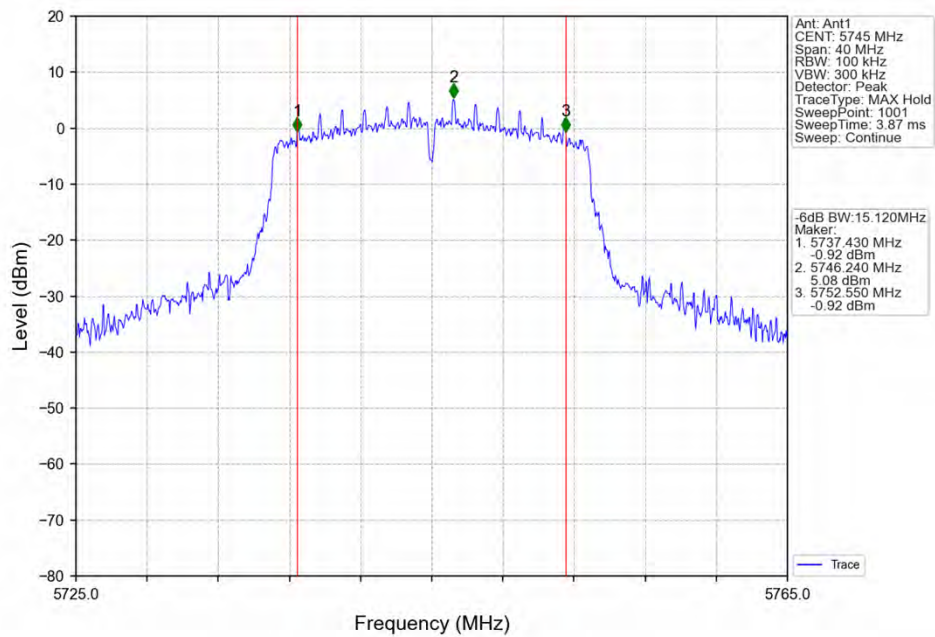
2.2.2 Test Graph



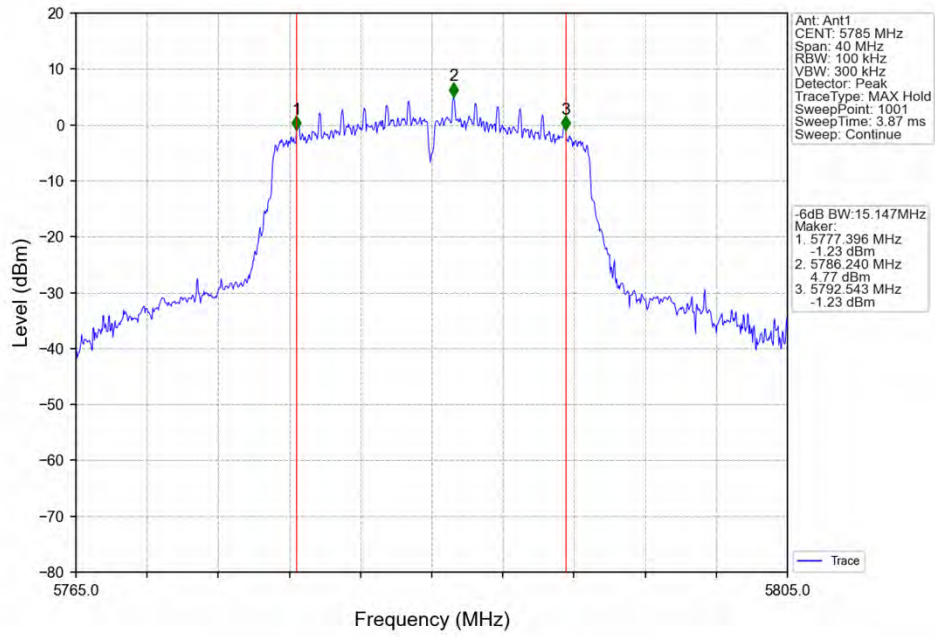
802.11a_HCH_5825MHz_Ant1_NTNV



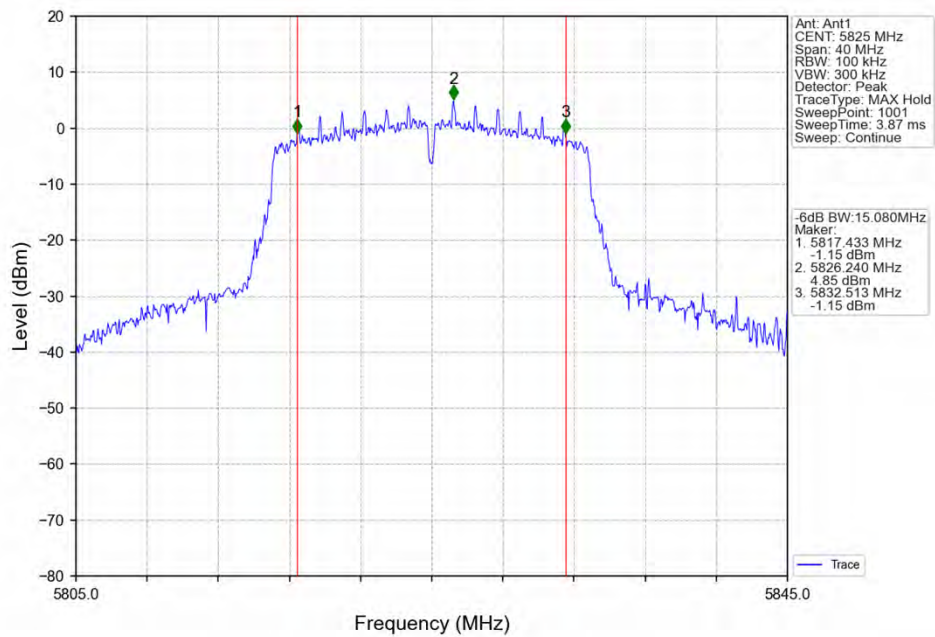
802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



