TEST REPORT

Report No:	TW2501163-04E
Applicant:	DMR Technologies
Product:	Remote Control
Model No:	D-Series H16, D-Series
Trademark:	N/A
Test Standards:	FCC Part 15 Subpart E, Paragraph 15.407
Test result:	It is herewith confirmed and found to comply with the requirements set up by ANSI C63.10, FCC Part 15 Subpart C, Paragraph 15.247 regulations for the evaluation of electromagnetic compatibility

Approved By: Terry Tang

Terry Tang

Manager

Dated: February 09, 2025

Results appearing herein relate only to the sample tested
The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TESTING LABORATORIES

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com

Special Statement:

FCC-Registration No.: 744189

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 744189.

Industry Canada (IC) —Registration No.:5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

A2LA (Certification Number:5013.01)

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

CAB identifier: CN0033

Test Report Conclusion

Content

1.0 **General Details**

1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TESTING LABORATORIES.

Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China

Telephone: (755) 83448688

Fax: (755) 83442996

Site Listed with Federal Communications commission (FCC)

Registration Number:744189

For 3m Anechoic Chamber

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205A

For 3m Anechoic Chamber

1.2 Applicant Details

Applicant: DMR Technologies

Address: 2050 15th St., Detroit, MI 48216

1.3 Description of EUT

Product:	Remote Control
Manufacturer:	DMR Technologies
Address:	2050 15th St., Detroit, MI 48216
Trademark:	N/A
Additional Trademark:	N/A
Model Number:	D-Series H16
Additional Model Number:	D-Series
Hardware Version:	V1.0
Software Version:	V1.0
Rating:	Input: DC9V, 2A
Battery:	DC3.7V, 20000mAh Li-ion battery
Type of Modulation	IEEE 802.11a/n (HT20/HT40): OFDM (64QAM, 16QAM, QPSK, BPSK); IEEE 802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)
Frequency	Band 4: 5745MHz-5825MHz
Air Data Rate	IEEE 802.11a: 54, 48,36, 24, 18, 12, 9, 6 Mbps IEEE 802.11n/HT20: mcs0-mcs7 IEEE 802.11n/HT40: mcs0-mcs7 IEEE 802.11ac (VHT20, VHT40, VHT80): NSS1 mcs0-mcs9
Antenna:	FPC antenna used. The gain of the antennas is 3.06dBi maximum. (Get from the antenna specification provided the applicant)
Test Mode:	6Mbps air data rate was the worst case for 802.11a mode; mcs0 air data rate was the worst case for 802.11n mode; mcs0 air data rate was the worst case for 802.11ac and 802.11ax

mode;

Frequency Selection By software

Each Channel Operation Frequency

Band 1					
802.11a / 11n HT20 / 802.11ac VHT20		802.11n HT40 / 802.11acVHT40		802.11ac VHT80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745 MHz	151	5755 MHz	155	5775 MHz
153	5765 MHz	159	5795 MHz		
157	5785 MHz				
161	5825 MHz				

The selected test channels as follows:

Band 1					
802.11a / 11n HT20		802.11n HT40		802.11ac VHT80	
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745 MHz	151	5755 MHz	155	5775 MHz
153	5765 MHz	159	5795 MHz		
161	5825 MHz				

Note: 802.11ac VHT20/VHT40 is similar with 802.11n HT20/HT40.

1.4 Submitted Sample:2 Samples

1.5 Test Duration

2025-01-09 to 2025-02-08

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions below 1GHz Uncertainty =4.7dB

Radiated Emissions above 1GHz Uncertainty =6.0dB

Conducted Power Uncertainty =6.0dB

Occupied Channel Bandwidth Uncertainty =5%

Note: The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

1.7 Test Engineer

The sample tested by _____

Print Name: Andy Xing

2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2024-07-12	2025-07-11
LISN	R&S	EZH3-Z5	100294	2024-07-12	2025-07-11
LISN	R&S	EZH3-Z5	100253	2024-07-12	2025-07-11
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2024-07-12	2025-07-11
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17
Spectrum	R&S	FSIQ26	100292	2024-07-12	2025-07-11
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2022-07-18	2025-07-17
Horn Antenna	R&S	BBHA 9120D	9120D-631	2022-07-18	2025-07-17
Power meter	Anritsu	ML2487A	6K00003613	2024-07-12	2025-07-11
Power sensor	Anritsu	MA2491A	32263	2024-07-12	2025-07-11
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2022-07-18	2025-07-17
9*6*6 Anechoic	--	--	N/A	2022-07-26	2025-07-25
EMI Test Receiver	RS	ESVB	826156/011	2024-07-12	2025-07-11
EMI Test Receiver	RS	ESCS 30	834115/006	2024-07-12	2025-07-11
Spectrum	HP/Agilent	E4407B	MY50441392	2024-07-12	2025-07-11
Spectrum	RS	FSP	1164.4391.38	2024-07-12	2025-07-11
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA	--	2024-07-12	2025-07-11
RF Cable	Zhengdi	7m	--	2024-07-12	2025-07-11
Pre-Amplifier	Schwarebeck	BBV9743	#218	2024-07-12	2025-07-11
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2024-07-12	2025-07-11
LISN	SCHAFFNER	NNB42	00012	2024-07-12	2025-07-11
ESPI Test Receiver	R&S	ESPI 3	100379	2024-07-12	2025-07-11
LISN	R&S	EZH3-Z5	100294	2024-07-12	2025-07-11

