



FCC TEST REPORT

FCC ID:2BWD6-Q1AS

Report Number..... : ZKT-260610L0749E-2

Date of Test..... : June 1, 2026- June 10, 2026

Date of issue..... : June 10, 2026

Test Result : PASS

Testing Laboratory..... : **Shenzhen ZKT Technology Co., Ltd.**

Address : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

Applicant's name : **Shenzhen Juntengda Trading Co., Ltd**

Address : 620-621, Building 6, 1970 Science and Technology Park, Minkang Community, Minzhi Street, Longhua District, Shenzhen City, China

Manufacturer's name : **Shenzhen Juntengda Trading Co., Ltd**

Address : 620-621, Building 6, 1970 Science and Technology Park, Minkang Community, Minzhi Street, Longhua District, Shenzhen City, China

Test specification:

Standard..... : FCC CFR Title 47 Part 15 Subpart E Section 15.407
ANSI C63.10-2020+Cor 1-2023
KDB 789033 D02 v02r01

Test procedure..... : /

Non-standard test method : N/A

Test Report Form No..... : TRF-EL-113_V0

Test Report Form(s) Originator..... : ZKT Testing

Master TRF : Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Product name..... : **Wireless CarPlay Adapter**

Trademark : /

Model/Type reference..... : Q1AS, Q1BO

Ratings..... : Input: DC 5 V



Testing procedure and testing location:

Testing Laboratory.....: **Shenzhen ZKT Technology Co., Ltd.**

Address.....: 1/F, No. 101, Building B, No. 6, Tangwei Community
Industrial Avenue, Fuhai Street, Bao'an District,
Shenzhen, China

Tested by (name + signature).....: Jim Liu

Reviewer (name + signature).....: Jackson Fang

Approved (name + signature).....: Lake Xie





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1. VERSION

Report No.	Version	Description	Approved
ZKT-260610L0749E-2	Rev.01	Initial issue of report	June 10, 2026



2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.407) , Subpart E			
Standard Section	Test Item	Judgment	Remark
§15.207(a)	AC Power Line Conducted Emission	PASS	
§15.205(a)/§15.209(a) §15.407(b)(1) §15.407(b)(4) §15.407(b)(8)	Radiated Emissions and Band Edge	PASS	
§15.407 (e) 789033 D02 General U-NII	26dB Emission Bandwidth and 6dB Occupied Bandwidth	PASS	
§15.407(a)(1) §15.407 (a)(3) i	Power Spectral Density	PASS	
§15.407(a)(1) §15.407 (a)(3) i §15.407(a)(12)	Maximum Conducted Output Power	PASS	
§15.407(b)(1) §15.407(b)(4) §15.407(b)(8)	Conducted Band Edge	PASS	
§15.407(g)	Frequency Stability	PASS	
789033 D02 General U-NII	Duty Cycle	PASS	
§15.203	Antenna Requirement	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report



2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.
Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 927491
Designation Number: CN1431
IC Registered No.: 27033
CAB identifier: CN0110

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	3m chamber Radiated spurious Emission (9KHz-30MHz)	4.5dB
2	3m chamber Radiated spurious emission (30MHz-1GHz)	4.8dB
3	3m chamber Radiated spurious emission (1GHz-6GHz)	4.9dB
4	3m chamber Radiated spurious emission (6GHz-40GHz)	5.0dB
5	Conducted Disturbance	3.2dB
6	RF Band Edge	1.68dB
7	RF Power Conducted	1.86dB
8	RF Conducted Spurious Emission	2.2dB
9	RF Occupied Bandwidth	1.8MHz
10	RF Power Spectral Density	1.75dB
11	Humidity Uncertainty	5.3%
12	Temperature Uncertainty	0.59°C



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	Wireless CarPlay Adapter		
Trademark:	/		
Model No.:	Q1AS		
Serial No.:	Q1BO		
Model Different.:	Q1AS is the test model, while other models are derivative models. These models are the same on the circuit, with only different model names, colors and shape. Therefore, the test data of Q1AS can represent the remaining models.		
Sample(s) Status:	Engineer sample		
Sample Number:	ZKT-260610L0749		
Product Description:	IEEE 802.11 WLAN Mode Supported	☒ 802.11a/n/ac	
	Data Rate	802.11a: 6/9/12/24/18/36/48/54Mbit/s 802.11n: MCS0-MCS7 802.11ac: MCS0-MCS9	
	Modulation	802.11a/n/ac: Orthogonal Frequency Division Multiplexing (OFDM)	
	Frequency Range	☐ 5180-5240MHz for 802.11a/n/ac (20M); ☐ 5190-5230MHz for 802.11n/ac (40M); ☒ 5745-5825 MHz for 802.11a/n/ac (20M); ☒ 5755-5795 MHz for 802.11n/ac (40M);	
	Number of Channels	☐ 4 channels for 802.11 a/n/ac (20M) in the 5180-5240MHz band; ☐ 2 channels for 802.11 n/ac (40M) in the 5190-5230 MHz band; ☒ 5 channels for 802.11 a/n/ac (20M) in the 5745-5825MHz band; ☒ 2 channels for 802.11 n/ac (40M) in the 5755-5795 MHz band;	
Channel List:	Please refer to the Note 2.		
Antenna Type:	PCB antenna		
Antenna Gain:	Band	5.8G	
	Gain (dBi)	2.67	
Power Supply:	Input: DC 5 V		

Note1: For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

Note2: The EUT's all information provided by client.



Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2. Channel List

802.11a/n/ac(20MHz) Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	153	5765	157	5785	161	5805
165	5825	-	-	-	-	-	-

802.11n/ac(40MHz) Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795	-	-	-	-



3.2 DESCRIPTION OF TEST MODES

Pretest Mode	Description
Mode 1	802.11 a/n/ac (20M) CH 149/CH 157/CH 165
Mode 2	802.11 n/ac (40M) CH 151/CH 159

Final Test Mode	For Conducted Emission
	Description
Mode 1	802.11 a/n/ac (20M) CH 149/CH 157/CH 165
Mode 2	802.11 n/ac (40M) CH 151/CH 159

Final Test Mode	For Radiated Emission
	Description
Mode 1	802.11 a/n/ac (20M) CH 149/CH 157/CH 165
Mode 2	802.11 n/ac (40M) CH 151/CH 159

Transmitting mode	Keep the EUT in continuously transmitting mode
Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data. For battery operated equipment, the equipment tests shall be performed using a new battery.	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:				
Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.				
Mode	802.11a	802.11n20/n40	802.11ac20/ac40	
Data rate	6Mbps	MCS0(HT0)	MCS0(VHT0)	

Test Software	adb V1.0
Power level setup	default



3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission



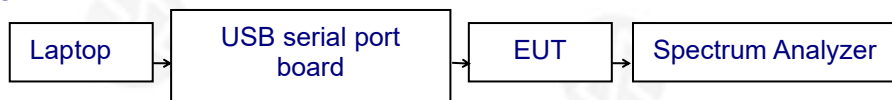
Radiated Emission(30MHz-1GHz)



Radiated Emission(above 1GHz)



RF Conducted test



3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	USB serial port board	/	/	/	AE
E-2	Laptop	Lenovo (Beijing) Co., Ltd	ThinkPad E480	/	AE
E-3	Adapter	Xiaomi	MDY-08-EH	/	AE

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Emissions & Radiation Spurious Emissions Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 20, 2025	Sep. 19, 2026
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 20, 2025	Sep. 19, 2026
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	100969	4.32	Oct. 24, 2025	Oct. 23, 2026
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	00877	N/A	Sep. 20, 2025	Sep. 19, 2026
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	N/A	Sep. 20, 2025	Sep. 19, 2026
6	Horn Antenna (15GHz-40GHz)	A.H.System	SAS-574	588	N/A	Sep. 30, 2025	Sep. 29, 2026
7	Loop Antenna	TESEQ	HLA6121	58357	N/A	Sep. 20, 2025	Sep. 19, 2026
8	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	60747	N/A	Sep. 19, 2025	Sep. 18, 2026
9	Amplifier (1GHz-26.5GHz)	HuiPu	8449B	3008A00315	N/A	Sep. 19, 2025	Sep. 18, 2026
10	Amplifier (500MHz-40GHz)	QuanJuDa	DLE-161	097	N/A	Oct. 24, 2025	Oct. 23, 2026
11	Test Cable	N/A	R-01	N/A	N/A	May. 25, 2026	May. 24, 2027
12	Test Cable	N/A	R-02	N/A	N/A	May. 25, 2026	May. 24, 2027
13	Test Cable	N/A	R-03	N/A	N/A	May. 25, 2026	May. 24, 2027
14	D.C. Power Supply	LongWei	TPR-6405D	N/A	N/A	\	\
15	EMC Software	Frad	EZ-EMC	Ver.EMC-CO N 3A1.1	N/A	\	\
16	Turntable	MF	MF-7802BS	N/A	N/A	\	\
17	Antenna tower	MF	MF-7802BS	N/A	N/A	\	\



Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	N/A	Sep. 23, 2025	Sep. 22, 2026
2	LISN	CYBERTEK	EM5040A	E1850400149	N/A	Sep. 19, 2025	Sep. 18, 2026
3	Test Cable	N/A	C-01	N/A	N/A	May. 22, 2026	May. 21, 2027
4	EMI Test Receiver	R&S	ESCI3	101393	4.42 SP3	Oct. 24, 2025	Oct. 23, 2026
5	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	N/A	\	\

RF Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 20, 2025	Sep. 19, 2026
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 20, 2025	Sep. 19, 2026
3	Test Cable	N/A	RF-01	N/A	N/A	May. 25, 2026	May. 24, 2027
4	Test Cable	N/A	RF-02	N/A	N/A	May. 25, 2026	May. 24, 2027
5	Test Cable	N/A	RF-03	N/A	N/A	May. 25, 2026	May. 24, 2027
6	ESG Signal Generator	Agilent	E4421B	N/A	B.03.84	Sep. 19, 2025	Sep. 18, 2026
7	Signal Generator	Agilent	N5182A	N/A	A.01.87	Sep. 20, 2025	Sep. 19, 2026
8	Magnetic Field Probe Tester	Narda	ELT-400	0-0344/M-17 52	N/A	Sep. 25, 2025	Sep. 24, 2026
9	SHIELD BOX	TESCOM	TC-5970C	5970C01555 3	N/A	Dec. 18, 2025	Dec. 17, 2026
10	Wideband Radio Communication Test	R&S	CMW500	106504	V 3.7.22	Sep. 28, 2025	Sep. 27, 2026
11	MWRF Power Meter Test system	MW	MW100-RF CB	N/A	N/A	Sep. 19, 2025	Sep. 18, 2026
12	D.C. Power Supply	LongWei	TPR-6405 D	N/A	N/A	\	\
13	RF Software	MW	MTS8310	V2.0.0.0	N/A	\	\



4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10-2020+Cor 1-2023
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) *Decreases with the logarithm of the frequency.

4.1.2 TEST PROCEDURE

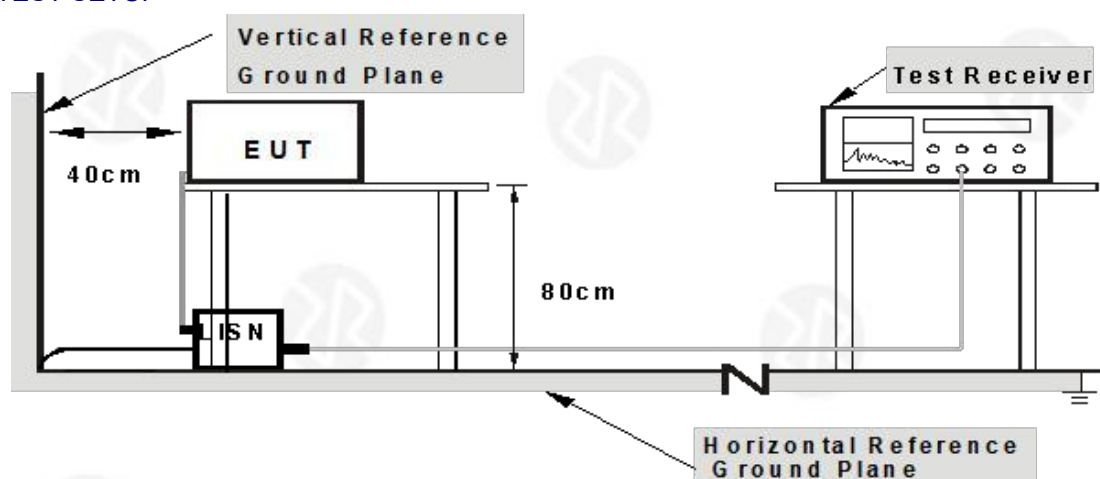
- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
 - I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
 - LISN at least 80 cm from nearest part of EUT chassis.
 - For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation



4.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80
from other units and other metal planes

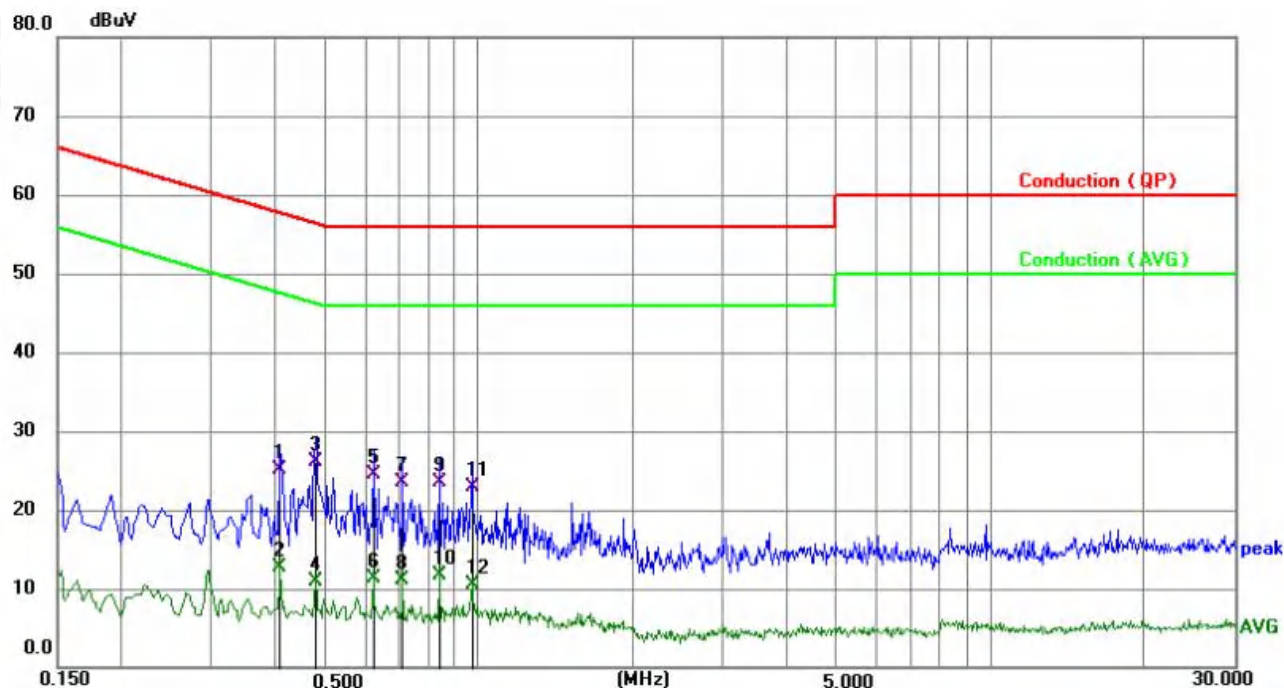
4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



4.1.6 TEST RESULT

Temperature:	24.2℃	Relative Humidity:	54.2%
Pressure:	1010 hPa	Polarization:	L
Test Voltage:	AC 120V/60Hz		



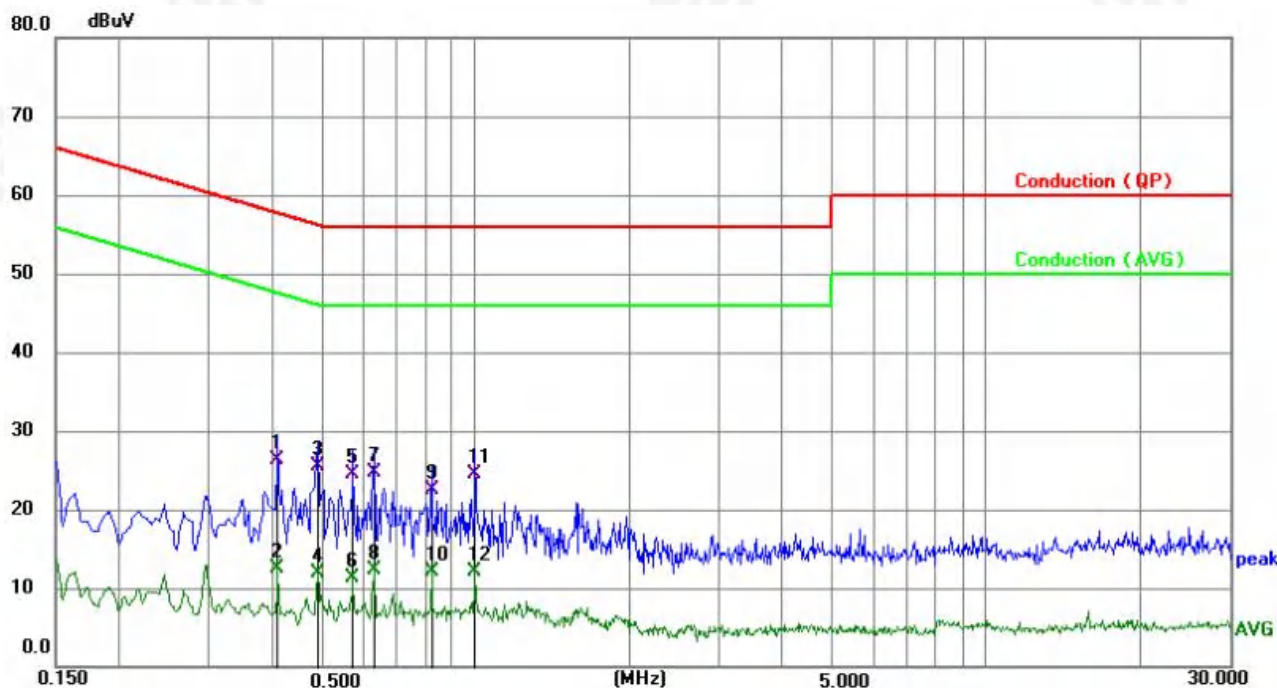
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.4063	15.16	9.98	25.14	57.72	-32.58	QP	P	
2	0.4063	2.64	9.98	12.62	47.72	-35.10	AVG	P	
3 *	0.4784	16.17	10.01	26.18	56.37	-30.19	QP	P	
4	0.4784	0.91	10.01	10.92	46.37	-35.45	AVG	P	
5	0.6225	14.40	10.03	24.43	56.00	-31.57	QP	P	
6	0.6225	1.24	10.03	11.27	46.00	-34.73	AVG	P	
7	0.7080	13.47	10.04	23.51	56.00	-32.49	QP	P	
8	0.7080	1.09	10.04	11.13	46.00	-34.87	AVG	P	
9	0.8385	13.40	10.05	23.45	56.00	-32.55	QP	P	
10	0.8385	1.72	10.05	11.77	46.00	-34.23	AVG	P	
11	0.9735	12.81	10.06	22.87	56.00	-33.13	QP	P	
12	0.9735	0.53	10.06	10.59	46.00	-35.41	AVG	P	

Notes:

- 1.An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2.Quasi - Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Lish factor+ Cable loss factor + limiter factor.
- 5.Margin = Measurement Level-Limit.
- 6.The test data shows only the worst case TX 802.11ac20 - 5825MHz.



Temperature:	24.2℃	Relative Humidity:	54.2%
Pressure:	1010 hPa	Polarization:	N
Test Voltage:	AC 120V/60Hz	Test Mode:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.4063	16.38	9.98	26.36	57.72	-31.36	QP	P	
2	0.4063	2.45	9.98	12.43	47.72	-35.29	AVG	P	
3 *	0.4874	15.55	10.01	25.56	56.21	-30.65	QP	P	
4	0.4874	1.94	10.01	11.95	46.21	-34.26	AVG	P	
5	0.5730	14.52	10.03	24.55	56.00	-31.45	QP	P	
6	0.5730	1.21	10.03	11.24	46.00	-34.76	AVG	P	
7	0.6314	14.66	10.03	24.69	56.00	-31.31	QP	P	
8	0.6314	2.21	10.03	12.24	46.00	-33.76	AVG	P	
9	0.8205	12.45	10.05	22.50	56.00	-33.50	QP	P	
10	0.8205	2.01	10.05	12.06	46.00	-33.94	AVG	P	
11	0.9960	14.37	10.06	24.43	56.00	-31.57	QP	P	
12	0.9960	2.05	10.06	12.11	46.00	-33.89	AVG	P	

Notes:

- 1.An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2.Quasi - Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Lissn factor+ Cable loss factor + limiter factor.
- 5.Margin = Measurement Level-Limit.
- 6.The test data shows only the worst case TX 802.11ac20 - 5825MHz.



4.2 RADIATED EMISSION AND BAND EDGE MEASUREMENT

4.2.1 APPLICABLE STANDARD

According to FCC Part 15.407(b)(1) and 15.407(b)(4)(i) and 15.205(a) and 15.209(a).

4.2.2 CONFORMANCE LIMIT

According to FCC Part 15.407(b)(1) Undesirable emission limits. Except as shown in paragraph (b)(10) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following 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 e.i.r.p. of -27 dBm/MHz.

Frequency Range	Peak	Average
All emissions outside of the 5.15-5.35 GHz band shall not exceed	68.20 (dBuV/m)	54 (dBuV/m)

(4) For transmitters operating solely in the 5.725-5.850 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Frequency Range	Peak	Average
All emissions shall be limited	68.20 (dBuV/m)	54 (dBuV/m)
Band edge $\pm$ 75 MHz	105.20 (dBuV/m)	54 (dBuV/m)
Band edge $\pm$ 25 MHz	110.80 (dBuV/m)	54 (dBuV/m)
Band edge $\pm$ 5 MHz	122.20 (dBuV/m)	54 (dBuV/m)

According to FCC Part 15.407(b)(10): Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

According to FCC Part 15.205, Restricted bands:

(MHz)	(MHz)	(MHz)	(GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	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	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	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	156.52475-156.52525	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	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			



Restricted Frequency (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009~0.490	2400/F(KHz)	20 log (uV/m)	300
0.490~1.705	2400/F(KHz)	20 log (uV/m)	30
1.705~30.0	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Limits of Radiated Emission Measurement(Above 1000MHz)

Frequency (MHz)	Class B (dBuV/m) (at 3M)	
	Peak	Average
Above 1000	74	54

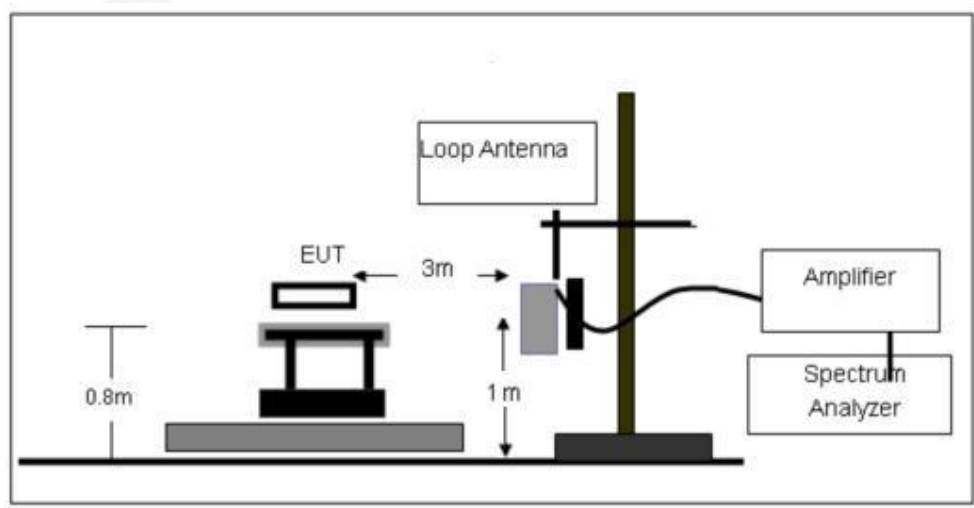
- Remark: 1. Emission level in dBuV/m = 20 log (uV/m);
2. Measurement was performed at an antenna to the closed point of EUT distance of meters;
3. Distance extrapolation factor =40log(Specific distance/ test distance)(dB);
4. Limit line=Specific limits(dBuV) + distance extrapolation factor;
5. Emission level in dBuV/m = (dBm) + 95.2.

4.2.3 MEASURING INSTRUMENTS

The Measuring equipment is listed in the section 3.5 of this test report.

