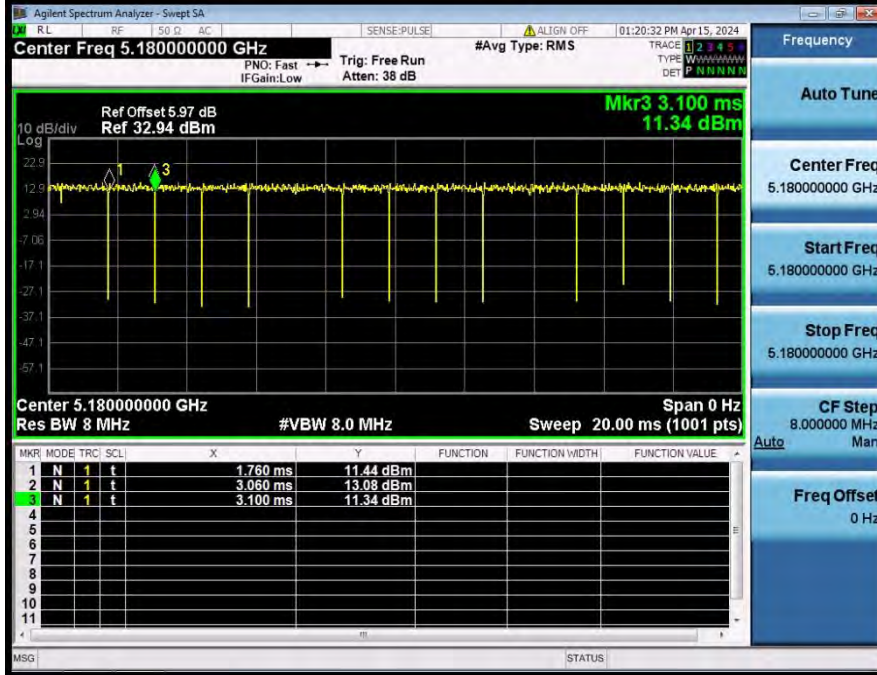
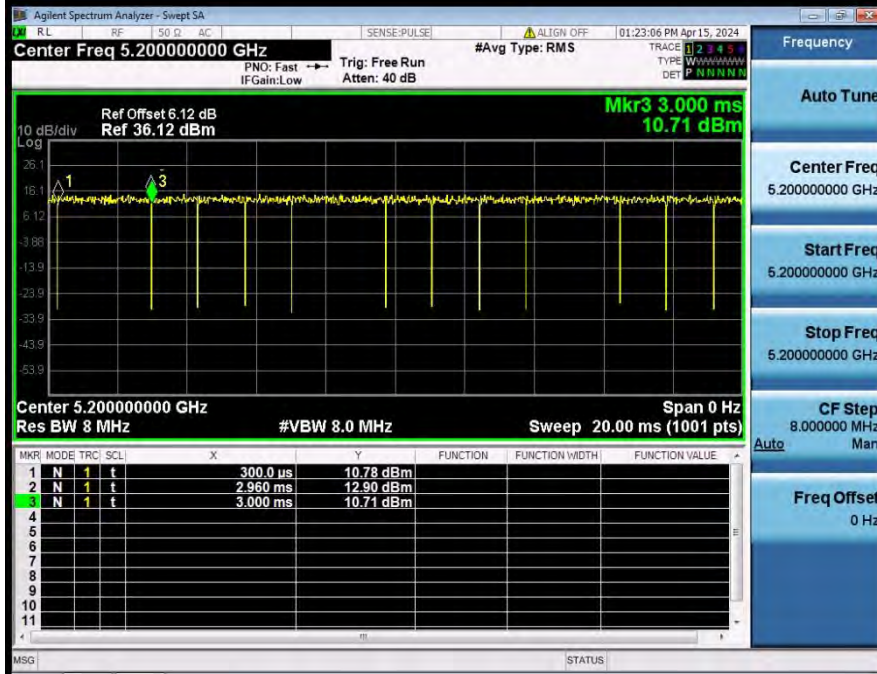


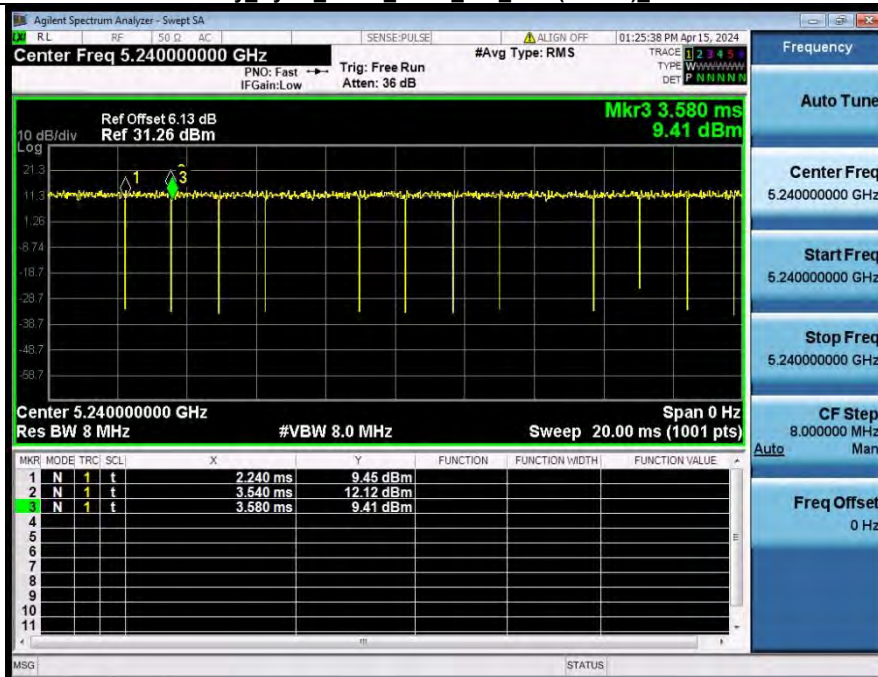
Duty_Cycle_HVNT_ANT1_802_11ac(VHT20)_5180



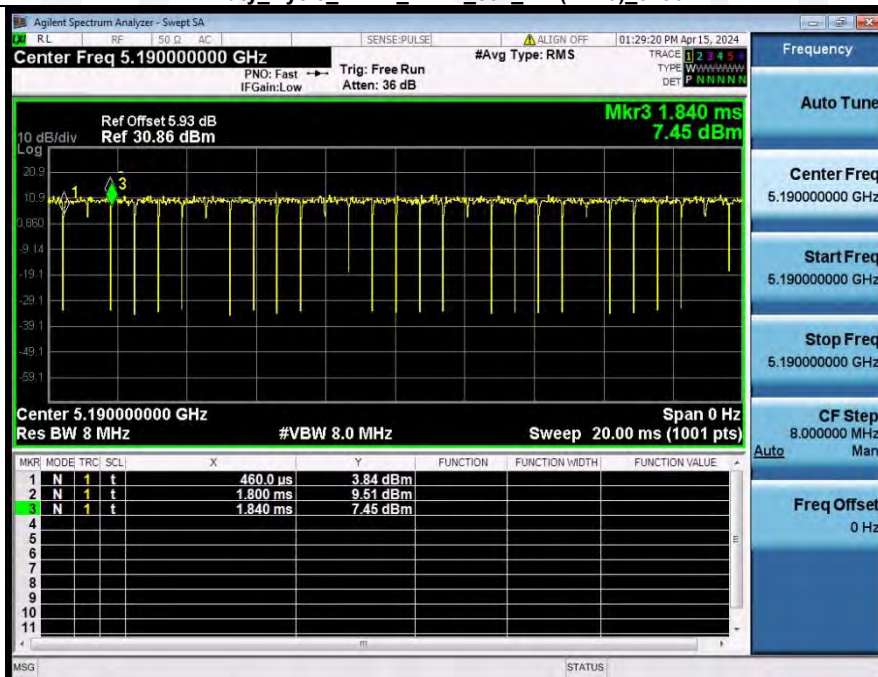
Duty_Cycle_HVNT_ANT1_802_11ac(VHT20)_5200



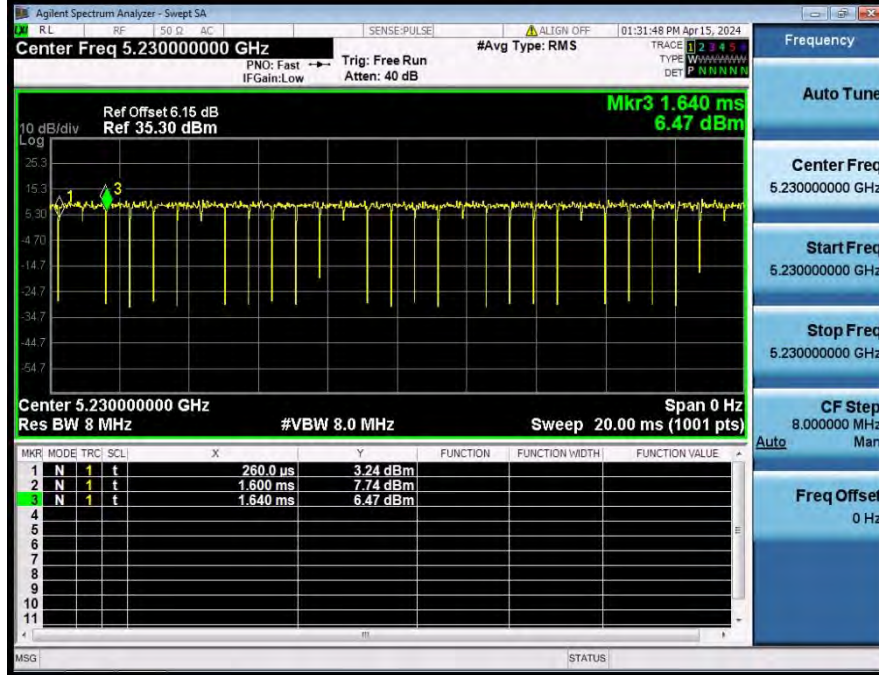
Duty_Cycle_HVNT_ANT1_802_11ac(VHT20)_5240



