

RF Test Report

For

Applicant Name: Address: EUT Name: Brand Name: Model Number: Serial Model Number:	Shenzhen Ucalcul Technology Co., Ltd 401, Building A, Jiewei Industrial City Phase III, Shangmugu, Pinghu Street, Longgang District, Shenzhen AEROPAD N/A UNP200 UNP100, UNP207, UNP222, UA14P, UA14L, UA14R Issued By
Company Name: Address:	BTF Testing Lab (Shenzhen) Co., Ltd. F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Report Number: Test Standards:	BTF240319R00204 47 CFR Part 15E

Test Conclusion: FCC ID: Test Date: Date of Issue: Pass 2BDJ4-UNP200 2024-03-20 to 2024-04-10 2024-04-12

Prepared By:

Date:

Approved By:

Date:

Chris Liu / Project Engine Control LAB

Ryan.CJ / EMC Manager 2024-04-12

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Revision History			
Version	Issue Date	Revisions Content	
R_V0	2024-04-12	Original	

Note: Once the revision has been made, then previous versions reports are invalid.

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Introduction 1

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

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	
FCC Registration Number:	518915	
Designation Number:	CN1330	

1.3 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.

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2 **Product Information**

Application Information 2.1

Company Name:	Shenzhen Ucalcul Technology Co., Ltd	
Address: 401, Building A, Jiewei Industrial City Phase III, Shangmugu, Pinghu Longgang District, Shenzhen		
0.0 Menufectures Information		

2.2 Manufacturer Information

Company Name:	Shenzhen Ucalcul Technology Co., Ltd	
Address:	401, Building A, Jiewei Industrial City Phase III, Shangmugu, Pinghu Street, Longgang District, Shenzhen	

Factory Information 2.3

Company Name:	Shenzhen Ucalcul Technology Co., Ltd	
Address:	401, Building A, Jiewei Industrial City Phase III, Shangmugu, Pinghu Street, Longgang District, Shenzhen	

General Description of Equipment under Test (EUT) 2.4

EUT Name:	AEROPAD
Test Model Number:	UNP200
Series Model Number:	UNP100, UNP207, UNP222, UA14P, UA14L, UA14R
Description of Model name differentiation:	Only the model name is different, everything else is the same
Hardware Version:	N/A
Software Version:	N/A

2.5 Technical Information

DC 7.6V from battery or DC12V from Adapter with AC 120V/60Hz	
Model:RJT-AS120300 Input:100-240v~50/60Hz 1.0A Output:12.0V==3.0A 36.0W	
U-NII Band 1: 5.18~5.24 GHz	
U-NII Band 3: 5.745~5.825 GHz	
U-NII Band 1: 5.15~5.25 GHz U-NII Band 3: 5.725~5.85 GHz	
802.11a: 20 MHz	
802.11n: 20 MHz, 40 MHz	
802.11ac: 20 MHz, 40 MHz, 80 MHz	
PIFA Antenna MIMO:2*1	
ANT1:2.78dBi ANT2:1.96dBi	

#: 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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3 Summary of Test Results

3.1 Test Standards

The tests were performed according to following standards:

47 CFR Part 15E: Unlicensed National Information Infrastructure Devices

3.2 Uncertainty of Test

Item	Measurement Uncertainty
Conducted Emission (150 kHz-30 MHz)	±2.64dB
Occupied Bandwidth	±69kHz
Transmitter Power, Conducted	±0.87dB
Power Spectral Density	±0.69dB
Conducted Spurious Emissions	±0.95dB
Radiated Spurious Emissions (above 1GHz)	1-6GHz: ±3.94dB
	6-18GHz: ±4.16dB
Radiated Spurious Emissions (30M - 1GHz)	±4.12dB

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

3.3 Summary of Test Result

Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15E	Part 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15E	47 CFR Part 15.207(a)	Pass
Maximum conducted output power	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(i) 47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iii) 47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(2) 47 CFR Part 15.407(a)(3)(i)	Pass
Power spectral density	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(i) 47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iii) 47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(2) 47 CFR Part 15.407(a)(3)(i)	Pass
Emission bandwidth and occupied bandwidth	47 CFR Part 15E	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use. 47 CFR Part 15.407(e)	Pass
Channel Availability Check Time	47 CFR Part 15E	47 CFR Part 15.407(h)(2)(ii)	Pass
U-NII Detection Bandwidth	47 CFR Part 15E	47 CFR Part 15.407(h)(2)	Pass
Statistical Performance Check	47 CFR Part 15E	KDB 935210 D02, Clause 5.1 Table 2	Pass
Channel Move Time, Channel Closing Transmission Time	47 CFR Part 15E	47 CFR Part 15.407(h)(2)(iii)	Pass
Non-Occupancy Period Test	47 CFR Part 15E	47 CFR Part 15.407(h)(2)(iv)	Pass
DFS Detection Thresholds	47 CFR Part 15E	KDB 905462 D02, Clause 5.2 Table 3	Pass
Band edge emissions (Radiated)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(2) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)	Pass

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Undesirable emission limits (below 1GHz)	47 CFR Part 15E	47 CFR Part 15.407(b)(9)	Pass
Undesirable emission limits (above 1GHz)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(2) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)	Pass

Test Configuration 4

Test Equipment List 4.1

Conducted Emission at AC power line							
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date		
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	00953	2023-11-16	2024-11-15		
Coaxial Switcher	SCHWARZBECK	CX210	CX210	2023-11-16	2024-11-15		
V-LISN	SCHWARZBECK	NSLK 8127	01073	2023-11-16	2024-11-15		
LISN	AFJ	LS16/110VAC	16010020076	2023-11-16	2024-11-15		
EMI Receiver	ROHDE&SCHWA RZ	ESCI3	101422	2023-11-16	2024-11-15		

Duty Cycle					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2023-11-16	2024-11-15
RF Sensor Unit	Techy	TR1029-2	/	2023-11-16	2024-11-15
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2023-11-16	2024-11-15
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2023-11-16	2024-11-15
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2023-11-16	2024-11-15
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2023-11-16	2024-11-15

Maximum conducted output power						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
RFTest software	/	V1.00	/	/	/	
RF Control Unit	Techy	TR1029-1	/	2023-11-16	2024-11-15	
RF Sensor Unit	Techy	TR1029-2	/	2023-11-16	2024-11-15	
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2023-11-16	2024-11-15	
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2023-11-16	2024-11-15	
WIDEBAND RADIO COMMNUNICATION	Rohde & Schwarz	CMW500	161997	2023-11-16	2024-11-15	

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MXA Signal Analyzer KEYSIGHT N9020A MY50410020 2023-11-16 2024-11-15	TESTER				
	MXA Signal Analyzer	N9020A	MY50410020	2023-11-16	2024 11 16

Power spectral density						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
RFTest software	/	V1.00	/	/	/	
RF Control Unit	Techy	TR1029-1	/	2023-11-16	2024-11-15	
RF Sensor Unit	Techy	TR1029-2	/	2023-11-16	2024-11-15	
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2023-11-16	2024-11-15	
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2023-11-16	2024-11-15	
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2023-11-16	2024-11-15	
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2023-11-16	2024-11-15	

Emission bandwidth and occupied bandwidth						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
RFTest software	/	V1.00	/	/	/	
RF Control Unit	Techy	TR1029-1	/	2023-11-16	2024-11-15	
RF Sensor Unit	Techy	TR1029-2	/	2023-11-16	2024-11-15	
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2023-11-16	2024-11-15	
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2023-11-16	2024-11-15	
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2023-11-16	2024-11-15	
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2023-11-16	2024-11-15	

Channel Availability Check Time						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
RFTest software	/	V1.00	/	/	/	
RF Control Unit	Techy	TR1029-1	/	2023-11-16	2024-11-15	
RF Sensor Unit	Techy	TR1029-2	/	2023-11-16	2024-11-15	
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2023-11-16	2024-11-15	
Adjustable Direct	Dongguan	etm-6050c	20211026123	2023-11-16	2024-11-15	

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Current Regulated	Tongmen				
Power Supply	Electronic				
	Technology Co.,				
	LTD				
WIDEBAND RADIO				2023-11-16	2024-11-15
COMMNUNICATION	Rohde & Schwarz	CMW500	161997		
TESTER					
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2023-11-16	2024-11-15

U-NII Detection Bandwidth						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
RFTest software	/	V1.00	/	/	/	
RF Control Unit	Techy	TR1029-1	/	2023-11-16	2024-11-15	
RF Sensor Unit	Techy	TR1029-2	/	2023-11-16	2024-11-15	
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2023-11-16	2024-11-15	
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2023-11-16	2024-11-15	
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2023-11-16	2024-11-15	
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2023-11-16	2024-11-15	

Statistical Performance Check						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
RFTest software	/	V1.00	/	/	/	
RF Control Unit	Techy	TR1029-1	/	2023-11-16	2024-11-15	
RF Sensor Unit	Techy	TR1029-2	/	2023-11-16	2024-11-15	
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2023-11-16	2024-11-15	
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2023-11-16	2024-11-15	
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2023-11-16	2024-11-15	
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2023-11-16	2024-11-15	

Channel Move Time, C	Channel Closing T	ransmission Time			
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2023-11-16	2024-11-15
RF Sensor Unit	Techy	TR1029-2	/	2023-11-16	2024-11-15
Programmable constant temperature	ZZCKONG	ZZ-K02A	20210928007	2023-11-16	2024-11-15

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and humidity box					
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2023-11-16	2024-11-15
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2023-11-16	2024-11-15
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2023-11-16	2024-11-15

Non-Occupancy Period Test						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
RFTest software	/	V1.00	/	/	/	
RF Control Unit	Techy	TR1029-1	/	2023-11-16	2024-11-15	
RF Sensor Unit	Techy	TR1029-2	/	2023-11-16	2024-11-15	
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2023-11-16	2024-11-15	
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2023-11-16	2024-11-15	
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2023-11-16	2024-11-15	
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2023-11-16	2024-11-15	

DFS Detection Thresholds					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2023-11-16	2024-11-15
RF Sensor Unit	Techy	TR1029-2	/	2023-11-16	2024-11-15
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2023-11-16	2024-11-15
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2023-11-16	2024-11-15
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2023-11-16	2024-11-15
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2023-11-16	2024-11-15

Band edge emissions (Radiated)						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23	
Preamplifier	SCHWARZBECK	BBV9744	00246	2023-11-16	2023-11-23	

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RE Cable	REBES Talent	UF1-SMASMAM-1 0m	21101566	2023-11-16	2024-11-15
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2023-11-16	2024-11-15
RE Cable	REBES Talent	UF1-SMASMAM-1 m	21101568	2023-11-16	2024-11-15
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2023-11-16	2024-11-15
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2023-11-16	2024-11-15
POSITIONAL CONTROLLER	SKET	PCI-GPIB	1	1	2024-11-15
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2023-11-16	2024-11-15
EMI TEST RECEIVER	ROHDE&SCHWA RZ	ESCI7	101032	2023-11-16	2024-11-15
SIGNAL ANALYZER	ROHDE&SCHWA RZ	FSQ40	100010	2023-11-16	2024-11-15
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-11-16	2024-11-15
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	1	1	1
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2023-11-16	2024-11-15

Undesirable emission limits (below 1GHz)						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23	
Preamplifier	SCHWARZBECK	BBV9744	00246	2023-11-16	2024-11-15	
RE Cable	REBES Talent	UF1-SMASMAM-1 0m	21101566	2023-11-16	2024-11-15	
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2023-11-16	2024-11-15	
RE Cable	REBES Talent	UF1-SMASMAM-1 m	21101568	2023-11-16	2024-11-15	
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2023-11-16	2024-11-15	
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2023-11-16	2024-11-15	
POSITIONAL CONTROLLER	SKET	PCI-GPIB	1	/	/	
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2023-11-16	2024-11-15	
EMI TEST RECEIVER	ROHDE&SCHWA RZ	ESCI7	101032	2023-11-16	2024-11-15	
SIGNAL ANALYZER	ROHDE&SCHWA RZ	FSQ40	100010	2023-11-16	2024-11-15	
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/	
Broadband Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-11-16	2024-11-15	
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21	
EZ_EMC	Frad	FA-03A2 RE+	/	1	/	
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	1	1	

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Log periodic antenna SCHWARZBECK VOLB 9166 01326 2021-11-26 2024-11-15	Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2024-11-15
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Undesirable emission limits (above 1GHz)						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-11-16	2024-11-15	
Preamplifier	SCHWARZBECK	BBV9744	00246	2023-11-16	2024-11-15	
RE Cable	REBES Talent	UF1-SMASMAM-1 0m	21101566	2023-11-16	2024-11-15	
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2023-11-16	2024-11-15	
RE Cable	REBES Talent	UF1-SMASMAM-1 m	21101568	2023-11-16	2024-11-15	
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2023-11-16	2024-11-15	
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2023-11-16	2024-11-15	
POSITIONAL CONTROLLER	SKET	PCI-GPIB	1	1	/	
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2023-11-16	2024-11-15	
EMI TEST RECEIVER	ROHDE&SCHWA RZ	ESCI7	101032	2023-11-16	2024-11-15	
SIGNAL ANALYZER	ROHDE&SCHWA RZ	FSQ40	100010	2023-11-16	2024-11-15	
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/	
Broadband Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-11-16	2024-11-15	
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21	
EZ_EMC	Frad	FA-03A2 RE+	/	/	/	
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	1	1	
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2023-11-16	2024-11-15	

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4.2 Test Auxiliary Equipment

The EUT was tested as an independent device.

4.3 Test Modes

No.	Test Modes	Description
TM1	802.11a mode	Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11a modulation type. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.
TM2	802.11n mode	Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11n modulation type. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.
ТМЗ	802.11ac mode	Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11ac modulation type. Only the data of worst case is recorded in the report.
TM4	Normal Operating	Keep the EUT works in normal operating mode and connect to companion device



5 Evaluation Results (Evaluation)

5.1 Antenna requirement

	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
Test Requirement:	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.

6 Radio Spectrum Matter Test Results (RF)

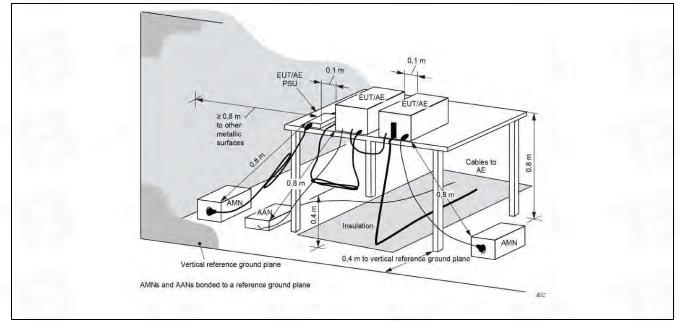
6.1 Conducted Emission at AC power line

Test Requirement:	47 CFR Part 15.207(a)				
Test Method:		Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices			
	Frequency of emission (MHz)	Conducted limit (dl	BμV)		
		Quasi-peak	Average		
Toot Limit:	0.15-0.5	66 to 56*	56 to 46*		
Test Limit:	0.5-5	56	46		
	5-30	60	50		
	*Decreases with the logarithm of t	*Decreases with the logarithm of the frequency.			

6.1.1 E.U.T. Operation:

Operating Environment:			
Temperature:	25.5 °C		
Humidity:	50.6 %		
Atmospheric Pressure:	1010 mbar		

6.1.2 Test Setup Diagram:



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6.1.3 Test Data:



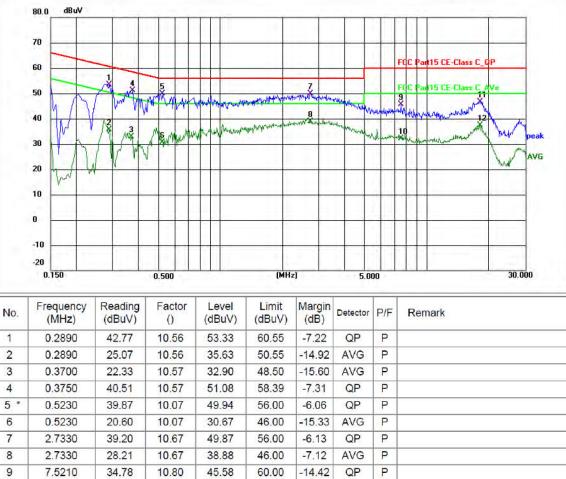
dBu∀ 80.0 70 FCC t15 CE-Class C G 60 5 50 8 40 5 30 war Adamsharper 20 AVG 10 0 -10 -20 0.150 0.500 (MHz) 5.000 30.000 Reading Frequency Factor Level Limit Margin P/F No. Detector Remark (MHz) (dBuV) (dBuV) (dBuV) (dB) () 10.56 0.2740 30.82 41.38 51.00 -9.62 P AVG 1 2 0.2760 44.78 10.56 55.34 60.94 -5.60 QP P 3 0.4810 27.75 10.09 37.84 46.32 -8.48 AVG P 4 0.4830 42.38 10.09 52.47 56.29 -3.82 QP Ρ 5 0.6580 39.86 10.00 49.86 56.00 -6.14 QP P 6 0.6630 21.76 10.00 31.76 46.00 -14.24 AVG Ρ 7 19.58 9.86 29.44 46.00 -16.56 P 0.8300 AVG 8 0.8340 36.09 9.85 45.94 56.00 -10.06 QP P 9 2.8730 30.93 10.68 41.61 56.00 -14.39 P OP 2.8730 10.68 -20.43 10 14.89 25.57 46.00 AVG Ρ 11 18.4880 34.18 11.02 45.20 60.00 -14.80 QP P 18.5960 12 20.51 11.02 -18.47 31.53 50.00 AVG P

Note:Reading=Receiver reading Factor=Antenna factor+Cable loss Level=Reading+Factor Limit=Limit stated in standard Margin=Measurement-Limits

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TM1 / Line: Neutral / Band 1/Mode:802.11a



N Note:Reading=Receiver reading Factor=Antenna factor+Cable loss Level=Reading+Factor Limit=Limit stated in standard Margin=Measurement-Limits

7.5210

18.2220

18.2220

21.43

35.78

26.34

10.80

10.97

10.97

32.23

46.75

37.31

50.00

60.00

50.00

-17.77

-13.25

-12.69

AVG

QP

AVG

Ρ

P

P

10

11

12

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6.2 Duty Cycle

Test Requirement:	All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation.
Test Method:	ANSI C63.10-2013 section 12.2 (b)
Test Limit:	No limits, only for report use.
Procedure:	 i) Set the center frequency of the instrument to the center frequency of the transmission. ii) Set RBW >= EBW if possible; otherwise, set RBW to the largest available value. iii) Set VBW >= RBW. iv) Set detector = peak. v) The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in item a1) of 12.2, and the number of sweep points across duration T exceeds 100.

6.2.1 E.U.T. Operation:

Operating Environment:			
Temperature:	25.5 °C		
Humidity:	50.6 %		
Atmospheric Pressure:	1010 mbar	and the second se	

6.2.2 Test Data:

Please Refer to Appendix for Details.



6.3 Maximum conducted output power

	47 CFR Part 15.407(a)(1)(i)
	47 CFR Part 15.407(a)(1)(ii)
Tast Danis	47 CFR Part 15.407(a)(1)(iii)
Test Requirement:	47 CFR Part 15.407(a)(1)(iv)
	47 CFR Part 15.407(a)(2)
	47 CFR Part 15.407(a)(3)(i)
Test Method:	ANSI C63.10-2013, section 12.3
	For an outdoor 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.
	If transmitting antennas of directional gain greater than 6 dBi are used, the
	maximum conducted output power shall be reduced by the amount in dB that the
	directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any
	elevation angle above 30 degrees as measured from the horizon must not exceed
	125 mW (21 dBm).
	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.
	If transmitting antennas of directional gain greater than 6 dBi are used, the
	maximum conducted output power shall be reduced by the amount in dB that the
	directional gain of the antenna exceeds 6 dBi.
	For fixed point-to-point access points 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.
	Fixed point-to-point U-NII devices may employ antennas with directional gain up to
	23 dBi without any corresponding reduction in the maximum conducted output
	power.
Test Limit:	For fixed point-to-point transmitters that employ a directional antenna gain greater
	than 23 dBi, a 1 dB reduction in maximum conducted output power is required for
	each 1 dB of antenna gain in excess of 23 dBi.
	Fixed, point-to-point operations exclude the use of point-to-multipoint systems,
	omnidirectional applications, and multiple collocated transmitters transmitting the
	same information. The operator of the U-NII device, or if the equipment is
	professionally installed, the installer, is responsible for ensuring that systems
	employing high gain directional antennas are used exclusively for fixed,
	point-to-point operations.
	For client devices in the 5.15-5.25 GHz band, the maximum conducted output
	power over the frequency band of operation shall not exceed 250 mW provided the
	maximum antenna gain does not exceed 6 dBi.
	If transmitting antennas of directional gain greater than 6 dBi are used, the
	maximum conducted output power shall be reduced by the amount in dB that the
	directional gain of the antenna exceeds 6 dBi.
	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 + 10 log B, where B is the 26 dB emission bandwidth in megahertz.
	If transmitting antennas of directional gain greater than 6 dBi are used, the
	maximum conducted output power shall be reduced by the amount in dB that the
	directional gain of the antenna exceeds 6 dBi.

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Procedure: If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point U-NII devices or Fixed, point-to-point U-NII devices, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations. Method SA-1 a) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal. b) Set RBW = 1 MHz. c) Set VBW >= 3 MHz. c) Set VBW >= 3 MHz. c) Number of points in sweep >= [2 × span / RBW]. (This gives bin-to-bin spacing <= RBW / 2, so that narrowband signals are not lost between frequency bins.) e) Sweep time = auto. f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode. g) if transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level, then the trigger shall be set to "free run." h) Trace average at least 100 traces in power averaging (rms) mode. i) Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument's band power measurement function, with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band po		
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Procedure: maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations. Method SA-1 a) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal. b) Set RBW = 1 MHz. c) Set VBW >= 3 MHz. d) Number of points in sweep >= [2 × span / RBW]. (This gives bin-to-bin spacing <= RBW /2, so that narrowband signals are not lost between frequency bins.)		
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 d) Number of points in sweep >= [2 × span / RBW]. (This gives bin-to-bin spacing <= RBW / 2, so that narrowband signals are not lost between frequency bins.) e) Sweep time = auto. f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode. g) If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle >= 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run." h) Trace average at least 100 traces in power averaging (rms) mode. i) Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument's band power measurement function, with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum. 		
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control level, then the trigger shall be set to "free run." h) Trace average at least 100 traces in power averaging (rms) mode. i) Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument's band power measurement function, with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.		
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spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.		
EBW or 99% OBW of the spectrum.		
OBW of the spectrum.		
	631 FUT Operation:	

6.3.1 E.U.T. Operation:

Operating Environment:		
Temperature:	25.5 °C	
Humidity:	50.6 %	
Atmospheric Pressure:	1010 mbar	

6.3.2 Test Data:

Please Refer to Appendix for Details.



6.4 Power spectral density

0.4 TOwer Speetral	
	47 CFR Part 15.407(a)(1)(i)
	47 CFR Part 15.407(a)(1)(ii)
Test Requirement:	47 CFR Part 15.407(a)(1)(iii)
·	47 CFR Part 15.407(a)(1)(iv)
	47 CFR Part 15.407(a)(2) 47 CFR Part 15.407(a)(3)(i)
Test Method:	ANSI C63.10-2013, section 12.5
	For an outdoor access point operating in the band 5.15-5.25 GHz, 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, the
	maximum power spectral density shall be reduced by the amount in dB that the
	directional gain of the antenna exceeds 6 dBi.
	For an indoor access point operating in the band 5.15-5.25 GHz, 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, the
	maximum power spectral density shall be reduced by the amount in dB that the
	directional gain of the antenna exceeds 6 dBi.
	For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the
	maximum power spectral density shall not exceed 17 dBm in any 1 megahertz
	band.
	Fixed point-to-point U-NII devices may employ antennas with directional gain up to
	23 dBi without any corresponding reduction in the maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain
	greater than 23 dBi, a 1 dB reduction in maximum power spectral density is
	required for each 1 dB of antenna gain in excess of 23 dBi.
	Fixed, point-to-point operations exclude the use of point-to-multipoint systems,
	omnidirectional applications, and multiple collocated transmitters transmitting the
Test Limit:	same information. The operator of the U-NII device, or if the equipment is
	professionally installed, the installer, is responsible for ensuring that systems
	employing high gain directional antennas are used exclusively for fixed,
	point-to-point operations.
	For client devices in the 5.15-5.25 GHz band, the maximum power spectral density
	shall not exceed 11 dBm in any 1 megahertz band.
	If transmitting antennas of directional gain greater than 6 dBi are used, the
	maximum power spectral density shall be reduced by the amount in dB that the
	directional gain of the antenna exceeds 6 dBi.
	For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral
	density shall not exceed 11 dBm in any 1 megahertz band.
	If transmitting antennas of directional gain greater than 6 dBi are used, the
	maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
	an couonal gain of the antenna exceeds 0 dbl.
	For the band 5.725-5.850 GHz, the maximum power spectral density shall not
	exceed 30 dBm in any 500-kHz band.
	If transmitting antennas of directional gain greater than 6 dBi are used, the
	maximum power spectral density shall be reduced by the amount in dB that the
	directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional
	gain greater than 6 dBi without any corresponding reduction in transmitter
	gain greater than o doi without any corresponding reduction in transmitter

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	conducted power.
	Fixed, point-to-point operations exclude the use of point-to-multipoint systems,
	omnidirectional applications, and multiple collocated transmitters transmitting the
	same information. The operator of the U-NII device, or if the equipment is
	professionally installed, the installer, is responsible for ensuring that systems
	employing high gain directional antennas are used exclusively for fixed,
	point-to-point operations.
	a) Create an average power spectrum for the EUT operating mode being tested by
	following the
	instructions in 12.3.2 for measuring maximum conducted output power using a
	spectrum
	analyzer or EMI receiver; that is, select the appropriate test method (SA-1, SA-2,
	SA-3, or their
	respective alternatives) and apply it up to, but not including, the step labeled,
	"Compute
	power" (This procedure is required even if the maximum conducted output
	power
	measurement was performed using the power meter method PM.)
	b) Use the peak search function on the instrument to find the peak of the spectrum.
	c) Make the following adjustments to the peak value of the spectrum, if applicable:
	1) If method SA-2 or SA-2A was used, then add [10 log (1 / D)], where D is the duty
	cycle, to the peak of the spectrum.
	2) If method SA-3A was used and the linear mode was used in step h) of 12.3.2.7,
	add
Procedure:	1 dB to the final result to compensate for the difference between linear averaging
Flocedule.	and
	power averaging.
	d) The result is the PPSD.
	e) The procedure in item a) through item c) requires the use of 1 MHz resolution
	bandwidth to
	satisfy the 1 MHz measurement bandwidth specified by some regulatory
	authorities. This
	requirement also permits use of resolution bandwidths less than 1 MHz "provided
	that the
	measured power is integrated to show the total power over the measurement
	bandwidth" (i.e.,
	1 MHz). If measurements are performed using a reduced resolution bandwidth and
	integrated
	over 1 MHz bandwidth, the following adjustments to the procedures apply:
	1) Set RBW >= 1 / T, where T is defined in 12.2 a).
	2) Set VBW >= $[3 \times RBW]$.
	3) Care shall be taken such that the measurements are performed during a period
	of continuous transmission or are corrected upward for duty cycle.

6.4.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %
Atmospheric Pressure:	1010 mbar

6.4.2 Test Data:

Please Refer to Appendix for Details.

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6.5 Emission bandwidth and occupied bandwidth

Test Requirement:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use. U-NII 3, U-NII 4: 47 CFR Part 15.407(e)
Test Method:	ANSI C63.10-2013, section 6.9.3 & 12.4 KDB 789033 D02, Clause C.2
Test Limit:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use. U-NII 3, U-NII 4: Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the
	 minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz. Emission bandwidth: 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 peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%. Occupied bandwidth: a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
Procedure:	 b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement. c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2. d) Step a) through step c) might require iteration to adjust within the specified
	range. 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 (if available) and repor
	 bandwidth. g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached;
	that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99%

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power bandwidth is
the difference between these two frequencies.
h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument
display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may
be reported in addition to the plot(s).
6 dB emission bandwidth:
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 >= RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) 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.

6.5.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %
Atmospheric Pressure:	1010 mbar

6.5.2 Test Data:

Please Refer to Appendix for Details.



6.6 Band edge emissions (Radiated)

	47 CFR Part 15.407(b)	(1)						
	47 CFR Part 15.407(b)(2)							
Test Requirement:	47 CFR Part 15.407(b)(2) 47 CFR Part 15.407(b)(4)							
	. ,	. ,						
T (M. II I	47 CFR Part 15.407(b)		7.0					
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6 For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the							
	For transmitters operation 5.15-5.35 GHz band sh	nall not exceed an e.i.r.	p. of −27 dBm/N	IHz.				
	5.15-5.35 GHz band sh	nall not exceed an e.i.r.	p. of −27 dBm/№	1Hz.				
	For transmitters operat							
	All emissions shall be I							
	or below the band edge							
	below the band edge, a							
	linearly to a level of 15.	.6 dBm/MHz at 5 MHz a	above or below t	he band edge, and				
	from 5 MHz above or b	elow the band edge inc	creasing linearly	to a level of 27				
	dBm/MHz at the band of	edge.						
	MHz	MHz	MHz	GHz				
	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15				
	¹ 0.495-0.505	16.69475-16.69525		5.35-5.46				
	2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75				
	4.125-4.128	25.5-25.67	1300-1427					
	4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2				
	4.20725-4.20775	73-74.6	1645.5-1646. 5	9.3-9.5				
	6.215-6.218	74.8-75.2	1660-1710	10.6-12.7				
	6.26775-6.26825	108-121.94	1718.8-1722.	13.25-13.4				
Test Limit:	0.04475.0.04005	100,100	2					
	6.31175-6.31225	123-138	2200-2300	14.47-14.5				
	8.291-8.294	149.9-150.05	2310-2390	15.35-16.2				
	8.362-8.366	156.52475-156.525 25	2483.5-2500	17.7-21.4				
	8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12				
	8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0				
	12.29-12.293	167.72-173.2	3332-3339	31.2-31.8				
	12.51975-12.52025	240-285		36.43-36.5				
			3345.8-3358					
	12.57675-12.57725 13.36-13.41	322-335.4	3600-4400	(²)				
	¹ Until February 1, 1999), this restricted band s	hall be 0.490-0.5	510 MHz.				
	² Above 38.6							
	The field strength of en exceed the limits show MHz, compliance with measurement instrume 1000 MHz, compliance based on the average 15.35apply to these me	n in § 15.209. At freque the limits in § 15.209sh entation employing a Cl with the emission limit value of the measured	encies equal to c all be demonstra SPR quasi-peak s in § 15.209sha	or less than 1000 ated using a detector. Above all be demonstrated				
	Except as provided els	ewhere in this subpart,	the emissions fi	rom an intentional				

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	radiator shall not exceed t	he field strength levels sp	ecified in the following table:
	Frequency (MHz)	Field strength	Measurement
		(microvolts/meter)	distance
		(Iniciovolis/Ineter)	
	0.000.0.100		(meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
	Above 1GHz:	300	3
		IT was also all on the ten	of a materia a table 4.5 meters
Procedure:	above the ground at a 3 m degrees to determine the b. The EUT was set 3 met was mounted on the top o c. The antenna height is v determine the maximum v polarizations of the antenn d. For each suspected em the antenna was tuned to of below 30MHz, the anten was turned from 0 degrees e. The test-receiver syster Bandwidth with Maximum f. If the emission level of th specified, then testing cour reported. Otherwise the em	neter fully-anechoic chamb position of the highest rad ers away from the interfer f a variable-height antenn aried from one meter to for alue of the field strength. The are set to make the me ission, the EUT was arran heights from 1 meter to 4 and was tuned to heights to 360 degrees to find the m was set to Peak Detect Hold Mode. The EUT in peak mode was ld be stopped and the pean missions that did not have	rence-receiving antenna, which a tower. bur meters above the ground to Both horizontal and vertical asurement. nged to its worst case and then meters (for the test frequency 1 meter) and the rotatable table ne maximum reading. Function and Specified as 10dB lower than the limit ak values of the EUT would be
	g. Test the EUT in the low h. The radiation measuren	nents are performed in X, und the X axis positioning	which it is the worst case.
	1. Level= Read Level+ Ca	hle Loss+ Antenna Factor	- Preamp Factor
			ve 18GHz was very low. The
	points marked on above p		
	testing, so only above poir		
		or which are attenuated m	ore than 20dB below the limit
	need not be reported.		
	3. As shown in this section	, for frequencies above 1	GHz, the field strength limits
	are based on average limi	ts. However, the peak field	d strength of any emission shall
	not exceed the maximum	permitted average limits s	pecified above by more than 20
			sions whose peak level is lower
	than the average limit, onl		
	4. The disturbance above		
			he above harmonics had been
	displayed.		
	alopiayoa.		

6.6.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %

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0,4 m

0,8 m

1EC

Atmospheric Pressure: 1010 mbar 6.6.2 Test Setup Diagram: 0,1 m 0,1 m EUT/AE EUT/AE PSU EUT/AE

To power supply

To AE

Insulation

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6.6.3 Test Data:

Note: All mode are tested, and the report only shows the worst mode data of 802.11n(40)

		UNI	I-1 802.11n(40)_5190MHz_	_Horizontal				
No. Frequency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) Limit (dBuV/m) Margin (dBuV/m) Detector P/									
1	5097.674	45.35	5.28	50.63	68.20	-17.57	peak	Р	
2	5150.000	46.29	5.33	51.62	68.20	-16.58	peak	Ρ	
		UN	III-1 802.11n(4	0) _5190MH	z_Vertical				
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	
1	5072.674	44.10	5.35	49.45	68.20	-18.75	peak	Р	
2	5150.000	46.77	5.33	52.10	68.20	-16.10	peak	Ρ	
		UNI	l-1 802.11n(40)_5230MHz	_Horizontal				
No. Frequency Reading Factor Level Limit Margin Detector									
INO.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	Margin (dB)	Detector	P/F	
No.		Ŭ				-	Detector peak	P/F P	
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)			
1	(MHz) 5350.000	(dBuV) 45.24 46.60	(dB/m) 5.45	(dBuV/m) 50.69 52.12	(dBuV/m) 68.20 68.20	(dB) -17.51	peak	Р	
1	(MHz) 5350.000	(dBuV) 45.24 46.60	(dB/m) 5.45 5.52	(dBuV/m) 50.69 52.12	(dBuV/m) 68.20 68.20	(dB) -17.51	peak	Р	
1 2	(MHz) 5350.000 5460.000 Frequency	(dBuV) 45.24 46.60 UR Reading	(dB/m) 5.45 5.52 NII-1 802.11n(4 Factor	(dBuV/m) 50.69 52.12 40)_5230MH Level	(dBuV/m) 68.20 68.20 z_Vertical Limit	(dB) -17.51 -16.08 Margin	peak peak	P	

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UNII-3 802.11n(40) _5750MHz_Horizontal										
No		Frequency	Reading	Factor	Level	Limit	Margin	Detector	P/F	
INO		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Delector	F/F	
1		5650.000	44.63	5.63	50.26	68.20	-17.94	peak	Р	
2		5700.000	45.09	5.70	50.79	105.20	-54.41	peak	Р	
3		5720.000	45.83	5.66	51.49	110.80	-59.31	peak	Р	

UNII-3 802.11n(40) _5750MHz_Vertical

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5350.000	43.89	5.63	49.52	68.20	-18.68	peak	Р
2	5460.000	45.15	5.70	50.85	105.20	-54.35	peak	Р
3	5460.000	45.75	5.66	51.41	110.80	-59.39	peak	Р

UNII-3802.11n(40) _5795MHz_Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5855.000	46.65	5.73	52.38	110.80	-58.42	peak	Ρ
2	5875.000	4 5.89	5.74	51.63	105.20	-53.57	peak	Р
3	5925.000	45.34	5.66	51.00	68.20	-17.20	peak	Р

UNII-3 802.11n(40)_5795MHz_ Vertical

No	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	5725.000	46.93	5.73	52.66	110.80	-58.14	peak	Р
2	5730.000	46.78	5.74	52.52	105.20	-52.68	peak	Р
3	5730.000	45.85	5.66	51.51	68.20	-16.69	peak	Р

Note:Reading=Receiver reading Factor=Antenna factor+Cable loss Level=Reading+Factor Limit=Limit stated in standard Margin=Measurement-Limits

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Undesirable emission limits (below 1GHz) 6.7

Test Requirement:	47 CFR Part 15.407(b)(9)						
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6						
	limits set forth in § 15.209 Except as provided elsew radiator shall not exceed	here in this subpart, the en the field strength levels spe	nissions from an intentional crified in the following table:				
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)				
	0.009-0.490 0.490-1.705	2400/F(kHz) 24000/F(kHz)	300 30				
	1.705-30.0 30-88	30 100 **	30 3				
	88-216 216-960 Above 960	150 ** 200 ** 500	3 3 3				
Procedure:	above the ground at a 3 m degrees to determine the b. The EUT was set 3 or 7 which was mounted on th c. The antenna height is w determine the maximum w polarizations of the anten d. For each suspected en the antenna was tuned to of below 30MHz, the anter was turned from 0 degree e. The test-receiver syste Bandwidth with Maximum f. If the emission level of t specified, then testing cou reported. Otherwise the e re-tested one by one usin data sheet. g. Test the EUT in the low h. The radiation measured Transmitting mode, and fo i. Repeat above procedur Remark: 1. Level= Read Level+ Ca 2. Scan from 9kHz to 30M points marked on above poi emissions from the radiat need not be reported. 3. The disturbance below	neter semi-anechoic chamb position of the highest radia 10 meters away from the in- e top of a variable-height a varied from one meter to fou- value of the field strength. E na are set to make the mea- nission, the EUT was arrang heights from 1 meter to 4 r nna was tuned to heights 1 es to 360 degrees to find the m was set to Peak Detect F hold Mode. the EUT in peak mode was all be stopped and the pea- missions that did not have g quasi-peak method as sp vest channel, the middle cha- ments are performed in X, N ound the X axis positioning es until all frequencies mea- able Loss+ Antenna Factor- Mz, the disturbance below blots are the highest emission nts had been displayed. The or which are attenuated mo-	terference-receiving antenna, ntenna tower. ur meters above the ground to Both horizontal and vertical asurement. ged to its worst case and then neters (for the test frequency meter) and the rotatable table e maximum reading. Function and Specified 10dB lower than the limit k values of the EUT would be 10dB margin would be becified and then reported in a annel, the Highest channel. Y, Z axis positioning for which it is the worst case. asured was complete. • Preamp Factor 30MHz was very low. The ons could be found when he amplitude of spurious ore than 20dB below the limit e harmonics were the highest				

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a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical
polarizations of the antenna are set to make the measurement.
 d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified
Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported
in a data sheet.
 g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark:
1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The
points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious
emissions from the radiator which are attenuated more than 20dB below the limit
need not be reported.
3. As shown in this section, for frequencies above 1GHz, the field strength limits
are based on average limits. However, the peak field strength of any emission shall
not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower
than the average limit, only the peak measurement is shown in the report.
4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been
displayed.