2.2 Automation Test Software

For Conducted Emission Test

Name	Version
EZ-EMC	Ver.EMC-CON 3A1.1

For Radiated Emissions

Name	Version
EMI Test Software BL410-EV18.91	V18.905
EMI Test Software BL410-EV18.806 High Frequency	V18.06

3.0 Technical Details

3.1 Summary of test results

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.407	Conducted Emission Test	Pass	Complies
FCC Part 15 Subpart E Paragraph 15.407 (b1/4/5/6/7), Part 15.205 and Part 15.209	Undesirable Emission and Restrict band	Pass	Complies
FCC Part 15, Paragraph 15.407 (a1/2/3)	Peak Transmit Power	Pass	Complies
FCC Part 15, Paragraph 15.407 (a)(6)	Peak Power Excursion	Pass	Complies
FCC Part 15, Paragraph 15.407 (a/1/2/3)	Peak Power Spectral Density	Pass	Complies
FCC Part 15, Paragraph 15.407(g)	Frequency Stability	Pass	Complies

3.2 Test Standards

FCC Part 15 Subpart & Subpart C, Paragraph 15.247, ANSI C63.10 :2013 and ANSI C63.4 :2014
789033 D02 General UNII Test Procedures New Rules v01r04

4.0 EUT Modification

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES.

5.0 Duty Cycle

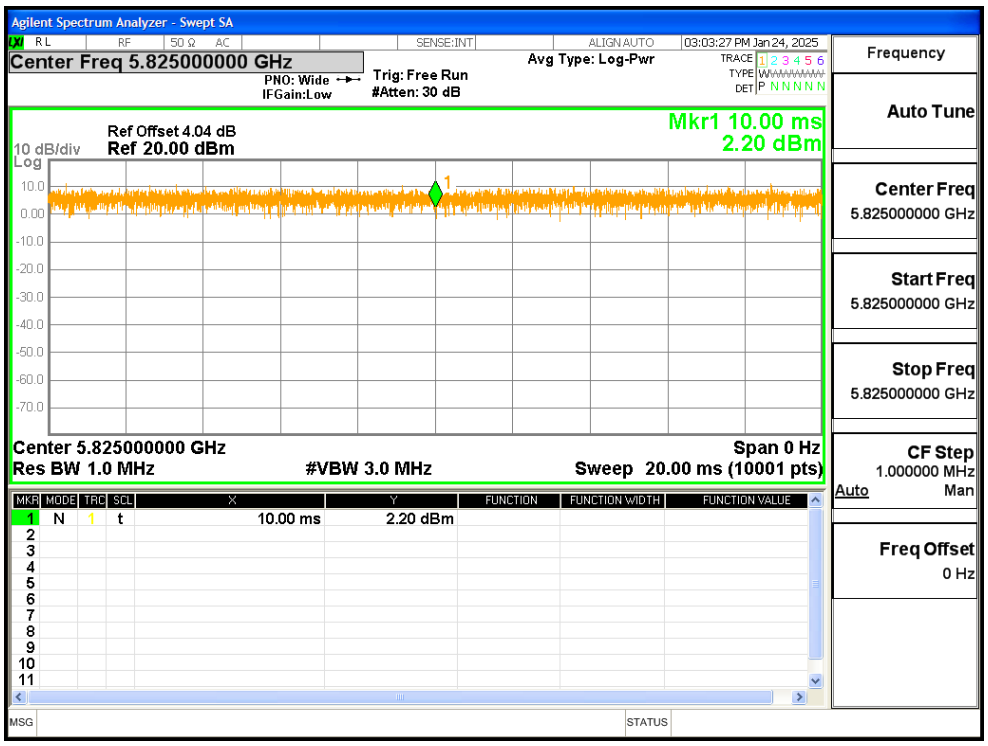
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5745	Ant1	100	0	0
		5785		100	0	0
		5825		100	0	0
	n20	5745		100	0	0
		5785		100	0	0
		5825		100	0	0
	n40	5755		100	0	0
		5795		100	0	0
	ac20	5745		100	0	0
		5785		100	0	0
		5825		100	0	0
	ac40	5755		100	0	0
		5795		100	0	0
	ac80	5775		100	0	0