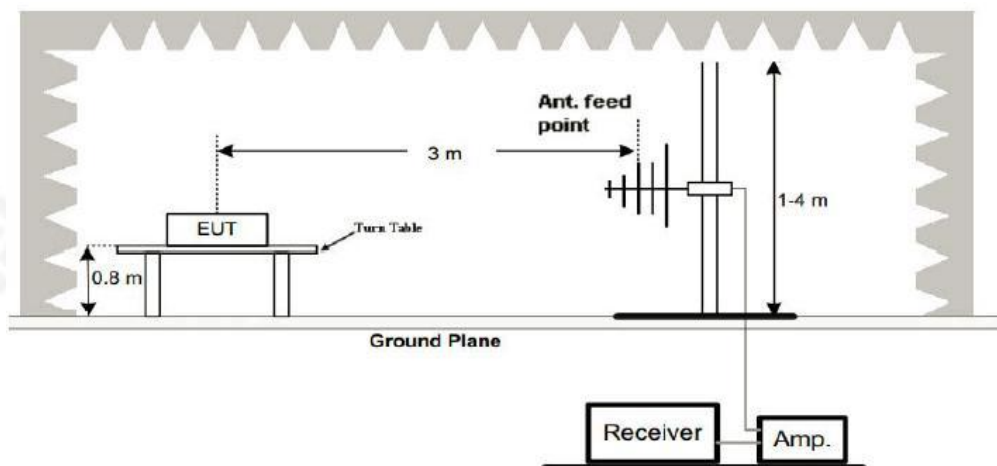
4.2.4 TEST CONFIGURATION

1.For radiated emissions below 30MHz

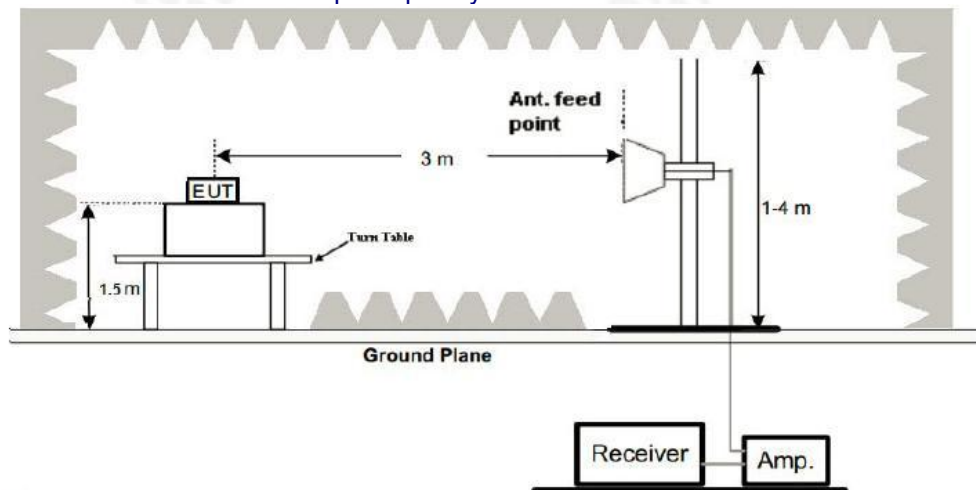




2.For radiated emissions from 30MHz to 1000MHz



3. Radiated Emission Test-Up Frequency Above 1GHz



4.2.5 TEST PROCEDURE

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2020+Cor 1-2023. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2020+Cor 1-2023 and CAN/CSA-CEI/IEC CISPR 22. This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP



- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item – EUT Test Photos.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution Bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	3 MHz

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where $RBWCF [dB] = 10 \cdot \lg(100 [kHz] / \text{narrower RBW [kHz]})$. , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

4.2.6 RADIATED EMISSION TEST RESULT

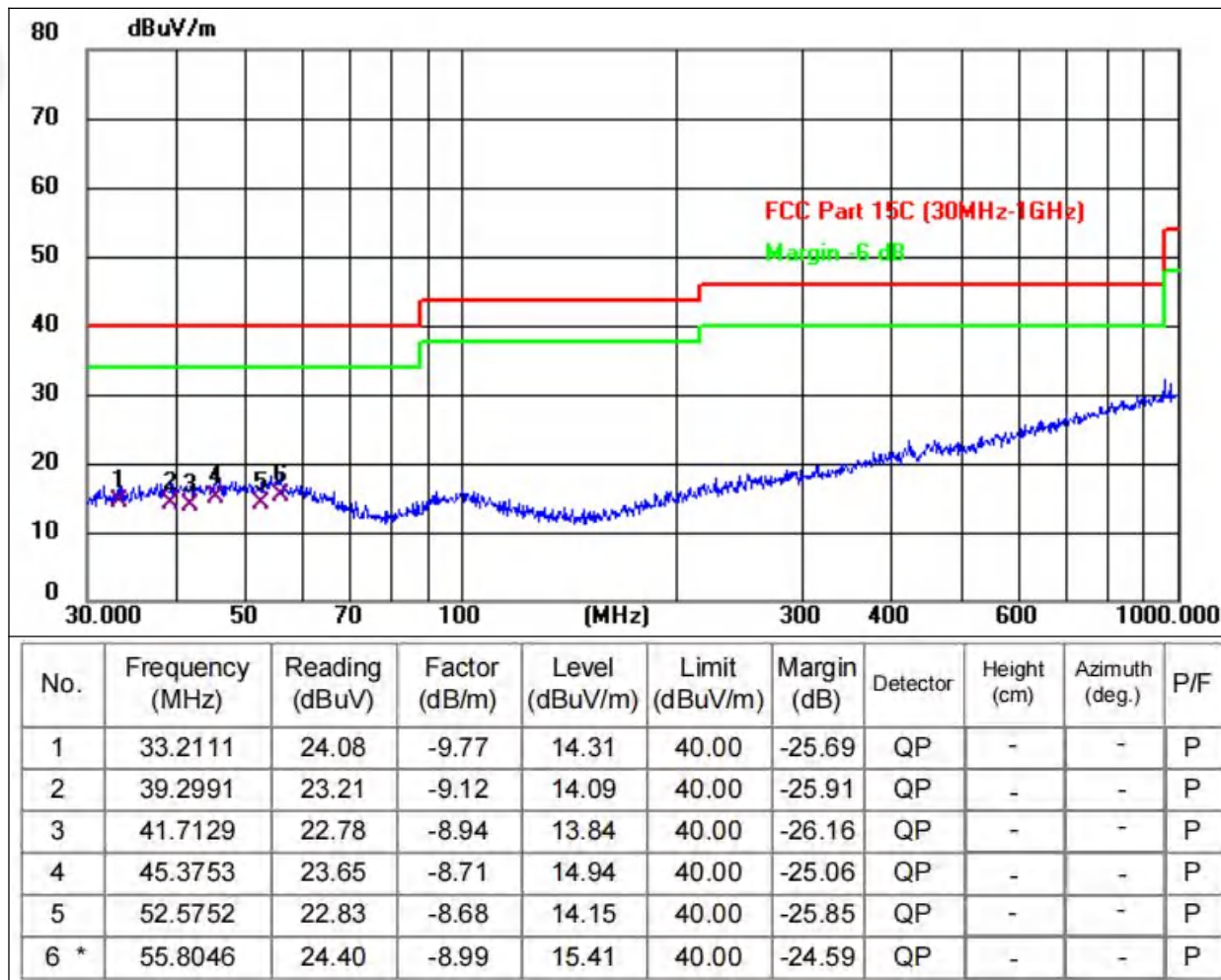
Between 9KHz – 30MHz

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o), the test result no need to reported.



Between 30MHz – 1GHz:

Temperature:	23.6℃	Relative Humidity:	53.9%
Pressure:	1010 hPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		

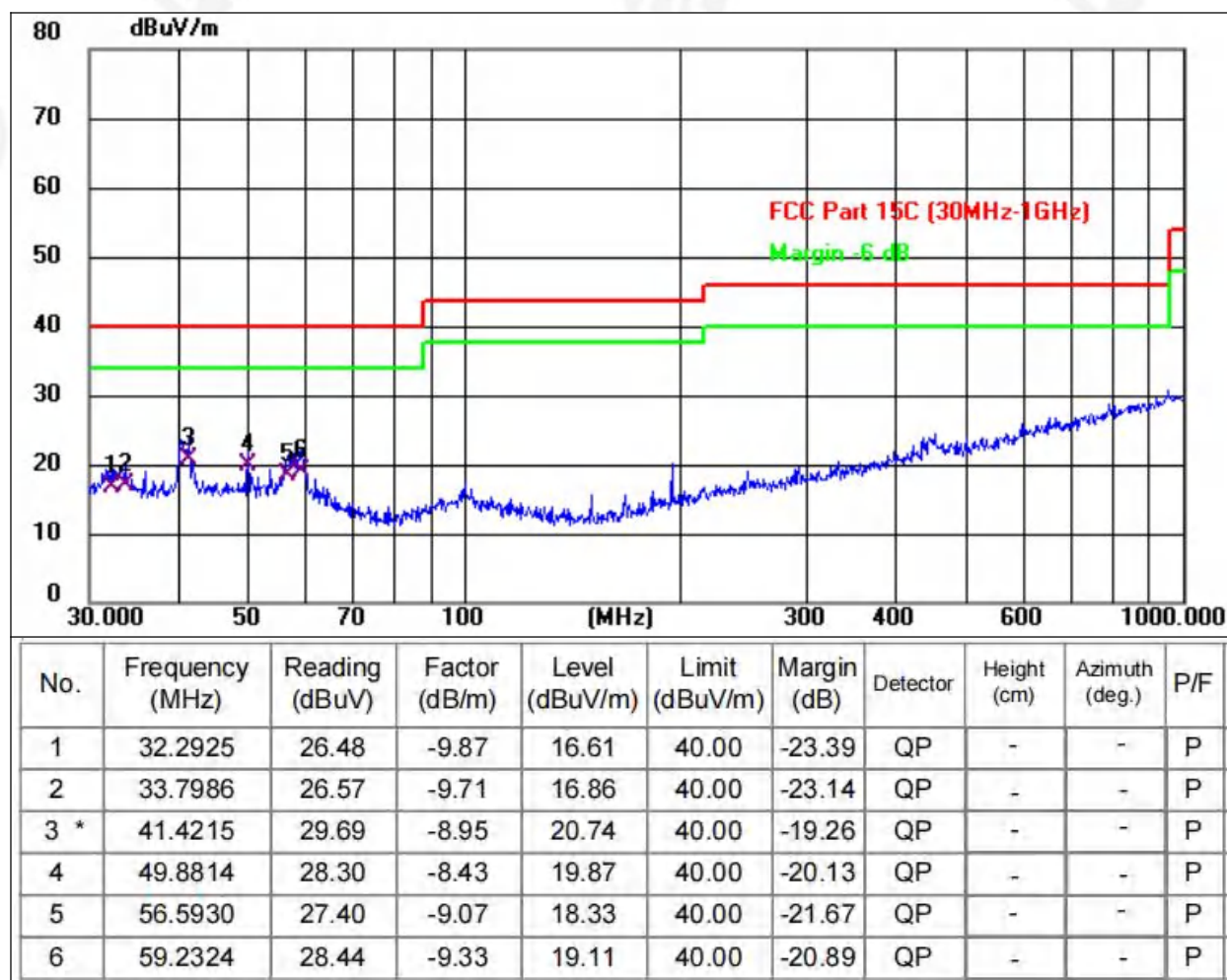


Notes:

1. An initial pre-scan was performed on the peak detector.
2. Quasi - Peak measurement were performed at the frequencies with maximized peak emission.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Final Level = Reading level + Correct Factor.
5. Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
6. Margin = Measurement Level-Limit.
7. '-' Means the test Degree and Height are not recorded by the test software and only show the worst case in the test report.
8. The test data shows only the worst case TX 802.11ac20 - 5825MHz.



Temperature:	23.6℃	Relative Humidity:	53.9%
Pressure:	1010 hPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



Notes:

1. An initial pre-scan was performed on the peak detector.
2. Quasi - Peak measurement were performed at the frequencies with maximized peak emission.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Final Level = Reading level + Correct Factor.
5. Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
6. Margin = Measurement Level-Limit.
7. '-' Means the test Degree and Height are not recorded by the test software and only show the worst case in the test report.
8. The test data shows only the worst case TX 802.11ac20 - 5825MHz.



Between 1GHz – 40GHz:

Temperature:	23.9℃	Relative Humidity:	54.2%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz

802.11a

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
Low Channel:5745MHz									
V	11490.00	45.38	34.3	5.8	41.2	58.08	74	-15.92	PK
V	11490.00	25.6	34.3	5.8	41.2	38.3	54	-15.7	AV
V	17235.00	38.99	32.1	6	43.5	56.39	68.2	-11.81	PK
V	17235.00	20.17	32.1	6	43.5	37.57	54	-16.43	AV
H	11490.00	47.54	34.3	5.8	41.2	60.24	74	-13.76	PK
H	11490.00	26.31	34.3	5.8	41.2	39.01	54	-14.99	AV
H	17235.00	37.85	32.1	6	43.5	55.25	68.2	-12.95	PK
H	17235.00	23.14	32.1	6	43.5	40.54	54	-13.46	AV
Middle Channel:5785MHz									
V	11570.00	49.22	34.3	5.8	41.2	61.92	74	-12.08	PK
V	11570.00	26.56	34.3	5.8	41.2	39.26	54	-14.74	AV
V	17355.00	35.91	32.1	6	43.5	53.31	68.2	-14.89	PK
V	17355.00	21.71	32.1	6	43.5	39.11	54	-14.89	AV
H	11570.00	45.8	34.3	5.8	41.2	58.5	74	-15.5	PK
H	11570.00	21.11	34.3	5.8	41.2	33.81	54	-20.19	AV
H	17355.00	35.22	32.1	6	43.5	52.62	68.2	-15.58	PK
H	17355.00	24.02	32.1	6	43.5	41.42	54	-12.58	AV
High Channel:5825MHz									
V	11650.00	48.71	34.3	5.8	41.2	61.41	74	-12.59	PK
V	11650.00	25.82	34.3	5.8	41.2	38.52	54	-15.48	AV
V	17475.00	37.93	32.1	6	43.5	55.33	68.2	-12.87	PK
V	17475.00	24.65	32.1	6	43.5	42.05	54	-11.95	AV
H	11650.00	46	34.3	5.8	41.2	58.7	74	-15.3	PK
H	11650.00	29.21	34.3	5.8	41.2	41.91	54	-12.09	AV
H	17475.00	37.24	32.1	6	43.5	54.64	68.2	-13.56	PK
H	17475.00	24.73	32.1	6	43.5	42.13	54	-11.87	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The attenuation level of (25GHz - 40GHz) exceeds the permitted value by 20 decibels. no need to be reported.



802.11n20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
Low Channel:5745MHz									
V	11490.00	47.45	34.3	5.8	41.2	60.15	74	-13.85	PK
V	11490.00	26.07	34.3	5.8	41.2	38.77	54	-15.23	AV
V	17235.00	37.76	32.1	6	43.5	55.16	68.2	-13.04	PK
V	17235.00	23.03	32.1	6	43.5	40.43	54	-13.57	AV
H	11490.00	49.76	34.3	5.8	41.2	62.46	74	-11.54	PK
H	11490.00	26.13	34.3	5.8	41.2	38.83	54	-15.17	AV
H	17235.00	39.23	32.1	6	43.5	56.63	68.2	-11.57	PK
H	17235.00	21.49	32.1	6	43.5	38.89	54	-15.11	AV
Middle Channel:5785MHz									
V	11570.00	47.71	34.3	5.8	41.2	60.41	74	-13.59	PK
V	11570.00	27.53	34.3	5.8	41.2	40.23	54	-13.77	AV
V	17355.00	38.6	32.1	6	43.5	56	68.2	-12.2	PK
V	17355.00	21.19	32.1	6	43.5	38.59	54	-15.41	AV
H	11570.00	46.27	34.3	5.8	41.2	58.97	74	-15.03	PK
H	11570.00	24.2	34.3	5.8	41.2	36.9	54	-17.1	AV
H	17355.00	37.21	32.1	6	43.5	54.61	68.2	-13.59	PK
H	17355.00	21.33	32.1	6	43.5	38.73	54	-15.27	AV
High Channel:5825MHz									
V	11650.00	49.95	34.3	5.8	41.2	62.65	74	-11.35	PK
V	11650.00	28.06	34.3	5.8	41.2	40.76	54	-13.24	AV
V	17475.00	38.69	32.1	6	43.5	56.09	68.2	-12.11	PK
V	17475.00	22	32.1	6	43.5	39.4	54	-14.6	AV
H	11650.00	48.26	34.3	5.8	41.2	60.96	74	-13.04	PK
H	11650.00	21.35	34.3	5.8	41.2	34.05	54	-19.95	AV
H	17475.00	39.86	32.1	6	43.5	57.26	68.2	-10.94	PK
H	17475.00	22.73	32.1	6	43.5	40.13	54	-13.87	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The attenuation level of (25GHz - 40GHz) exceeds the permitted value by 20 decibels. no need to be reported.



802.11n40

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
Low Channel:5755MHz									
V	11510.00	48.99	34.3	5.8	41.2	61.69	74	-12.31	PK
V	11510.00	26.61	34.3	5.8	41.2	39.31	54	-14.69	AV
V	17265.00	38.5	32.1	6	43.5	55.9	68.2	-12.3	PK
V	17265.00	23.92	32.1	6	43.5	41.32	54	-12.68	AV
H	11510.00	48.75	34.3	5.8	41.2	61.45	74	-12.55	PK
H	11510.00	27.89	34.3	5.8	41.2	40.59	54	-13.41	AV
H	17265.00	37.96	32.1	6	43.5	55.36	68.2	-12.84	PK
H	17265.00	21.48	32.1	6	43.5	38.88	54	-15.12	AV
Middle Channel:5795MHz									
V	11590.00	49.01	34.3	5.8	41.2	61.71	74	-12.29	PK
V	11590.00	28.05	34.3	5.8	41.2	40.75	54	-13.25	AV
V	17385.00	35.59	32.1	6	43.5	52.99	68.2	-15.21	PK
V	17385.00	21.71	32.1	6	43.5	39.11	54	-14.89	AV
H	11590.00	45.85	34.3	5.8	41.2	58.55	74	-15.45	PK
H	11590.00	22.58	34.3	5.8	41.2	35.28	54	-18.72	AV
H	17385.00	35.48	32.1	6	43.5	52.88	68.2	-15.32	PK
H	17385.00	20.24	32.1	6	43.5	37.64	54	-16.36	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The attenuation level of (25GHz - 40GHz) exceeds the permitted value by 20 decibels. no need to be reported.



802.11ac20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-ampl ifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
Low Channel:5745MHz									
V	11490.00	45.36	34.3	5.8	41.2	58.06	74	-15.94	PK
V	11490.00	28.2	34.3	5.8	41.2	40.9	54	-13.1	AV
V	17235.00	35.55	32.1	6	43.5	52.95	68.2	-15.25	PK
V	17235.00	20.69	32.1	6	43.5	38.09	54	-15.91	AV
H	11490.00	49.62	34.3	5.8	41.2	62.32	74	-11.68	PK
H	11490.00	26.73	34.3	5.8	41.2	39.43	54	-14.57	AV
H	17235.00	36.72	32.1	6	43.5	54.12	68.2	-14.08	PK
H	17235.00	20.32	32.1	6	43.5	37.72	54	-16.28	AV
Middle Channel:5785MHz									
V	11570.00	48.23	34.3	5.8	41.2	60.93	74	-13.07	PK
V	11570.00	28.02	34.3	5.8	41.2	40.72	54	-13.28	AV
V	17355.00	39.1	32.1	6	43.5	56.5	68.2	-11.7	PK
V	17355.00	20.01	32.1	6	43.5	37.41	54	-16.59	AV
H	11570.00	46.19	34.3	5.8	41.2	58.89	74	-15.11	PK
H	11570.00	25.36	34.3	5.8	41.2	38.06	54	-15.94	AV
H	17355.00	39.21	32.1	6	43.5	56.61	68.2	-11.59	PK
H	17355.00	24.07	32.1	6	43.5	41.47	54	-12.53	AV
High Channel:5825MHz									
V	11650.00	46.53	34.3	5.8	41.2	59.23	74	-14.77	PK
V	11650.00	28.02	34.3	5.8	41.2	40.72	54	-13.28	AV
V	17475.00	39.55	32.1	6	43.5	56.95	68.2	-11.25	PK
V	17475.00	24.27	32.1	6	43.5	41.67	54	-12.33	AV
H	11650.00	45.51	34.3	5.8	41.2	58.21	74	-15.79	PK
H	11650.00	28.57	34.3	5.8	41.2	41.27	54	-12.73	AV
H	17475.00	35.43	32.1	6	43.5	52.83	68.2	-15.37	PK
H	17475.00	24.83	32.1	6	43.5	42.23	54	-11.77	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The attenuation level of (25GHz - 40GHz) exceeds the permitted value by 20 decibels. no need to be reported.



802.11ac40

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
Low Channel:5755MHz									
V	11510.00	49.4	34.3	5.8	41.2	62.1	74	-11.9	PK
V	11510.00	28.83	34.3	5.8	41.2	41.53	54	-12.47	AV
V	17265.00	38.08	32.1	6	43.5	55.48	68.2	-12.72	PK
V	17265.00	22.97	32.1	6	43.5	40.37	54	-13.63	AV
H	11510.00	48.89	34.3	5.8	41.2	61.59	74	-12.41	PK
H	11510.00	29.72	34.3	5.8	41.2	42.42	54	-11.58	AV
H	17265.00	39.4	32.1	6	43.5	56.8	68.2	-11.4	PK
H	17265.00	20.46	32.1	6	43.5	37.86	54	-16.14	AV
Middle Channel:5795MHz									
V	11590.00	47.65	34.3	5.8	41.2	60.35	74	-13.65	PK
V	11590.00	25.11	34.3	5.8	41.2	37.81	54	-16.19	AV
V	17385.00	38.65	32.1	6	43.5	56.05	68.2	-12.15	PK
V	17385.00	22.17	32.1	6	43.5	39.57	54	-14.43	AV
H	11590.00	48.93	34.3	5.8	41.2	61.63	74	-12.37	PK
H	11590.00	24.6	34.3	5.8	41.2	37.3	54	-16.7	AV
H	17385.00	37.34	32.1	6	43.5	54.74	68.2	-13.46	PK
H	17385.00	24.18	32.1	6	43.5	41.58	54	-12.42	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The attenuation level of (25GHz - 40GHz) exceeds the permitted value by 20 decibels. no need to be reported.



4.2.7 RADIATED BAND EDGE TEST RESULT

Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz

802.11a

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
Low Channel:5745MHz									
V	5700.00	58.54	34.8	3.86	36.2	63.8	110.8	-47	PK
V	5700.00	27.85	34.8	3.86	36.2	33.11	54	-20.89	AV
V	5725.00	58.65	34.8	3.86	36.2	63.91	122.2	-58.29	PK
V	5725.00	29.76	34.8	3.86	36.2	35.02	54	-18.98	AV
H	5700.00	53.94	34.8	3.86	36.2	59.2	110.8	-51.6	PK
H	5700.00	36.74	34.8	3.86	36.2	42	54	-12	AV
H	5725.00	57.91	34.8	3.86	36.2	63.17	122.2	-59.03	PK
H	5725.00	26.78	34.8	3.86	36.2	32.04	54	-21.96	AV
High Channel:5825MHz									
V	5850.00	58.26	34.8	3.86	36.2	63.52	110.8	-47.28	PK
V	5850.00	27.18	34.8	3.86	36.2	32.44	54	-21.56	AV
V	5875.00	59.89	34.8	3.86	36.2	65.15	122.2	-57.05	PK
V	5875.00	28.49	34.8	3.86	36.2	33.75	54	-20.25	AV
H	5850.00	52.26	34.8	3.86	36.2	57.52	110.8	-53.28	PK
H	5850.00	38.73	34.8	3.86	36.2	43.99	54	-10.01	AV
H	5875.00	64.73	34.8	3.86	36.2	69.99	122.2	-52.21	PK
H	5875.00	27.92	34.8	3.86	36.2	33.18	54	-20.82	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11n20

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5745MHz									
V	5700.00	58.64	34.8	3.86	36.2	63.9	110.8	-46.9	PK
V	5700.00	26.01	34.8	3.86	36.2	31.27	54	-22.73	AV
V	5725.00	59.91	34.8	3.86	36.2	65.17	122.2	-57.03	PK
V	5725.00	27.18	34.8	3.86	36.2	32.44	54	-21.56	AV
H	5700.00	51.95	34.8	3.86	36.2	57.21	110.8	-53.59	PK
H	5700.00	37.07	34.8	3.86	36.2	42.33	54	-11.67	AV
H	5725.00	64.55	34.8	3.86	36.2	69.81	122.2	-52.39	PK
H	5725.00	26.56	34.8	3.86	36.2	31.82	54	-22.18	AV
High Channel:5825MHz									
V	5850.00	59.06	34.8	3.86	36.2	64.32	110.8	-46.48	PK
V	5850.00	29.92	34.8	3.86	36.2	35.18	54	-18.82	AV
V	5875.00	58.05	34.8	3.86	36.2	63.31	122.2	-58.89	PK
V	5875.00	25.97	34.8	3.86	36.2	31.23	54	-22.77	AV
H	5850.00	51.18	34.8	3.86	36.2	56.44	110.8	-54.36	PK
H	5850.00	36.76	34.8	3.86	36.2	42.02	54	-11.98	AV
H	5875.00	56.68	34.8	3.86	36.2	61.94	122.2	-60.26	PK
H	5875.00	29.19	34.8	3.86	36.2	34.45	54	-19.55	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11n40

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5755MHz									
V	5700.00	59.86	34.8	3.86	36.2	65.12	110.8	-45.68	PK
V	5700.00	28.31	34.8	3.86	36.2	33.57	54	-20.43	AV
V	5725.00	59.51	34.8	3.86	36.2	64.77	122.2	-57.43	PK
V	5725.00	29.45	34.8	3.86	36.2	34.71	54	-19.29	AV
H	5700.00	54.74	34.8	3.86	36.2	60	110.8	-50.8	PK
H	5700.00	38.59	34.8	3.86	36.2	43.85	54	-10.15	AV
H	5725.00	58.95	34.8	3.86	36.2	64.21	122.2	-57.99	PK
H	5725.00	29.98	34.8	3.86	36.2	35.24	54	-18.76	AV
High Channel:5795MHz									
V	5850.00	55.82	34.8	3.86	36.2	61.08	110.8	-49.72	PK
V	5850.00	29.99	34.8	3.86	36.2	35.25	54	-18.75	AV
V	5875.00	59.81	34.8	3.86	36.2	65.07	122.2	-57.13	PK
V	5875.00	27.16	34.8	3.86	36.2	32.42	54	-21.58	AV
H	5850.00	51.57	34.8	3.86	36.2	56.83	110.8	-53.97	PK
H	5850.00	35.32	34.8	3.86	36.2	40.58	54	-13.42	AV
H	5875.00	60.1	34.8	3.86	36.2	65.36	122.2	-56.84	PK
H	5875.00	28.75	34.8	3.86	36.2	34.01	54	-19.99	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11ac20

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5745MHz									
V	5700.00	55.94	34.8	3.86	36.2	61.2	110.8	-49.6	PK
V	5700.00	26.88	34.8	3.86	36.2	32.14	54	-21.86	AV
V	5725.00	59.45	34.8	3.86	36.2	64.71	122.2	-57.49	PK
V	5725.00	26.3	34.8	3.86	36.2	31.56	54	-22.44	AV
H	5700.00	53.86	34.8	3.86	36.2	59.12	110.8	-51.68	PK
H	5700.00	35.01	34.8	3.86	36.2	40.27	54	-13.73	AV
H	5725.00	65.41	34.8	3.86	36.2	70.67	122.2	-51.53	PK
H	5725.00	26.57	34.8	3.86	36.2	31.83	54	-22.17	AV
High Channel:5825MHz									
V	5850.00	59.05	34.8	3.86	36.2	64.31	110.8	-46.49	PK
V	5850.00	25.24	34.8	3.86	36.2	30.5	54	-23.5	AV
V	5875.00	59.67	34.8	3.86	36.2	64.93	122.2	-57.27	PK
V	5875.00	29.28	34.8	3.86	36.2	34.54	54	-19.46	AV
H	5850.00	53.35	34.8	3.86	36.2	58.61	110.8	-52.19	PK
H	5850.00	38.11	34.8	3.86	36.2	43.37	54	-10.63	AV
H	5875.00	64.65	34.8	3.86	36.2	69.91	122.2	-52.29	PK
H	5875.00	27.45	34.8	3.86	36.2	32.71	54	-21.29	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



802.11ac40

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5755MHz									
V	5700.00	59.96	34.8	3.86	36.2	65.22	110.8	-45.58	PK
V	5700.00	25.18	34.8	3.86	36.2	30.44	54	-23.56	AV
V	5725.00	58.81	34.8	3.86	36.2	64.07	122.2	-58.13	PK
V	5725.00	27.76	34.8	3.86	36.2	33.02	54	-20.98	AV
H	5700.00	52.86	34.8	3.86	36.2	58.12	110.8	-52.68	PK
H	5700.00	39.14	34.8	3.86	36.2	44.4	54	-9.6	AV
H	5725.00	62.11	34.8	3.86	36.2	67.37	122.2	-54.83	PK
H	5725.00	27.49	34.8	3.86	36.2	32.75	54	-21.25	AV
High Channel:5795MHz									
V	5850.00	58.69	34.8	3.86	36.2	63.95	110.8	-46.85	PK
V	5850.00	25.44	34.8	3.86	36.2	30.7	54	-23.3	AV
V	5875.00	59.48	34.8	3.86	36.2	64.74	122.2	-57.46	PK
V	5875.00	29.16	34.8	3.86	36.2	34.42	54	-19.58	AV
H	5850.00	52.51	34.8	3.86	36.2	57.77	110.8	-53.03	PK
H	5850.00	36.95	34.8	3.86	36.2	42.21	54	-11.79	AV
H	5875.00	63.46	34.8	3.86	36.2	68.72	122.2	-53.48	PK
H	5875.00	25.31	34.8	3.86	36.2	30.57	54	-23.43	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



5. POWER SPECTRAL DENSITY TEST

5.1 APPLIED PROCEDURES / LIMIT

According to FCC §15.407(a) (1) Power limits:

(i) 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, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. 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).