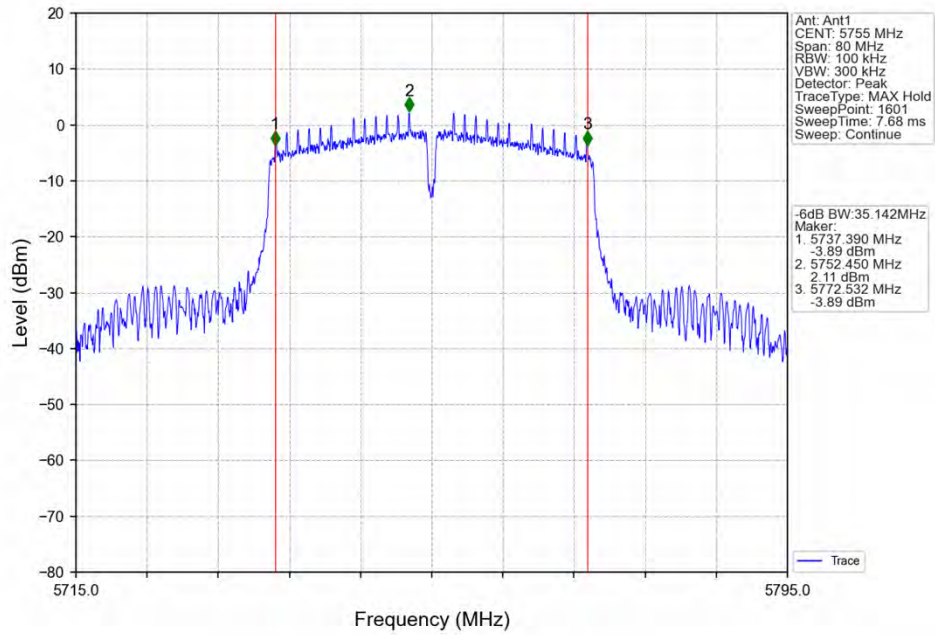
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



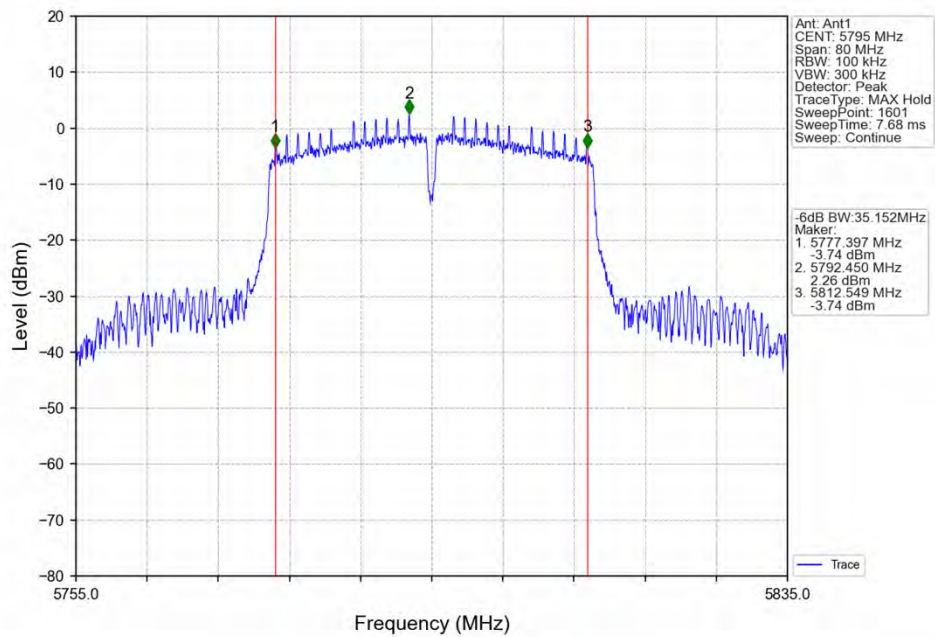
802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