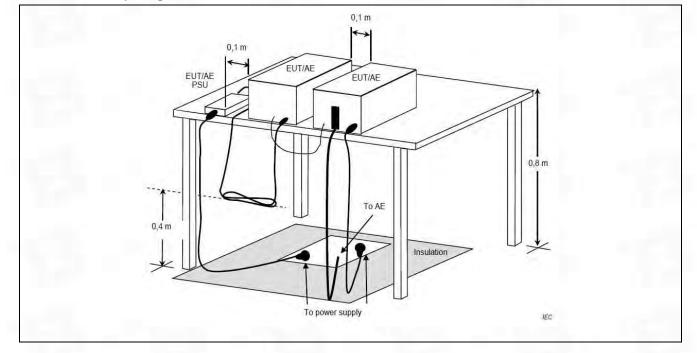
6.7.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %
Atmospheric Pressure:	1010 mbar

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6.7.2 Test Setup Diagram:



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6.7.3 Test Data:

TM1 / Polarization: Horizontal / Band 1/Mode:802.11a

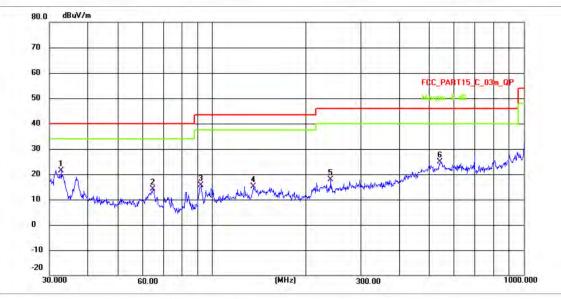
dBuV/m 80.0 70 60 FCC_PART15_ C 03 50 40 30 8 20 10 0 -10 -20 30.000 (MHz) 1000.000 60.00 300.00

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	37.0896	34.35	-18.44	15.91	40.00	-24.09	QP	P
2	58.2030	28.04	-18.20	9.84	40.00	-30.16	QP	Р
3	91.8161	42.54	-29.58	12.96	43.50	-30.54	QP	Р
4	164.3300	41.94	-27.65	14.29	43.50	-29.21	QP	Р
5	264.2820	41.83	-25.73	16.10	46.00	-29.90	QP	Р
6 *	545,1825	46.75	-21.61	25.14	46.00	-20,86	QP	Р
-		1 7 7 7 T						

Note:Reading=Receiver reading Factor=Antenna factor+Cable loss Level=Reading+Factor Limit=Limit stated in standard Margin=Measurement-Limits

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TM1 / Polarization: Vertical / Band 1/Mode:802.11a

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	32.8635	42.16	-20.68	21.48	40.00	-18.52	QP	Р
2	64.5460	34.13	-20.08	14.05	40.00	-25.95	QP	P
3	92.1386	45.23	-29.52	15.71	43.50	-27.79	QP	Р
4	135.7440	43.07	-27.91	15.16	43,50	-28.34	QP	P
5	239.9873	43.92	-25.94	17.98	46.00	-28.02	QP	P
6	541,3721	46.41	-21.57	24.84	46.00	-21.16	QP	Р

Note:Reading=Receiver reading Factor=Antenna factor+Cable loss

Level=Reading+Factor

Limit=Limit stated in standard Margin=Measurement-Limits

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6.8 Undesirable emission limits (above 1GHz)

	47 CFR Part 15.407(b)							
Test Requirement:	47 CFR Part 15.407(b)(2)							
lest Requirement.	47 CFR Part 15.407(b)(4)							
	47 CFR Part 15.407(b)(10)							
Test Method:	ANSI C63.10-2013, se							
	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the							
	5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.							
	For transmitters operating in the 5.25-5.35 GHz band: All emissions outside							
		nall not exceed an e.i.r.						
	For transmitters operating solely in the 5.725-5.850 GHz band: 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,							
	linearly to a level of 15							
	from 5 MHz above or below the band edge increasing linearly to a level of 27							
	dBm/MHz at the band	edge.						
	MHz	MHz	MHz	GHz				
	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15				
	¹ 0.495-0.505	16.69475-16.69525		5.35-5.46				
	2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75				
	4.125-4.128	25.5-25.67	1300-1427	8.025-8.5				
	4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2				
	4.20725-4.20775	73-74.6	1645.5-1646.	9.3-9.5				
			5					
	6.215-6.218	74.8-75.2	1660-1710	10.6-12.7				
	6.26775-6.26825	108-121.94	1718.8-1722.	13.25-13.4				
			2					
	6.31175-6.31225	123-138	2200-2300	14.47-14.5				
Test Limit:	8.291-8.294	149.9-150.05	2310-2390	15.35-16.2				
	8.362-8.366	156.52475-156.525	2483.5-2500	17.7-21.4				
	0.002-0.000	25	2400.0-2000	17.7-21.4				
	8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12				
	8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0				
	12.29-12.293	167.72-173.2		31.2-31.8				
	12.51975-12.52025		3332-3339 3345.8-3358					
				36.43-36.5				
	12.57675-12.57725	322-335.4	3600-4400	(²)				
	13.36-13.41							
	¹ Until February 1, 1000), this restricted band s	hall he 0 490-0 4	510 MHz				
	² Above 38.6							
	Above 50.0							
	The field strength of er	missions appearing with	in these frequer	nov hands shall not				
		n in § 15.209. At freque						
		the limits in § 15.209sh						
		entation employing a CI						
		e with the emission limit						
		value of the measured	emissions. The	provisions in §				
	15.35apply to these m	easurements.						
	Event on provided ele	For and an analytical algorithm in this and a set of the						
	Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:							
	Frequency (MHz)	Field strength		Measurement				

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Test Report Number: BTF240319R00204



Image: constraint of the second sec	
Procedure:0.009-0.4902400/F(kHz)3000.490-1.70524000/F(kHz)301.705-30.0303030-88100 **388-216150 **3216-960200 **3Above 9605003Above 1GHz:a. For above 1GHz, the EUT was placed on the top of a rotating table 1above the ground at a 3 meter fully-anechoic chamber. The table was rodegrees to determine the position of the highest radiation.b. The EUT was set 3 meters away from the interference-receiving antewas mounted on the top of a variable-height antenna tower.c. The antenna height is varied from one meter to four meters above thedetermine the maximum value of the field strength. Both horizontal andpolarizations of the antenna are set to make the measurement.d. For each suspected emission, the EUT was arranged to its worst casthe antenna was tuned to heights from 1 meter to 4 meters (for the testof below 30MHz, the antenna was tuned to heights 1 meter) and the rotwas turned from 0 degrees to 360 degrees to flad the maximum readinge. The test-receiver system was set to Peak Detect Function and SpeciBandwidth with Maximum Hold Mode.f. If the emission level of the EUT in peak mode was 10dB lower than thspecified, then testing could be stopped and the peak values of the EUTreported. Otherwise the emissions that did not have 10dB margin wouldre-tested one by one using peak or average method as specified and thein a data sheet.g. Test the EUT in the lowest channel, the midle channel, the Highest of	
Procedure: 0.490-1.705 24000/F(kHz) 30 1.705-30.0 30 30 30 30-88 100 ** 3 88-216 150 ** 3 216-960 200 ** 3 Above 960 500 3 Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1 above the ground at a 3 meter fully-anechoic chamber. The table was rodegrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving anter was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the determine the maximum value of the field strength. Both horizontal and polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst cas the antenna was tuned to heights from 1 meter to 4 meters (for the test of below 30MHz, the antenna was tuned to heights 1 meter) and the rot was turned from 0 degrees to 360 degrees to find the maximum reading e. The test-receiver system was set to Peak Detect Function and Speci Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than th specified, then testing could be stopped and the peak values of the EUT reported. Otherwise the emissions that did not have 10dB margin would re-tested one by one using peak or average method as specified and the in a data sheet. g. Test t	
Procedure:1.705-30.03030301.705-30.03030303030-88100**388-216150**3216-960200**3Above 9605003Above 1GHz:a. For above 1GHz, the EUT was placed on the top of a rotating table 1above the ground at a 3 meter fully-anechoic chamber. The table was ro degrees to determine the position of the highest radiation.b. The EUT was set 3 meters away from the interference-receiving anter was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the determine the maximum value of the field strength. Both horizontal and polarizations of the antenna are set to make the measurement.d. For each suspected emission, the EUT was arranged to its worst cas the antenna was tuned to heights from 1 meter to 4 meters (for the test of below 30MHz, the antenna was tuned to heights 1 meter) and the rot was turned from 0 degrees to 360 degrees to find the maximum reading e. The test-receiver system was set to Peak Detect Function and Speci Bandwidth with Maximum Hold Mode.f. If the emission level of the EUT in peak mode was 10dB lower than th specified, then testing could be stopped and the peak values of the EUT reported. Otherwise the emissions that did not have 10dB margin would re-tested one by one using peak or average method as specified and the in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest o h. The radiation measurements are performed in X, Y, Z axis positioning Transmitting mode, and found the X axis positioning which it is the wors i. Repeat above procedures until all frequencies measured was completed the set apo	
30-88 100 ** 3 88-216 150 ** 3 216-960 200 ** 3 Above 960 500 3 Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1 above the ground at a 3 meter fully-anechoic chamber. The table was rodegrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving anter was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the determine the maximum value of the field strength. Both horizontal and polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst cas the antenna was tuned to heights 1 meter) and the rot was turned from 0 degrees to 360 degrees to find the maximum reading e. The test-receiver system was set to Peak Detect Function and Speci Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the specified, then testing could be stopped and the peak values of the EUT reported. Otherwise the emissions that did not have 10dB margin would re-tested one by one using peak or average method as specified and the in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest of h. The radiation measurements are performed in X, Y, Z axis positioning Transmitting mode, and found the X axis positioning which it is the wors i. Repeat above procedures until all frequencies measured was completed and the peak above procedures until all frequencies measured was comple	
Procedure: 88-216 150 ** 3 216-960 200 ** 3 Above 960 500 3 Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1 above the ground at a 3 meter fully-anechoic chamber. The table was to degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving anter was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the determine the maximum value of the field strength. Both horizontal and polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst cas the antenna was tuned to heights from 1 meter to 4 meters (for the test of below 30MHz, the antenna was stuned to heights 1 meter) and the rot was turned from 0 degrees to 360 degrees to find the maximum reading e. The test-receiver system was set to Peak Detect Function and Speci Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than th specified, then testing could be stopped and the peak values of the EUT reported. Otherwise the emissions that did not have 10dB margin would re-tested one by one using peak or average method as specified and the in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest of h. The radiation measurements are performed in X, Y, Z axis positioning Transmitting mode, and found the X axis positioning which it is the wors i. Repeat above procedures until all frequencies measured was comple	
Procedure: 216-960 200 ** 3 Above 960 500 3 Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1 above the ground at a 3 meter fully-anechoic chamber. The table was rodegrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving anter was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the determine the maximum value of the field strength. Both horizontal and polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst cas the antenna was tuned to heights from 1 meter to 4 meters (for the test of below 30MHz, the antenna was tuned to heights 1 meter) and the rots was turned from 0 degrees to 360 degrees to find the maximum reading e. The test-receiver system was set to Peak Detect Function and Speci Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than th specified, then testing could be stopped and the peak values of the EUT reported. Otherwise the emissions that did not have 10dB margin would re-tested one by one using peak or average method as specified and the in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest on h. The radiation measurements are performed in X, Y, Z axis positioning Transmitting mode, and found the X axis positioning which it is the wors i. Repeat above procedures until all frequencies measured was completed was someted was completed to the set was completed to be above procedures until all frequencies measured was completed to the set was c	
Above 9605003Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1 above the ground at a 3 meter fully-anechoic chamber. The table was ro degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving anter was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the determine the maximum value of the field strength. Both horizontal and polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst cas the antenna was tuned to heights from 1 meter to 4 meters (for the test of below 30MHz, the antenna was tuned to heights 1 meter) and the rot was turned from 0 degrees to 360 degrees to find the maximum reading e. The test-receiver system was set to Peak Detect Function and Speci Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than th specified, then testing could be stopped and the peak values of the EUT reported. Otherwise the emissions that did not have 10dB margin would re-tested one by one using peak or average method as specified and the in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest of h. The radiation measurements are performed in X, Y, Z axis positioning Transmitting mode, and found the X axis positioning which it is the wors i. Repeat above procedures until all frequencies measured was completed and the output of the state on the assist of bound the X axis positioning which it is the wors i. Repeat above procedures until all frequencies measured was completed and the output of the state on the state one by one curve on the state one by an euler of the X axis positioning which it is the wors i. Repeat above procedures until all frequencies meas	
 Procedure: Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1 above the ground at a 3 meter fully-anechoic chamber. The table was redegrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving anter was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the determine the maximum value of the field strength. Both horizontal and polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst cas the antenna was tuned to heights from 1 meter to 4 meters (for the test of below 30MHz, the antenna was tuned to heights 1 meter) and the rott was turned from 0 degrees to 360 degrees to find the maximum reading e. The test-receiver system was set to Peak Detect Function and Specified, then testing could be stopped and the peak values of the EUT reported. Otherwise the emissions that did not have 10dB margin would re-tested one by one using peak or average method as specified and the in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest on h. The radiation measurements are performed in X, Y, Z axis positioning Transmitting mode, and found the X axis positioning which it is the wors i. Repeat above procedures until all frequencies measured was completed and the reduction of the EUT in the lowest channel, the middle channel, the two set is in the specified and the in a data sheet. 	
 Procedure: a. For above 1GHz, the EUT was placed on the top of a rotating table 1 above the ground at a 3 meter fully-anechoic chamber. The table was redegrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving anterwas mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the determine the maximum value of the field strength. Both horizontal and polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst cas the antenna was tuned to heights from 1 meter to 4 meters (for the test of below 30MHz, the antenna was tuned to heights 1 meter) and the rota was turned from 0 degrees to 360 degrees to find the maximum reading e. The test-receiver system was set to Peak Detect Function and Specified, then testing could be stopped and the peak values of the EUT reported. Otherwise the emissions that did not have 10dB margin would re-tested one by one using peak or average method as specified and the in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest of h. The radiation measurements are performed in X, Y, Z axis positioning Transmitting mode, and found the X axis positioning which it is the wors i. Repeat above procedures until all frequencies measured was completed and the reduction and specified and the fully set of the equation areasurements are performed in X, Y, Z axis positioning the set of the equation are set of the set of the equation measurements are performed in X, Y, Z axis positioning transmitting mode, and found the X axis positioning which it is the wors i. Repeat above procedures until all frequencies measured was completed and the procedures areasured was completed an	
 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very points marked on above plots are the highest emissions could be found testing, so only above points had been displayed. The amplitude of spu emissions from the radiator which are attenuated more than 20dB below need not be reported. 3. As shown in this section, for frequencies above 1GHz, the field streng are based on average limits. However, the peak field strength of any eminot exceed the maximum permitted average limits specified above by m dB under any condition of modulation. For the emissions whose peak let than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics wer highest point could be found when testing, so only the above harmonics. 	otated 360 nna, which e ground to vertical e and then frequency atable table be e limit would be be en reported channel. for t case. e. low. The when rious v the limit sission shall ore than 20 vel is lower rt. e the

6.8.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %
Atmospheric Pressure:	1010 mbar

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6.8.2 Test Data:

Note: All mode are tested, and the report only shows the worst mode data of 802.11a

		U	NII-1_802	.11a_5180MHz	_Horizontal			
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	10380.000	66.70	-24.40	42.30	74.00	-31.70	peak	Р
2	15570.000	68.56	-21.44	47.12	74.00	-26.88	peak	Р
	•	U	NII-1_802	.11a _5180MH:	z_Vertical			
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	10380.000	67.57	-21.50	46.07	74.00	-27.93	peak	Ρ
2	15570.000	68.22	-24.45	43.77	74.00	-30.23	peak	Ρ
		UN	III-1 <u>802</u> .1	1a_5200MHz_	Horizontal		-	
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	10400.000	67.10	-24.47	42.63	74.00	-31.37	peak	Ρ
2	15600.000	68.96	-21.51	47.45	74.00	-26.55	peak	Ρ
		U	NII-1_802	.11a _5200MH	z_Vertical			
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	10560.000	68.07	-24.47	43.60	74.00	-30.40	peak	Р
2	15840.000	68.72	-21.51	47.21	74.00	-26.79	peak	Р
		UN	III-1_802.1	1a _5240MHz	Horizontal			
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	10460.000	67.49	-24.40	43.09	74.00	-30.91	peak	Р
2	15690.000	69.35	-21.42	47.93	74.00	-26.07	peak	Р
		U	INII-1_802	.11a _5240MH	z_Vertical			
<u> </u>	Frequency	Reading	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
No.	(MHz)	(dBuV)	(ub/iii)	(424)	(
No.	(MHz) 10460.000	(dBuV) 68.40	-24.40	44.00	74.00	-30.00	peak	Р

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UNII-3_802.11a _5745MHz_Horizontal										
Na	Frequency	Reading	Factor	Level	Limit	Margin	Detector	DIE		
No.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector	P/F		
1	11510.000	66.38	-23.01	43.37	74.00	-30.63	peak	Р		
2	17265.000	66.40	-17.30	49.10	74.00	-24.90	peak	Р		

			UNII-3_80	2.11a _5745M⊦	Iz_Vertical					
	Frequency	Reading	Factor	Level	Limit	Margin	Detector	DIE		
No.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector	P/F		
1	11510.000	65.96	-23.07	42.89	74.00	-31.11	peak	Ρ		
2	17265.000	68.05	-17.36	50.69	74.00	-23.31	peak	Ρ		
		UN	111-3 802.1	1a 5785MHz	Horizontal					
Frequency Reading Factor Level Limit Margin										
No.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector	P/F		
1	11570.000	66.78	-22.95	43.83	74.00	-30.17	peak	P		
2	17355.000	66.80	-16.89	49.91	74.00	-24.09	peak	P		
				.11a 5785MH:						
I	1	1						1		
No.	Frequency	Reading	Factor	Level	Limit	Margin	Detector	P/F		
110.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Dettector	• • •		
1	11570.000	67.38	-22.95	44.43	74.00	-29.57	peak	Р		
2	17355.000	69.47	-16.89	52.58	74.00	-21.42	peak	Ρ		
		UN	III-3_802 .1	1a _5825MHz	Horizontal					
	Frequency	Reading	Factor	Level	Limit	Margin				
No.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector	P/F		
1	11590.000	67.37	-22.69	44.68	74.00	-29.32	peak	Р		
2	17385.000	67.39	-16.30	51.09	74.00	-22.91	peak	Р		
	•	U	INII-3_802	.11a _5825MH:	z_Vertical					
	Frequency	Reading	Factor	Level	Limit	Margin				
		-		(dBuV/m)	(dBuV/m)	(dB)	Detector	P/F		
No.	(MHz)	(dBuV)	(dB/m)	(ubuv/III)	(ubu v/iii)					
No.	(MHz) 11590.000	(dBuV) 67.86	(dB/m) -22.69	45.17	74.00	-28.83	peak	Р		

Note:Reading=Receiver reading

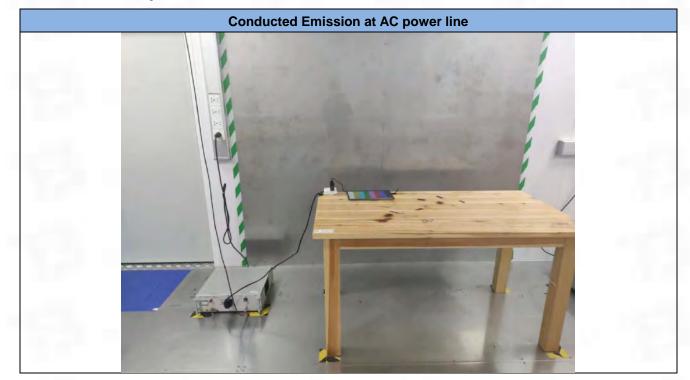
Factor=Antenna factor+Cable loss Level=Reading+Factor Limit=Limit stated in standard Margin=Measurement-Limits

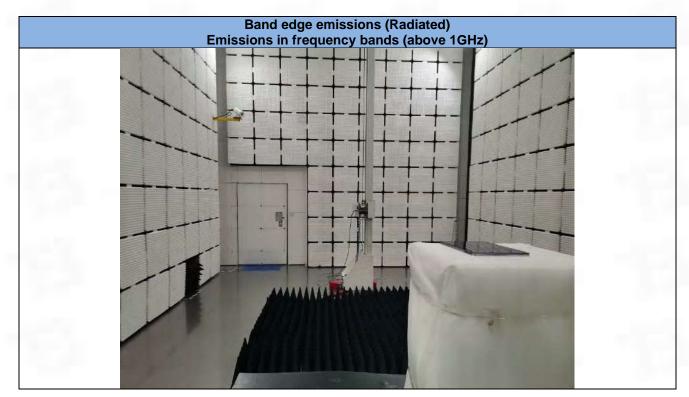
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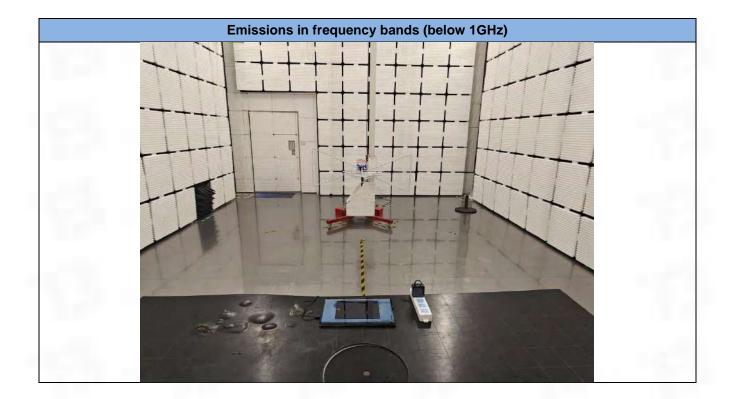
7 Test Setup Photos





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Test Report Number: BTF240319R00204

8 EUT Constructional Details (EUT Photos)

Please refer to the test report No. BTF240319R00201

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Test Report Number: BTF240319R00204

Appendix

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1. Duty Cycle

1.1 Ant1

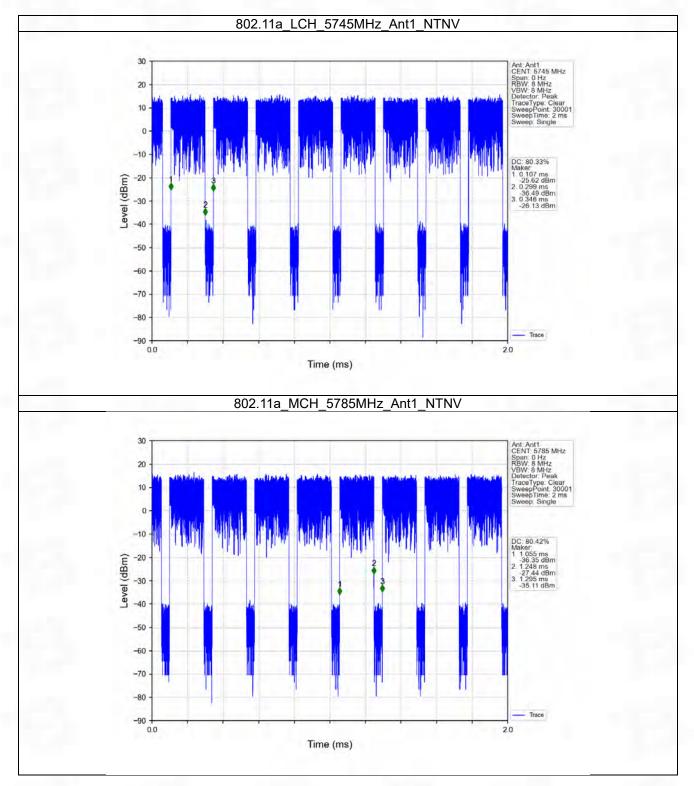
1.1.1 Test Result

				/	Ant1		
Mode	TX	Frequency	T_on	Period	Duty Cycle	Duty Cycle	Max. DC
Mode	Туре	(MHz)	(ms)	(ms)	(%)	Correction Factor (dB)	Variation (%)
		5745	0.192	0.239	80.33	0.95	0.06
802.11a	SISO	5785	0.193	0.240	80.42	0.95	0.48
		5825	0.193	0.240	80.42	0.95	0.53
802.11n		5745	0.212	0.259	81.85	0.87	0.08
(HT20)	MIMO	5785	0.213	0.259	82.24	0.85	0.24
(11120)		5825	0.212	0.259	81.85	0.87	0.04
802.11a	SISO	5180	2.089	2.136	97.80	0.10	0.07
802.11n		5755	0.200	0.247	80.97	0.92	0.05
(HT40)	MIMO	5795	0.200	0.247	80.97	0.92	0.18
902 110	SISO	5200	2.088	2.136	97.75	0.10	0.07
802.11a		5240	2.088	2.136	97.75	0.10	0.07
000 11-	MIMO	5180	4.015	4.064	98.79	0.05	0.07
802.11n (HT20)		5200	4.016	4.062	98.87	0.05	0.04
		5240	4.016	4.063	98.84	0.05	0.04
802.11n	MIMO	5190	3.992	4.039	98.84	0.05	0.03
(HT40)		5230	3.991	4.039	98.81	0.05	0.03
		5745	0.192	0.239	80.33	0.95	0.08
000 11		5785	0.192	0.240	80.00	0.97	0.58
802.11ac	MIMO	5825	0.204	0.252	80.95	0.92	0.52
(VHT20)		5180	4.004	4.052	98.82	0.05	0.07
		5200	4.004	4.050	98.86	0.05	0.04
802.11ac (VHT40)	MIMO	5755	0.201	0.248	81.05	0.91	0.20
802.11ac (VHT20)	ΜΙΜΟ	5240	4.004	4.051	98.84	0.05	0.03
		5795	0.201	0.247	81.38	0.90	0.20
802.11ac	MIMO	5190	3.980	4.027	98.83	0.05	0.03
(VHT40)		5230	3.980	4.027	98.83	0.05	0.04
802.11ac	МІМО	5775	0.176	0.223	78.92	1.03	0.09
(VHT80)	UNINO	5210	3.976	4.024	98.81	0.05	0.03

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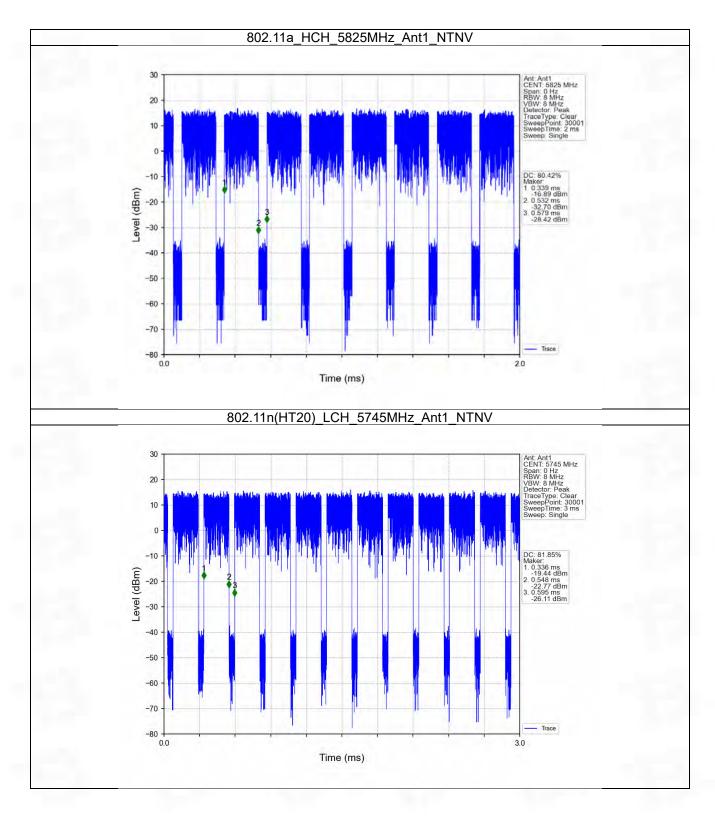


1.1.2 Test Graph



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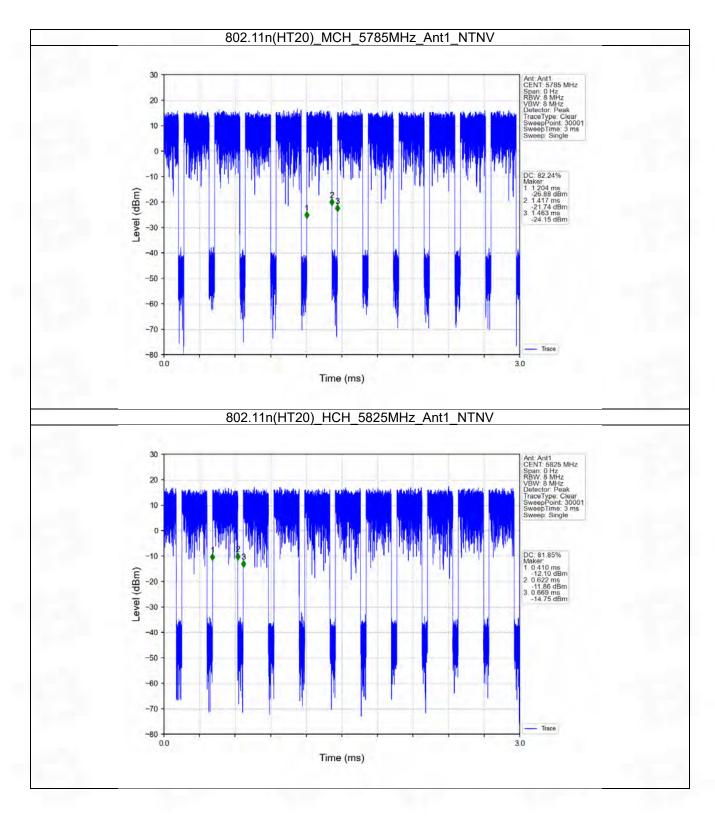




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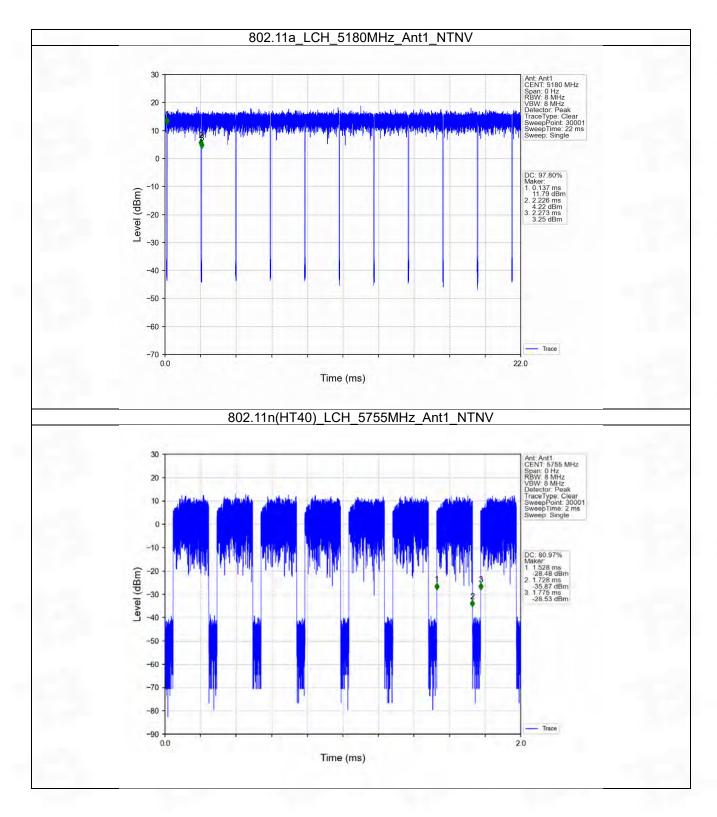
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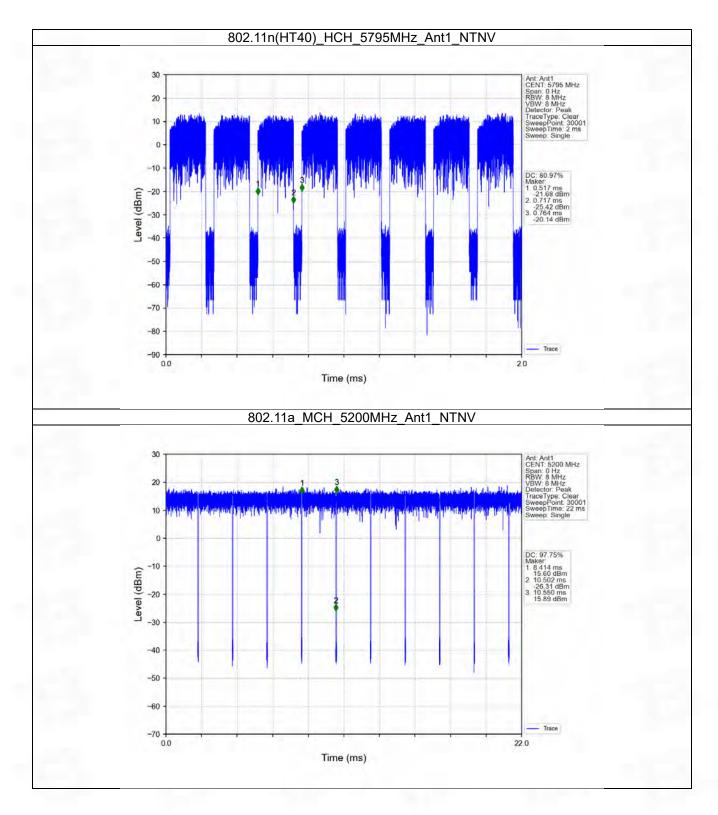
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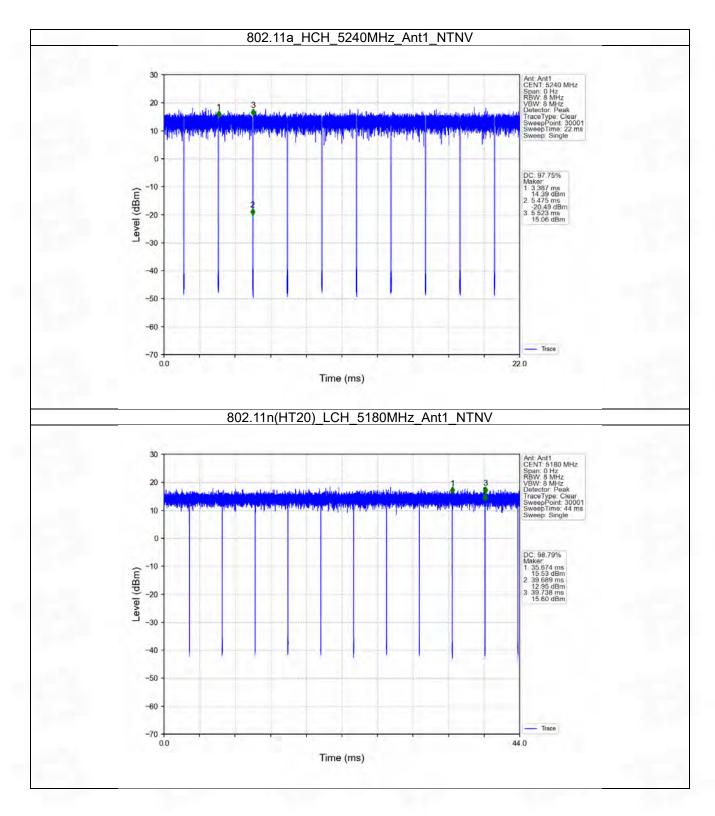
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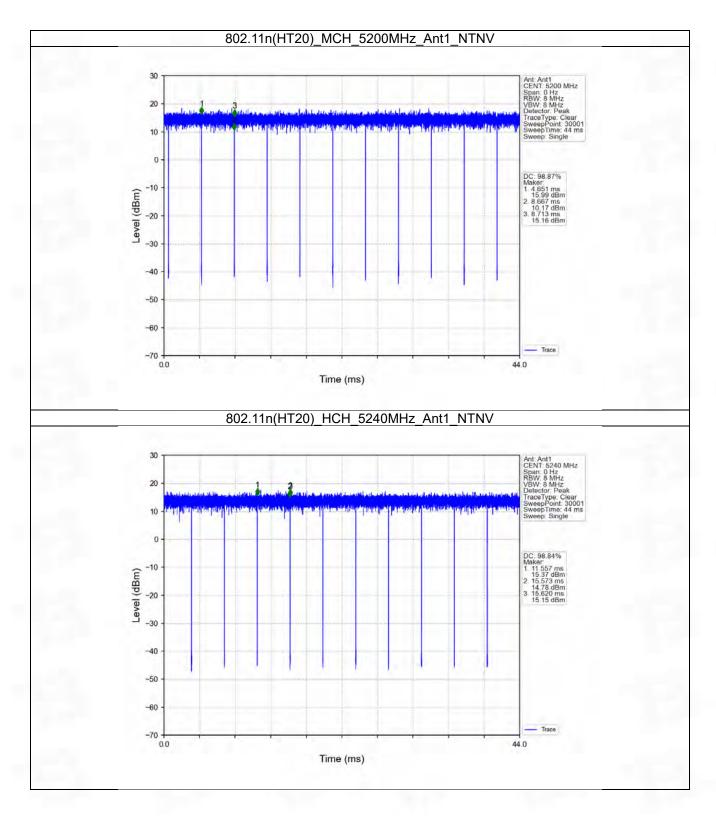




