RF Test Report

For

Applicant Name:	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address:	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN, 518XXX China
EUT Name:	Tablet
Brand Name:	OUKITEL
Model Number:	OT5
Series Model Number:	Refer to section 2

Issued By

Company Name:	**BTF Testing Lab (Shenzhen) Co., Ltd.**
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Report Number:	BTF230921R00704
Test Standards:	47 CFR Part 15 Subpart E Section 15.407
FCC ID:	2ANMU-OT5
Test Conclusion:	Pass
Test Date:	2023-09-21 to 2023-10-13
Date of Issue:	2023-10-16

Prepared By:

Chris Liu / Project Engineer

Date: 2023-10-16

Approved By:

Ryan.CJ / EMC Manager

Date: 2023-10-16

Note: All the test results in this report only related to the testing samples. Which can be duplicated completely for the legal use with approval of applicant; it shall not be reproduced except in full without the written approval of BTF Testing Lab (Shenzhen) Co., Ltd., All the objections should be raised within thirty days from the date of issue. To validate the report, you can contact us.

Revision History		
Version	Issue Date	Revisions Content
R_V0	2023-10-16	Original
Note:	Once the revision has been made, then previous versions reports are invalid.	

Table of Contents

1. Introduction

1.1 Identification of Testing Laboratory

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130

1.2 Identification of the Responsible Testing Location

Test Location:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Description:	All measurement facilities used to collect the measurement data are located at F101,201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
FCC Registration Number:	518915
Designation Number:	CN1330

1.3 Laboratory Condition

Ambient Temperature:	20℃ to 25℃
Ambient Relative Humidity:	45% to 55%
Ambient Pressure:	100 kPa to 102 kPa

1.4 Announcement

(1) The test report reference to the report template version v0.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.

(5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

(6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2. Product Information

2.1 Application Information

Company Name:	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address:	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN, 518XXX China

2.2 Manufacturer Information

Company Name:	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address:	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN, 518XXX China

2.3 Factory Information

Company Name:	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address:	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN, 518XXX China

2.4 General Description of Equipment under Test (EUT)

EUT Name	Tablet
Under Test Model Name	OT5
Series Model Name	OT5 S, OT5 Pro, OT5 Ultra
Description of Model name differentiation	Only the model name is different, everything else is the same
Hardware Version	Q2_TV1.0
Software and Firmware Version	OUKITEL_OT5_EEA_V04

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2.5 Technical Information

Modulation technology	OFDM
Modulation Type	BPSK, QPSK, 16QAM, 64QAM, 256QAM
Function	☐ Outdoor AP ☐ Indoor AP ☐ Fixed P2P ☒ Client
Operation Frequency Range	U-NII Band 1: 5.18~5.24 GHz U-NII Band 3: 5.745~5.825 GHz
Frequency Block	U-NII Band 1: 5.15~5.25 GHz U-NII Band 3: 5.725~5.85 GHz
Channel Bandwidth	802.11a: 20 MHz 802.11n: 20 MHz, 40 MHz 802.11ac: 20 MHz, 40 MHz, 80 MHz
Antenna Type	PIFA Antenna
Antenna Gain#	1.87 dBi
Antenna Impedance	50Ω
Antenna System (MIMO Smart Antenna)	N/A

Note:

#: The antenna gain provided by the applicant, and the laboratory will not be responsible for the accumulated calculation results which covers the information provided by the applicant.

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Modulation technology	Modulation Type	Transfer Rate (Mbps)
OFDM (802.11a)	BPSK	6, 9
	QPSK	12, 18
	16QAM	24, 36
	64QAM	48, 54
OFDM (802.11n(HT20))	BPSK	6.5, 7.2
	QPSK	13, 14.4, 19.5, 21.7
	16QAM	26, 28.9, 39, 43.3
	64QAM	52, 57.8, 58.5, 65, 72.2
OFDM (802.11n(HT40))	BPSK	13.5, 15.0
	QPSK	27, 30, 40.5, 45.0
	16QAM	54, 60, 81, 90
	64QAM	108, 120, 121.5, 135, 150

OFDM (802.11ac(VHT20)/ (VHT40)/ (VHT80)):

MCS	Modulation	20 MHz channels		40 MHz channels		80 MHz channels	
index	type	800ns GI	400ns GI	800ns GI	400ns GI	800ns GI	400ns GI
0	BPSK	6.5	7.2	13.5	15	29.3	32.5
1	QPSK	13	14.4	27	30	58.5	65
2	QPSK	19.5	21.7	40.5	45	87.8	97.5
3	16-QAM	26	28.9	54	60	117	130
4	16-QAM	39	43.3	81	90	175.5	195
5	64-QAM	52	57.8	108	120	234	260
6	64-QAM	58.5	65	121.5	135	263.3	292.5
7	64-QAM	65	72.2	135	150	292.5	325
8	256-QAM	78	86.7	162	180	351	390
9	256-QAM	N/A	N/A	180	200	390	433.3

Note: Preliminary tests were performed in different data rate in above table to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

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Test Items	Mode	Data Rate	Modulation Type	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
				Channel	Channel	Channel	Channel
RF Output Power	11a	6	BPSK QPSK 16QAM 64QAM 256QAM	36/44/48	52/56/64	100/116/144	149/157/165
	11n(20 MHz)	6.5		36/44/48	52/56/64	100/116/144	149/157/165
	11n(40 MHz)	13.5		38/46	54/62	102/110/142	151/159
	11ac(20 MHz)	6.5		36/44/48	52/56/64	100/116/144	149/157/165
	11ac(40 MHz)	13.5		38/46	54/62	102/110/142	151/159
	11ac(80 MHz)	29.3		42	58	106/138	155
26dB Emission Bandwidth & 99% Occupied Bandwidth	11a	6	BPSK QPSK 16QAM 64QAM 256QAM	36/44/48	52/56/64	100/116/144	149/157/165
	11n(20 MHz)	6.5		36/44/48	52/56/64	100/116/144	149/157/165
	11n(40 MHz)	13.5		38/46	54/62	102/110/142	151/159
	11ac(20 MHz)	6.5		36/44/48	52/56/64	100/116/144	149/157/165
	11ac(40 MHz)	13.5		38/46	54/62	102/110/142	151/159
	11ac(80 MHz)	29.3		42	58	106/138	155
6 dB bandwidth	11a	6	BPSK QPSK 16QAM 64QAM 256QAM	N/A	N/A	N/A	149/157/165
	11n(20 MHz)	6.5		N/A	N/A	N/A	149/157/165
	11n(40 MHz)	13.5		N/A	N/A	N/A	151/159
	11ac(20 MHz)	6.5		N/A	N/A	N/A	149/157/165
	11ac(40 MHz)	13.5		N/A	N/A	N/A	151/159
	11ac(80 MHz)	29.3		N/A	N/A	N/A	155
Power Spectral Density	11a	6	BPSK QPSK 16QAM 64QAM 256QAM	36/44/48	52/56/64	100/116/144	149/157/165
	11n(20 MHz)	6.5		36/44/48	52/56/64	100/116/144	149/157/165
	11n(40 MHz)	13.5		38/46	54/62	102/110/142	151/159
	11ac(20 MHz)	6.5		36/44/48	52/56/64	100/116/144	149/157/165
	11ac(40 MHz)	13.5		38/46	54/62	102/110/142	151/159
	11ac(80 MHz)	29.3		42	58	106/138	155
Radiated Spurious Emissions	11a	6	BPSK QPSK 16QAM 64QAM 256QAM	36/44/48	52/56/64	100/116/144	149/157/165
	11n(20 MHz)	6.5		36/44/48	52/56/64	100/116/144	149/157/165
	11n(40 MHz)	13.5		38/46	54/62	102/110/142	151/159
	11ac(20 MHz)	6.5		36/44/48	52/56/64	100/116/144	149/157/165
	11ac(40 MHz)	13.5		38/46	54/62	102/110/142	151/159
	11ac(80 MHz)	29.3		42	58	106/138	155
Band Edge (Restricted -band)	11a	6	BPSK QPSK 16QAM 64QAM 256QAM	36/48	52/64	100/140	149/165
	11n(20 MHz)	6.5		36/48	52/64	100/140	149/165
	11n(40 MHz)	13.5		38/46	54/62	102/134	151/159
	11ac(20 MHz)	6.5		36/48	52/64	100/140	149/165
	11ac(40 MHz)	13.5		38/46	54/62	102/134	151/159
	11ac(80 MHz)	29.3		42	58	106/122	155

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Frequency Stability	11a	6	BPSK QPSK 16QAM 64QAM 256QAM	36/44/48	52/56/64	100/116/144	149/157/165
	11n(20 MHz)	6.5		36/44/48	52/56/64	100/116/144	149/157/165
	11n(40 MHz)	13.5		38/46	54/62	102/110/142	151/159
	11ac(20 MHz)	6.5		36/44/48	52/56/64	100/116/144	149/157/165
	11ac(40 MHz)	13.5		38/46	54/62	102/110/142	151/159
	11ac(80 MHz)	29.3		42	58	106/138	155

According to section 15.31(m), regards to the operating frequency range over 10 MHz, must select three channels which were tested. The Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the below .

Band	Test Channel	20MHz		40MHz		80MHz	
		Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
U-NII-1	CH_L	36	5180	38	5190	-	-
	CH_M	44	5220	-	-	42	5210
	CH_H	48	5240	46	5230	-	-
U-NII-2A	CH_L	52	5260	54	5270	-	-
	CH_M	56	5280	-	-	58	5290
	CH_H	64	5320	62	5310	-	-
U-NII-2C	CH_L	100	5500	102	5510	106	5530
	CH_M	116	5580	110	5550	122	5610
	CH_H	140	5700	134	5670	138	5690
	CH_{H1}	144	5720	142	5710		
U-NII-3	CH_L	149	5745	151	5755	-	-
	CH_M	157	5785	-	-	155	5775
	CH_H	165	5825	159	5795	-	-

3. Summary of Test Results

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15 Subpart E Section 15.407	Unlicensed National Information Infrastructure Devices
2	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
3	KDB 789033 D02 v02r01	GUIDELINES FOR COMPLIANCE TESTING OF UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII) DEVICES PART 15, SUBPART E

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3.2 Summary of Test Result

No.	Description	FCC Part No.	Channel	Test Result	Test By	Verdict	Remark
1	Antenna Requirement	15.203	N/A	--	--	Pass	--
2	AC Conducted Emission	15.207	N/A	ANNEX A.1		Pass	--
3	Peak Output Power	15.407(a)	Low/Middle/High	ANNEX A.2		Pass	--
4	Power Spectral Density	15.407(a)	Low/Middle/High	ANNEX A.3		Pass	--
5	26dB Emission Bandwidth & 99% Occupied Bandwidth	15.407(a)	Low/Middle/High	ANNEX A.4		Pass	--
6	6 dB bandwidth	15.407(e)	Low/Middle/High	ANNEX A.5		Pass	--
7	Radiated Spurious Emissions	15.407(b)	Low/Middle/High	ANNEX A.6		Pass	--
8	Band Edge (Restricted-band)	15.407(b)	Low/High	ANNEX A.7		Pass	--
9	Frequency Stability	15.407(g)	Low/Middle/High	ANNEX A.8		Pass	--

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3.3 Uncertainty of Test

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2 and TR100 028-1/-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Occupied Channel Bandwidth	69 KHz
RF output power, conducted	0.87 dB
Power Spectral Density, conducted	0.69 dB
Unwanted Emissions, conducted	0.94 dB
All emissions, radiated(<1GHz)	4.12 dB
All emissions, radiated(>1GHz)	4.16 dB
Temperature	0.82 °C
Humidity	4.1 %

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4. Test Configuration

4.1 Environment Condition

Environment Parameter	Selected Values During Tests			
	Temperature	Voltage	Relative Humidity	Ambient Pressure
Normal Temperature, Normal Voltage (NTNV)	20°C to 25°C	DC 3.80V from battery	30% to 60%	100 kPa to 102 kPa

4.2 Test Equipment List

Conducted Method Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022.11.24	2023.11.23	☒
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022.11.24	2023.11.23	☒
ESG VECTOR SIGNAL GENERATOR	Agilent	E4438C	MY45094854	2022.11.24	2023.11.23	☒
MXG Vector Signal Generator	Agilent	N5182A	MY46240163	2022.11.24	2023.11.23	☒
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022.11.25	2023.11.24	☒
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022.11.24	2023.11.23	☒
RF Control Unit	TST	TST-Full	S01	/	/	☒
RF Test software	TST	V2.0	/	/	/	☒

Radiated Method Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022.11.24	2023.11.23	☒
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022.11.24	2023.11.23	☒
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021.11.28	2023.11.27	☒
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021.11.28	2023.11.27	☒
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/	☒
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022.11.24	2023.11.23	☒
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022.11.24	2023.11.23	☒
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022.11.24	2023.11.23	☒

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Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023.3.24	2024.3.23	☒
RE Cable	Talent Microwave	A40-2.92M2.92 M-14M	22080539	2022.11.24	2023.11.23	☒
RE Cable	Talent Microwave	A81-SMAMNM-14M	22080538	2022.11.24	2023.11.23	☒
Preamplifier	SCHWARZBECK	BBV9744	00246	2022.11.24	2023.11.23	☒
Horn Antenna	Schwarzbeck	BBHA9120D	2597	2022.5.22	2024.5.21	☒
Broadband Preamplilifier	Schwarzbeck	BBV9718D	00008	2023.3.24	2024.3.23	☒

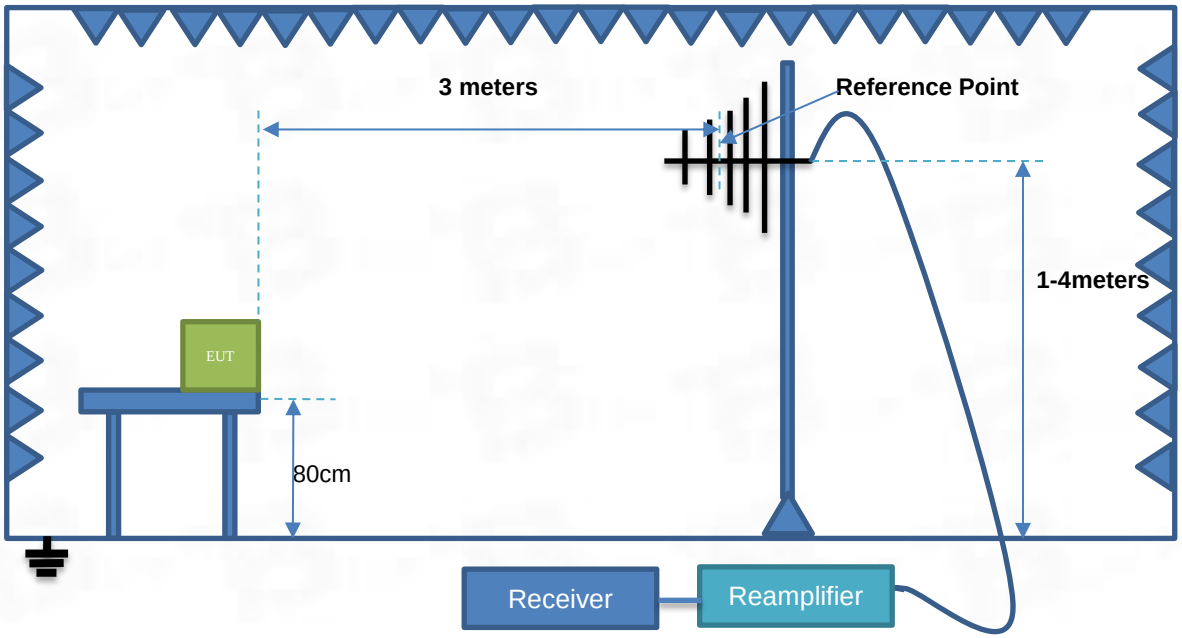
Conducted disturbance Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	ROHDE&SCHWARZ	ESCI3	101422	2022.11.24	2023.11.23	☒
V-LISN	SCHWARZBECK	NSLK 8127	01073	2022.11.24	2023.11.23	☒
LISN	AFJ	LS16/110VAC	16010020076	2022.11.24	2023.11.23	☒
Coaxial Switcher	SCHWARZBECK	CX210	CX210	2022.11.24	2023.11.23	☒
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	00953	2022.11.24	2023.11.23	☒
EZ_EMC	Frad	EMC-CON 3A1.1+	/	/	/	☒

4.3 Test Auxiliary Equipment

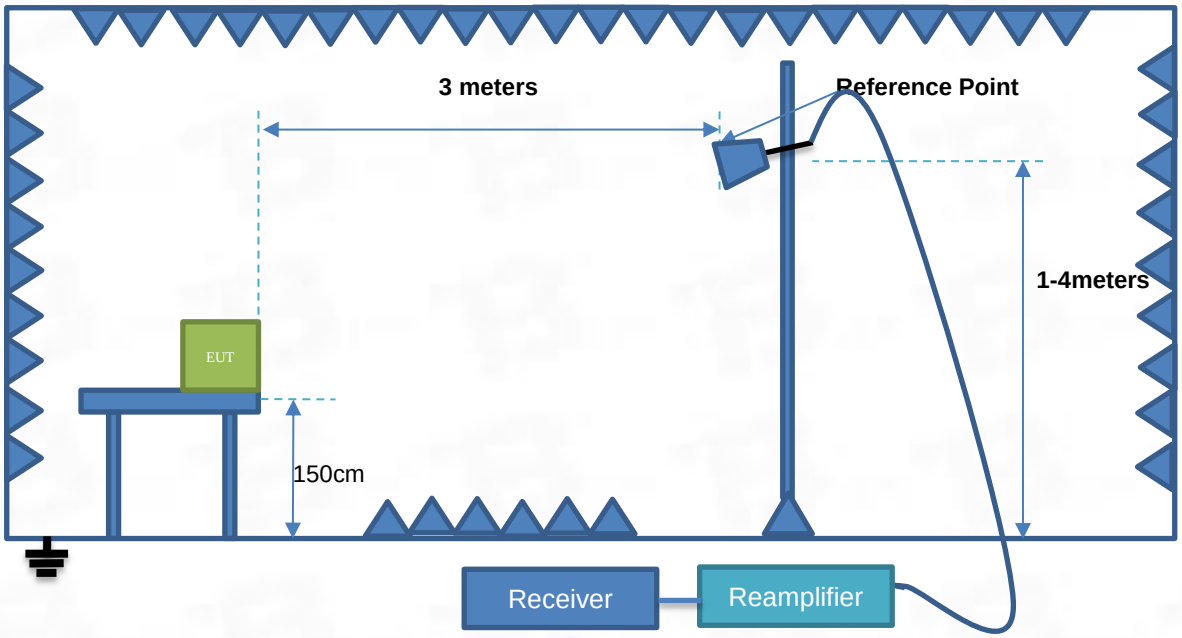
Description	Manufacturer	Model	Serial No.	Length	Description	Use
						☒

4.4 Test Setup

Test Setup 1

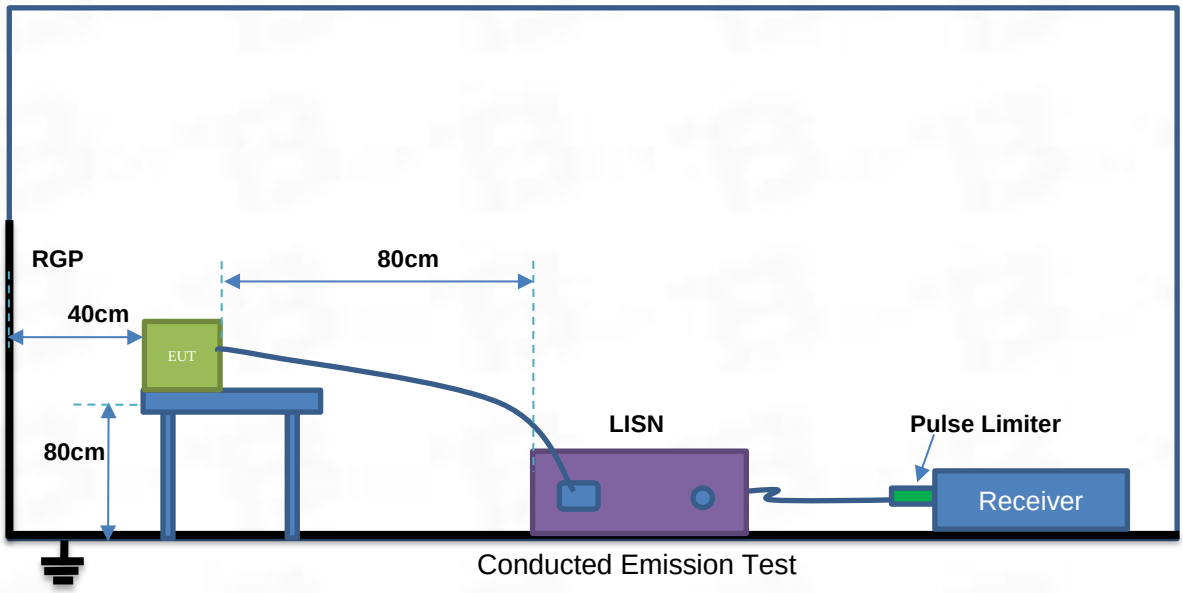


Radiation Test (30MHz – 1GHz)



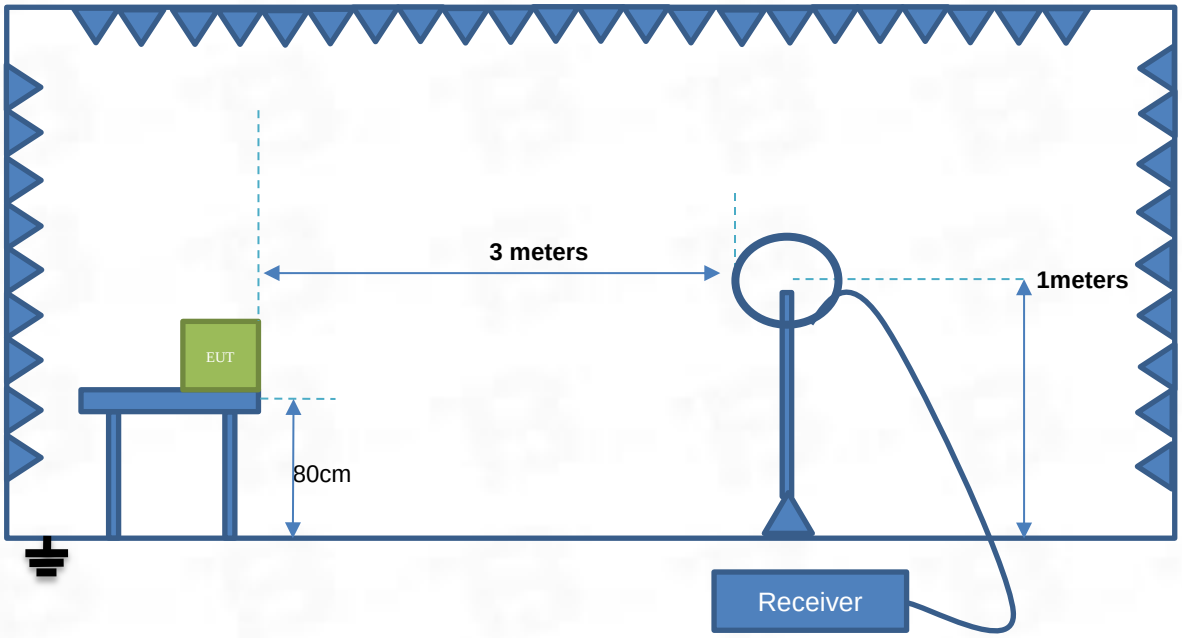
Radiation Test (Above 1GHz)

Test Setup 2



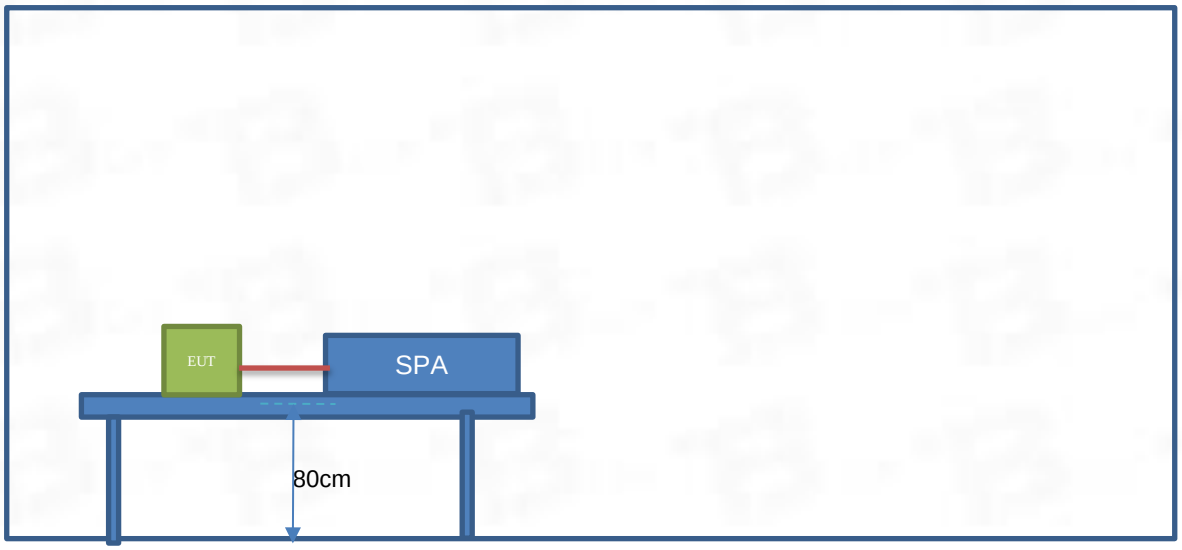
Conducted Emission Test

Test Setup 3



Radiation Test (9k - 30MHz)

Test Setup 4



5. Test Items

5.1 Antenna Requirements

5.1.1 Relevant Standards

FCC §15.203; RSS-247, 5.4(f)
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

5.1.2 Antenna Anti-Replacement Construction

Protected Method	Description
The antenna is embedded in the product.	An embedded in antenna design is used.