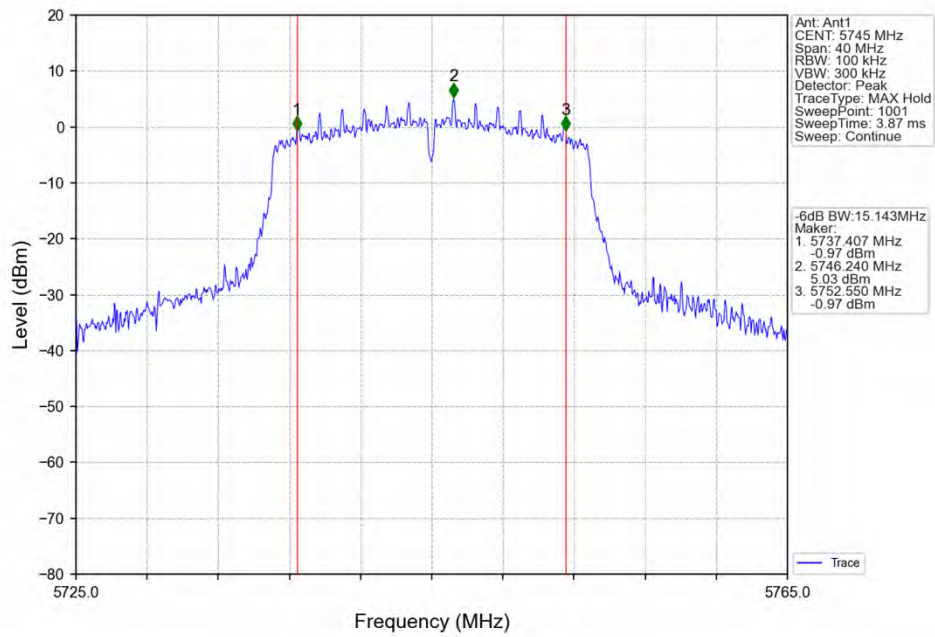
802.11n(HT40)_LCH_5755MHz_Ant1_NTNV



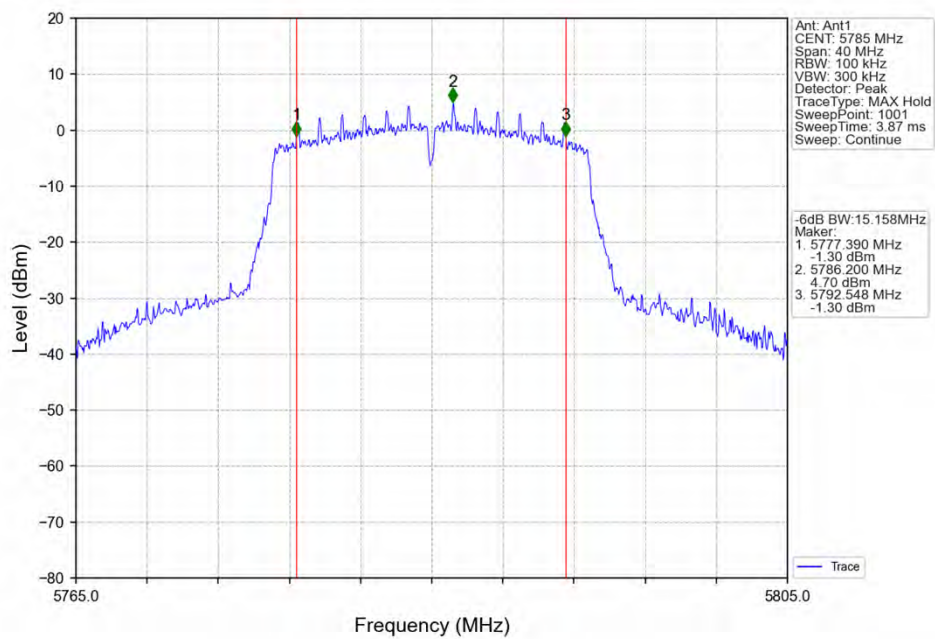
802.11n(HT40)_HCH_5795MHz_Ant1_NTNV



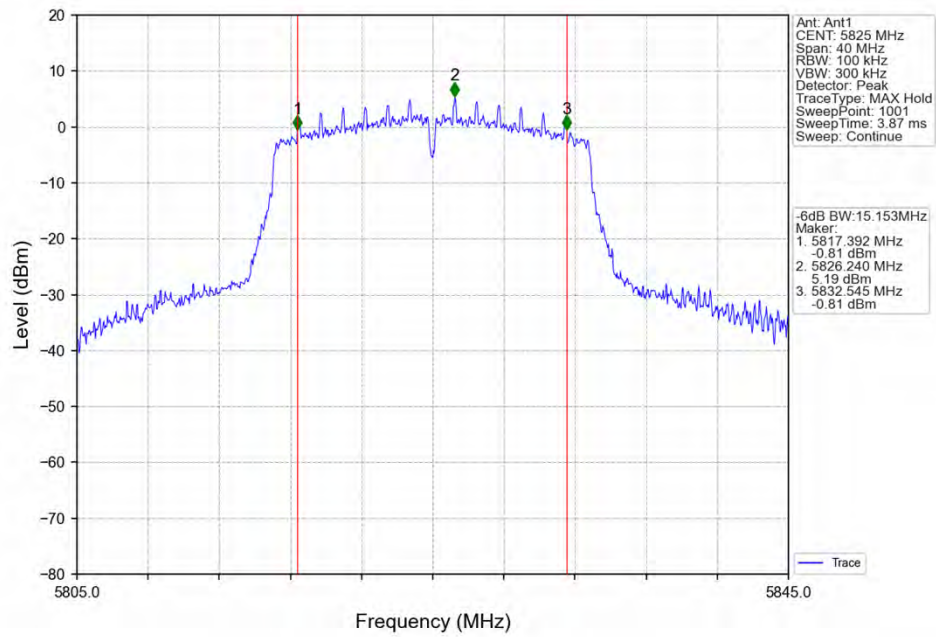