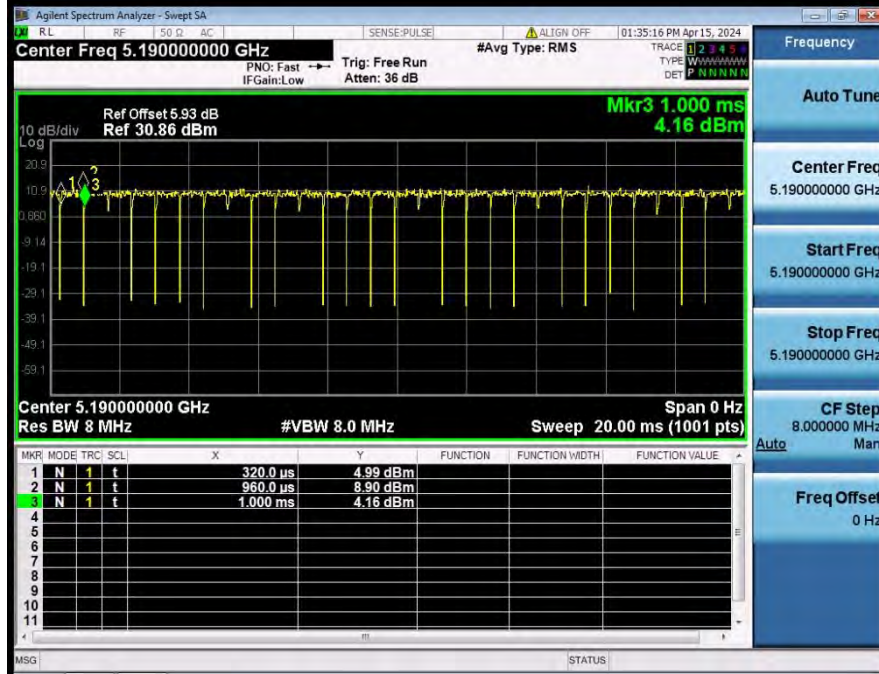
Duty_Cycle_HVNT_ANT1_802_11n(HT40)_5190



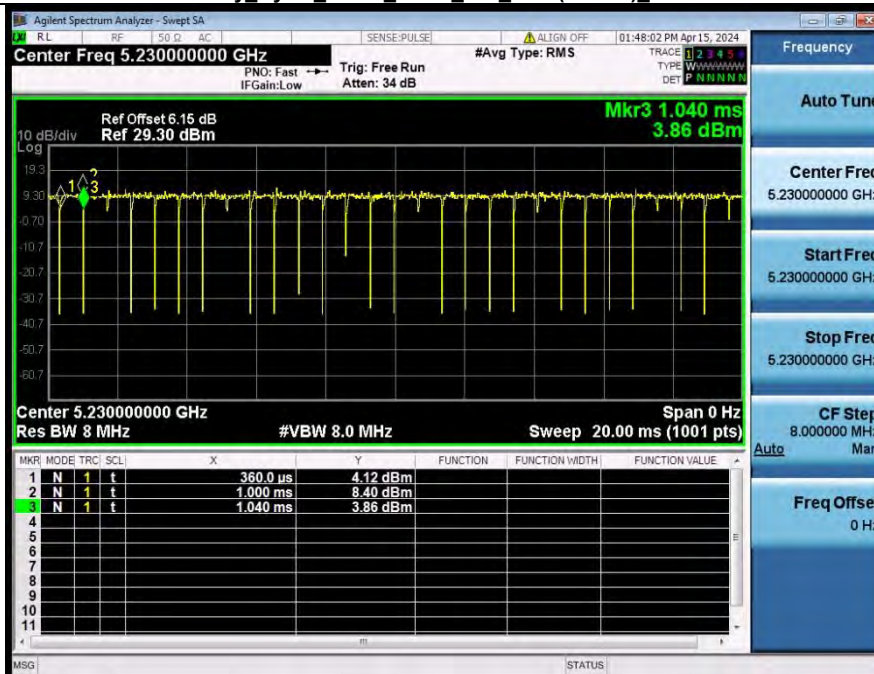
Duty Cycle HVNT_ANT1_802_11n(HT40)_5230



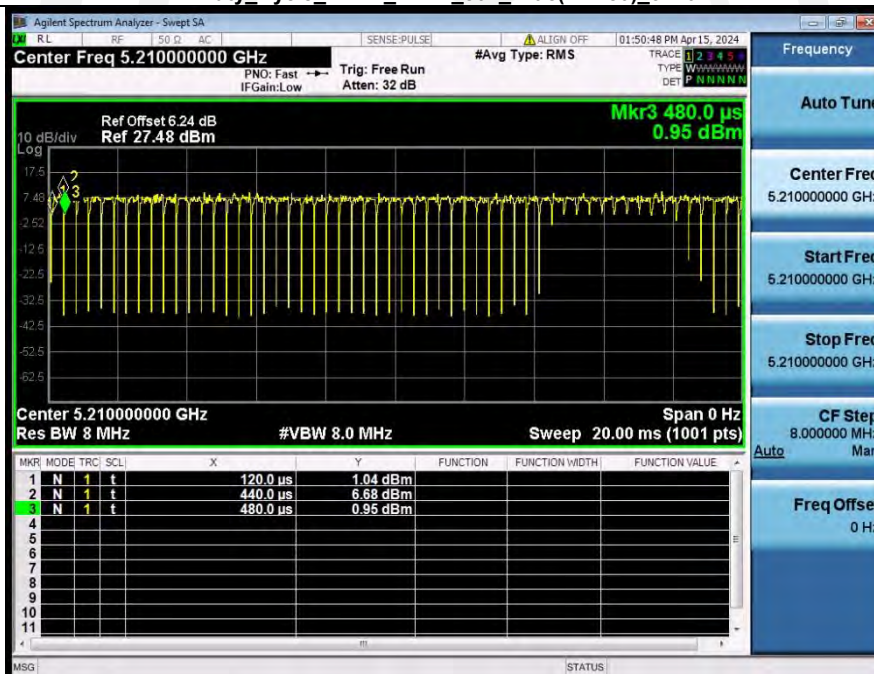
Duty Cycle HVNT_ANT1_802_11ac(VHT40)_5190



Duty_Cycle_HVNT_ANT1_802_11ac(VHT40)_5230



Duty_Cycle_HVNT_ANT1_802_11ac(VHT80)_5210

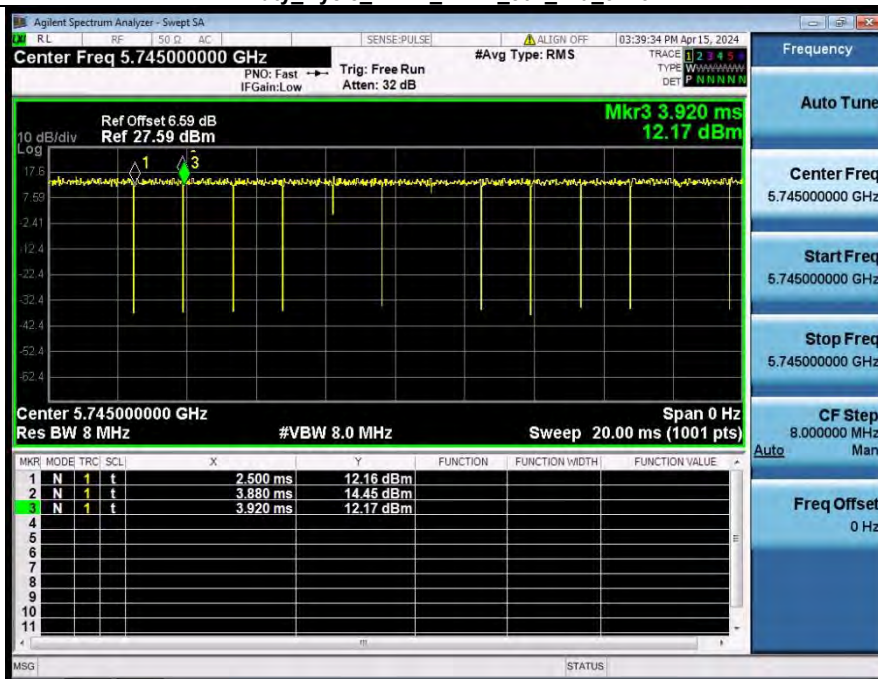


Band 4 (5725 – 5850 MHz)

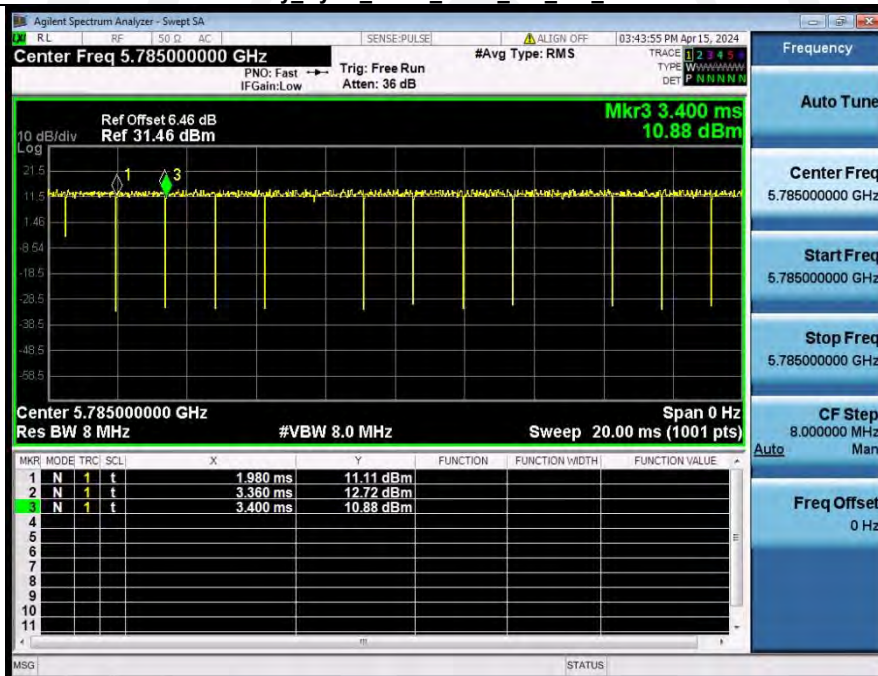
Condition	Antenna	Modulation	Frequency (MHz)	Conducted Power(dBm)	Duty factor(dB)	Total Power(dBm)	limit(dBm)	Result
NVNT	ANT1	802.11a	5745.00	9.05	0.12	9.17	30	Pass
NVNT	ANT1	802.11a	5785.00	7.60	0.12	7.72	30	Pass
NVNT	ANT1	802.11a	5825.00	8.14	0.12	8.26	30	Pass
NVNT	ANT1	802.11n(HT20)	5745.00	8.85	0.13	8.98	30	Pass
NVNT	ANT1	802.11n(HT20)	5785.00	7.42	0.13	7.55	30	Pass
NVNT	ANT1	802.11n(HT20)	5825.00	8.04	0.00	8.04	30	Pass
NVNT	ANT1	802.11ac(VHT20)	5745.00	8.94	0.13	9.07	30	Pass
NVNT	ANT1	802.11ac(VHT20)	5785.00	7.46	0.13	7.59	30	Pass
NVNT	ANT1	802.11ac(VHT20)	5825.00	8.17	0.00	8.17	30	Pass
NVNT	ANT1	802.11n(HT40)	5755.00	8.34	0.26	8.60	30	Pass
NVNT	ANT1	802.11n(HT40)	5795.00	7.69	0.26	7.95	30	Pass
NVNT	ANT1	802.11ac(VHT40)	5755.00	8.41	0.26	8.67	30	Pass
NVNT	ANT1	802.11ac(VHT40)	5795.00	7.73	0.26	7.99	30	Pass
NVNT	ANT1	802.11ac(VHT80)	5775.00	7.61	0.51	8.12	30	Pass

Condition	Antenna	Modulation	Frequency (MHz)	Duty cycle(%)	Duty_factor
NVNT	ANT1	802.11a	5745.00	97.18	0.12
NVNT	ANT1	802.11a	5785.00	97.18	0.12
NVNT	ANT1	802.11a	5825.00	97.18	0.12
NVNT	ANT1	802.11n(HT20)	5745.00	97.01	0.13
NVNT	ANT1	802.11n(HT20)	5785.00	97.01	0.13
NVNT	ANT1	802.11n(HT20)	5825.00	98.50	0.00
NVNT	ANT1	802.11ac(VHT20)	5745.00	97.01	0.13
NVNT	ANT1	802.11ac(VHT20)	5785.00	97.01	0.13
NVNT	ANT1	802.11ac(VHT20)	5825.00	98.52	0.00
NVNT	ANT1	802.11n(HT40)	5755.00	94.12	0.26
NVNT	ANT1	802.11n(HT40)	5795.00	94.12	0.26
NVNT	ANT1	802.11ac(VHT40)	5755.00	94.12	0.26
NVNT	ANT1	802.11ac(VHT40)	5795.00	94.12	0.26
NVNT	ANT1	802.11ac(VHT80)	5775.00	88.89	0.51