Reference Documents	Item
Photo	Please refer to the EUT Photo documents.

5.1.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

5.2 AC Conducted Emission

5.2.1 Limit

FCC §15.2074

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

5.2.2 Test Setup

See section 4.4 for test setup description for setup 2. The photo of test setup please refer to ANNEX B

5.2.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.2.4 Test Result

Please refer to ANNEX A.1

NOTE:

1. Results (dBuV) = Reading (dBuV) + Factor (dB)
   The reading level is calculated by software which is not shown in the sheet
2. Factor = Insertion loss + Cable loss
3. Over limit = Results – Limit.

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5.3 Peak Output Power

5.3.1 Limit

FCC §15.407(a)

Frequency Band (MHz)	Limit
5.15~5.25GHz band	Outdoor AP The maximum conducted output power (P_{out}) shall not exceed 1W (30dBm). if G_{TX}>6dBi, then P_{out} =30-(G_{TX}-6). e.i.r.p. at any elevation angle above 30 degrees ≤125mW (21dBm). Indoor AP The maximum conducted output power (P_{out}) shall not exceed 1W (30dBm). if G_{TX}>6dBi, then P_{out} =30-(G_{TX}-6). Point-to-point AP The maximum conducted output power (P_{out}) shall not exceed of 1W (30dBm). if G_{TX}>23dBi, then P_{out} =30-(G_{TX}-23). Client devices The maximum conducted output power (P_{out}) shall not exceed 250mW (24dBm). if G_{TX}>6dBi, then P_{out} =24-(G_{TX}-6).
5.25~5.35GHz band	The maximum conducted output power (P_{out}) shall not exceed 250mW (24dBm) or 11dBm+10 log B, where B is the 26dB emission bandwith in MHz. if G_{TX}>6dBi, then P_{out} =24-(G_{TX}-6).
5.47~5.725GHz band	The maximum conducted output power (P_{out}) shall not exceed 250mW (24dBm) or 11dBm+10 log B, where B is the 26dB emission bandwith in MHz. if G_{TX}>6dBi, then P_{out} =24-(G_{TX}-6).
5.725~5.85GHz band	Point-to-multipoint systems (P2M) The maximum conducted output power (P_{out}) shall not exceed 1W (30dBm). if G_{TX}>6dBi, then P_{out} =30-(G_{TX}-6). Point-to-point systems (P2P) The maximum conducted output power (P_{out}) shall not exceed 1W (30dBm).

5.3.2 Test Setup

See section 4.4 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B

5.3.3 Test Result

Please refer to ANNEX A.2

5.4 Power Spectral Density

5.4.1 Limit

FCC §15.407(a)

Frequency Band (MHz)	Limit
5.15~5.25GHz band	Outdoor AP The peak power spectral density (PSD) shall not exceed 17dBm/MHz. if G_{TX}>6dBi, then PSD =17-(G_{TX}-6). Indoor AP The peak power spectral density (PSD) shall not exceed 17dBm/MHz. if G_{TX}>6dBi, then PSD =17-(G_{TX}-6). Point-to-point AP The peak power spectral density (PSD) shall not exceed 17dBm/MHz. if G_{TX}>23dBi, then PSD =17-(G_{TX}-23). Client devices The peak power spectral density (PSD) shall not exceed 11dBm/MHz. if G_{TX}>6dBi, then PSD =11-(G_{TX}-6).
5.25~5.35GHz band	The peak power spectral density (PSD) shall not exceed 11dBm/MHz. if G_{TX}>6dBi, then PSD =11-(G_{TX}-6).
5.47~5.725GHz band	The peak power spectral density (PSD) shall not exceed 11dBm/MHz. if G_{TX}>6dBi, then PSD =11-(G_{TX}-6).
5.725~5.85GHz band	Point-to-multipoint systems (P2M) The peak power spectral density (PSD) shall not exceed 30dBm/500KHz. if G_{TX}>6dBi, then PSD =30-(G_{TX}-6). Point-to-point systems (P2P) The peak power spectral density (PSD) shall not exceed 30dBm/500KHz.

5.4.2 Test Setup

See section 4.4 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B

5.4.3 Test Procedure

According KDB 789033 D02 – Section F
Analyzer was setting as follow:
Center frequency: test channel
Span was set to encompass the entire emission bandwidth of the signal
RBW=1MHz for devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz

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RBW=500kHz for devices operating in the band 5.725-5.85 GHz, VBW ≥ 3 RBW
Number of sweep points > 2 x (span/RBW)
Sweep time = auto
Detector = Peak
Trigger was set to free run for all modes, trace was averaged over 100 sweeps
The peak search function of the spectrum analyzer was used to find the peak of the spectrum.

5.4.4 Test Result

Please refer to ANNEX A.3

5.5 26dB Emission Bandwidth & 99% Occupied Bandwidth

5.5.1 Limit

FCC §15.407(a)
The bandwidth at 26dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in KDB 789033 D02 , and at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26dB bandwidth.

5.5.2 Test Setup

See section 4.4 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B

5.5.3 Test Procedure

1. According KDB 789033 D02 – Section C, 26dB bandwidth test as follow
a) Set RBW = approximately 1% of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. According KDB 789033 D02 – Section D, 99% bandwidth test as follow
a). Set center frequency to the nominal EUT channel center frequency.
b). Set span = 1.5 times to 5.0 times the OBW.
c). Set RBW = 1% to 5% of the OBW
d). Set VBW ⩾ 3RBW
e). Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
f). Use the 99% power bandwidth function of the instrument

5.5.4 Test Result

Please refer to ANNEX A.4

5.6 6 dB bandwidth

5.6.1 Limit

FCC §15.407(e)
Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz

5.6.2 Test Setup

See section 4.4 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B

5.6.3 Test Procedure

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Configure the spectrum analyzer as shown below (enter all losses between the transmitter output and the spectrum analyzer).
   Center Frequency =test channel center frequency
   Span=2 x emission bandwidth
   RBW = 100 kHz, VBW $\geqslant$ 3 $\times$ RBW
   Sweep time= auto couple
   Detector = Peak
   Trace mode = max hold
3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter wave form on the spectrum analyzer.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission, and record the pertinent measurements.

5.6.4 Test Result

Please refer to ANNEX A.5

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5.7 Radiated Spurious Emissions

5.7.1 Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.209 and Part 15 Subpart E Section 15.407(b)

Frequency	Limit (dBuV/m)	Value
0.009 MHz ~0.49 MHz	2400/F(kHz) @300m	Quasi-peak
0.49 MHz ~ 1.705 MHz	24000/F(kHz) @30m	Quasi-peak
1.705 MHz ~30 MHz	30 @30m	Quasi-peak

Note: Limit dBuV/m @3m = Limit dBuV/m @300m + 40*log(300/3)= Limit dBuV/m @300m +80,

Limit dBuV/m @3m = Limit dBuV/m @30m +40*log(30/3)= Limit dBuV/m @30m + 40.

Unwanted emissions below 1GHz and Restricted band emissions above 1GHz		
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

5.7.2 Test Setup

See section 4.4 for test setup description for setup 1 and 3. The photo of test setup please refer to ANNEX B

5.7.3 Test Procedure

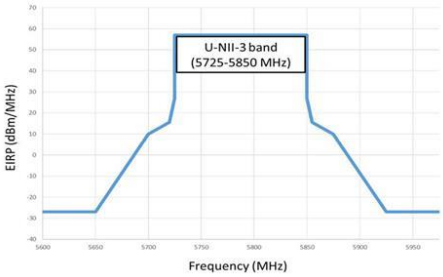
5.7.4 Test Result

Please refer to ANNEX A.6

5.8 Band Edge (Restricted-band)

5.8.1 Limit

FCC §15.407(b)

Un-restricted band emissions above 1GHz			
Operating Band	Frequency	EIRP Limit	Value
5150-5250MHz	Above 1GHz	-27dBm/MHz(68.2dBuV/m)@3m	Peak
5250-5350MHz	Above 1GHz	-27dBm/MHz(68.2dBuV/m)@3m	Peak
5470-5725MHz	Above 1GHz	-27dBm/MHz(68.2dBuV/m)@3m	Peak
5725-5850 MHz 	1GHz-5.65GHz	-27 dBm/MHz(68.2dBuV/m)@3m	Peak
	5.65GHz-5.7GHz	-27dBm/MHz to 10dBm/MHz* (68.2dBuV/m to 105.6dBuV/m) *	Peak
	5.7GHz-5.72GHz	10dBm/MHz to 15.6dBm/MHz* (105.6dBuV/m to 110.8dBuV/m) *	Peak
	5.72GHz-5.725GHz	15.6dBm/MHz to 27dBm/MHz* (110.8dBuV/m to 122.2dBuV/m) *	Peak
	5.85GHz-5.855GHz	27dBm/MHz to 15.6dBm/MHz* (122.2dBuV/m to110.8dBuV/m)*	Peak
	5.855GHz-5.875GHz	15.6dBm/MHz to 10dBm/MHz* (110.8dBuV/m to 105.6dBuV/m*	Peak
	5.875GHz-5.925GHz	10dBm/MHz to -27dBm/MHz* (105.6dBuV/m to 68.2dBuV/m) *	Peak
	Above 5.925GHz	-27 dBm/MHz(68.2dBuV/m)@3m	Peak

* Increase/Decreases with the linearly of the frequency.

For emission above 1GHz and in restricted band, according to FCC KDB 789033 D02 General UNII Test Procedure, all emission that complies with both the average and peak limits of Section 15.209 is not required to satisfy the -27 dBm/MHz peak emission limit. E[dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters.

5.8.2 Test Setup

See section 4.4 for test setup description for setup 1. The photo of test setup please refer to ANNEX B

5.8.3 Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT waspositioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. Thisis repeated for both horizontal and vertical polarization of the antenna. In order to find themaximum emission, all of the interface

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cables were manipulated according to ANSI C63.10:2013 on radiated measurement.

5. The receiver set as follow:

RBW=1MHz, VBW=3MHz , PEAK detector for Peak value.

5.8.4 Test Result

Please refer to ANNEX A.7

5.9 Frequency Stability

5.9.1 Limit

FCC §15.407(g)
Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

5.9.2 Test Setup

See section 4.4 for test setup description for antenna port. The photo of test setup please refer to ANNEX B

5.9.3 Test Procedure

Frequency stability with respect to ambient temperature

1. The equipment under test was connected to an external power supply.
2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.
3. The EUT was placed inside the temperature chamber.
4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution.
5. Turn EUT off and set the chamber temperature to -30℃. After the temperature stabilized for approximately 30 minutes recorded the frequency.
6. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached..

Frequency stability when varying supply voltage

1. The equipment under test was connected to an external power supply.
2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.
3. The EUT was placed in normal room temperature of 25℃.
4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution.
5. Measure the frequency when EUT supply by normal rate voltage.
6. Repeat step measure when supply voltage adjusted to 85% and 115%.

5.9.4 Test Result

Please refer to ANNEX A.8

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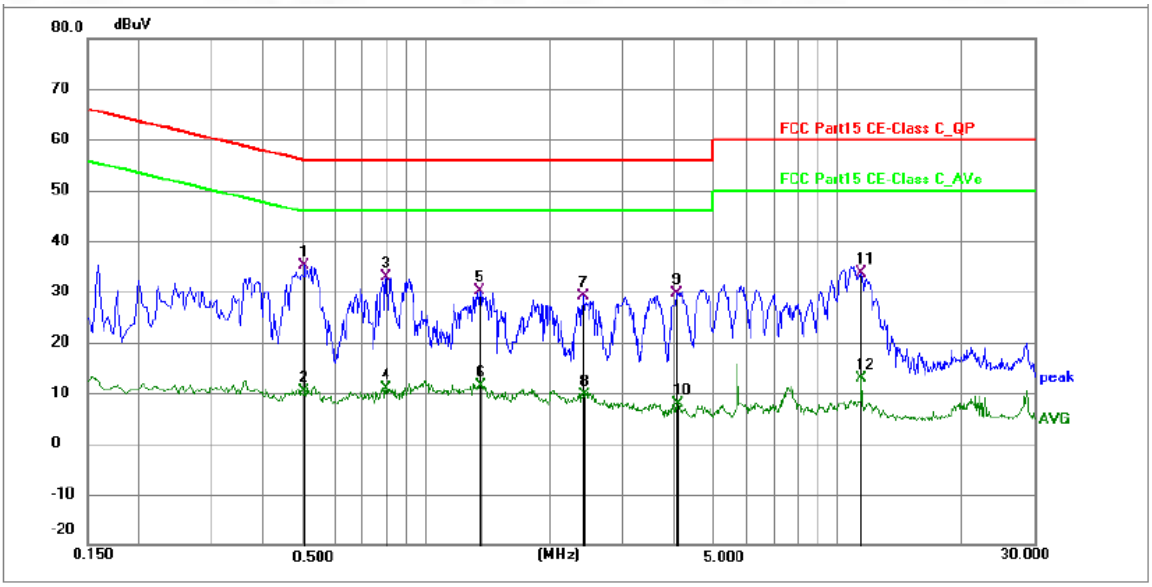
ANNEX A Test Results

A.1 AC Conducted Emission

TM1 / Line: Line



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.5054	24.54	10.61	35.15	56.00	-20.85	QP	P	
2	0.5054	-0.25	10.61	10.36	46.00	-35.64	AVG	P	
3	0.7980	22.20	10.75	32.95	56.00	-23.05	QP	P	
4	0.7980	0.08	10.75	10.83	46.00	-35.17	AVG	P	
5	1.3514	19.47	10.75	30.22	56.00	-25.78	QP	P	
6	1.3560	0.68	10.75	11.43	46.00	-34.57	AVG	P	
7	2.4045	18.42	10.70	29.12	56.00	-26.88	QP	P	
8	2.4224	-1.09	10.70	9.61	46.00	-36.39	AVG	P	
9	4.0650	18.85	10.74	29.59	56.00	-26.41	QP	P	
10	4.0830	-2.91	10.74	7.83	46.00	-38.17	AVG	P	
11	11.3234	22.62	10.95	33.57	60.00	-26.43	QP	P	
12	11.4090	2.06	10.94	13.00	50.00	-37.00	AVG	P	

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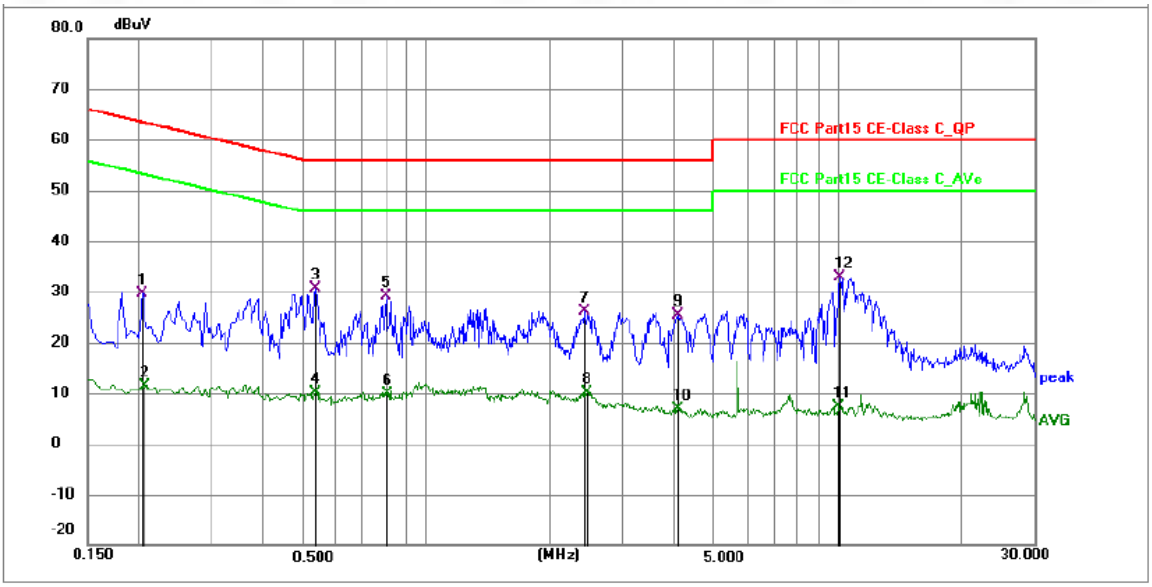
TM1 / Line: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2040	19.09	10.59	29.68	63.45	-33.77	QP	P	
2	0.2072	0.87	10.59	11.46	53.32	-41.86	AVG	P	
3 *	0.5370	20.01	10.63	30.64	56.00	-25.36	QP	P	
4	0.5370	-0.51	10.63	10.12	46.00	-35.88	AVG	P	
5	0.7980	18.40	10.75	29.15	56.00	-26.85	QP	P	
6	0.8025	-0.80	10.75	9.95	46.00	-36.05	AVG	P	
7	2.4090	15.39	10.70	26.09	56.00	-29.91	QP	P	
8	2.4585	-0.50	10.70	10.20	46.00	-35.80	AVG	P	
9	4.0785	14.66	10.74	25.40	56.00	-30.60	QP	P	
10	4.0785	-3.77	10.74	6.97	46.00	-39.03	AVG	P	
11	10.0229	-3.60	10.95	7.35	50.00	-42.65	AVG	P	
12	10.1085	21.93	10.95	32.88	60.00	-27.12	QP	P	

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A.2 Peak Output Power

Please Refer to Appendix for Details.

A.3 Power Spectral Density

Please Refer to Appendix for Details.

A.4 26dB Emission Bandwidth & 99% Occupied Bandwidth

Please Refer to Appendix for Details.

A.5 6 dB bandwidth

Please Refer to Appendix for Details.

A.6 Frequency Stability

Please Refer to Appendix for Details.

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A.7 Radiated Spurious Emission

Note 1: For the test data above 1 GHz, according the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, only show the worst case mode for each band.
Note 2: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and 802.11a mode is the worst.
Note 3: Results (dBuV/m) = Original reading level of Spectrum Analyzer (dBuV/m) + Factor (dB)
The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line was not reported.

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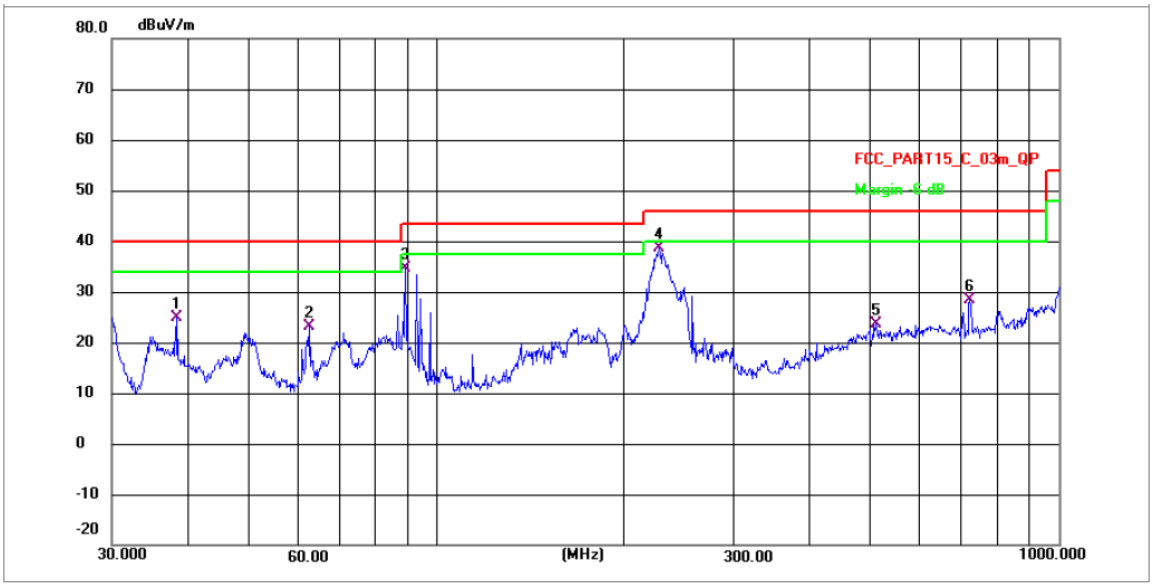
All mode are tested. Only the worst case are in the report
(30 MHz ~ 1GHz) ANT Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	38.2120	45.46	-20.57	24.89	40.00	-15.11	QP	P
2	62.5409	43.19	-20.12	23.07	40.00	-16.93	QP	P
3	89.2764	50.08	-15.56	34.52	43.50	-8.98	QP	P
4 *	228.0902	53.24	-14.58	38.66	46.00	-7.34	QP	P
5	508.2582	34.86	-11.17	23.69	46.00	-22.31	QP	P
6	721.7259	52.04	-23.68	28.36	46.00	-17.64	QP	P

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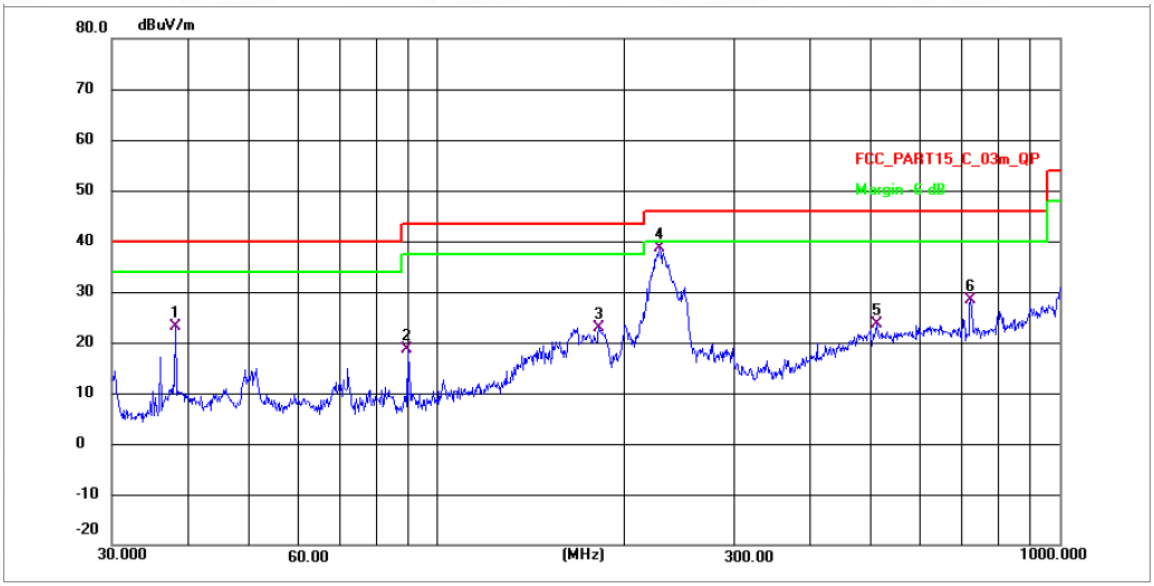
(30 MHz ~ 1GHz) ANT Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	38.0783	41.61	-18.42	23.19	40.00	-16.81	QP	P
2	89.5899	34.14	-15.56	18.58	43.50	-24.92	QP	P
3	182.2394	41.26	-18.31	22.95	43.50	-20.55	QP	P
4 *	228.0902	55.05	-16.39	38.66	46.00	-7.34	QP	P
5	508.2582	35.15	-11.46	23.69	46.00	-22.31	QP	P
6	721.7259	52.04	-23.68	28.36	46.00	-17.64	QP	P

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(1 GHz ~ 10th Harmonic)

Note: The spurious from 18GHz-25GHz is noise only, do not show on the report.