802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



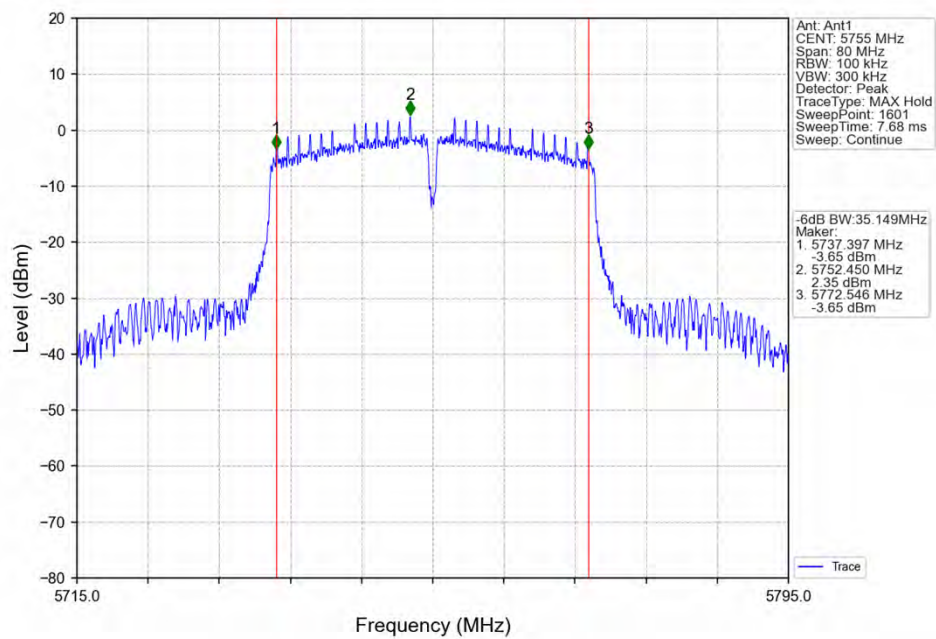
802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV



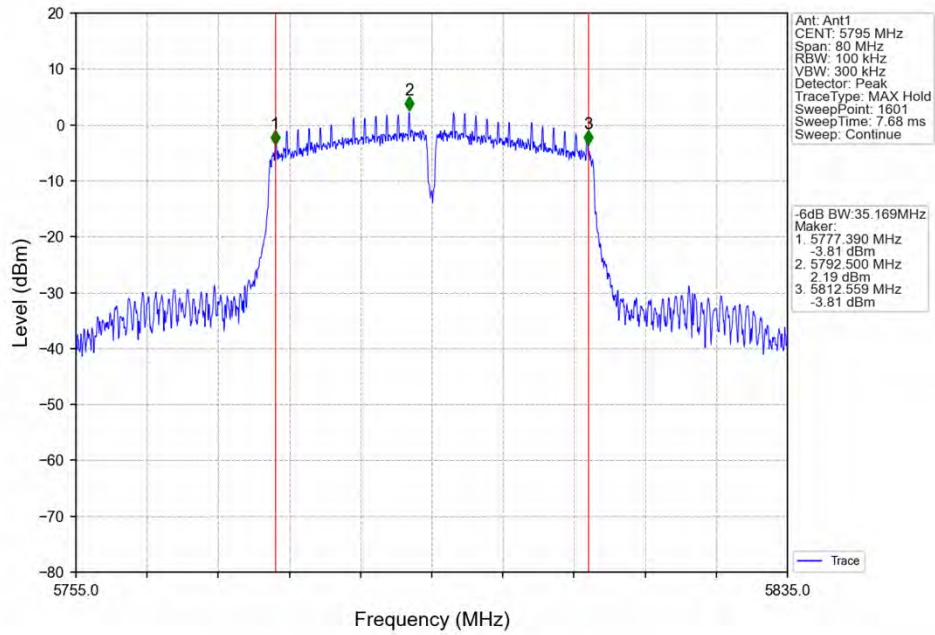
802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV



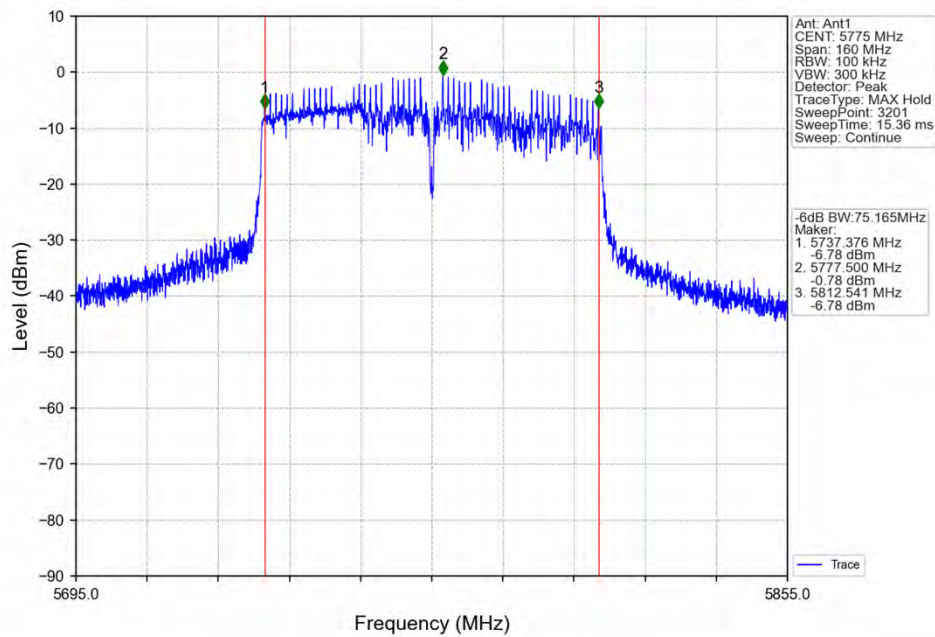
802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV



802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV

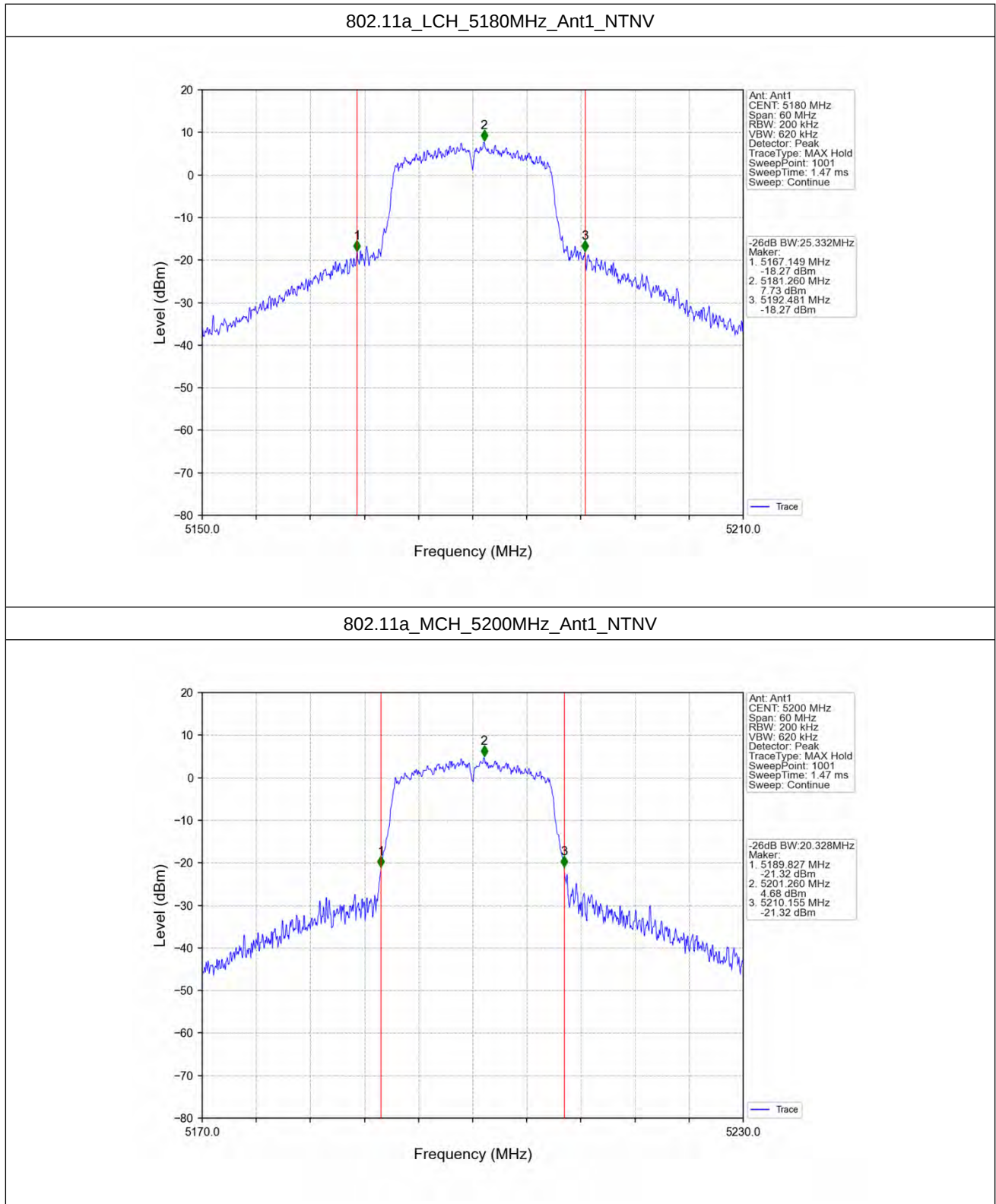


2.3 26dB BW

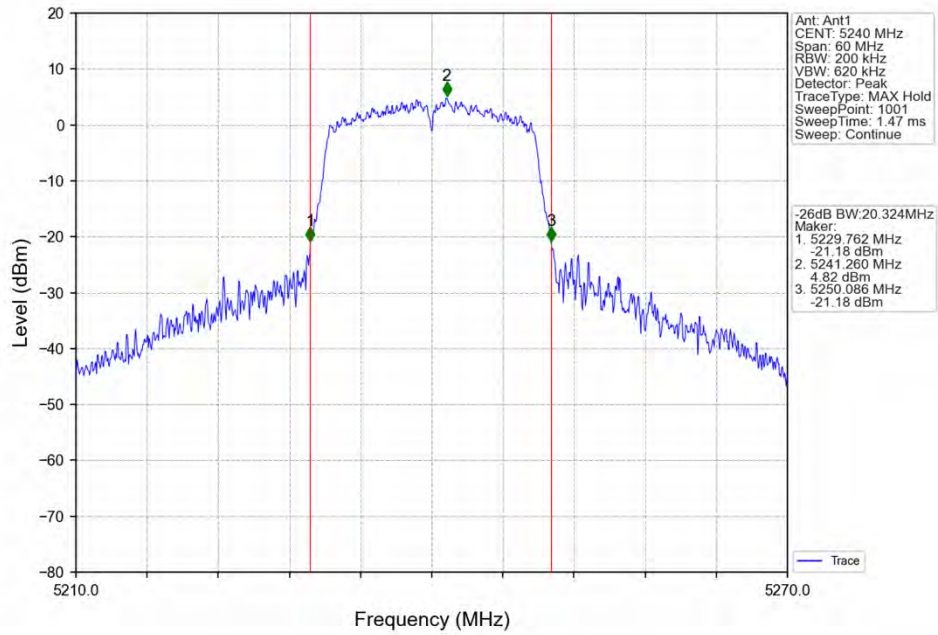
2.3.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	26dB Bandwidth (MHz)	Verdict
				Result	
802.11a	SISO	5180	1	25.332	Pass
		5200	1	20.328	Pass
		5240	1	20.324	Pass
802.11n (HT20)	SISO	5180	1	20.271	Pass
		5200	1	20.159	Pass
		5240	1	20.211	Pass
802.11n (HT40)	SISO	5190	1	40.833	Pass
		5230	1	40.827	Pass
802.11ac (VHT20)	SISO	5180	1	20.306	Pass
		5200	1	20.252	Pass
		5240	1	20.191	Pass
802.11ac (VHT40)	SISO	5190	1	40.793	Pass
		5230	1	40.438	Pass
802.11ac (VHT80)	SISO	5210	1	99.758	Pass