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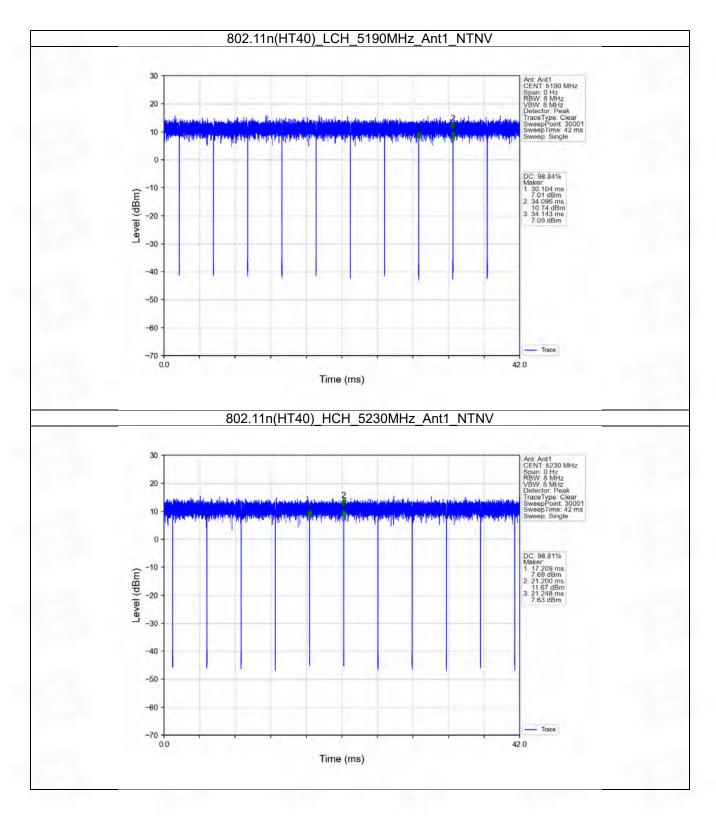




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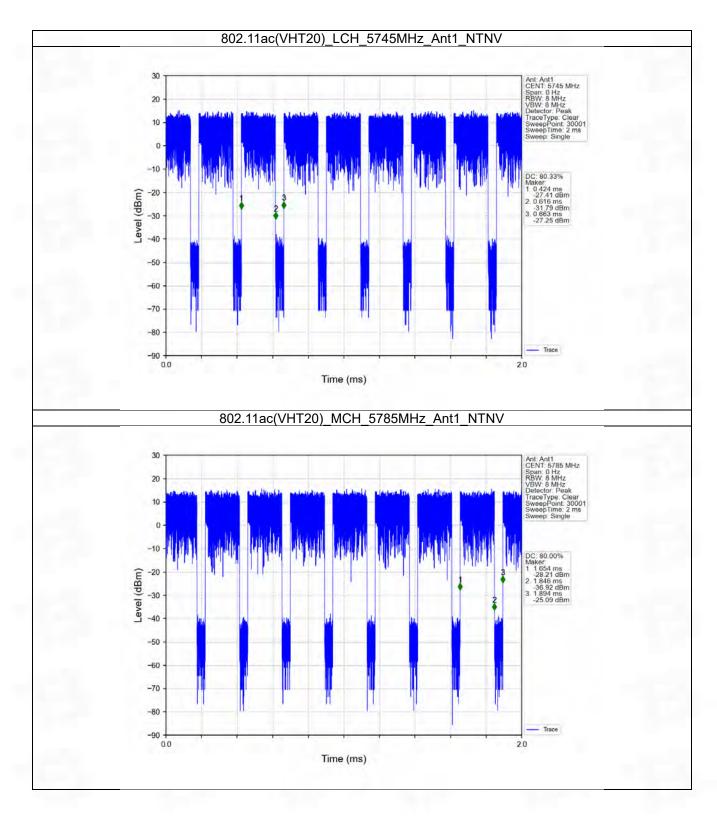
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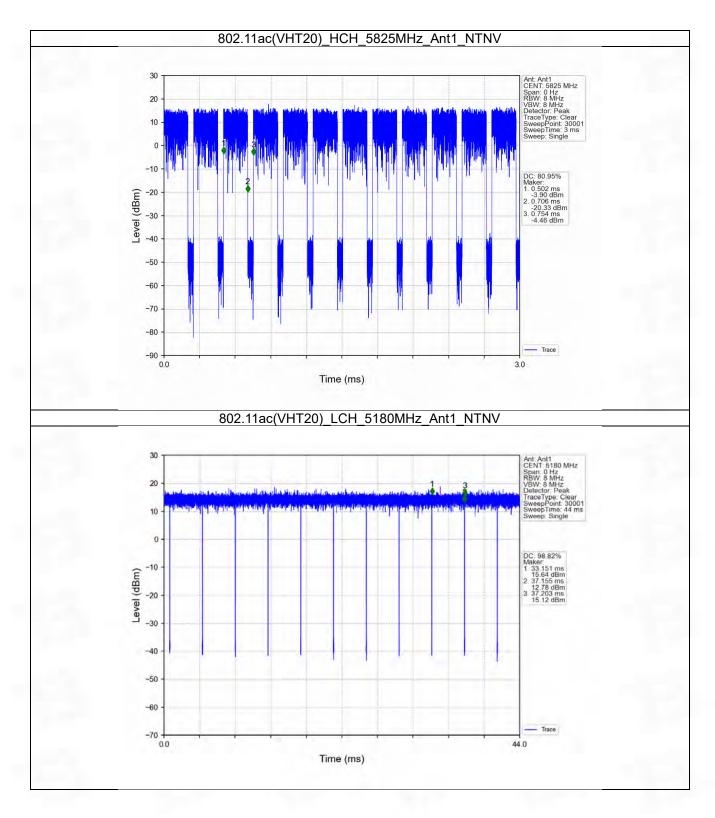
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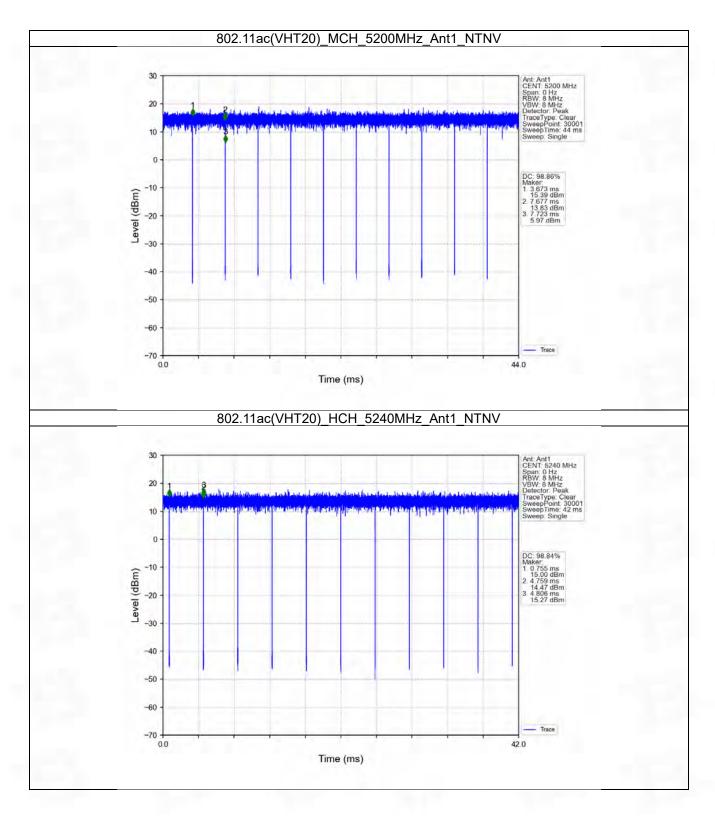




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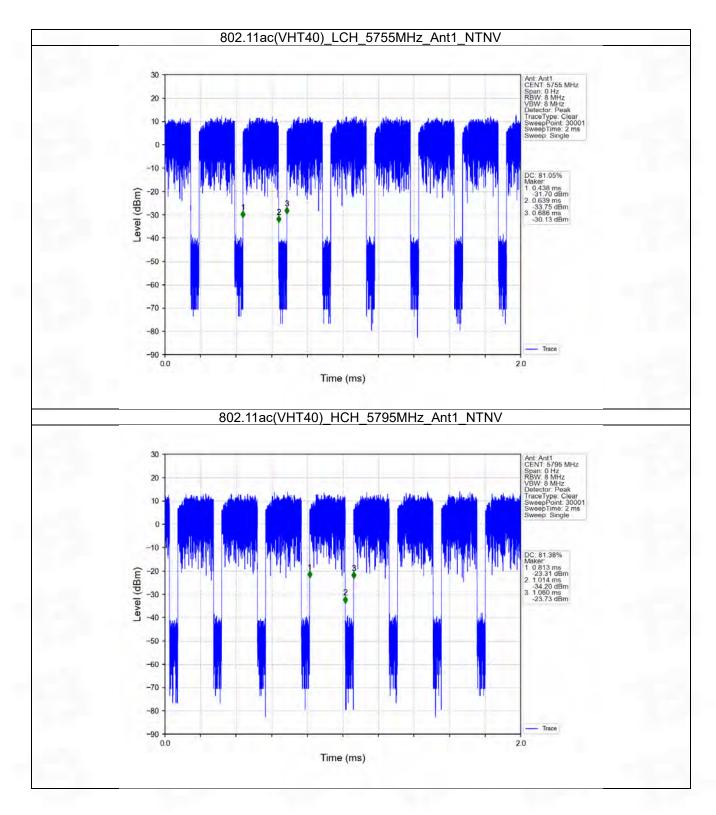
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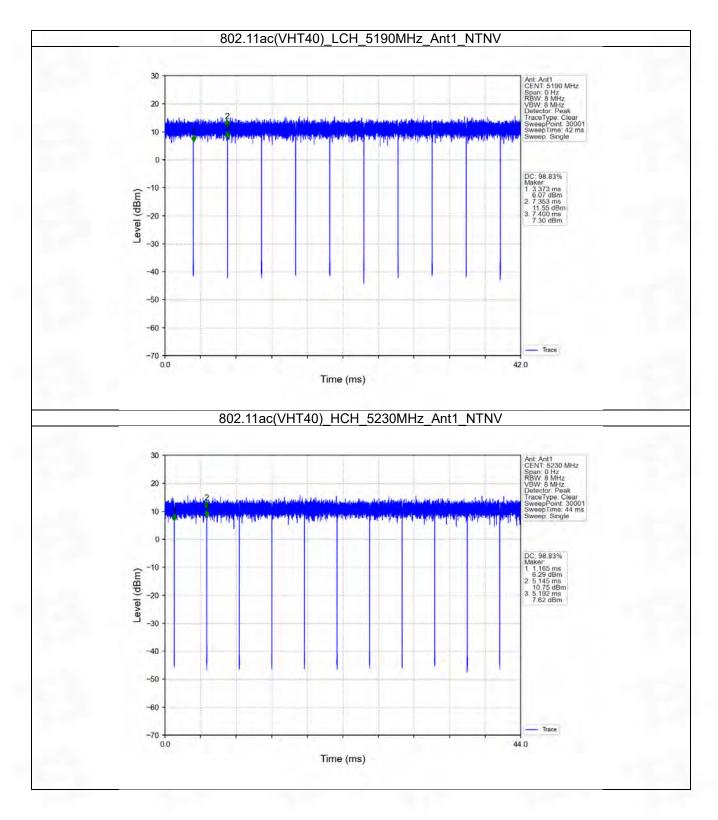




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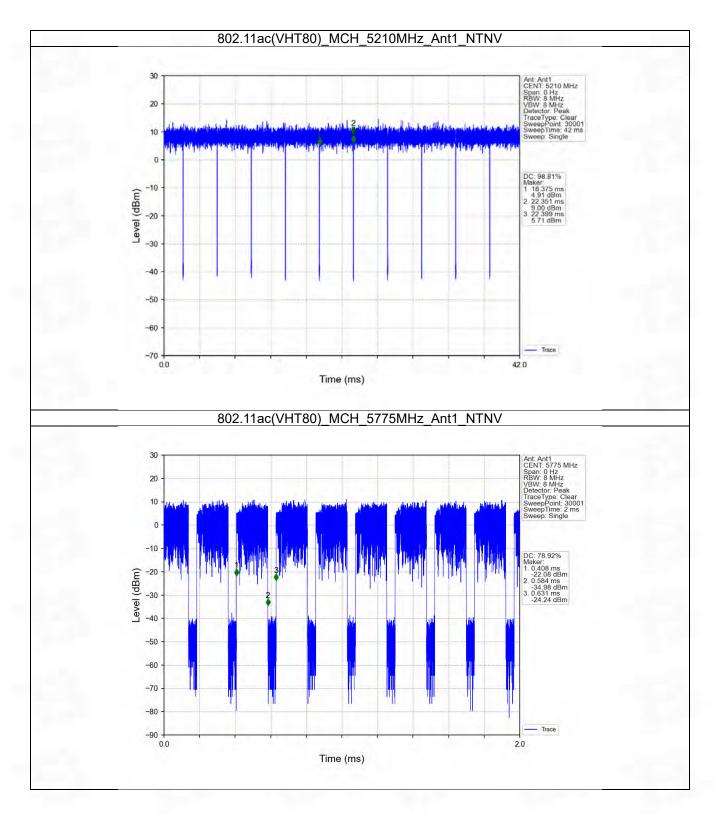




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2. Bandwidth

2.1 OBW

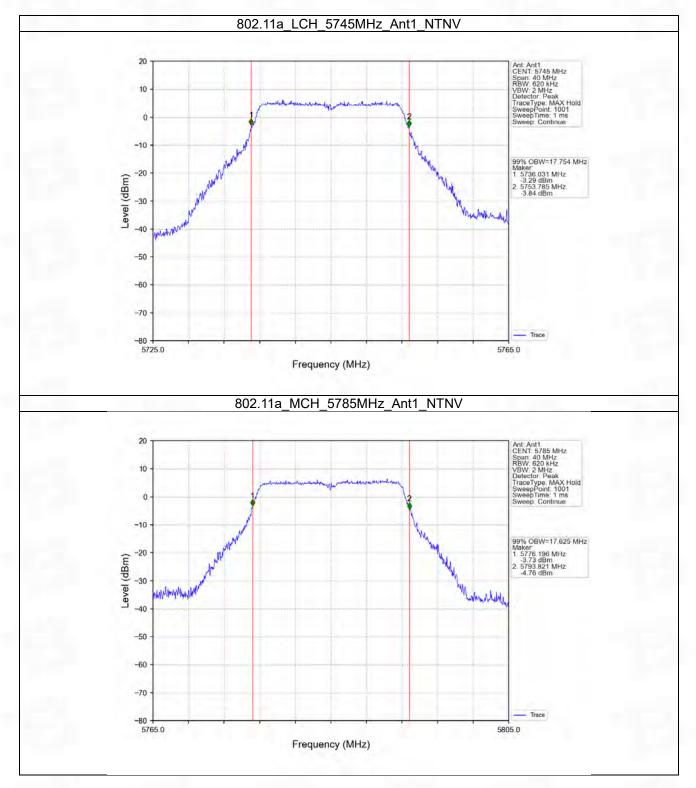
2.1.1 Test Result

Mode	TX	Frequency	ANT	99% Occupied Bar	Vardiat	
	Туре	(MHz)		Result	Limit	Verdict
		5745	1	17.754	1	Pass
802.11a	SISO	5785	1	17.625	/	Pass
		5825	1	17.768	/	Pass
000.44		5745	1	18.732	/	Pass
802.11n	MIMO	5785	1	18.720	/	Pass
(HT20)		5825	1	18.676	/	Pass
802.11a	SISO	5180	1	17.432	/	Pass
802.11n	MIMO	5755	1	37.062	/	Pass
(HT40)		5795	1	36.985	/	Pass
000 11 -	SISO	5200	1	17.353	/	Pass
802.11a		5240	1	17.507	/	Pass
000 44	МІМО	5180	1	18.403	/	Pass
802.11n (HT20)		5200	1	18.314	/	Pass
		5240	1	18.450	/	Pass
802.11n	MIMO	5190	1	36.245	/	Pass
(HT40)		5230	1	36.256	/	Pass
	МІМО	5745	1	17.800	/	Pass
		5785	1	17.626	/	Pass
802.11ac		5825	1	18.674	/	Pass
(VHT20)		5180	1	18.410	/	Pass
, ,		5200	1	18.412	/	Pass
		5240	1	18.426	/	Pass
802.11ac	МІМО	5755	1	36.962	/	Pass
		5795	1	36.939	/	Pass
(VHT40)		5190	1	36.260	/	Pass
. ,		5230	1	36.203	/	Pass
802.11ac		5210	1	75.303	/	Pass
(VHT80)	MIMO	5775	1	75.449	1	Pass

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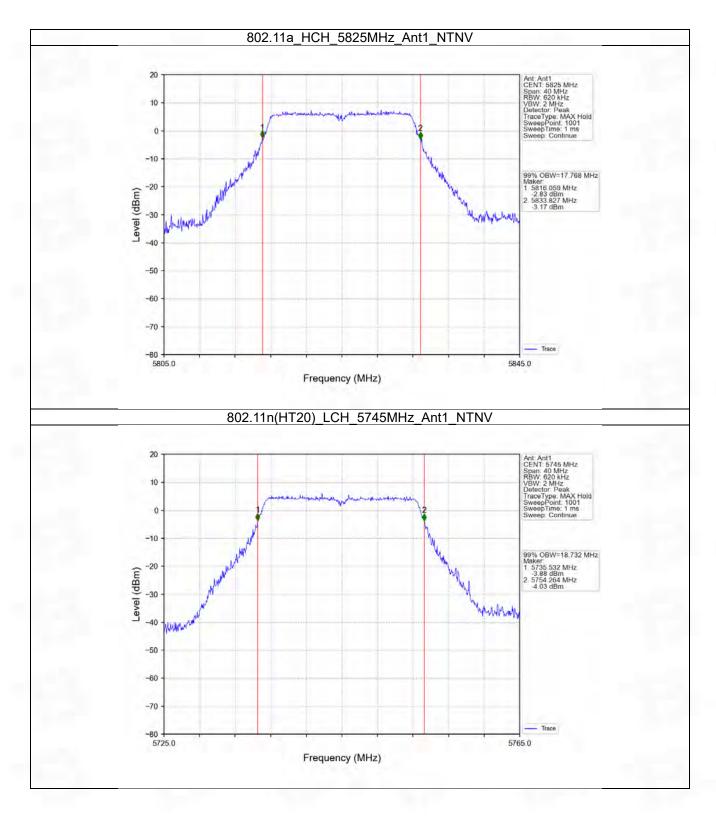


2.1.2 Test Graph



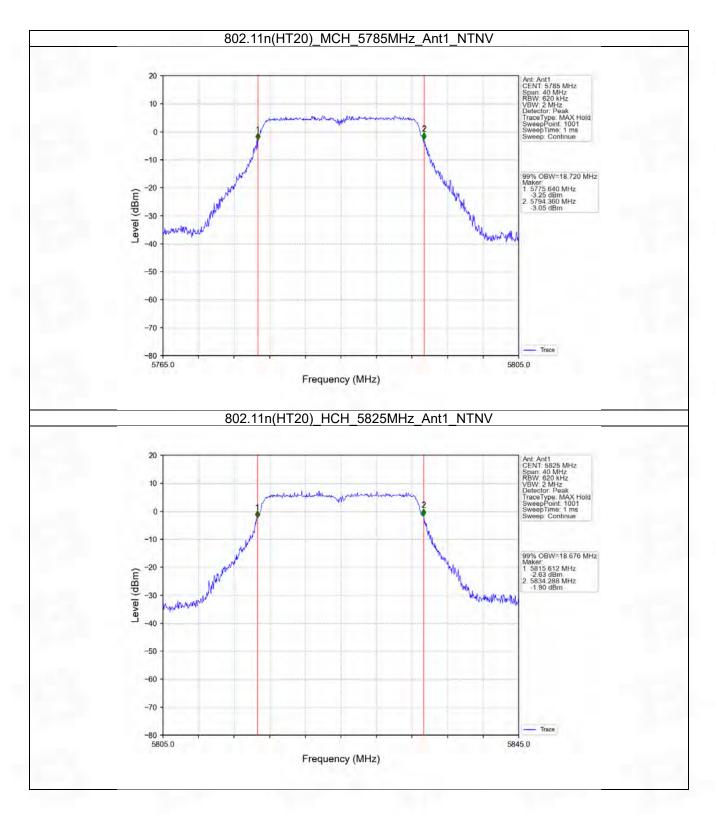
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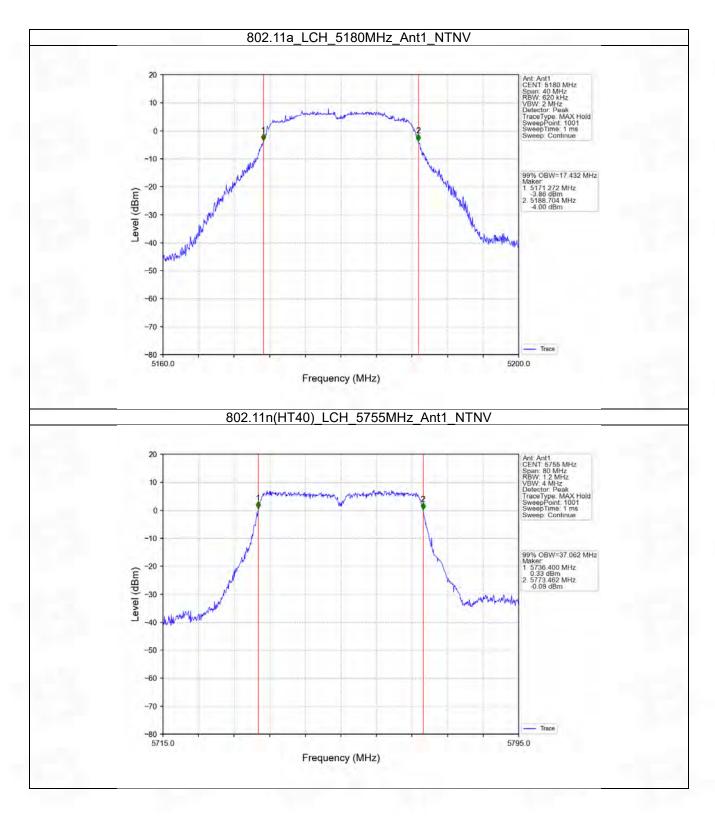
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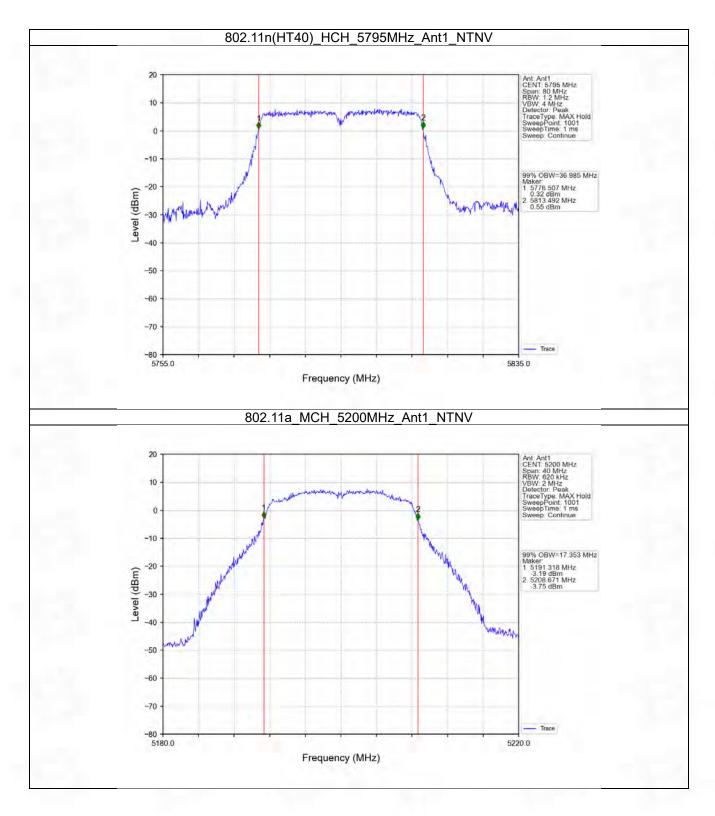




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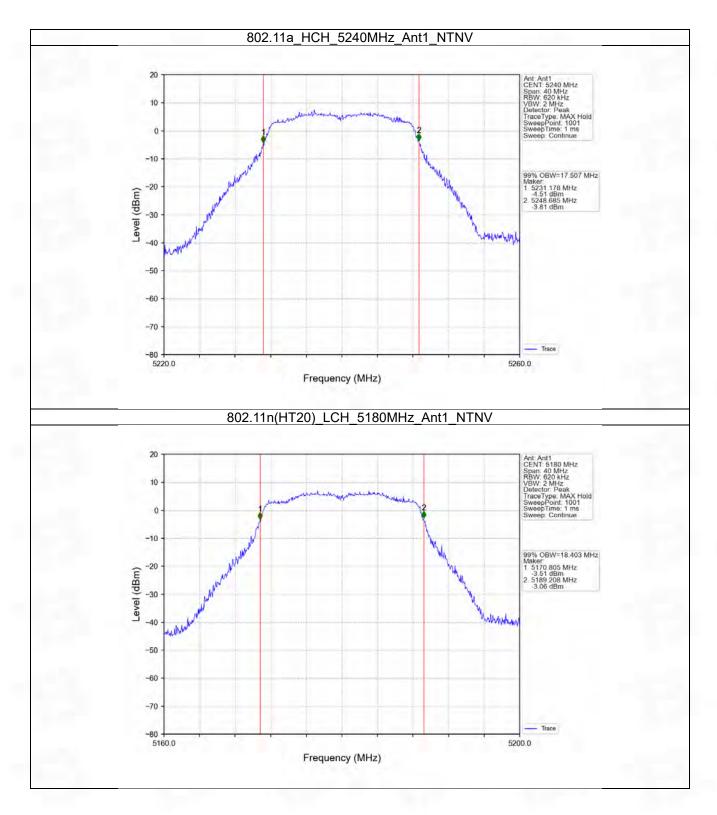
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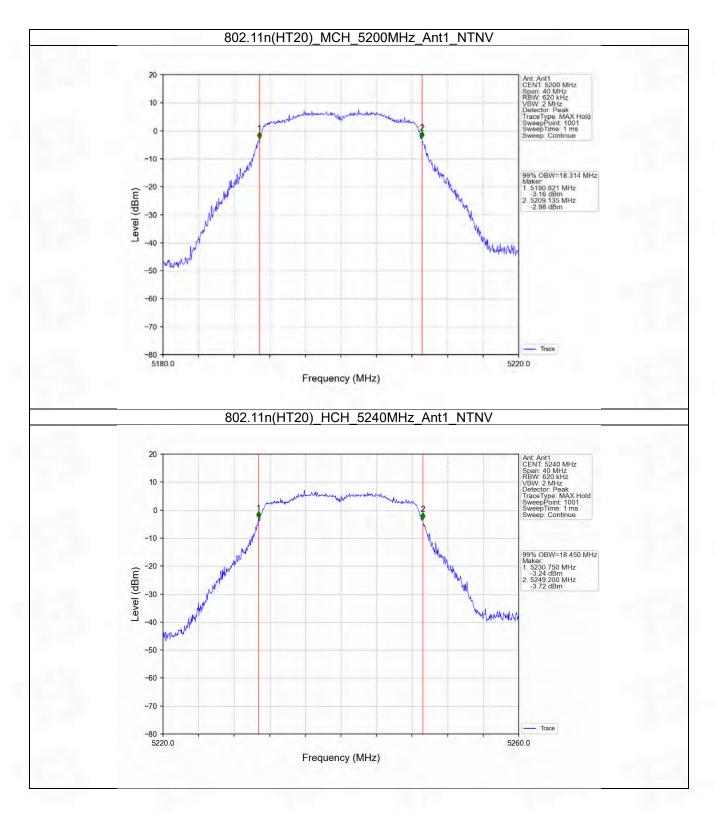




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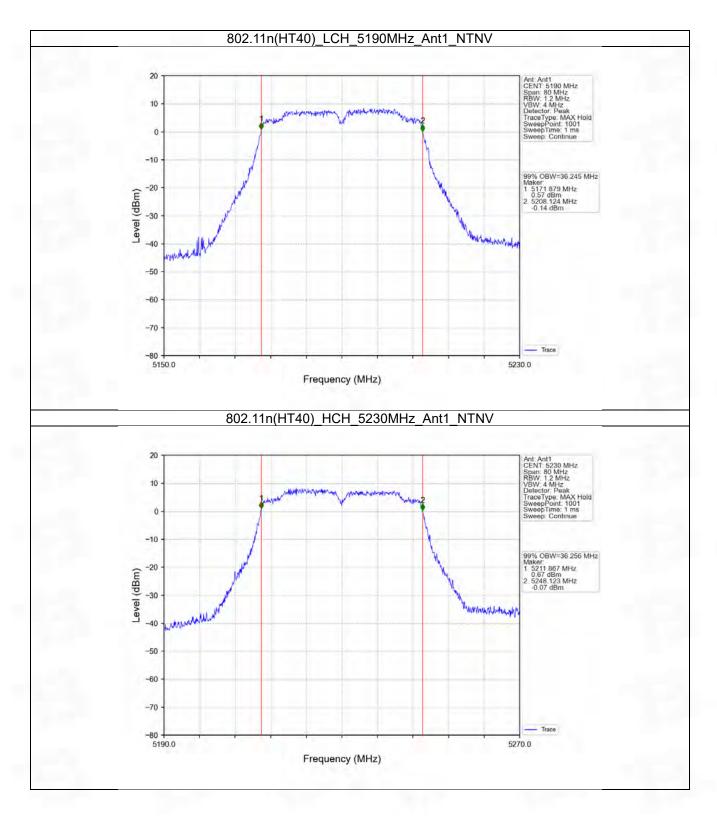




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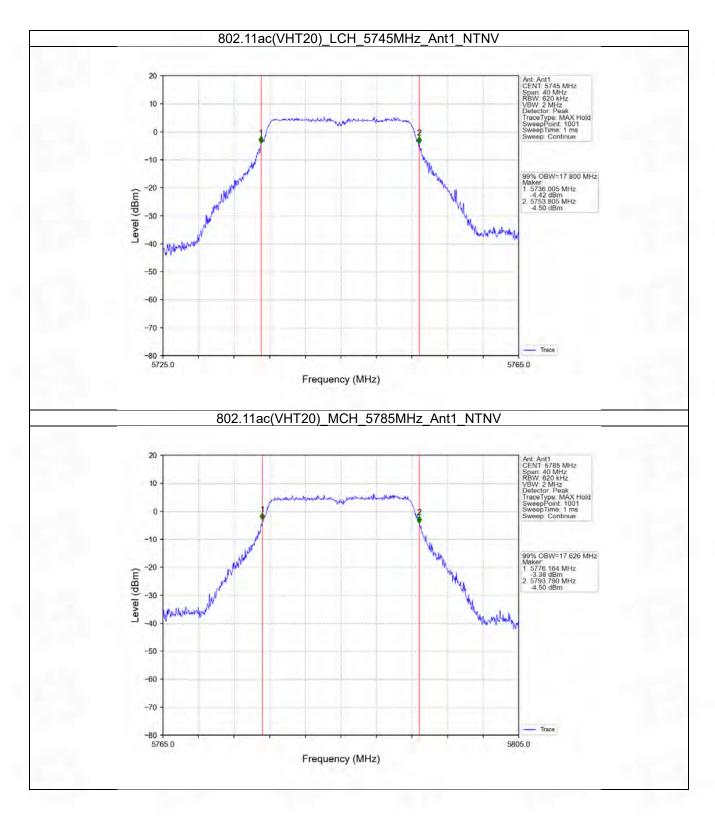
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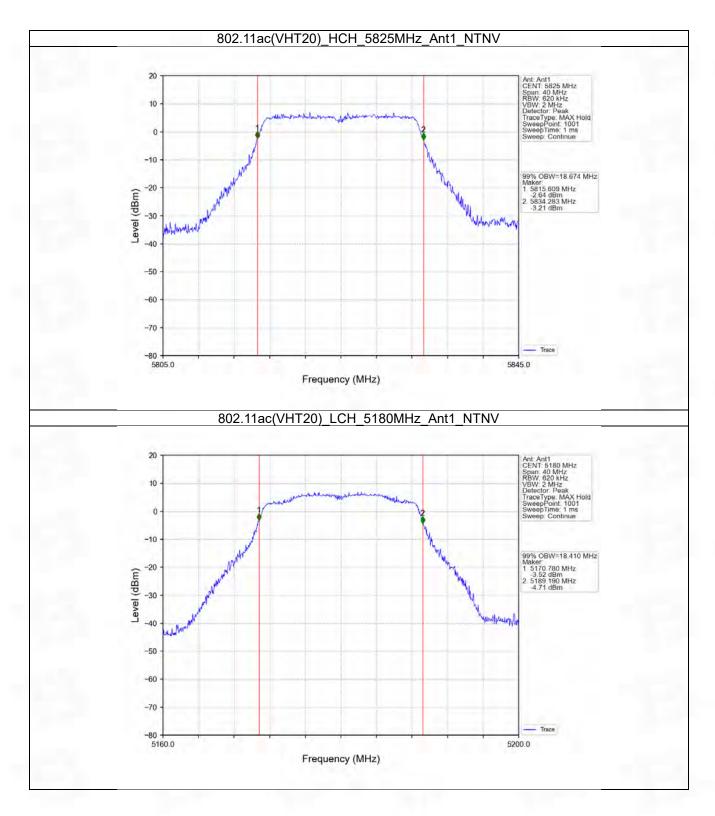