All mode are tested. Only the worst case are in the report

U-NII-1	Worst mode: 802.11a	Test channel: CH_L
Polarization:	Horizontal	

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1383.062	65.86	-31.07	34.79	68.20	-33.41	peak	P
2	2594.863	69.94	-30.21	39.73	68.20	-28.47	peak	P
3	4323.102	73.11	-28.86	44.25	68.20	-23.95	peak	P
4	7303.011	77.61	-24.84	52.77	68.20	-15.43	peak	P
5 *	9563.544	77.11	-23.34	53.77	68.20	-14.43	peak	P
6	12965.793	73.52	-21.36	52.16	68.20	-16.04	peak	P

Polarization:	Vertical

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2263.943	69.65	-30.63	39.02	68.20	-29.18	peak	P
2	3483.587	70.76	-29.07	41.69	68.20	-26.51	peak	P
3	7602.392	78.26	-24.93	53.33	68.20	-14.87	peak	P
4 *	9588.455	77.04	-23.39	53.65	68.20	-14.55	peak	P
5	11630.565	75.69	-22.83	52.86	68.20	-15.34	peak	P
6	14370.993	73.75	-21.17	52.58	68.20	-15.62	peak	P

U-NII-1	Worst mode: 802.11a	Test channel: CH_M
Polarization:	Horizontal	

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1646.397	64.77	-31.48	33.29	68.20	-34.91	peak	P
2	3123.942	70.51	-29.40	41.11	68.20	-27.09	peak	P
3	7154.669	76.36	-24.88	51.48	68.20	-16.72	peak	P
4 *	9660.783	76.25	-23.55	52.70	68.20	-15.50	peak	P
5	12596.397	73.14	-21.56	51.58	68.20	-16.62	peak	P
6	14707.165	71.58	-20.86	50.72	68.20	-17.48	peak	P

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Polarization:	Vertical

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1436.434	66.55	-31.36	35.19	68.20	-33.01	peak	P
2	3114.925	70.90	-29.41	41.49	68.20	-26.71	peak	P
3 *	6711.939	77.87	-25.19	52.68	68.20	-15.52	peak	P
4	10493.325	76.53	-24.51	52.02	68.20	-16.18	peak	P
5	14707.165	73.43	-20.86	52.57	68.20	-15.63	peak	P
6	17942.862	69.44	-16.80	52.64	68.20	-15.56	peak	P

U-NII-1	Worst mode: 802.11a	Test channel: CH_H
Polarization:	Horizontal	

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1216.487	68.27	-30.16	38.11	68.20	-30.09	peak	P
2	2252.195	70.09	-30.65	39.44	68.20	-28.76	peak	P
3	3161.182	70.76	-29.37	41.39	68.20	-26.81	peak	P
4	7246.240	77.47	-24.86	52.61	68.20	-15.59	peak	P
5	11933.635	74.78	-22.31	52.47	68.20	-15.73	peak	P
6 *	14333.658	74.33	-21.16	53.17	68.20	-15.03	peak	P

Polarization:	Vertical

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1319.794	66.37	-30.73	35.64	68.20	-32.56	peak	P
2	3173.083	70.89	-29.36	41.53	68.20	-26.67	peak	P
3	7635.424	76.98	-24.98	52.00	68.20	-16.20	peak	P
4	9034.206	76.45	-24.24	52.21	68.20	-15.99	peak	P
5	11947.440	74.53	-22.28	52.25	68.20	-15.95	peak	P
6 *	14358.537	73.95	-21.17	52.78	68.20	-15.42	peak	P

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U-NII-3	Worst mode: 802.11ac(VHT80)	Test channel: CH_L

Polarization:	Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2692.632	77.53	-29.51	48.02	74.00	-25.98	peak	P
2	4091.632	80.90	-30.02	50.88	74.00	-23.12	peak	P
3	7705.312	81.53	-30.24	51.29	74.00	-22.71	peak	P
4	8685.582	79.13	-31.02	48.11	74.00	-25.89	peak	P
5	10987.473	79.57	-31.51	48.06	74.00	-25.94	peak	P
6	14646.084	81.19	-30.60	50.59	74.00	-23.41	peak	P

Polarization:	Vertical

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2464.365	78.00	-29.40	48.60	74.00	-25.40	peak	P
2	3863.365	81.37	-29.91	51.46	74.00	-22.54	peak	P
3	7477.045	82.00	-30.13	51.87	74.00	-22.13	peak	P
4	8457.315	79.60	-30.91	48.69	74.00	-25.31	peak	P
5	10759.206	80.04	-31.40	48.64	74.00	-25.36	peak	P
6	14417.817	81.66	-30.49	51.17	74.00	-22.83	peak	P

U-NII-3	Worst mode: 802.11ac(VHT80)	Test channel: CH_M

Polarization:	Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3131.352	77.46	-29.51	47.95	74.00	-26.05	peak	P
2	4530.352	80.83	-30.02	50.81	74.00	-23.19	peak	P
3	8144.032	81.46	-30.24	51.22	74.00	-22.78	peak	P
4	9124.302	79.06	-31.02	48.04	74.00	-25.96	peak	P
5	11426.193	79.50	-31.51	47.99	74.00	-26.01	peak	P
6	15084.804	81.12	-30.60	50.52	74.00	-23.48	peak	P

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Polarization:	Vertical

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2464.635	78.19	-29.30	48.89	74.00	-25.11	peak	P
2	3863.635	81.56	-29.81	51.75	74.00	-22.25	peak	P
3	7477.315	82.19	-30.03	52.16	74.00	-21.84	peak	P
4	8457.585	79.79	-30.81	48.98	74.00	-25.02	peak	P
5	10759.476	80.23	-31.30	48.93	74.00	-25.07	peak	P
6	14418.087	81.85	-30.39	51.46	74.00	-22.54	peak	P

U-NII-3	Worst mode: 802.11ac(VHT80)	Test channel: CH_H
Polarization:	Horizontal	

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1827.354	78.30	-29.62	48.68	74.00	-25.32	peak	P
2	3226.354	81.67	-30.13	51.54	74.00	-22.46	peak	P
3	6840.034	82.30	-30.35	51.95	74.00	-22.05	peak	P
4	7820.304	79.90	-31.13	48.77	74.00	-25.23	peak	P
5	10122.195	80.34	-31.62	48.72	74.00	-25.28	peak	P
6	13780.806	81.96	-30.71	51.25	74.00	-22.75	peak	P

Polarization:	Vertical

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	752.362	78.43	-29.55	48.88	74.00	-25.12	peak	P
2	3226.354	81.80	-30.06	51.74	74.00	-22.26	peak	P
3	6840.034	82.43	-30.28	52.15	74.00	-21.85	peak	P
4	7820.304	80.03	-31.06	48.97	74.00	-25.03	peak	P
5	10122.195	80.47	-31.55	48.92	74.00	-25.08	peak	P
6	13780.806	82.09	-30.64	51.45	74.00	-22.55	peak	P

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A.8 Band Edge (Restricted-band-edge)

Note 1: The lowest and highest channels are tested to verify the band edge emissions. Please refer to the following the plots for emissions values.
Note 2: The test data all are tested in the vertical and horizontal antenna which the trace is max hold. So these plots have shown the worst case.
Note 3: According the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement. only show the worst case mode for each band.
Note 4: The Level (dBuV/m) has been corrected by factor.

U-NII-1	Worst mode: 802.11a	Test channel: CH_L

Polarization:	Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5139.640	84.95	-32.09	52.86	68.20	-15.34	peak	P
2	5150.000	85.55	-32.05	53.50	68.20	-14.70	peak	P

Polarization:	Vertical

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5047.680	83.95	-31.79	52.16	68.20	-16.04	peak	P
2	5150.000	84.55	-31.75	52.80	68.20	-15.40	peak	P

U-NII-1	Worst mode: 802.11a	Test channel: CH_H

Polarization:	Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5350.000	85.55	-31.78	53.77	68.20	-14.43	peak	P
2	5362.214	83.92	-31.74	52.18	68.20	-16.02	peak	P

Polarization:	Vertical

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5350.000	85.44	-31.65	53.79	68.20	-14.41	peak	P
2	5362.214	83.81	-31.61	52.20	68.20	-16.00	peak	P

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U-NII-3	Worst mode: 802.11ac(VHT80)	Test channel: CH_L

Polarization: Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5650.000	90.89	-32.00	58.89	68.20	-9.31	peak	P
2	5700.000	92.26	-32.11	60.15	105.60	-45.45	peak	P
3	5720.000	93.45	-32.17	61.28	110.8	-49.52	peak	P

Polarization: Vertical

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5650.000	91.85	-31.91	59.94	68.20	-8.26	peak	P
2	5700.000	93.22	-32.02	61.20	105.60	-44.40	peak	P
3	5720.000	94.41	-32.08	62.33	110.8	-48.47	peak	P

U-NII-3	Worst mode: 802.11ac(VHT80)	Test channel: CH_H

Polarization: Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5850.000	84.72	-31.80	52.92	122.20	-69.28	peak	P
2	5875.000	91.66	-31.91	59.75	110.80	-51.05	peak	P
3	5925.000	91.28	-31.97	59.31	68.20	-8.89	peak	P

Polarization: Vertical

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5850.000	84.34	-31.69	52.65	122.20	-69.55	peak	P
2	5875.000	91.28	-31.80	59.48	110.80	-51.32	peak	P
3	5925.000	90.90	-31.86	59.04	68.20	-9.16	peak	P

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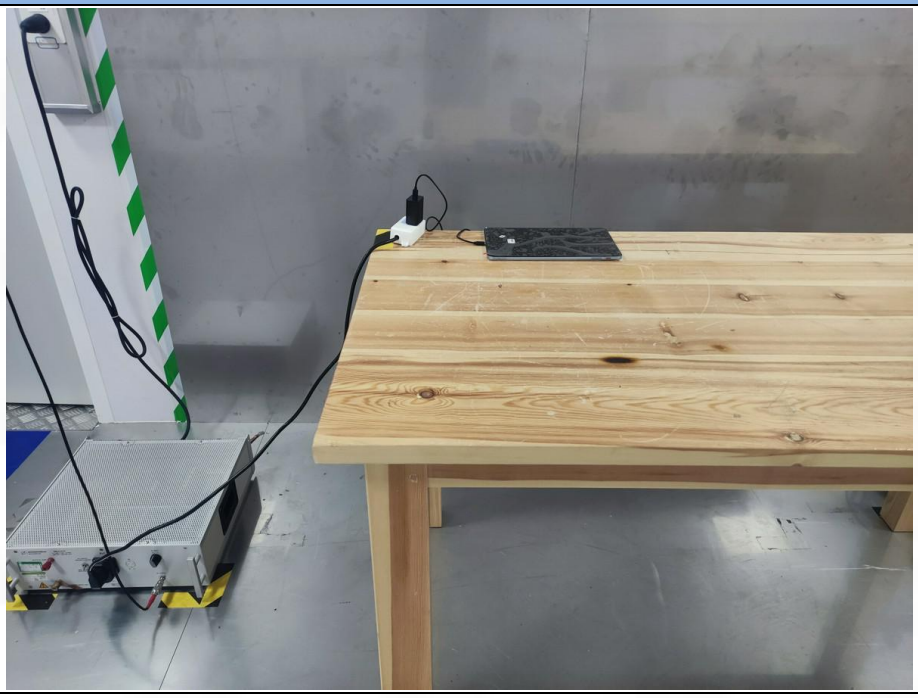
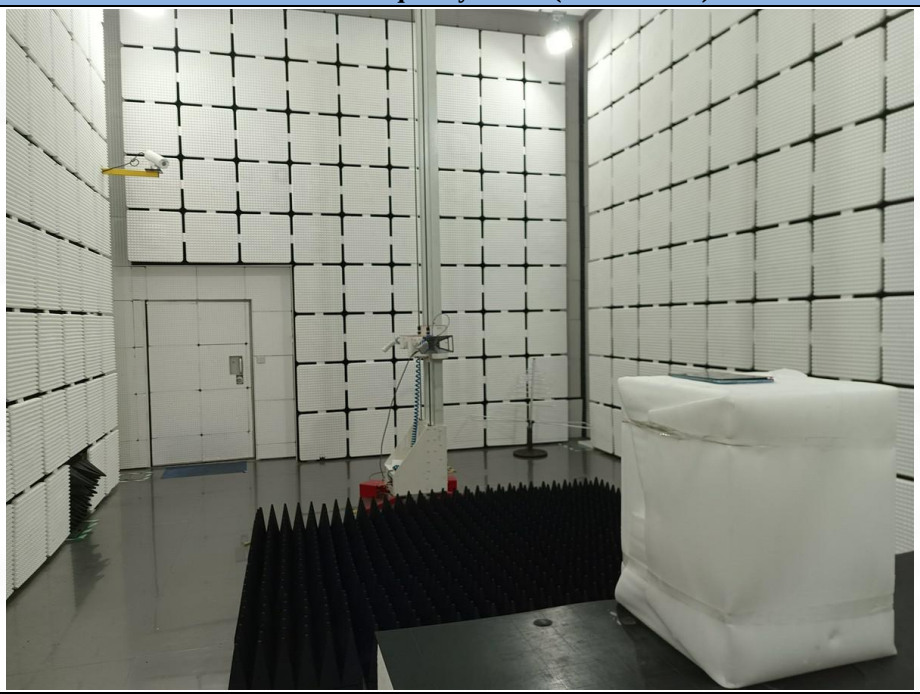
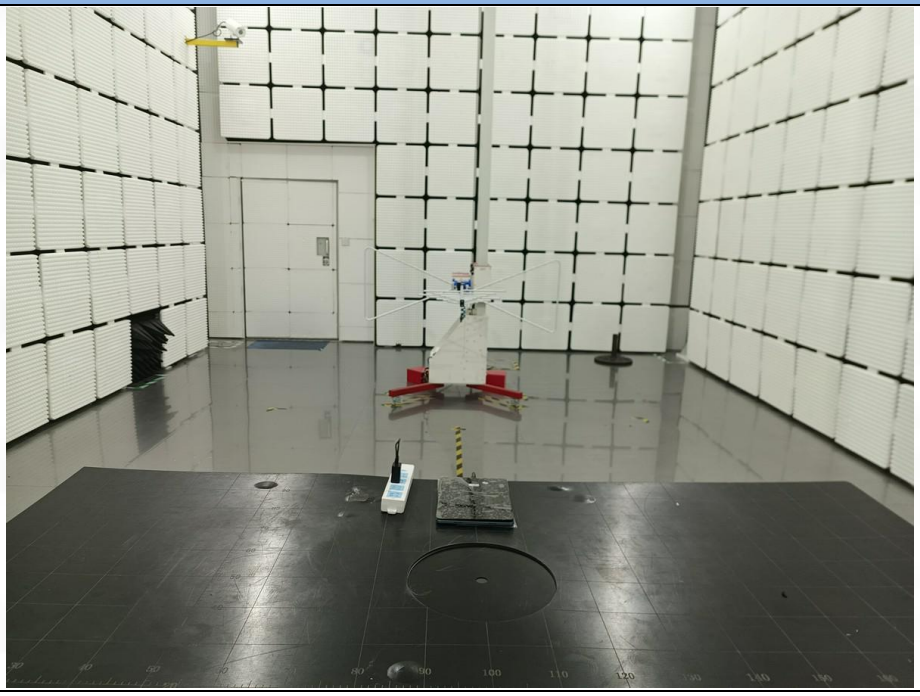
ANNEX B TEST SETUP PHOTOS

Conducted Emission at AC power line


Band edge emissions (Radiated) Emissions in frequency bands (above 1GHz)


Emissions in frequency bands (below 1GHz)


ANNEX C EUT Constructional Details (EUT Photos)

Please refer to the test report No. BTF230921R00701

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	1.393	1.428	97.55	0.11	0.07
		5200	1.394	1.428	97.62	0.10	0.10
		5240	1.395	1.428	97.69	0.10	0.03
		5745	1.394	1.428	97.62	0.10	0.07
		5785	1.392	1.428	97.48	0.11	0.06
		5825	1.392	1.427	97.55	0.11	0.03
802.11n (HT20)	SISO	5180	1.302	1.337	97.38	0.12	0.14
		5200	1.302	1.337	97.38	0.12	0.07
		5240	1.303	1.336	97.53	0.11	0.03
		5745	1.301	1.336	97.38	0.12	0.07
		5785	1.302	1.337	97.38	0.12	0.07
		5825	1.301	1.336	97.38	0.12	0.07
802.11n (HT40)	SISO	5190	0.648	0.683	94.88	0.23	0.03
		5230	0.650	0.683	95.17	0.22	0.03
		5755	0.648	0.683	94.88	0.23	0.03
		5795	0.649	0.683	95.02	0.22	0.10
802.11ac (VHT20)	SISO	5180	1.313	1.348	97.40	0.11	0.07
		5200	1.313	1.348	97.40	0.11	0.10
		5240	1.314	1.348	97.48	0.11	0.03
		5745	1.314	1.348	97.48	0.11	0.04
		5785	1.313	1.348	97.40	0.11	0.07
		5825	1.313	1.348	97.40	0.11	0.07
802.11ac (VHT40)	SISO	5190	0.652	0.687	94.91	0.23	0.07
		5230	0.653	0.687	95.05	0.22	0.03
		5755	0.653	0.687	95.05	0.22	0.03
		5795	0.652	0.687	94.91	0.23	0.03
802.11ac (VHT80)	SISO	5210	0.325	0.358	90.78	0.42	0.04
		5775	0.324	0.358	90.50	0.43	0.07

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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	1.393	1.428	97.55	0.11	0.07
		5200	1.394	1.428	97.62	0.10	0.10
		5240	1.395	1.428	97.69	0.10	0.03
		5745	1.394	1.428	97.62	0.10	0.07
		5785	1.392	1.428	97.48	0.11	0.06
		5825	1.392	1.427	97.55	0.11	0.03
802.11n (HT20)	SISO	5180	1.302	1.337	97.38	0.12	0.14
		5200	1.302	1.337	97.38	0.12	0.07
		5240	1.303	1.336	97.53	0.11	0.03
		5745	1.301	1.336	97.38	0.12	0.07
		5785	1.302	1.337	97.38	0.12	0.07
		5825	1.301	1.336	97.38	0.12	0.07
802.11n (HT40)	SISO	5190	0.648	0.683	94.88	0.23	0.03
		5230	0.650	0.683	95.17	0.22	0.03
		5755	0.648	0.683	94.88	0.23	0.03
		5795	0.649	0.683	95.02	0.22	0.10
802.11ac (VHT20)	SISO	5180	1.313	1.348	97.40	0.11	0.07
		5200	1.313	1.348	97.40	0.11	0.10
		5240	1.314	1.348	97.48	0.11	0.03
		5745	1.314	1.348	97.48	0.11	0.04
		5785	1.313	1.348	97.40	0.11	0.07
		5825	1.313	1.348	97.40	0.11	0.07
802.11ac (VHT40)	SISO	5190	0.652	0.687	94.91	0.23	0.07
		5230	0.653	0.687	95.05	0.22	0.03
		5755	0.653	0.687	95.05	0.22	0.03
		5795	0.652	0.687	94.91	0.23	0.03
802.11ac (VHT80)	SISO	5210	0.325	0.358	90.78	0.42	0.04
		5775	0.324	0.358	90.50	0.43	0.07

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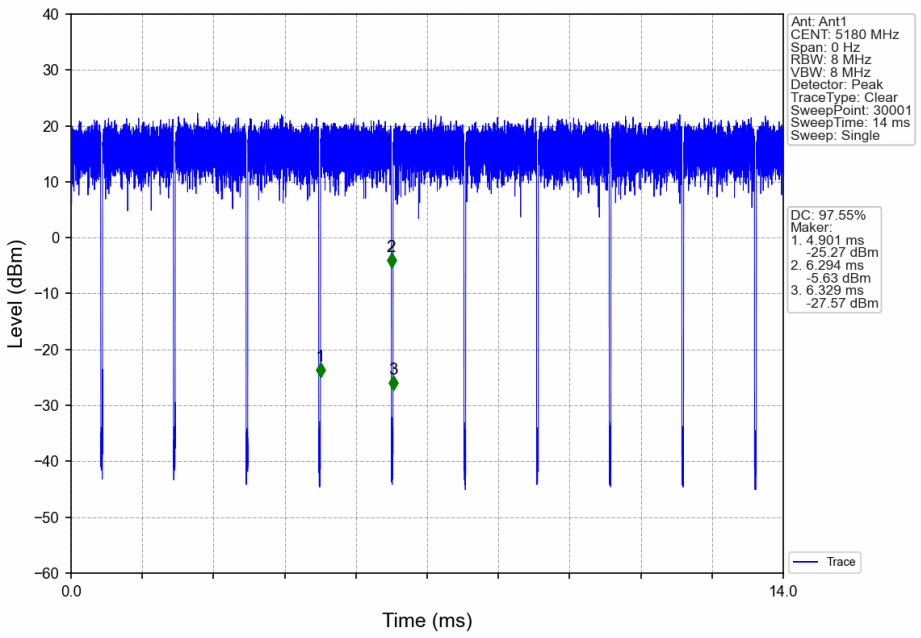
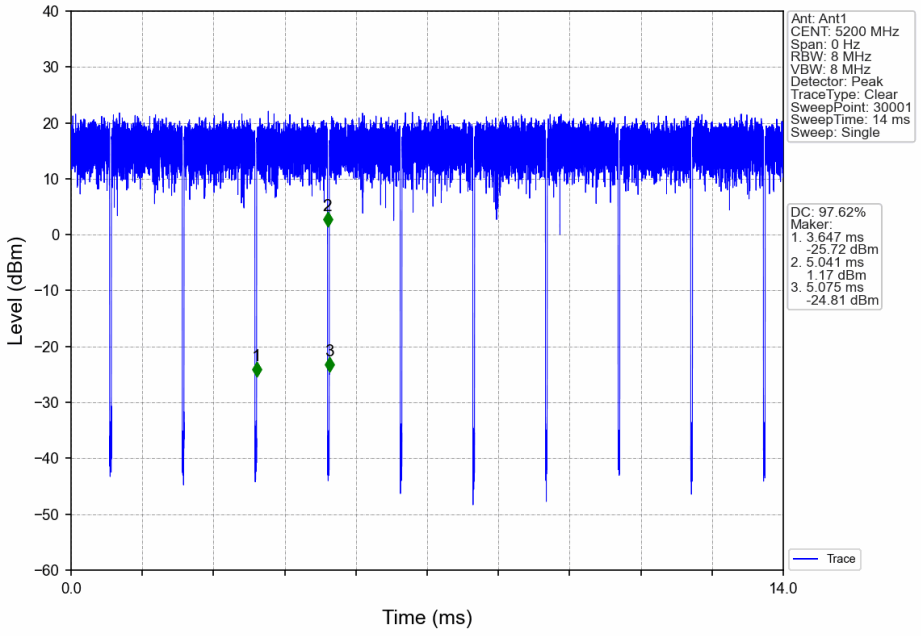
1.1.2 Test Graph