(ii) 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, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) 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 conducted output power or 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 conducted output power and 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 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.

(iv) 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. In addition, 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, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to FCC §15.407(a) (3) Power limits:

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, 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, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. 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.



5.2 TEST PROCEDURE

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

- a) Set $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3$ RBW.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10\log(1\text{MHz}/RBW)$ to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections 5.c) and 5.d) above, since RBW=100 kHz is available on nearly all spectrum analyzers.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.



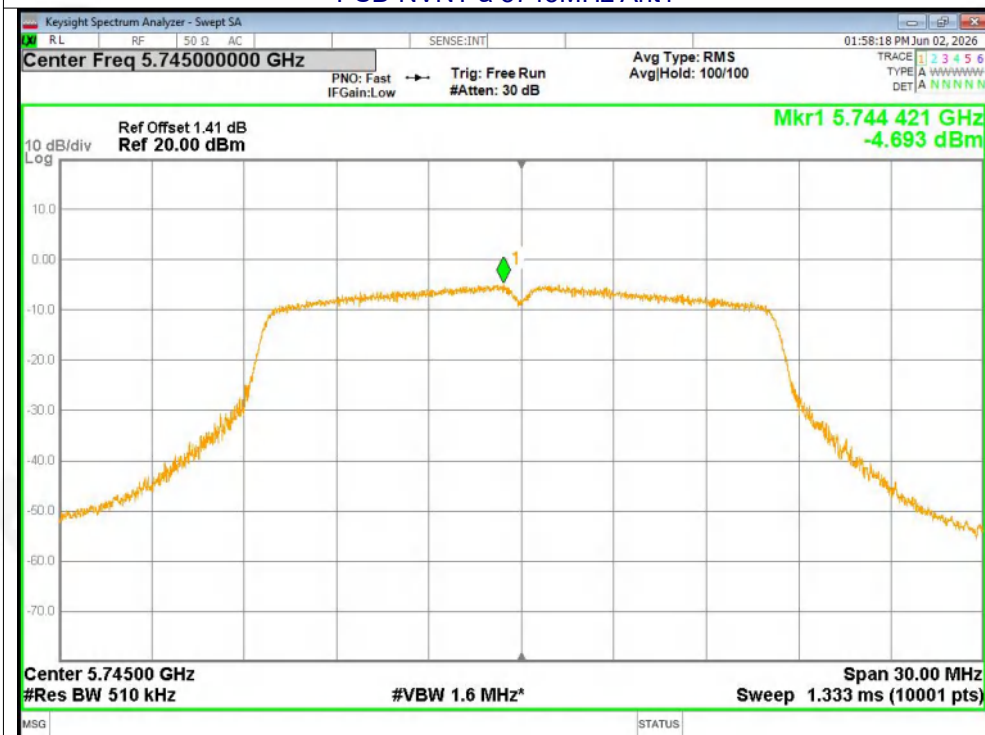
5.6 TEST RESULTS

Temperature:	23.6 °C	Relative Humidity:	54.0%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz

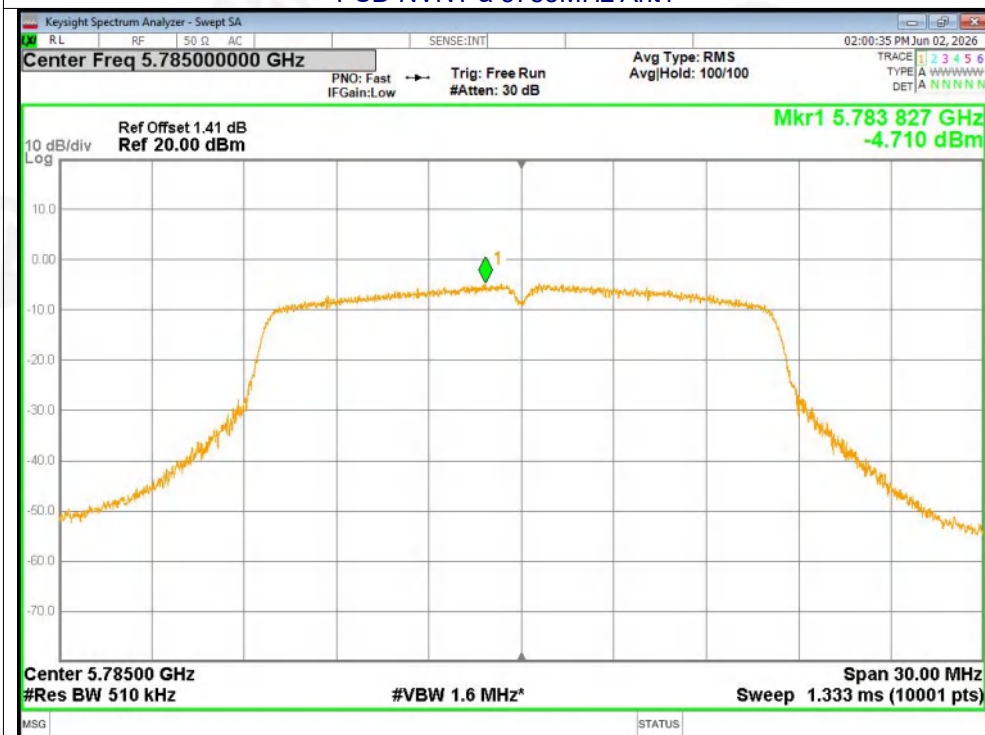
Test mode	Test Channel (MHz)	PSD (dBm/500kHz)	Duty cycle factor (dB)	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11a	5745	-4.69	0.32	-4.37	30	Pass
	5785	-4.71	0.46	-4.25	30	Pass
	5825	-3.67	0.36	-3.31	30	Pass
802.11n20	5745	-5.23	0.22	-5.01	30	Pass
	5785	-5.49	0.37	-5.12	30	Pass
	5825	-4.69	0.47	-4.22	30	Pass
802.11n40	5755	-8.08	0.94	-7.14	30	Pass
	5795	-8.07	0.68	-7.39	30	Pass
802.11ac20	5745	-5.17	0.91	-4.26	30	Pass
	5785	-5.07	0.89	-4.18	30	Pass
	5825	-4.03	0.75	-3.28	30	Pass
802.11ac40	5755	-7.88	0.82	-7.06	30	Pass
	5795	-8.11	0.87	-7.24	30	Pass
Note: Total PSD = PSD + Duty cycle factor.						



Test Graphs
PSD NVNT a 5745MHz Ant1

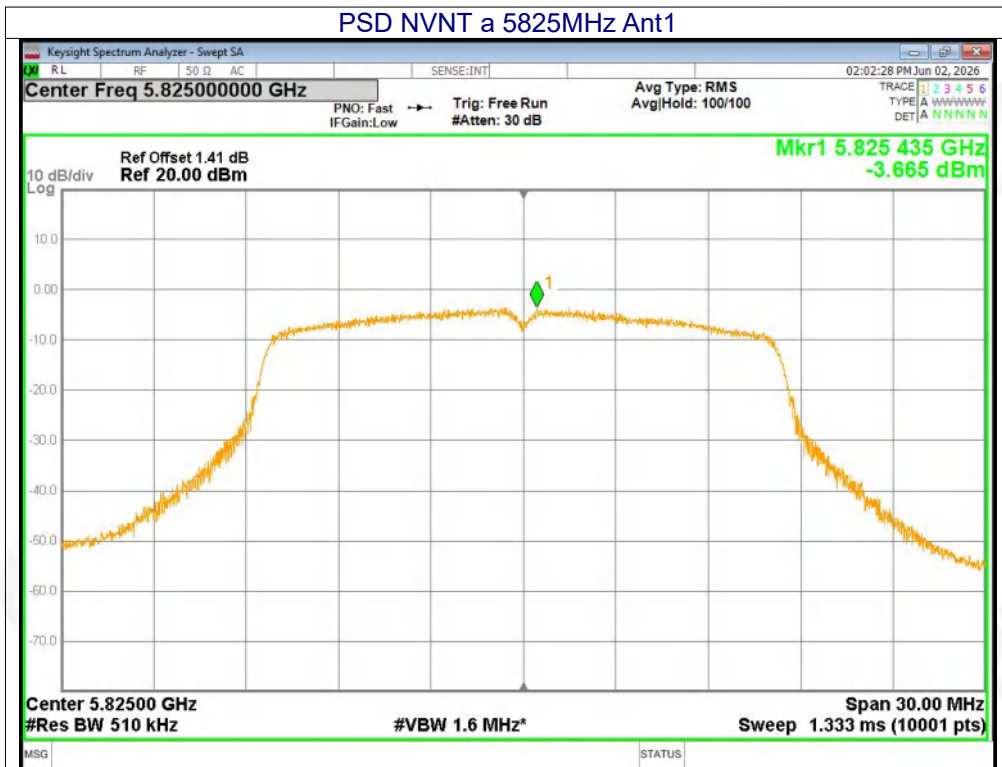


PSD NVNT a 5785MHz Ant1

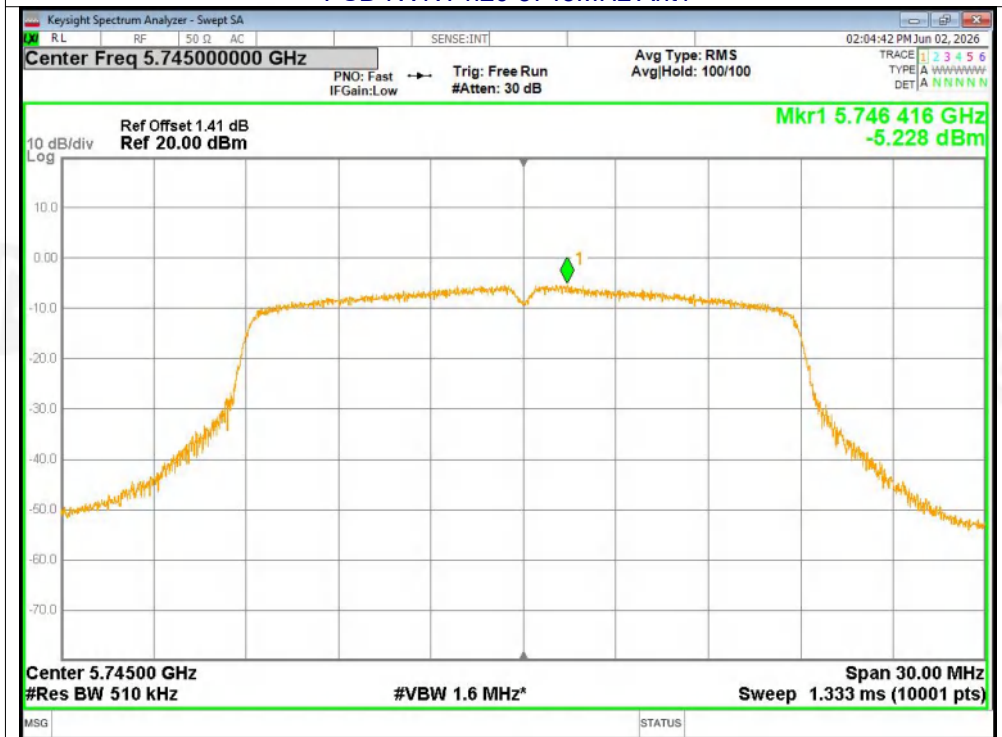




PSD NVNT a 5825MHz Ant1

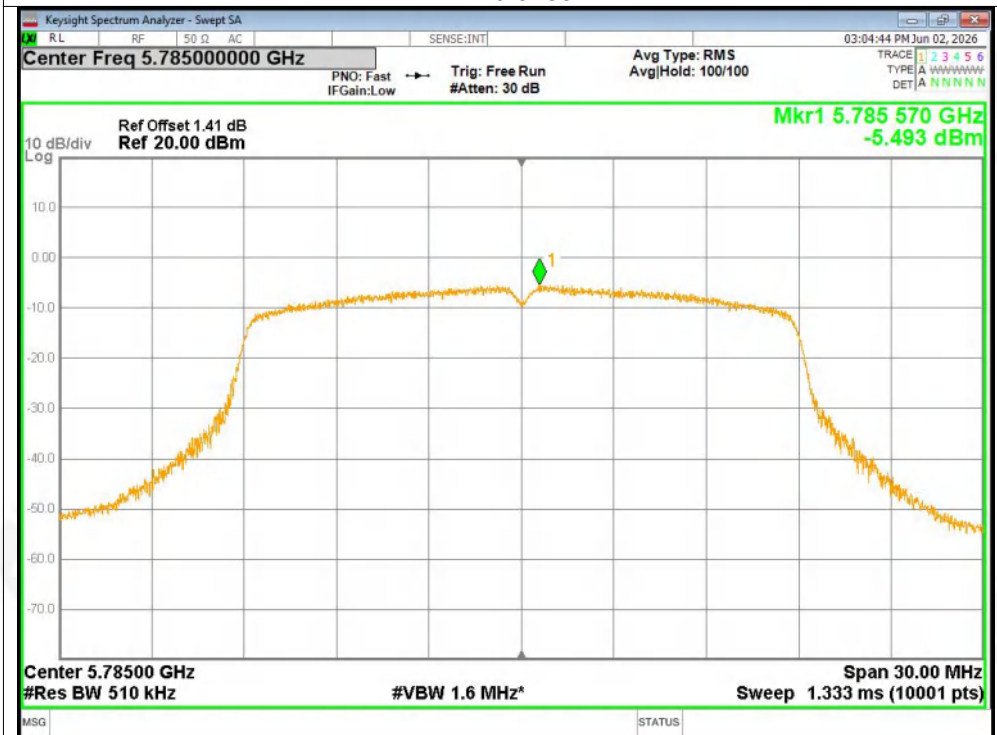


PSD NVNT n20 5745MHz Ant1

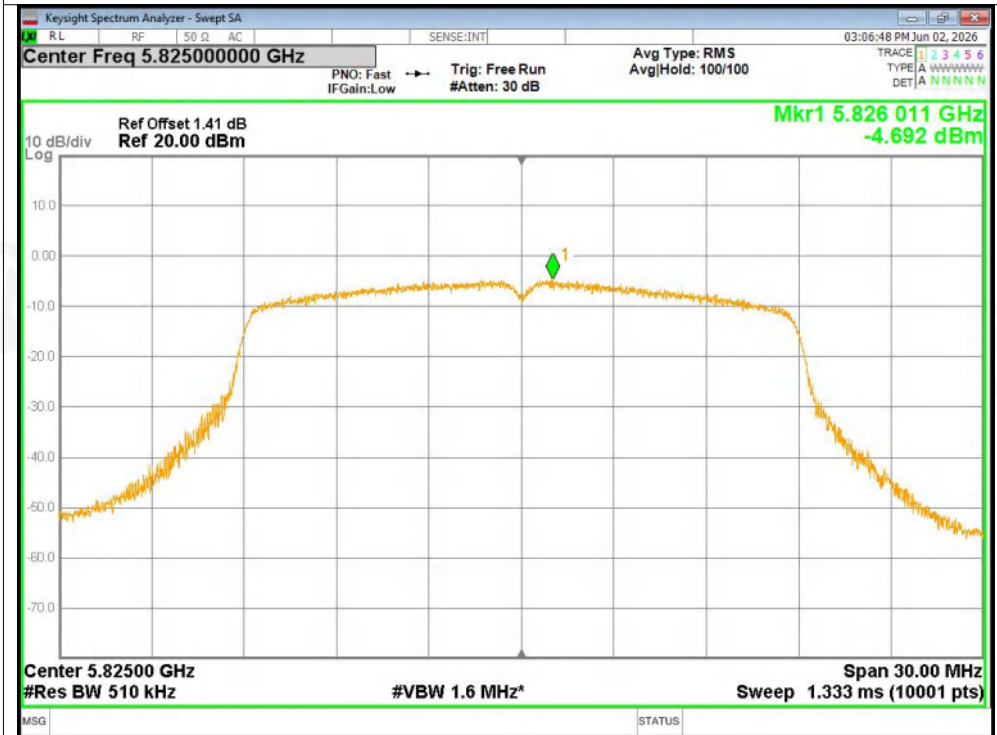




PSD NVNT n20 5785MHz Ant1



PSD NVNT n20 5825MHz Ant1





PSD NVNT n40 5755MHz Ant1

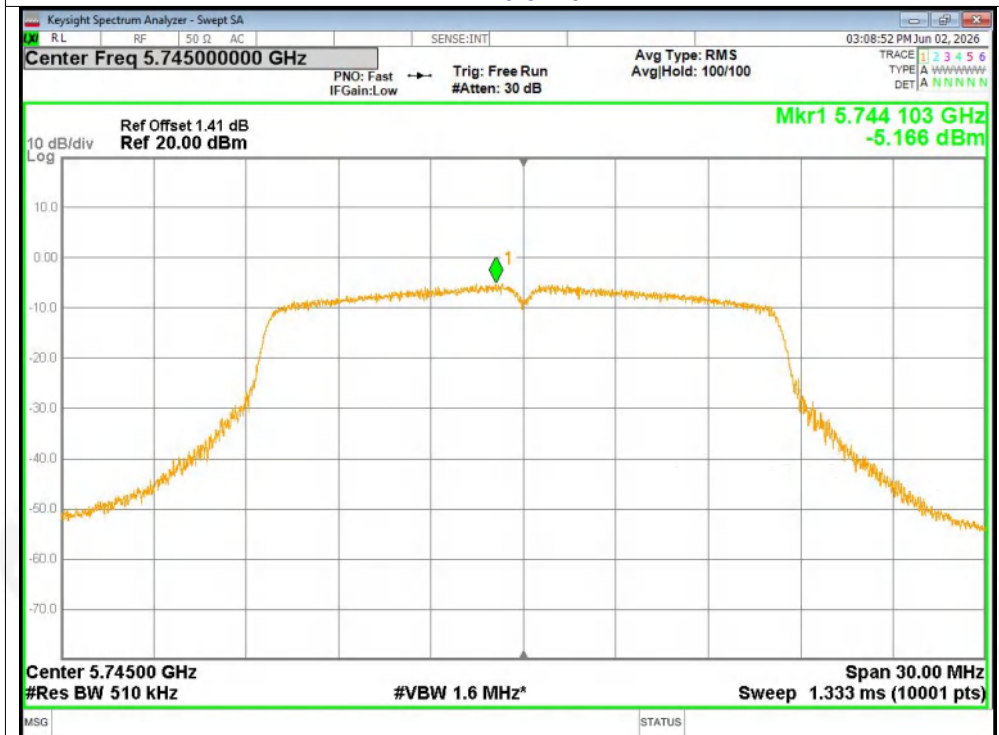


PSD NVNT n40 5795MHz Ant1

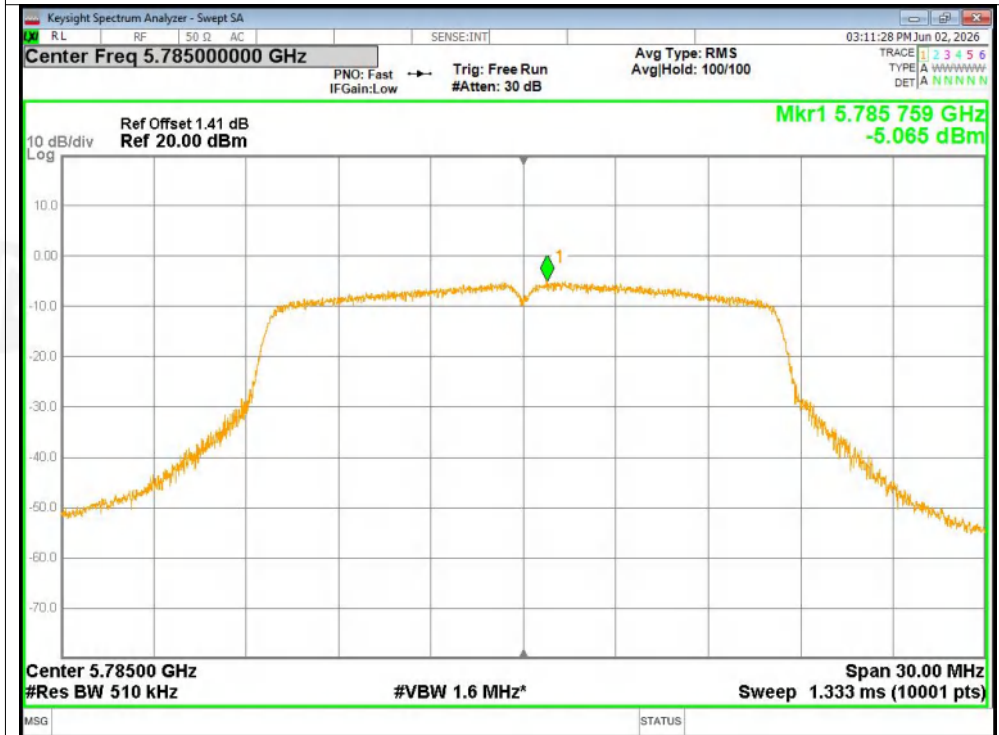




PSD NVNT ac20 5745MHz Ant1

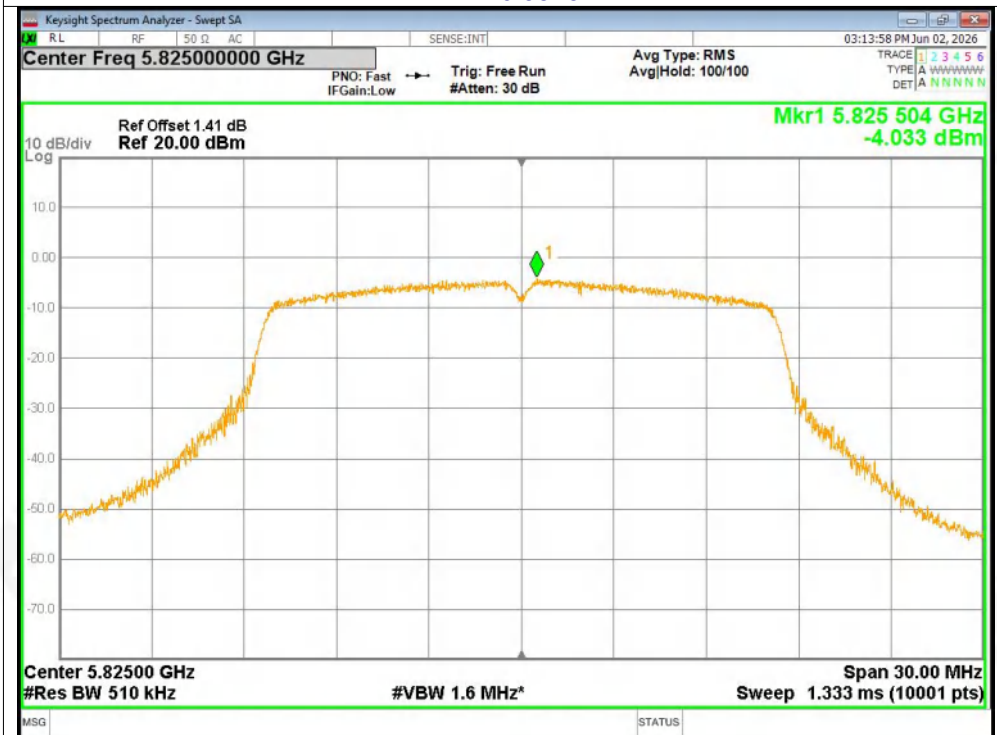


PSD NVNT ac20 5785MHz Ant1

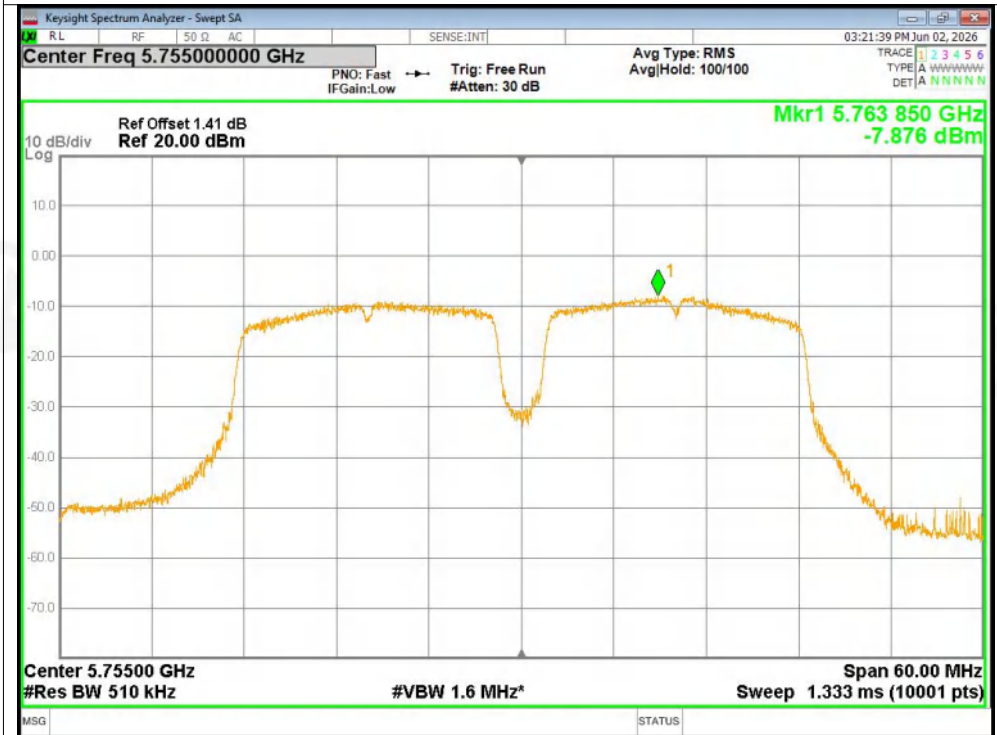


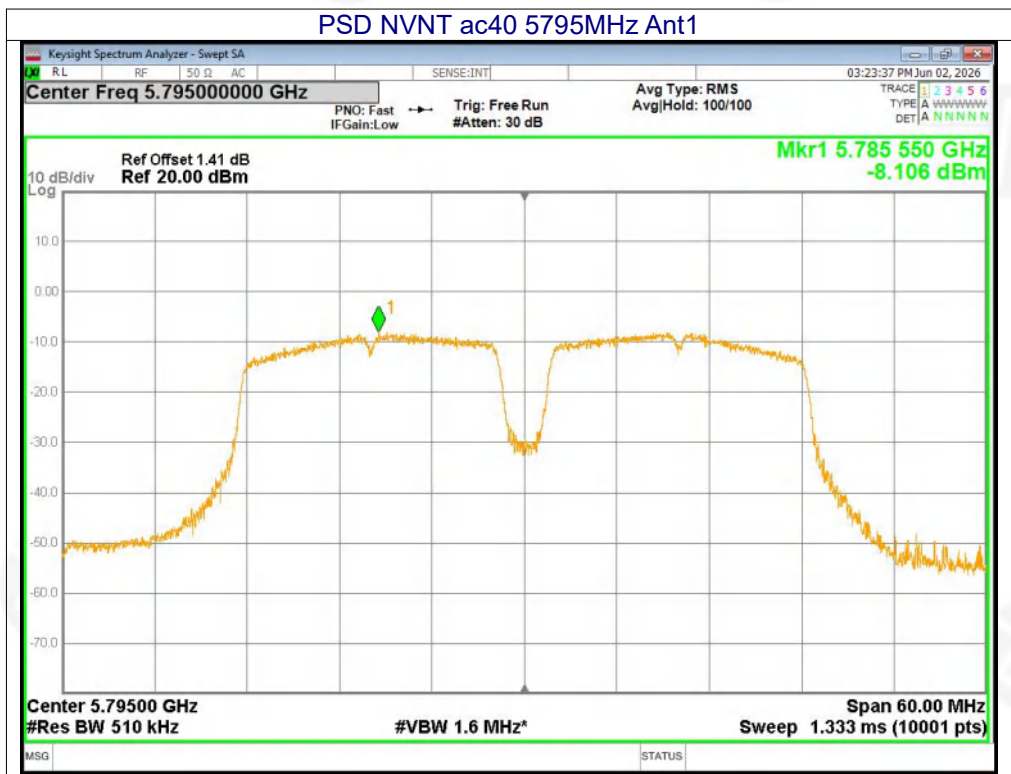


PSD NVNT ac20 5825MHz Ant1



PSD NVNT ac40 5755MHz Ant1







6. 26DB EMISSION BANDWIDTH & 6DB OCCUPIED BANDWIDTH

6.1 APPLIED PROCEDURES / LIMIT

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band, the minimum bandwidth 6 dB bandwidth of U-NII devices shall be at least 500KHz. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

6.2 TEST PROCEDURE

1) Emission bandwidth for the band 5.725 GHz to 5.85 GHz.