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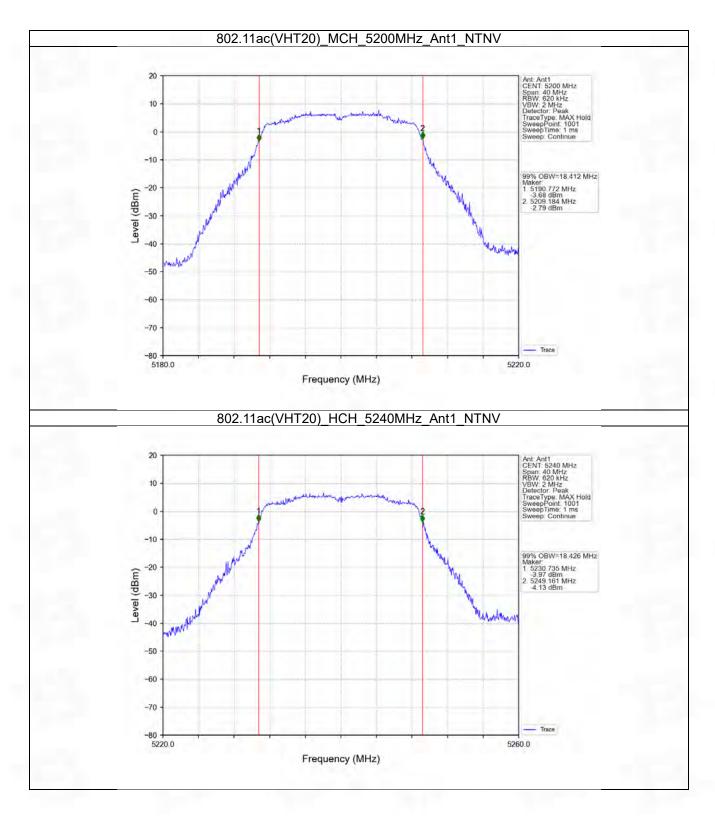
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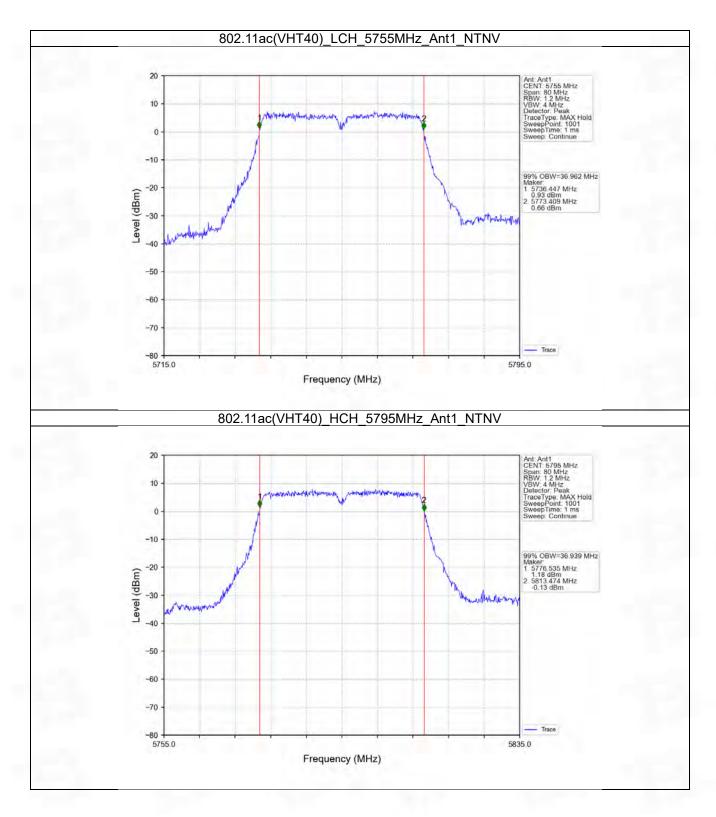
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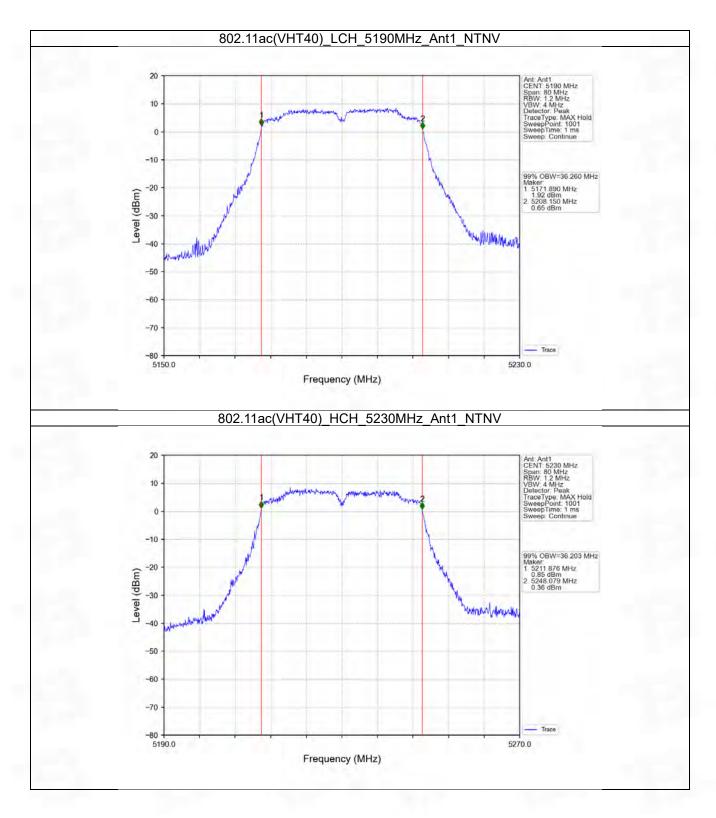




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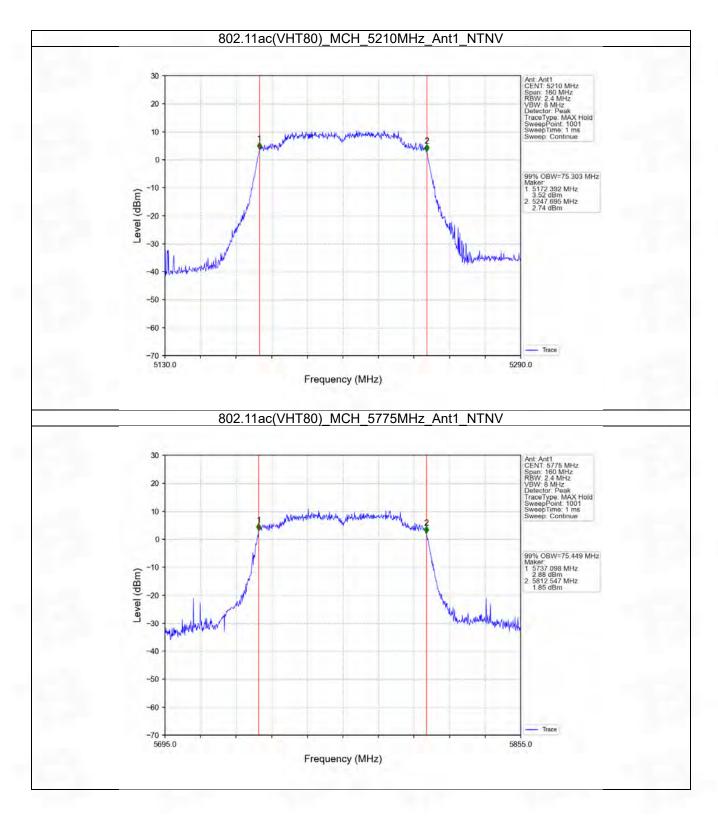
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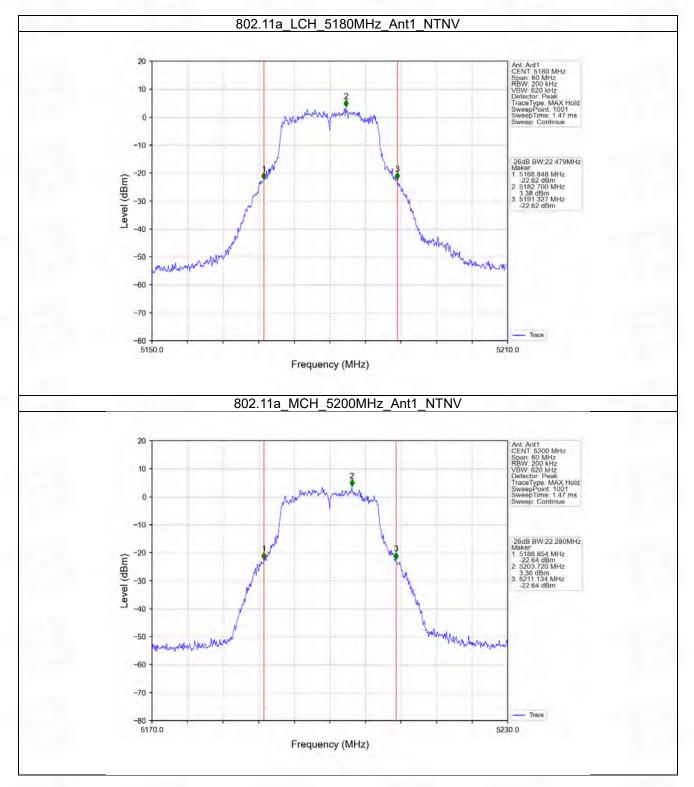
2.2 26dB BW

2.2.1 Test Result

Mode	TX	Frequency (MHz)	ANT	26dB Bandwidth (MHz)		Vardiat
wode	Туре			Result	Limit	Verdict
802.11a	SISO	5180	1	22.479	/	Pass
		5200	1	22.280	1	Pass
		5240	1	22.555	/	Pass
802.11n (HT20)	MIMO	5180	1	23.356	/	Pass
		5200	1	22.797	/	Pass
		5240	1	22.819	/	Pass
802.11n (HT40)	MIMO	5190	1	42.094	1	Pass
		5230	1	42.719	/	Pass
802.11ac (VHT20)	MIMO	5180	1	23.253	/	Pass
		5200	1	23.234	/	Pass
		5240	1	23.065	/	Pass
802.11ac (VHT40)	MIMO	5190	1	43.123	/	Pass
		5230	1	42.854	/	Pass
802.11ac (VHT80)	MIMO	5210	1	85.135	1	Pass

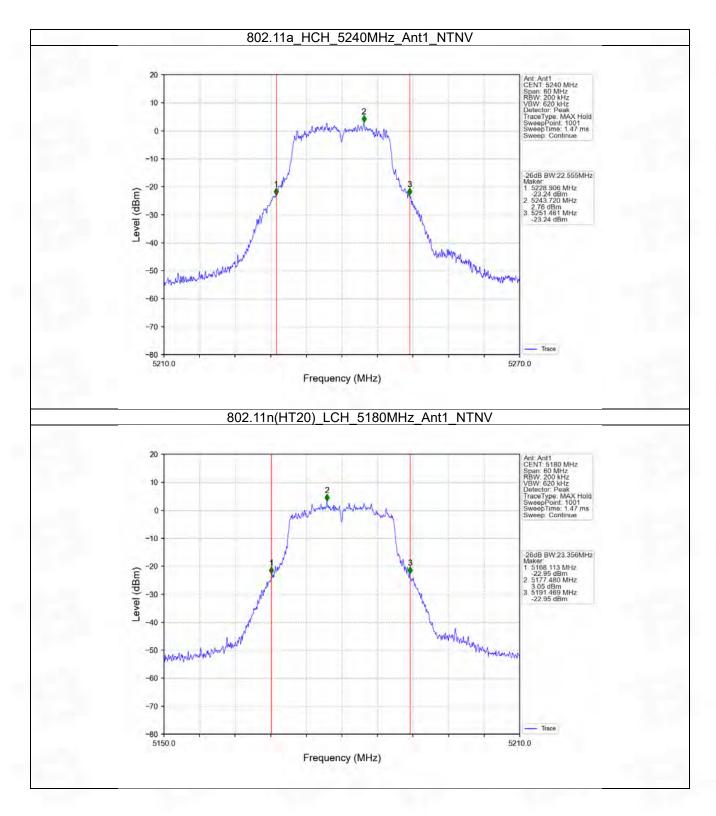


2.2.2 Test Graph



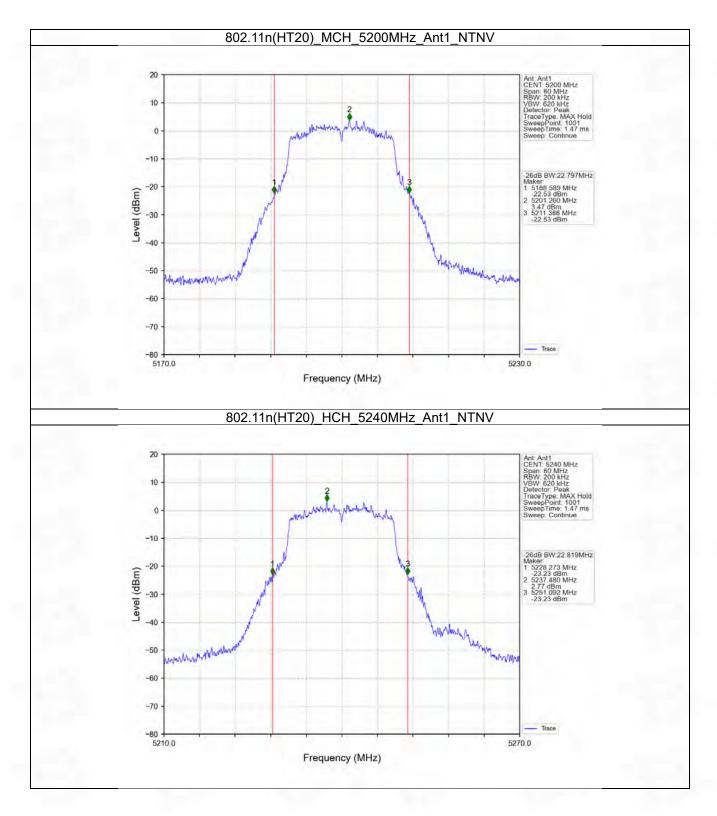
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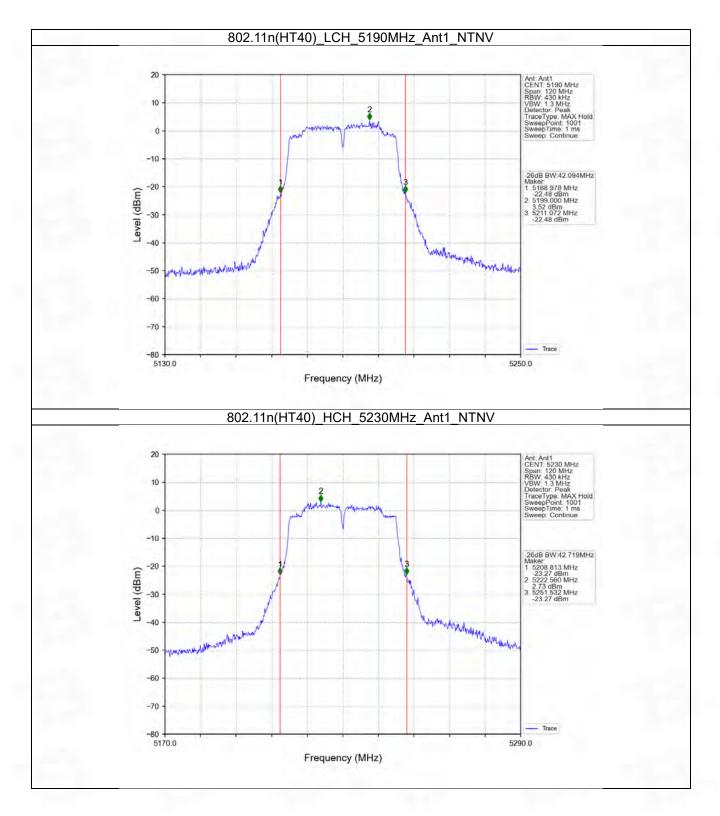


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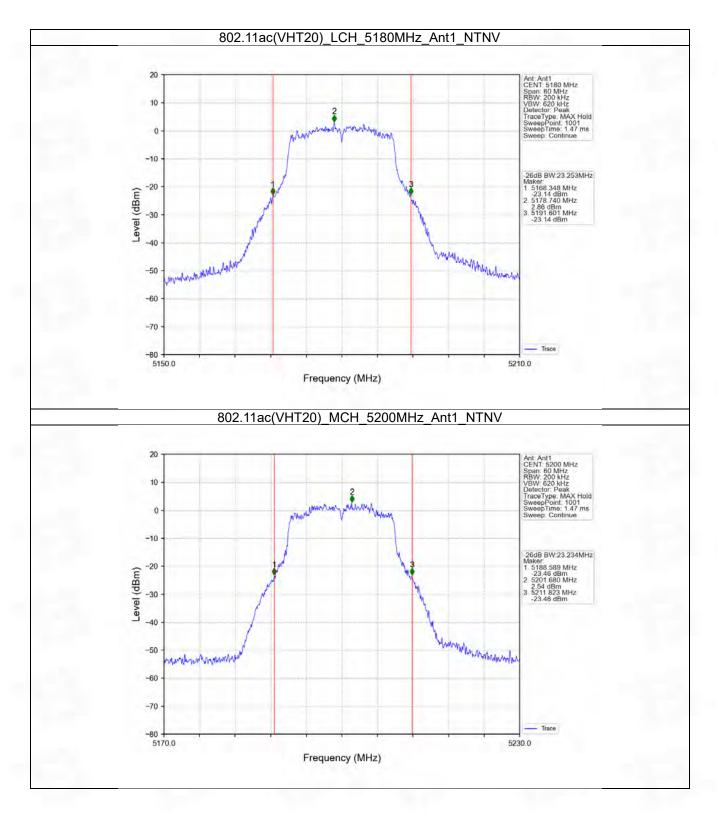




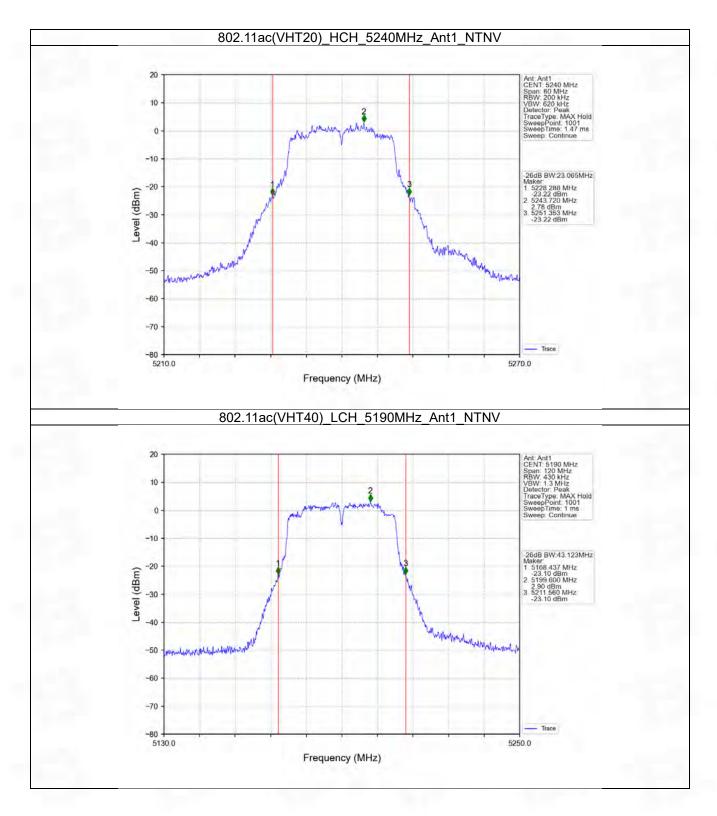






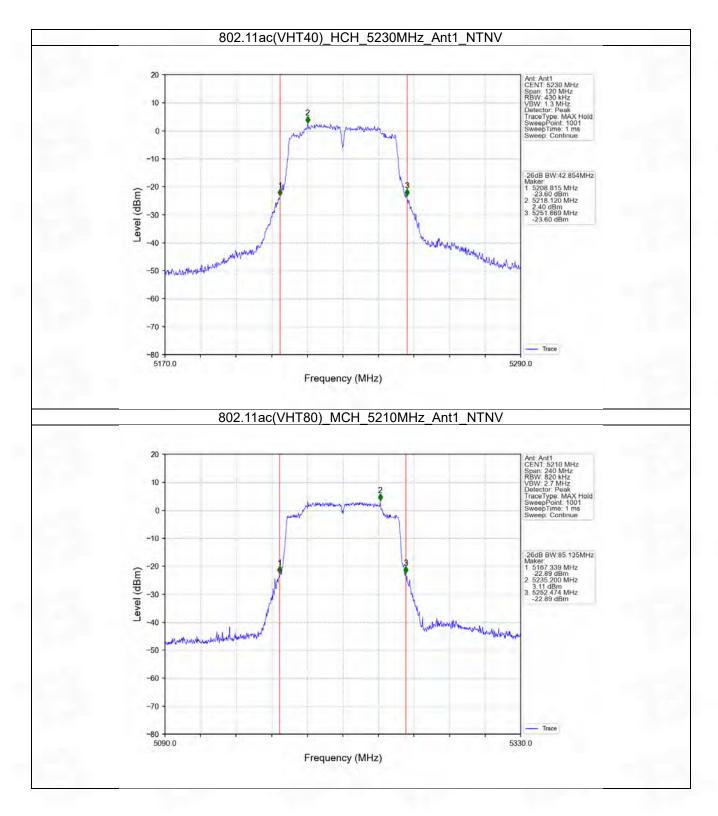






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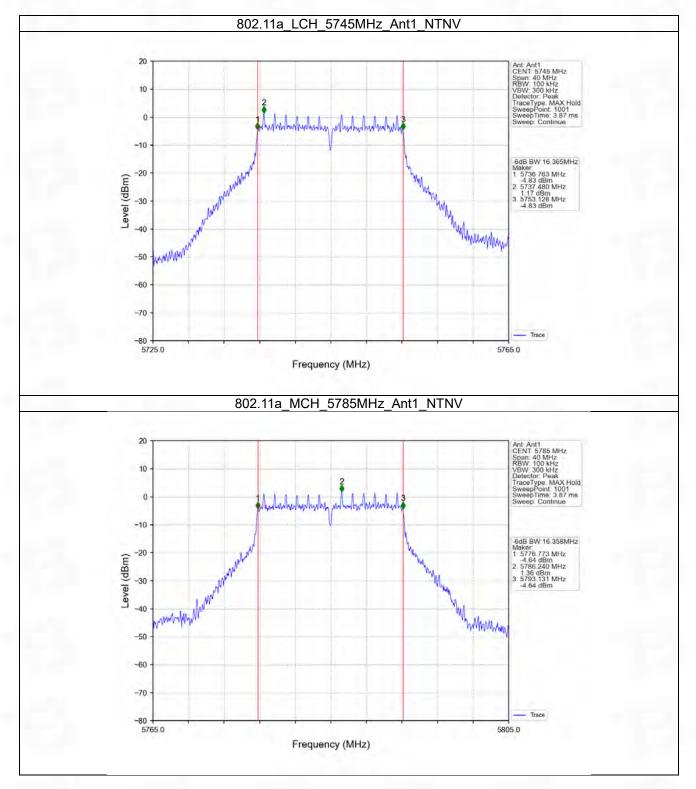
2.3 6dB BW

2.3.1 Test Result

Mode	TX	Frequency		6dB Bandwidth (MHz)		Verdict
wode	Туре	(MHz)	ANT	Result	sult Limit	
802.11a		5745	1	16.365	>=0.5	Pass
	SISO	5785	1	16.358	>=0.5	Pass
		5825	1	16.376	>=0.5	Pass
802.11n (HT20)	MIMO	5745	1	17.585	>=0.5	Pass
		5785	1	17.594	>=0.5	Pass
		5825	1	17.602	>=0.5	Pass
802.11n (HT40)	MIMO	5755	1	36.360	>=0.5	Pass
		5795	1	36.326	>=0.5	Pass
000 11	MIMO	5745	1	16.364	>=0.5	Pass
802.11ac (VHT20)		5785	1	16.363	>=0.5	Pass
		5825	1	17.600	>=0.5	Pass
802.11ac (VHT40)	MIMO	5755	1	36.362	>=0.5	Pass
		5795	1	36.328	>=0.5	Pass
802.11ac (VHT80)	MIMO	5775	1	75.124	>=0.5	Pass

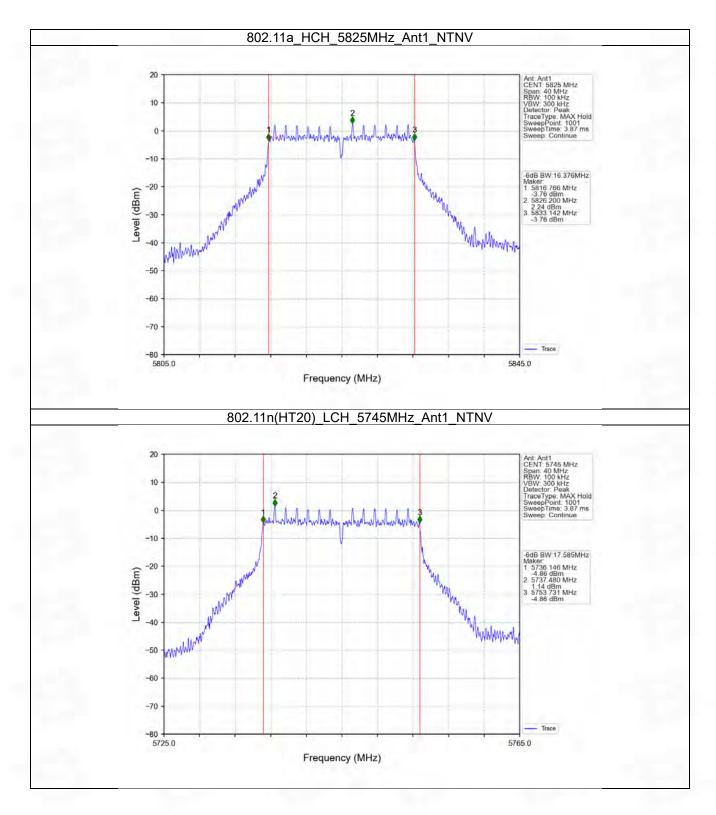


2.3.2 Test Graph

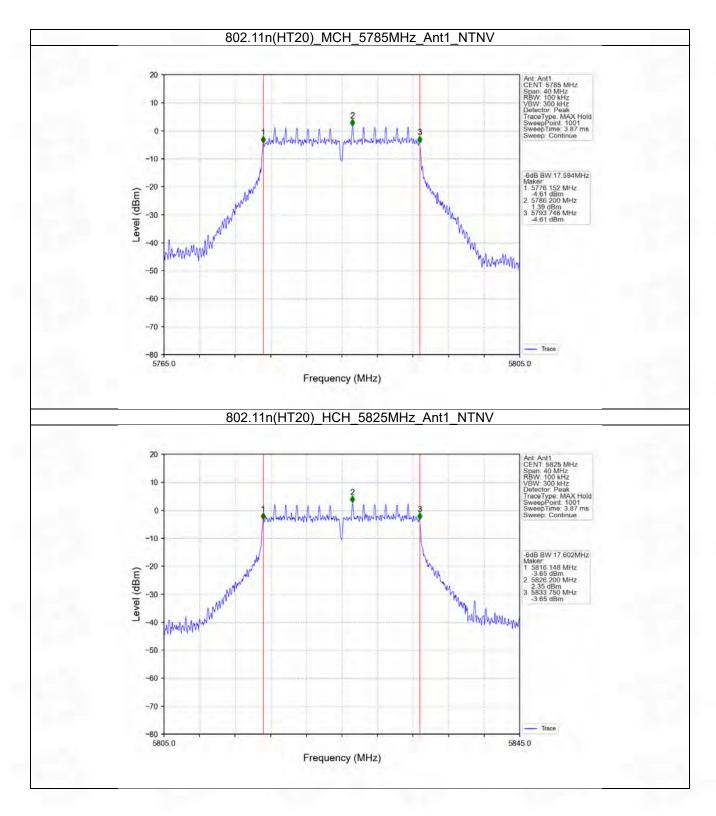


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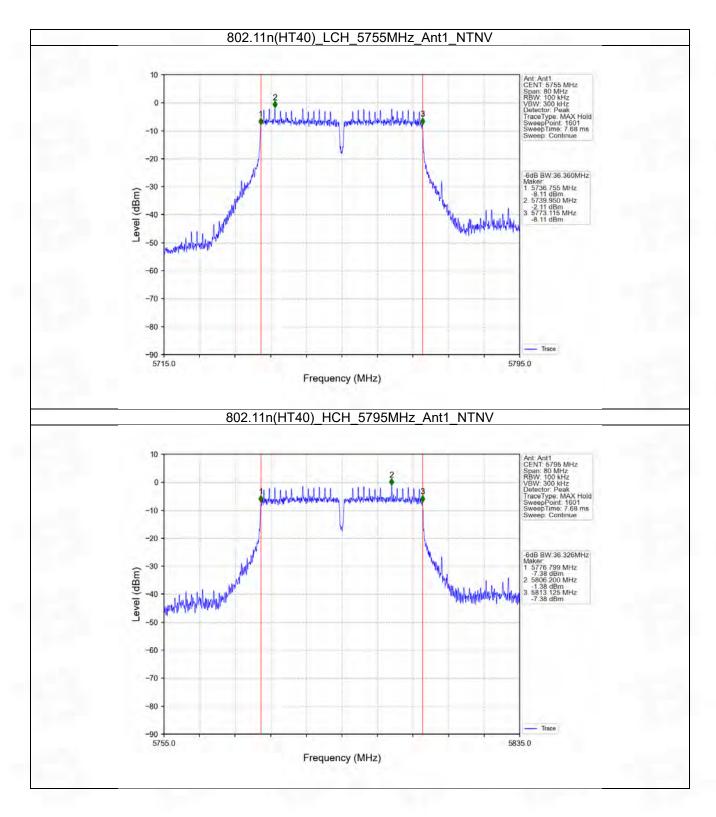






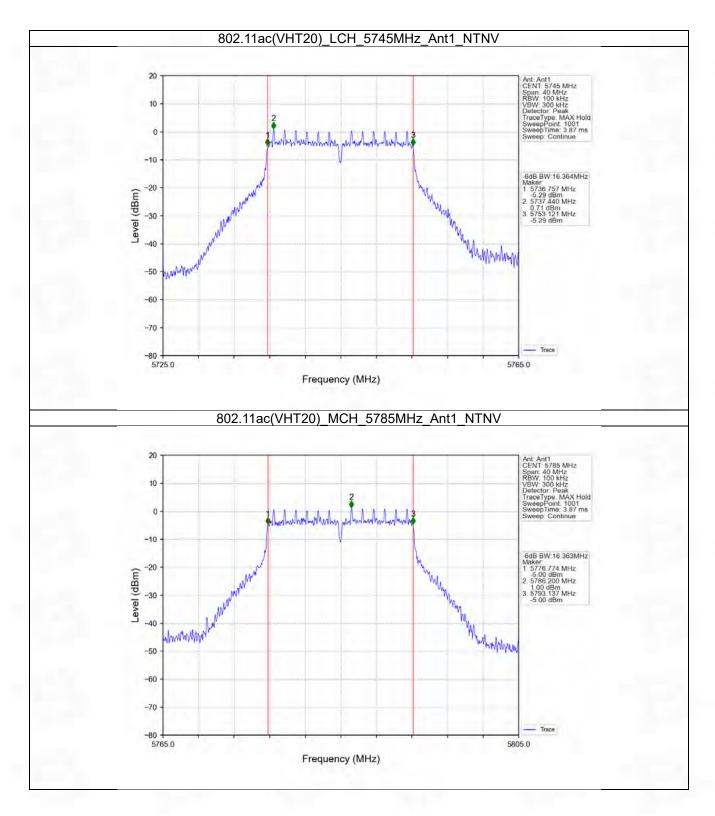
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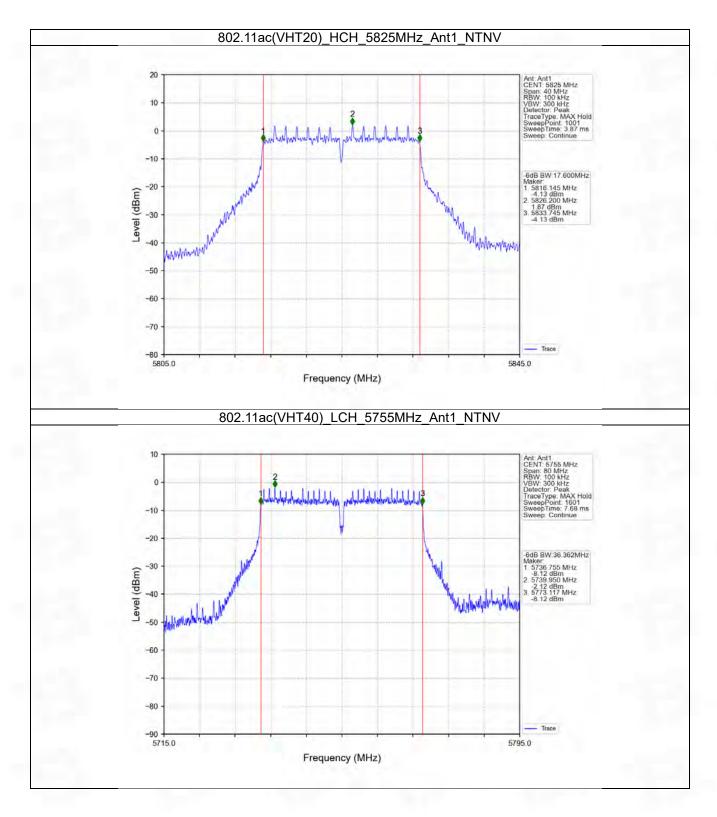


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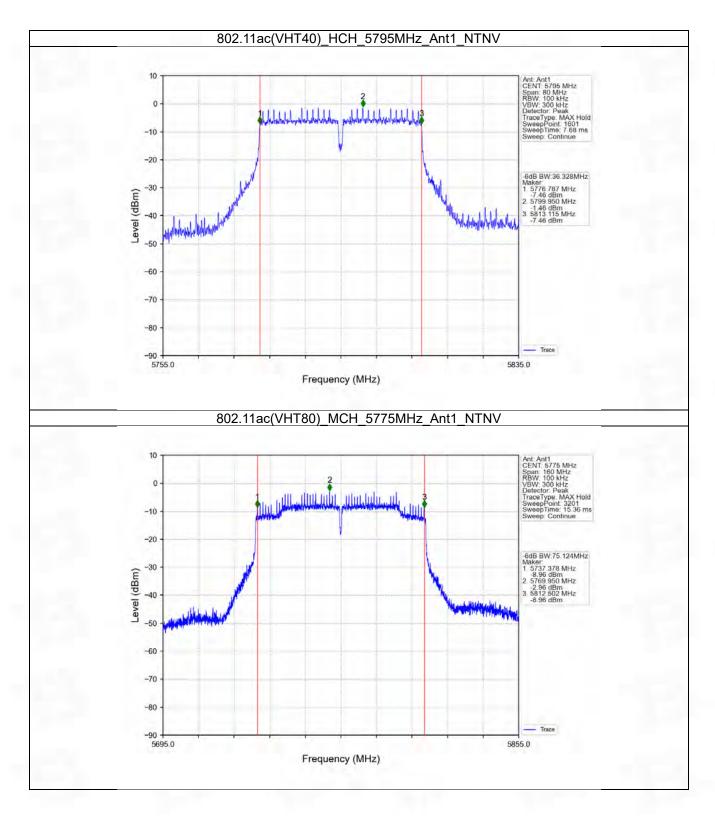














3. Maximum Conducted Output Power

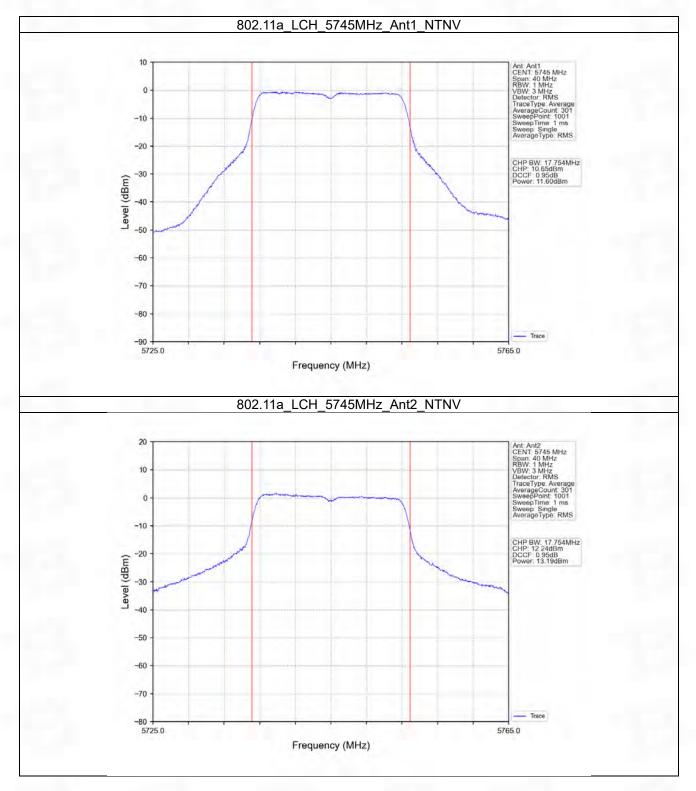
3.1 Power

3.1.1 Test Result

Mode 802.11a 802.11n	Type SISO	(MHz) 5745 5785	ANT1 11.60	ANT2	MIMO	Limit	veruici
802.11n	SISO		11.60				Verdict
802.11n	SISO	5785		13.19	/	<=30	Pass
			11.94	11.06	/	<=30	Pass
		5825	12.90	11.62	/	<=30	Pass
	MIMO	5745	11.56	13.10	15.41	<=30	Pass
(HT20)		5785	11.97	11.06	14.55	<=30	Pass
		5825	12.98	11.56	15.34	<=30	Pass
802.11a	SISO	5180	12.06	10.20	1	<=23.98	Pass
802.11n	MIMO	5755	11.73	13.01	15.43	<=30	Pass
(HT40)		5795	12.52	11.82	15.19	<=30	Pass
902 110	SISO	5200	12.26	10.53	/	<=23.98	Pass
802.11a		5240	11.67	9.62	/	<=23.98	Pass
902 11p	MIMO	5180	11.85	10.11	14.08	<=23.98	Pass
802.11n (HT20)		5200	12.10	10.38	14.33	<=23.98	Pass
		5240	11.52	9.52	13.64	<=23.98	Pass
802.11n	MIMO	5190	12.37	10.70	14.63	<=23.98	Pass
(HT40)		5230	12.13	10.40	14.36	<=23.98	Pass
	MIMO	5745	11.23	13.50	15.52	<=30	Pass
		5785	11.64	11.20	14.44	<=30	Pass
302.11ac		5825	12.58	11.79	15.21	<=30	Pass
(VHT20)		5180	11.85	10.08	14.06	<=23.98	Pass
		5200	12.11	10.37	14.34	<=23.98	Pass
		5240	11.52	9.49	13.63	<=23.98	Pass
	MIMO	5755	11.68	13.34	15.60	<=30	Pass
802.11ac		5795	12.51	12.00	15.27	<=30	Pass
(VHT40)		5190	12.37	10.72	14.63	<=23.98	Pass
		5230	12.12	10.43	14.37	<=23.98	Pass
302.11ac		5775	12.60	12.31	15.47	<=30	Pass
(VHT80)		5210	12.69	9.19	14.29	<=23.98	Pass
ote1: Antenr	na Gain: A	nt1: 2.78dBi;	Ant2: 1.96dBi;				