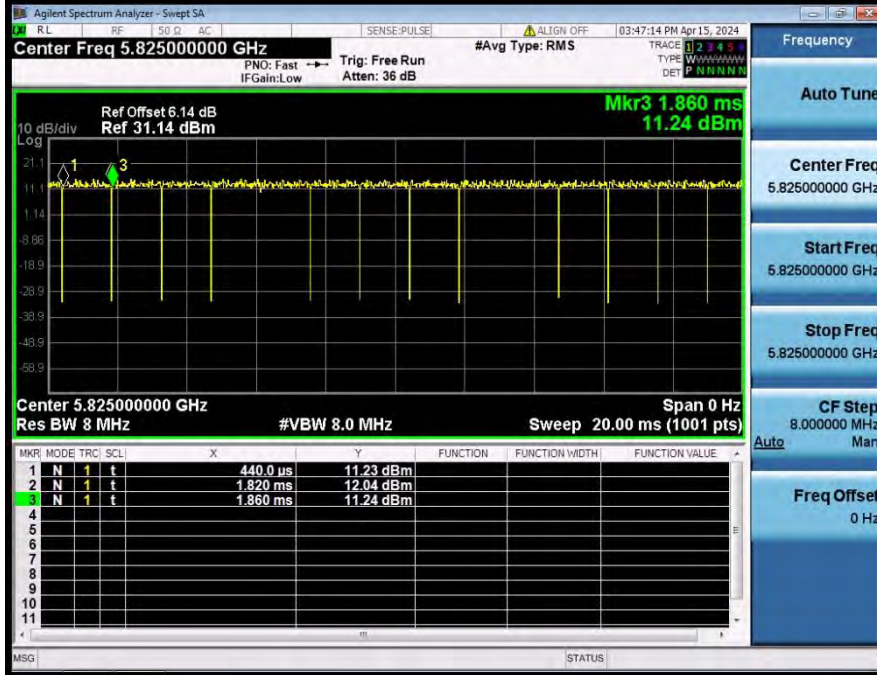
Duty Cycle NVNT_ANT1_802_11a_5745



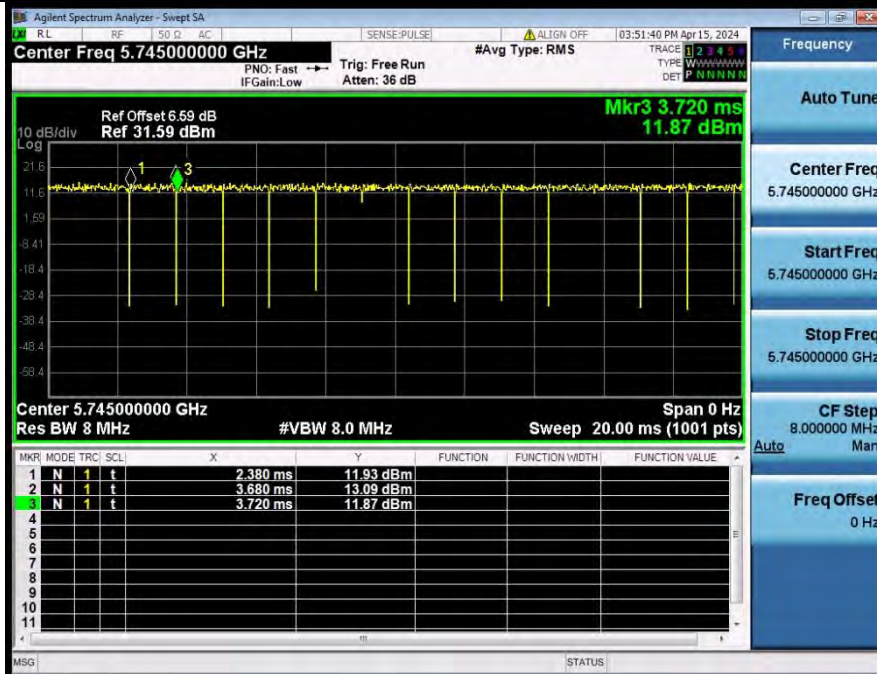
Duty Cycle NVNT_ANT1_802_11a_5785



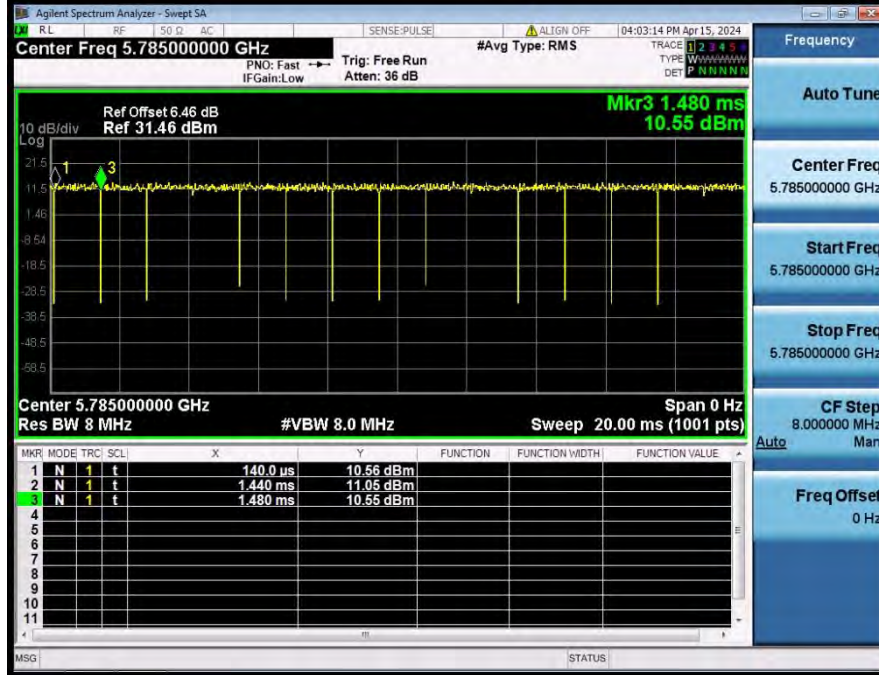
Duty Cycle NVNT_ANT1_802_11a_5825



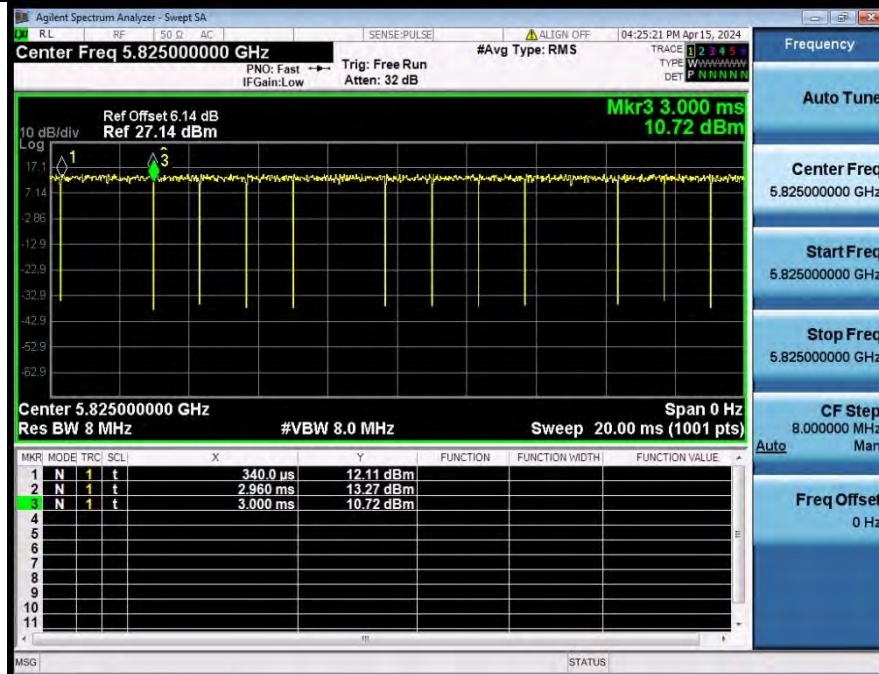
Duty Cycle NVNT_ANT1_802_11n(HT20)_5745



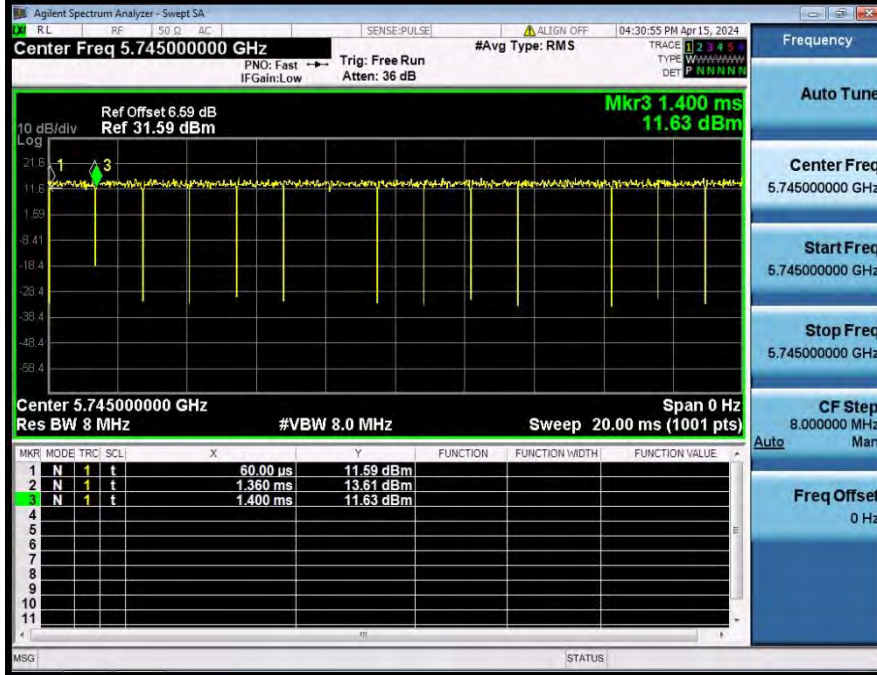
Duty Cycle NVNT_ANT1_802_11n(HT20)_5785



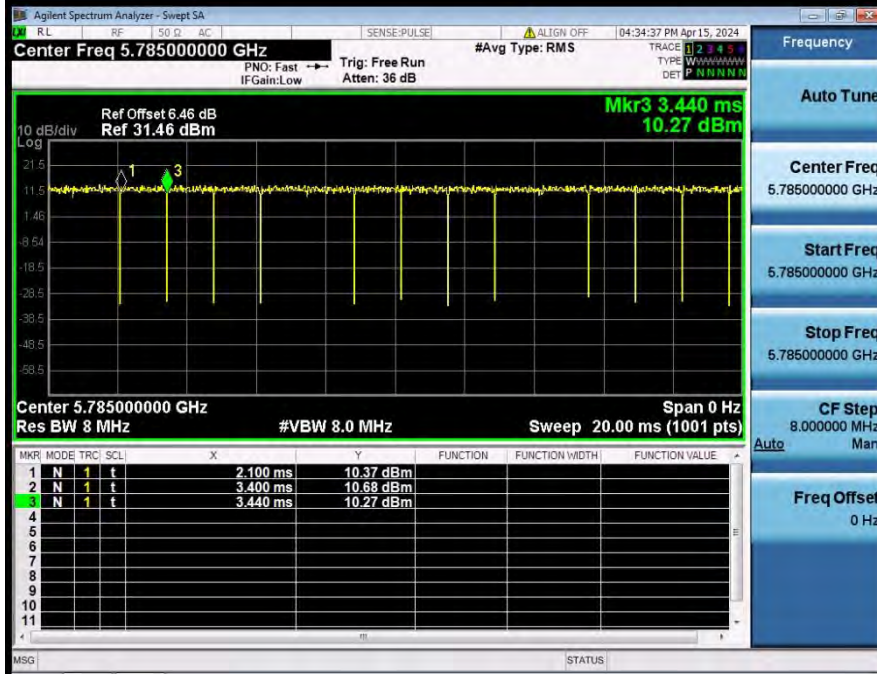
Duty Cycle NVNT_ANT1_802_11n(HT20)_5825



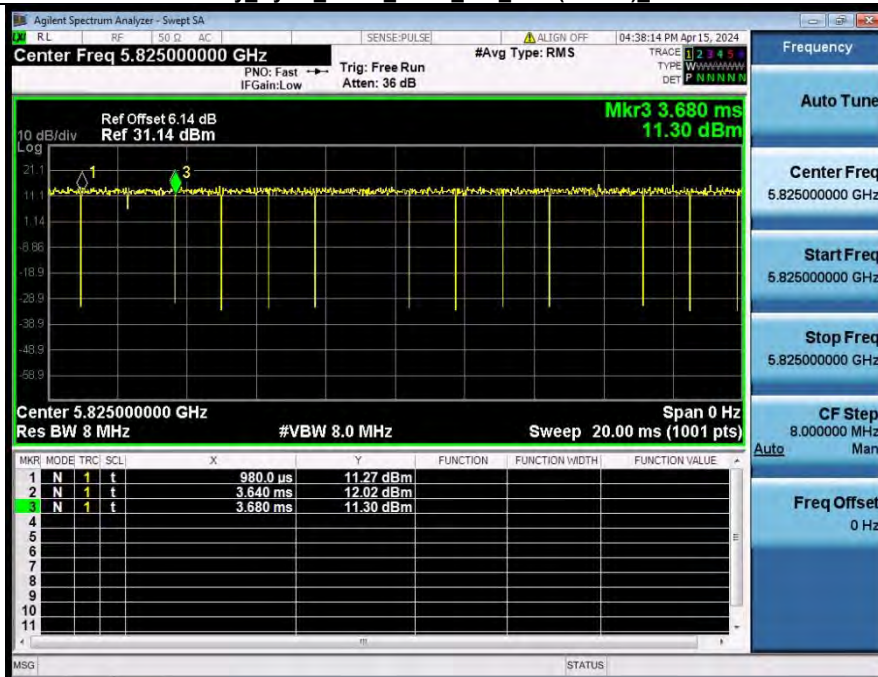
Duty_Cycle_NVNT_ANT1_802_11ac(VHT20)_5745