802.11a_LCH_5180MHz_Ant1_NTNV



802.11a_MCH_5200MHz_Ant1_NTNV



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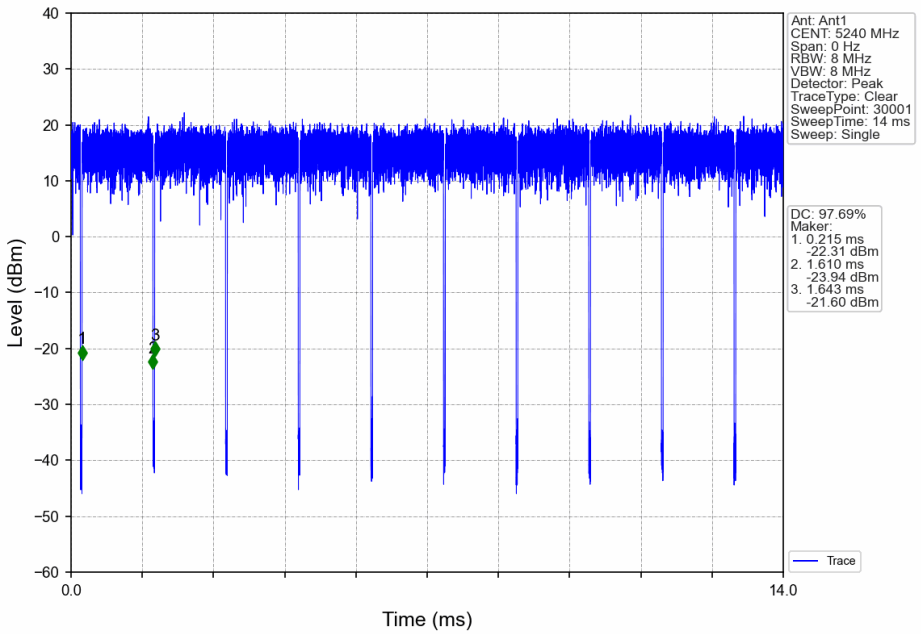
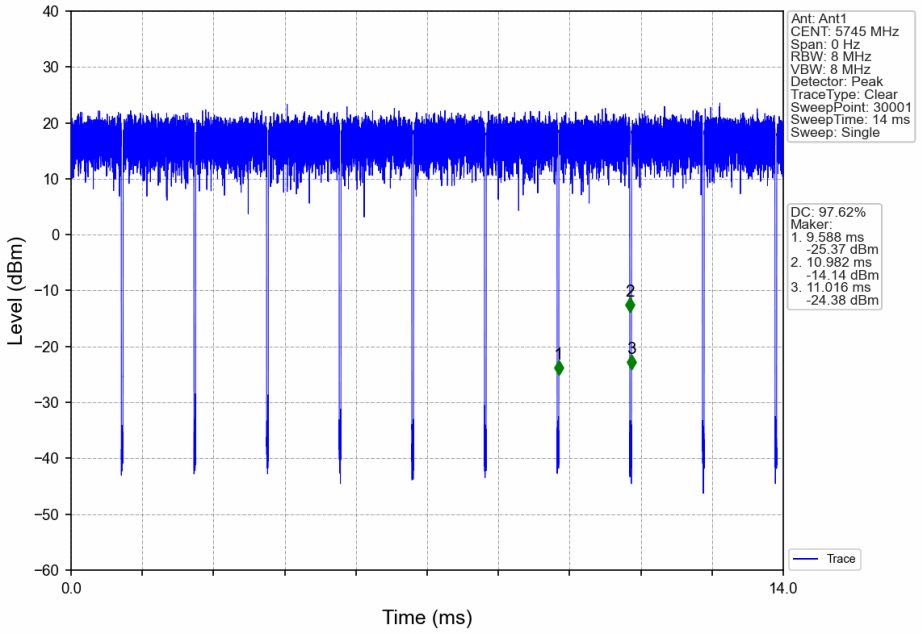
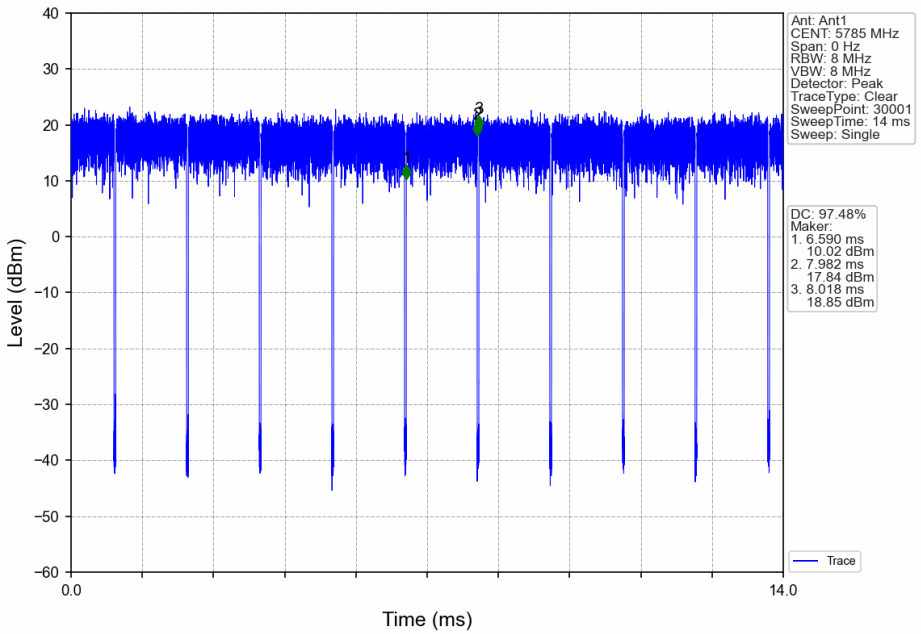
802.11a_HCH_5240MHz_Ant1_NTNV



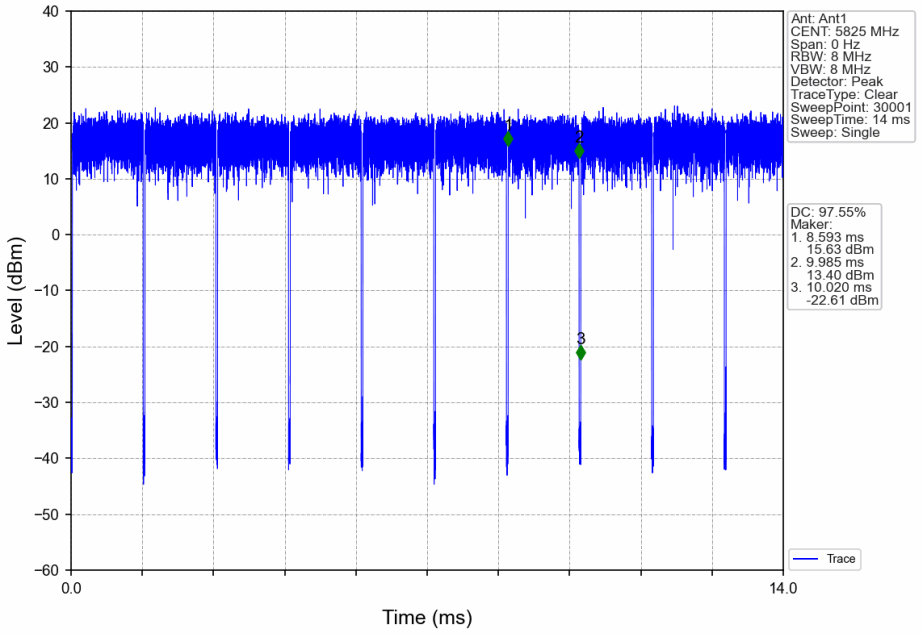
802.11a_LCH_5745MHz_Ant1_NTNV



802.11a_MCH_5785MHz_Ant1_NTNV



802.11a_HCH_5825MHz_Ant1_NTNV



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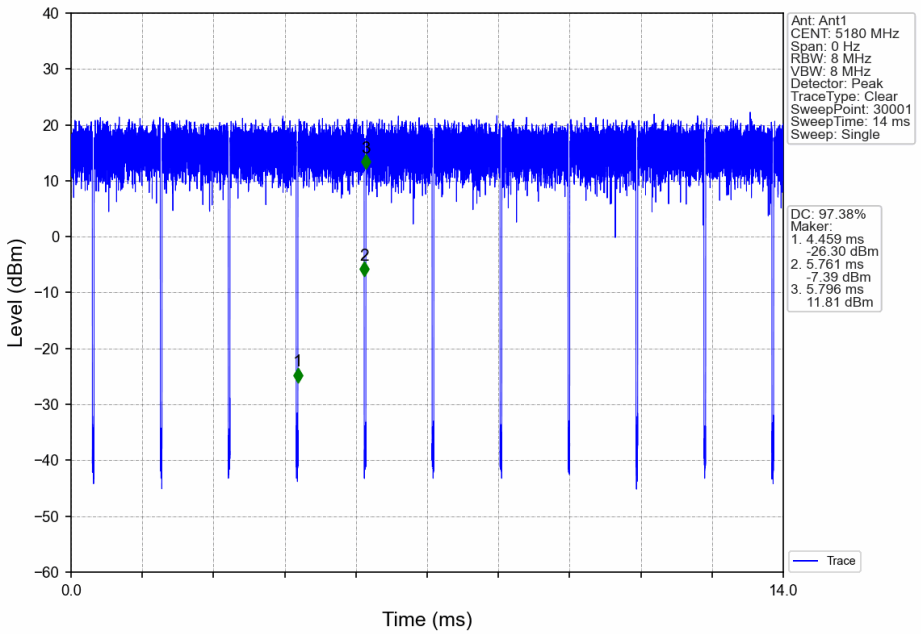
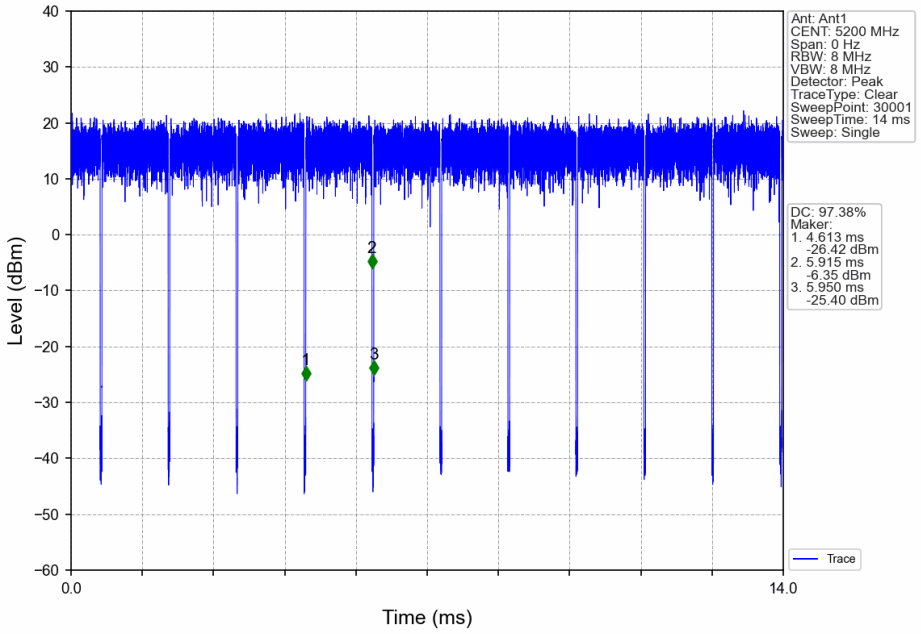
802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



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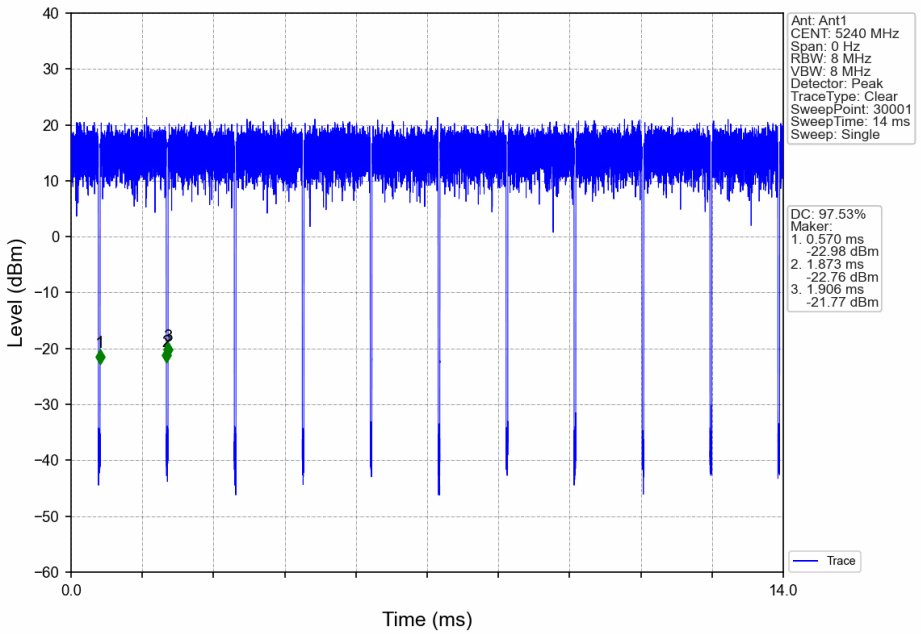
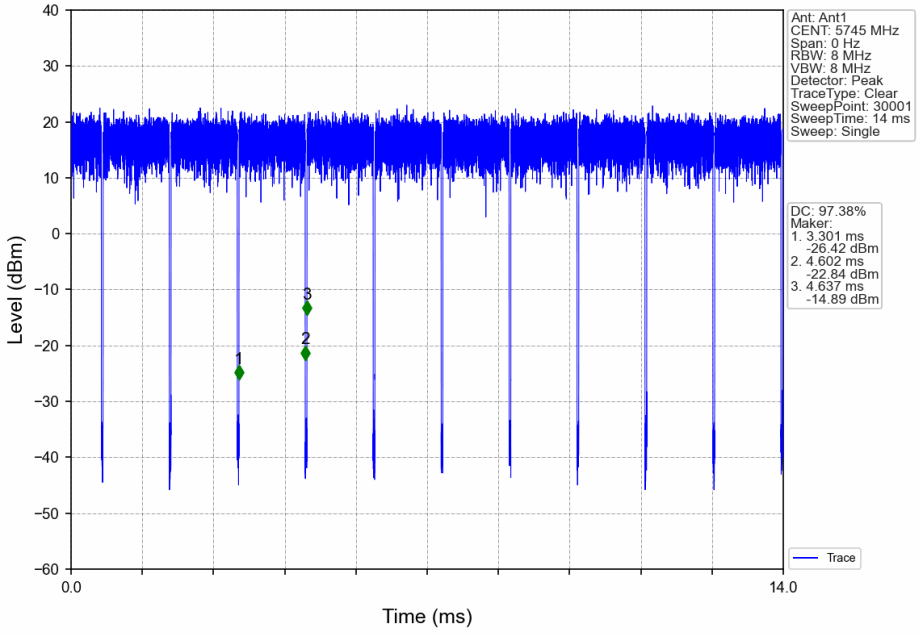
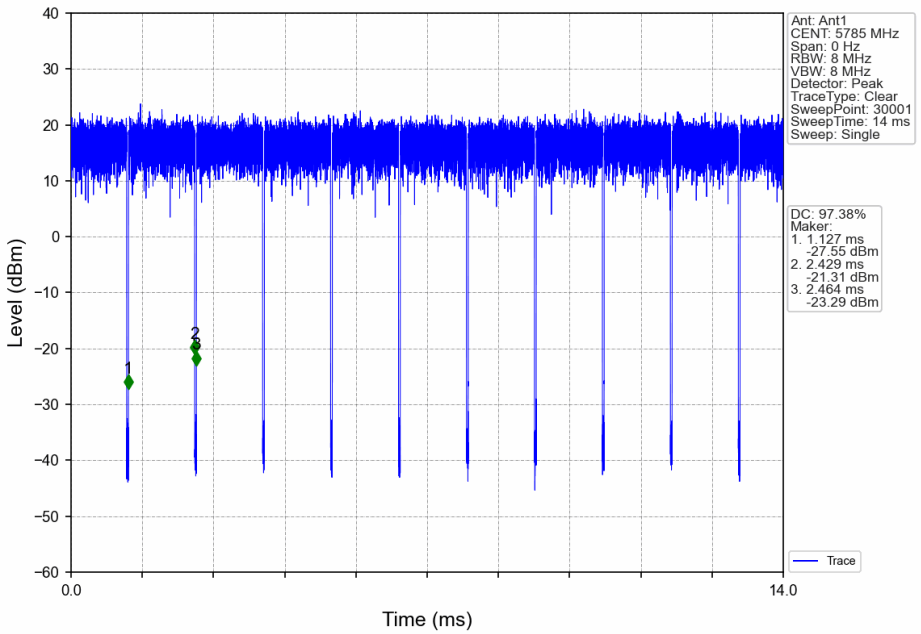
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



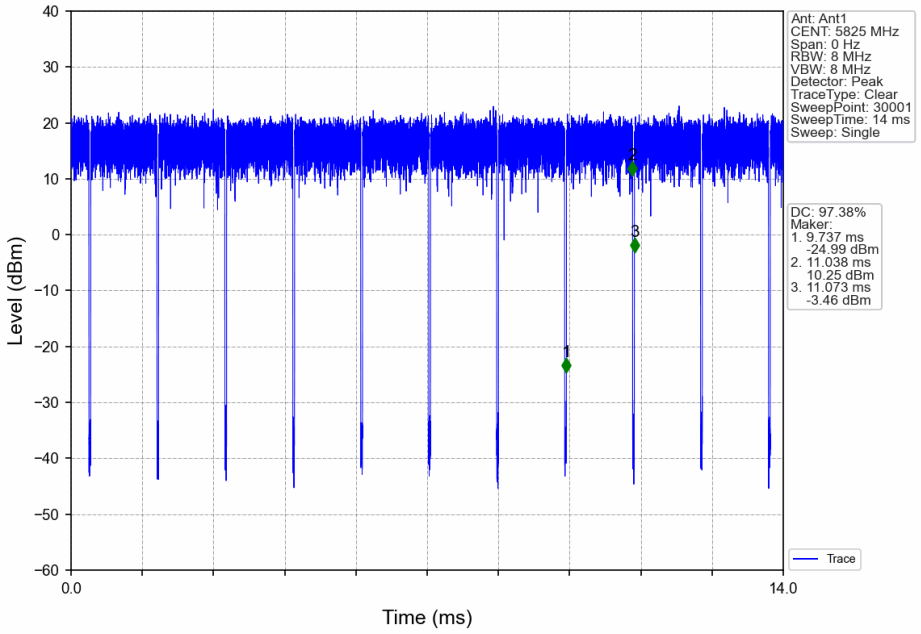
802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



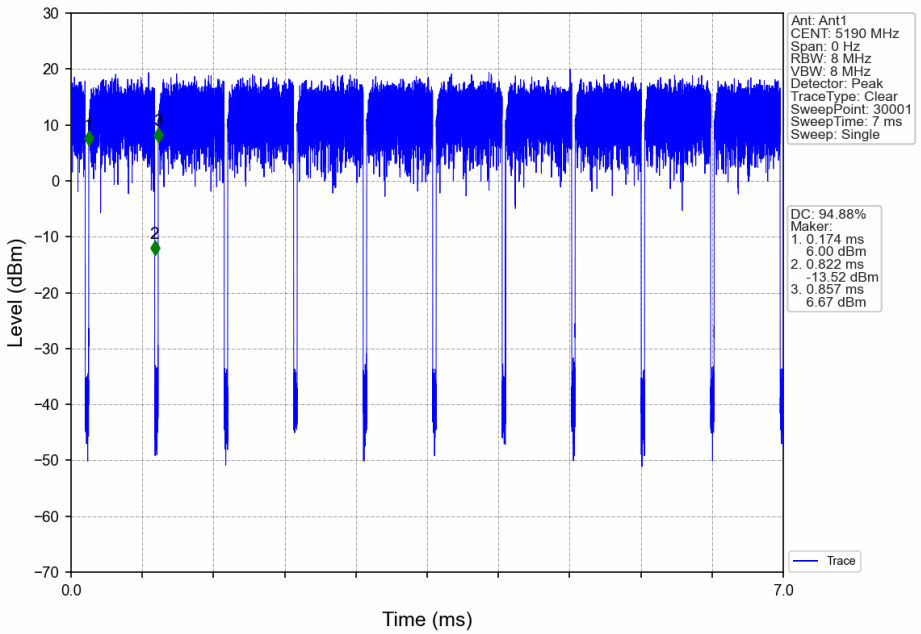
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



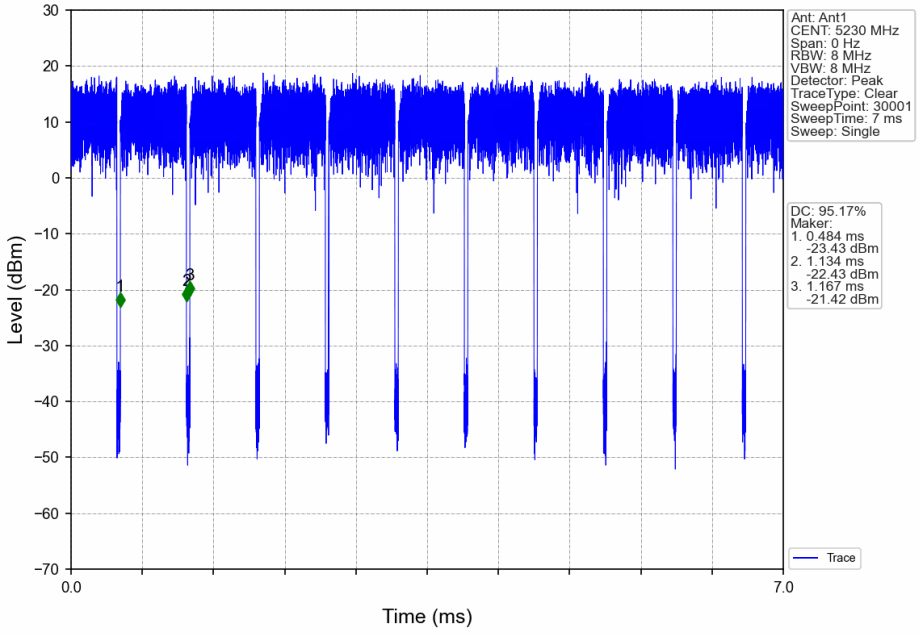
802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