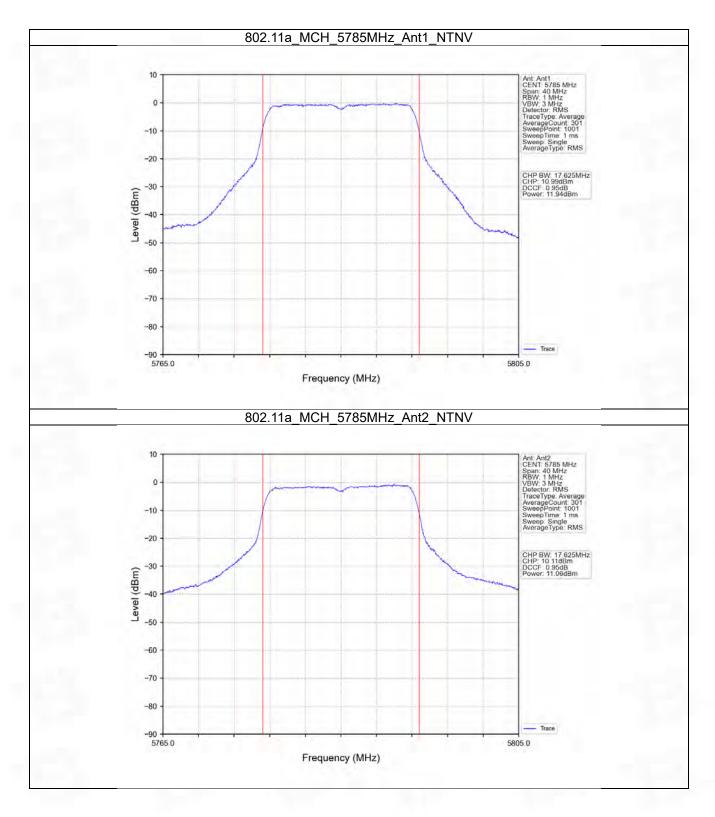


3.1.2 Test Graph

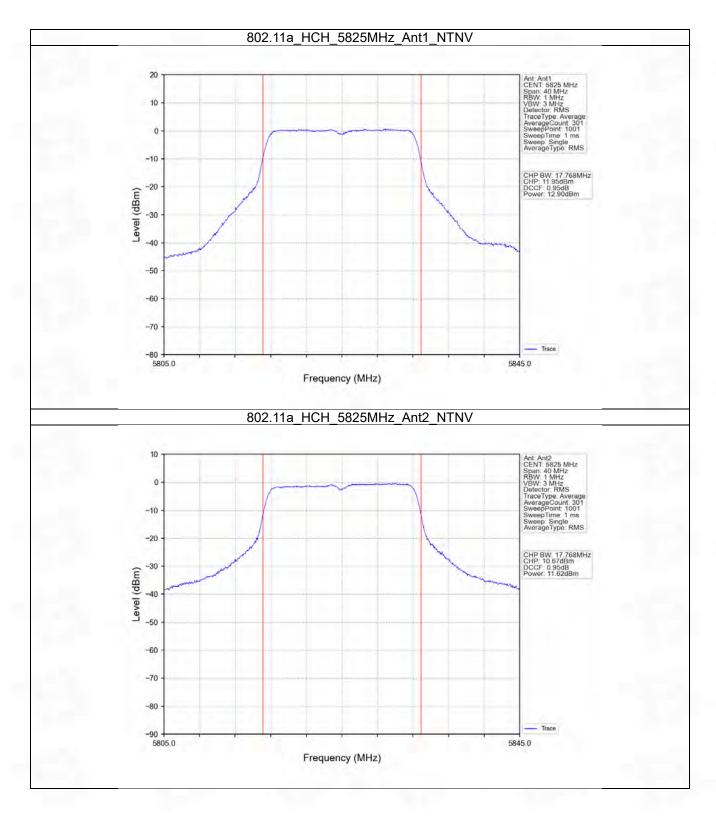


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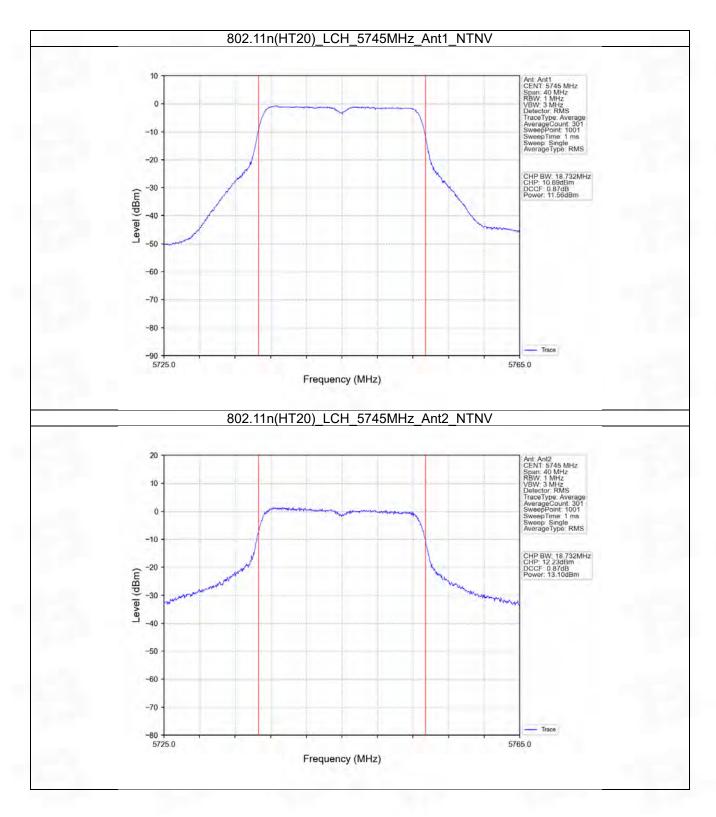




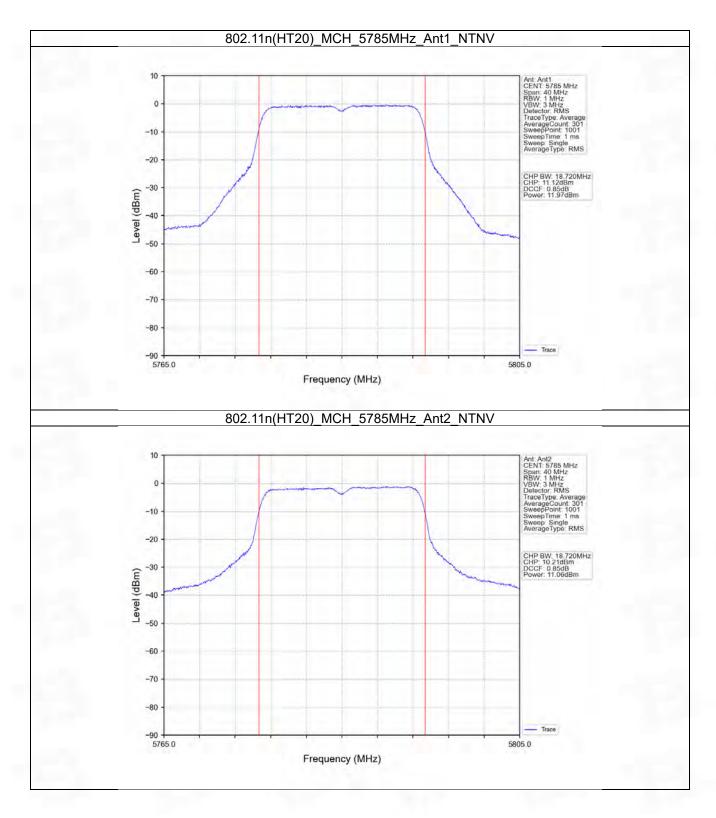




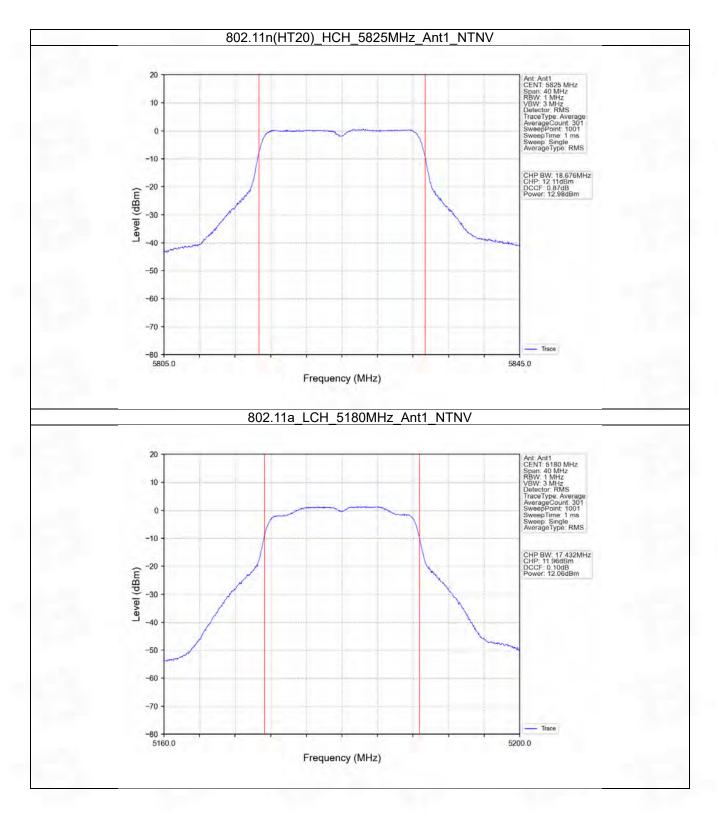






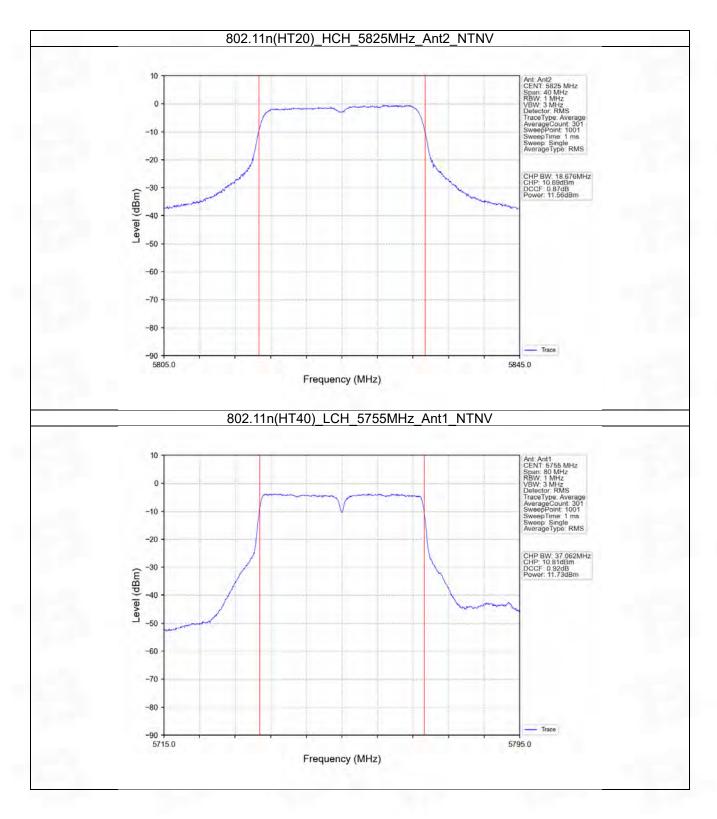




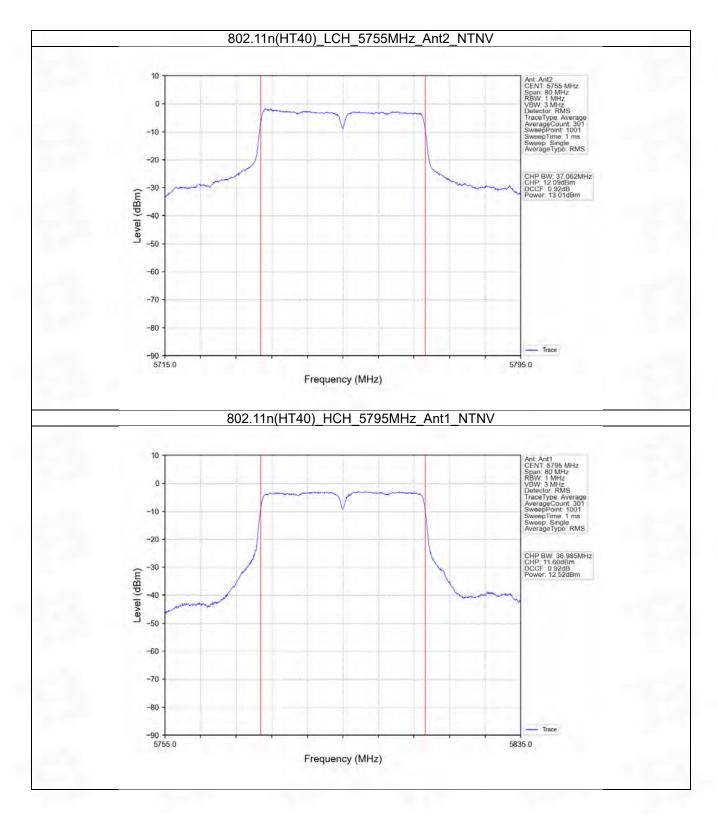


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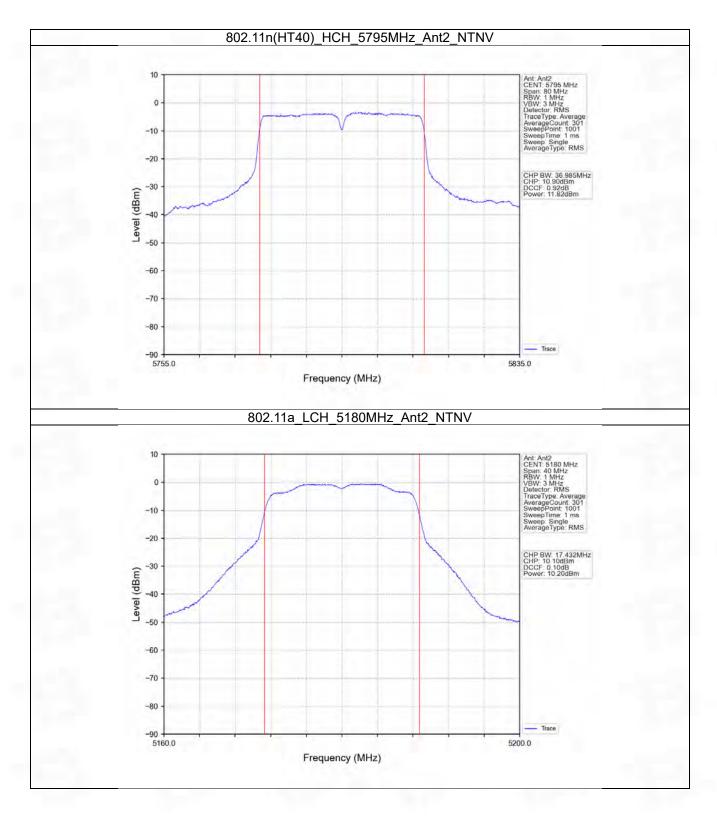






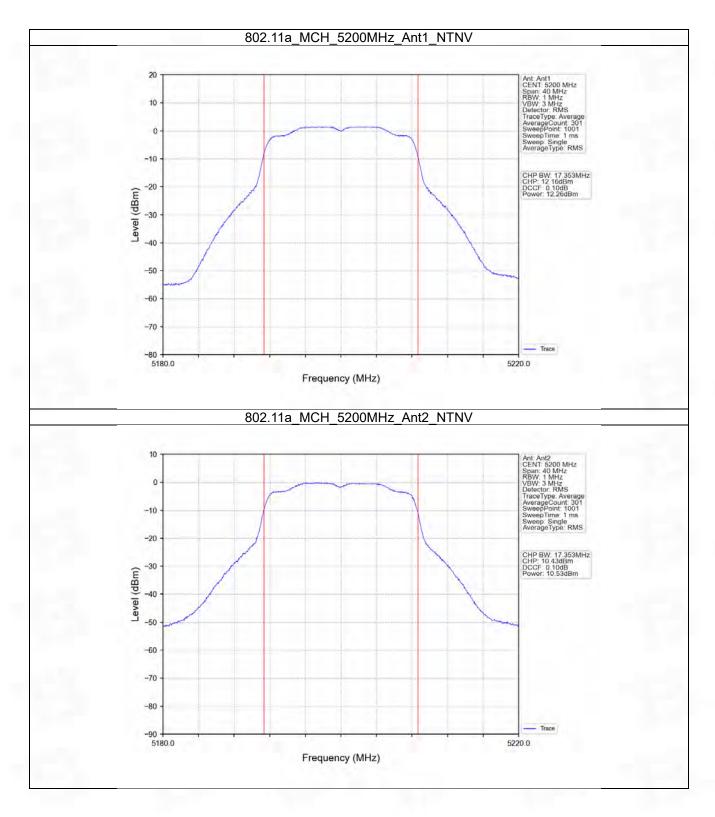
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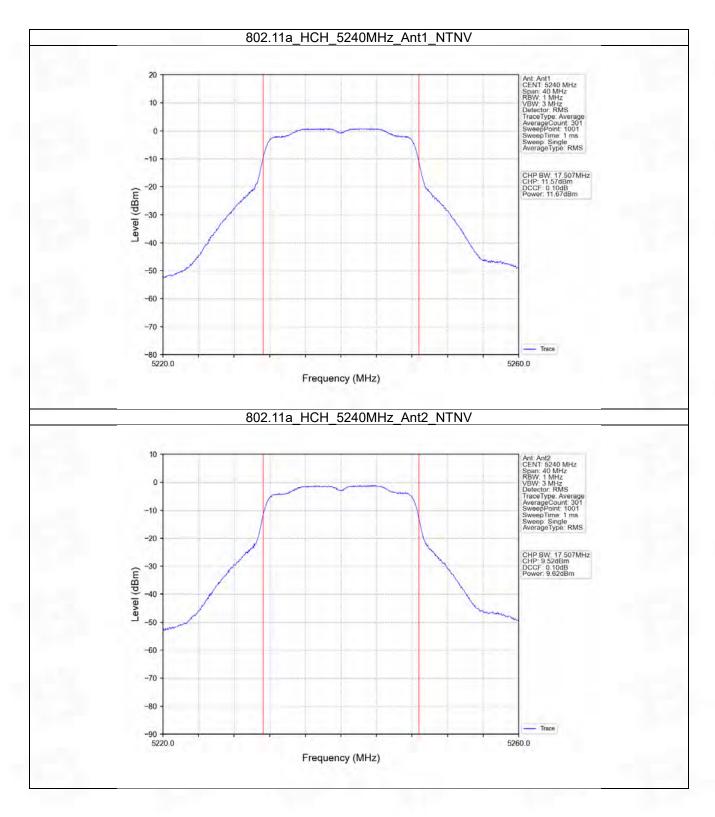
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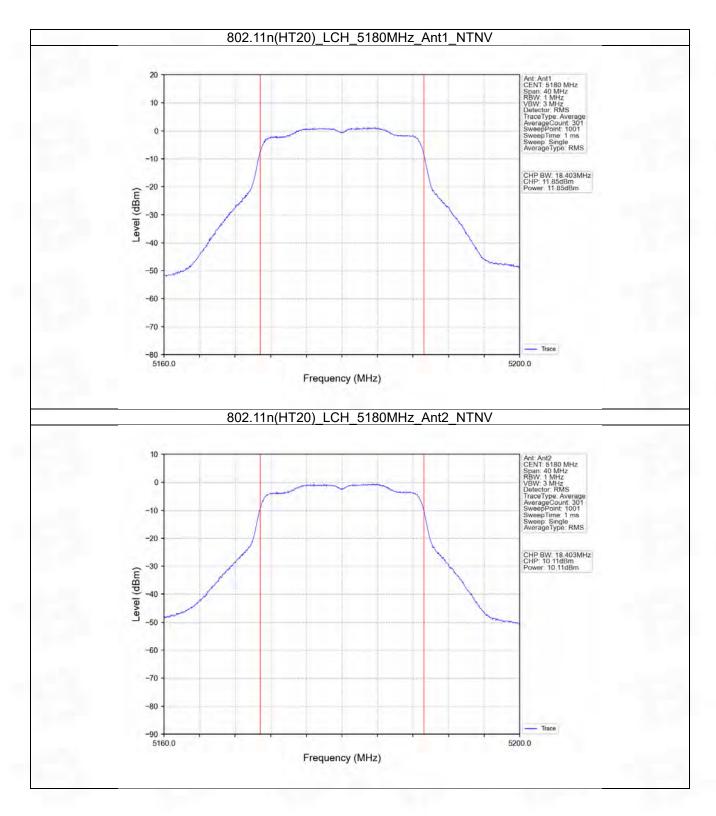
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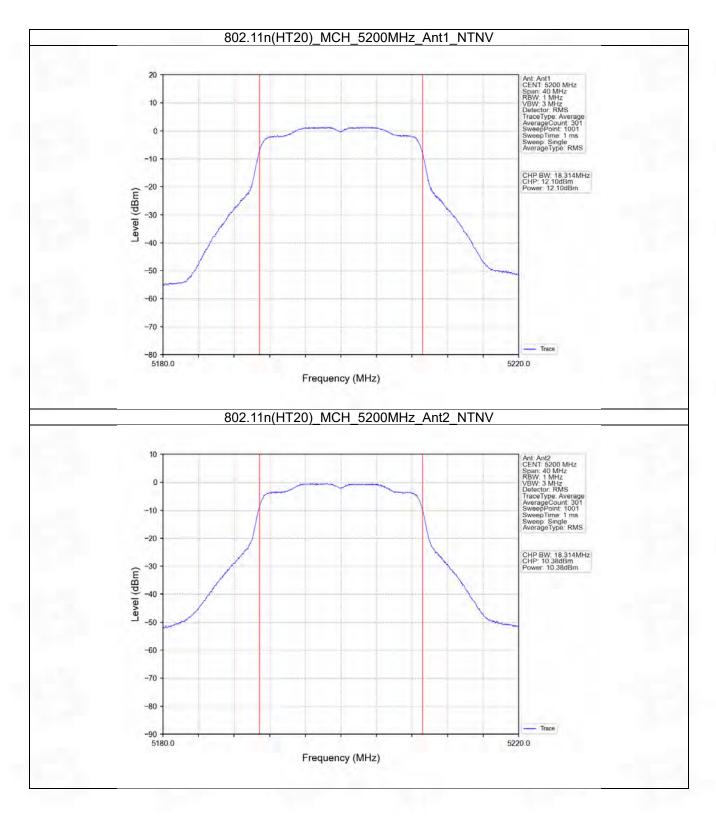
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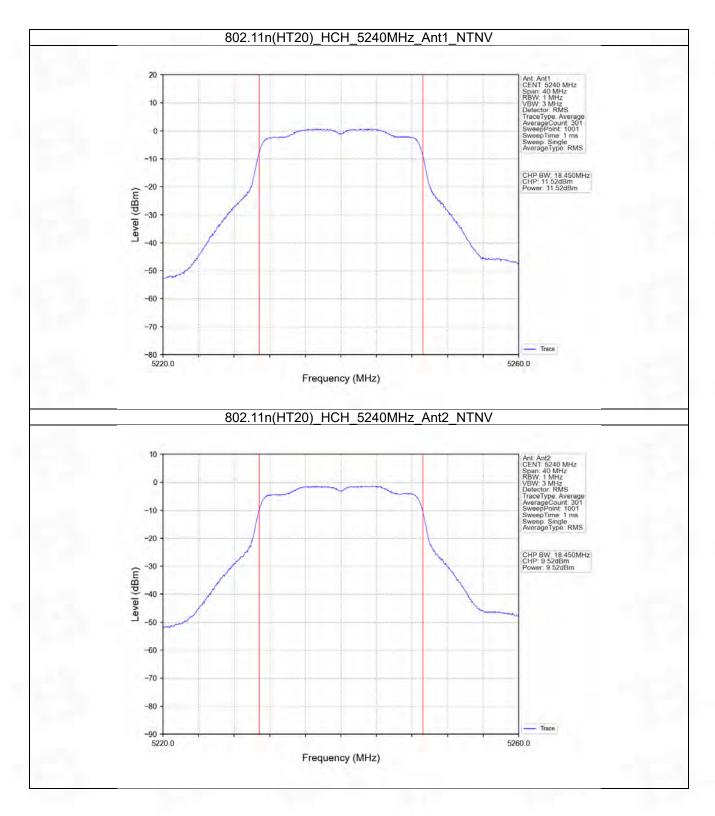
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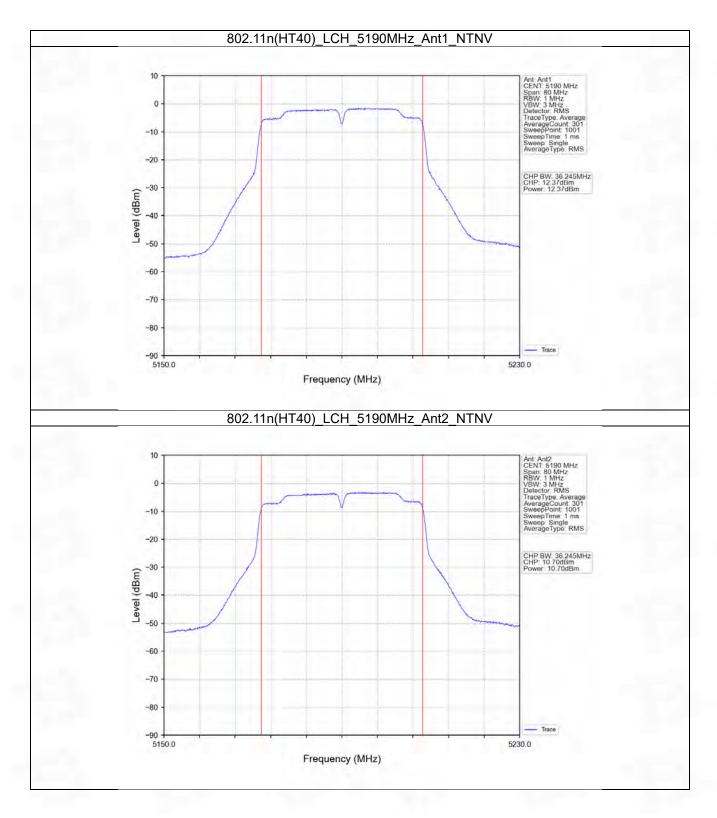


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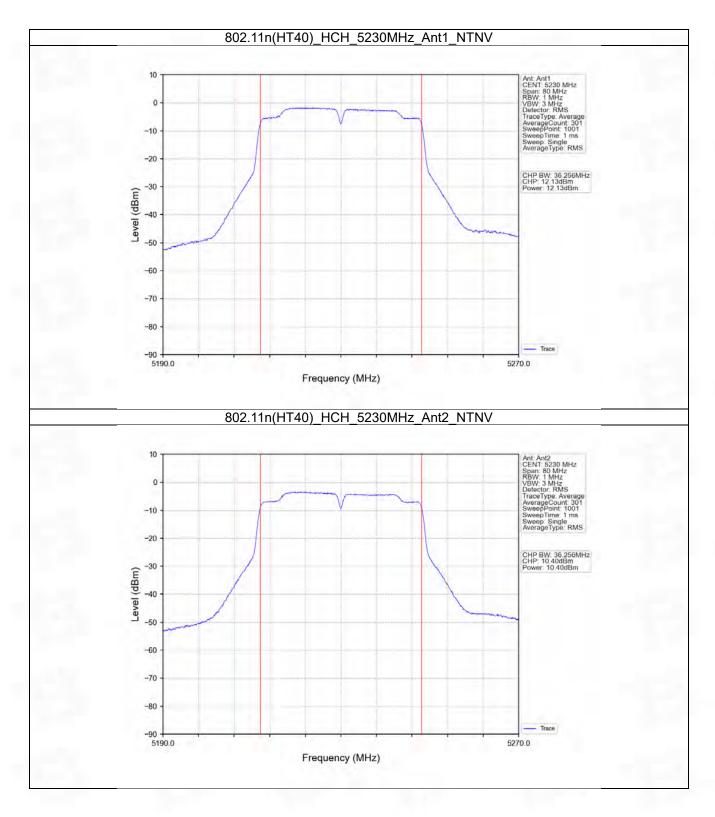






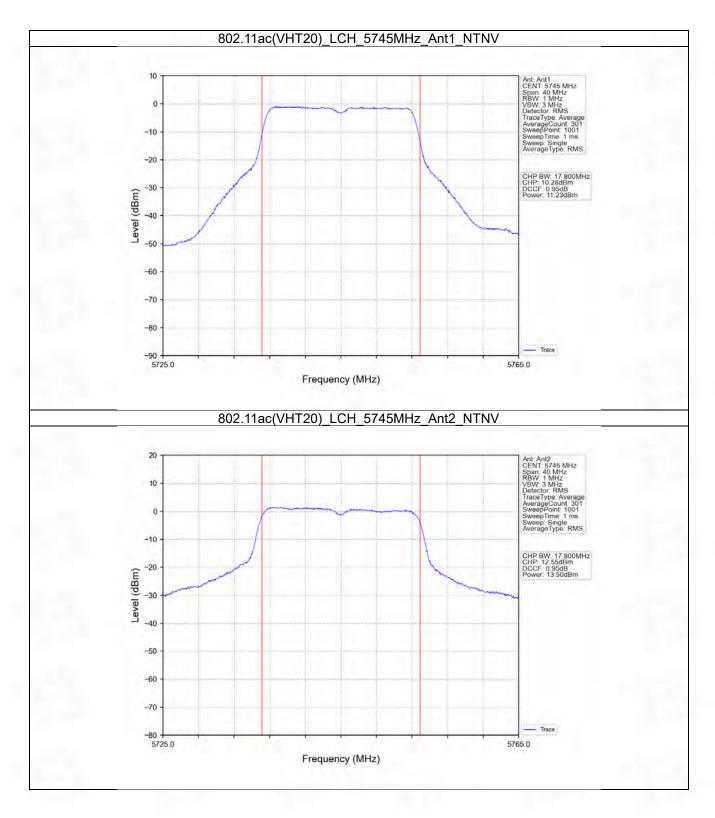
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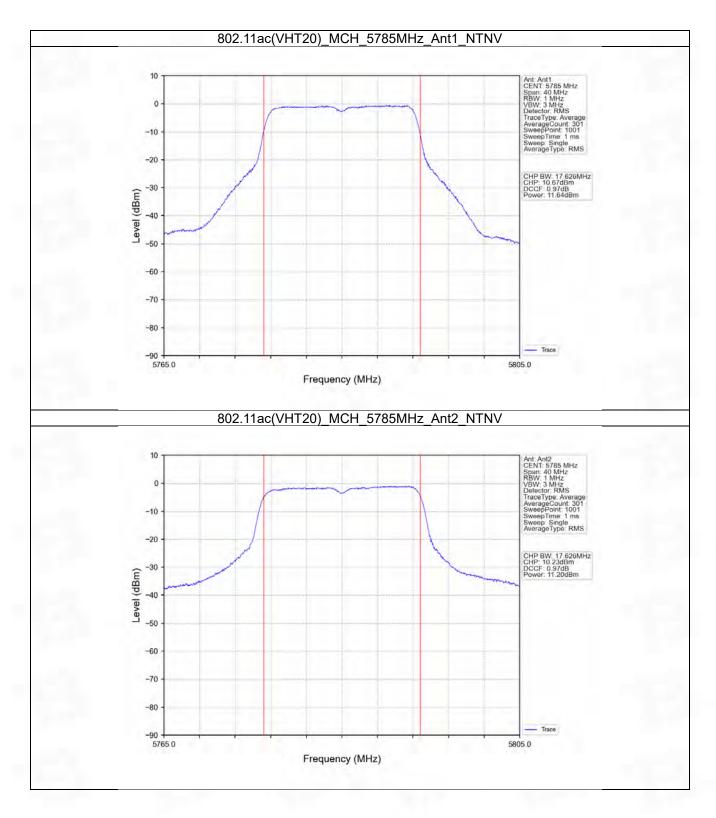
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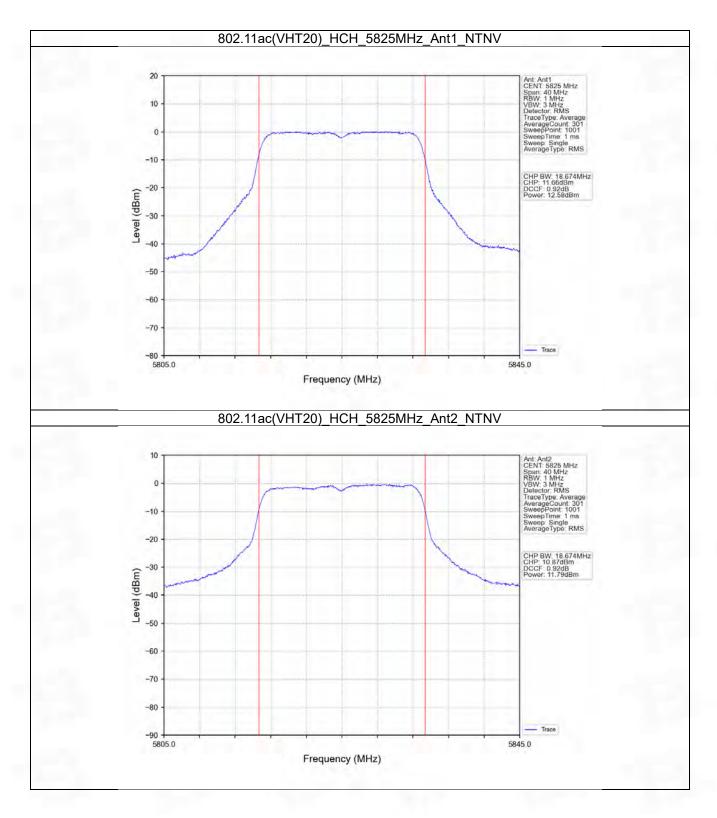


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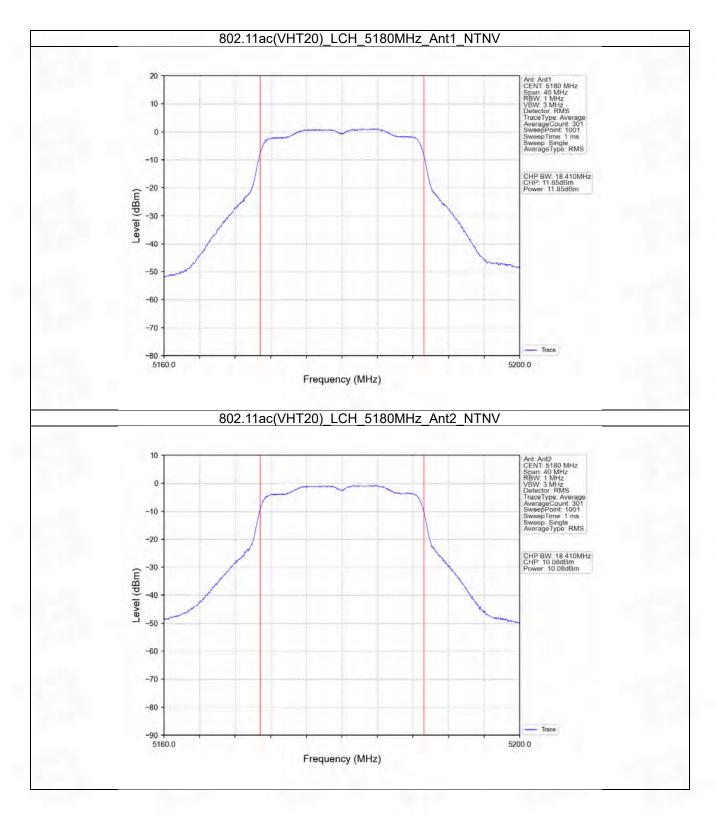