Test Graphs

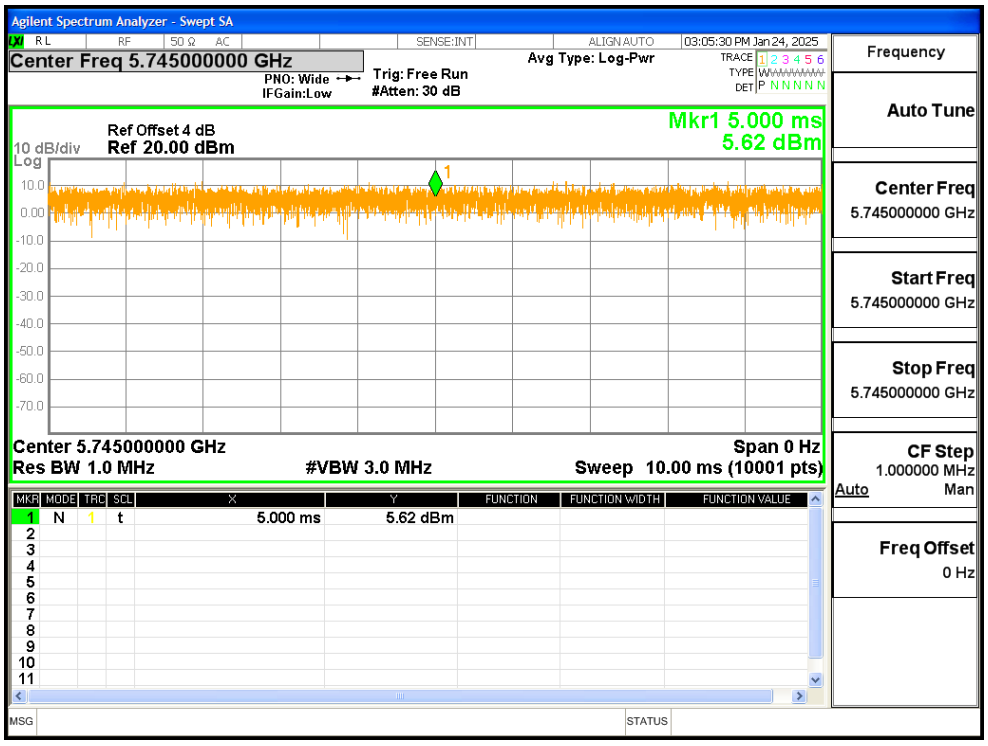
Duty Cycle NVNT a 5745MHz Ant1

Duty Cycle NVNT a 5785MHz Ant1

Duty Cycle NVNT a 5825MHz Ant1

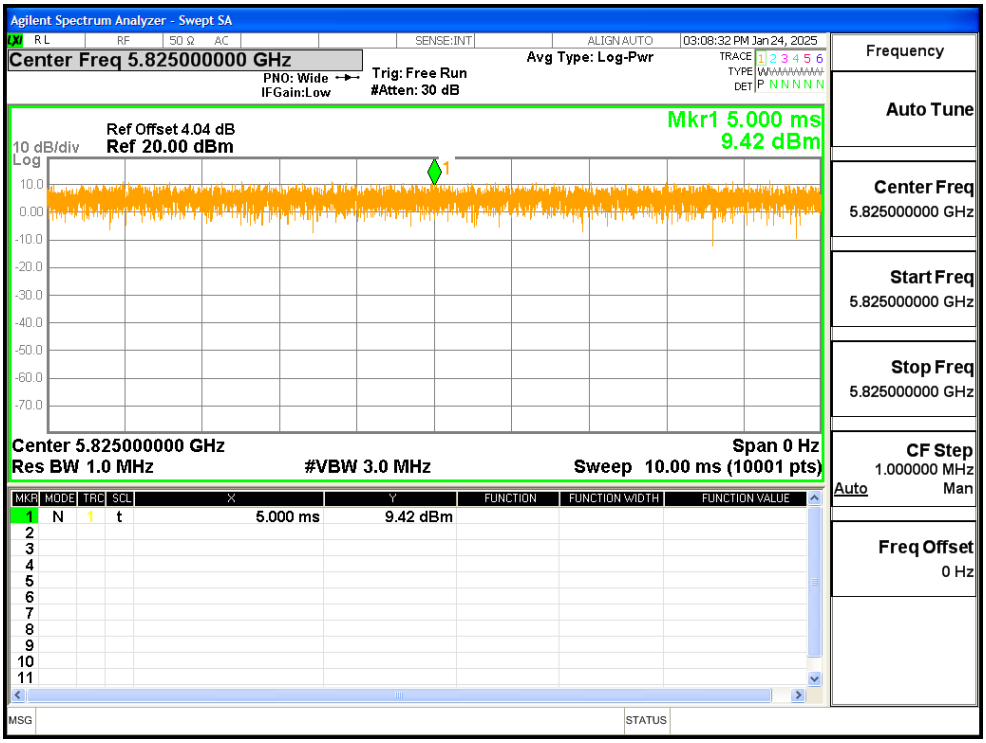


Duty Cycle NVNT n20 5745MHz Ant1



Duty Cycle NVNT n20 5785MHz Ant1

Duty Cycle NVNT n20 5825MHz Ant1

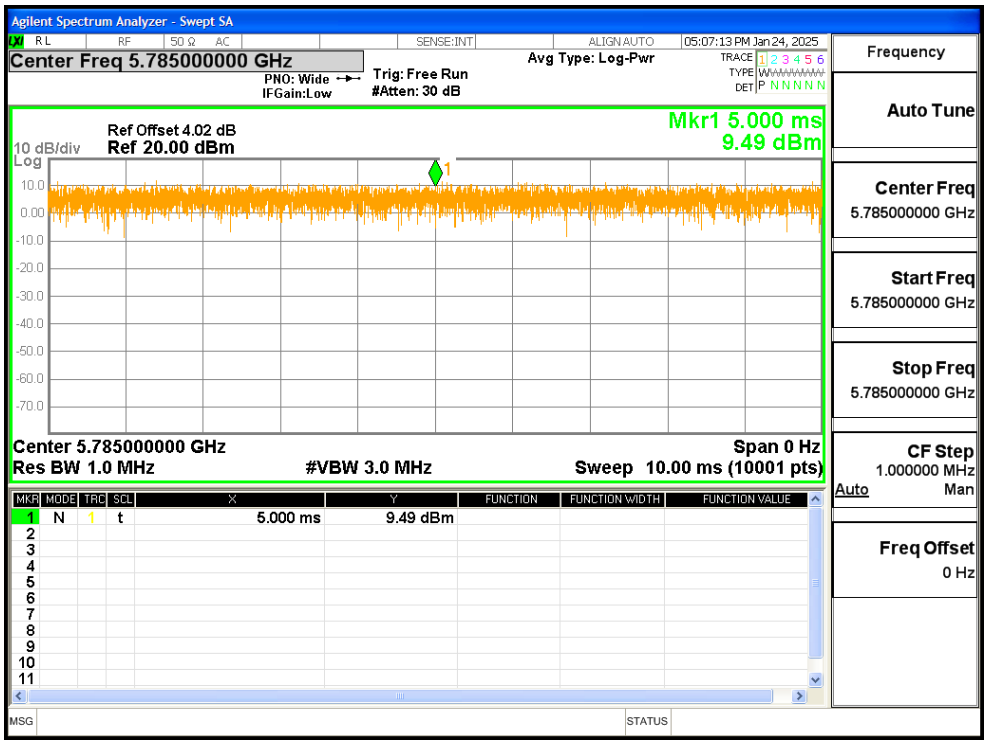