The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max-hold.
- e) Sweep = No faster than coupled (auto) time.
- 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.

2) Emission bandwidth for all other bands 5.15 GHz to 5.35 GHz.

The procedure for this method is as follows:

- a) Set RBW = shall be in the range of 1% to 5% of the emission bandwidth.
- b) Set the VBW $\geq$ 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 in the range of 1% to 5%.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or an EMI receiver may be employed if it implements the functionality described in the preceding items.

6.3 DEVIATION FROM STANDARD

No deviation.



6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.

6.6 TEST RESULTS

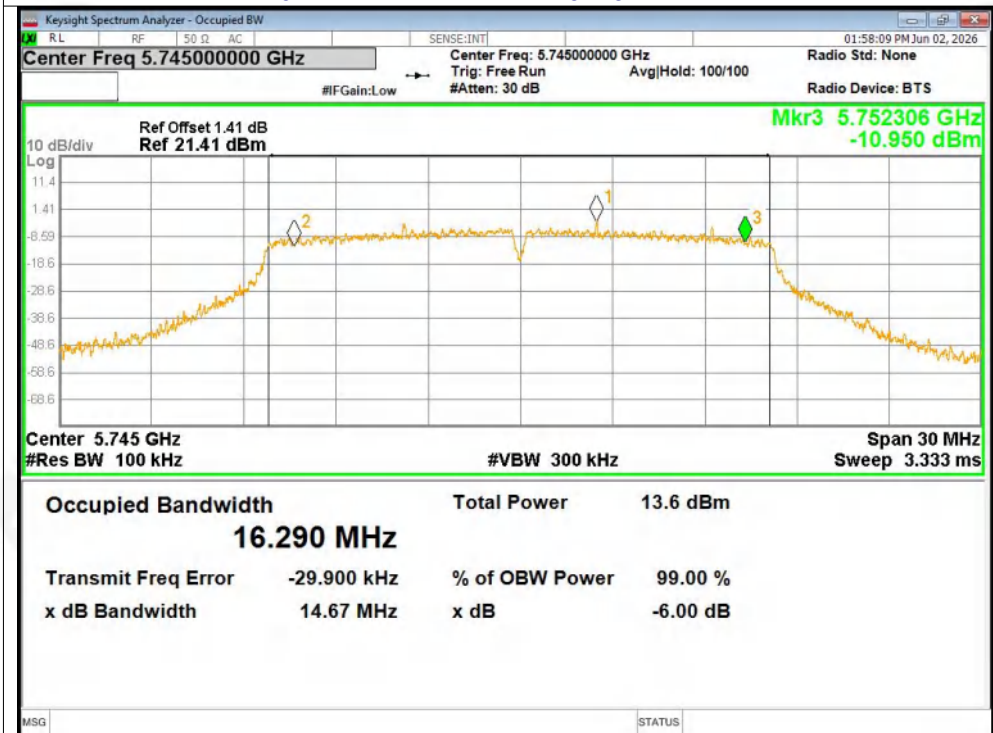
Temperature:	23.6 °C	Relative Humidity:	54.0%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz

Test Mode	Test Channel (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
802.11a	5745	14.671	>500	Pass
	5785	15.314		
	5825	15.357		
802.11n20	5745	13.881	>500	Pass
	5785	12.348		
	5825	15.050		
802.11n40	5755	27.583	>500	Pass
	5795	31.280		
802.11ac20	5745	14.380	>500	Pass
	5785	13.142		
	5825	13.713		
802.11ac40	5755	33.856	>500	Pass
	5795	33.560		