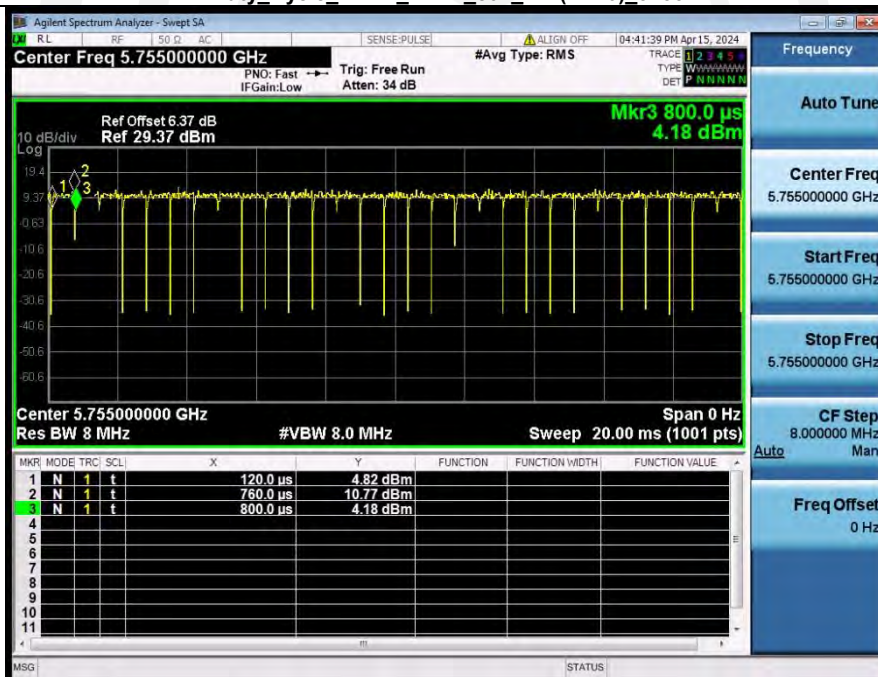
Duty_Cycle_NVNT_ANT1_802_11ac(VHT20)_5785

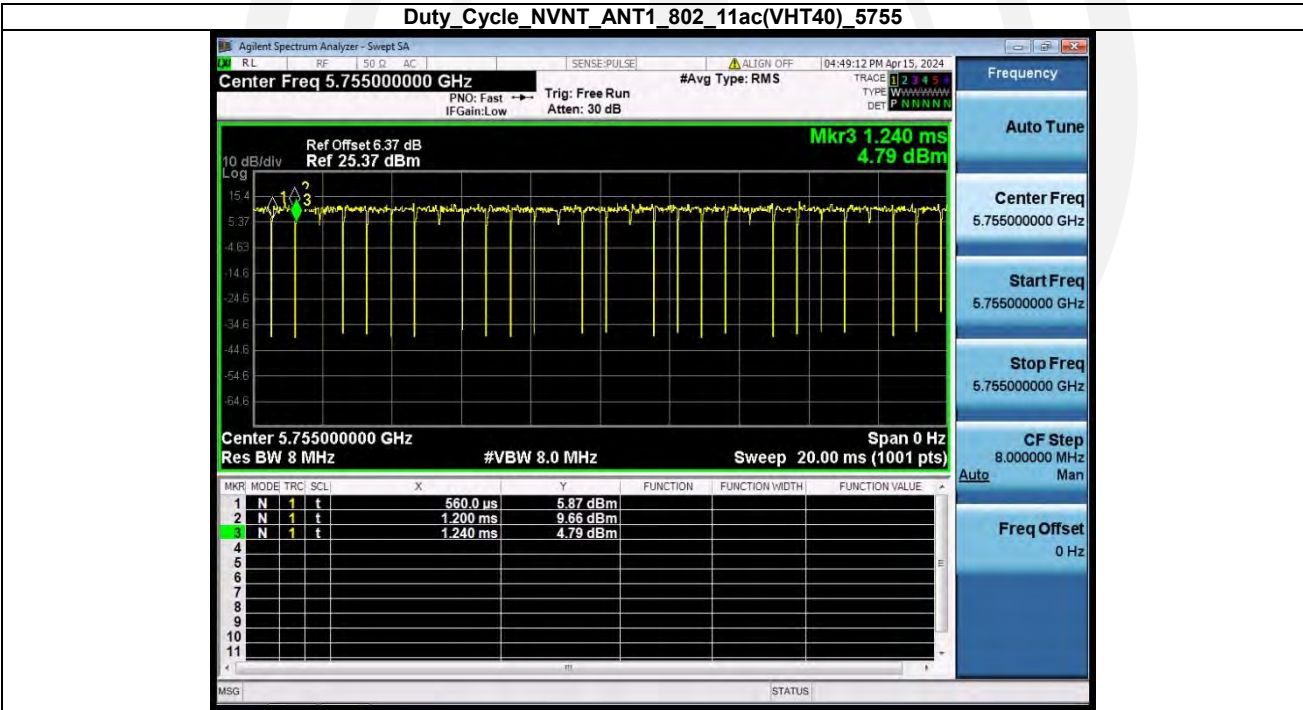
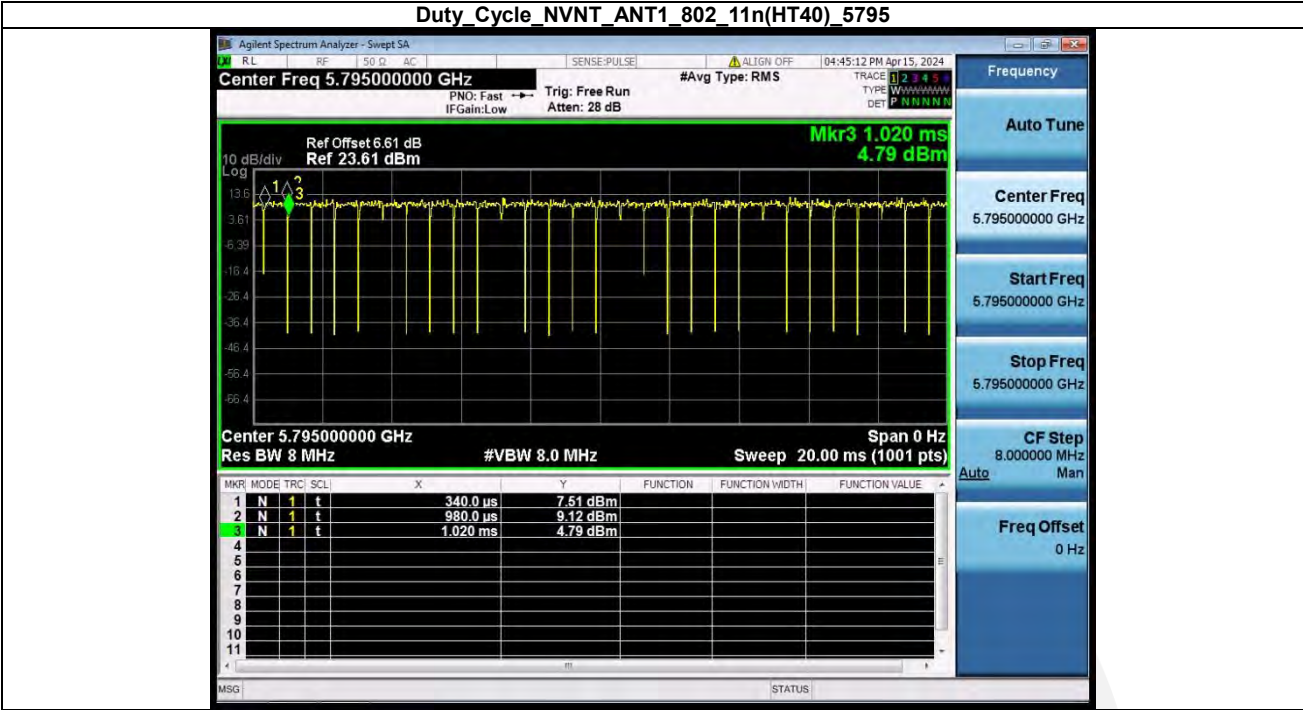


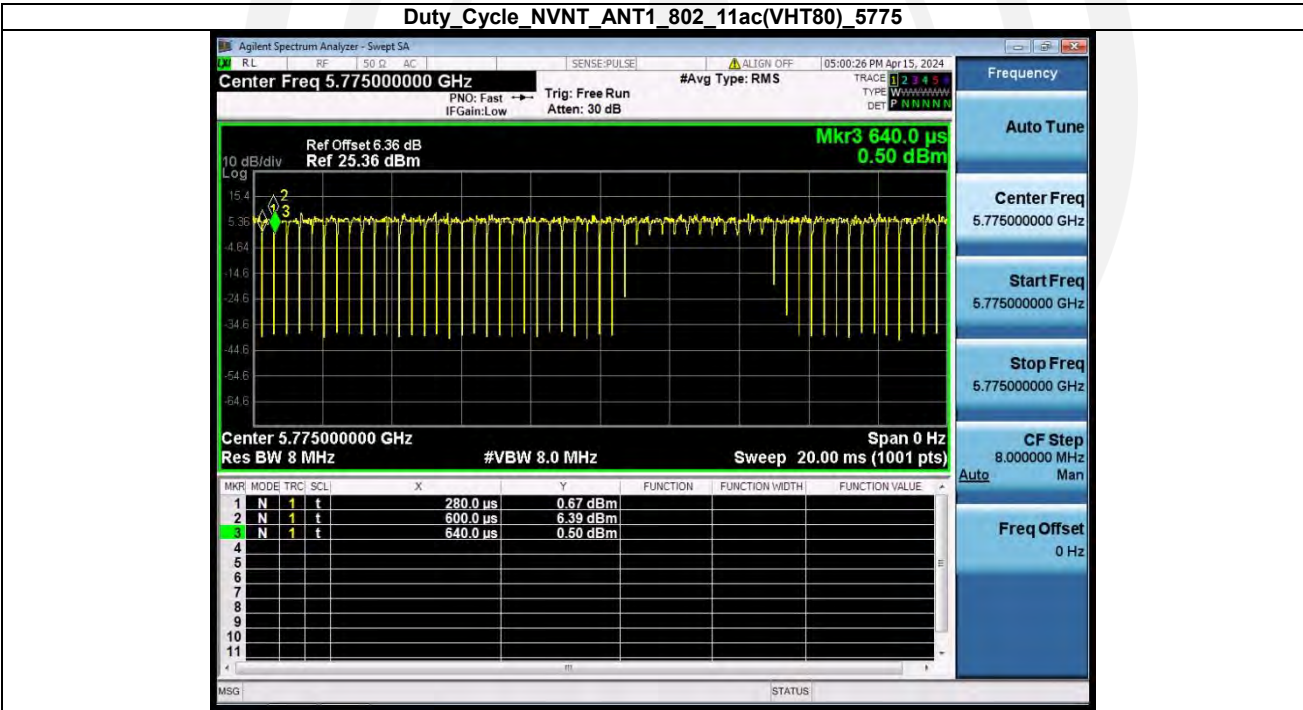
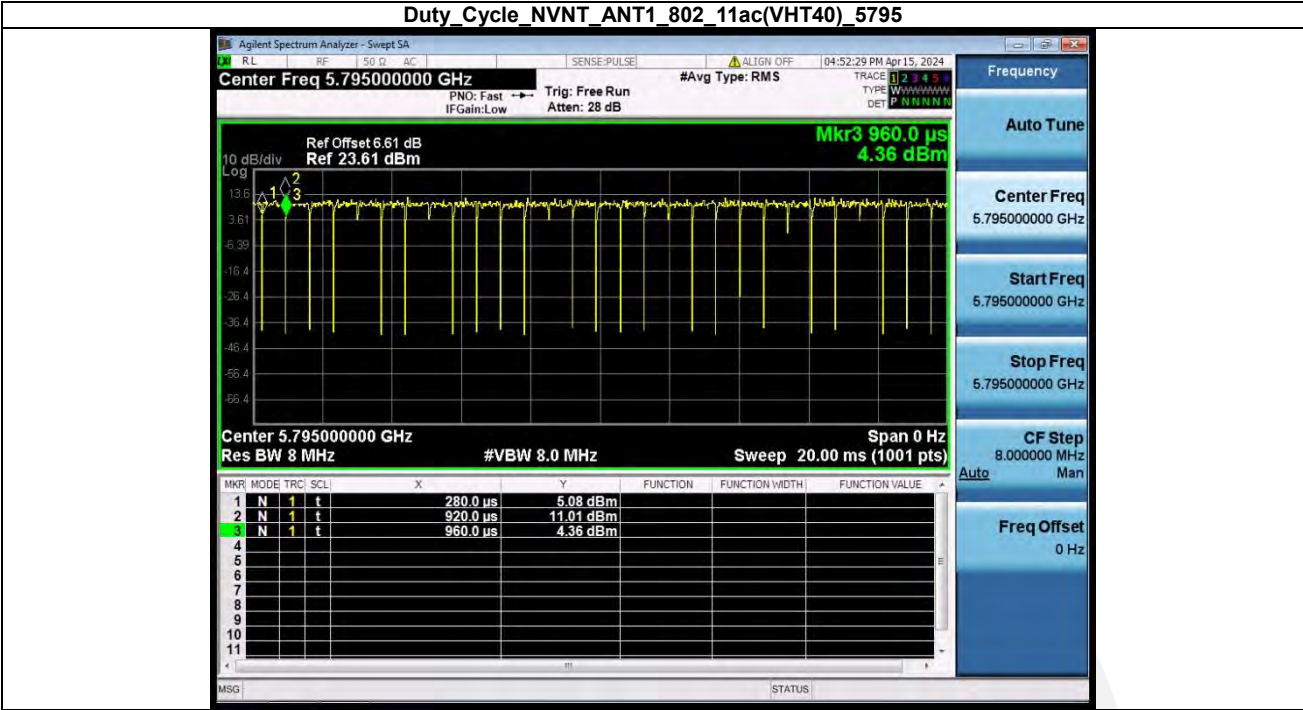
Duty_Cycle_NVNT_ANT1_802_11ac(VHT20)_5825