Duty Cycle NVNT n40 5755MHz Ant1

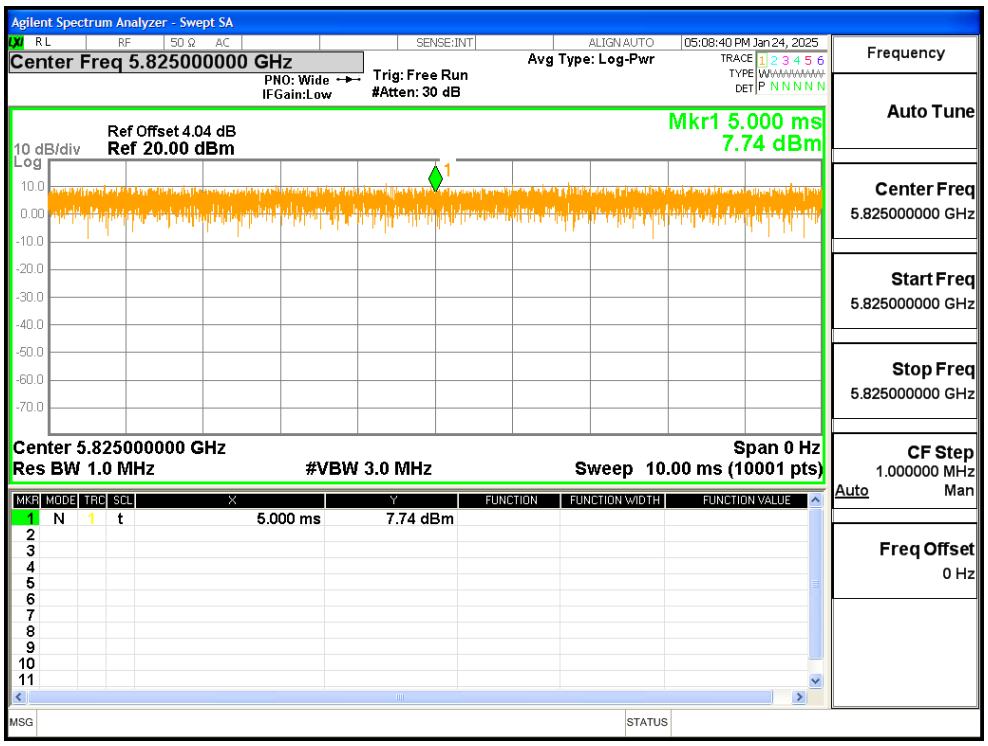
Duty Cycle NVNT n40 5795MHz Ant1

Duty Cycle NVNT ac20 5745MHz Ant1

Duty Cycle NVNT ac20 5785MHz Ant1

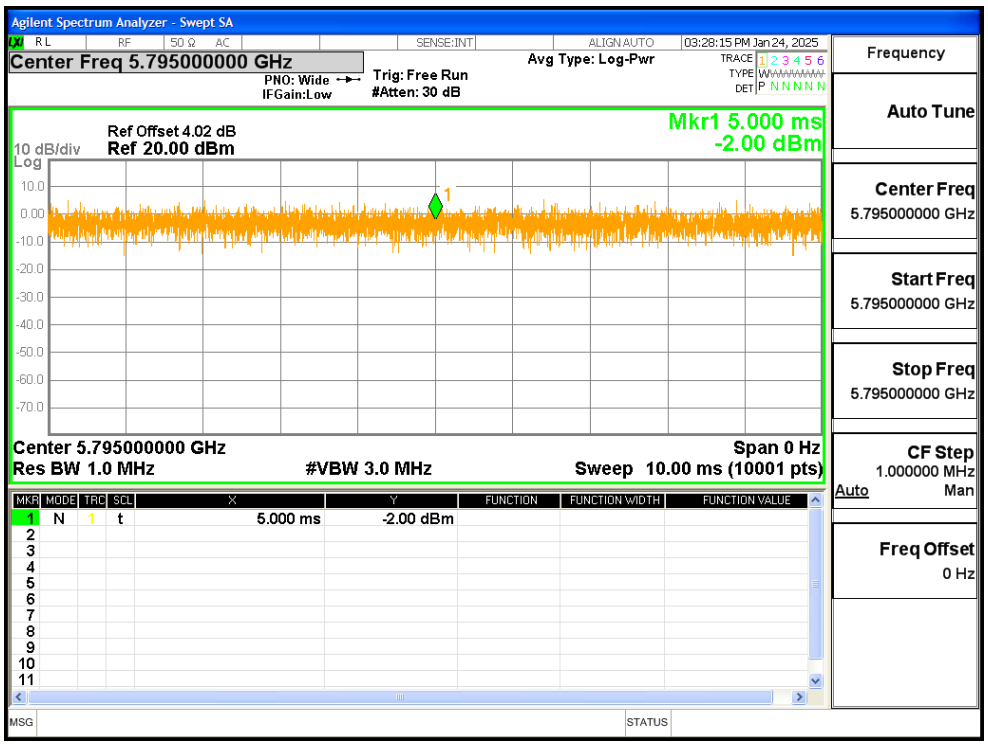


Duty Cycle NVNT ac20 5825MHz Ant1



Duty Cycle NVNT ac40 5755MHz Ant1

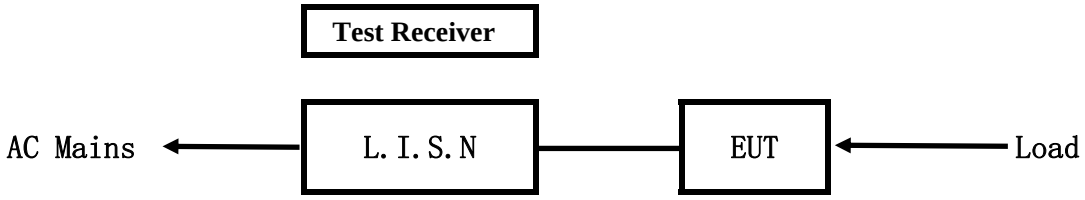
Duty Cycle NVNT ac40 5795MHz Ant1



Duty Cycle NVNT ac80 5775MHz Ant1

6. Power Line Conducted Emission Test

6.1 Schematics of the test



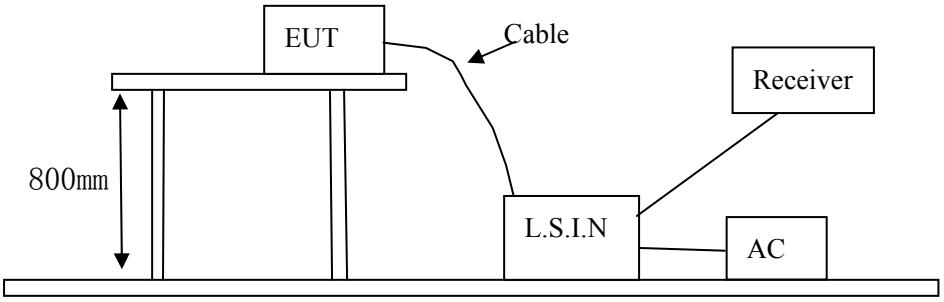
EUT: Equipment Under Test

6.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2009.The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.10–2013.