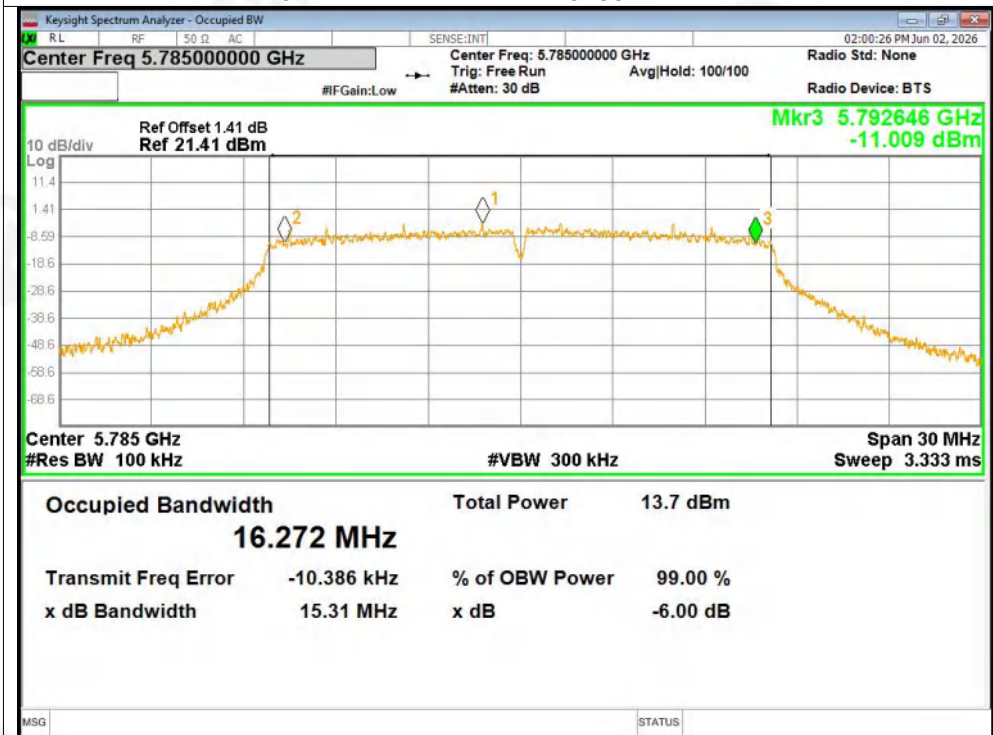


Test Graphs

-6dB Bandwidth NVNT a 5745MHz Ant1

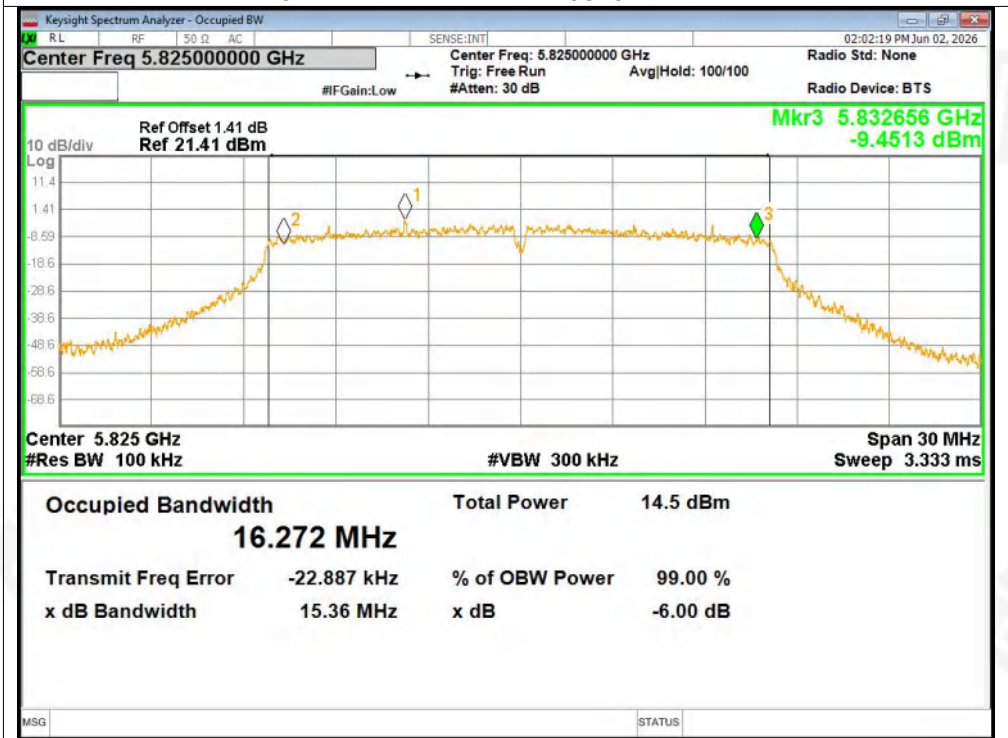


-6dB Bandwidth NVNT a 5785MHz Ant1

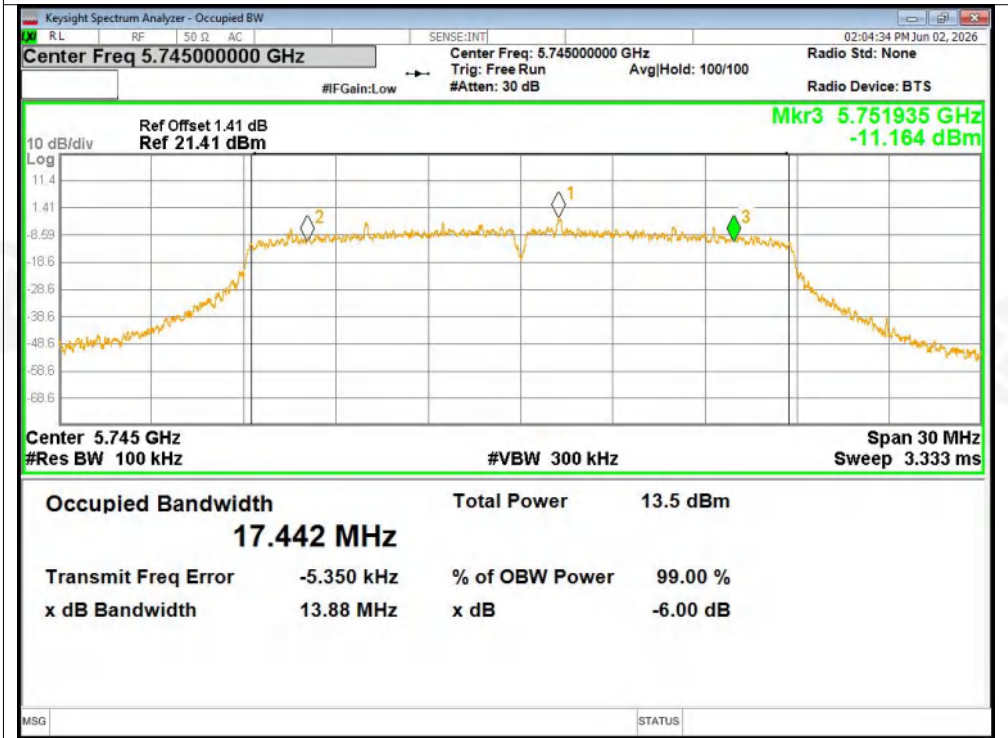




-6dB Bandwidth NVNT a 5825MHz Ant1

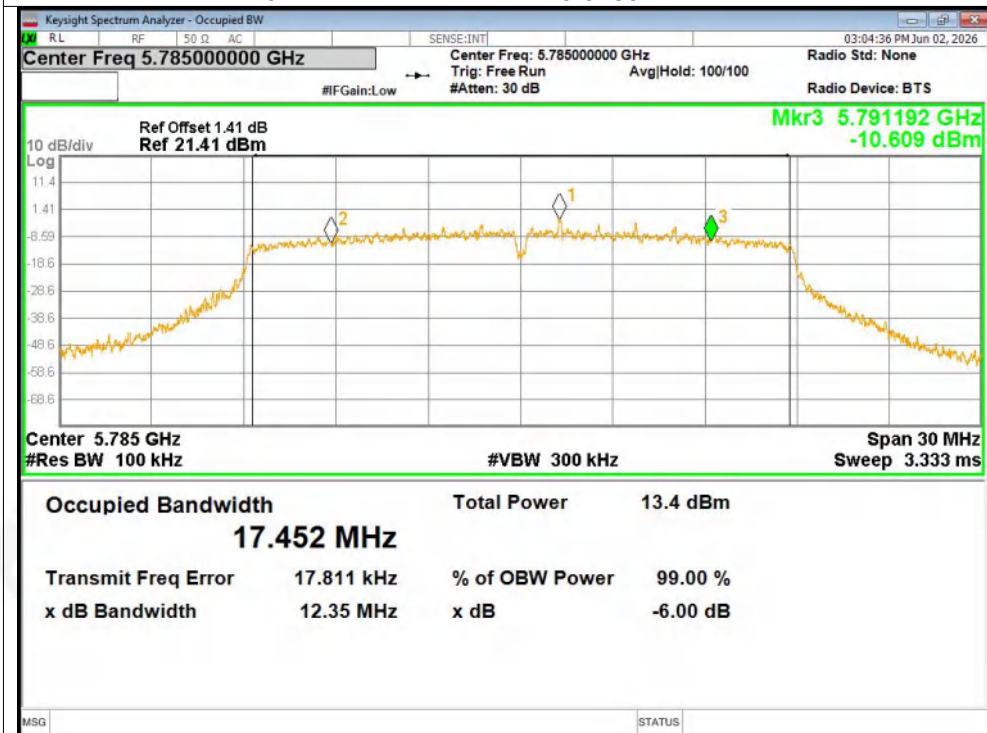


-6dB Bandwidth NVNT n20 5745MHz Ant1

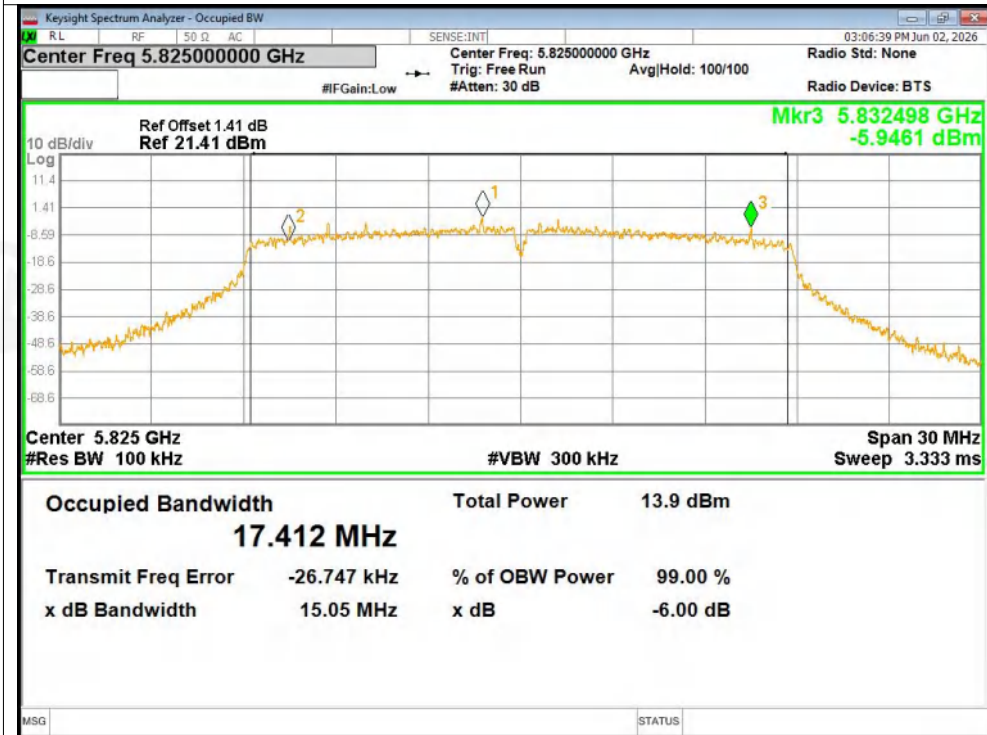




-6dB Bandwidth NVNT n20 5785MHz Ant1

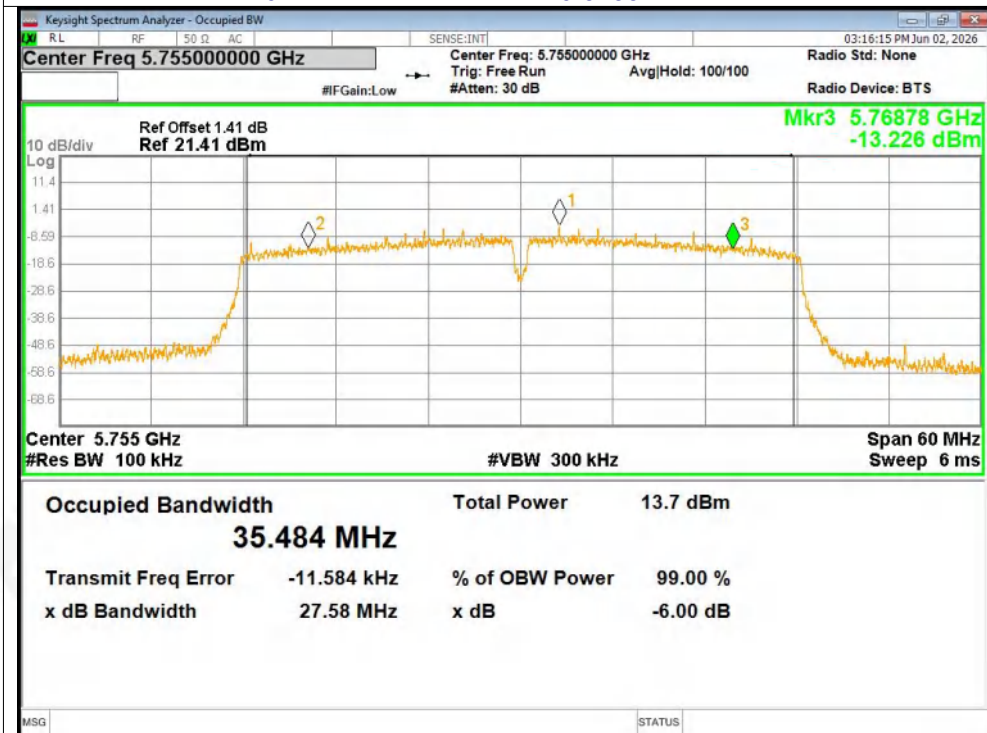


-6dB Bandwidth NVNT n20 5825MHz Ant1

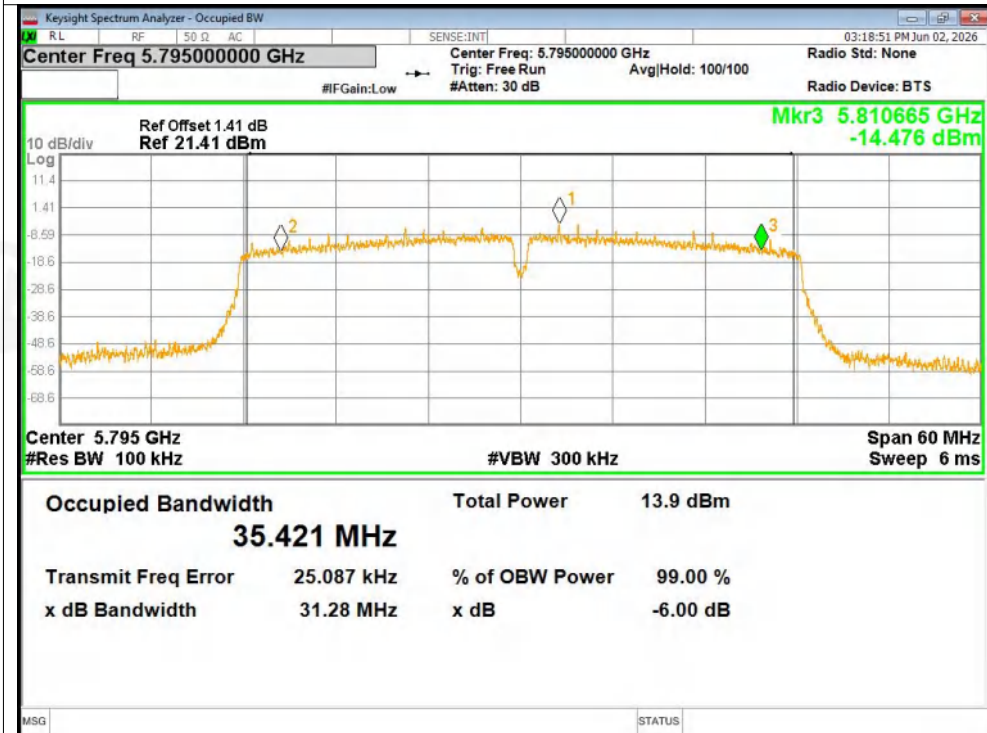




-6dB Bandwidth NVNT n40 5755MHz Ant1

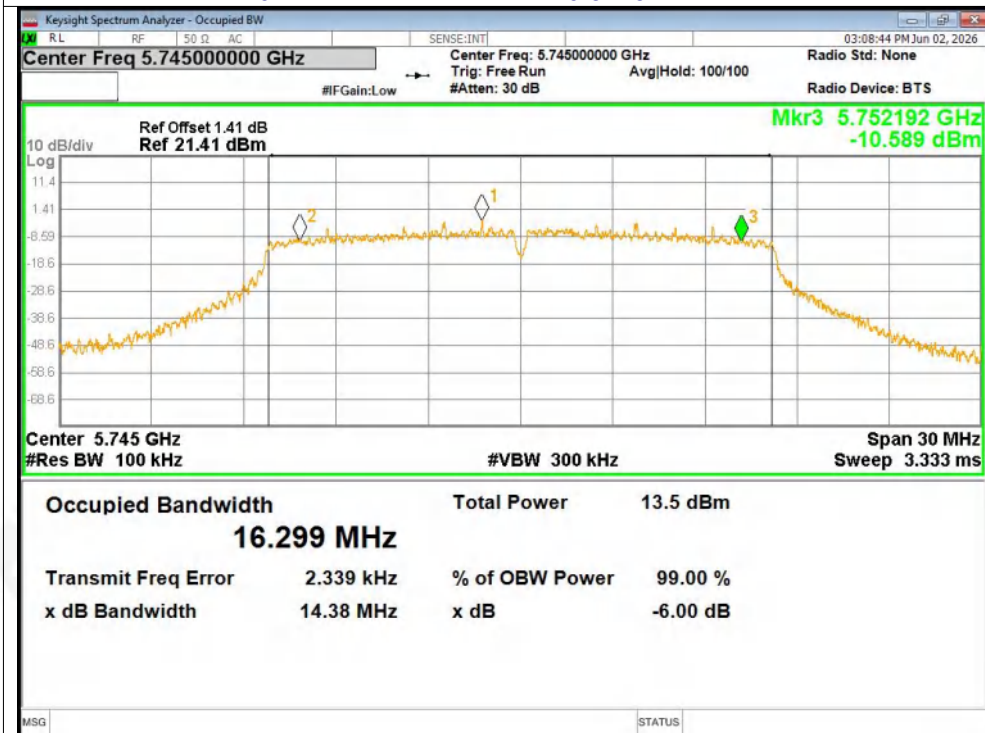


-6dB Bandwidth NVNT n40 5795MHz Ant1

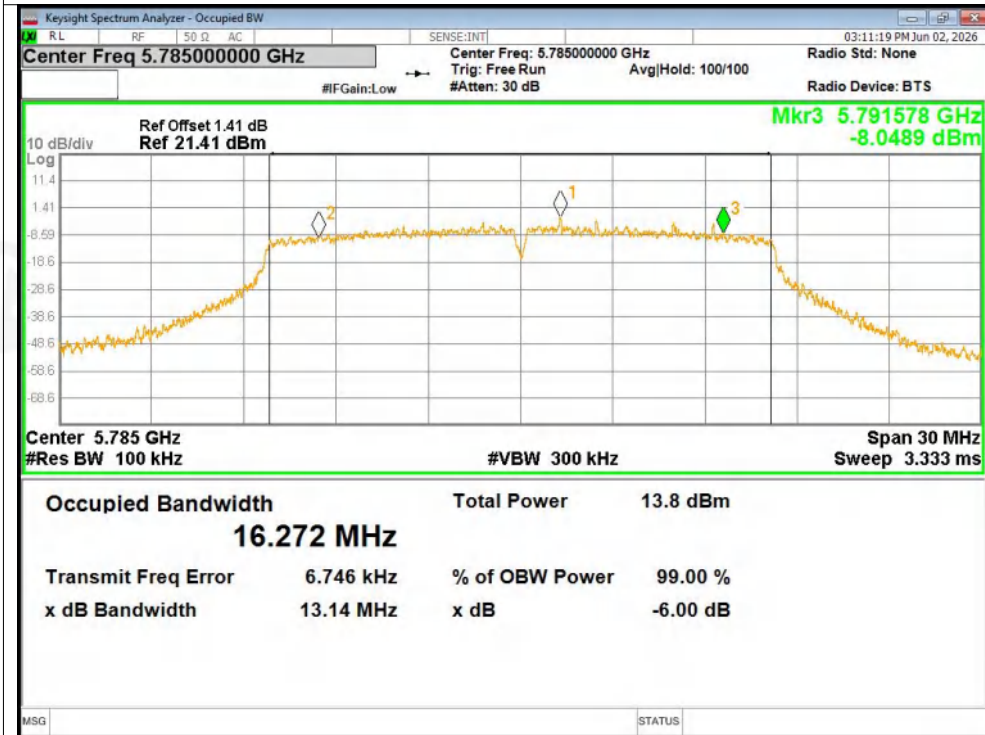




-6dB Bandwidth NVNT ac20 5745MHz Ant1

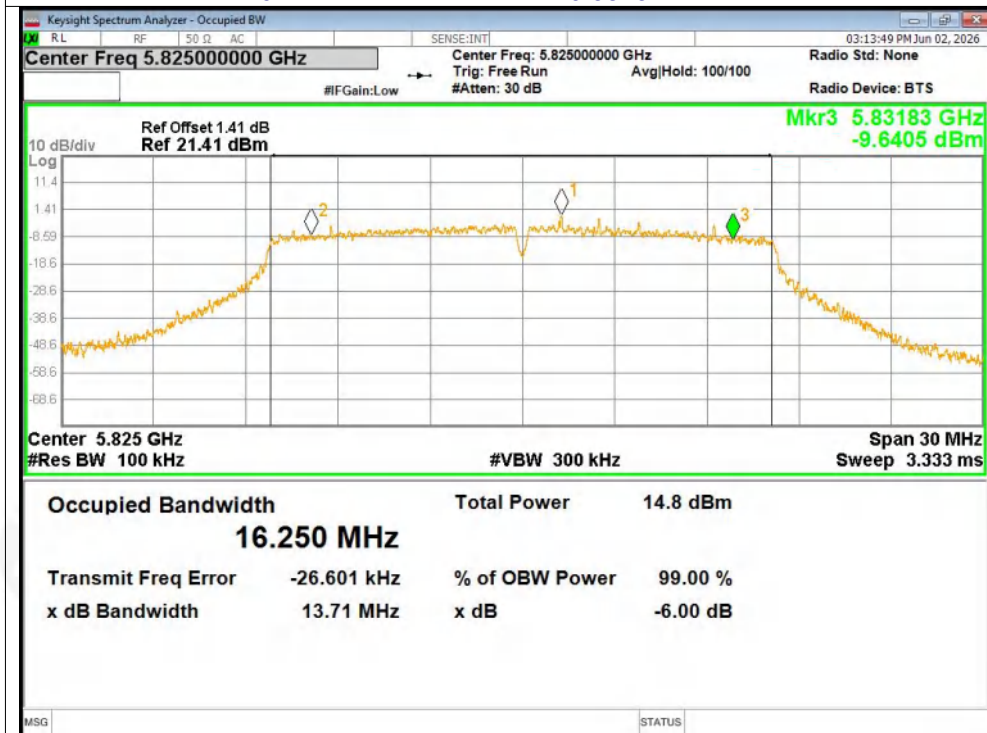


-6dB Bandwidth NVNT ac20 5785MHz Ant1

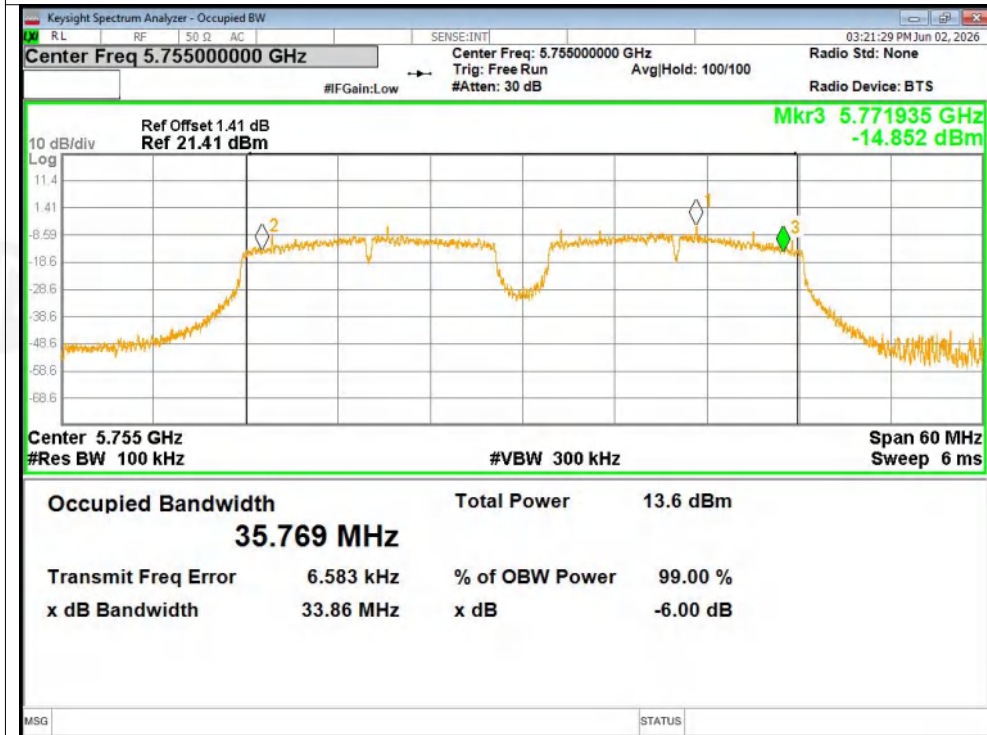


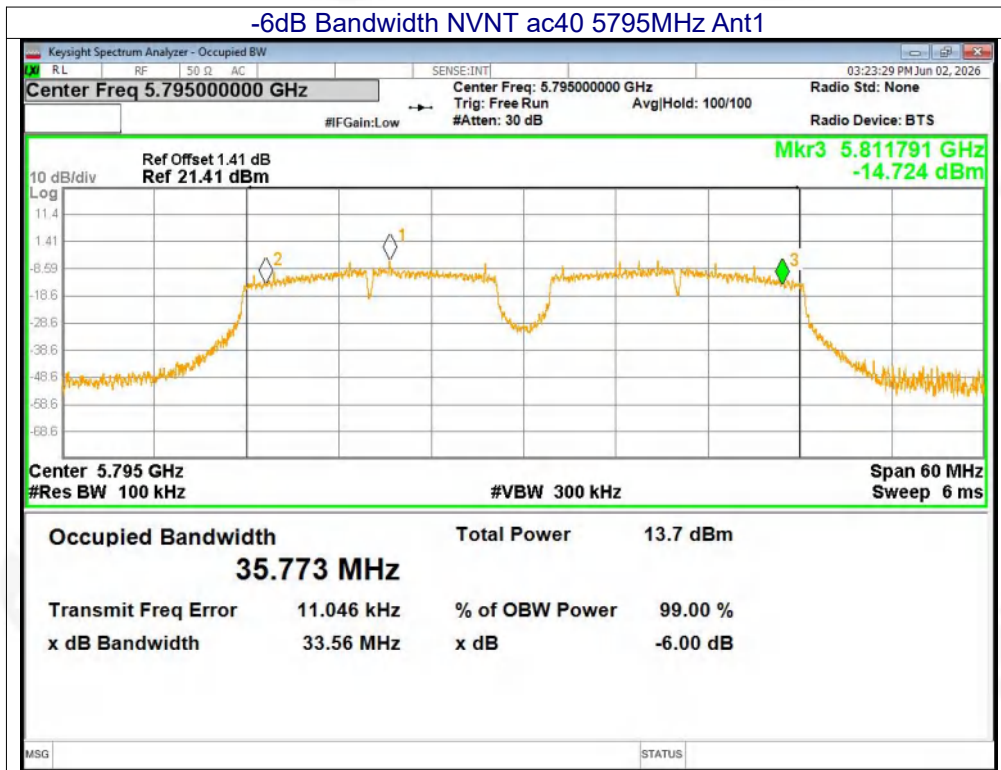


-6dB Bandwidth NVNT ac20 5825MHz Ant1



-6dB Bandwidth NVNT ac40 5755MHz Ant1







7. MAXIMUM CONDUCTED OUTPUT POWER

7.1 PPLIED PROCEDURES / LIMIT

According to FCC §15.407 (a)(1) & (a)(3)(i)
The maximum conducted output power should not exceed:

Frequency Band(MHz)	Limit
5150~5250	250mW
5725~5850	1W

7.2 TEST PROCEDURE

According 789033 D02 General UNII Test Procedures New Rules v02r01.

EUT Measurement using a Power Meter (PM)

a) Method PM (Measurement using an RF average power meter):

(i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:

- The EUT is configured to transmit continuously or to transmit with a constant duty cycle.
- At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
- The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

(ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in II.B.

(iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

(iv) Adjust the measurement in dBm by adding $10 \log (1/x)$ where x is the duty cycle (e.g., $10 \log (1/0.25)$ if the duty cycle is 25%).

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.



7.6 TEST RESULTS

Temperature:	23.6 °C	Relative Humidity:	54.0%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz

Test Mode	Frequency (MHz)	Output Power (dBm)	Duty cycle factor (dB)	Total Power (dBm)	Limit (dBm)	Result
802.11 a	5745	7.84	0.32	8.16	30	Pass
	5785	7.86	0.46	8.32	30	Pass
	5825	8.71	0.36	9.07	30	Pass
802.11 n20	5745	7.36	0.22	7.58	30	Pass
	5785	7.27	0.37	7.64	30	Pass
	5825	7.9	0.47	8.37	30	Pass
802.11 n40	5755	7.23	0.94	8.17	30	Pass
	5785	7.24	0.68	7.92	30	Pass
802.11 ac20	5745	7.18	0.91	8.09	30	Pass
	5785	7.55	0.89	8.44	30	Pass
	5825	8.35	0.75	9.1	30	Pass
802.11 ac40	5755	7.36	0.82	8.18	30	Pass
	5785	7.26	0.87	8.13	30	Pass

Note: Total Power = Output Power + Duty cycle factor.



8. CONDUCTED BAND EDGE

8.1 APPLICABLE STANDARD

According to FCC §15.407(b)

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following 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 e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

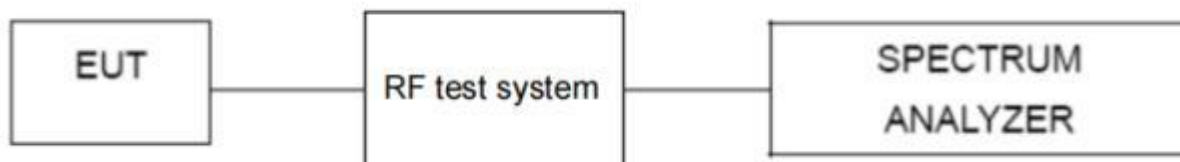
8.2 TEST PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.



8.6 TEST RESULTS

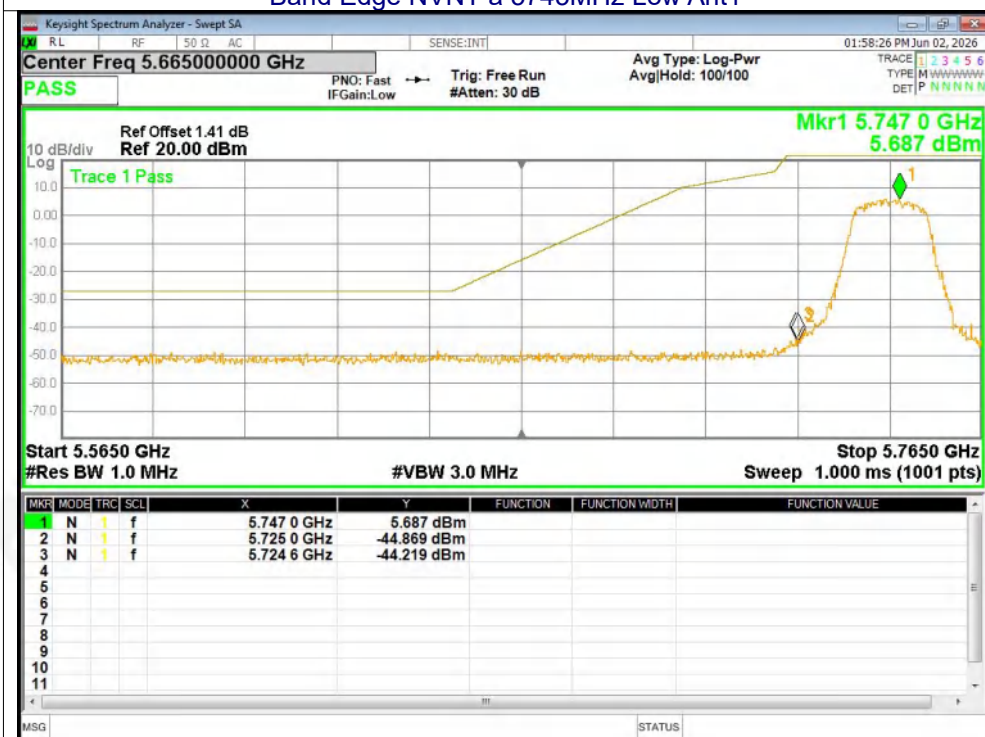
Temperature:	23.6 °C	Relative Humidity:	54.0%
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz

Test Mode	Frequency (MHz)	Emission Frequency (MHz)	Measurement Value Max (dBm)	Antenna gain (dBi)	RF Cable Loss (dB)	Total Value Max (dBm)	Result
802.11a	5745	5724.625	-44.21	2.67	1.1	-40.44	Pass
	5825	5850.475	-47.33	2.67	1.1	-43.56	Pass
802.11n20	5745	5724.700	-39.81	2.67	1.1	-36.04	Pass
	5825	5852.135	-46.65	2.67	1.1	-42.88	Pass
802.11n40	5755	5721.415	-41.09	2.67	1.1	-37.32	Pass
	5785	5852.640	-47.67	2.67	1.1	-43.90	Pass
802.11ac20	5745	5724.675	-43.43	2.67	1.1	-39.66	Pass
	5825	5850.030	-48.06	2.67	1.1	-44.29	Pass
802.11ac40	5755	5718.540	-33.41	2.67	1.1	-29.64	Pass
	5785	5850.515	-43.89	2.67	1.1	-40.12	Pass
Note: Total Value = Measurement Value + RF Cable Loss + Antenna gain.							