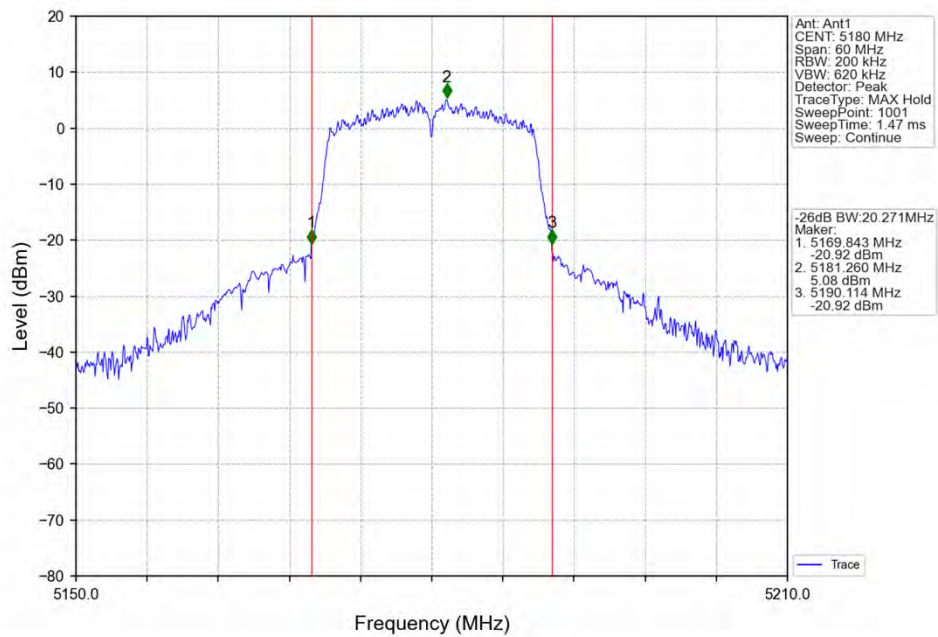
2.3.2 Test Graph



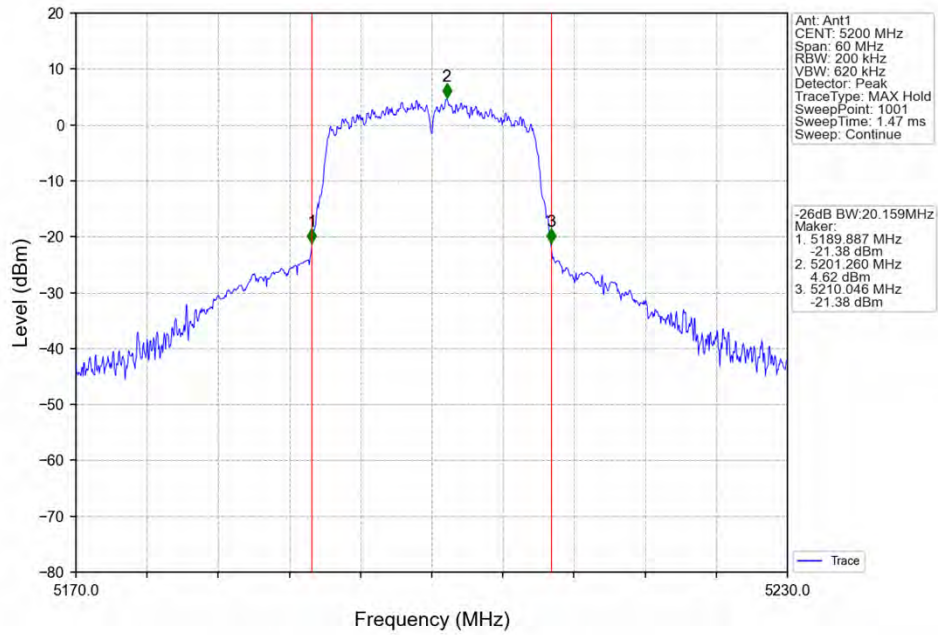
802.11a_HCH_5240MHz_Ant1_NTNV



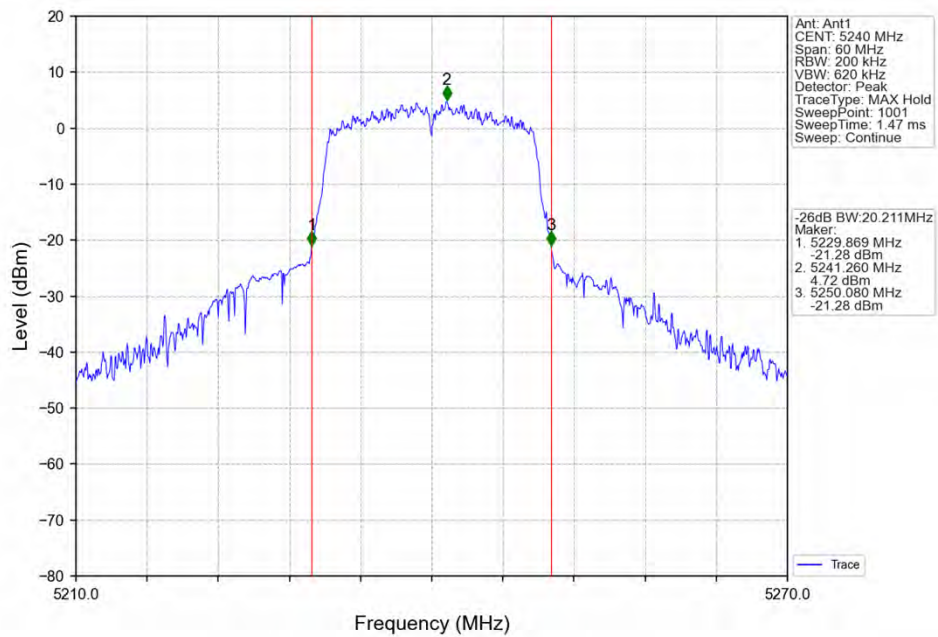