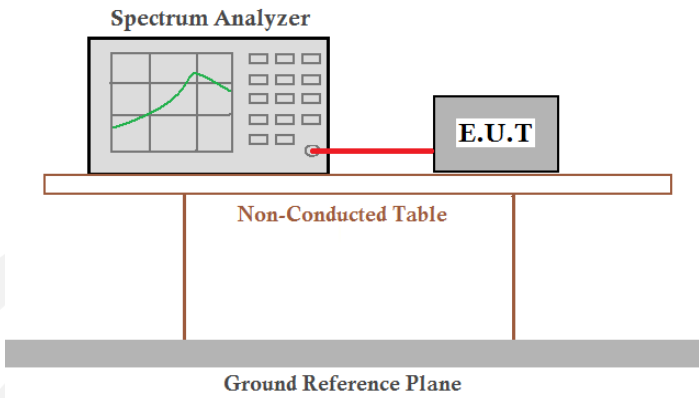
Duty_Cycle_NVNT_ANT1_802_11n(HT40)_5755







4.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Limit:	$\leq 11.00\text{dBm/MHz}$ for 5150MHz-5250MHz, 5250-5350MHz and 5470-5725 MHz $\leq 30.00\text{dBm/500KHz}$ for 5725MHz-5850MHz
Test setup:	 The diagram shows a Spectrum Analyzer and an E.U.T. connected by a red cable. They are positioned on a table labeled 'Non-Conducted Table'. Below this table is a thick grey bar labeled 'Ground Reference Plane'.
Test procedure:	1) Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, "Compute power...". 2) Use the peak search function on the instrument to find the peak of the spectrum. 3) Make the following adjustments to the peak value of the spectrum, if applicable: a) If Method SA-2 or SA-2 Alternative was used, add $10 \log(1/x)$, where x is the duty cycle, to the peak of the spectrum. b) If Method SA-3 Alternative was used and the linear mode was used in step E)2)g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging. 4) The result is the PSD.
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Measurement Data

Band 1 (5150-5250 MHz)

Condition	Antenna	Modulation	Frequency (MHz)	PSD(dBm/MHz)	Duty factor(dB)	Total PSD(dBm/MHz)	limit(dBm)	Result
HVNT	ANT1	802.11a	5180.00	-1.56	0.00	-1.56	11	Pass
HVNT	ANT1	802.11a	5200.00	-2.09	0.00	-2.09	11	Pass
HVNT	ANT1	802.11a	5240.00	-3.52	0.12	-3.40	11	Pass
HVNT	ANT1	802.11n(HT20)	5180.00	-1.45	0.00	-1.45	11	Pass
HVNT	ANT1	802.11n(HT20)	5200.00	-2.29	0.13	-2.17	11	Pass
HVNT	ANT1	802.11n(HT20)	5240.00	-3.40	0.13	-3.27	11	Pass
HVNT	ANT1	802.11ac(VHT20)	5180.00	-1.50	0.13	-1.37	11	Pass
HVNT	ANT1	802.11ac(VHT20)	5200.00	-2.61	0.00	-2.61	11	Pass
HVNT	ANT1	802.11ac(VHT20)	5240.00	-3.62	0.13	-3.49	11	Pass
HVNT	ANT1	802.11n(HT40)	5190.00	-5.57	0.13	-5.44	11	Pass
HVNT	ANT1	802.11n(HT40)	5230.00	-6.00	0.13	-5.87	11	Pass
HVNT	ANT1	802.11ac(VHT40)	5190.00	-5.45	0.26	-5.19	11	Pass
HVNT	ANT1	802.11ac(VHT40)	5230.00	-6.08	0.26	-5.82	11	Pass
HVNT	ANT1	802.11ac(VHT80)	5210.00	-9.01	0.51	-8.50	11	Pass

Power_Spectral_Density_HVNT_ANT1_802_11a_5180



Power_Spectral_Density_HVNT_ANT1_802_11a_5200



Power Spectral Density HVNT_ANT1_802_11a_5240



Power Spectral Density HVNT_ANT1_802_11n(HT20)_5180



Power_Spectral_Density_HVNT_ANT1_802_11n(HT20)_5200



Power_Spectral_Density_HVNT_ANT1_802_11n(HT20)_5240



Power Spectral Density HVNT_ANT1_802_11ac(VHT20)_5180



Power Spectral Density HVNT_ANT1_802_11ac(VHT20)_5200



Power_Spectral_Density_HVNT_ANT1_802_11ac(VHT20)_5240



Power_Spectral_Density_HVNT_ANT1_802_11n(HT40)_5190



Power Spectral Density HVNT_ANT1_802_11n(HT40)_5230



Power Spectral Density HVNT_ANT1_802_11ac(VHT40)_5190



Power Spectral Density HVNT_ANT1_802_11ac(VHT40)_5230



Power Spectral Density HVNT_ANT1_802_11ac(VHT80)_5210



Band 4 (5725 – 5850 MHz)

Modulation	Frequency (MHz)	PSD_SA(dBm/RBW)	Duty factor(dB)	RB factor(dB)	PSD(dBm/500kHz)	limit(dBm/500kHz)	Result
802.11a	5745.00	-3.76	0.12	-0	-3.73	30	Pass
802.11a	5785.00	-5.21	0.12	-0	-5.17	30	Pass
802.11a	5825.00	-4.59	0.12	-0	-4.55	30	Pass
802.11n(HT20)	5745.00	-3.85	0.13	-0	-3.80	30	Pass
802.11n(HT20)	5785.00	-5.34	0.13	-0	-5.30	30	Pass
802.11n(HT20)	5825.00	-4.91	0.00	-0	-4.99	30	Pass
802.11ac(VHT20)	5745.00	-3.89	0.13	-0	-3.85	30	Pass
802.11ac(VHT20)	5785.00	-5.29	0.13	-0	-5.25	30	Pass
802.11ac(VHT20)	5825.00	-4.87	0.00	-0	-4.95	30	Pass
802.11n(HT40)	5755.00	-7.57	0.26	-0	-7.39	30	Pass
802.11n(HT40)	5795.00	-7.99	0.26	-0	-7.82	30	Pass
802.11ac(VHT40)	5755.00	-7.40	0.26	-0	-7.23	30	Pass
802.11ac(VHT40)	5795.00	-8.18	0.26	-0	-8.01	30	Pass
802.11ac(VHT80)	5775.00	-12.13	0.51	-0	-11.71	30	Pass



Power_Spectral_Density_NVNT_ANT1_802_11a_5745



Power_Spectral_Density_NVNT_ANT1_802_11a_5785



Power_Spectral_Density_NVNT_ANT1_802_11a_5825



Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_5745



Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_5785



Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_5825



Power Spectral Density NVNT_ANT1_802_11ac(VHT20)_5745



Power Spectral Density NVNT_ANT1_802_11ac(VHT20)_5785



Power_Spectral_Density_NVNT_ANT1_802_11ac(VHT20)_5825



Power_Spectral_Density_NVNT_ANT1_802_11n(HT40)_5755



Power Spectral Density NVNT_ANT1_802_11n(HT40)_5795



Power Spectral Density NVNT_ANT1_802_11ac(VHT40)_5755



Power Spectral Density NVNT_ANT1_802_11ac(VHT40)_5795

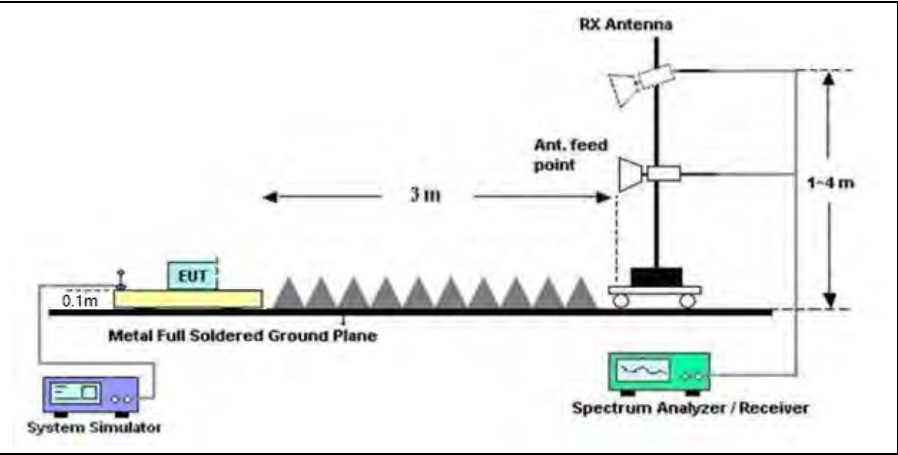


Power Spectral Density NVNT_ANT1_802_11ac(VHT80)_5775



4.6 Band Edge

Test Requirement:	FCC Part15 E Section 15.407 and 15.205																								
Test Method:	ANSI C63.10:2013																								
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)																								
Receiver setup:	<table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr><tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr><tr><td>AV</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr></table>					Frequency	Detector	RBW	VBW	Remark	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value	Above 1GHz	Peak	1MHz	3MHz	Peak Value	AV	1MHz	3MHz	Average Value	
Frequency	Detector	RBW	VBW	Remark																					
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value																					
Above 1GHz	Peak	1MHz	3MHz	Peak Value																					
	AV	1MHz	3MHz	Average Value																					
Limit:	<table><tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr><tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr><tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr><tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr><tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr><tr><td>68.2</td><td>Peak Value</td></tr></table> Undesirable emission limits: (1) 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 EIRP of -27 dBm/MHz. (2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band. (3) For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.					Frequency	Limit (dBuV/m @3m)	Remark	30MHz-88MHz	40.0	Quasi-peak Value	88MHz-216MHz	43.5	Quasi-peak Value	216MHz-960MHz	46.0	Quasi-peak Value	960MHz-1GHz	54.0	Quasi-peak Value	Above 1GHz	54.0	Average Value	68.2	Peak Value
Frequency	Limit (dBuV/m @3m)	Remark																							
30MHz-88MHz	40.0	Quasi-peak Value																							
88MHz-216MHz	43.5	Quasi-peak Value																							
216MHz-960MHz	46.0	Quasi-peak Value																							
960MHz-1GHz	54.0	Quasi-peak Value																							
Above 1GHz	54.0	Average Value																							
	68.2	Peak Value																							
Test Procedure:	a. The EUT was placed on the top of a rotating table 0.1 m above the ground at a 3 meter camber. 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 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, quasi-peak or average method as specified and then reported in a data sheet.																								
Test setup:	Above 1GHz																								

	
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Remark:

According to KDB 789033 D02 v02r01 section G) 1) (d), for For measurements above 1000 MHz @ 3m distance, the limit of field strength is computed as follows:

$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2,$

For example, if $\text{EIRP} = -27\text{dBm}$

$E[\text{dBuV/m}] = -27 + 95.2 = 68.2\text{dBuV/m}.$

Measurement Data:**Band1**

Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	34.60	17.20	51.80	68.20	-16.40	PK
V	5150.00	32.85	17.20	50.05	68.20	-18.15	PK
Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	25.21	17.20	42.41	54.00	-11.59	AV
V	5150.00	24.40	17.20	41.60	54.00	-12.40	AV
Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	36.69	17.20	53.89	68.20	-14.31	PK
V	5350.00	37.06	17.20	54.26	68.20	-13.94	PK
Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	28.03	17.20	45.23	54.00	-8.77	AV
V	5350.00	26.15	17.20	43.35	54.00	-10.65	AV

Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	36.15	17.20	53.35	68.20	-14.85	PK
V	5150.00	33.77	17.20	50.97	68.20	-17.23	PK
Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	26.88	17.20	44.08	54.00	-9.92	AV
V	5150.00	26.09	17.20	43.29	54.00	-10.71	AV
Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	37.97	17.20	55.17	68.20	-13.03	PK
V	5350.00	33.55	17.20	50.75	68.20	-17.45	PK
Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	27.85	17.20	45.05	54.00	-8.95	AV
V	5350.00	25.99	17.20	43.19	54.00	-10.81	AV

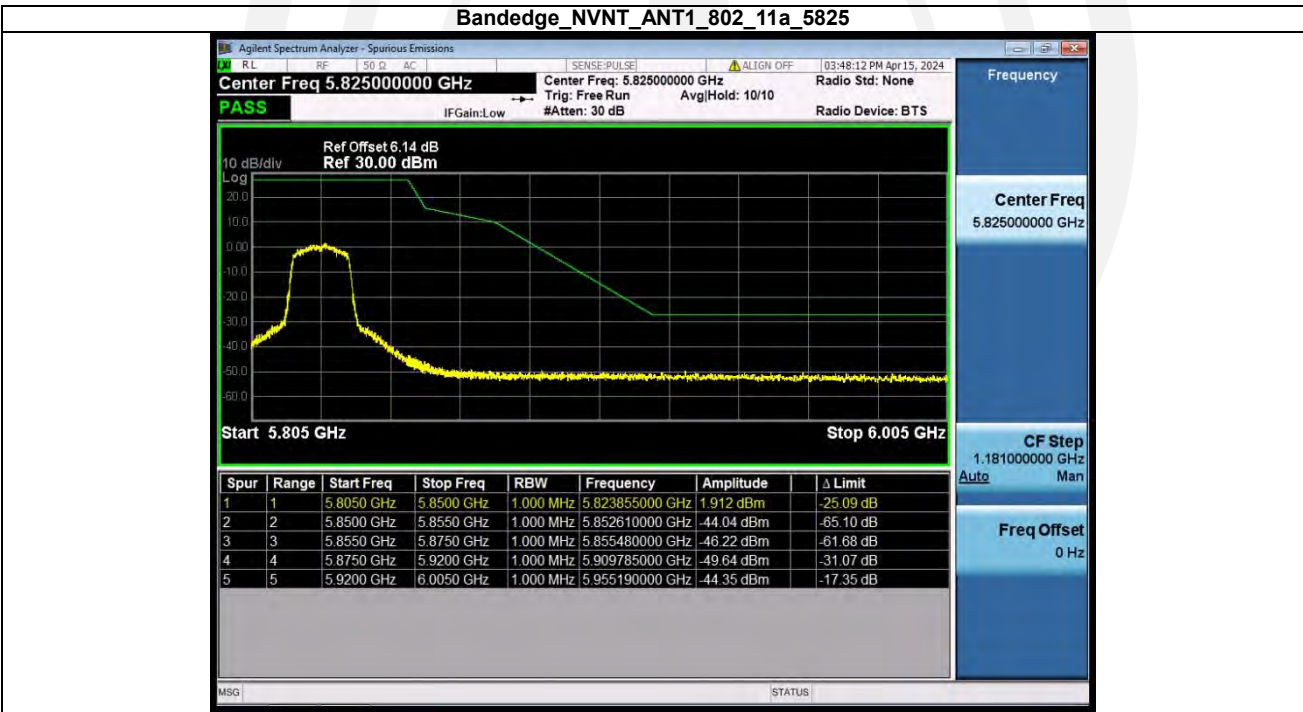
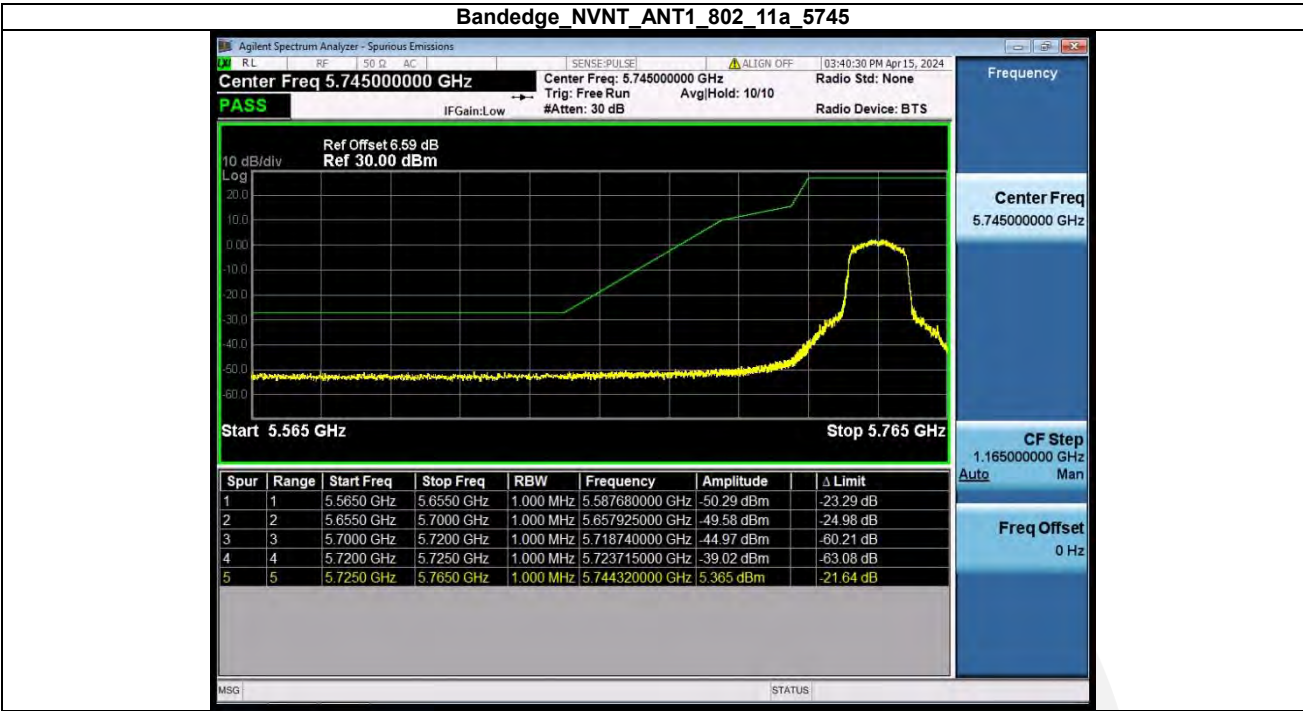
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Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	34.12	17.20	51.32	68.20	-16.88	PK
V	5150.00	35.01	17.20	52.21	68.20	-15.99	PK
Mode:		802.11ac(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	26.52	17.20	43.72	54.00	-10.28	AV
V	5150.00	27.31	17.20	44.51	54.00	-9.49	AV
Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	37.58	17.20	54.78	68.20	-13.42	PK
V	5350.00	36.27	17.20	53.47	68.20	-14.73	PK
Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	28.26	17.20	45.46	54.00	-8.54	AV
V	5350.00	25.01	17.20	42.21	54.00	-11.79	AV

Mode:		802.11n(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	37.27	17.20	54.47	68.20	-13.73	PK
V	5150.00	33.14	17.20	50.34	68.20	-17.86	PK
Mode:		802.11n(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	26.10	17.20	43.30	54.00	-10.70	AV
V	5150.00	23.78	17.20	40.98	54.00	-13.02	AV
Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	35.54	17.20	52.74	68.20	-15.46	PK
V	5350.00	33.92	17.20	51.12	68.20	-17.08	PK
Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	24.48	17.20	41.68	54.00	-12.32	AV
V	5350.00	26.46	17.20	43.66	54.00	-10.34	AV

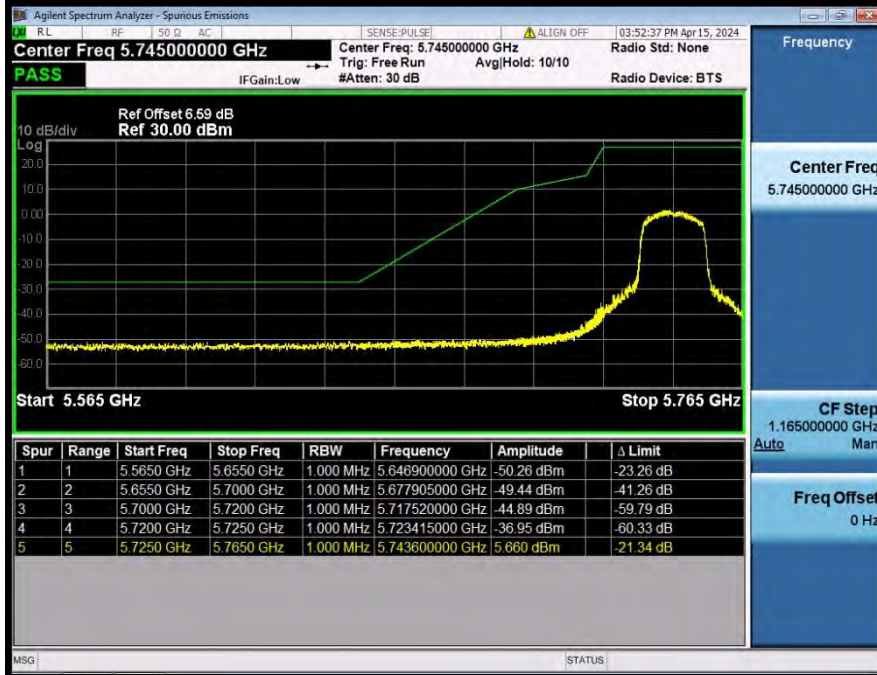
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Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	37.14	17.20	54.34	68.20	-13.86	PK
V	5150.00	33.15	17.20	50.35	68.20	-17.85	PK
Mode:		802.11ac(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	25.27	17.20	42.47	54.00	-11.53	AV
V	5150.00	25.86	17.20	43.06	54.00	-10.94	AV
Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	36.25	17.20	53.45	68.20	-14.75	PK
V	5350.00	34.57	17.20	51.77	68.20	-16.43	PK
Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	26.94	17.20	44.14	54.00	-9.86	AV
V	5350.00	23.77	17.20	40.97	54.00	-13.03	AV

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	36.14	17.20	53.34	68.20	-14.86	PK
V	5150.00	34.45	17.20	51.65	68.20	-16.55	PK
Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	26.33	17.20	43.53	54.00	-10.47	AV
V	5150.00	24.63	17.20	41.83	54.00	-12.17	AV
Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	34.91	17.20	52.11	68.20	-16.09	PK
V	5350.00	34.91	17.20	52.11	68.20	-16.09	PK
Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	26.40	17.20	43.60	54.00	-10.40	AV
V	5350.00	24.97	17.20	42.17	54.00	-11.83	AV