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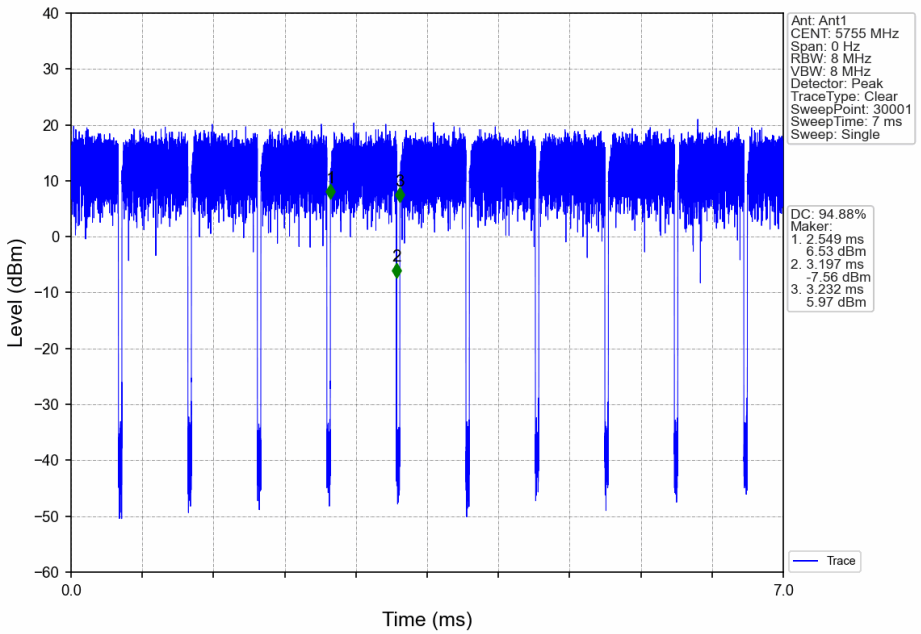
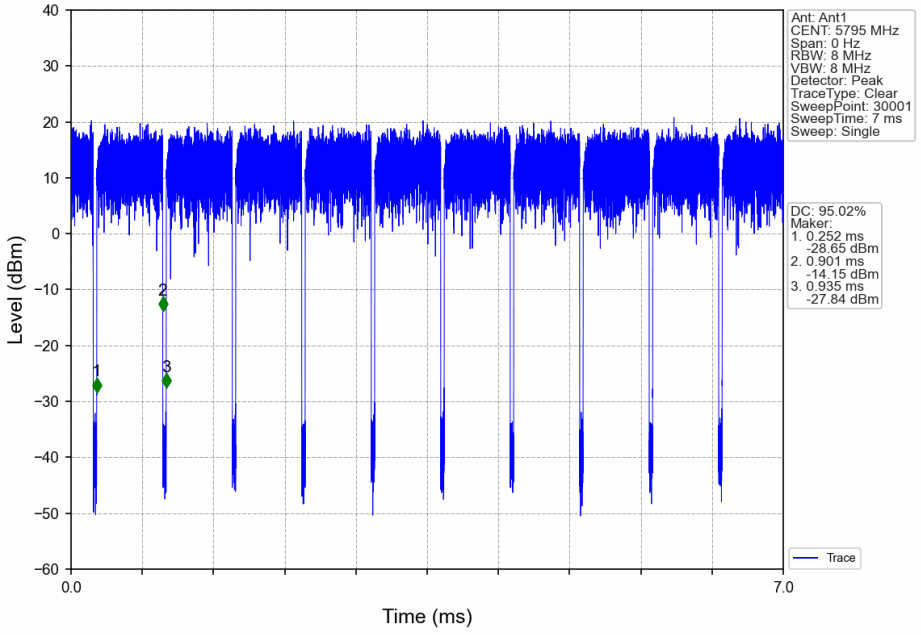
802.11n(HT40)_LCH_5755MHz_Ant1_NTNV



802.11n(HT40)_HCH_5795MHz_Ant1_NTNV



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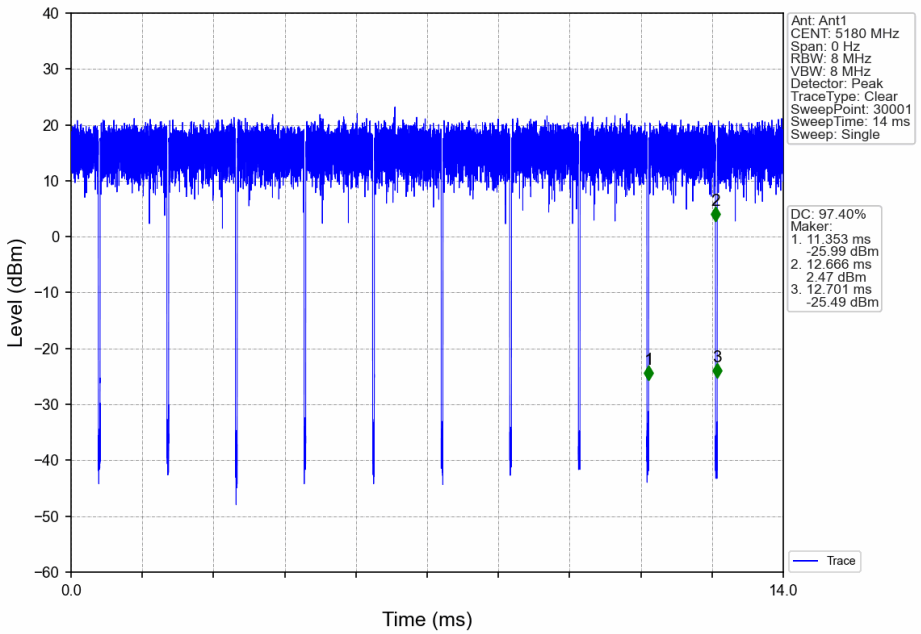
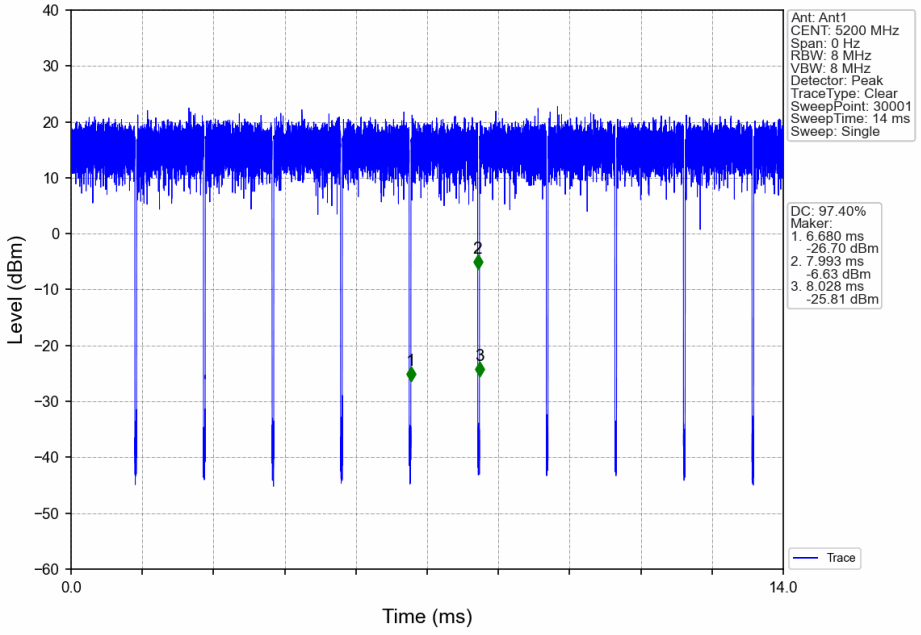
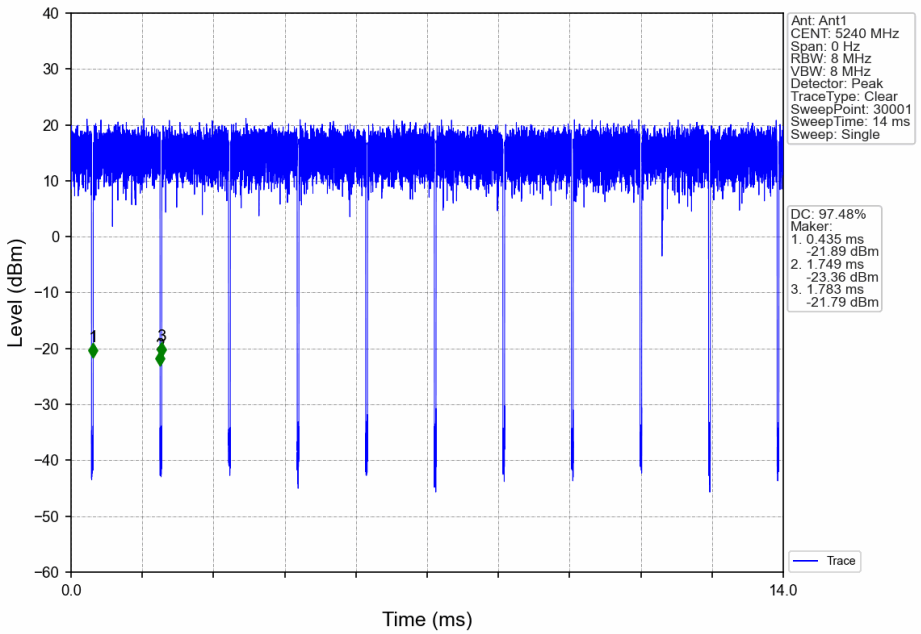
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



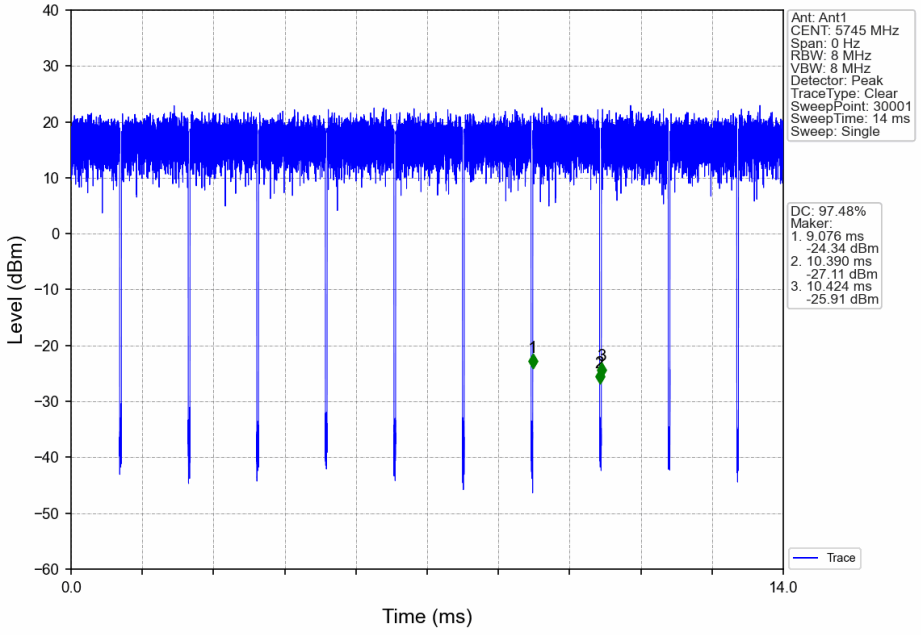
802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



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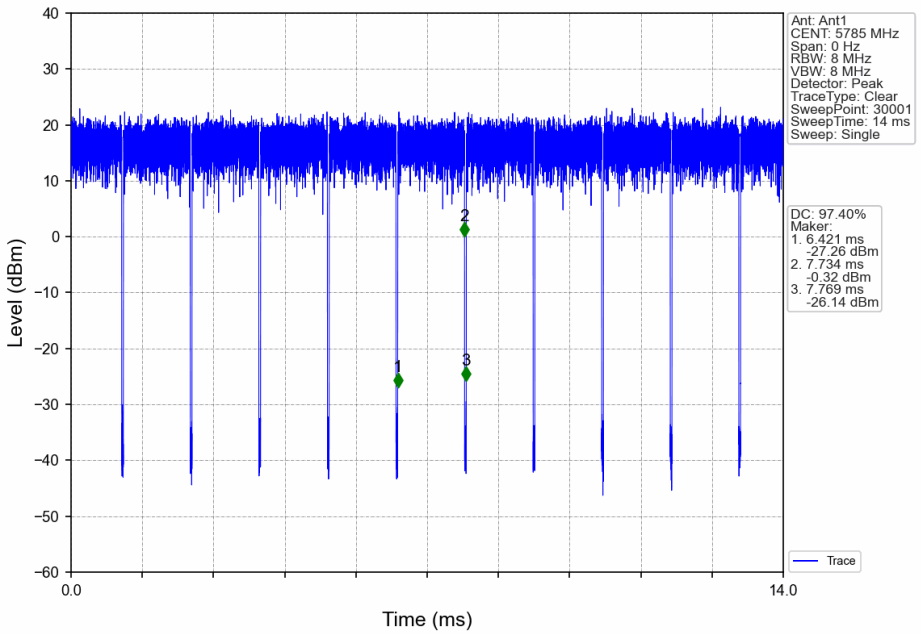
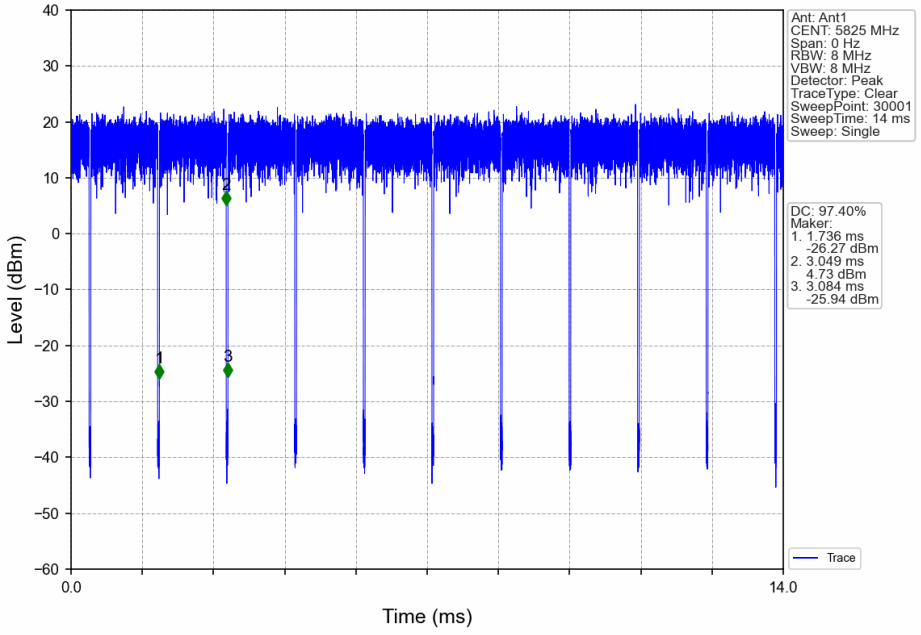
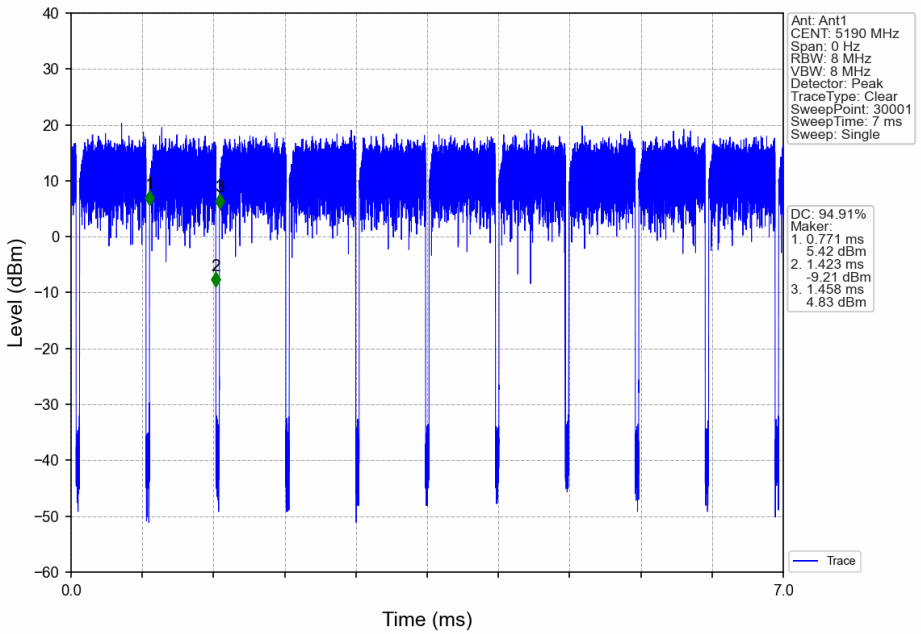
802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV



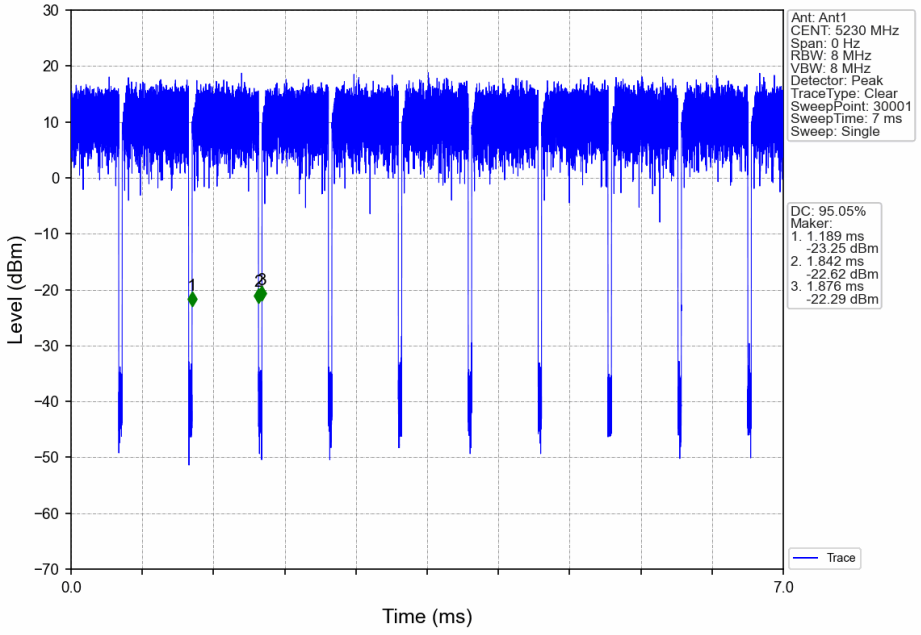
802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV



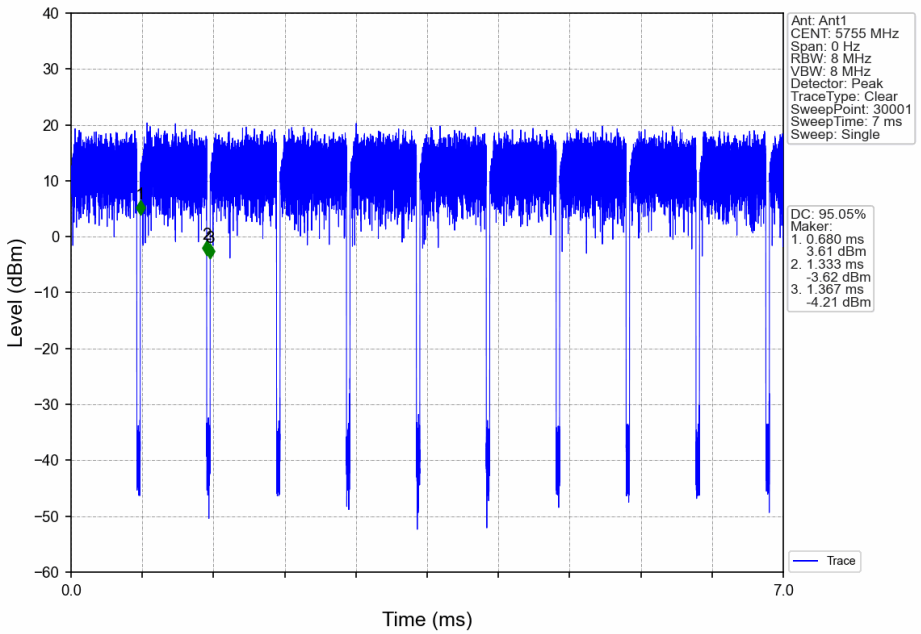
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



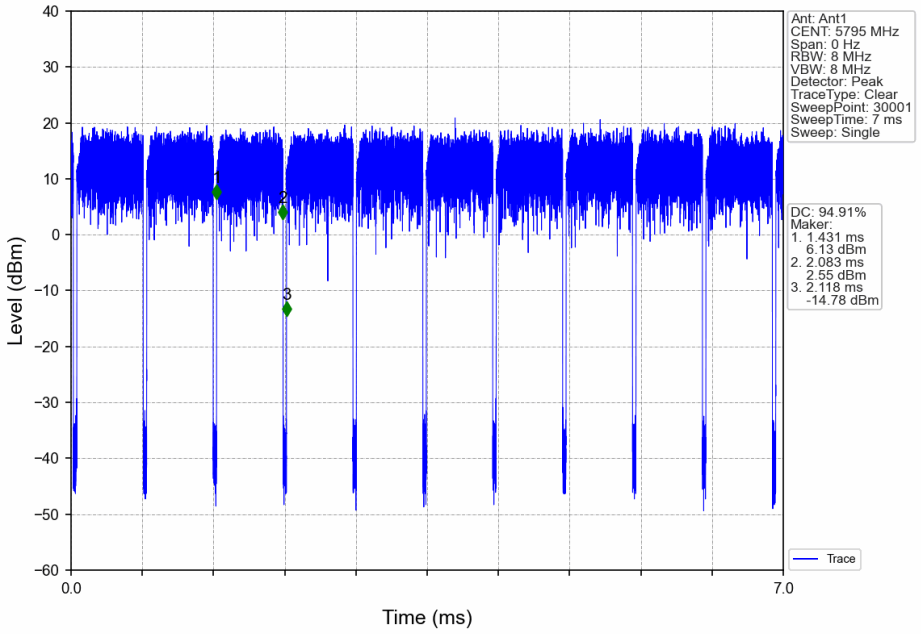
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



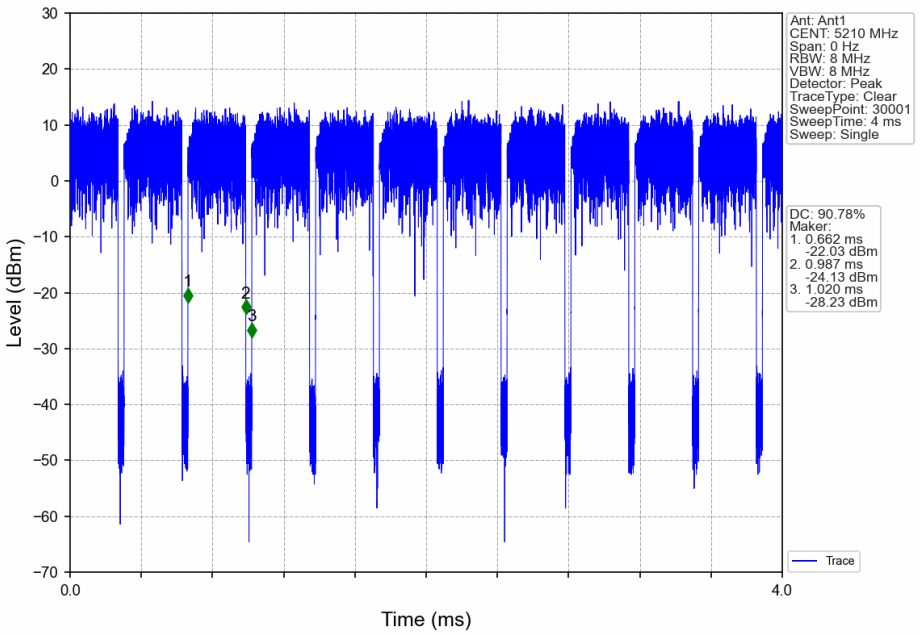
802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV