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



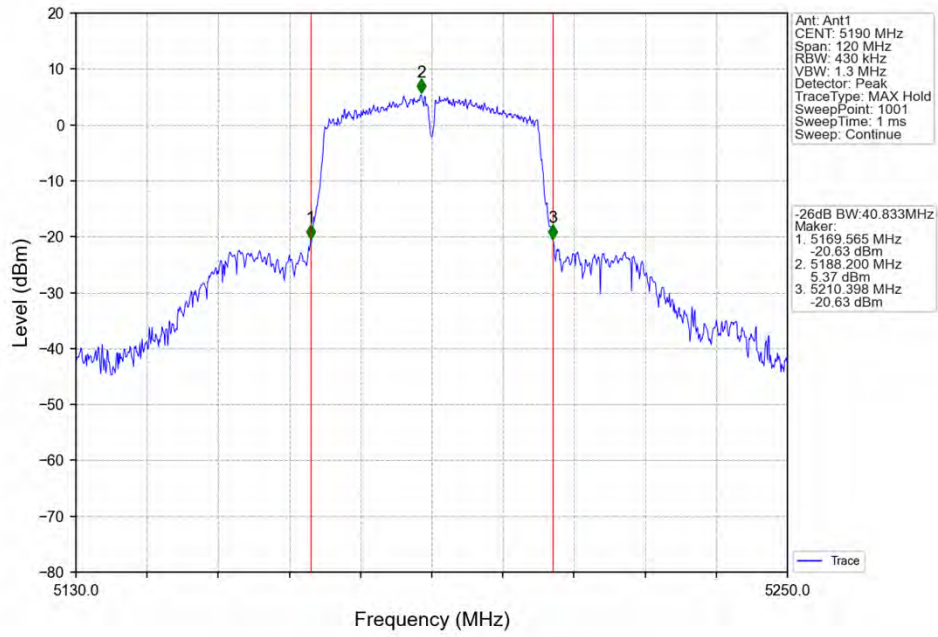
802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



802.11n(HT40)_HCH_5230MHz_Ant1_NTNV