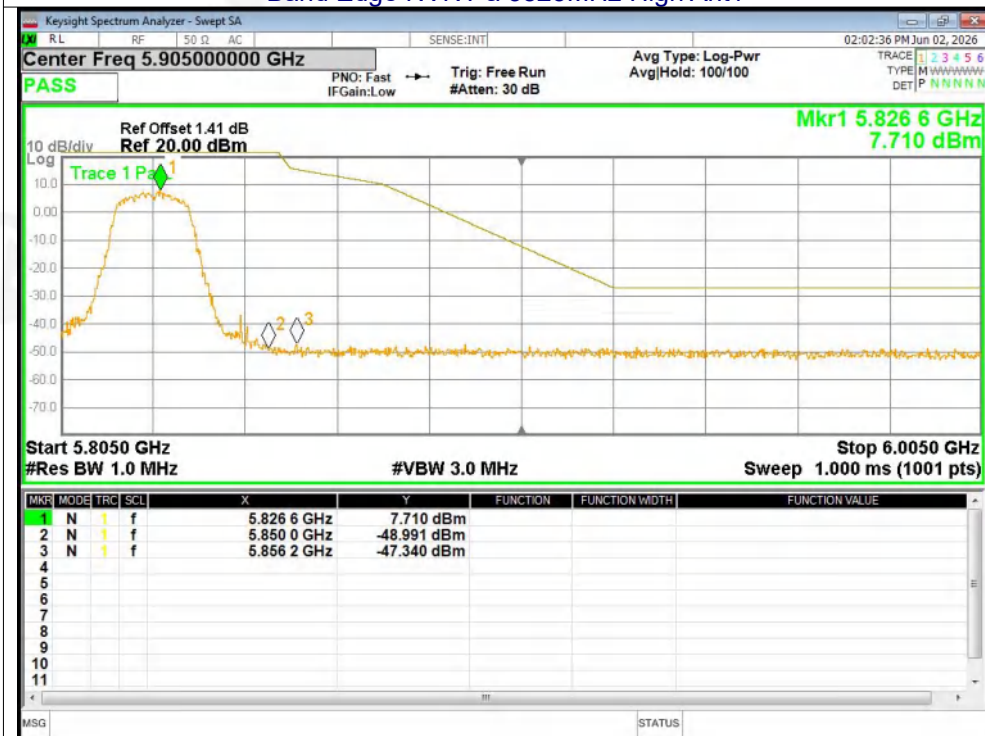


Test Graphs

Band Edge NVNT a 5745MHz Low Ant1

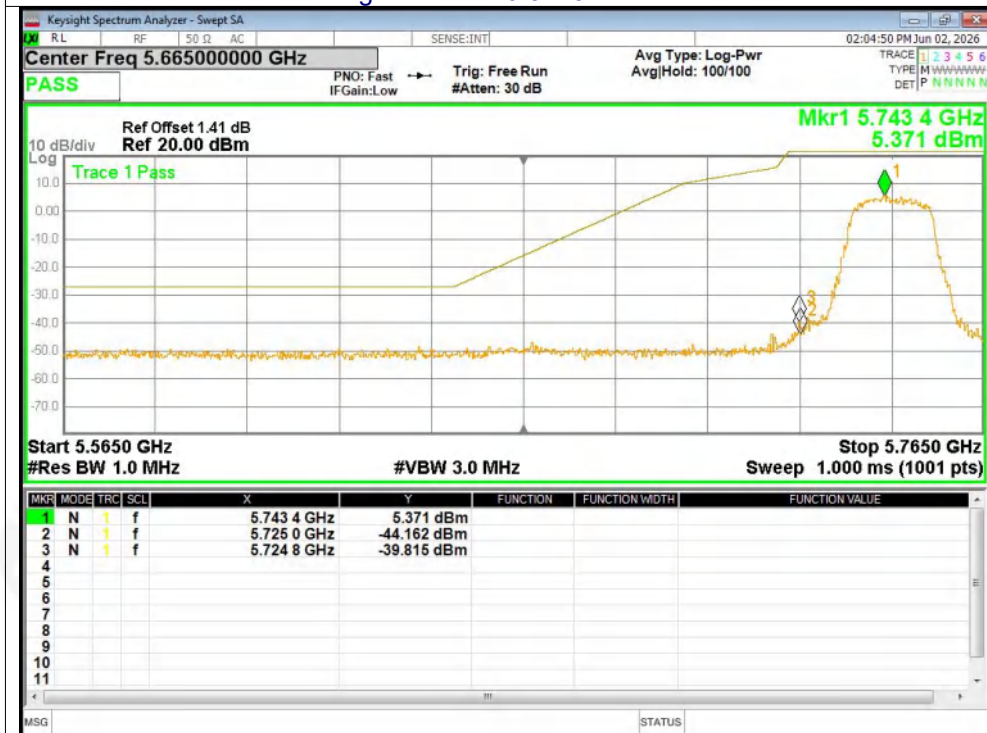


Band Edge NVNT a 5825MHz High Ant1

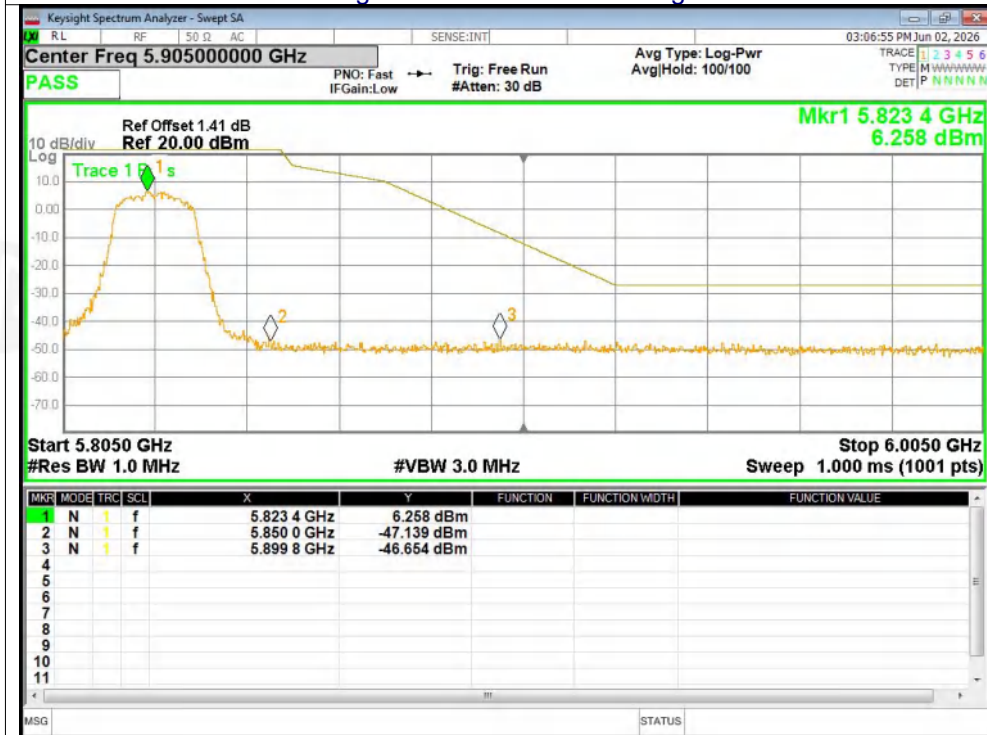




Band Edge NVNT n20 5745MHz Low Ant1

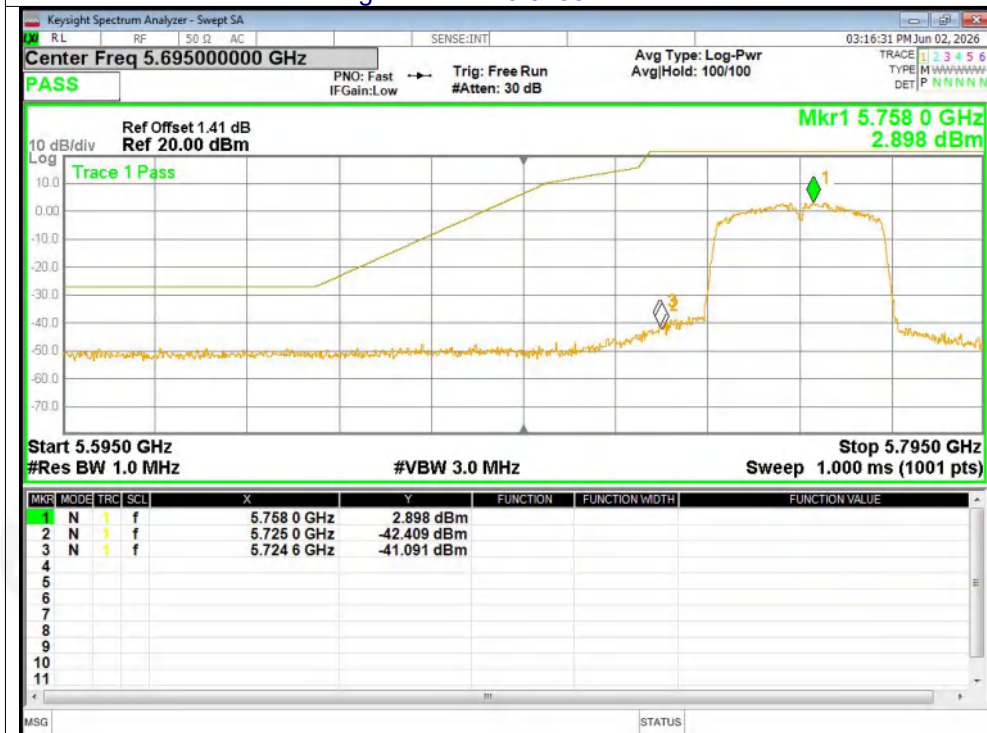


Band Edge NVNT n20 5825MHz High Ant1

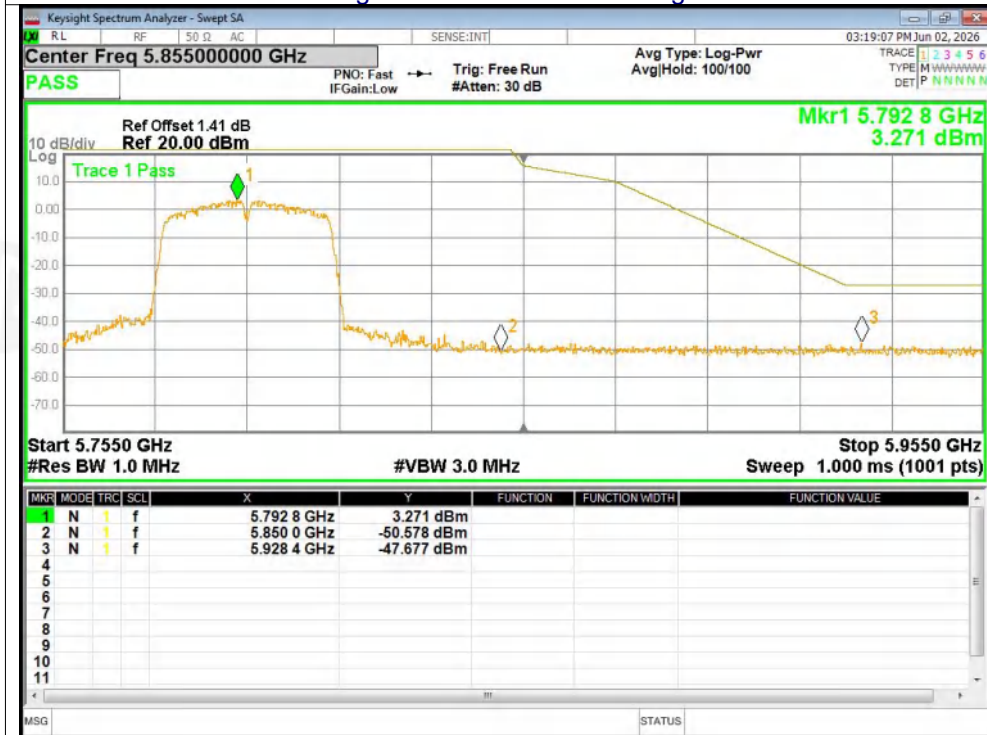




Band Edge NVNT n40 5755MHz Low Ant1

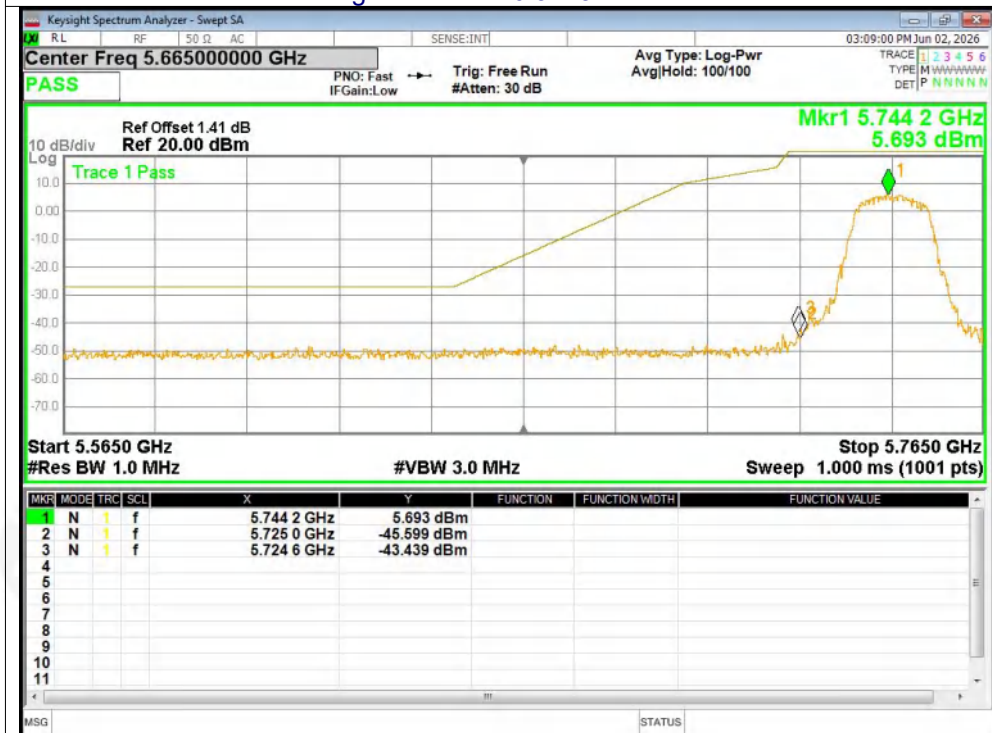


Band Edge NVNT n40 5795MHz High Ant1

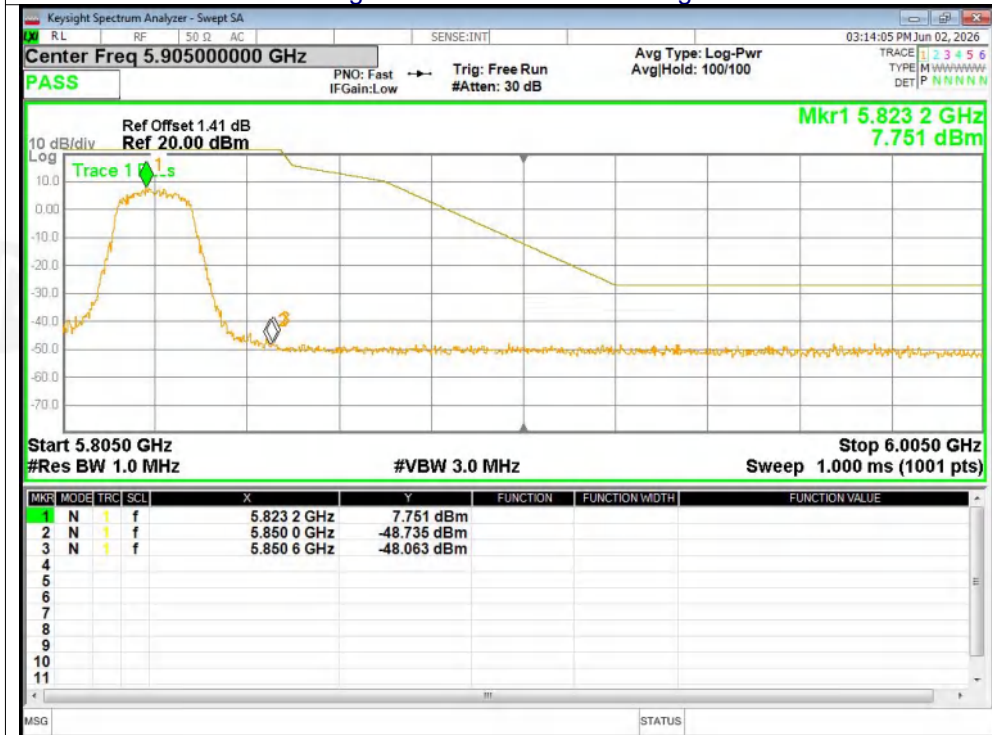




Band Edge NVNT ac20 5745MHz Low Ant1

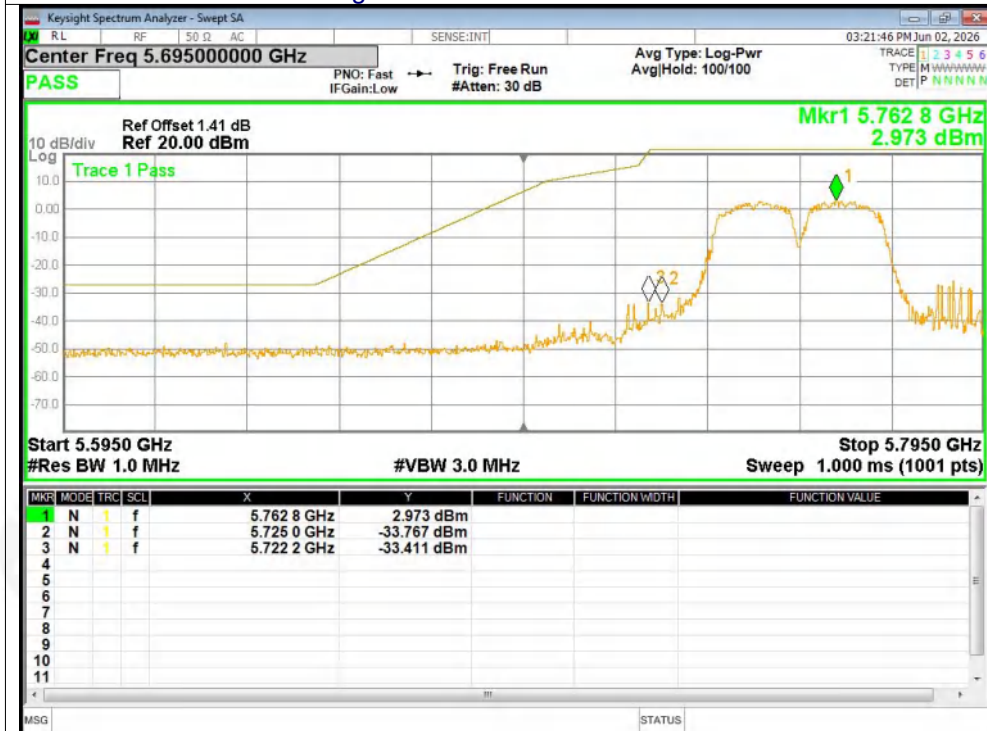


Band Edge NVNT ac20 5825MHz High Ant1

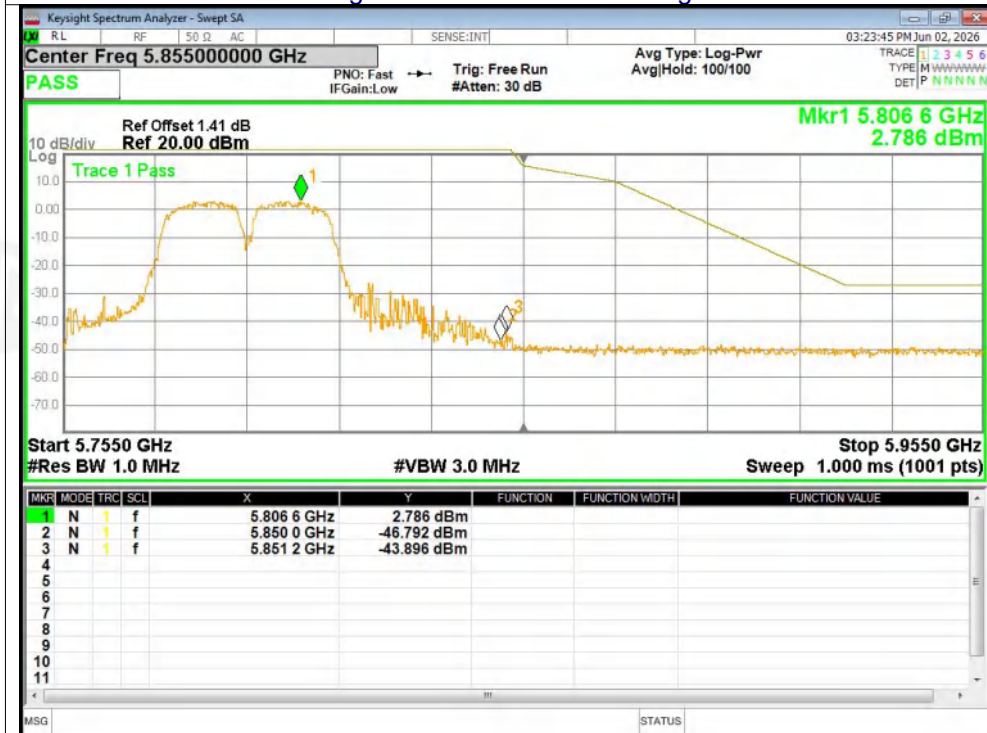




Band Edge NVNT ac40 5755MHz Low Ant1



Band Edge NVNT ac40 5795MHz High Ant1





9. FREQUENCY STABILITY MEASUREMENT

9.1 LIMIT

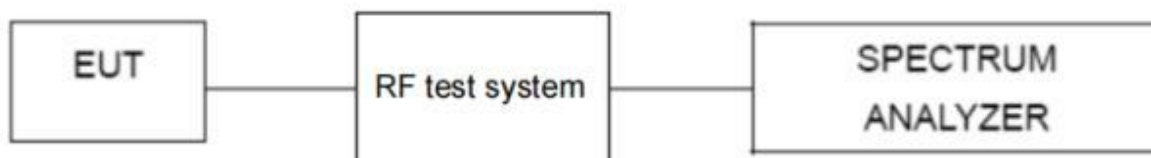
Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be (IEEE 802.11n specification).

9.2 TEST PROCEDURES

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 106 \text{ ppm}$.
6. The test extreme voltage is to change the primary supply voltage from 85% to 115% percent of the nominal value.
7. Extreme temperature is -20°C~70°C.

9.3 TEST SETUP LAYOUT



9.4 EUT OPERATION DURING TEST

The EUT tested system was configured as the statements of chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.



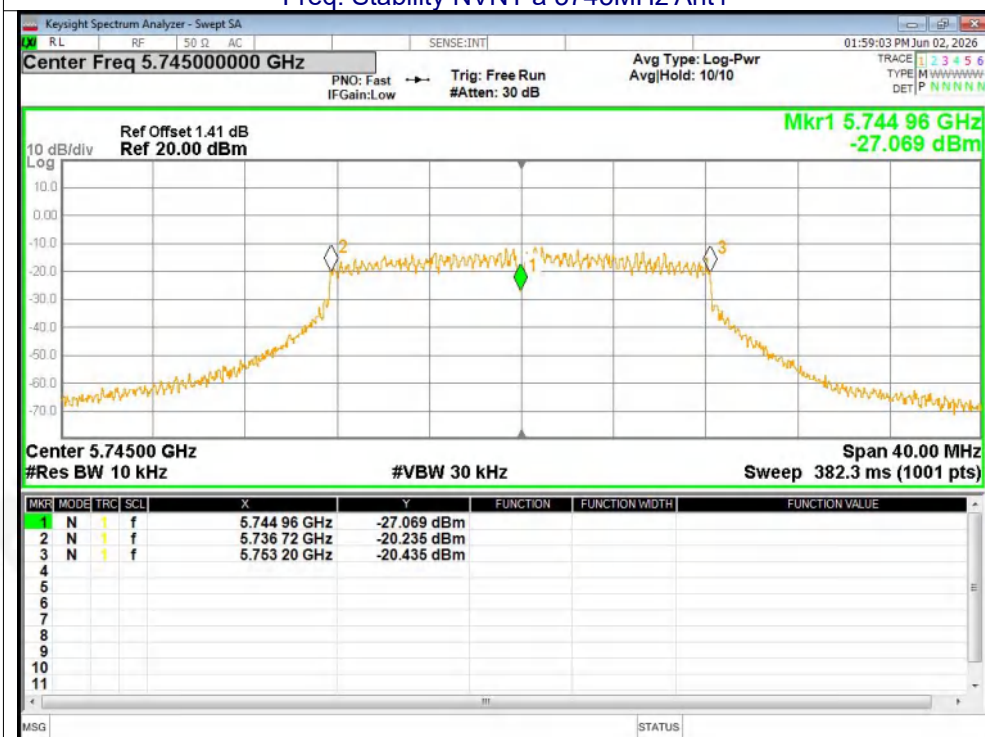
9.5 TEST RESULTS

Temperature:	23.6 °C	Relative Humidity:	54.0%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz

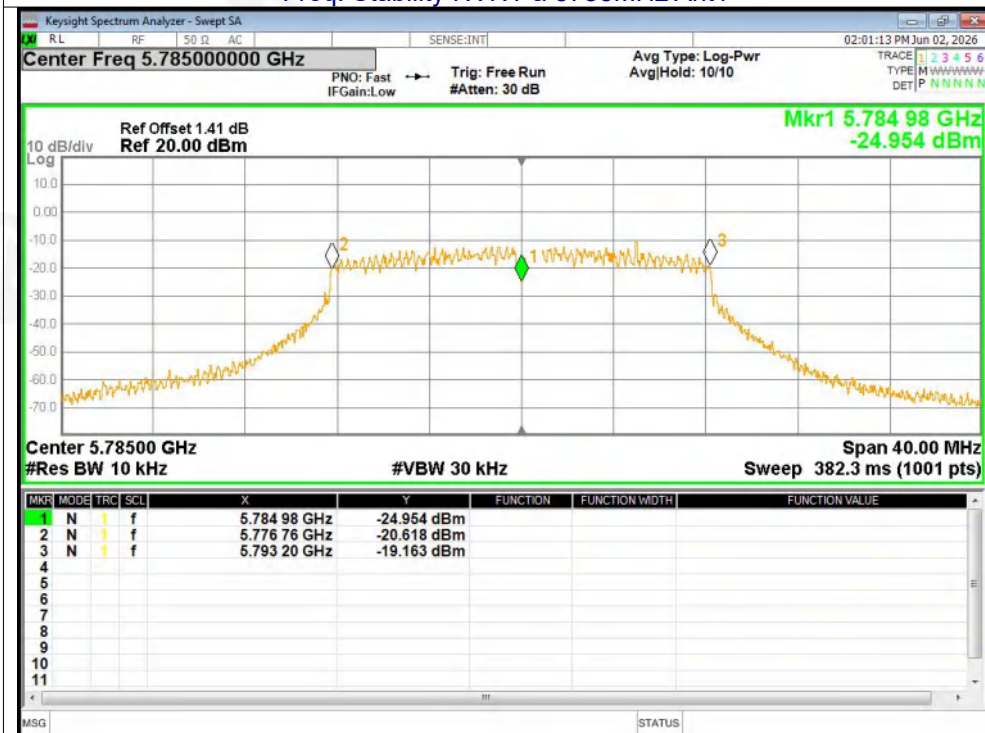
Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
a	5745	Ant1	5744.96	-40000	-6.96	25	Pass
a	5785	Ant1	5784.98	-20000	-3.46	25	Pass
a	5825	Ant1	5824.98	-20000	-3.43	25	Pass
n20	5745	Ant1	5745	0	0	25	Pass
n20	5785	Ant1	5784.98	-20000	-3.46	25	Pass
n20	5825	Ant1	5824.98	-20000	-3.43	25	Pass
n40	5755	Ant1	5754.96	-40000	-6.95	25	Pass
n40	5795	Ant1	5795	0	0	25	Pass
ac20	5745	Ant1	5745	0	0	25	Pass
ac20	5785	Ant1	5784.98	-20000	-3.46	25	Pass
ac20	5825	Ant1	5824.98	-20000	-3.43	25	Pass
ac40	5755	Ant1	5755.04	40000	6.95	25	Pass
ac40	5795	Ant1	5795.12	120000	20.71	25	Pass