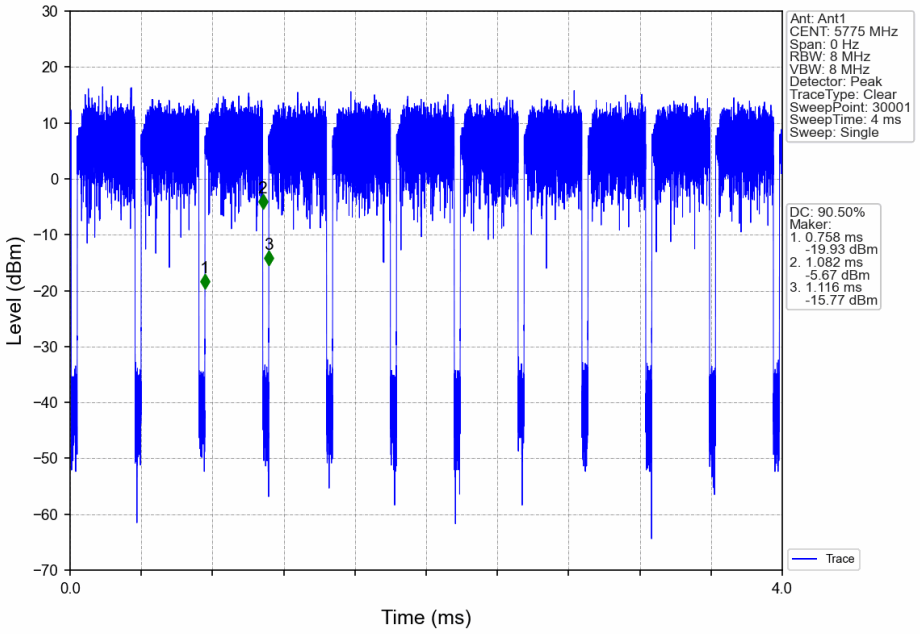
802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



2. Bandwidth

2.1 OBW

2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz) Result	Verdict
802.11a	SISO	5180	1	17.449	Pass
		5200	1	17.828	Pass
		5240	1	17.888	Pass
		5745	1	17.802	Pass
		5785	1	17.953	Pass
		5825	1	17.990	Pass
802.11n (HT20)	SISO	5180	1	18.846	Pass
		5200	1	18.805	Pass
		5240	1	18.762	Pass
		5745	1	18.786	Pass
		5785	1	18.857	Pass
		5825	1	18.852	Pass
802.11n (HT40)	SISO	5190	1	37.354	Pass
		5230	1	37.352	Pass
		5755	1	37.438	Pass
		5795	1	37.352	Pass
802.11ac (VHT20)	SISO	5180	1	18.472	Pass
		5200	1	18.499	Pass
		5240	1	18.482	Pass
		5745	1	18.530	Pass
		5785	1	18.565	Pass
		5825	1	18.622	Pass
802.11ac (VHT40)	SISO	5190	1	36.648	Pass
		5230	1	36.773	Pass
		5755	1	36.936	Pass
		5795	1	36.804	Pass
802.11ac (VHT80)	SISO	5210	1	76.058	Pass
		5775	1	76.003	Pass

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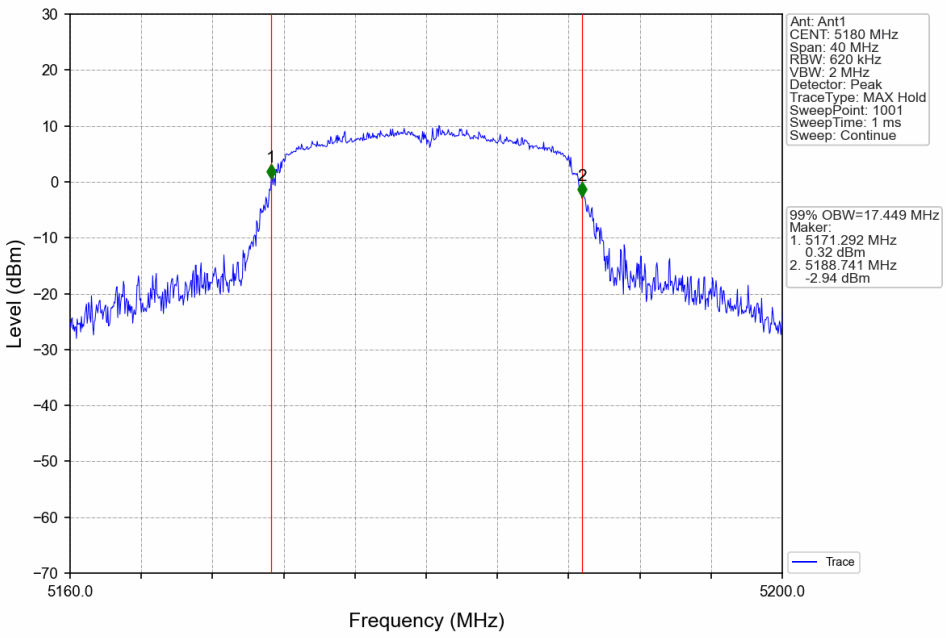
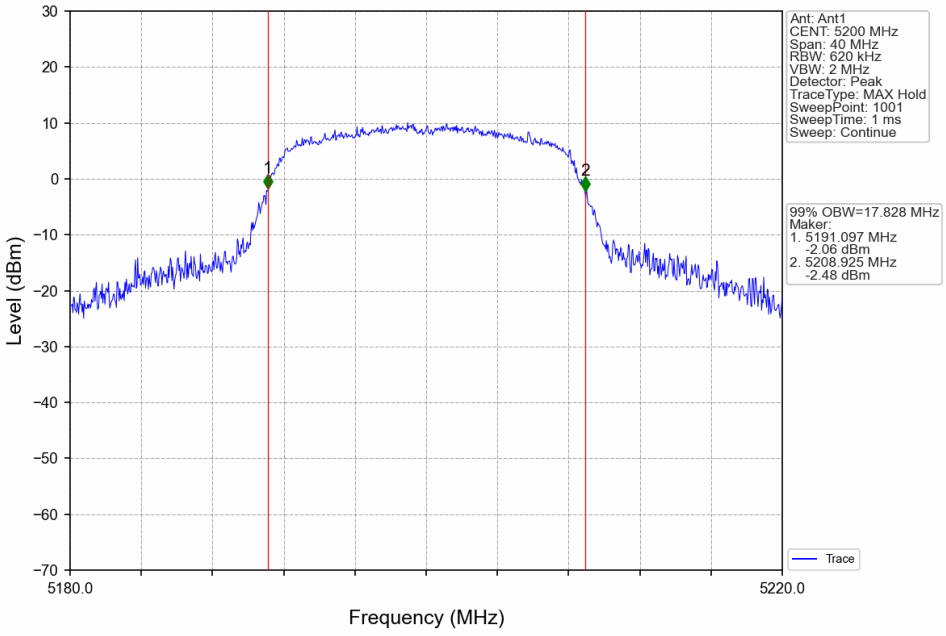
2.1.2 Test Graph

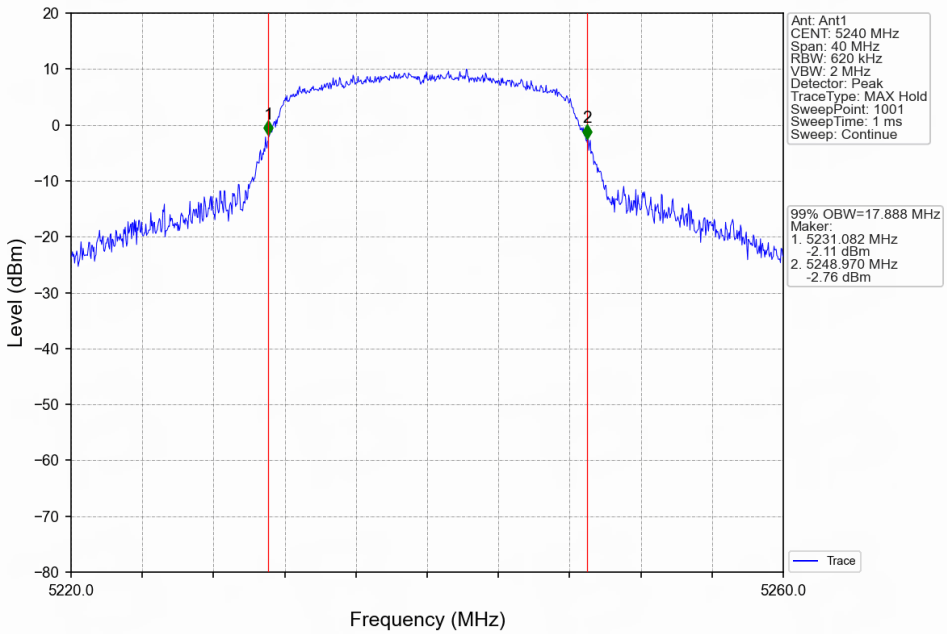
802.11a_LCH_5180MHz_Ant1_NTNV



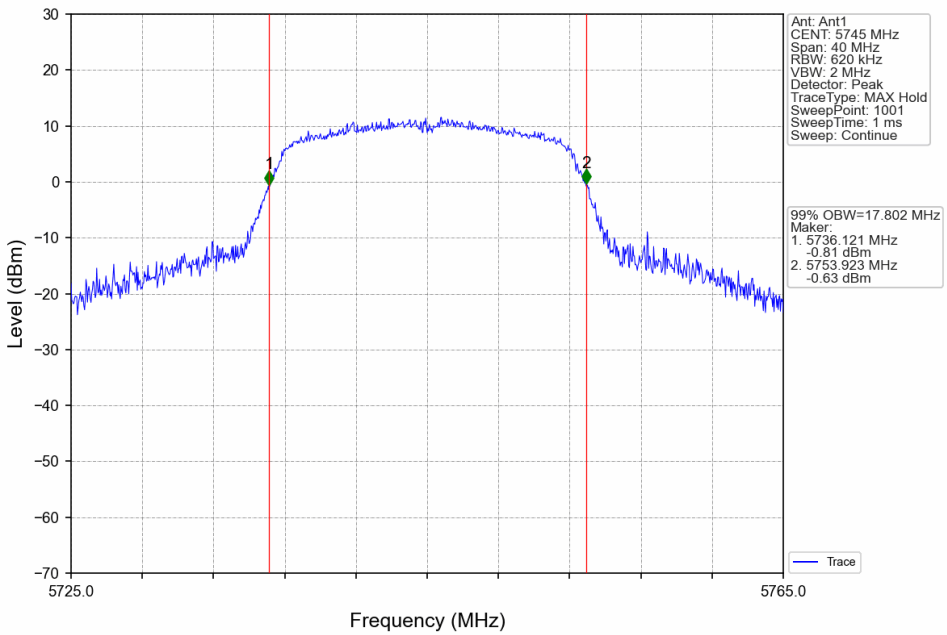
802.11a_MCH_5200MHz_Ant1_NTNV



802.11a_HCH_5240MHz_Ant1_NTNV



802.11a_LCH_5745MHz_Ant1_NTNV



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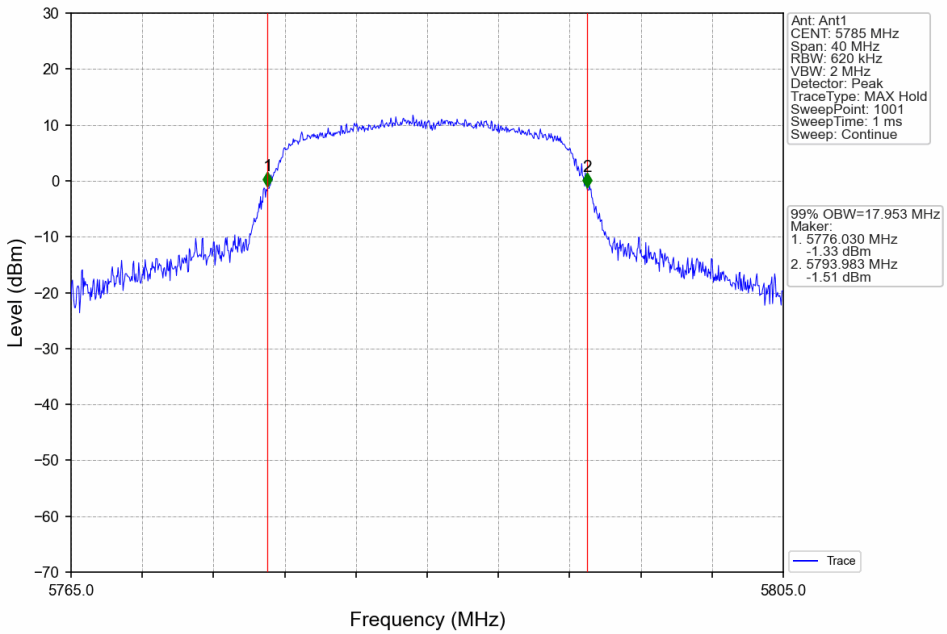
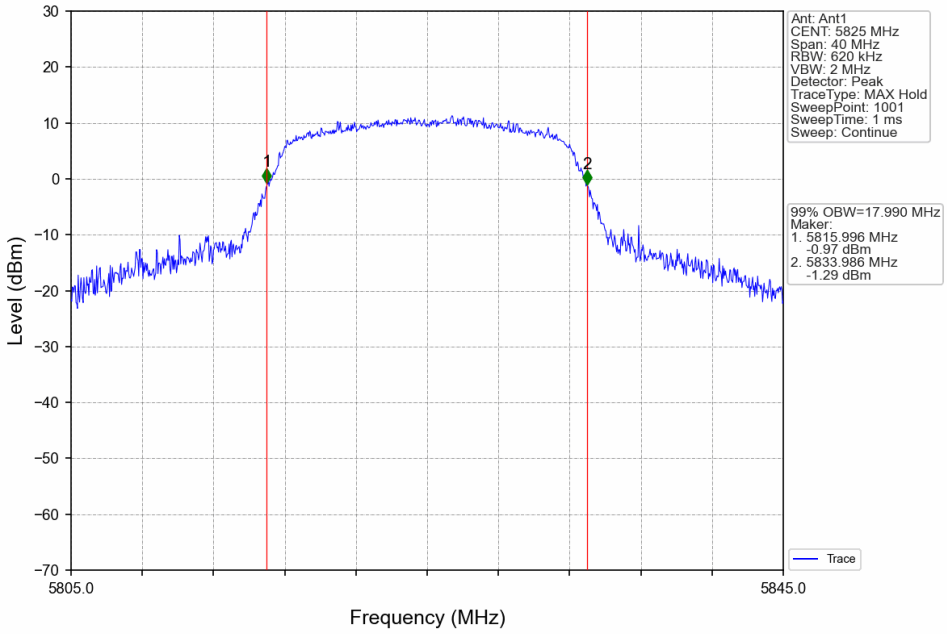
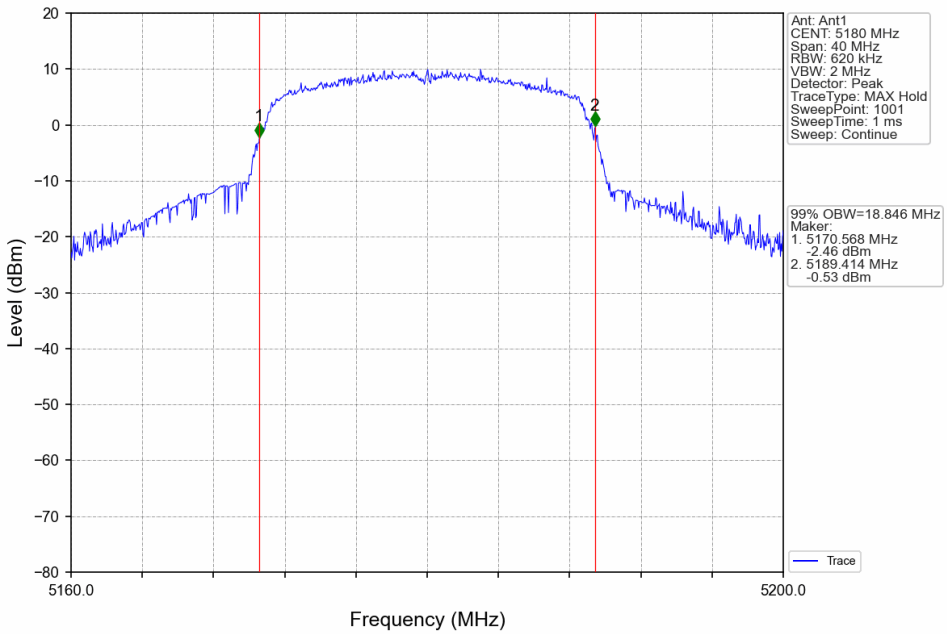
802.11a_MCH_5785MHz_Ant1_NTNV



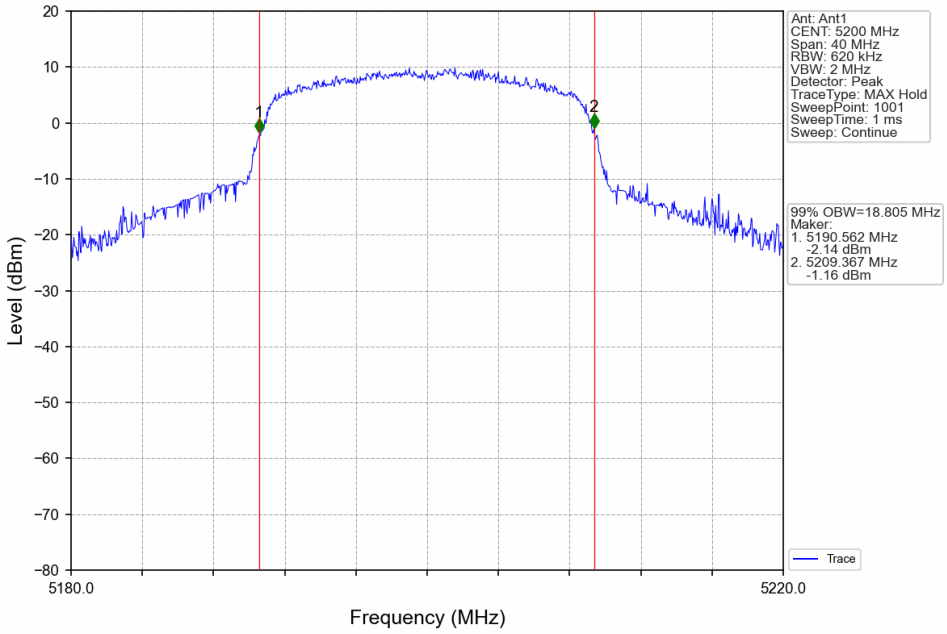
802.11a_HCH_5825MHz_Ant1_NTNV



802.11n(HT20)_LCH_5180MHz_Ant1_NTNV



802.11n(HT20)_MCH_5200MHz_Ant1_NTNV



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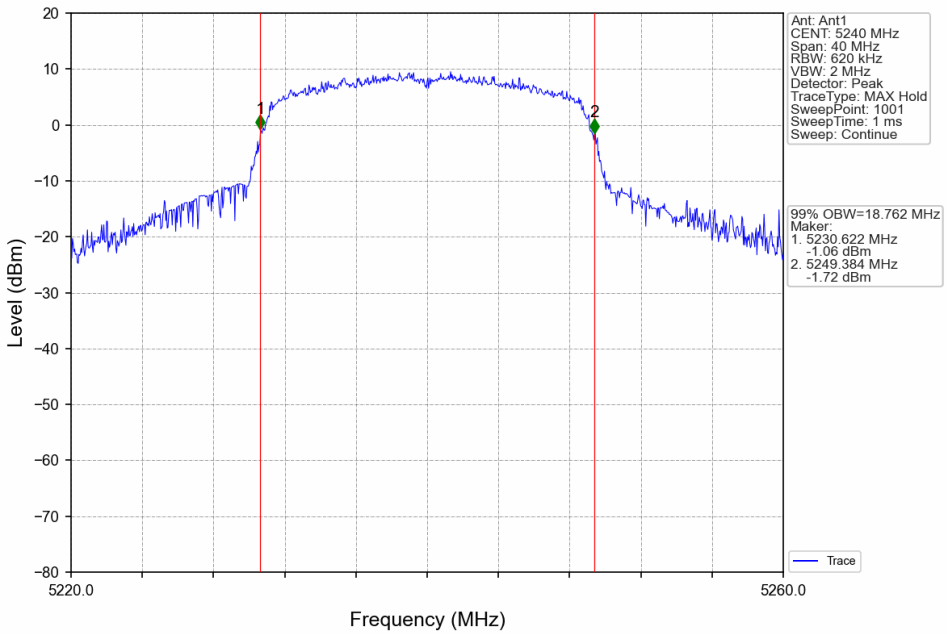
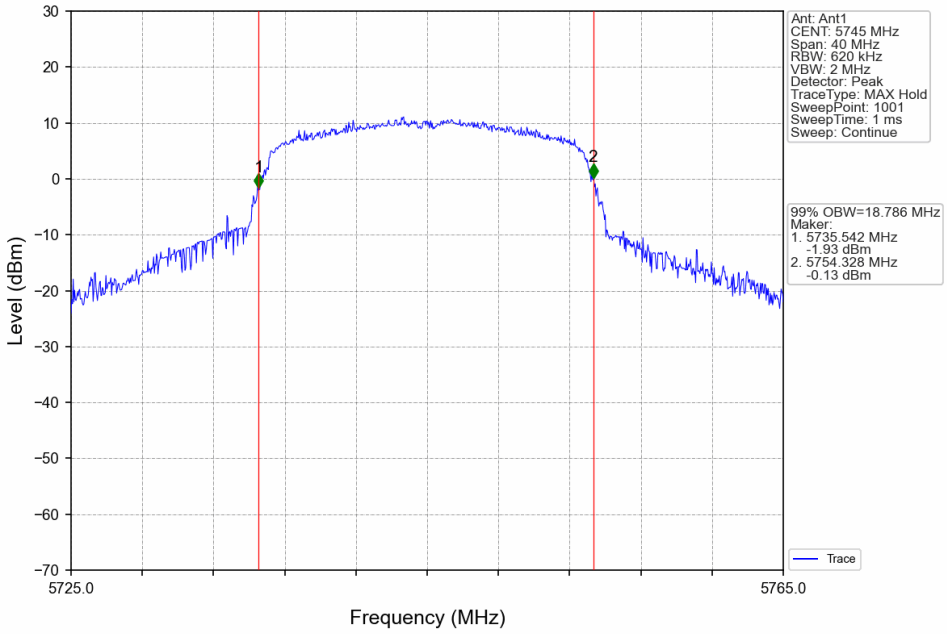
802.11n(HT20)_HCH_5240MHz_Ant1_NTNV