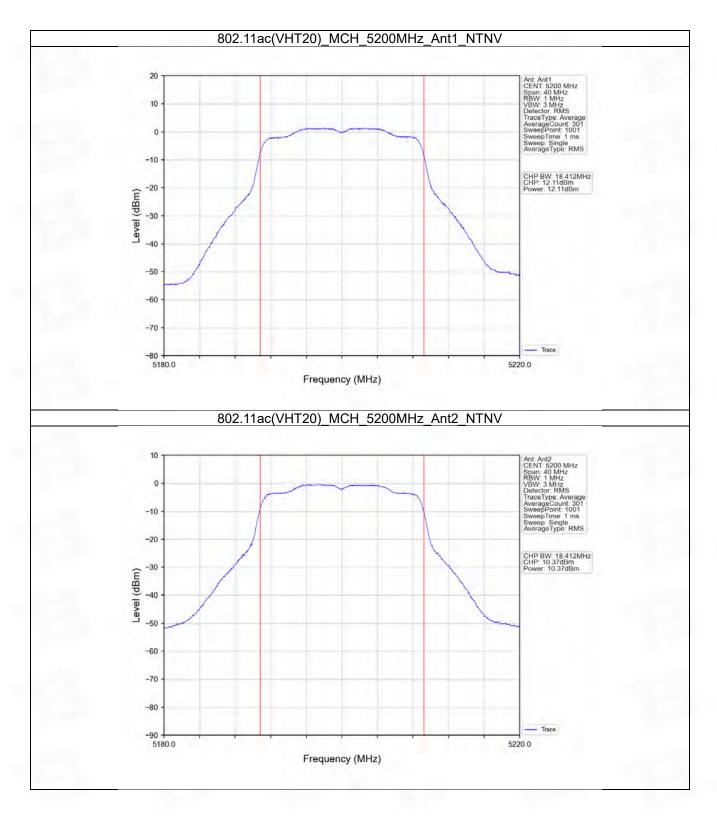
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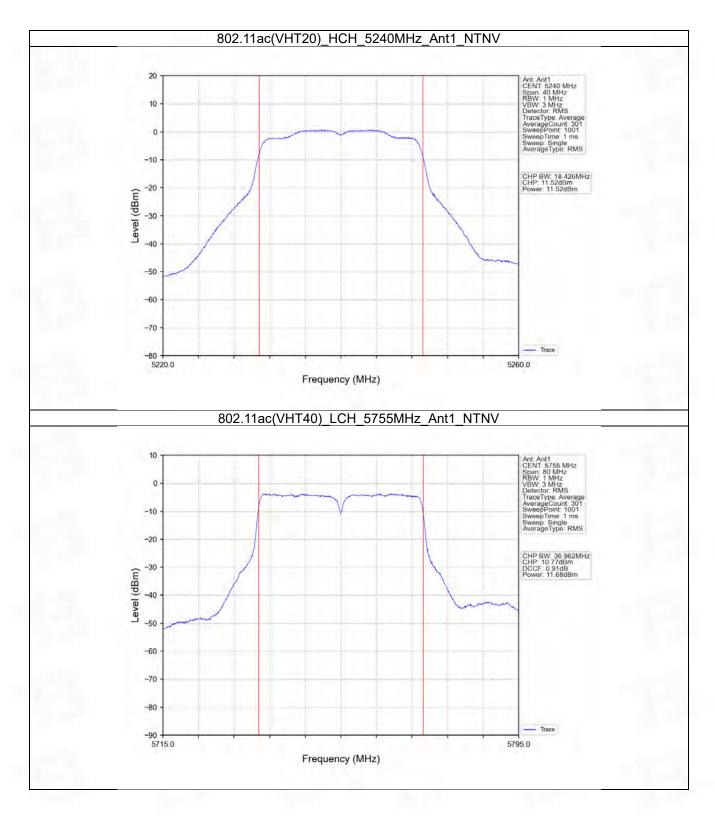


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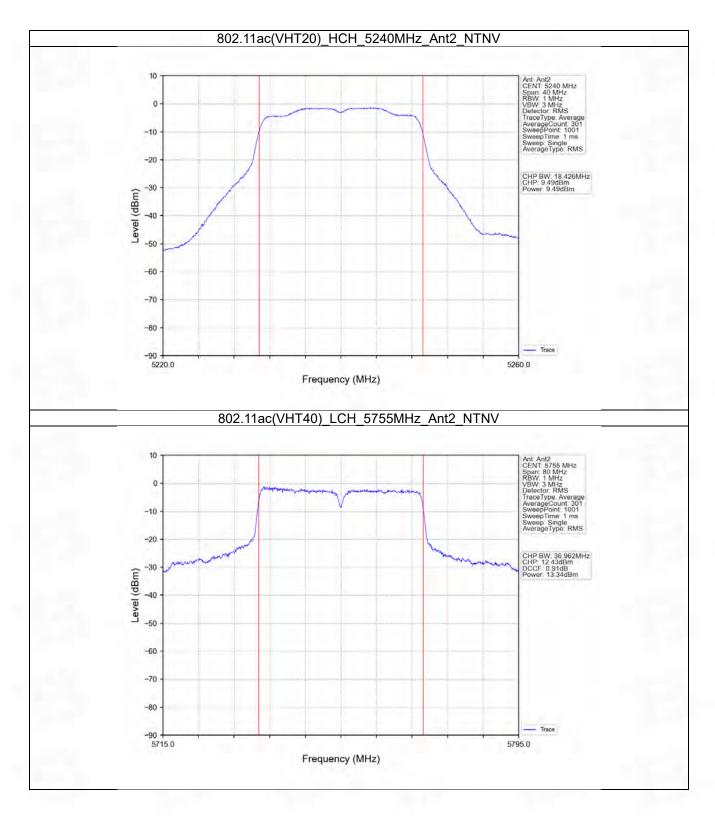




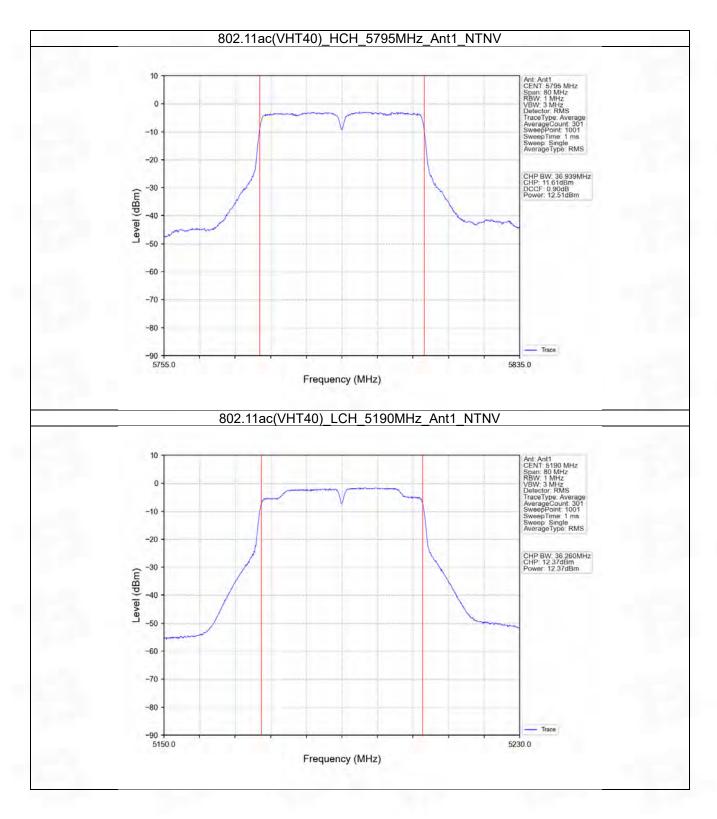




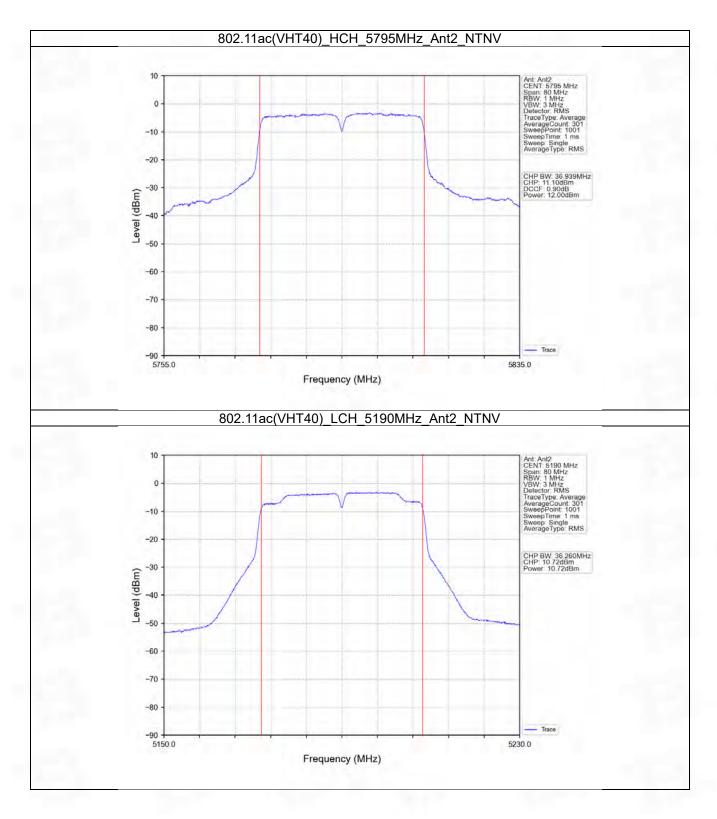






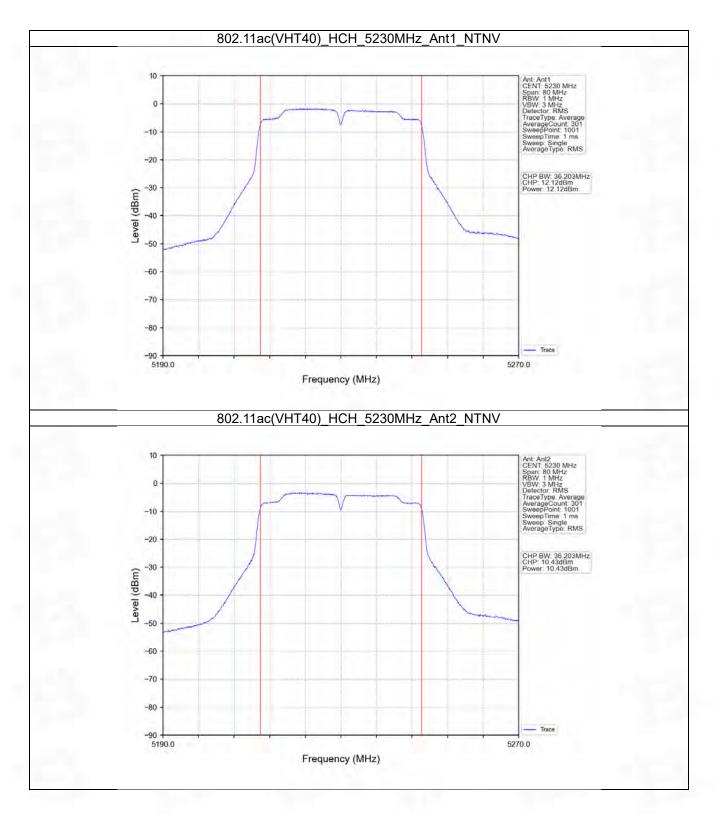






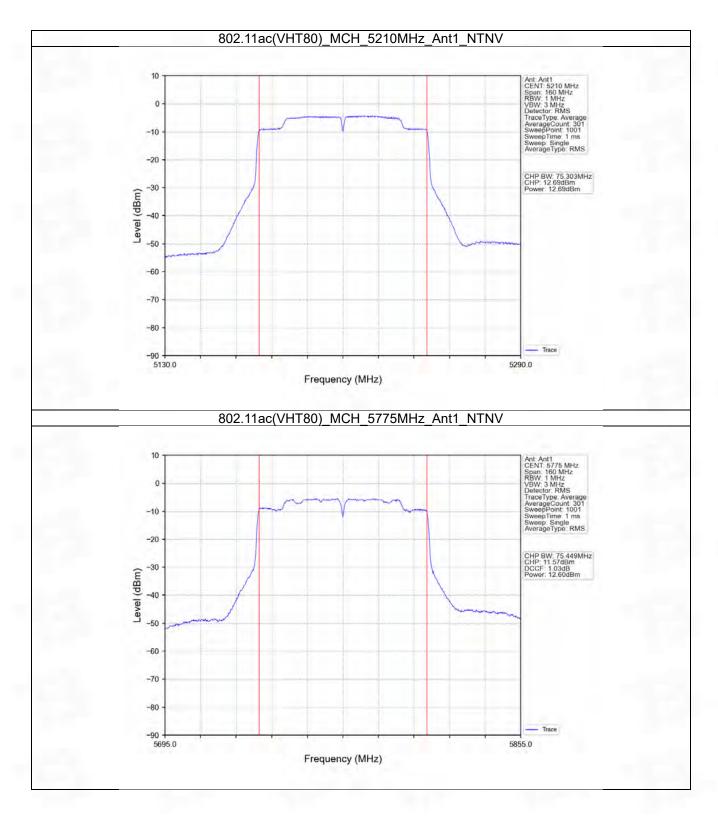
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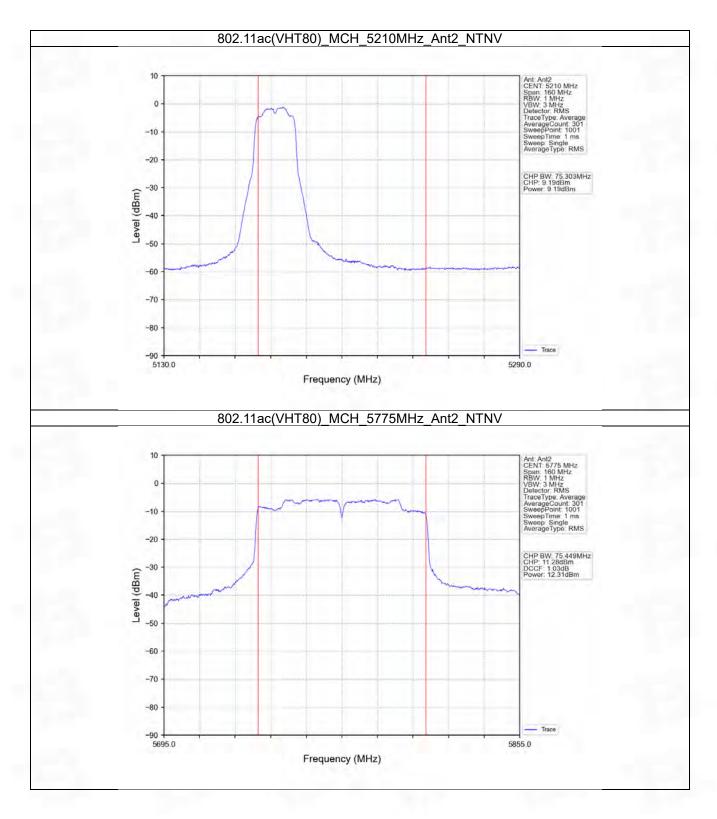
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4. Maximum Power Spectral Density

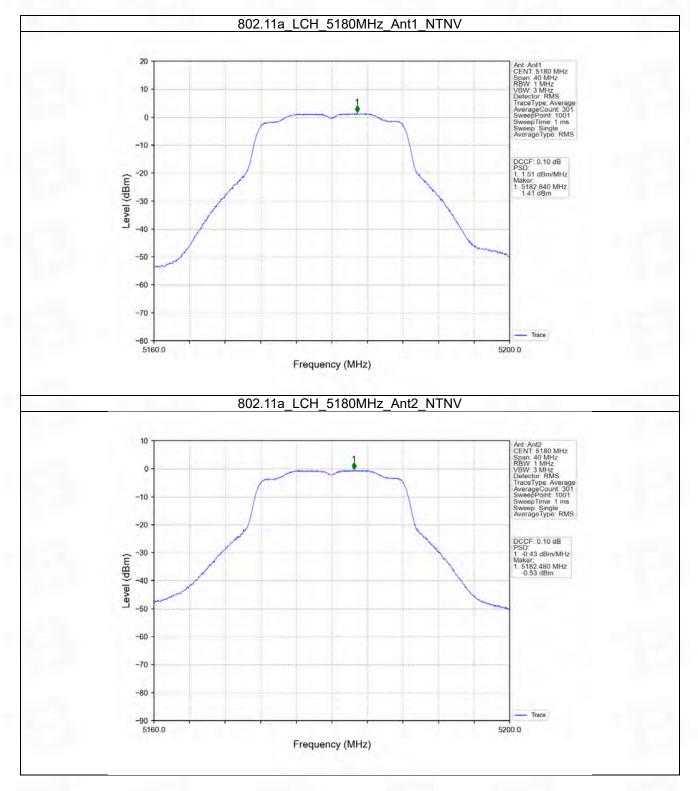
4.1 PSD

4.1.1 Test Result

Mode	TX	Frequency	Maximum PSD (dBm/MHz)				Verdiet
	Туре	(MHz)	ANT1	ANT2	MIMO	Limit	Verdict
802.11a	SISO	5180	1.51	-0.43	/	<=11	Pass
		5200	1.79	0.10	/	<=11	Pass
		5240	1.00	-0.85	/	<=11	Pass
802.11n (HT20)		5180	1.13	-0.65	3.20	<=11	Pass
	MIMO	5200	1.49	-0.30	3.60	<=11	Pass
		5240	0.72	-1.35	2.73	<=11	Pass
802.11n (HT40)	MIMO	5190	-1.60	-3.23	0.60	<=11	Pass
		5230	-1.73	-3.42	0.40	<=11	Pass
802.11ac (VHT20)	МІМО	5180	1.09	-0.69	3.19	<=11	Pass
		5200	1.38	-0.39	3.57	<=11	Pass
		5240	0.69	-1.25	2.75	<=11	Pass
802.11ac (VHT40)	МІМО	5190	-1.55	-3.19	0.63	<=11	Pass
		5230	-1.71	-3.40	0.42	<=11	Pass
802.11ac (VHT80)	ΜΙΜΟ	5210	-4.26	-1.25	-0.32	<=11	Pass
lote1: Antenn	a Gain: Ant1:	2.36dBi; Ant2:	3.22dBi;				

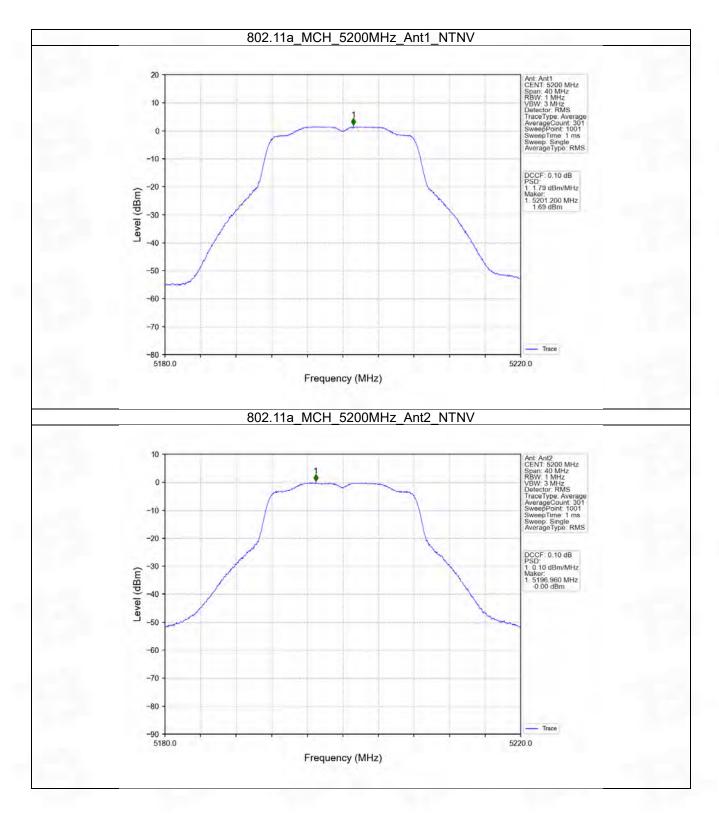


4.1.2 Test Graph

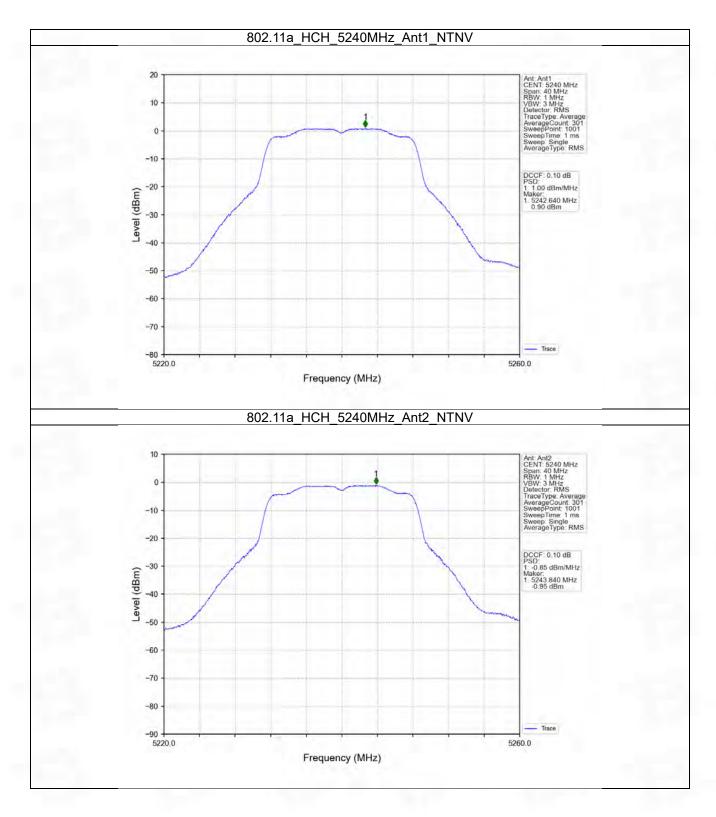


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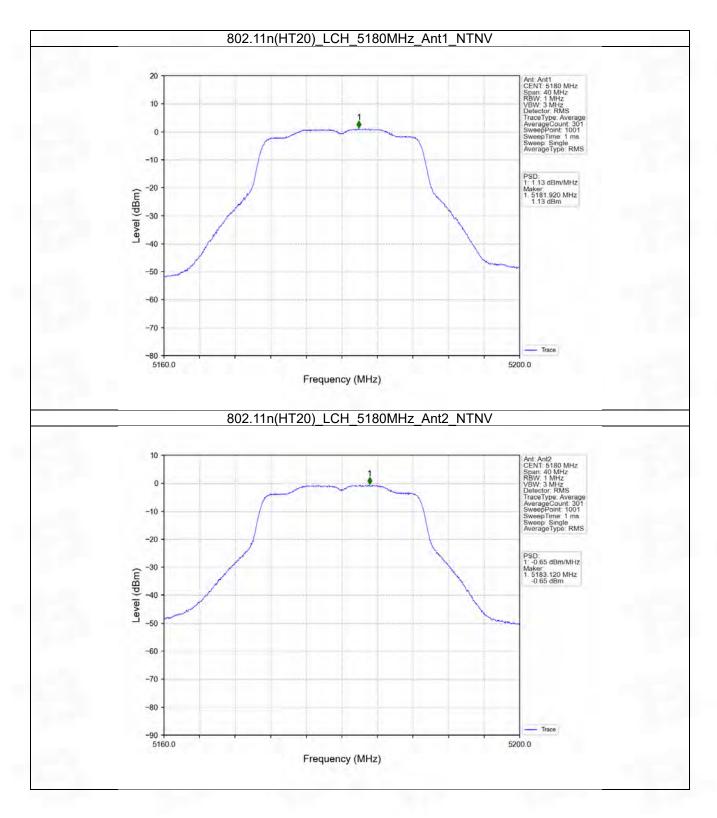






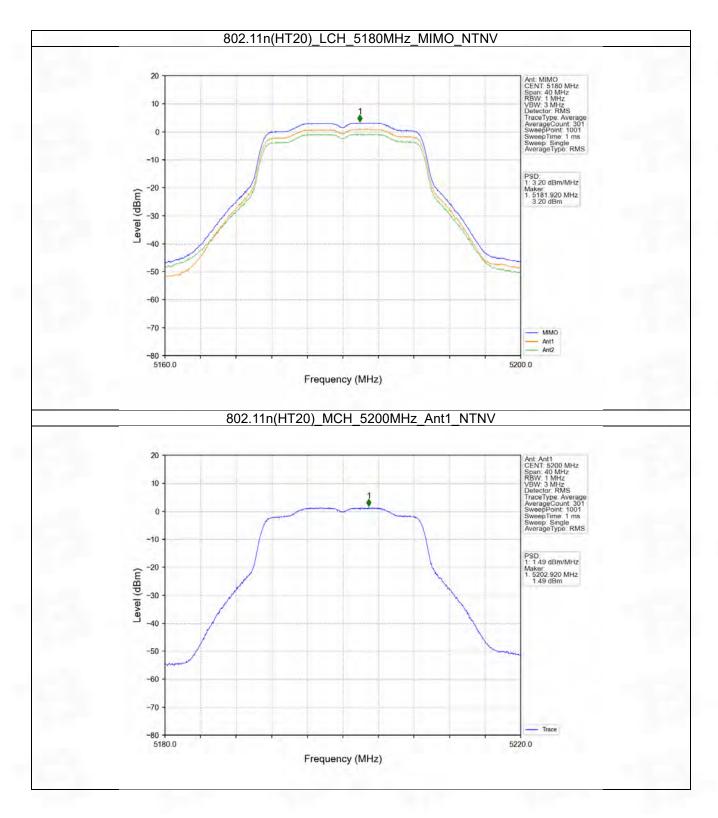






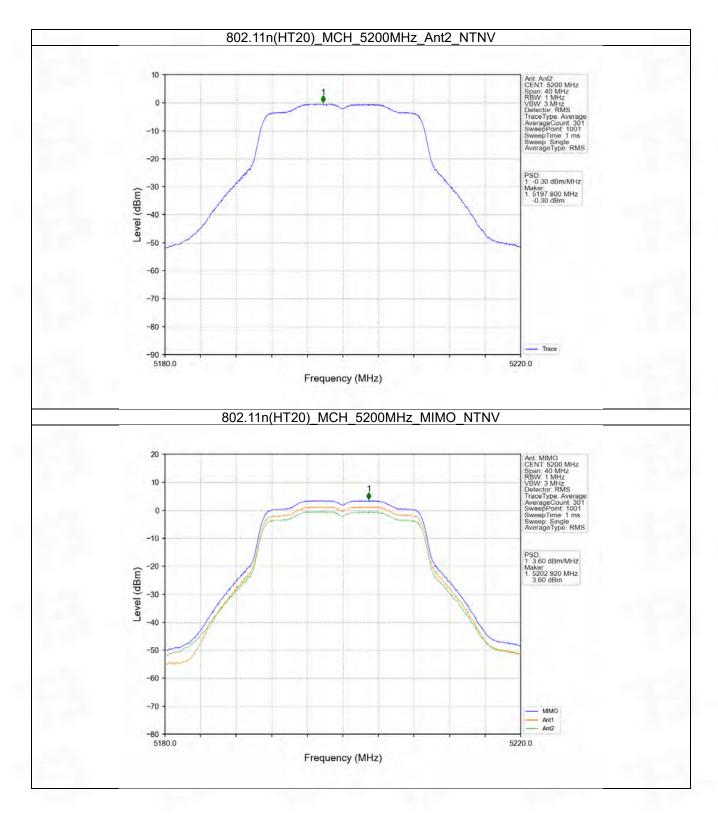
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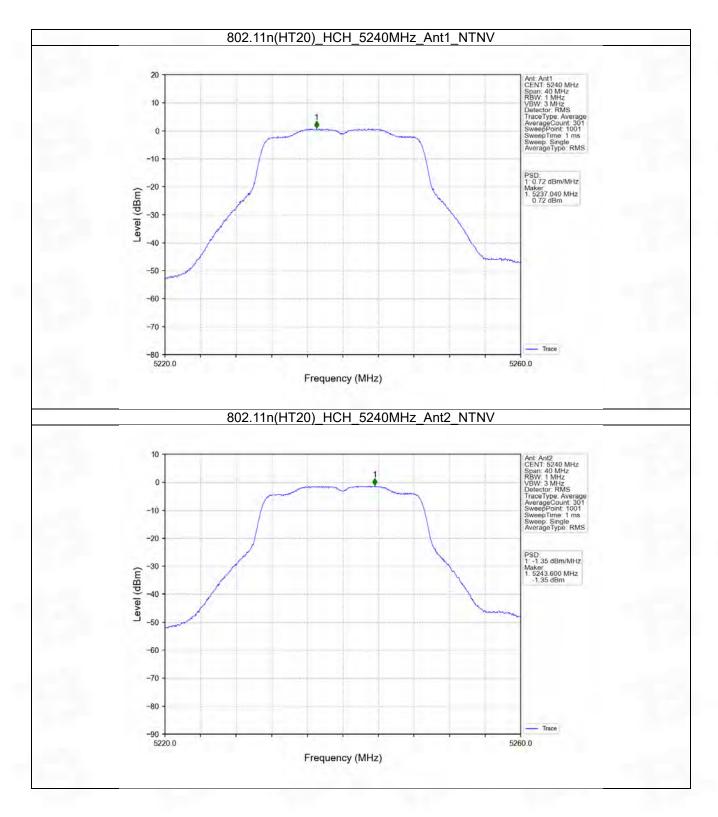


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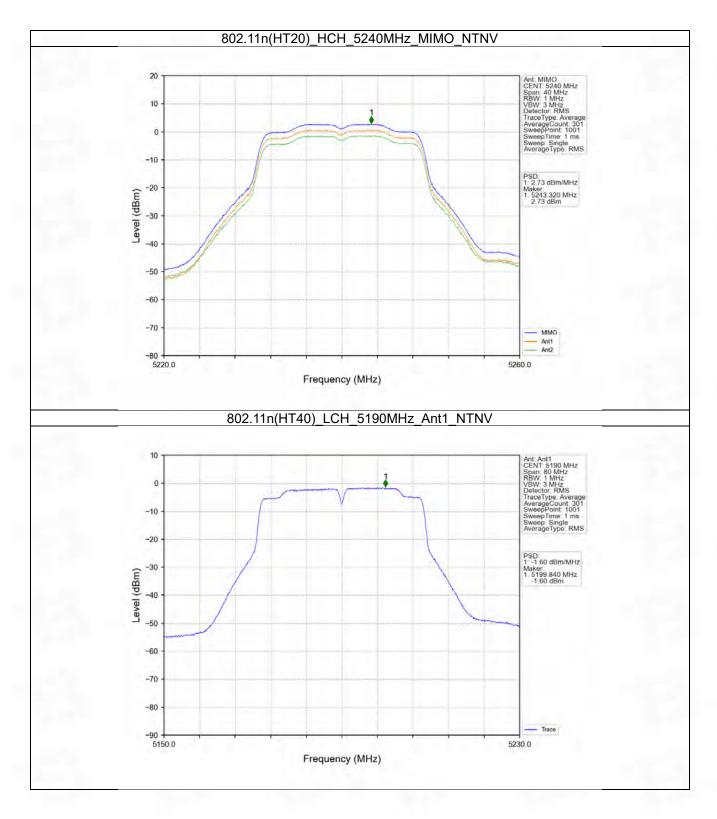






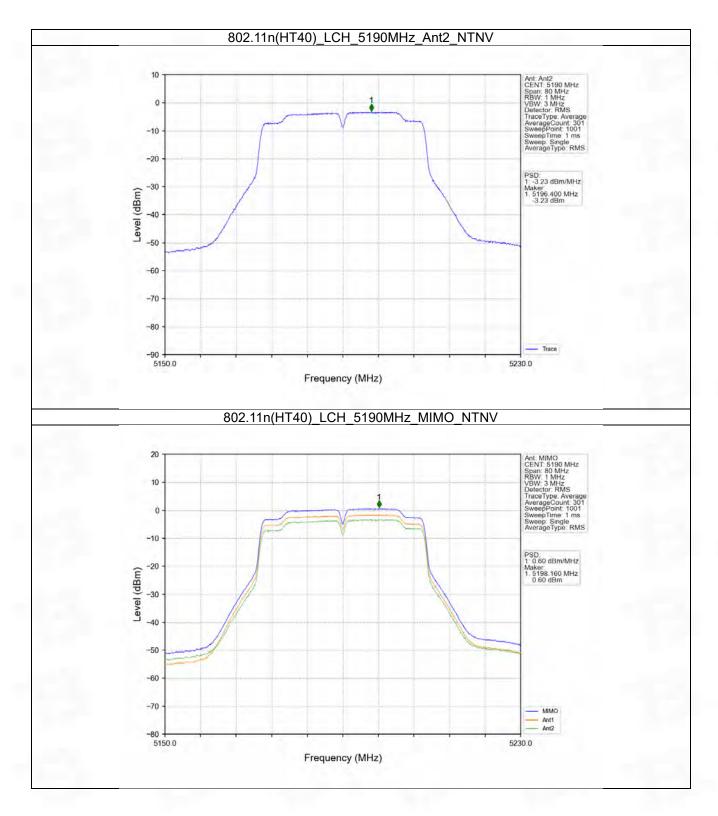




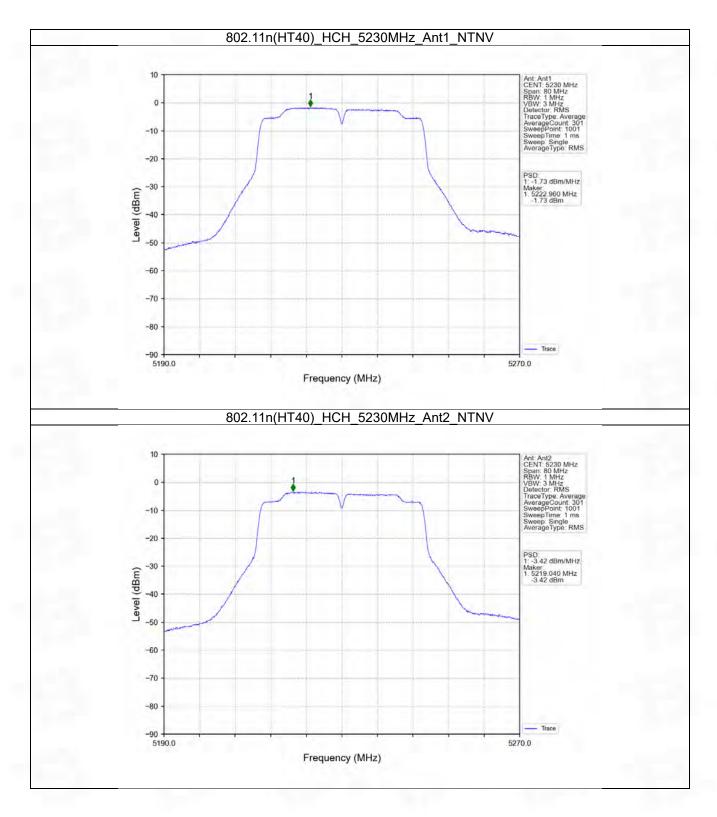


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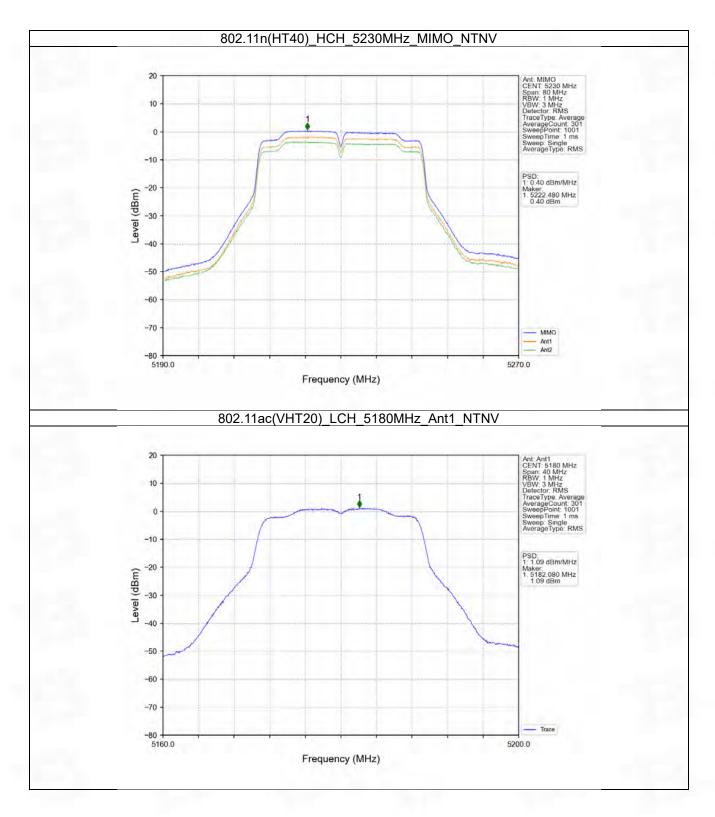