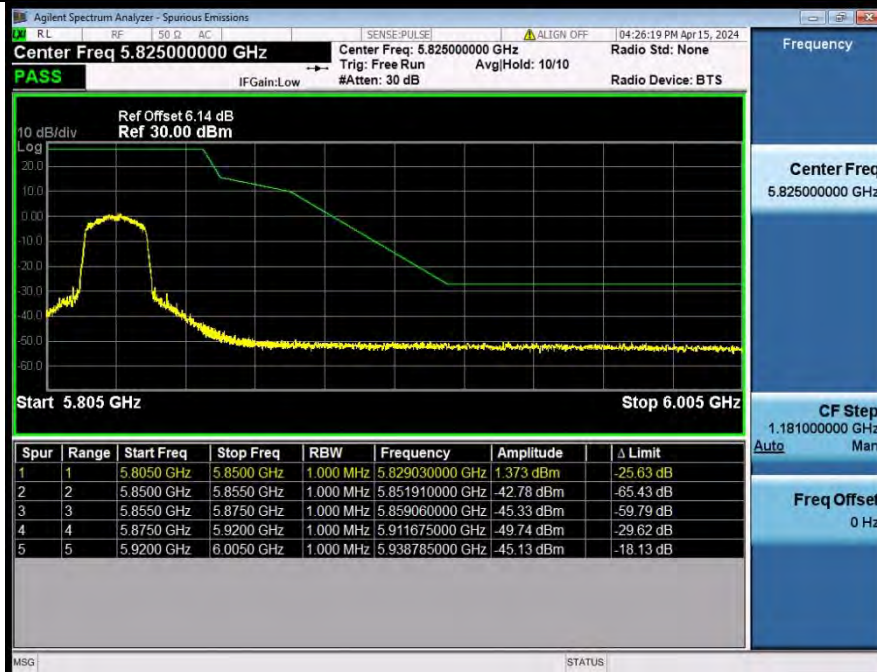
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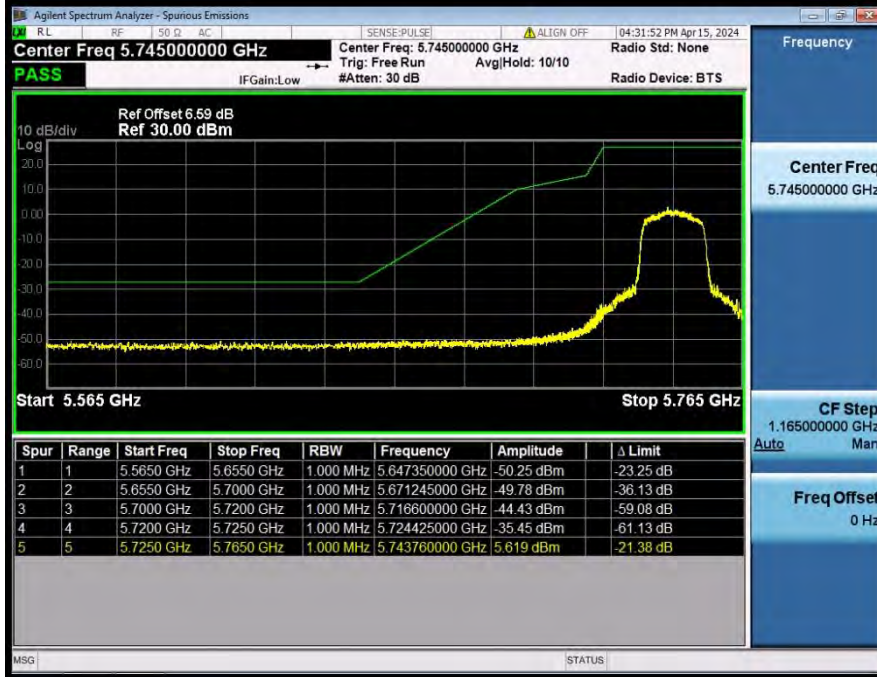
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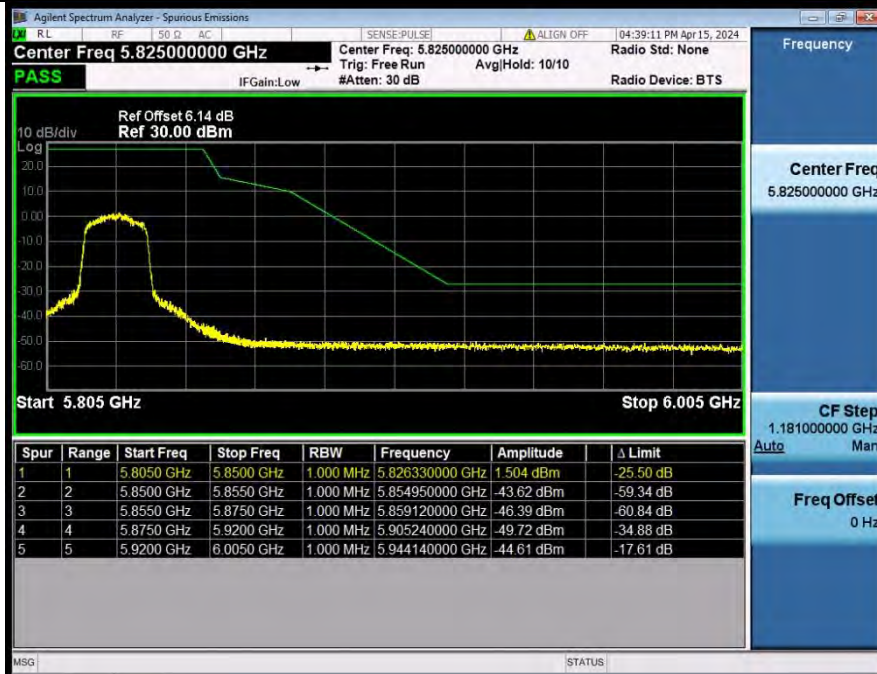
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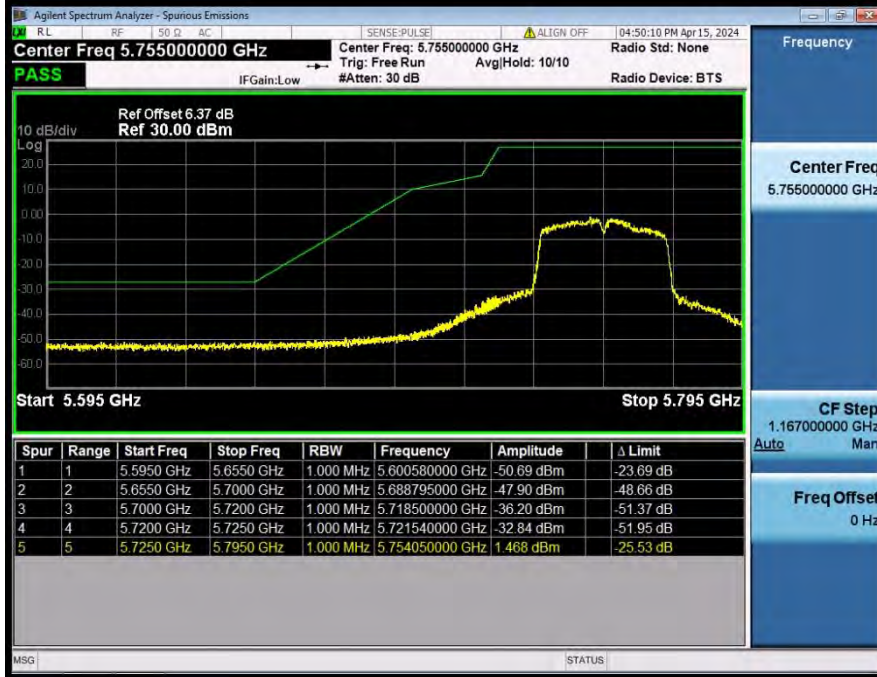


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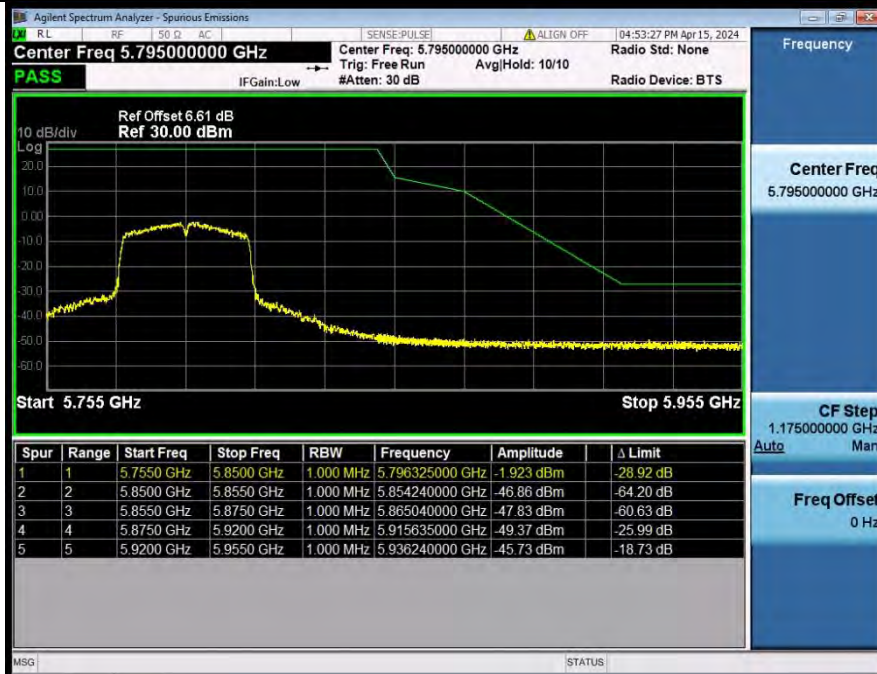