802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



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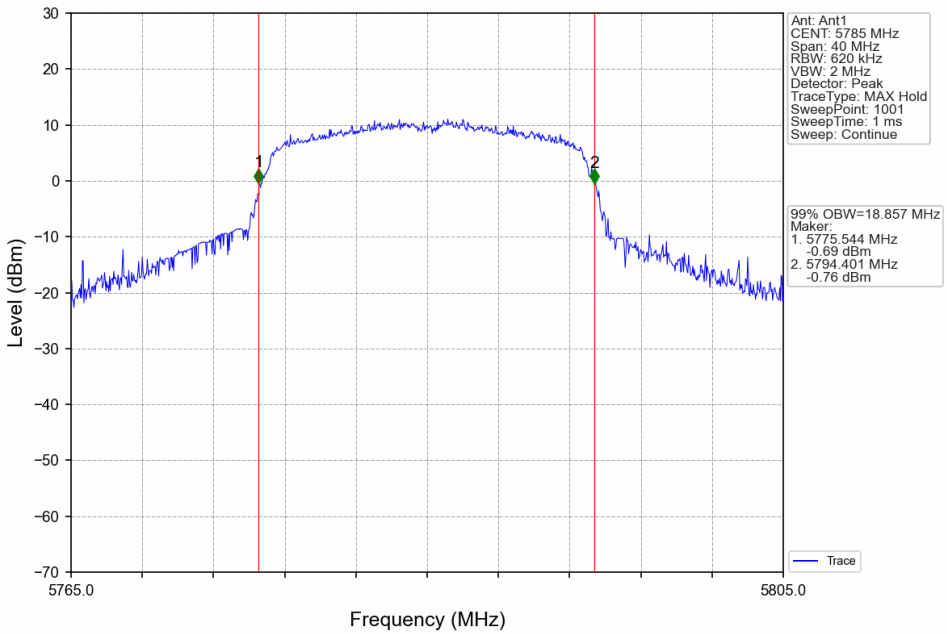
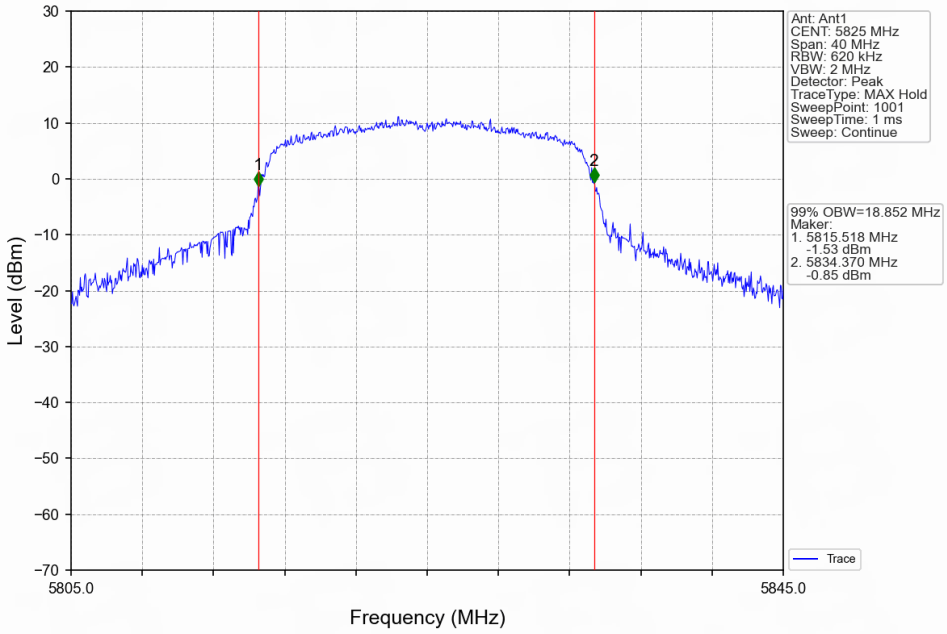
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



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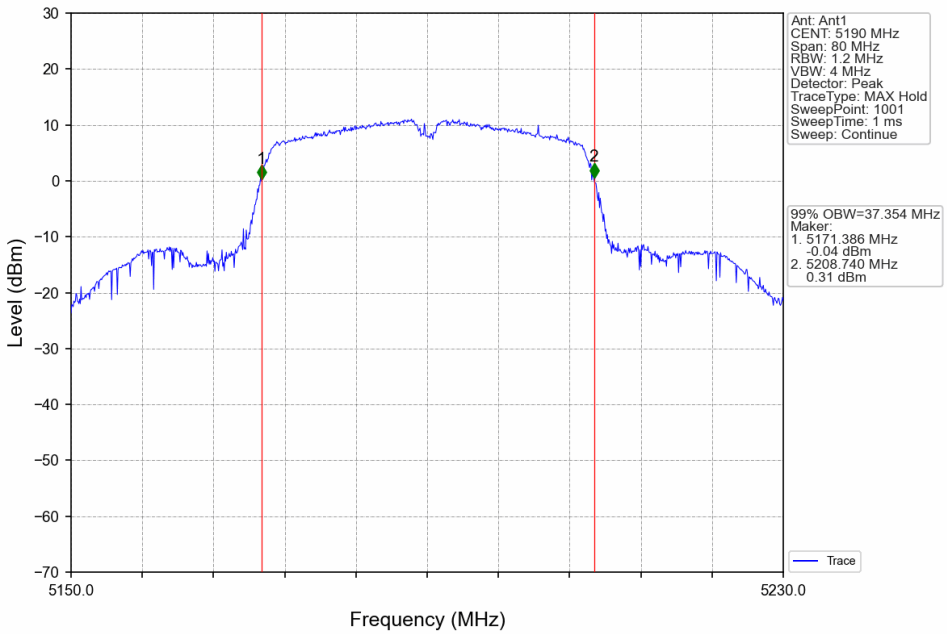
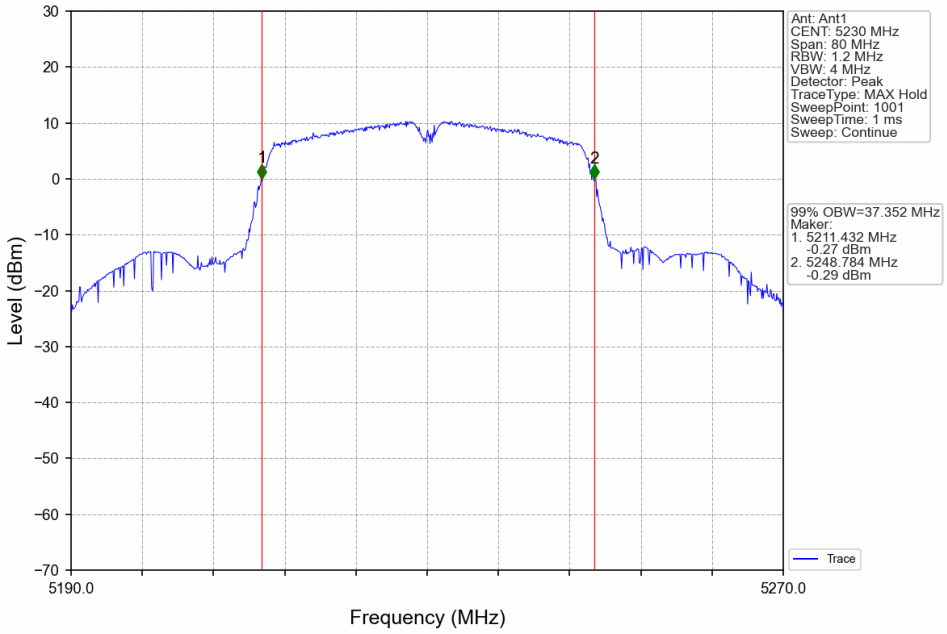
802.11n(HT40)_LCH_5190MHz_Ant1_NTNV



802.11n(HT40)_HCH_5230MHz_Ant1_NTNV



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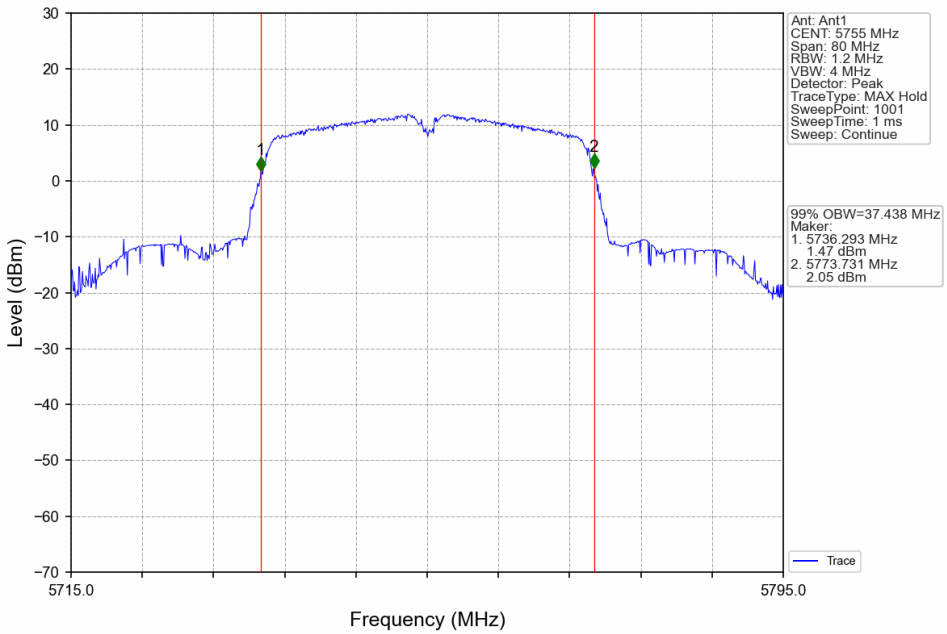
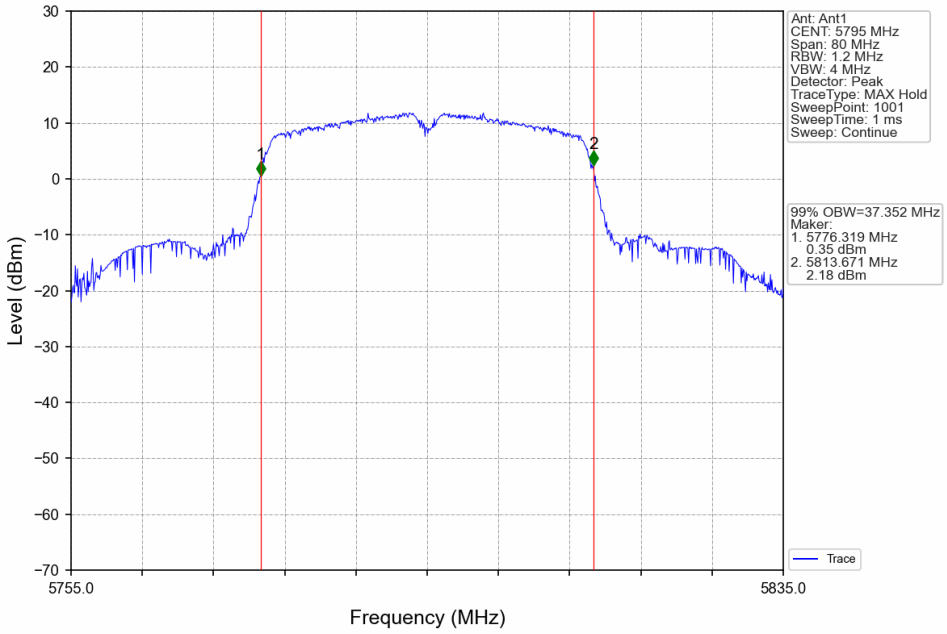
802.11n(HT40)_LCH_5755MHz_Ant1_NTNV



802.11n(HT40)_HCH_5795MHz_Ant1_NTNV



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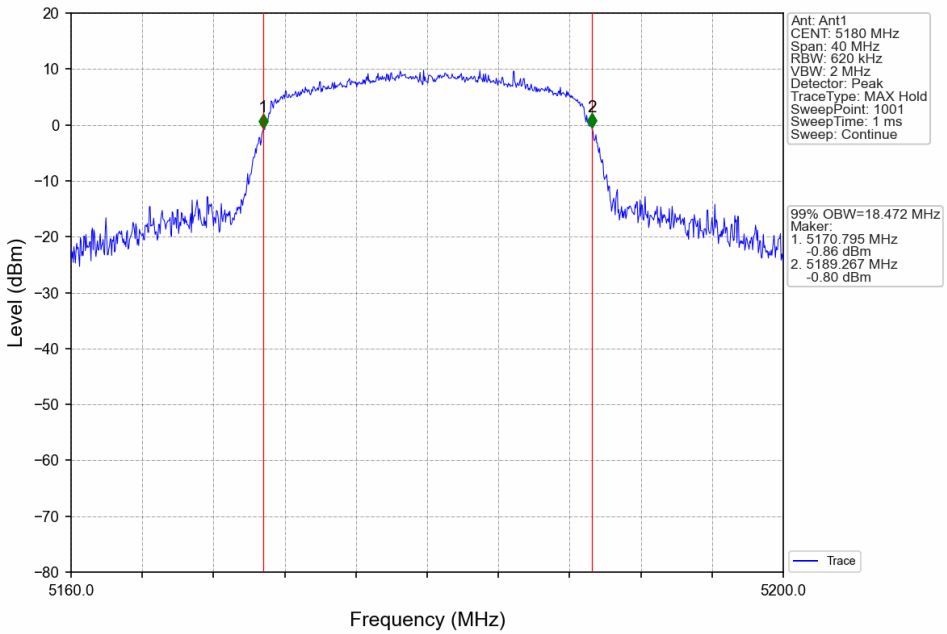
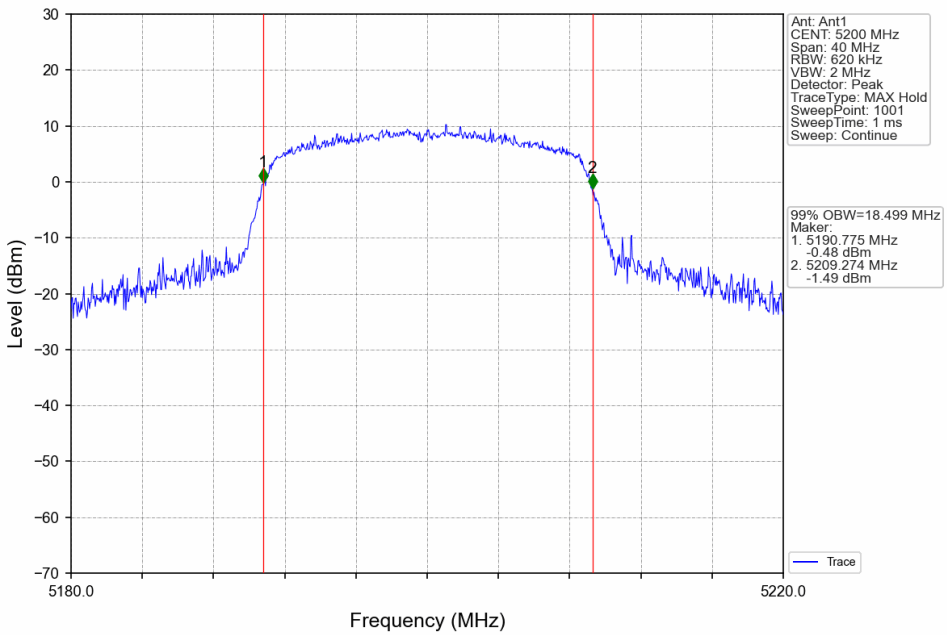
802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV



802.11ac(VHT20)_MCH_5200MHz_Ant1_NTNV



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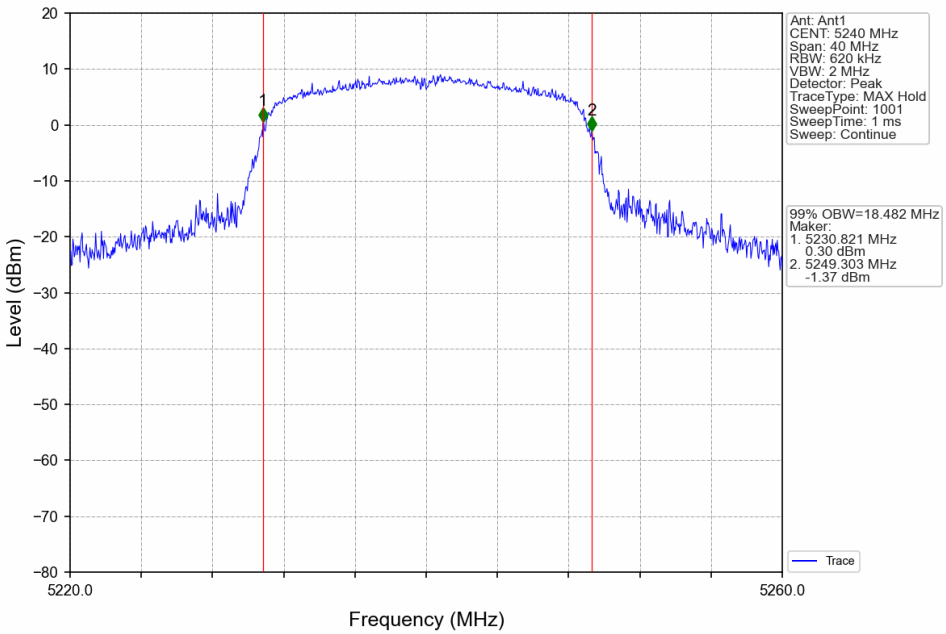
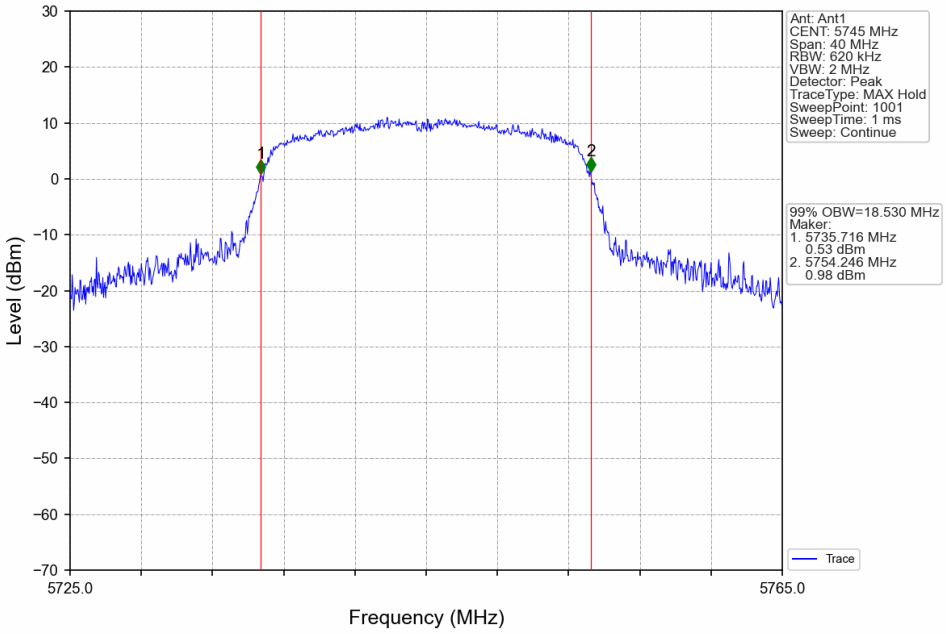
802.11ac(VHT20)_HCH_5240MHz_Ant1_NTNV



802.11ac(VHT20)_LCH_5745MHz_Ant1_NTNV



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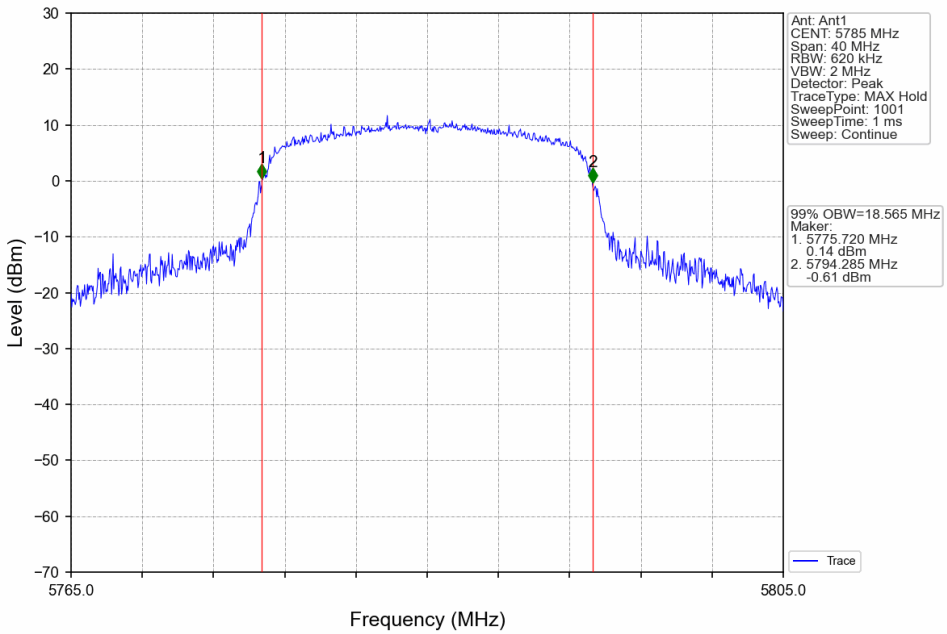
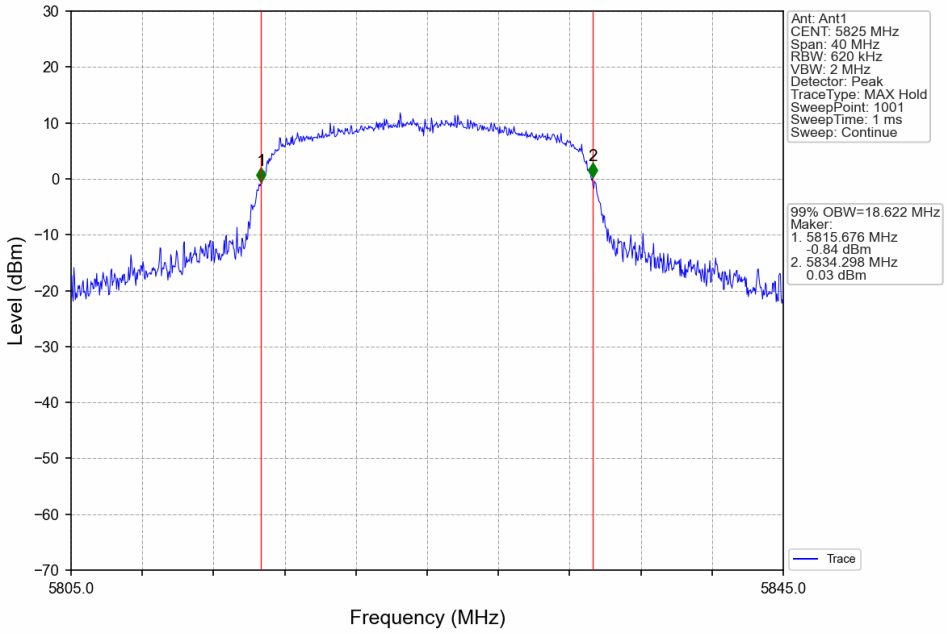
802.11ac(VHT20)_MCH_5785MHz_Ant1_NTNV