Test Voltage: 120V~, 60Hz

Block diagram of Test setup



6.3 Configuration of the EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

A. EUT

Device	Manufacturer	Model	FCC ID
Remote Control	DMR Technologies	D-Series H16, D-Series	2BM3J-H16

B. Internal Device

Device	Manufacturer	Model	Rating

C. Peripherals

Device	Manufacturer	Model	Rating
Power Supply	Xiaomi	MDY-12-EF	Input: 100-240V~, 50/60Hz, 1.7A; Output: DC5V, 3A; 5-20A; 6.2- 3.25A(67W Max)

6.4 EUT Operating Condition

Operating condition is according to ANSI C63.10 -2013.

A Setup the EUT and simulators as shown on follow

B Enable AF signal and confirm EUT active to normal condition

6.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency (MHz)	Limits (dB μ V)	
	Quasi-peak Level	Aver ge Level
0.15 ～ 0.50	66.0～56.0*	56.0～46.0*
0.50 ～ 5.00	56.0	46.0
5.00 ～ 30.00	60.0	50.0

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

2. The tighter limit shall apply at the transition frequencies

6.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

A: Conducted Emission on Live Terminal (150kHz to 30MHz)

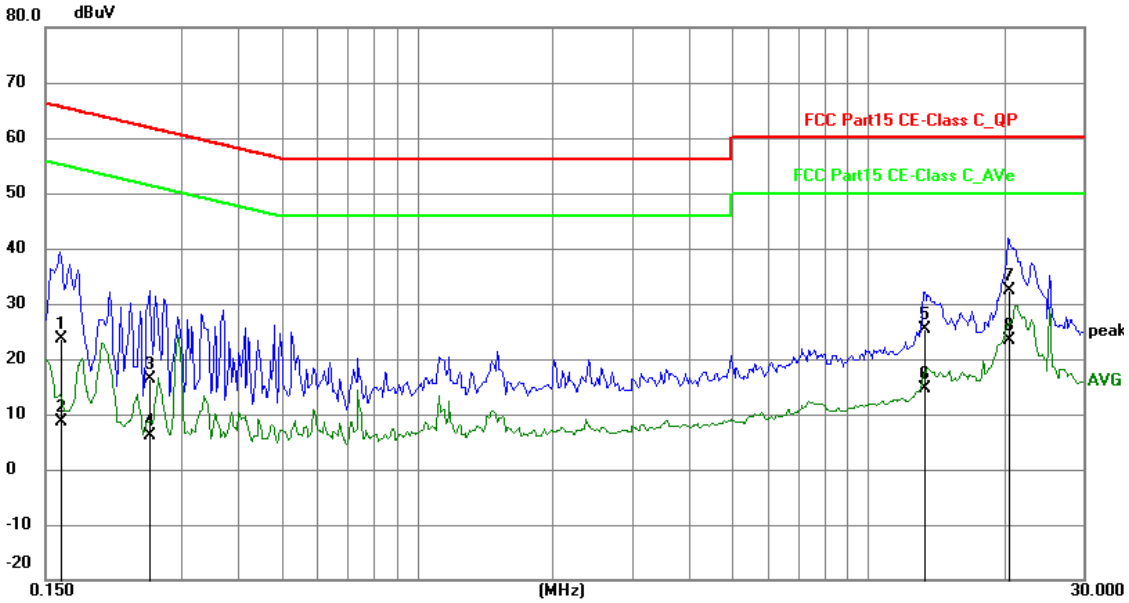
EUT Operating Environment

Temperature: 26℃ Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Keeping WIFI Transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1617	13.23	10.34	23.57	65.38	-41.81	QP	P
2	0.1617	-1.66	10.34	8.68	55.38	-46.70	AVG	P
3	0.2553	6.17	10.33	16.50	61.58	-45.08	QP	P
4	0.2553	-4.09	10.33	6.24	51.58	-45.34	AVG	P
5	13.3077	10.60	14.69	25.29	60.00	-34.71	QP	P
6	13.3077	-0.07	14.69	14.62	50.00	-35.38	AVG	P
7	20.4486	16.11	16.34	32.45	60.00	-27.55	QP	P
8	20.4486	7.14	16.34	23.48	50.00	-26.52	AVG	P