Test Graphs
Freq. Stability NVNT a 5745MHz Ant1

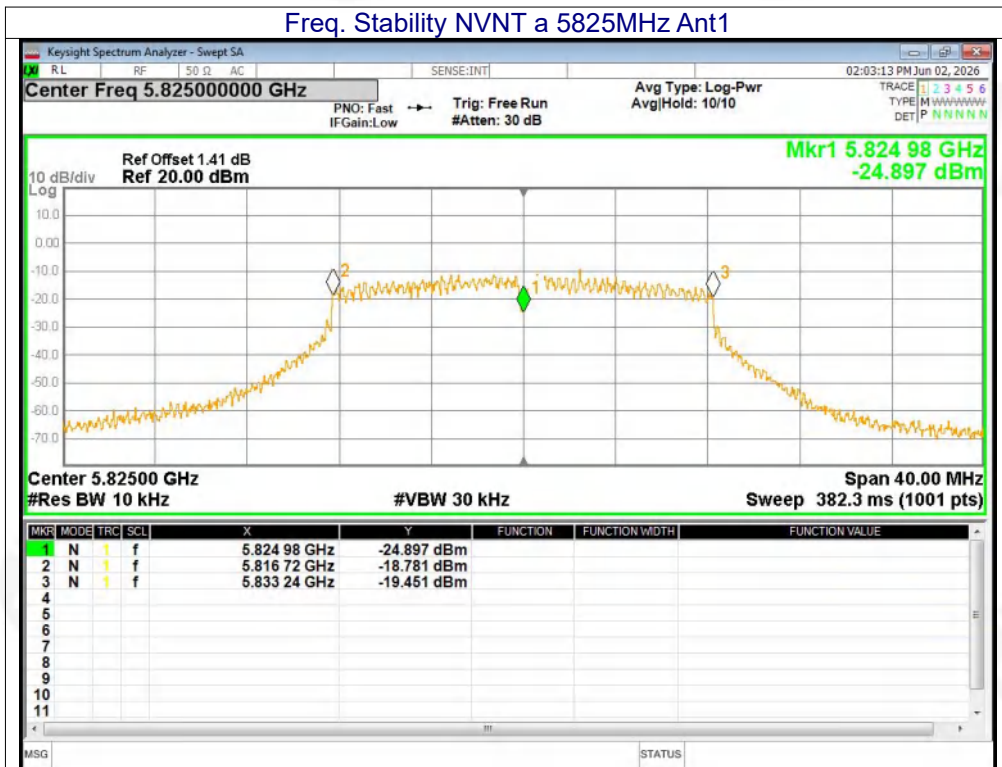


Freq. Stability NVNT a 5785MHz Ant1

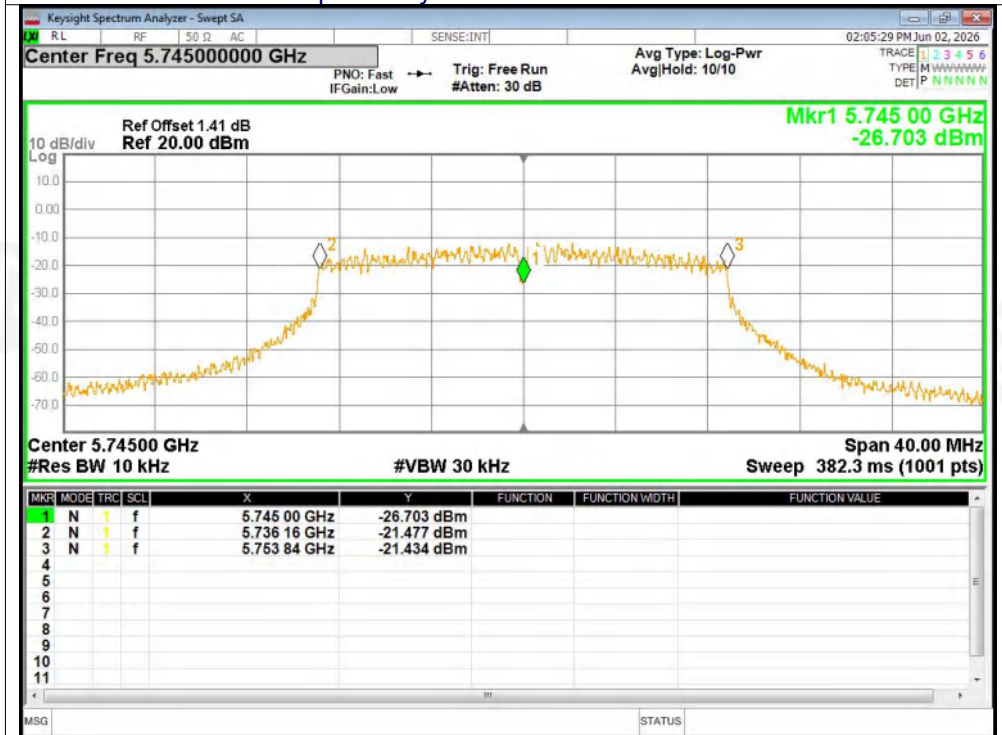




Freq. Stability NVNT a 5825MHz Ant1

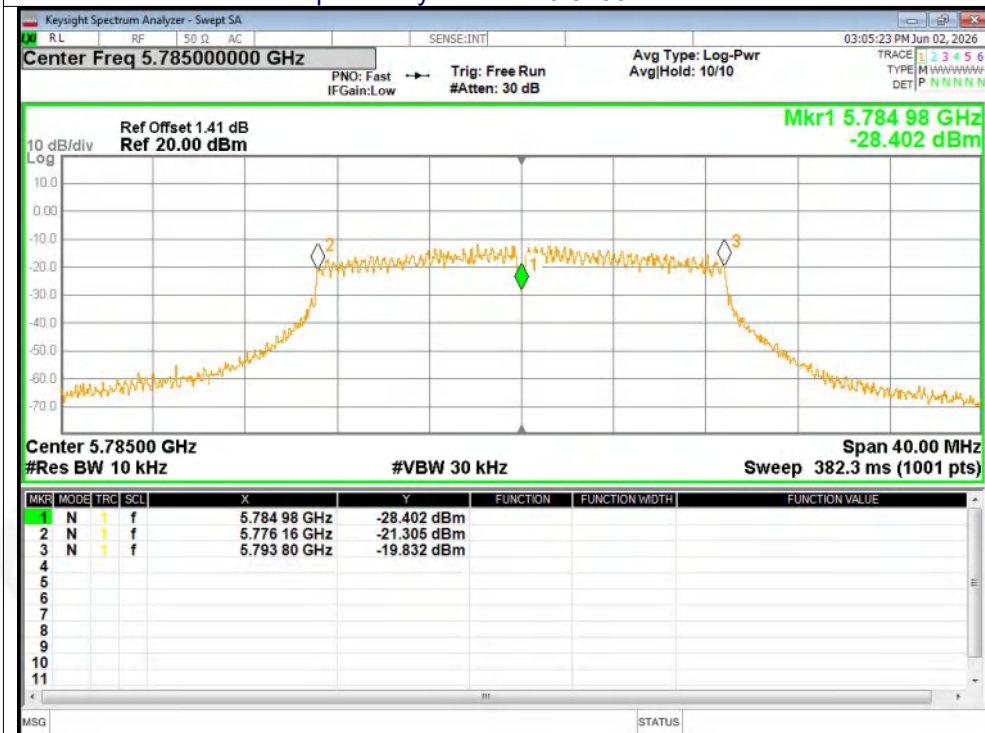


Freq. Stability NVNT n20 5745MHz Ant1

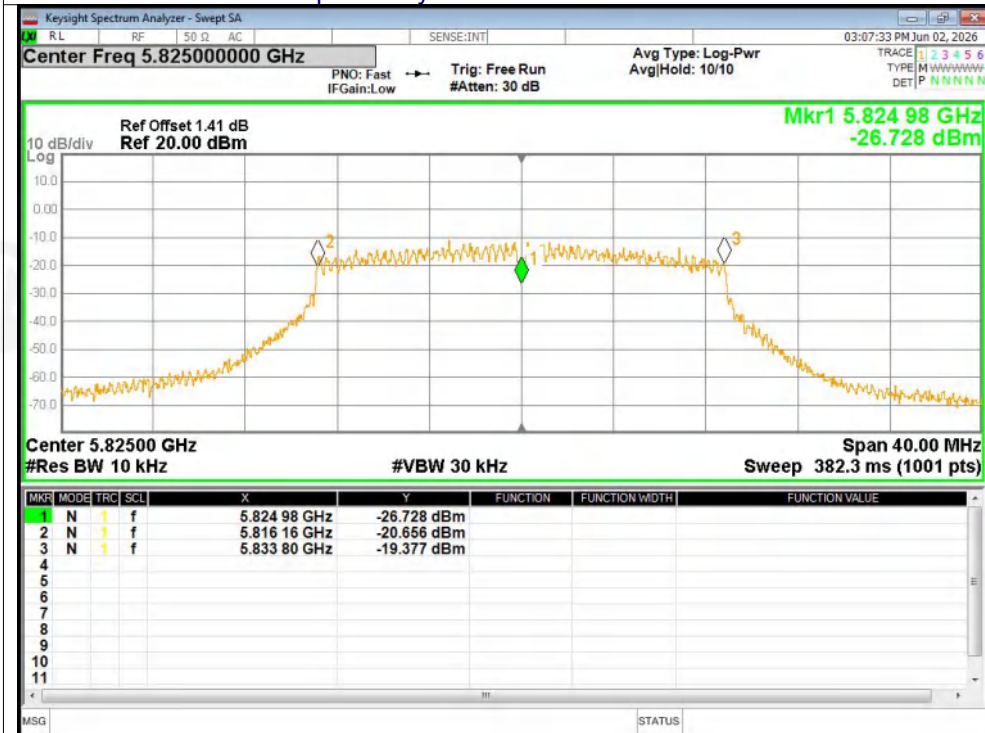




Freq. Stability NVNT n20 5785MHz Ant1

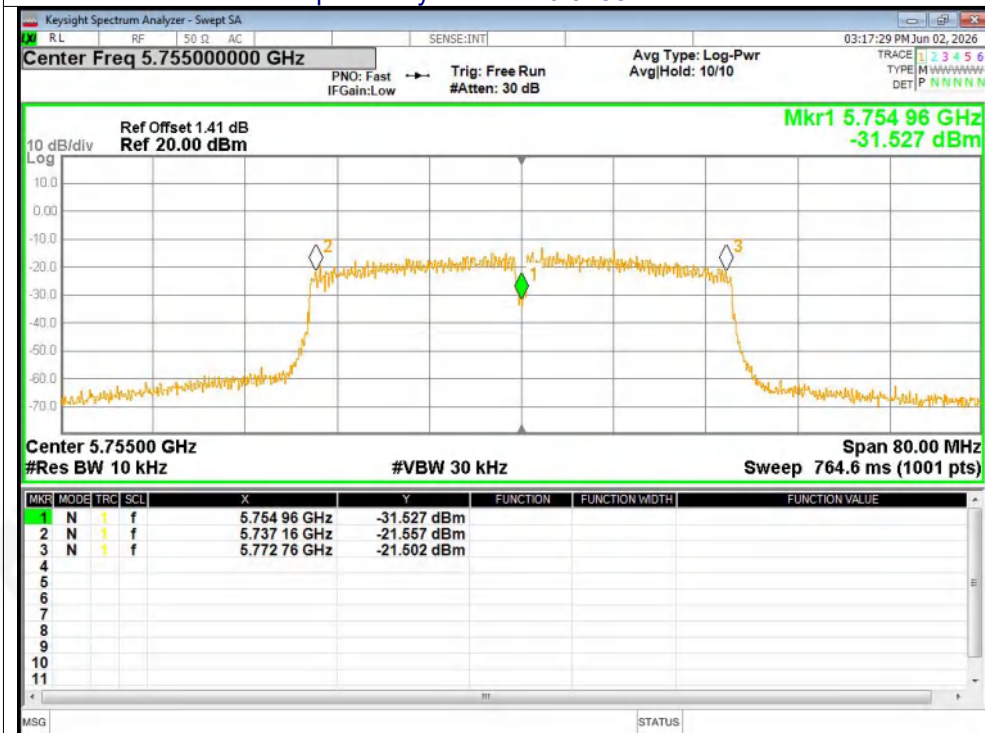


Freq. Stability NVNT n20 5825MHz Ant1

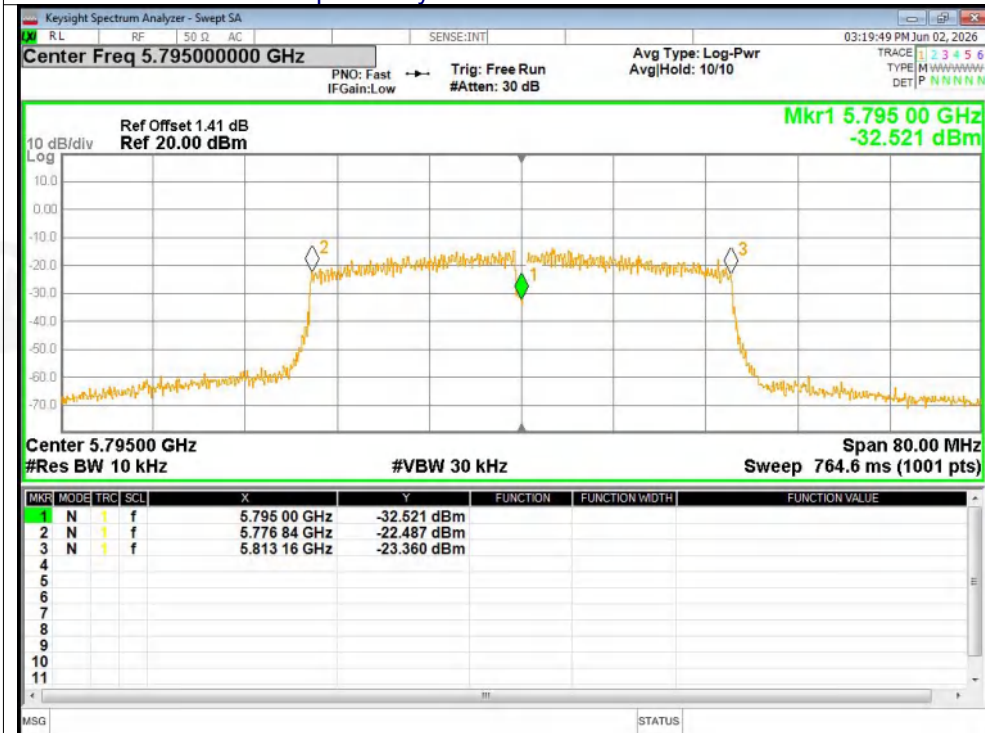




Freq. Stability NVNT n40 5755MHz Ant1

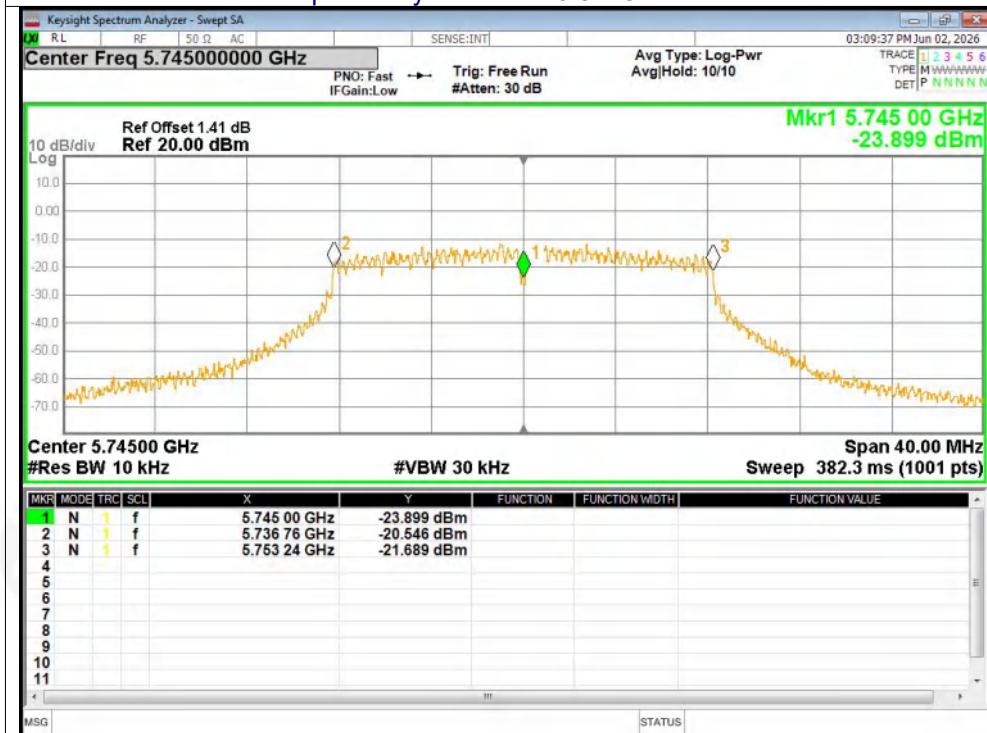


Freq. Stability NVNT n40 5795MHz Ant1

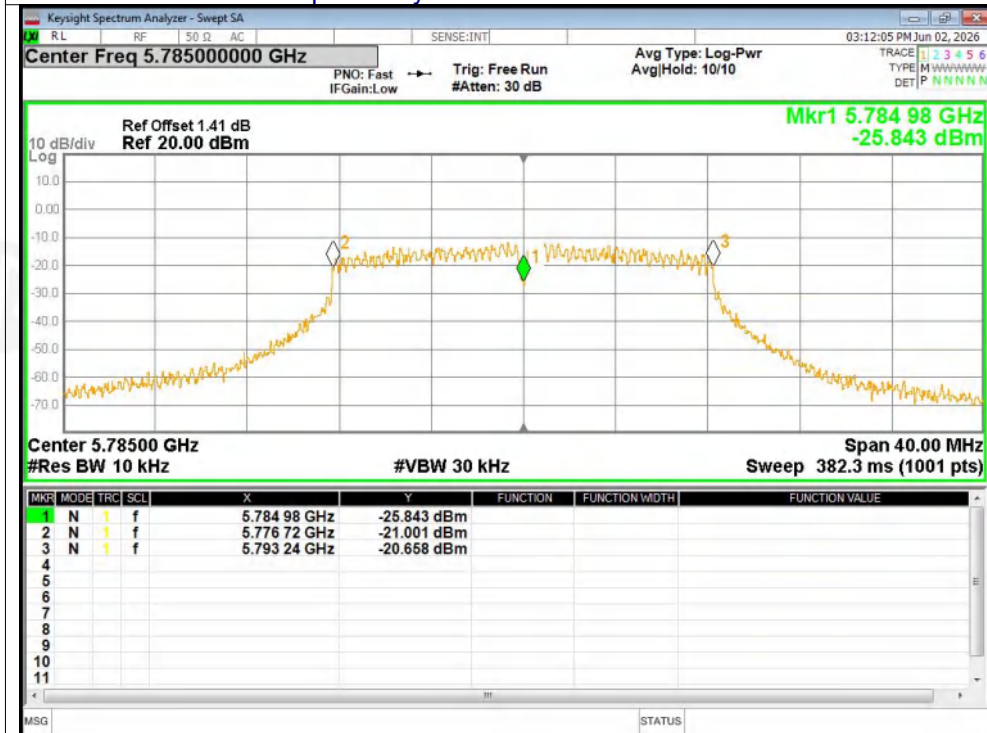




Freq. Stability NVNT ac20 5745MHz Ant1

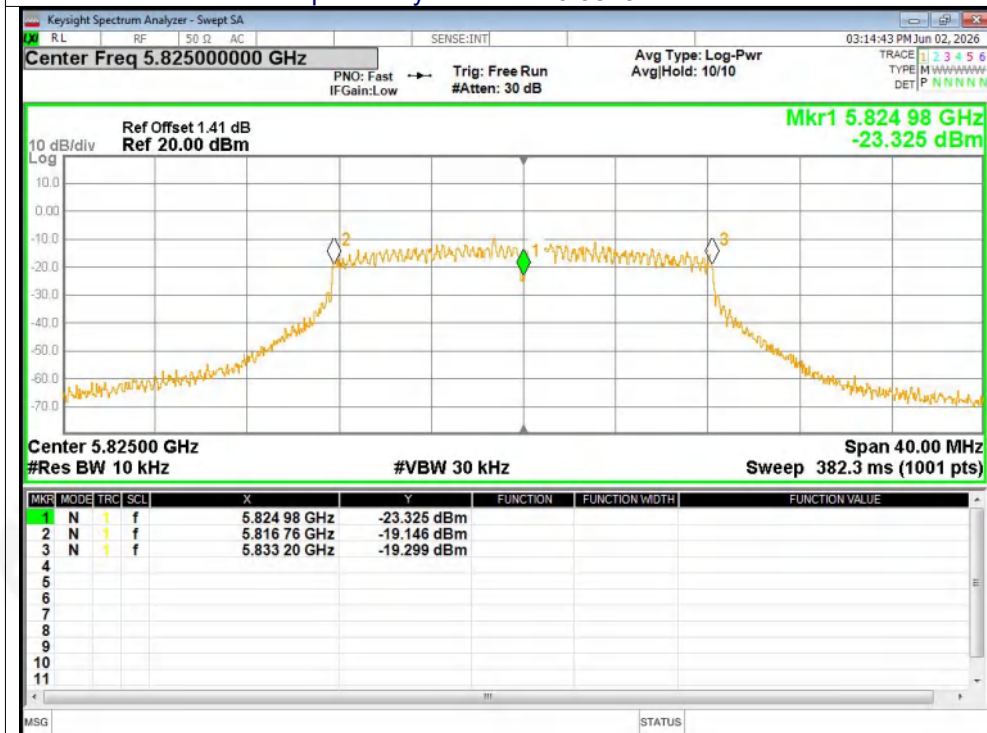


Freq. Stability NVNT ac20 5785MHz Ant1

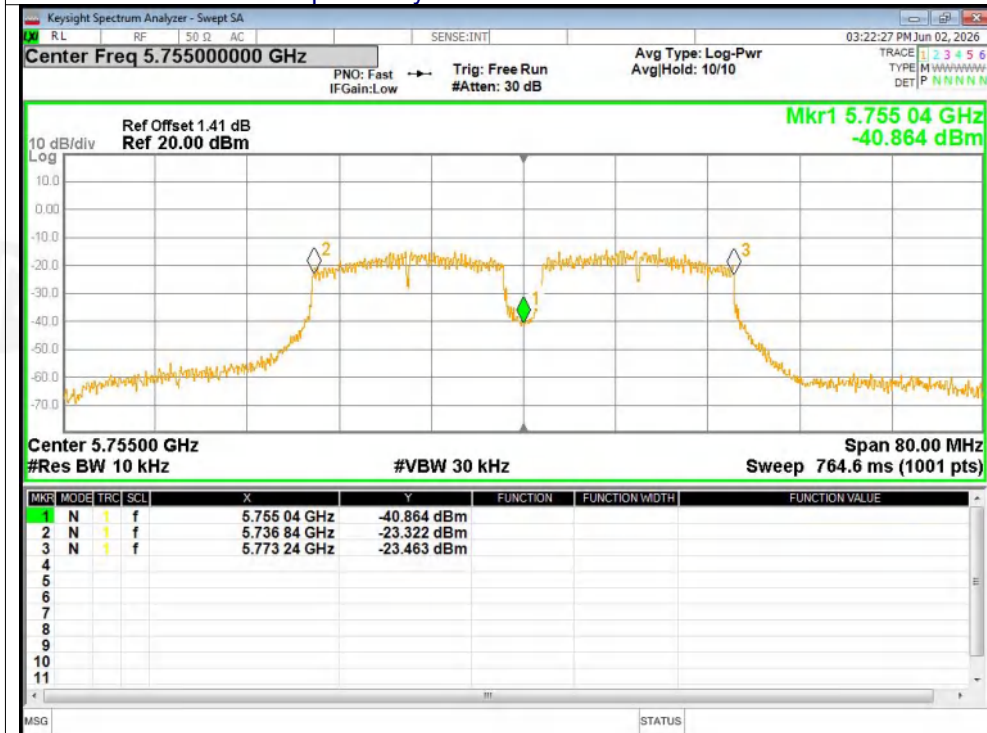


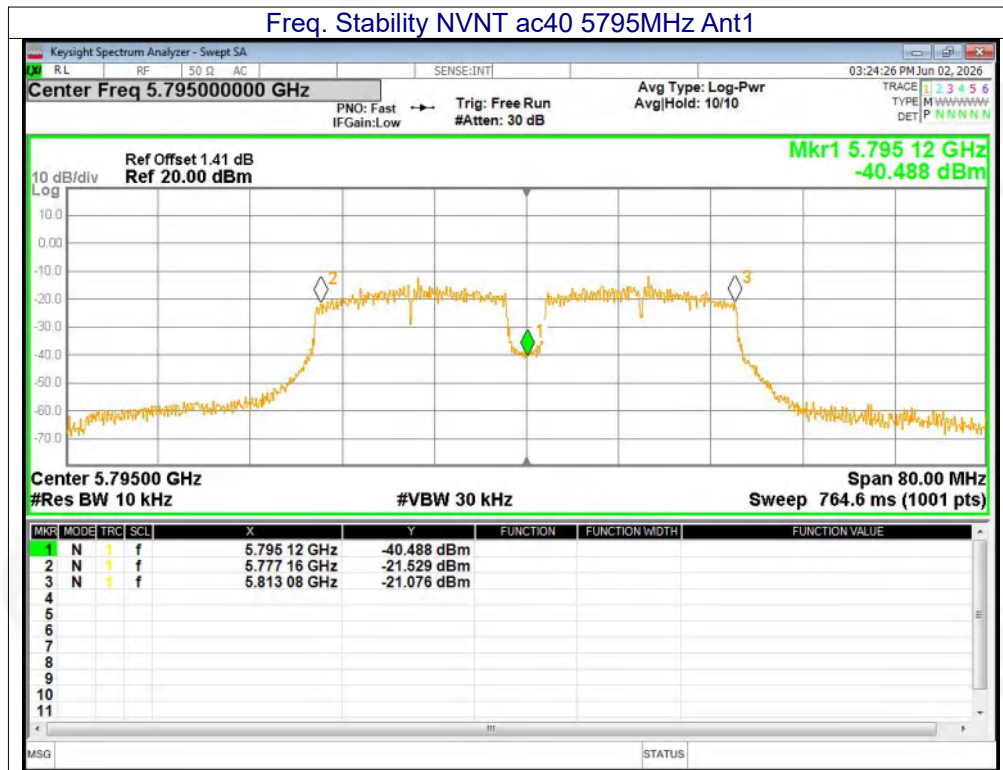


Freq. Stability NVNT ac20 5825MHz Ant1



Freq. Stability NVNT ac40 5755MHz Ant1







10. DUTY CYCLE

10.1 APPLIED PROCEDURES / LIMIT

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

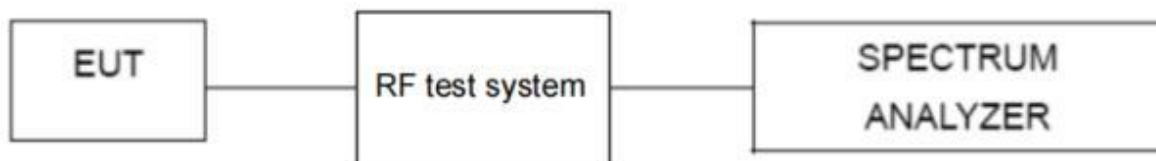
- 1) A diode detector and an oscilloscope that together have sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.
- 2) The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:
 - i) Set the center frequency of the instrument to the center frequency of the transmission.
 - ii) Set $RBW \geq EBW$ if possible; otherwise, set RBW to the largest available value.
 - iii) Set $VBW \geq RBW$.
 - 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.

For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if $T \leq 16.7 \mu s$.

10.2 DEVIATION FROM STANDARD

No deviation.

10.3 TEST SETUP



10.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of chapter 3, Unless otherwise a special operating condition is specified in the follows during the testing.



10.5 TEST RESULTS

Temperature:	23.6 °C	Relative Humidity:	54.0%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz

Mode	Frequency (MHz)	Antenna	T _{on} ms	T _{total} ms	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
a	5745	Ant1	2.06	2.22	92.79	0.32	0.49
a	5785	Ant1	2.06	2.29	89.96	0.46	0.49
a	5825	Ant1	2.06	2.24	91.96	0.36	0.49
n20	5745	Ant1	1.92	2.08	92.31	0.22	0.52
n20	5785	Ant1	1.92	2.09	91.87	0.37	0.52
n20	5825	Ant1	1.92	2.14	89.72	0.47	0.52
n40	5755	Ant1	0.95	1.18	80.51	0.94	1.05
n40	5795	Ant1	0.94	1.11	84.68	0.68	1.06
ac20	5745	Ant1	2.06	2.54	81.10	0.91	0.49
ac20	5785	Ant1	2.07	2.44	84.84	0.89	0.48
ac20	5825	Ant1	2.06	2.54	81.10	0.75	0.49
ac40	5755	Ant1	2.06	2.49	82.73	0.82	0.49
ac40	5795	Ant1	2.07	2.53	81.82	0.87	0.48

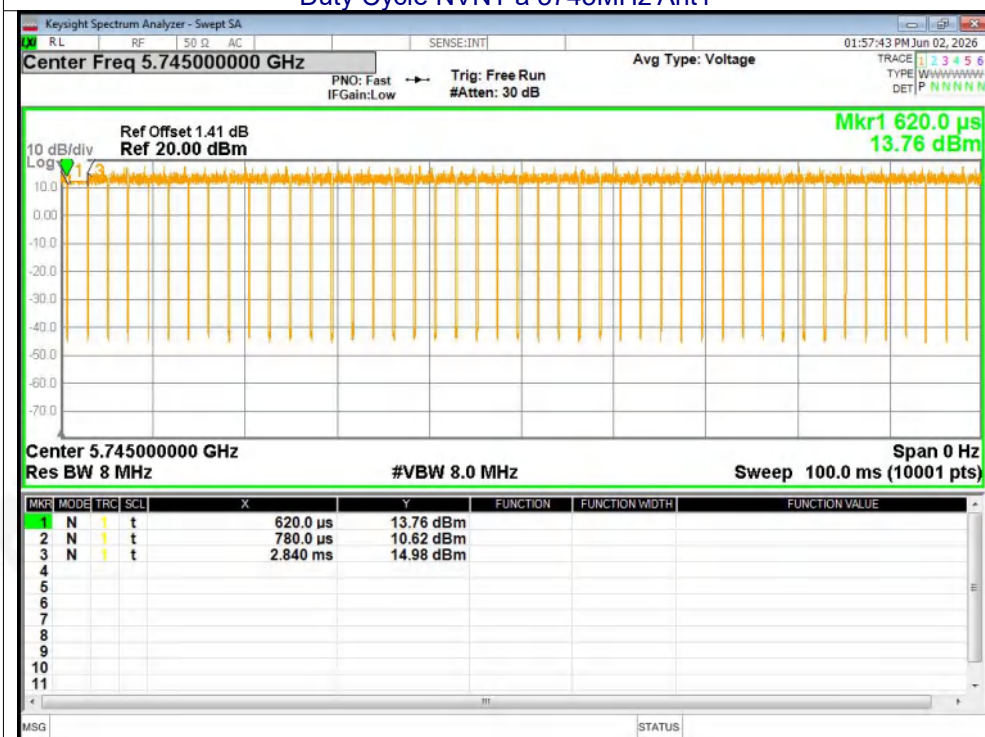
Note:

1. Duty Cycle = T_{on} / T_{total}
2. Correction Factor = $10 \log (1 / \text{Duty Cycle})$.
3. $1/T = 1/T_{on}$

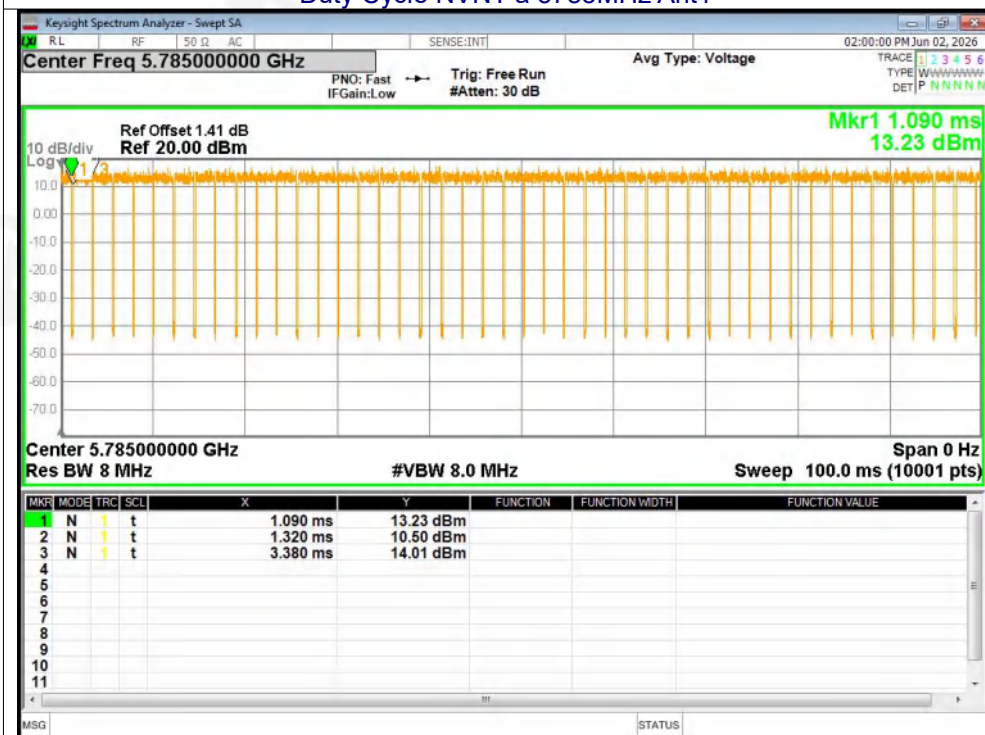


Test Graphs

Duty Cycle NVNT a 5745MHz Ant1

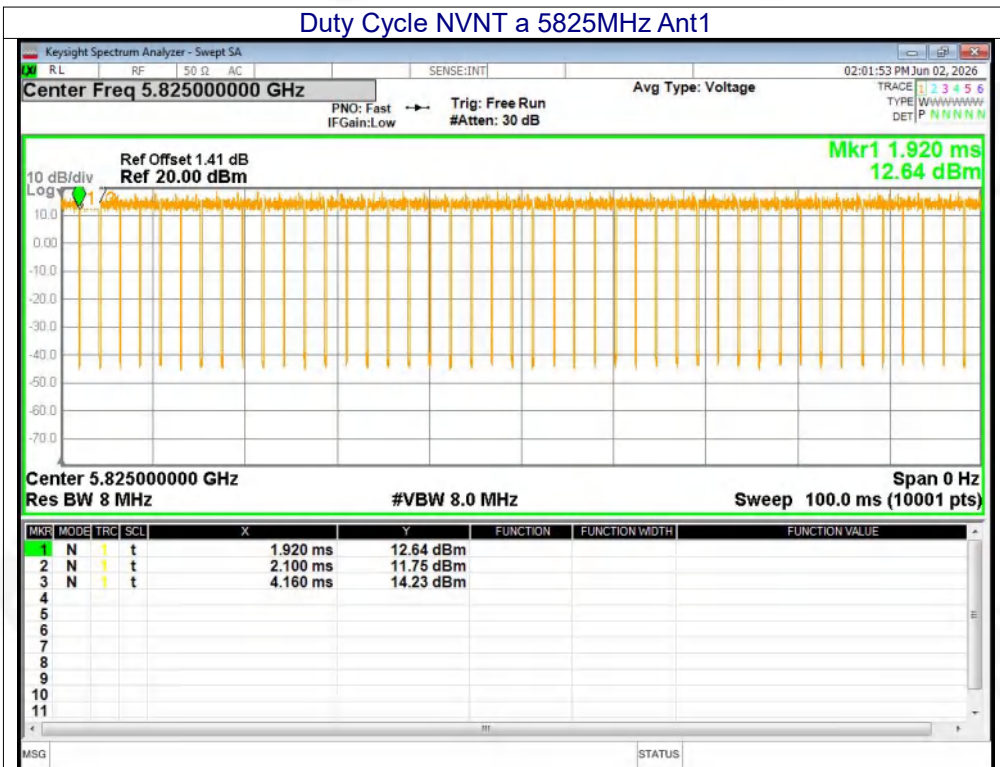


Duty Cycle NVNT a 5785MHz Ant1

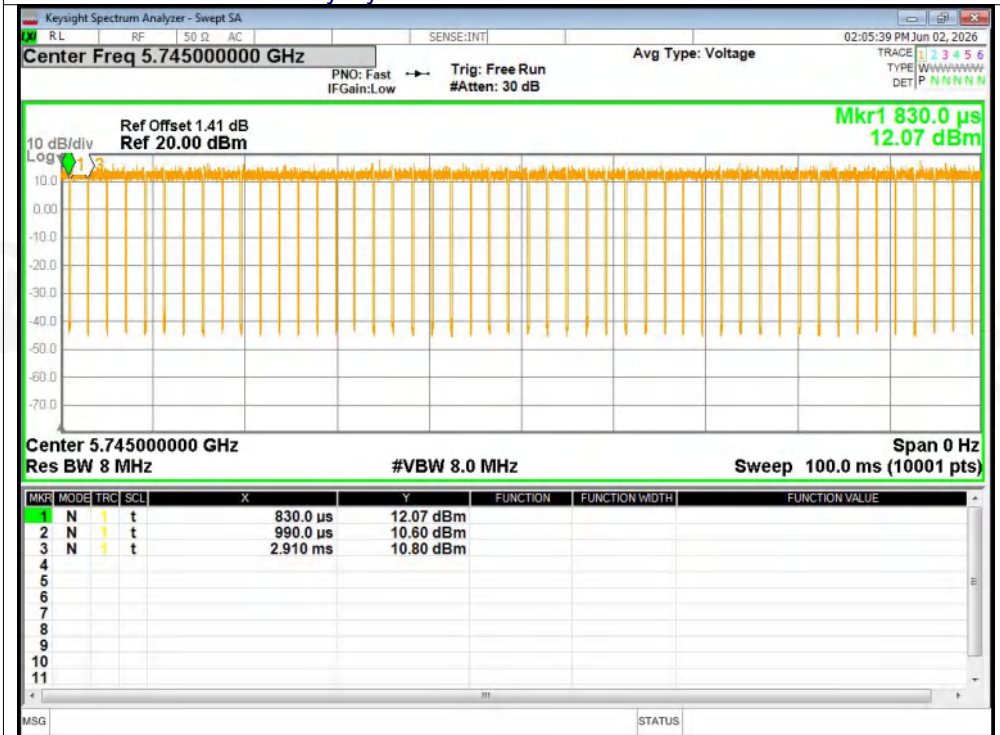




Duty Cycle NVNT a 5825MHz Ant1

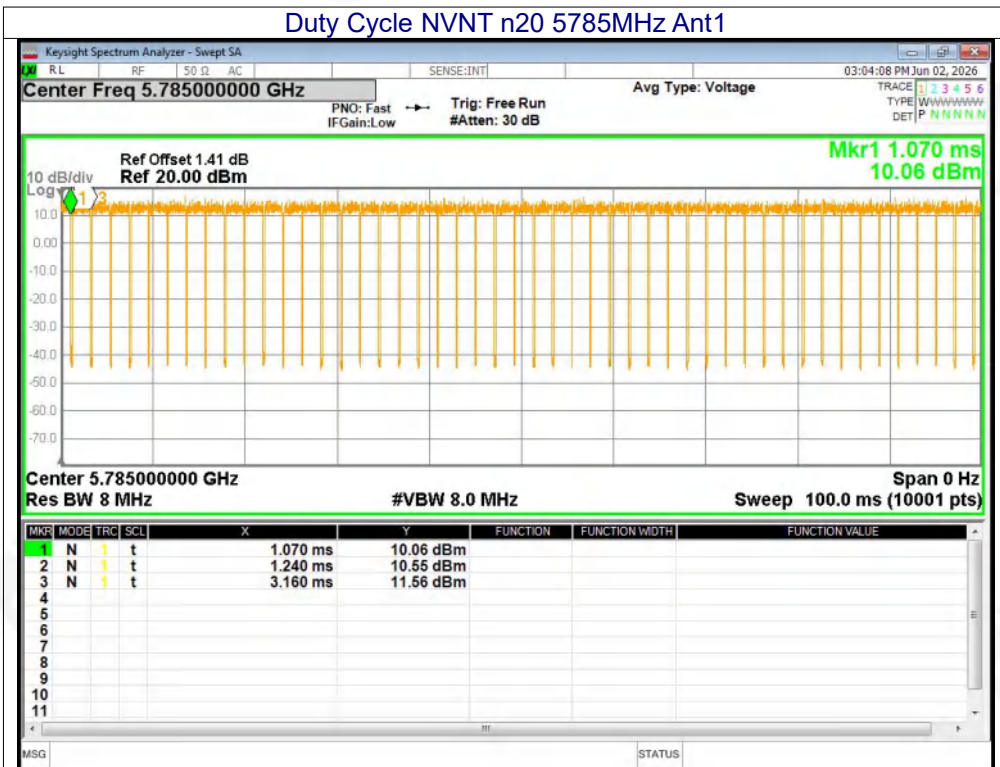


Duty Cycle NVNT n20 5745MHz Ant1

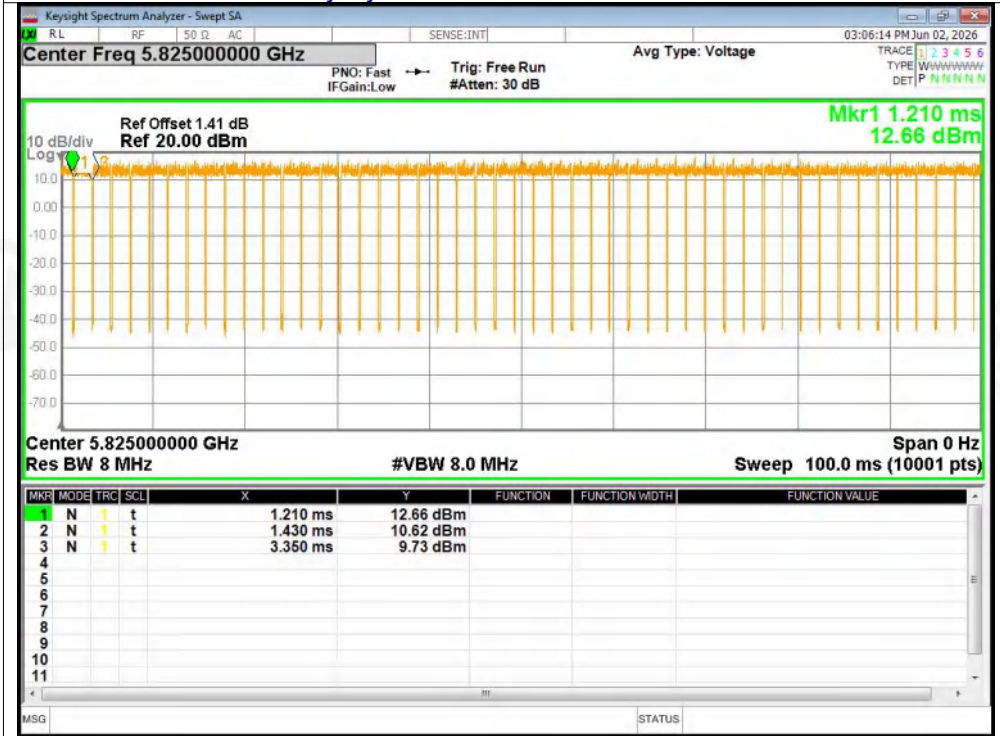




Duty Cycle NVNT n20 5785MHz Ant1

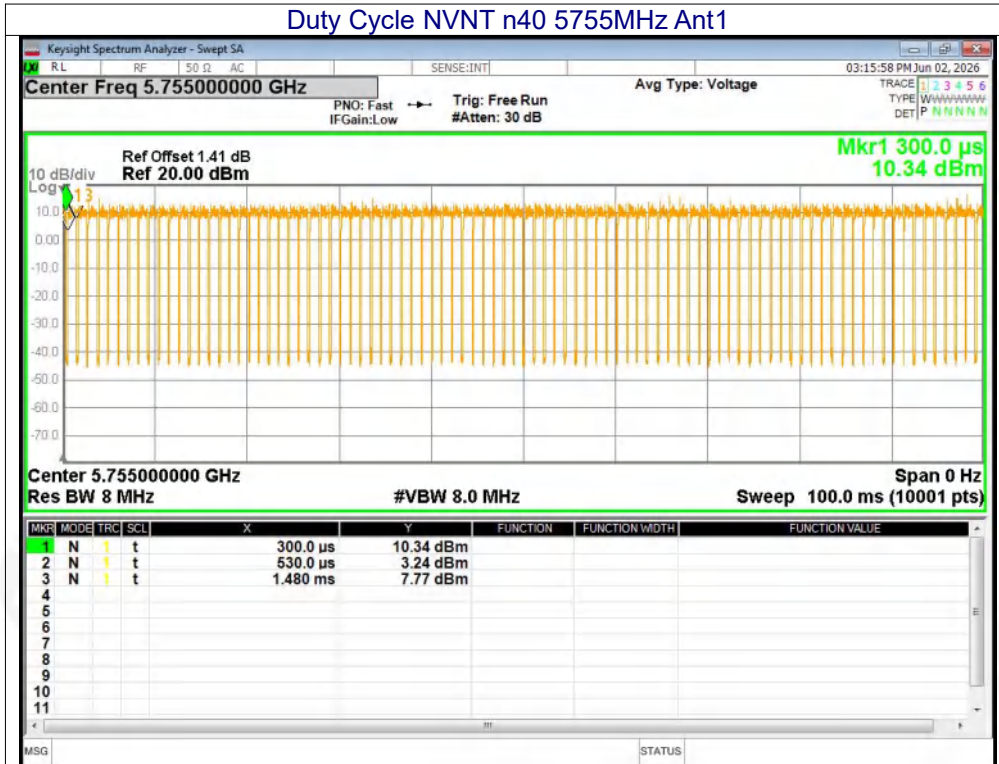


Duty Cycle NVNT n20 5825MHz Ant1

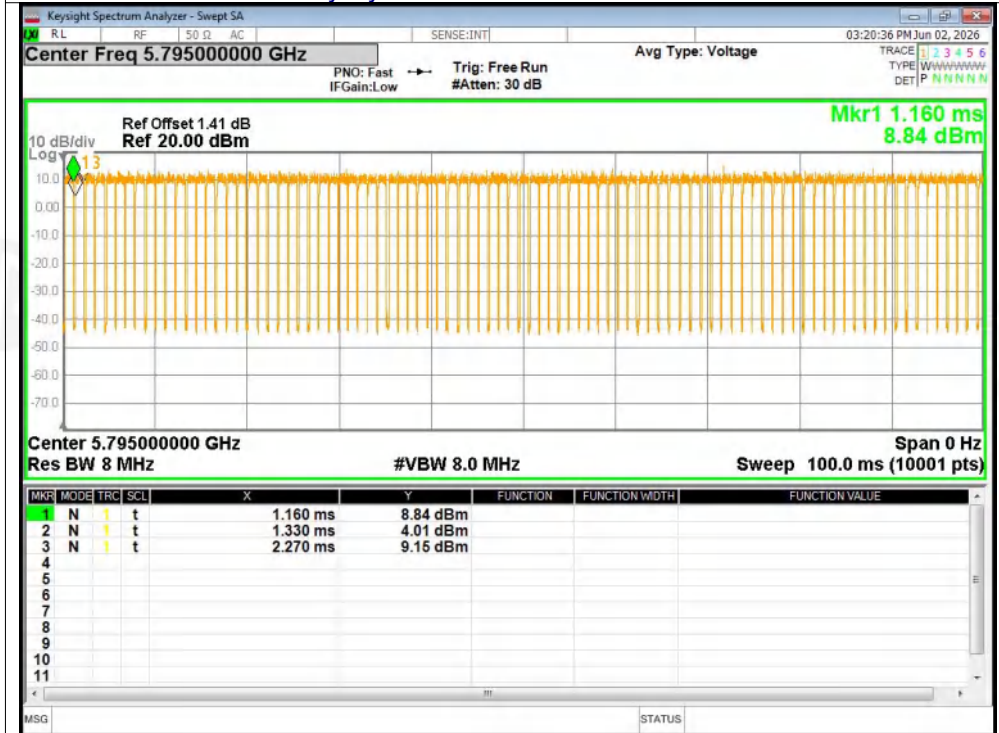




Duty Cycle NVNT n40 5755MHz Ant1

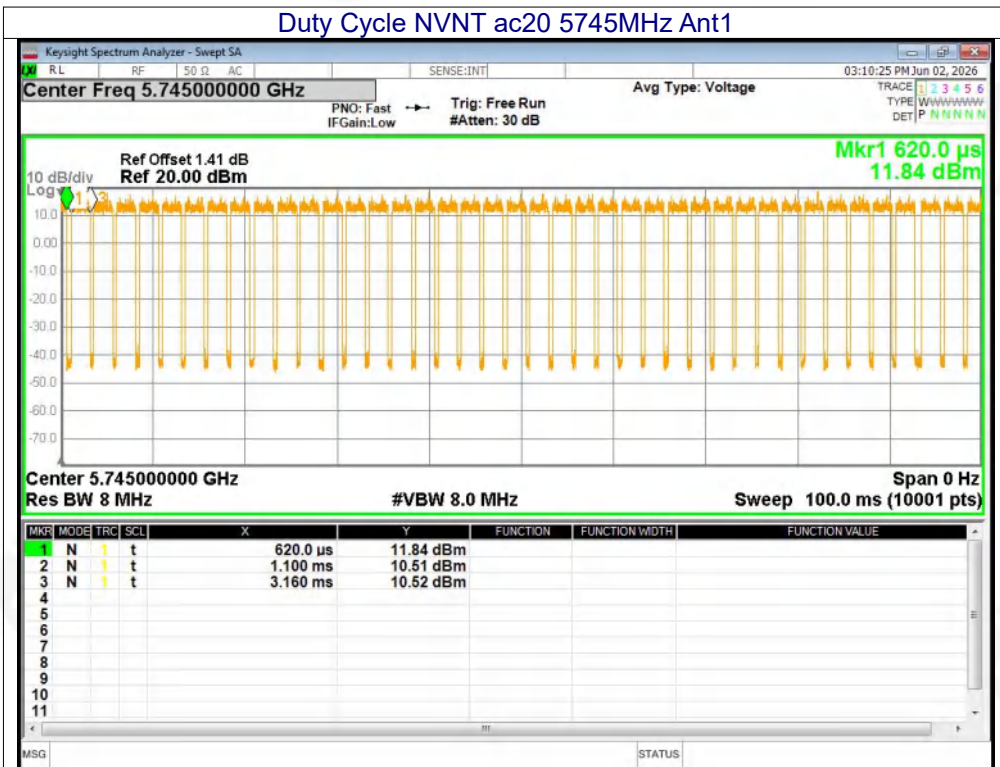


Duty Cycle NVNT n40 5795MHz Ant1

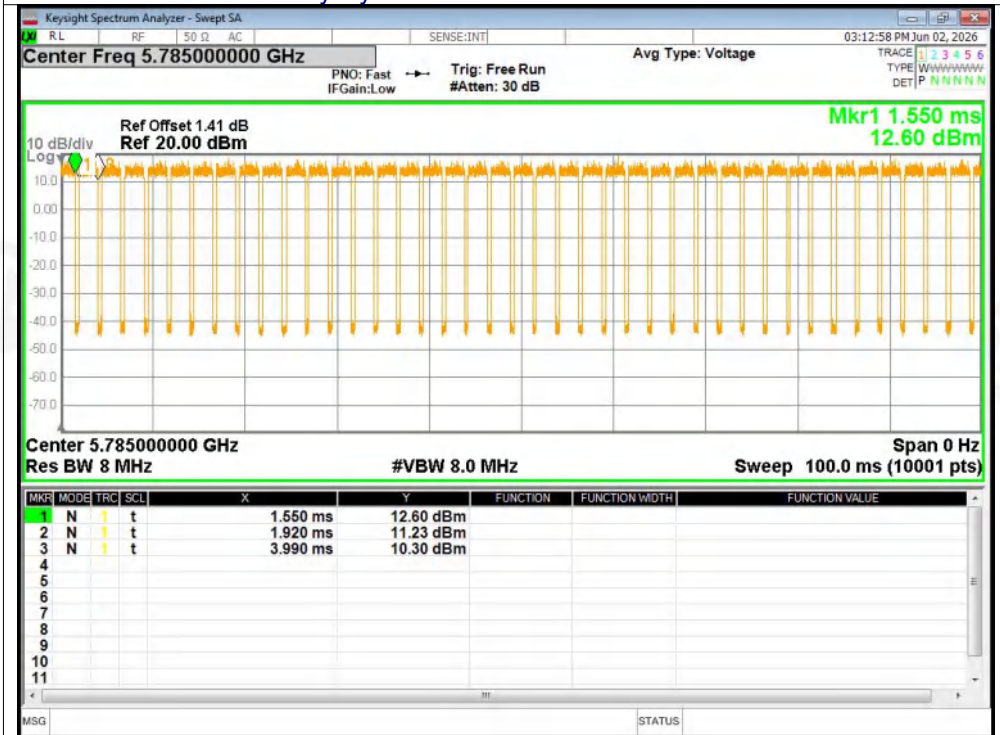




Duty Cycle NVNT ac20 5745MHz Ant1

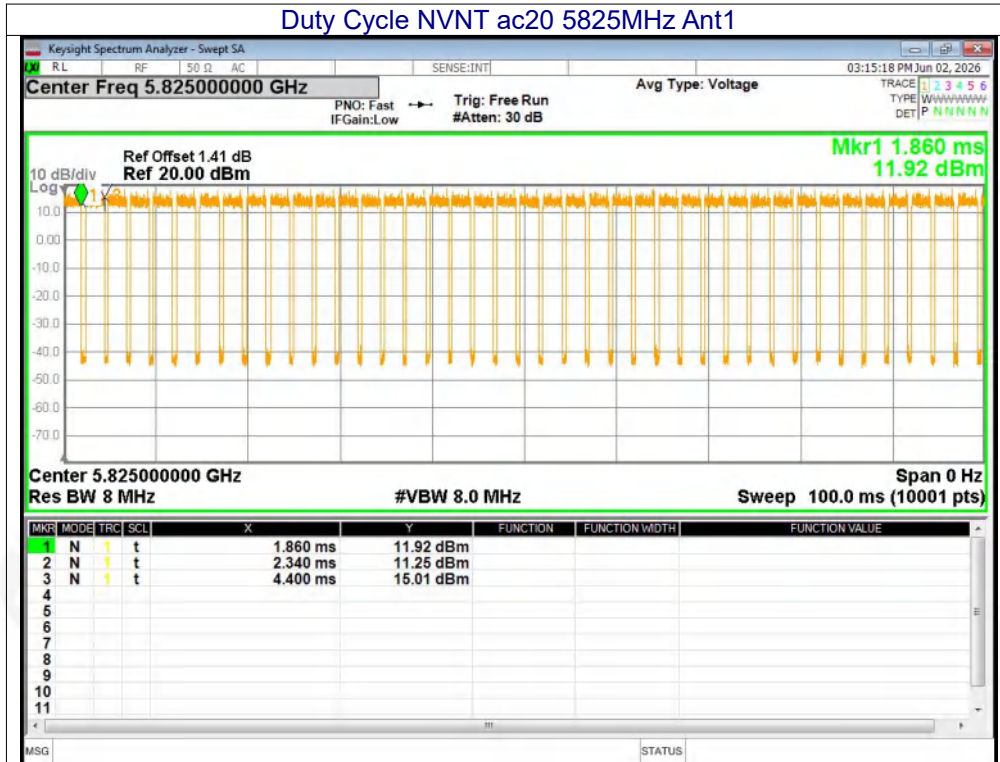


Duty Cycle NVNT ac20 5785MHz Ant1

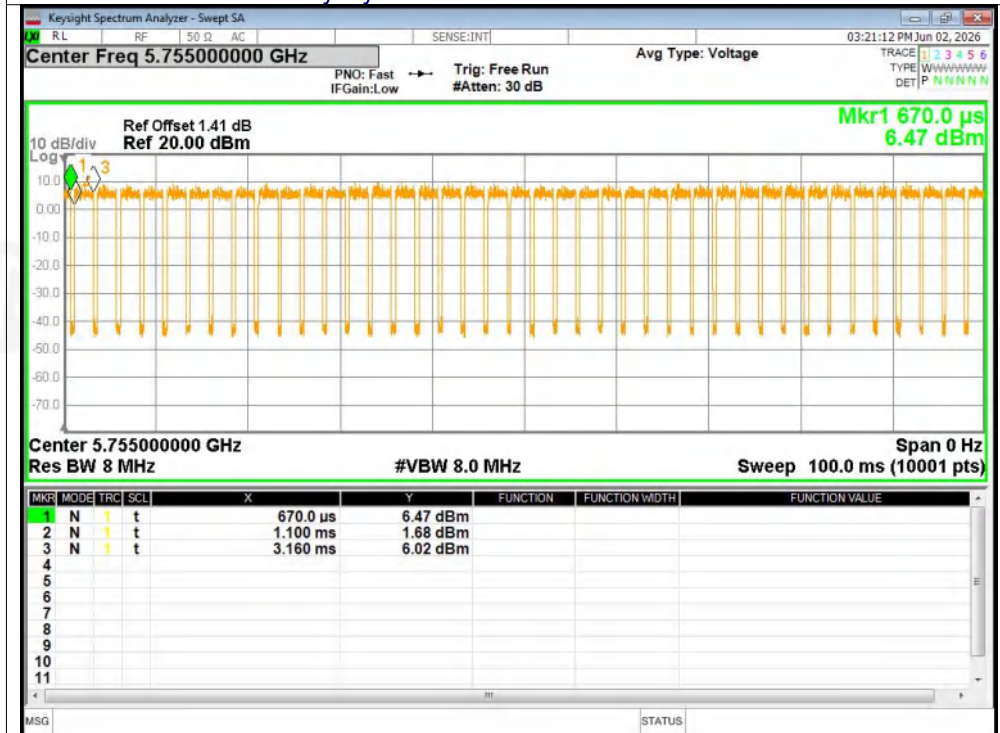


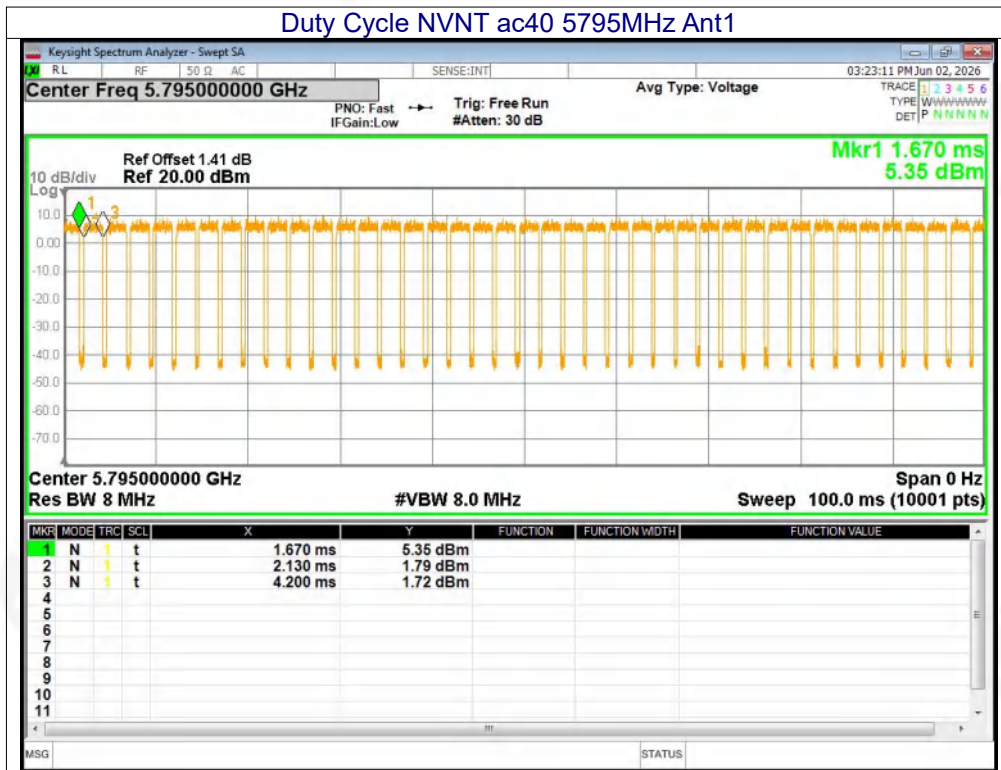


Duty Cycle NVNT ac20 5825MHz Ant1



Duty Cycle NVNT ac40 5755MHz Ant1







11. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203
15.203 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 permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
EUT Antenna:	
	The antenna is PCB Antenna, the best case gain of the antenna is 2.67dBi, reference to the appendix II for details



12. TEST SETUP PHOTO

Reference to the appendix I for details.

13. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

***** END OF REPORT *****