802.11ac(VHT20)_HCH_5825MHz_Ant1_NTNV



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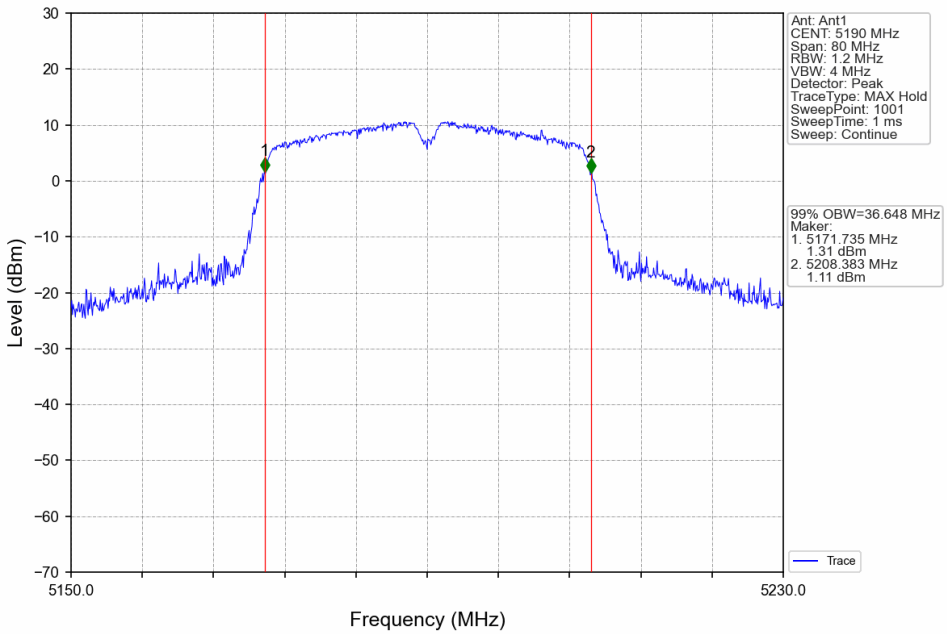
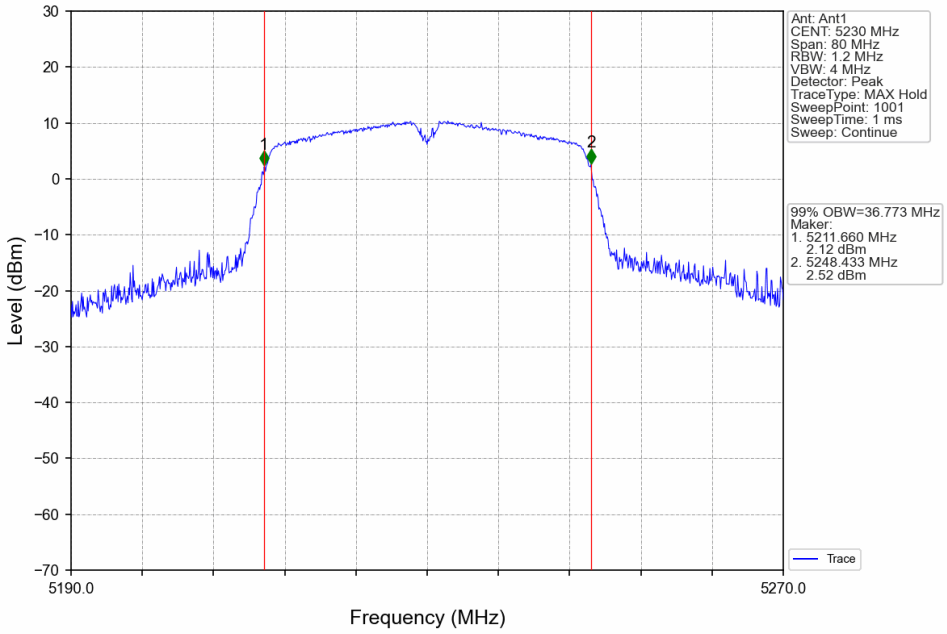
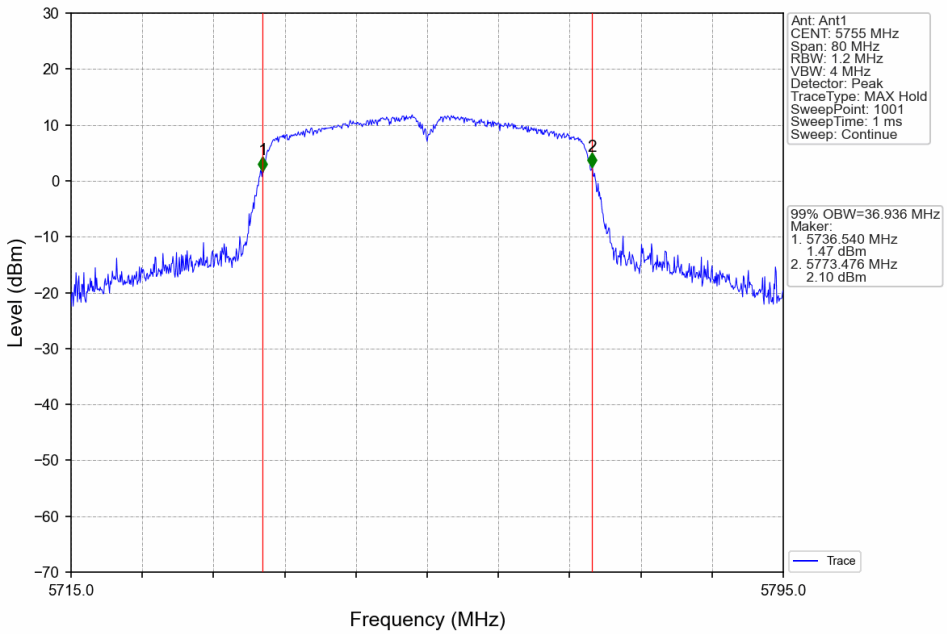
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV



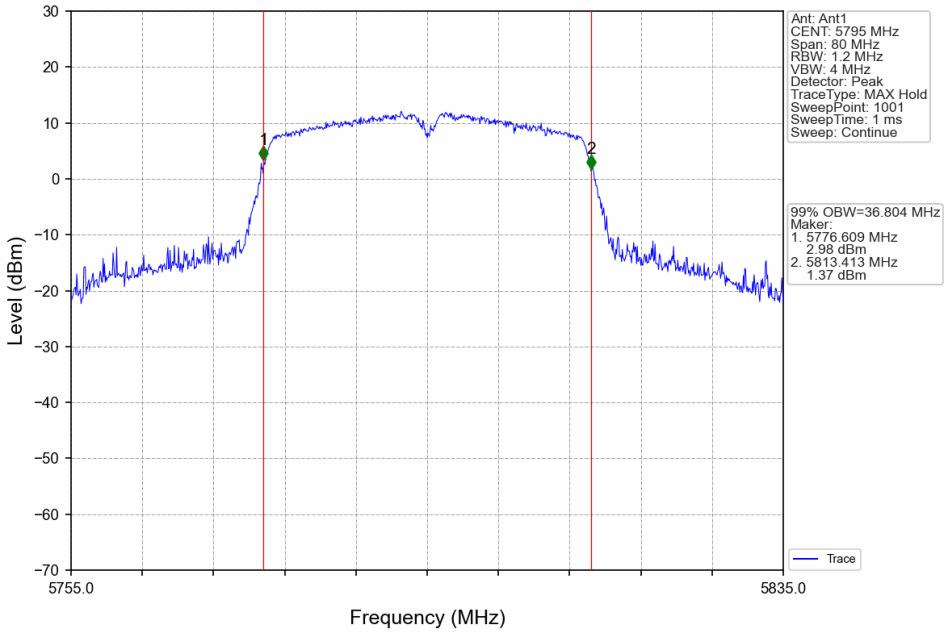
802.11ac(VHT40)_HCH_5230MHz_Ant1_NTNV



802.11ac(VHT40)_LCH_5755MHz_Ant1_NTNV



802.11ac(VHT40)_HCH_5795MHz_Ant1_NTNV



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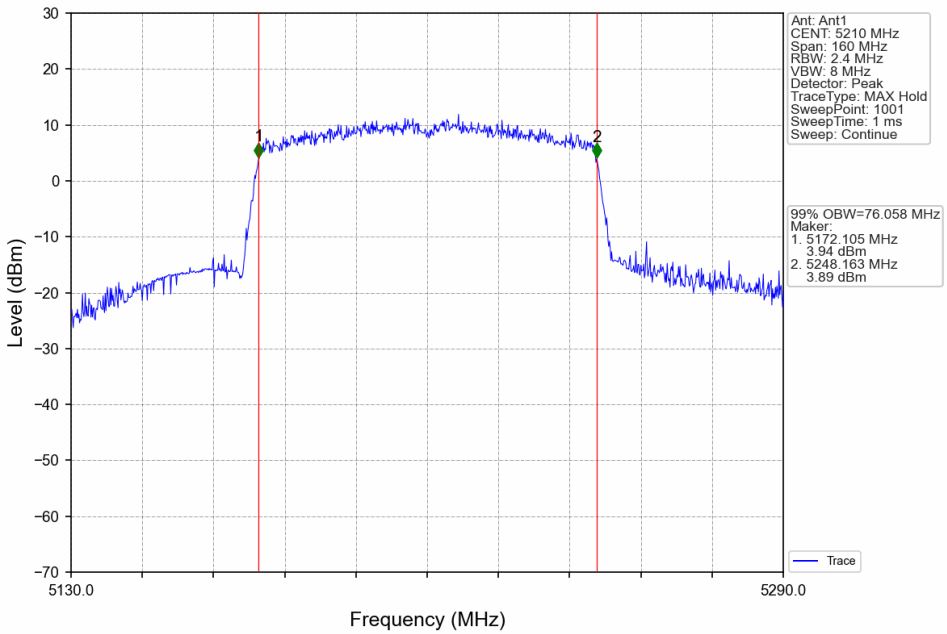
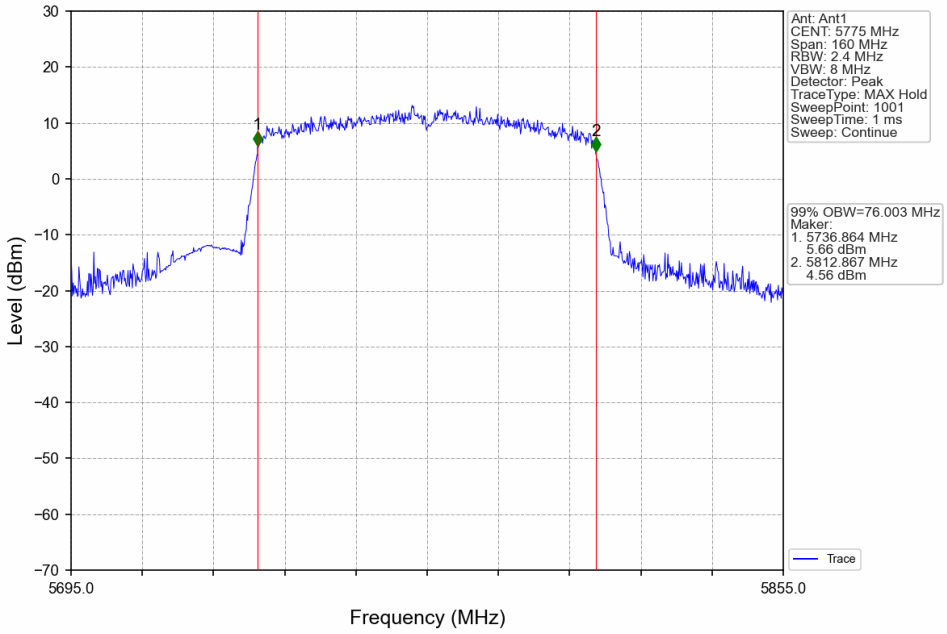
802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV



802.11ac(VHT80)_MCH_5775MHz_Ant1_NTNV



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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	15.137	>=0.5	Pass
		5785	1	15.143	>=0.5	Pass
		5825	1	15.138	>=0.5	Pass
802.11n (HT20)	SISO	5745	1	15.161	>=0.5	Pass
		5785	1	15.143	>=0.5	Pass
		5825	1	15.164	>=0.5	Pass
802.11n (HT40)	SISO	5755	1	35.144	>=0.5	Pass
		5795	1	35.137	>=0.5	Pass
802.11ac (VHT20)	SISO	5745	1	15.163	>=0.5	Pass
		5785	1	15.093	>=0.5	Pass
		5825	1	15.165	>=0.5	Pass
802.11ac (VHT40)	SISO	5755	1	35.155	>=0.5	Pass
		5795	1	35.151	>=0.5	Pass
802.11ac (VHT80)	SISO	5775	1	75.161	>=0.5	Pass

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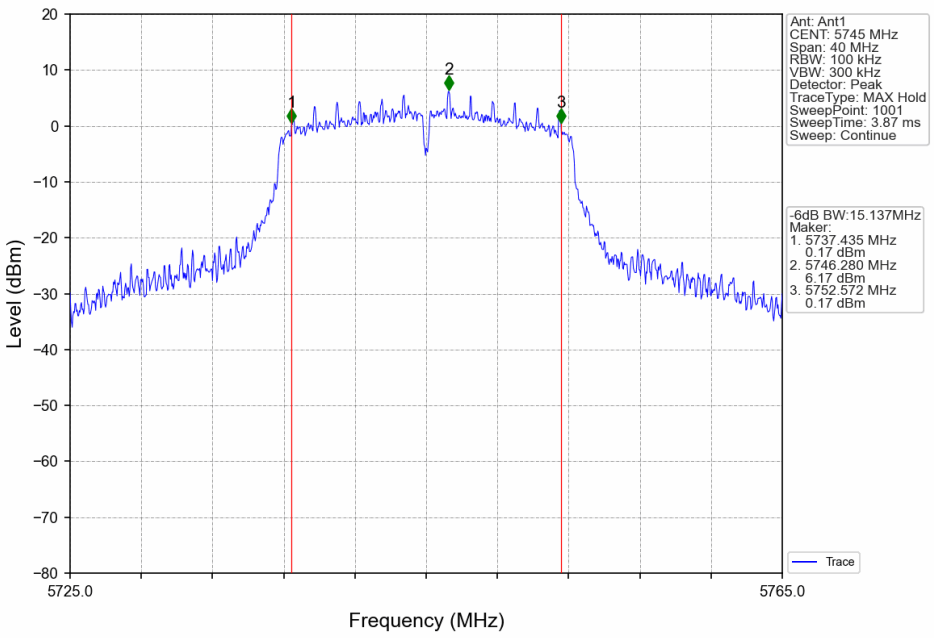
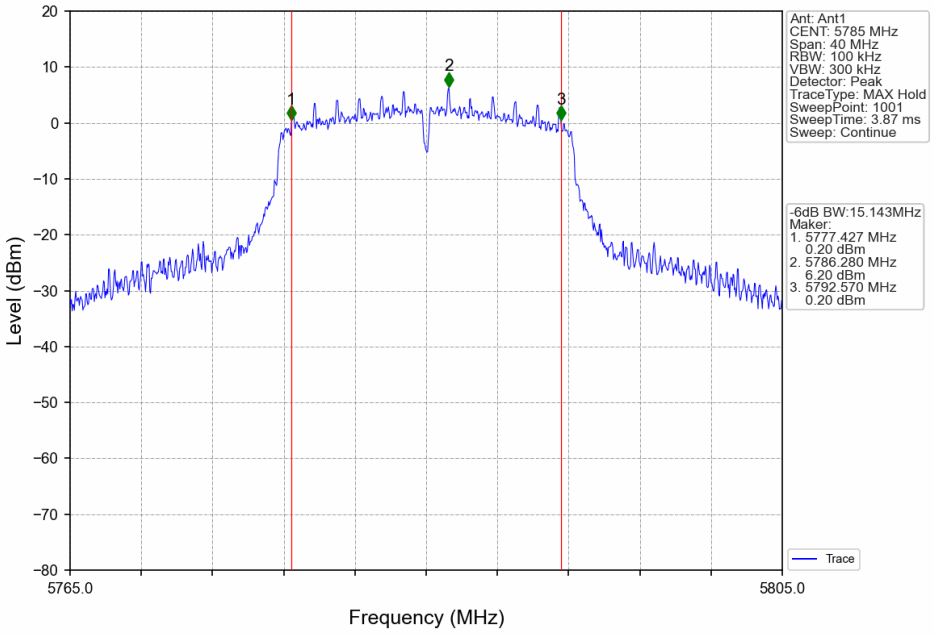
2.2.2 Test Graph

802.11a_LCH_5745MHz_Ant1_NTNV



802.11a_MCH_5785MHz_Ant1_NTNV



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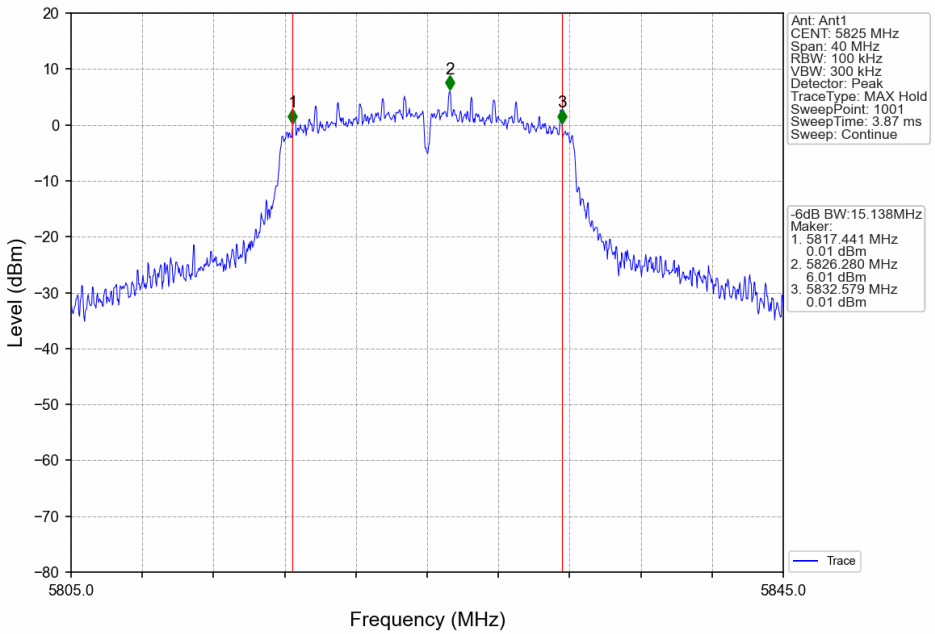
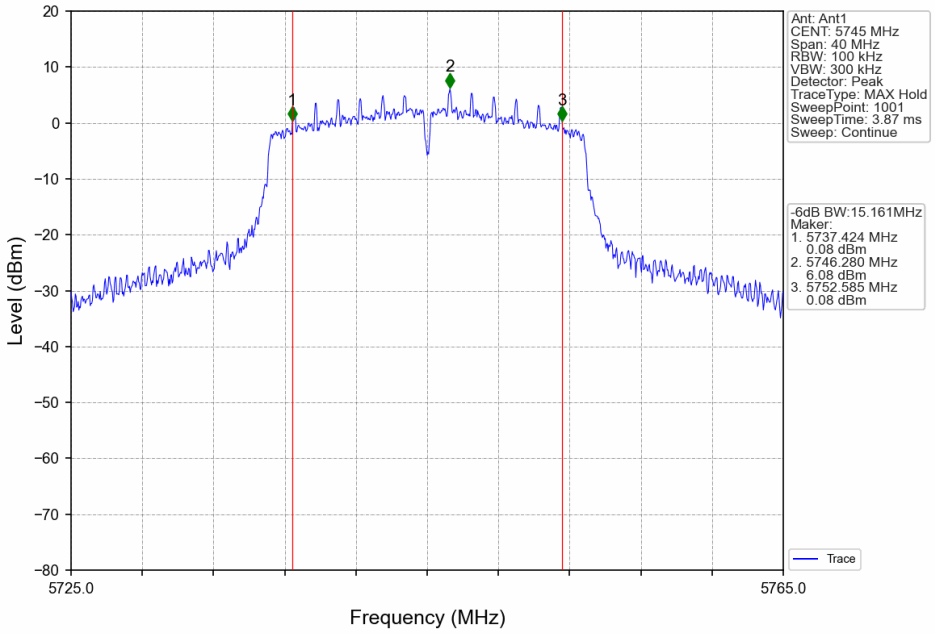
802.11a_HCH_5825MHz_Ant1_NTNV



802.11n(HT20)_LCH_5745MHz_Ant1_NTNV



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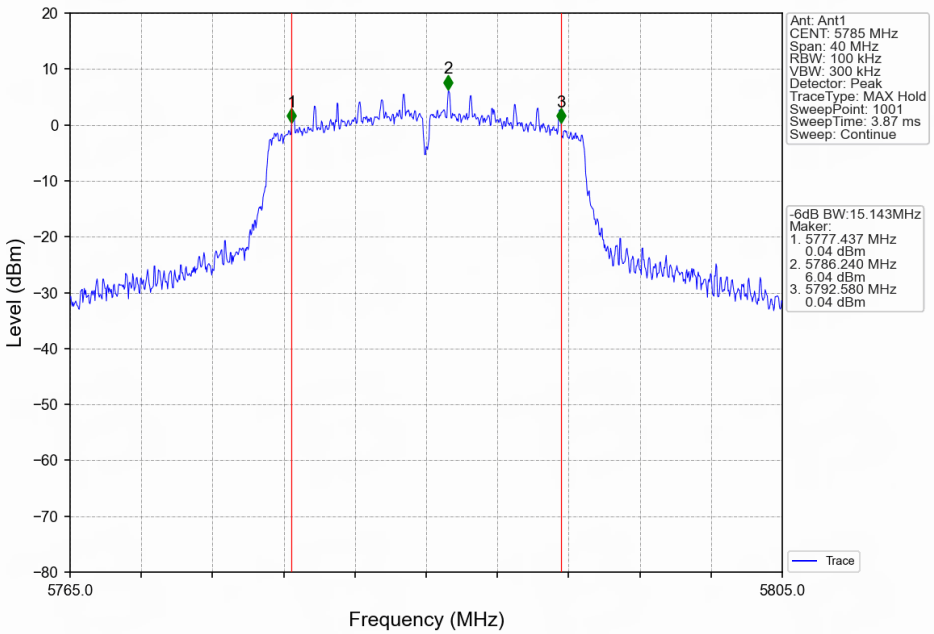
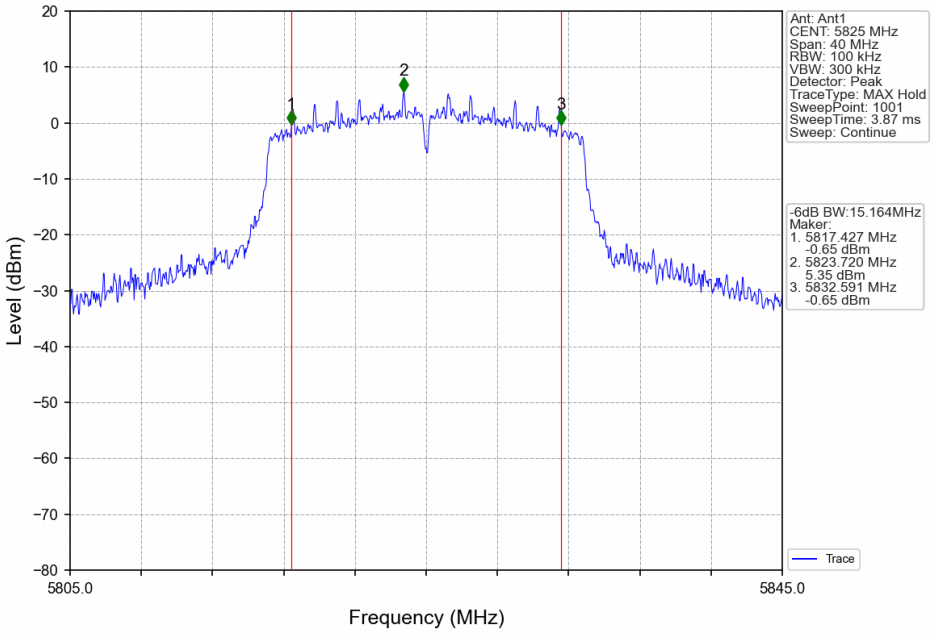
802.11n(HT20)_MCH_5785MHz_Ant1_NTNV



802.11n(HT20)_HCH_5825MHz_Ant1_NTNV



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