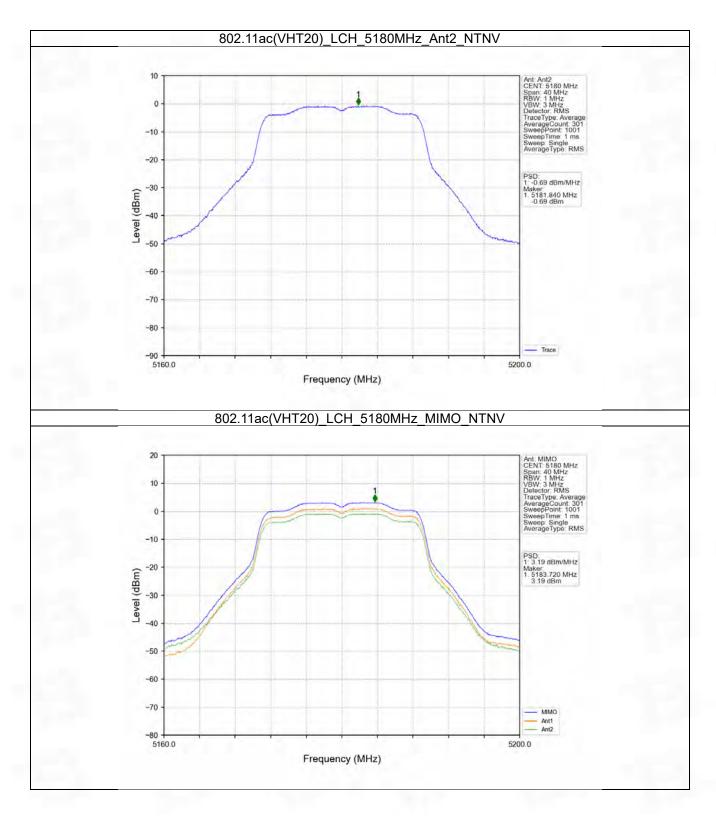
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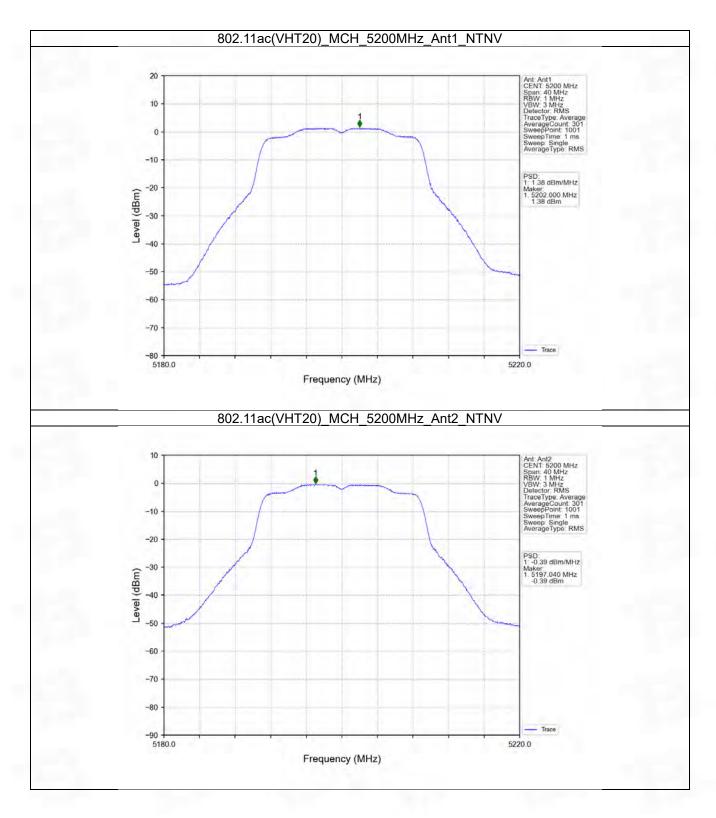
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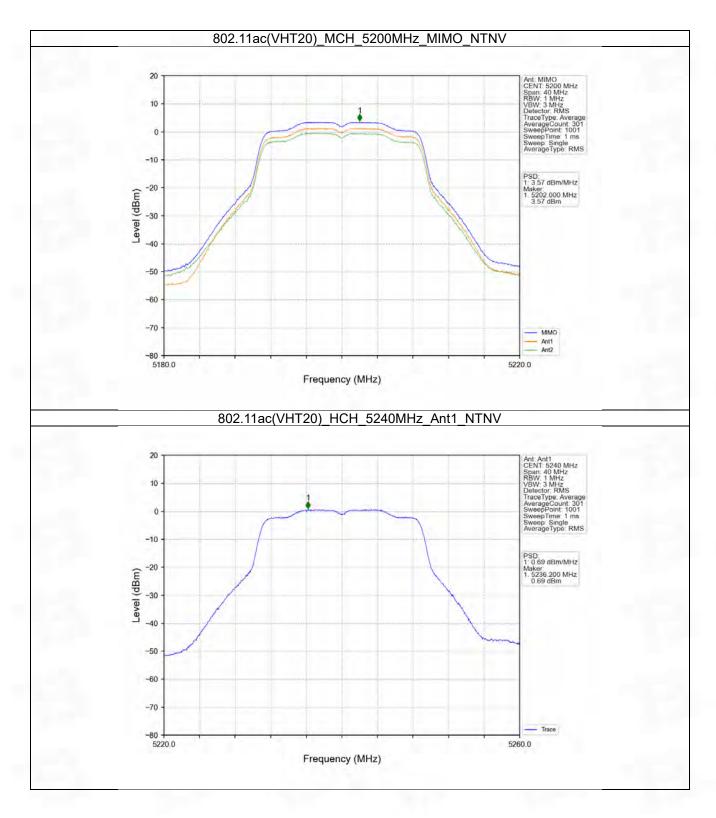


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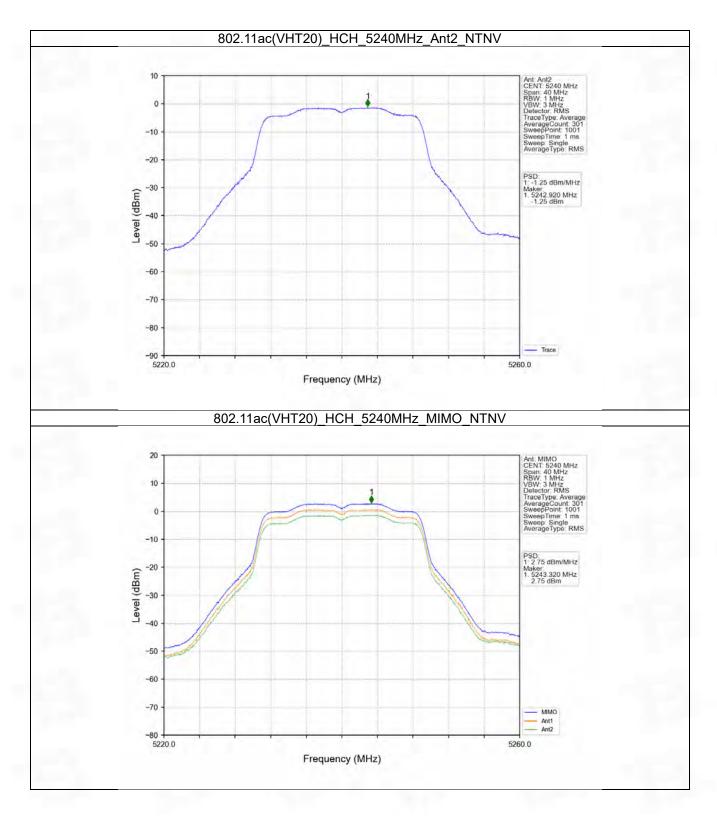




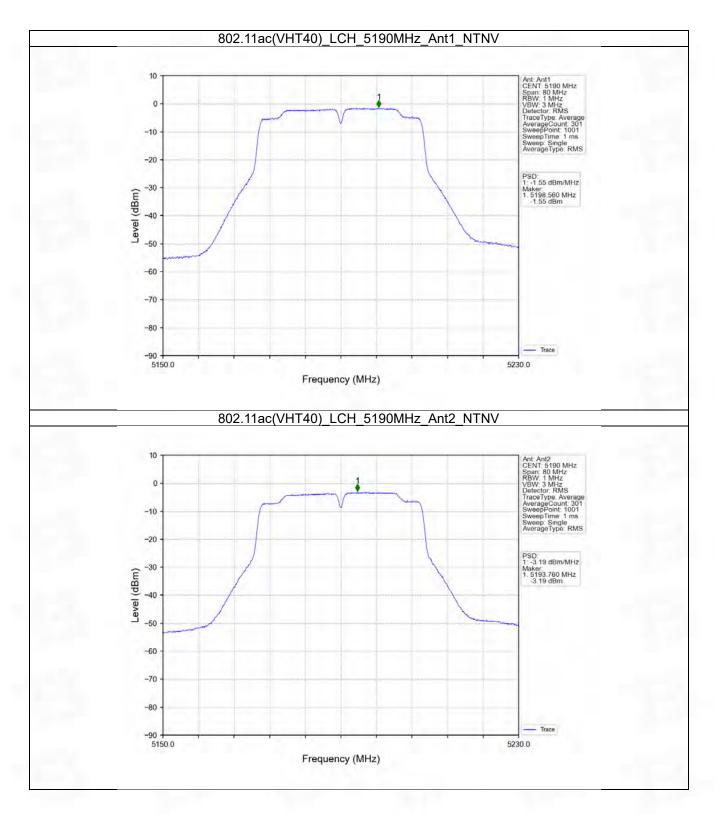


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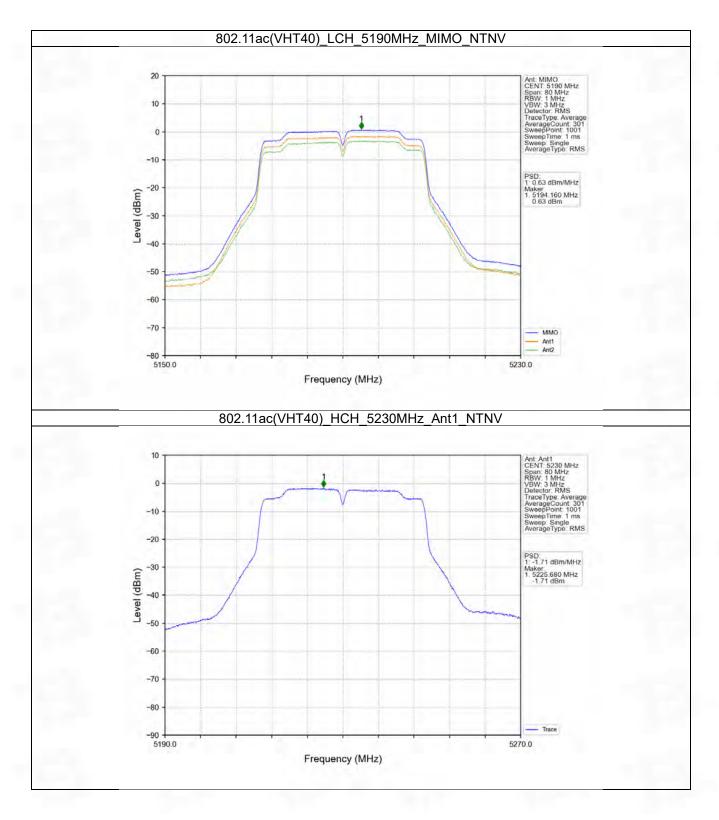






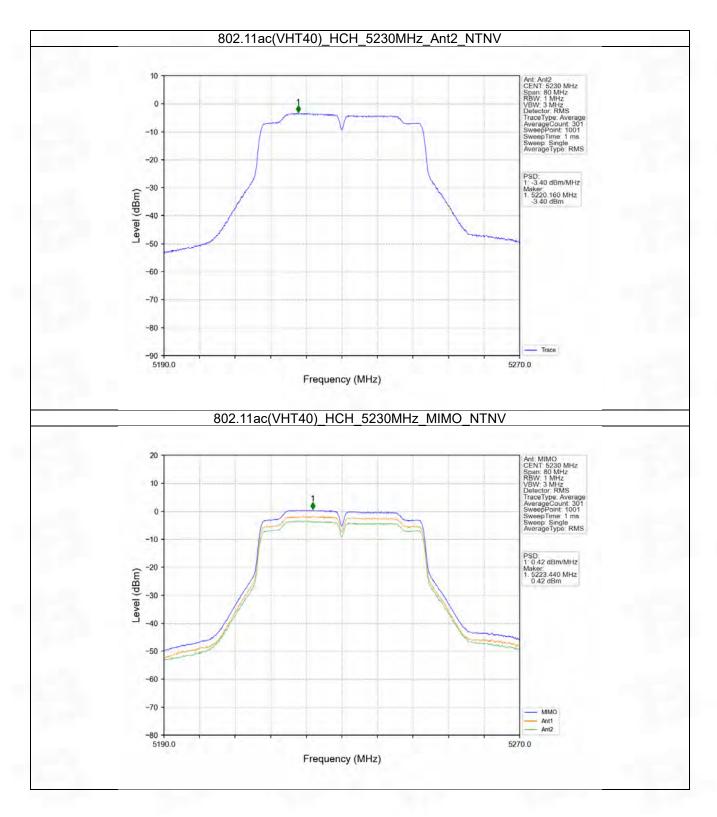




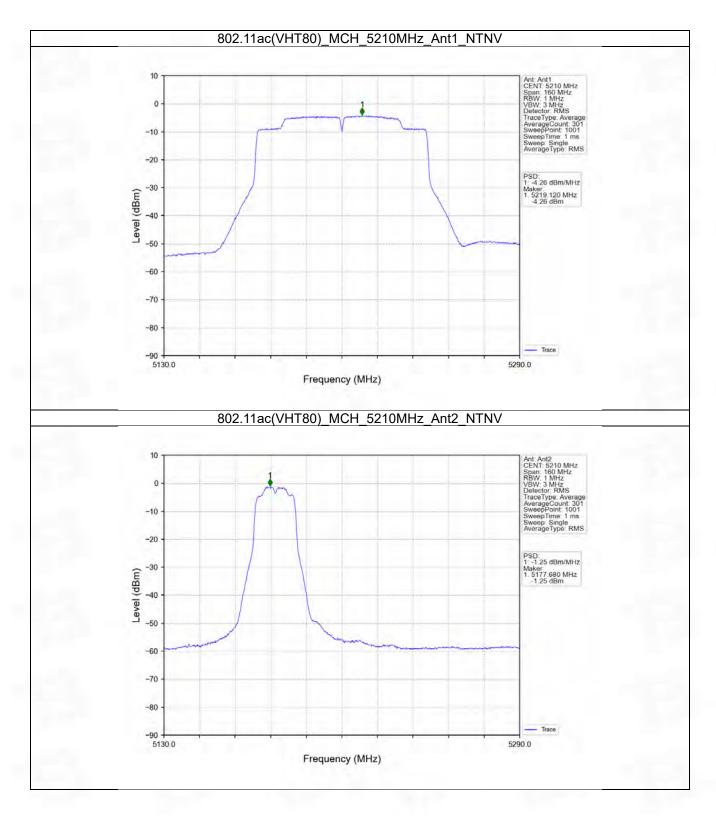


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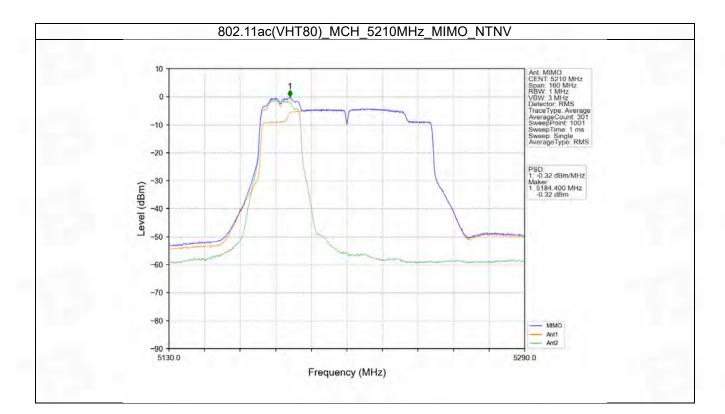














4.2 PSD-Band3

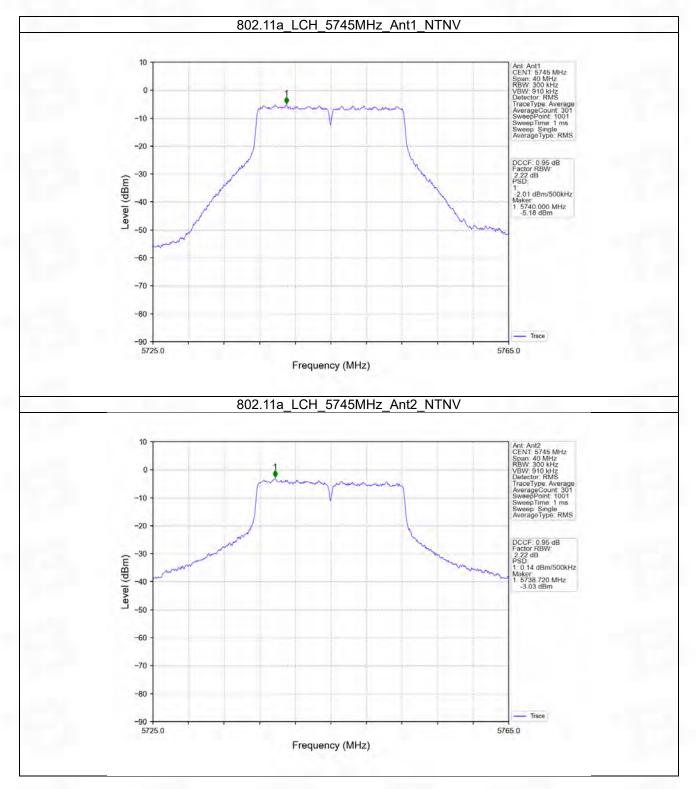
4.2.1 Test Result

	ту	Fraguanay	Maximum DSD (dBm/500kHz)				
Mode	TX	Frequency	Maximum PSD (dBm/500kHz)				Verdict
	Туре	(MHz)	ANT1	ANT2	MIMO	Limit	voraio
802.11a	SISO	5745	-2.01	0.14	/	<=30	Pass
		5785	-1.77	-1.97	/	<=30	Pass
		5825	-0.79	-1.66	/	<=30	Pass
802.11n (HT20)	МІМО	5745	-2.36	-0.56	1.59	<=30	Pass
		5785	-1.79	-2.36	0.81	<=30	Pass
		5825	-0.93	-1.56	1.74	<=30	Pass
802.11n (HT40)	MIMO	5755	-5.10	-3.30	-1.20	<=30	Pass
		5795	-4.45	-4.90	-1.69	<=30	Pass
802.11ac (VHT20)	МІМО	5745	-2.48	0.19	1.81	<=30	Pass
		5785	-1.73	-2.21	0.88	<=30	Pass
		5825	-1.16	-1.83	1.35	<=30	Pass
802.11ac (VHT40)	MIMO	5755	-5.17	-2.84	-0.97	<=30	Pass
		5795	-4.48	-4.57	-1.66	<=30	Pass
802.11ac (VHT80)	MIMO	5775	-6.80	-6.89	-3.98	<=30	Pass
ote1: Antenr	na Gain: Ant1	: 2.78dBi; Ant2	2: 1.96dBi;				
ote2: Directi	onal Gain: Un	correlated(Directio	nal Gain = Ant	: Gain)			

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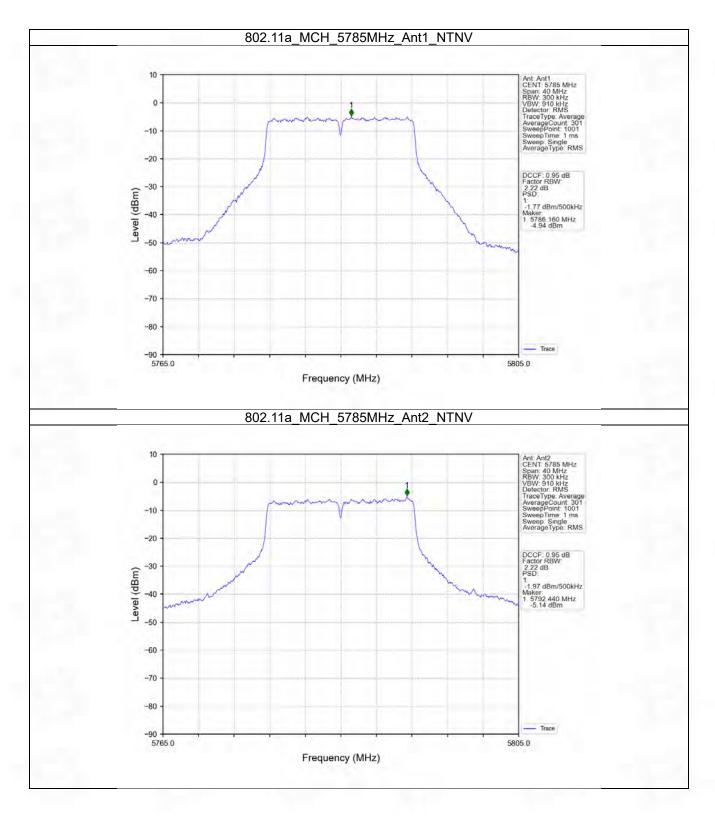


4.2.2 Test Graph



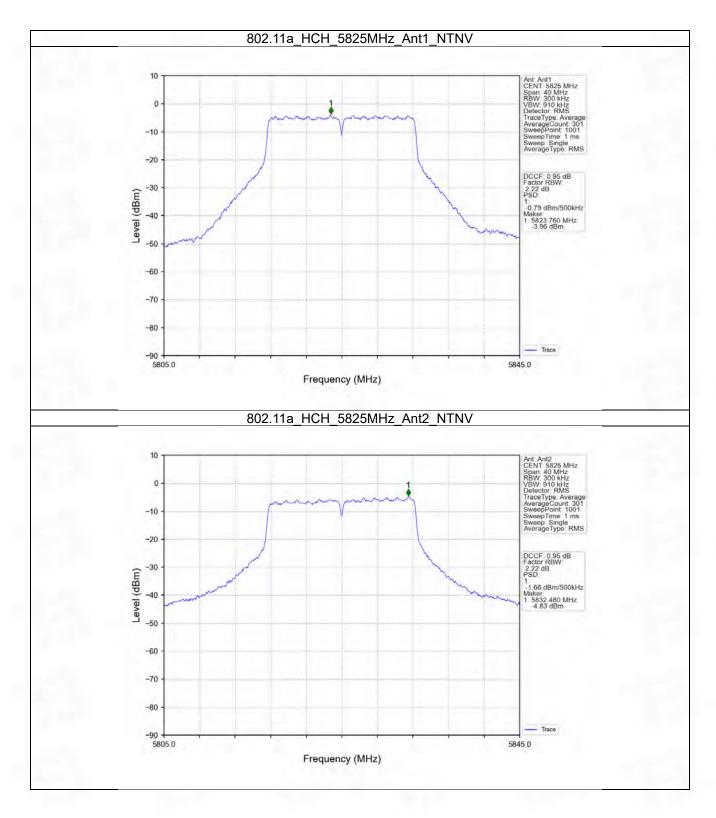
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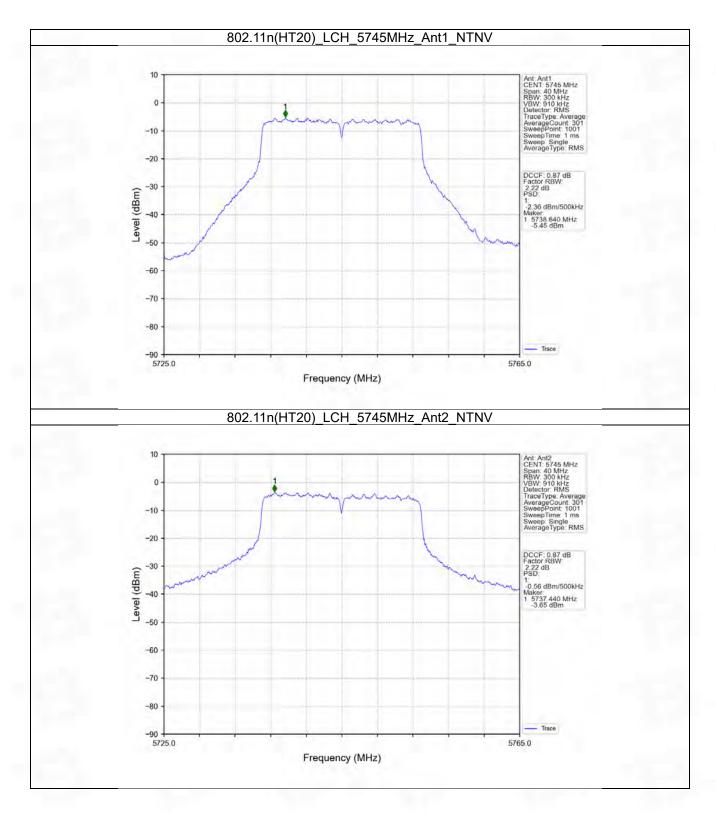
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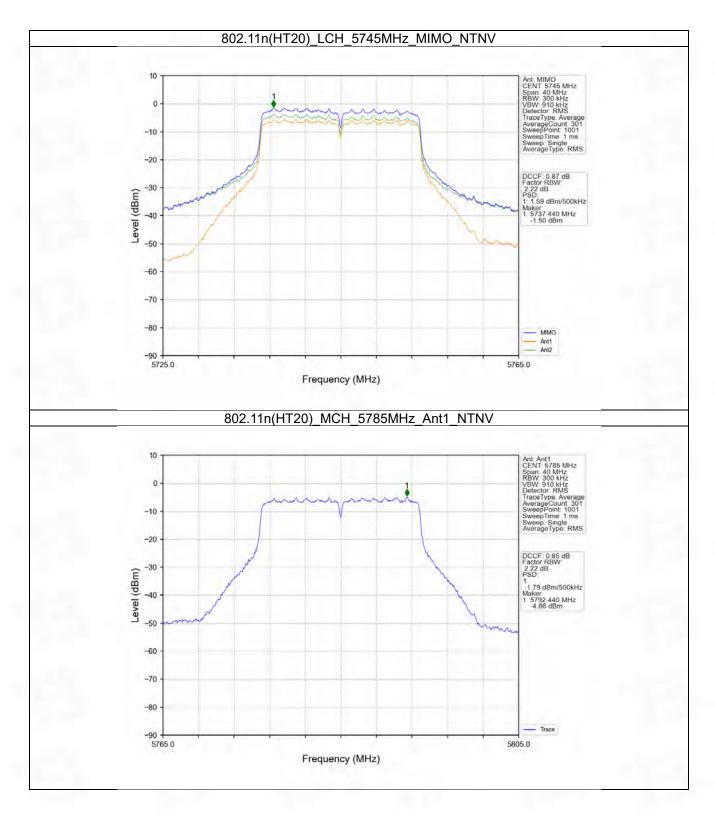


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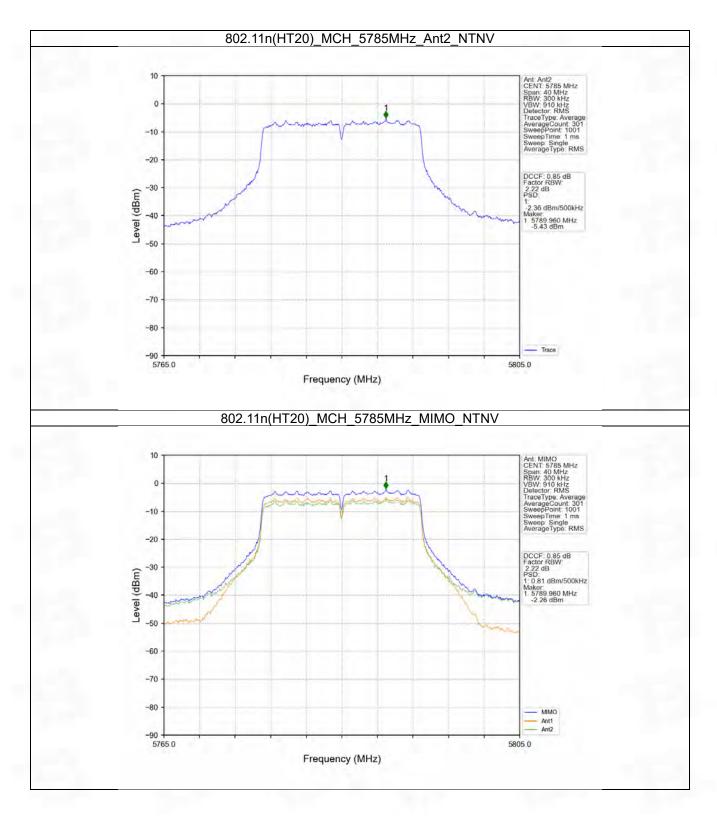