B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

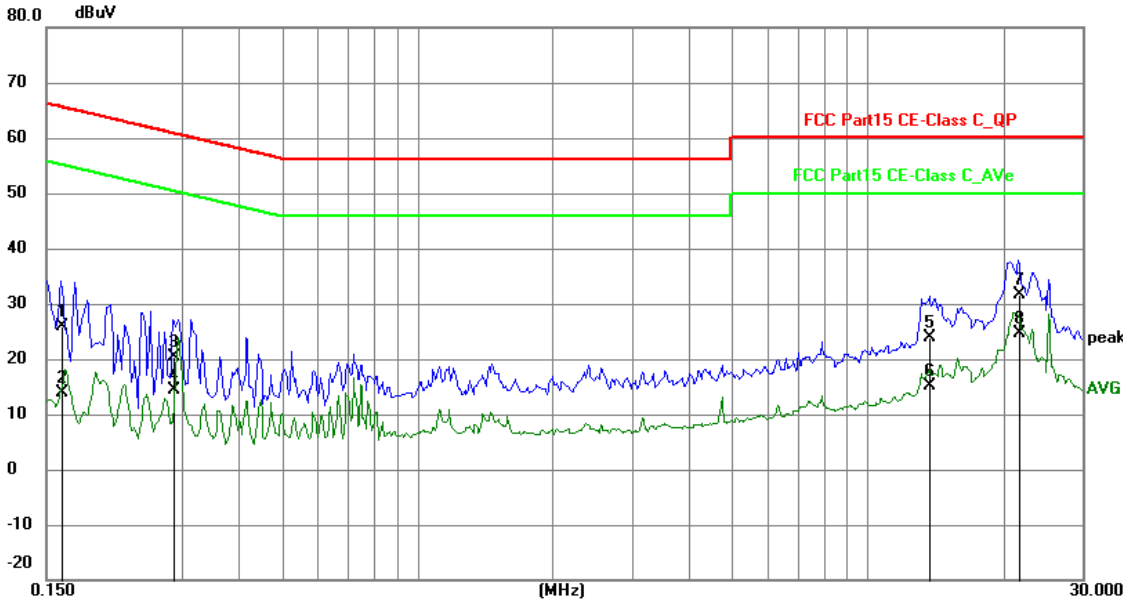
EUT Operating Environment

Temperature: 26℃ Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Keeping WIFI Transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1617	15.61	10.34	25.95	65.38	-39.43	QP	P
2	0.1617	3.47	10.34	13.81	55.38	-41.57	AVG	P
3	0.2865	10.03	10.34	20.37	60.63	-40.26	QP	P
4	0.2865	4.00	10.34	14.34	50.63	-36.29	AVG	P
5	13.7094	9.00	14.79	23.79	60.00	-36.21	QP	P
6	13.7094	0.33	14.79	15.12	50.00	-34.88	AVG	P
7	21.6576	15.47	16.08	31.55	60.00	-28.45	QP	P
8	21.6576	8.63	16.08	24.71	50.00	-25.29	AVG	P

7 Undesirable Emission and Restrict band

7.1 Test Method and test Procedure:

(1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.744189

(2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.

(3) The frequency spectrum from 30 MHz to 40 GHz was investigated. All readings from 30 MHz to 1 GHz are Quasi-peak values with a resolution bandwidth of 120 kHz. For measurement above 1GHz, peak values with RBW=1MHz, VBW=3MHz and PK detector.
Measurements were made at 3 meters.

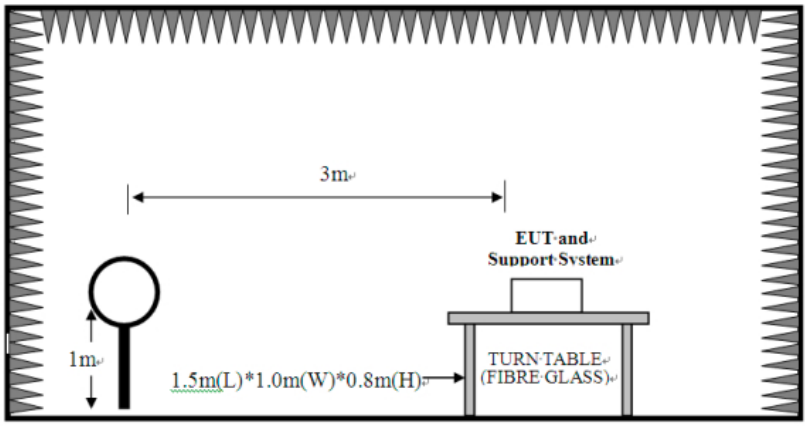
(4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.

(5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "**QP**" in the data table.