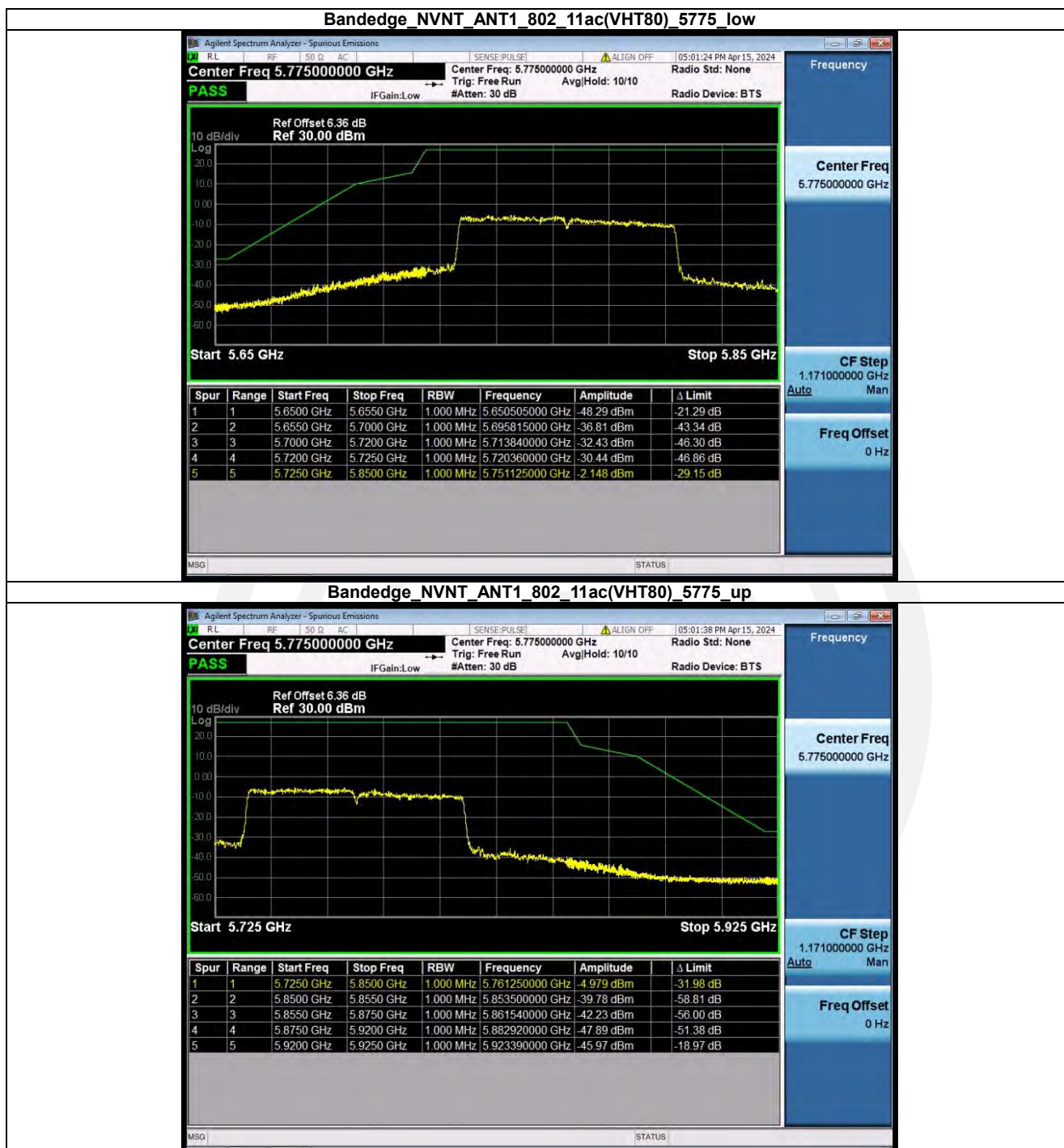


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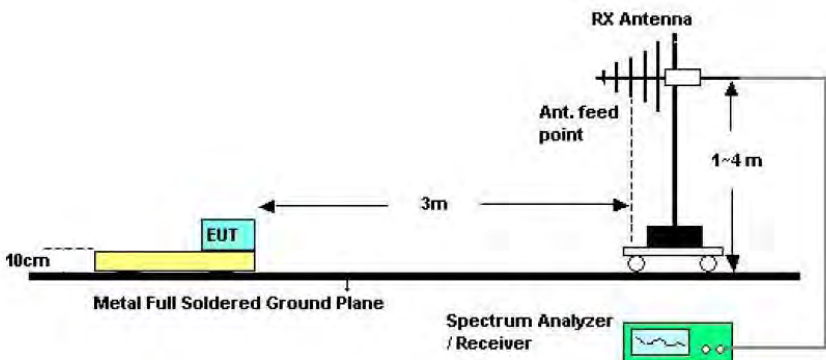
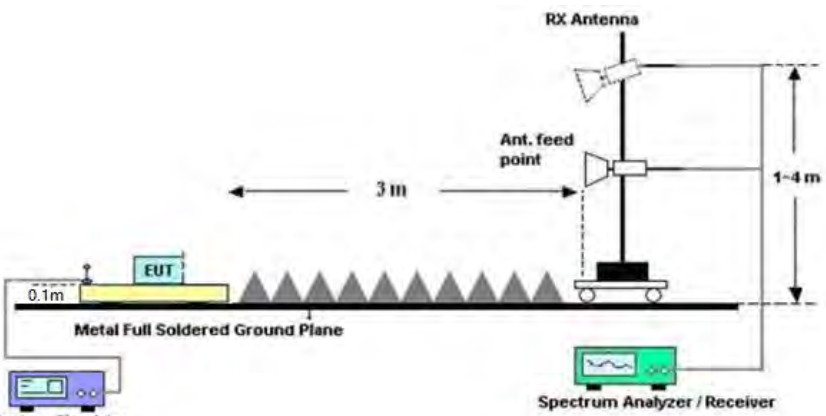




Note: The test spectrum already includes antenna gain and cable loss.

4.7 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	30MHz to 40GHz				
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		AV	1MHz	3MHz	Average Value
Limit:	Frequency		Limit (dBuV/m @3m)		Remark
	30MHz-88MHz		40.0		Quasi-peak Value
	88MHz-216MHz		43.5		Quasi-peak Value
	216MHz-960MHz		46.0		Quasi-peak Value
	960MHz-1GHz		54.0		Quasi-peak Value
	Above 1GHz		74.0		Peak Value
			54.0		Average Value
Test Procedure:	Substitution method was performed to determine the actual ERP emission levels of the EUT. The following test procedure as below:				
	1>.Below 1GHz test procedure:				
	1. The EUT was placed on the top of a rotating table (0.1m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.				
	2>.Above 1GHz test procedure:				
	1. On the test site as test setup graph above, the EUT shall be placed at the 1.5m support on the turntable and in the position closest to normal use as declared by the provider. 2. The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter. The output of the test antenna shall be connected to the measuring receiver. 3. The transmitter shall be switched on, if possible, without modulation and the measuring receiver shall be tuned to the frequency of the				

	transmitter under test. - The test antenna shall be raised and lowered from 1m to 4m until a maximum signal level is detected by the measuring receiver. Then the turntable should be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver. - Repeat step 4 for test frequency with the test antenna polarized horizontally. - Remove the transmitter and replace it with a substitution antenna - Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a nonradiating cable. With the antennas at both ends vertically polarized, and with the signal generator tuned to a particular test frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output. - Repeat step 7 with both antennas horizontally polarized for each test frequency. - Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps 7 and 8 by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula: $\text{EIRP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}$ where: Pg is the generator output power into the substitution antenna.
Test setup:	Below 1GHz  Above 1GHz 

Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Measurement Data:**Below 1GHz**

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
33.86	47.98	11.37	0.71	30.20	29.86	40	-10.14	Vertical
55.01	41.24	12.34	1.22	30.37	24.43	40	-15.57	Vertical
120.71	47.12	9.75	1.71	29.92	28.66	43.5	-14.84	Vertical
172.81	43.52	8.91	2.11	29.72	24.83	43.5	-18.67	Vertical
441.07	37.28	16.51	3.27	29.63	27.43	46	-18.57	Vertical
860.75	33.38	22.13	4.99	29.44	31.07	46	-14.93	Vertical
64.57	35.97	8.79	0.96	29.95	15.77	40	-24.23	Horizontal
99.92	34.27	11.92	1.38	29.89	17.68	43.5	-25.82	Horizontal
270.29	45.73	12.79	2.48	30.05	30.95	46	-15.05	Horizontal
351.30	37.11	14.81	2.93	30.04	24.81	46	-21.19	Horizontal
628.14	35.63	19.72	4.12	29.56	29.91	46	-16.09	Horizontal
956.40	40.50	22.58	5.10	29.14	39.04	46	-6.96	Horizontal

Above 1GHz:**802.11a(HT20) 5180MHz**

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.84	50.13	11.50	14.96	32.66	43.95	74	-30.05	Vertical
15540.69	51.34	12.01	17.97	34.71	46.61	74	-27.39	Vertical
10360.43	52.61	9.59	15.00	33.03	44.18	74	-29.82	Horizontal
15540.49	53.90	8.61	17.72	34.78	45.45	74	-28.55	Horizontal

802.11a(HT20) 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.85	50.12	11.60	14.96	32.86	43.82	74	-30.18	Vertical
15540.88	51.67	12.04	17.94	34.66	46.98	74	-27.02	Vertical
10360.68	52.47	9.68	15.11	32.71	44.54	74	-29.46	Horizontal
15540.63	53.28	8.77	17.83	34.82	45.06	74	-28.94	Horizontal

802.11a(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.08	50.85	11.44	14.93	32.85	44.36	74	-29.64	Vertical
15540.37	51.48	12.12	17.81	34.78	46.63	74	-27.37	Vertical
10360.18	52.90	9.57	14.72	33.02	44.17	74	-29.83	Horizontal
15540.08	53.54	8.81	18.12	34.53	45.93	74	-28.07	Horizontal

802.11n(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.39	50.60	11.25	15.03	33.07	43.81	74	-30.19	Vertical
15540.75	51.33	12.37	18.06	34.88	46.88	74	-27.12	Vertical
10360.97	52.85	9.64	14.84	32.98	44.34	74	-29.66	Horizontal
15540.56	53.35	8.99	18.06	34.83	45.57	74	-28.43	Horizontal

802.11n(HT20) 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.22	50.87	11.64	15.09	32.95	44.65	74	-29.35	Vertical
15540.97	51.42	12.27	17.91	34.79	46.81	74	-27.19	Vertical
10360.63	52.22	9.45	14.94	33.10	43.51	74	-30.49	Horizontal
15540.98	53.63	8.59	17.75	34.66	45.31	74	-28.69	Horizontal

802.11n(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.73	50.62	11.55	14.82	32.67	44.32	74	-29.68	Vertical
15540.21	51.57	11.94	18.02	34.73	46.79	74	-27.21	Vertical
10360.88	52.23	9.57	14.86	33.05	43.61	74	-30.39	Horizontal
15540.00	53.05	8.72	17.93	34.94	44.75	74	-29.25	Horizontal

802.11ac(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.10	50.22	11.75	15.01	32.75	44.23	74	-29.77	Vertical
15540.94	51.85	12.11	17.97	34.55	47.39	74	-26.61	Vertical
10360.51	52.78	9.83	14.86	32.88	44.59	74	-29.41	Horizontal
15540.54	53.67	8.70	18.10	34.87	45.60	74	-28.40	Horizontal

802.11ac(HT20) 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.45	50.68	11.27	15.07	32.72	44.31	74	-29.69	Vertical
15540.67	51.06	12.21	18.13	34.50	46.90	74	-27.10	Vertical
10360.31	52.09	9.74	15.04	33.12	43.75	74	-30.25	Horizontal
15540.16	53.68	8.98	17.85	34.68	45.83	74	-28.17	Horizontal

802.11ac(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.70	50.81	11.31	15.01	32.88	44.26	74	-29.74	Vertical
15540.13	51.22	12.29	17.92	34.70	46.74	74	-27.26	Vertical
10360.52	52.37	9.42	14.68	32.99	43.47	74	-30.53	Horizontal
15540.72	53.87	8.59	17.79	34.47	45.78	74	-28.22	Horizontal

802.11n(HT40) 5190MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.66	50.77	11.70	14.74	33.04	44.17	74	-29.83	Vertical
15540.21	51.22	12.23	17.81	34.88	46.37	74	-27.63	Vertical
10360.85	52.97	9.83	14.63	32.69	44.75	74	-29.25	Horizontal
15540.98	53.76	8.97	17.66	34.50	45.89	74	-28.11	Horizontal

802.11n(HT40) 5230MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.04	50.78	11.48	14.90	33.11	44.04	74	-29.96	Vertical
15540.97	51.68	12.10	17.77	34.81	46.75	74	-27.25	Vertical
10360.40	52.41	9.57	14.95	33.13	43.80	74	-30.20	Horizontal
15540.33	53.24	8.62	17.95	34.47	45.33	74	-28.67	Horizontal

802.11ac(HT40) 5190MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.60	50.48	11.30	14.71	32.73	43.77	74	-30.23	Vertical
15540.84	51.32	12.18	17.81	34.57	46.74	74	-27.26	Vertical
10360.06	52.68	9.41	14.73	32.72	44.10	74	-29.90	Horizontal
15540.76	53.32	8.70	17.80	34.83	44.98	74	-29.02	Horizontal

802.11ac(HT40) 5230MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.10	50.53	11.74	14.67	33.02	43.92	74	-30.08	Vertical
15540.13	51.58	12.03	17.67	34.59	46.69	74	-27.31	Vertical
10360.60	52.59	9.66	14.91	33.06	44.10	74	-29.90	Horizontal
15540.92	53.98	8.54	17.86	34.55	45.83	74	-28.17	Horizontal

802.11ac(HT80) 5210MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.18	50.52	11.72	14.91	33.10	44.05	74	-29.95	Vertical
15540.31	51.02	11.98	18.00	34.55	46.45	74	-27.55	Vertical
10360.47	52.08	9.51	15.10	32.67	44.02	74	-29.98	Horizontal
15540.74	53.31	8.97	17.87	34.54	45.62	74	-28.38	Horizontal

Note:

1. Level = Read Level + Antenna Factor+ Cable loss- Preamp Factor.
2. The test trace is same as the ambient noise (the test frequency range: 18GHz~40GHz), therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. This Report only show the test plots of the worst case (U-NII-1).

4.8 Frequency stability

Test limit	Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
Test results:	Pass

Measurement Data:

Mode	Voltage (V)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
Band 1 (5150-5250 MHz)	DC 11.52V	5179.993	7	5239.992	8
	DC12.80V	5179.994	6	5239.994	6
	DC 14.08V	5179.993	7	5239.992	8
Mode	Voltage (V)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
Band 4 (5725-5850 MHz)	DC 11.52V	5744.996	4	5824.996	4
	DC12.80V	5744.993	7	5824.992	8
	DC 14.08V	5744.996	4	5824.996	4

Mode	Temperature (°C)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
Band 1 (5150-5250 MHz)	-10°C	5179.992	8	5239.994	6
	0°C	5179.993	7	5239.996	4
	+10°C	5179.993	7	5239.996	4
	+20°C	5179.993	7	5239.991	9
	+30°C	5179.992	8	5239.992	8
	+40°C	5179.995	5	5239.991	9
	+50°C	5179.993	7	5239.995	5
Mode	Temperature (°C)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
Band 4 (5725-5850 MHz)	-10°C	5744.994	6	5824.995	5
	0°C	5744.997	3	5824.993	7
	+10°C	5744.997	3	5824.992	8
	+20°C	5744.994	6	5824.997	3
	+30°C	5744.995	5	5824.991	9
	+40°C	5744.994	6	5824.996	4
	+50°C	5744.993	7	5824.997	3

-----END OF REPORT-----