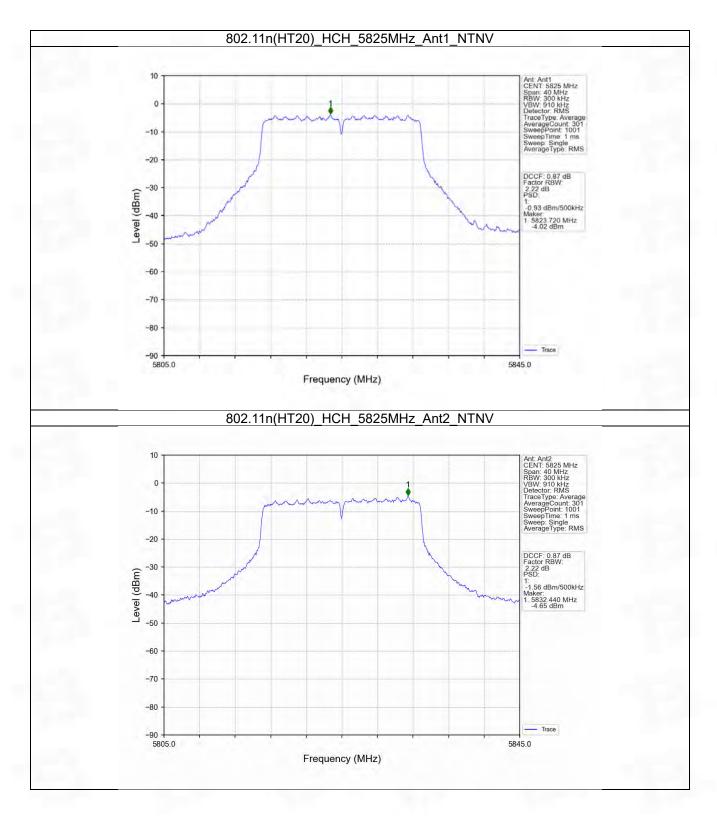






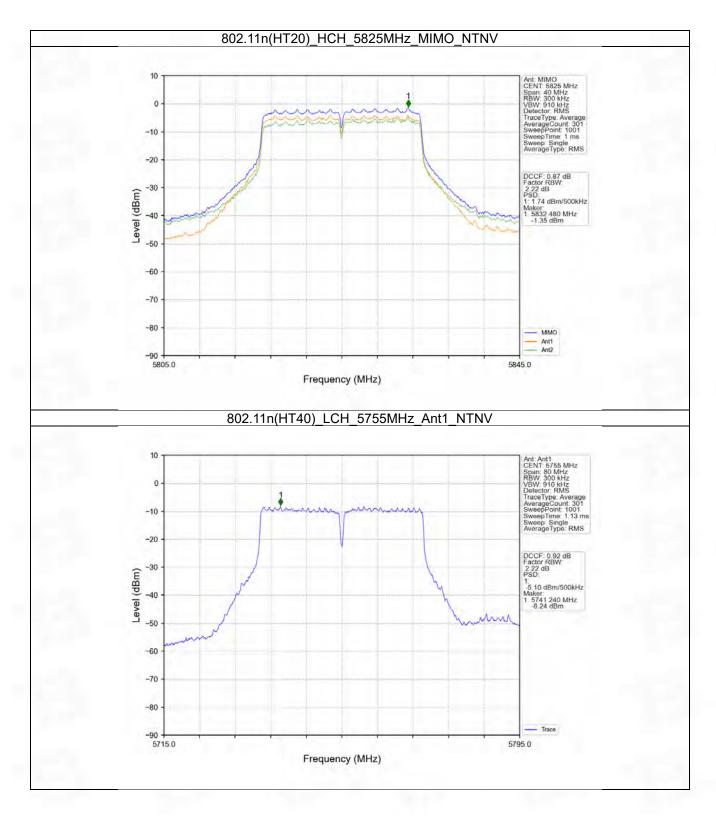






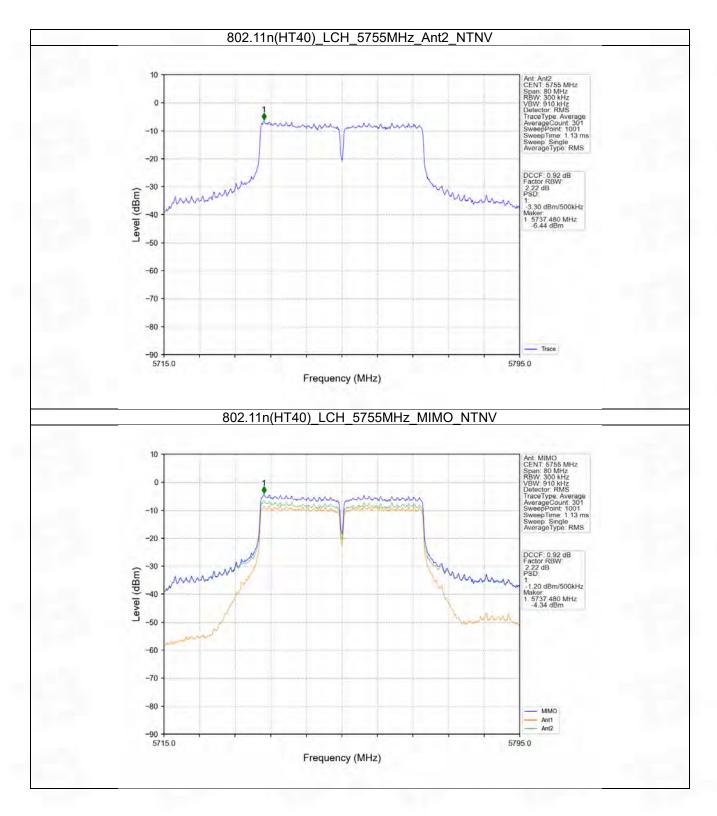
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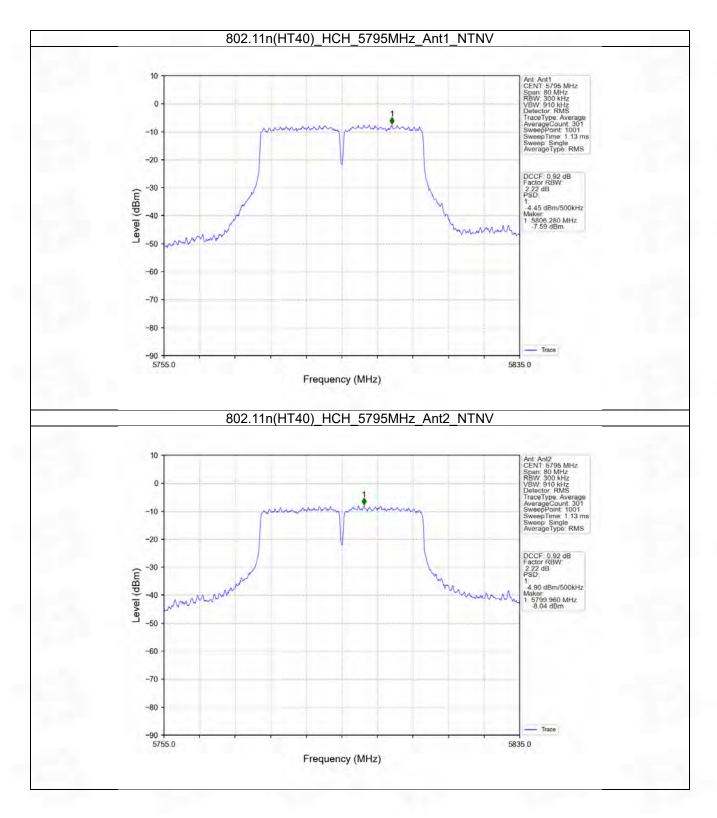
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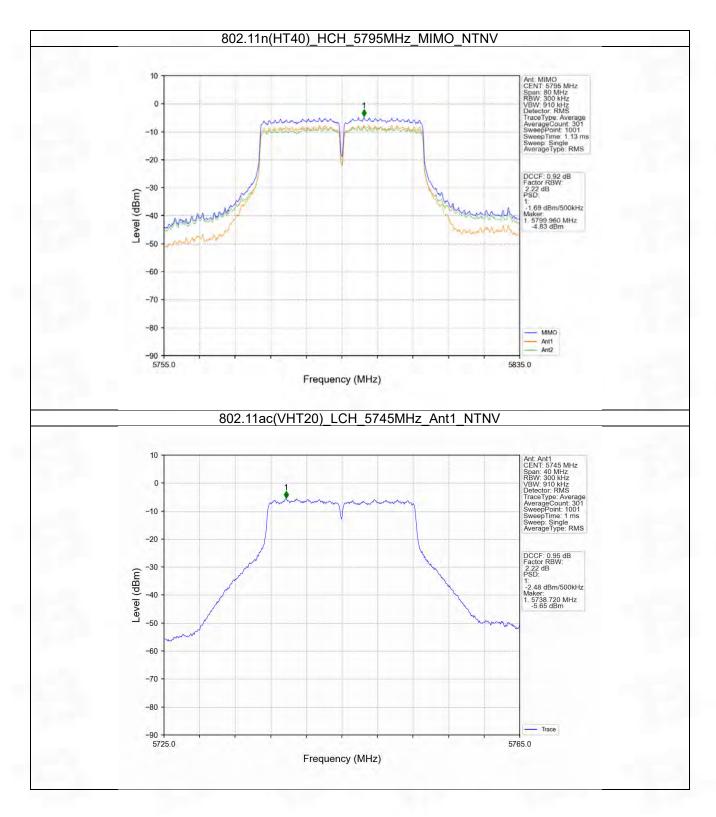
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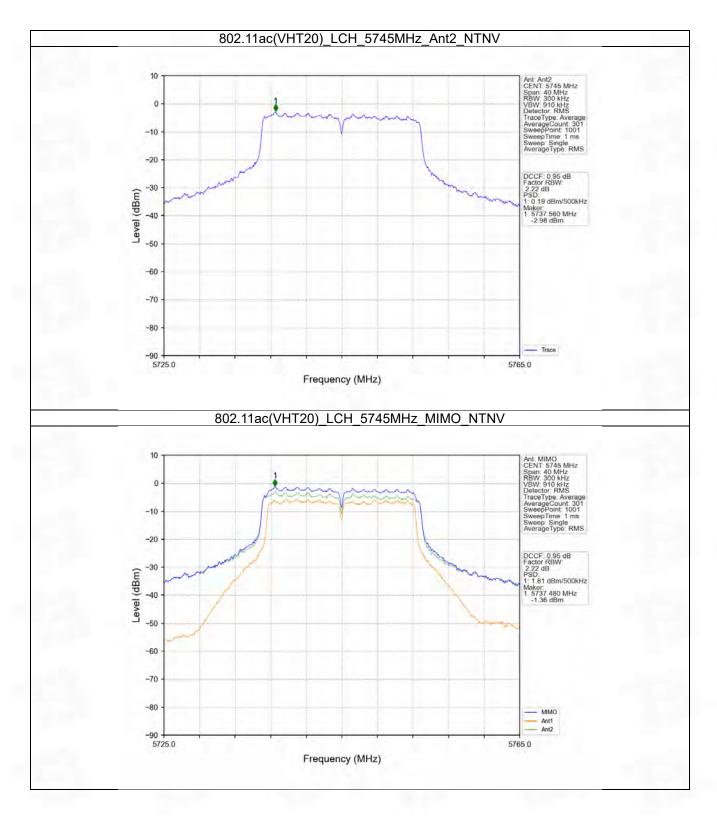
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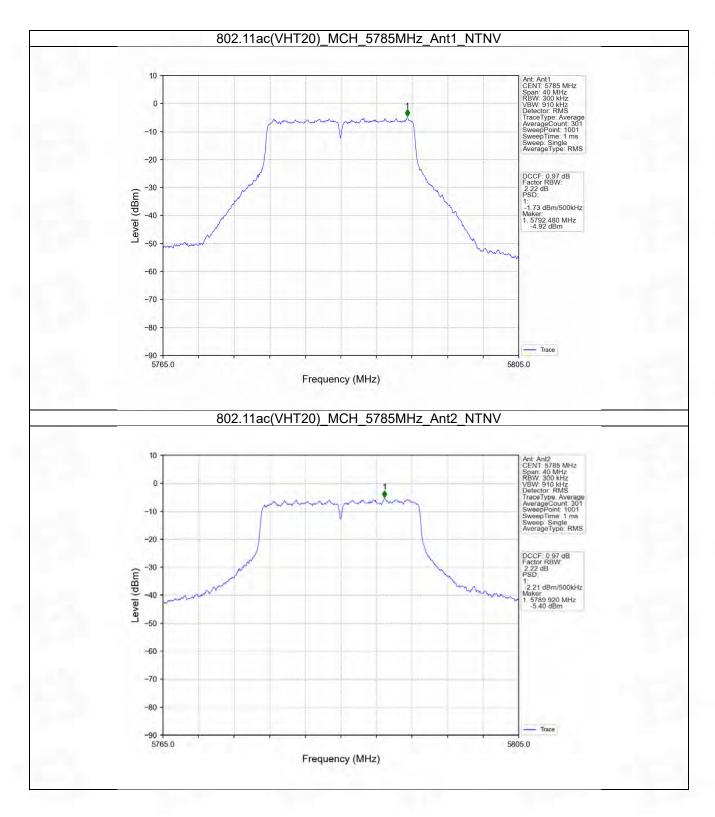
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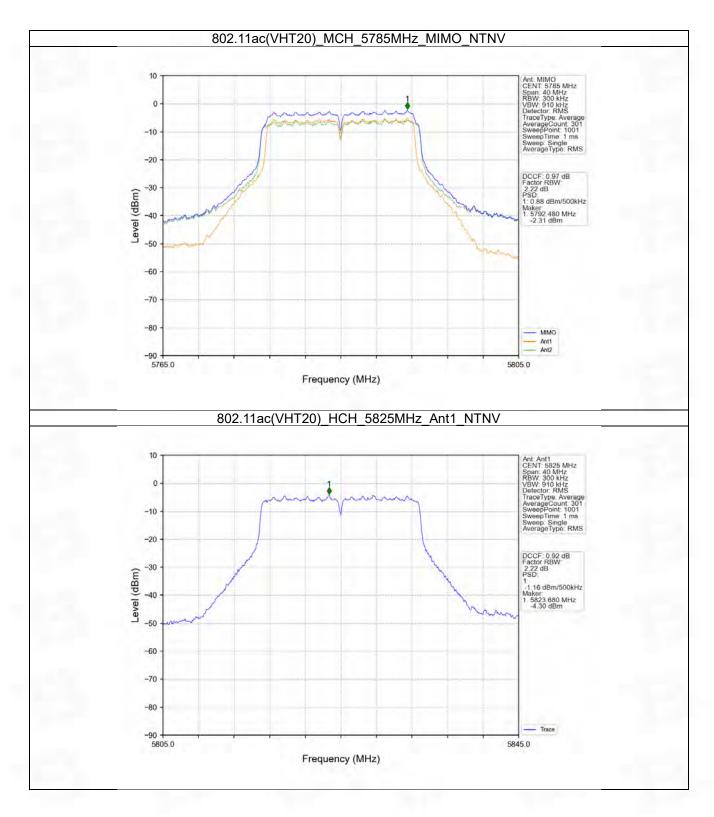


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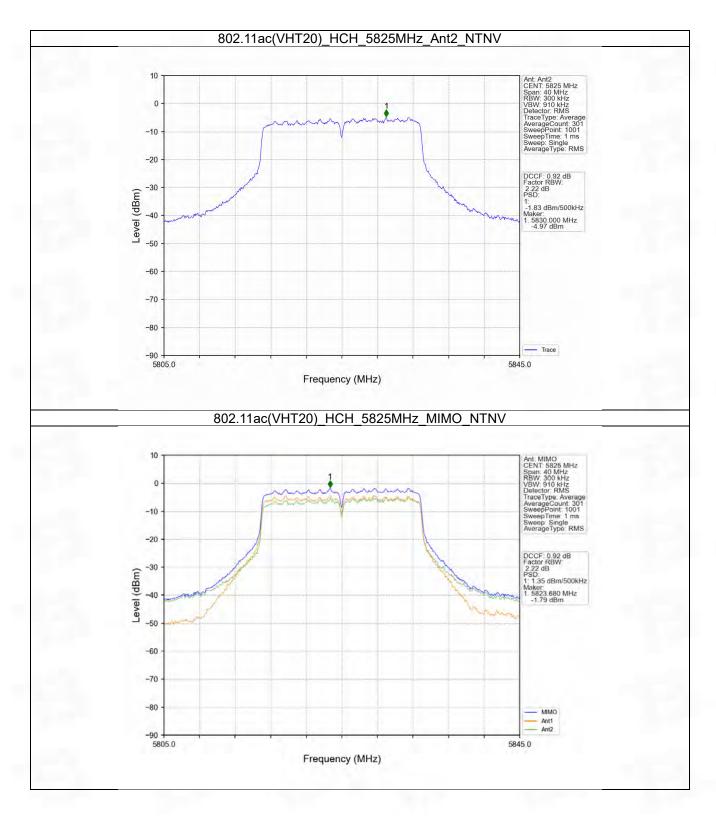






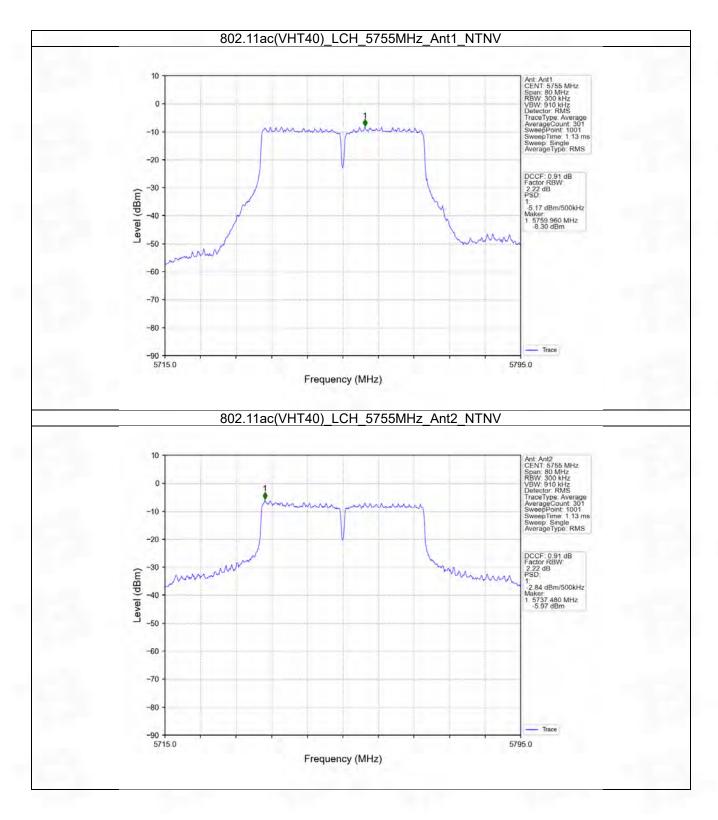




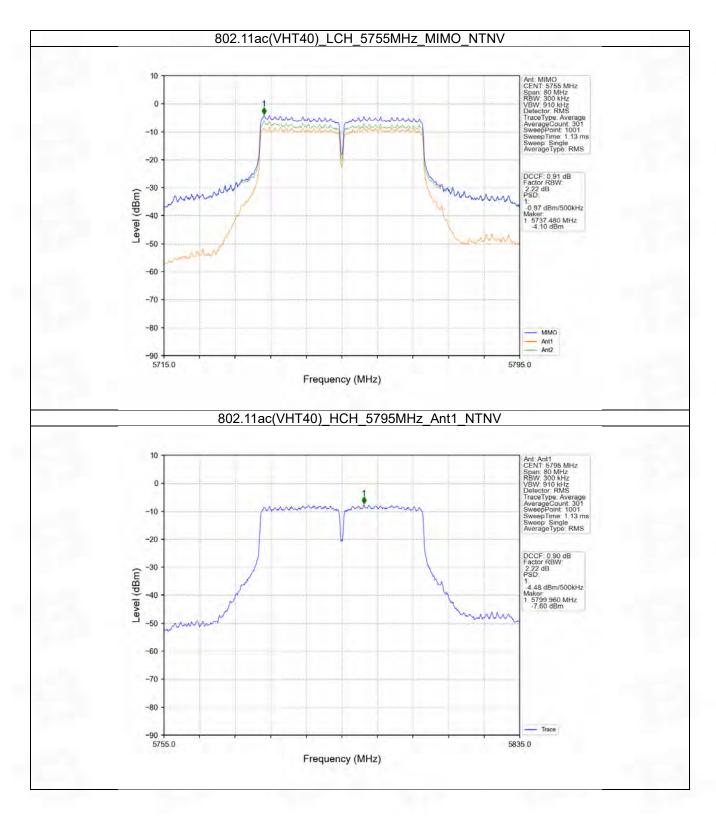


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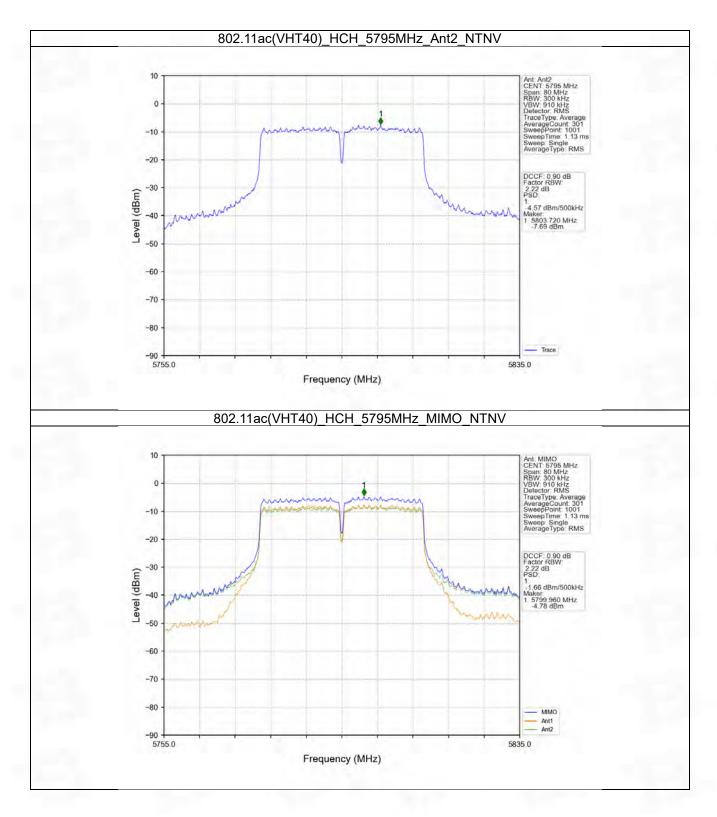






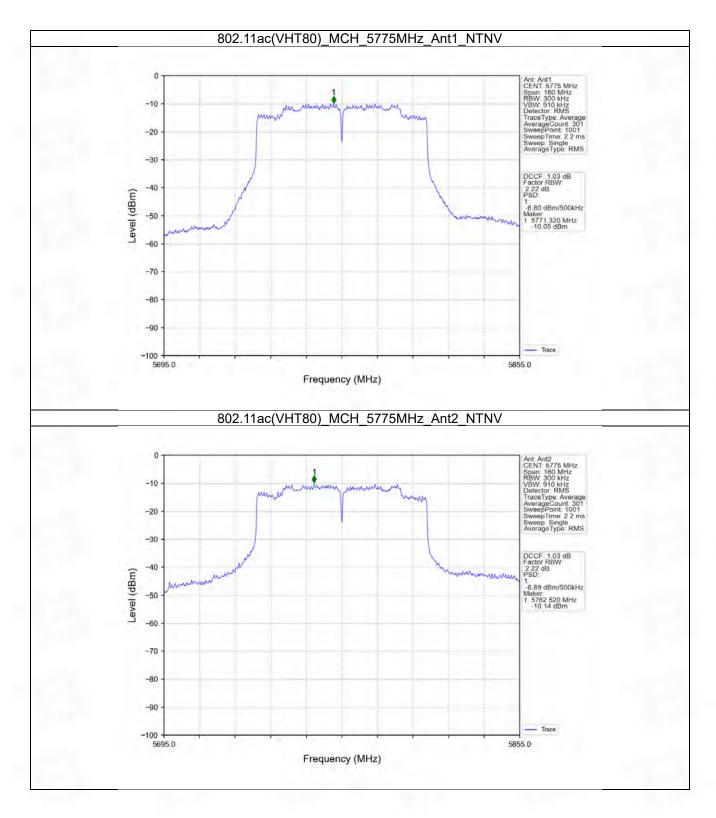
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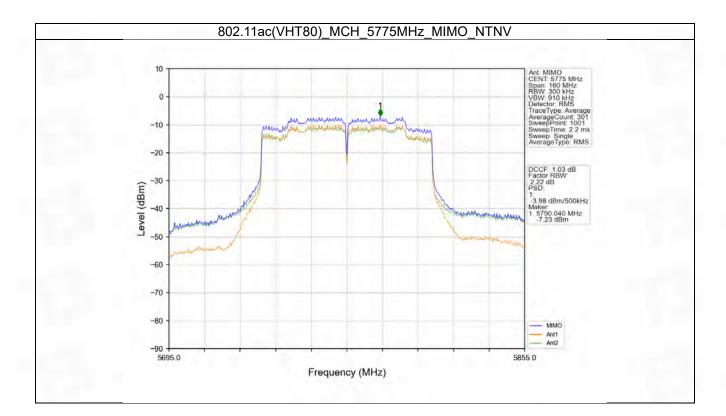


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5. Frequency Stability

5.1 Ant1

5.1.1 Test Result

	ТХ	Frequency	Temperature	Ant1 Voltage	Measured Frequency	Limit	
Mode	Туре	(MHz)	(°C)	(VAČ)	(MHz)	(MHz)	Verdict
				102	5744.940	5725 to 5850	Pass
			20	120	5745.000	5725 to 5850	Pass
				138	5744.900	5725 to 5850	Pass
			-30	120	5744.900	5725 to 5850	Pass
			-20	120	5745.000	5725 to 5850	Pass
		5745	-10	120	5744.940	5725 to 5850	Pass
			0	120	5744.940	5725 to 5850	Pass
			10	120	5744.980	5725 to 5850	Pass
			30	120	5744.960	5725 to 5850	Pass
			40	120	5744.960	5725 to 5850	Pass
			50	120	5744.980	5725 to 5850	Pass
				102	5784.980	5725 to 5850	Pass
			20	120	5784.960	5725 to 5850	Pass
				138	5784.920	5725 to 5850	Pass
			-30	120	5784.980	5725 to 5850	Pass
		O 5785	-20	120	5785.020	5725 to 5850	Pass
802.11a	SISO		-10	120	5785.000	5725 to 5850	Pass
	_		0	120	5785.000	5725 to 5850	Pass
			10	120	5785.000	5725 to 5850	Pass
			30	120	5784.980	5725 to 5850	Pass
			40	120	5784.960	5725 to 5850	Pass
			50	120	5784.920	5725 to 5850	Pass
				102	5824.960	5725 to 5850	Pass
			20	120	5824.960	5725 to 5850	Pass
				138	5824.940	5725 to 5850	Pass
		5825	-30	120	5825.000	5725 to 5850	Pass
			-20	120	5824.960	5725 to 5850	Pass
			-10	120	5824.960	5725 to 5850	Pass
			0	120	5824.960	5725 to 5850	Pass
			10	120	5824.980	5725 to 5850	Pass
			30	120	5824.900	5725 to 5850	Pass
			40	120	5824.980	5725 to 5850	Pass
			50	120	5824.980	5725 to 5850	Pass
				102	5744.980	5725 to 5850	Pass
			20	120	5744.880	5725 to 5850	Pass
				138	5744.980	5725 to 5850	Pass
802.11n		F7 4 F	-30	120	5744.940	5725 to 5850	Pass
(HT20)	MIMO	5745	-20	120	5744.960	5725 to 5850	Pass
. ,			-10	120	5744.960	5725 to 5850	Pass
			0	120	5744.960	5725 to 5850	Pass
			10	120	5744.940	5725 to 5850	Pass

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			30	120	5744.880	5725 to 5850	Pass
		F	40	120	5744.920	5725 to 5850	Pass
		-	50	120	5744.980	5725 to 5850	Pass
				102	5784.920	5725 to 5850	Pass
			20	120	5784.980	5725 to 5850	Pass
		-		138	5784.960	5725 to 5850	Pass
			-30	120	5784.980	5725 to 5850	Pass
			-20	120	5784.940	5725 to 5850	Pass
		5785	-10	120	5785.000	5725 to 5850	Pass
		0,00	0	120	5784.900	5725 to 5850	Pass
			10	120	5785.020	5725 to 5850	Pass
		-	30	120	5784.980	5725 to 5850	Pass
			40	120	5784.920	5725 to 5850	Pass
		-	50	120	5784.980	5725 to 5850	Pass
	-		50	102	5824.940	5725 to 5850	Pass
			20	120	5824.920	5725 to 5850	Pass
		5825	20	138	5824.920	5725 to 5850	Pass
		5025	-30	120	5825.020	5725 to 5850	Pass
			-30	120	5824.960	5725 to 5850	Pass
802.11a	SISO	5180	20	120	5180.000	5150 to 5250	Pass
802.11a 802.11n	3130	5160	20	102	5160.000	5150 10 5250	rass
(HT20)	MIMO	5825	-10	120	5824.940	5725 to 5850	Pass
802.11a	SISO	5180	20	120	5180.060	5150 to 5250	Pass
802.11n (HT20)	MIMO	5825	0	120	5824.940	5725 to 5850	Pass
802.11a	SISO	5180	20	138	5180.060	5150 to 5250	Pass
802.11n (HT20)	MIMO	5825	10	120	5824.880	5725 to 5850	Pass
802.11a	SISO	5180	-30	120	5179.980	5150 to 5250	Pass
802.11n			30	120	5824.940	5725 to 5850	Pass
(HT20)	MIMO	MO 5825	40	120	5824.980	5725 to 5850	Pass
(11120)			50	120	5824.960	5725 to 5850	Pass
				102	5755.000	5725 to 5850	Pass
			20	120	5755.000	5725 to 5850	Pass
				138	5754.960	5725 to 5850	Pass
			-30	120	5754.960	5725 to 5850	Pass
			-20	120	5755.000	5725 to 5850	Pass
		5755	-10	120	5754.960	5725 to 5850	Pass
			0	120	5754.960	5725 to 5850	Pass
			10	120	5755.000	5725 to 5850	Pass
			30	120	5754.960	5725 to 5850	Pass
802.11n			40	120	5754.920	5725 to 5850	Pass
(HT40)	MIMO		50	120	5754.960	5725 to 5850	Pass
(,				102	5795.040	5725 to 5850	Pass
			20	120	5795.000	5725 to 5850	Pass
			20	138	5794.960	5725 to 5850	Pass
			-30	120	5795.000	5725 to 5850	Pass
		5795	-20	120	5795.040	5725 to 5850	Pass
		0700	-20	120	5794.960	5725 to 5850	Pass
		ŀ	0	120	5795.000	5725 to 5850	Pass
			10	120	5794.960	5725 to 5850	Pass
			30	120			
000 11-	0100	5100			5795.000	5725 to 5850	Pass
802.11a	SISO	5180	-20	120	5179.920	5150 to 5250	Pass

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802.11n		5705	40	120	5794.960	5725 to 5850	Pass
(HT40)	MIMO	5795	50	120	5795.000	5725 to 5850	Pass
/			-10	120	5180.060	5150 to 5250	Pass
			0	120	5179.960	5150 to 5250	Pass
			10	120	5180.060	5150 to 5250	Pass
		5180	30	120	5179.960	5150 to 5250	Pass
			40	120	5180.020	5150 to 5250	Pass
1.000			50	120	5180.000	5150 to 5250	Pass
				102	5200.040	5150 to 5250	Pass
			20	120	5199.960	5150 to 5250	Pass
				138	5200.020	5150 to 5250	Pass
			-30	120	5200.000	5150 to 5250	Pass
			-20	120	5199.980	5150 to 5250	Pass
		5200	-10	120	5200.080	5150 to 5250	Pass
		0200	0	120	5199.960	5150 to 5250	Pass
			10	120	5199.960	5150 to 5250	Pass
802.11a	SISO		30	120	5199.960	5150 to 5250	Pass
			40	120	5199.940	5150 to 5250	Pass
			50	120	5199.960	5150 to 5250	Pass
	-		00	102	5239.940	5150 to 5250	Pass
			20	120	5239.980	5150 to 5250	Pass
			20	138	5239.980	5150 to 5250	Pass
		5240	-30	120	5239.960	5150 to 5250	Pass
			-20	120	5239.900	5150 to 5250	Pass
			-10	120	5239.960	5150 to 5250	Pass
			0	120	5239.940	5150 to 5250	Pass
			10	120	5239.940	5150 to 5250	Pass
		-	30	120	5239.940	5150 to 5250	Pass
			40	120	5240.000	5150 to 5250	Pass
			50	120	5240.000	5150 to 5250	Pass
			50	102	5179.960	5150 to 5250	Pass
			20	120	5179.900	5150 to 5250	Pass
			20	138	5180.060	5150 to 5250	Pass
			-30	120	5180.000	5150 to 5250	Pass
			-30 -20	120	5180.000	5150 to 5250	Pass
1		5180	-20	120	5180.020	5150 to 5250	Pass
		5160	-10	120	5179.960	5150 to 5250	
			10	120	5180.000		Pass
			30	120	5179.980	5150 to 5250 5150 to 5250	Pass
			40	120	5179.980		Pass
			50	120		5150 to 5250	Pass
802.11n	мімо		50	120	5179.980	5150 to 5250	Pass
(HT20)			20		5200.000	5150 to 5250	Pass
1.0			20	120	5199.940	5150 to 5250	Pass
			20	138	5200.000	5150 to 5250	Pass
		-	-30	120	5200.060	5150 to 5250	Pass
		5000	-20	120	5199.940	5150 to 5250	Pass
		5200	-10	120	5200.000	5150 to 5250	Pass
			0	120	5199.980	5150 to 5250	Pass
			10	120	5199.960	5150 to 5250	Pass
			30	120	5199.960	5150 to 5250	Pass
			40	120	5200.040	5150 to 5250	Pass
		5040	50	120	5200.040	5150 to 5250	Pass
		5240	20	102	5239.900	5150 to 5250	Pass

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				120	5240.000	5150 to 5250	Pass
				138	5239.960	5150 to 5250	Pass
			-30	120	5240.040	5150 to 5250	Pass
			-20	120	5239.980	5150 to 5250	Pass
			-10	120	5239.880	5150 to 5250	Pass
			0	120	5239.900	5150 to 5250	Pass
			10	120	5240.020	5150 to 5250	Pass
			30	120	5239.960	5150 to 5250	Pass
			40	120	5239.980	5150 to 5250	Pass
		-	50	120	5240.000	5150 to 5250	Pass
				102	5190.000	5150 to 5250	Pass
			20	120	5190.040	5150 to 5250	Pass
				138	5190.000	5150 to 5250	Pass
		-	-30	120	5190.000	5150 to 5250	Pass
		-	-20	120	5190.000	5150 to 5250	Pass
		5190	-10	120	5190.000	5150 to 5250	Pass
			0	120	5190.000	5150 to 5250	Pass
			10	120	5190.000	5150 to 5250	Pass
			30	120	5190.040	5150 to 5250	Pass
		-	40	120	5190.000	5150 to 5250	Pass
802.11n		-	50	120	5190.000	5150 to 5250	Pass
(HT40)	MIMO -		00	102	5230.000	5150 to 5250	Pass
(11140)		_	20	120	5230.000	5150 to 5250	Pass
			20	138	5229.960	5150 to 5250	Pass
			-30	120	5230.000	5150 to 5250	Pass
			-30	120	5230.000	5150 to 5250	Pass
		5230	-20	120	5230.040	5150 to 5250	Pass
		5230	0	120	5230.040		Pass
			10	120	5230.000	5150 to 5250	Pass
				120		5150 to 5250	
			30		5230.040	5150 to 5250	Pass
			40	120	5230.000	5150 to 5250	Pass
_			50	120	5230.000	5150 to 5250	Pass
			00	102	5744.920	5725 to 5850	Pass
			20	120	5744.940	5725 to 5850	Pass
			00	138	5744.940	5725 to 5850	Pass
		_	-30	120	5744.940	5725 to 5850	Pass
		5745	-20	120	5744.960	5725 to 5850	Pass
1.1		5745	-10	120	5744.900	5725 to 5850	Pass
		-	0	120	5744.940	5725 to 5850	Pass
		F	10	120	5744.940	5725 to 5850	Pass
		L L	30	120	5744.920	5725 to 5850	Pass
802.11ac			40	120	5744.980	5725 to 5850	Pass
(VHT20)	MIMO		50	120	5744.900	5725 to 5850	Pass
(102	5785.000	5725 to 5850	Pass
			20	120	5784.980	5725 to 5850	Pass
				138	5784.960	5725 to 5850	Pass
1.0			-30	120	5784.960	5725 to 5850	Pass
		5785	-20	120	5784.940	5725 to 5850	Pass
		5705	-10	120	5785.020	5725 to 5850	Pass
		Γ	0	120	5784.980	5725 to 5850	Pass
			10	120	5784.920	5725 to 5850	Pass
			30	120	5785.000	5725 to 5850	Pass
			40	120	5784.960	5725 to 5850	Pass

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			50	120	5784.980	5725 to 5850	Pass	
			50	102	5824.940	5725 to 5850	Pass	
		5825	20	120	5824.920	5725 to 5850	Pass	
			20	138	5824.940	5725 to 5850	Pass	
			-30	120	5824.940	5725 to 5850	Pass	
			-30	120	5824.920	5725 to 5850	Pass	
				120				
			-10		5825.000	5725 to 5850	Pass	
			0	120	5824.960	5725 to 5850	Pass	
			10	120	5824.960	5725 to 5850	Pass	
			30	120	5824.960	5725 to 5850	Pass	
		100	40	120	5824.960	5725 to 5850	Pass	
	-		50	120	5824.960	5725 to 5850	Pass	
			00	102	5180.000	5150 to 5250	Pass	
			20	120	5180.060	5150 to 5250	Pass	
				138	5180.000	5150 to 5250	Pass	
			-30	120	5180.080	5150 to 5250	Pass	
		F 100	-20	120	5179.980	5150 to 5250	Pass	
		5180	-10	120	5180.020	5150 to 5250	Pass	
			0	120	5179.900	5150 to 5250	Pass	
			10	120	5179.960	5150 to 5250	Pass	
			30	120	5179.980	5150 to 5250	Pass	
			40	120	5179.960	5150 to 5250	Pass	
			50	120	5179.900	5150 to 5250	Pass	
		5200			102	5199.980	5150 to 5250	Pass
			20	120	5199.940	5150 to 5250	Pass	
				138	5199.920	5150 to 5250	Pass	
			-30	120	5199.980	5150 to 5250	Pass	
			-20	120	5200.000	5150 to 5250	Pass	
			-10	120	5199.960	5150 to 5250	Pass	
			0	120	5200.000	5150 to 5250	Pass	
			10	120	5199.900	5150 to 5250	Pass	
			30	120	5199.980	5150 to 5250	Pass	
			40	120	5200.000	5150 to 5250	Pass	
			50	120	5200.020	5150 to 5250	Pass	
		5240	20	102	5239.920	5150 to 5250	Pass	
802.11ac		57E5	20	102	5754.920	5725 to 5850	Pass	
(VHT40)	MIMO	5755	20	120	5755.000	5725 to 5850	Pass	
802.11ac (VHT20)	MIMO	5240	20	120	5239.960	5150 to 5250	Pass	
802.11ac (VHT40)	MIMO	5755	20	138	5755.000	5725 to 5850	Pass	
802.11ac (VHT20)	MIMO	5240	20	138	5239.960	5150 to 5250	Pass	
802.11ac (VHT40)	MIMO	5755	-30	120	5755.000	5725 to 5850	Pass	
802.11ac		5240	-30	120	5240.040	5150 to 5250	Pass	
(VHT20)	MIMO	5240	-20	120	5239.980	5150 to 5250	Pass	
802.11ac		F7FF	-20	120	5754.960	5725 to 5850	Pass	
(VHT40)	MIMO	5755	-10	120	5755.000	5725 to 5850	Pass	
802.11ac (VHT20)	MIMO	5240	-10	120	5239.960	5150 to 5250	Pass	
802.11ac (VHT40)	MIMO	5755	0	120	5754.920	5725 to 5850	Pass	

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802.11ac			0	120	5239.960	5150 to 5250	Pass	
(VHT20)	MIMO	5240	10	120	5240.000	5150 to 5250	Pass	
802.11ac			10	120	5755.000	5725 to 5850	Pass	
(VHT40)	MIMO	5755	30	120	5755.040	5725 to 5850	Pass	
802.11ac			50	120	5755.040	3723 10 3030	1 033	
(VHT20)	MIMO	5240	30	120	5239.960	5150 to 5250	Pass	
802.11ac (VHT40)	MIMO	5755	40	120	5754.960	5725 to 5850	Pass	
802.11ac			40	120	5240.000	5150 to 5250	Pass	
(VHT20)	MIMO	5240	50	120	5239.900	5150 to 5250	Pass	
(1111=0)		5755	50	120	5754.880	5725 to 5850	Pass	
	-			102	5795.000	5725 to 5850	Pass	
		5795	20	120	5795.080	5725 to 5850	Pass	
	-	5190	20	102	5190.040	5150 to 5250	Pass	
	-	5795	20	138	5795.040	5725 to 5850	Pass	
		5190	20	120	5189.960	5150 to 5250	Pass	
		5795	-30	120	5795.000	5725 to 5850	Pass	
	_		20	138	5190.000	5150 to 5250	Pass	
		5190	-30	120	5189.960	5150 to 5250	Pass	
	-	5795	-30	120	5795.000	5725 to 5850	Pass	
	-	5190	-20	120	5190.000	5150 to 5250	Pass	
		5190	-20	120	5795.000	5725 to 5850	Pass	
		5795		120	5795.000			
	-	5190	0		5190.000	5725 to 5850	Pass	
	мімо		-10	120		5150 to 5250	Pass	
		5795	10	120	5795.000	5725 to 5850	Pass	
		5190	0	120	5190.000	5150 to 5250	Pass	
802.11ac		5795	30	120	5794.920	5725 to 5850	Pass	
(VHT40)		5190	10	120	5190.000	5150 to 5250	Pass	
	-		30	120	5190.000	5150 to 5250	Pass	
		5795	40	120	5794.960	5725 to 5850	Pass	
				50	120	5795.040	5725 to 5850	Pass
			5190	40	120	5189.960	5150 to 5250	Pass
	_		50	120	5190.080	5150 to 5250	Pass	
				102	5230.000	5150 to 5250	Pass	
					20	120	5230.000	5150 to 5250
				138	5230.040	5150 to 5250	Pass	
			-30	120	5230.000	5150 to 5250	Pass	
			-20	120	5230.000	5150 to 5250	Pass	
		5230	-10	120	5230.000	5150 to 5250	Pass	
				0	120	5230.000	5150 to 5250	Pass
			10	120	5230.000	5150 to 5250	Pass	
			30	120	5230.000	5150 to 5250	Pass	
			40	120	5230.000	5150 to 5250	Pass	
			50	120	5230.000	5150 to 5250	Pass	
		5775	20	102	5774.925	5725 to 5850	Pass	
		5210	20	102	5210.000	5150 to 5250	Pass	
		5210	20	120	5209.925	5150 to 5250	Pass	
000.44		5775	20	120	5774.925	5725 to 5850	Pass	
802.11ac	MIMO	5210	20	138	5209.925	5150 to 5250	Pass	
(VHT80)		5775	20	138	5774.925	5725 to 5850	Pass	
		5210	-30	120	5209.925	5150 to 5250	Pass	
		5775	-30	120	5774.925	5725 to 5850	Pass	

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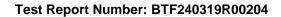
F77F	-20	120	5774.925	5725 to 5850	Pass
5775	-10	120	5774.925	5725 to 5850	Pass
5210	-10	120	5210.000	5150 to 5250	Pass
5775	0	120	5775.000	5725 to 5850	Pass
5210	0	120	5209.925	5150 to 5250	Pass
5210	10	120	5209.925	5150 to 5250	Pass
5775	10	120	5774.925	5725 to 5850	Pass
5210	30	120	5210.000	5150 to 5250	Pass
5775	30	120	5774.925	5725 to 5850	Pass
5210	40	120	5210.000	5150 to 5250	Pass
5775	40	120	5774.925	5725 to 5850	Pass
5175	50	120	5775.000	5725 to 5850	Pass
5210	50	120	5209.925	5150 to 5250	Pass

6. Form731

6.1 Form731

6.1.1 Test Result

Lower Freq (MHz)	High Freq (MHz)	MAX Power (W)	MAX Power (dBm)
5745	5825	0.0356	15.52
5755	5795	0.0363	15.60
5180	5240	0.0272	14.34
5190	5230	0.0290	14.63
5775	5775	0.0352	15.47







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