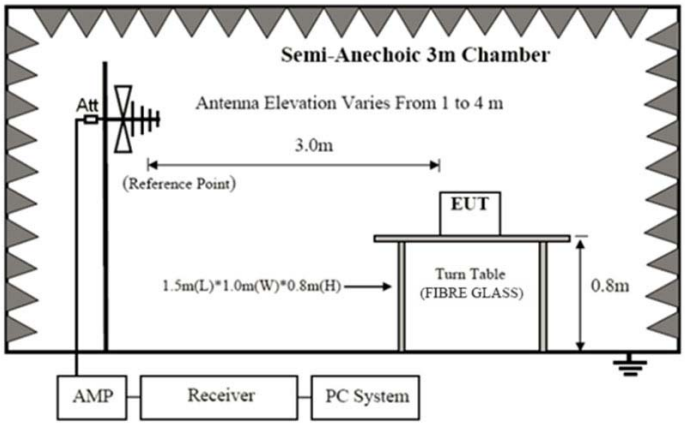
(6) The antenna polarization: Vertical polarization and Horizontal polarization.

Block diagram of Test setup

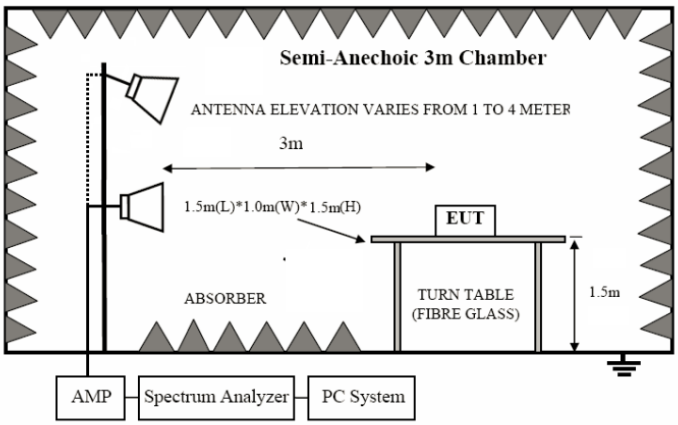
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to1GHz



For radiated emissions above 1GHz



7.2 Configuration of The EUT

Same as section 5.3 of this report

7.3 EUT Operating Condition

Same as section 5.4 of this report.

7.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

Frequencies in restricted band are complied to limit on Paragraph 15.209

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

(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 -27dBm/MHz

(2) For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27dBm/MHz.

Note: 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
2. In the Above Table, the higher limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

Note: Only the worst case was recorded in the test report.

Test result

General Radiated Emission Data and Harmonics Radiated Emission Data

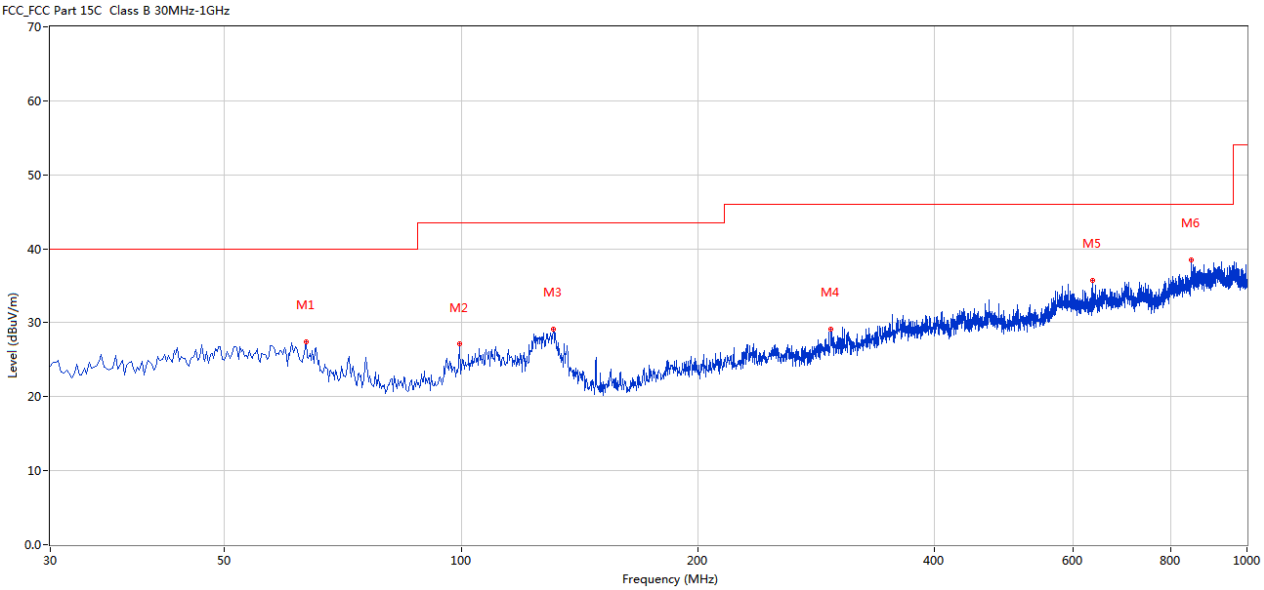
Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: **Keeping WIFI Transmitting**

Results: **Pass**

Test Figure:

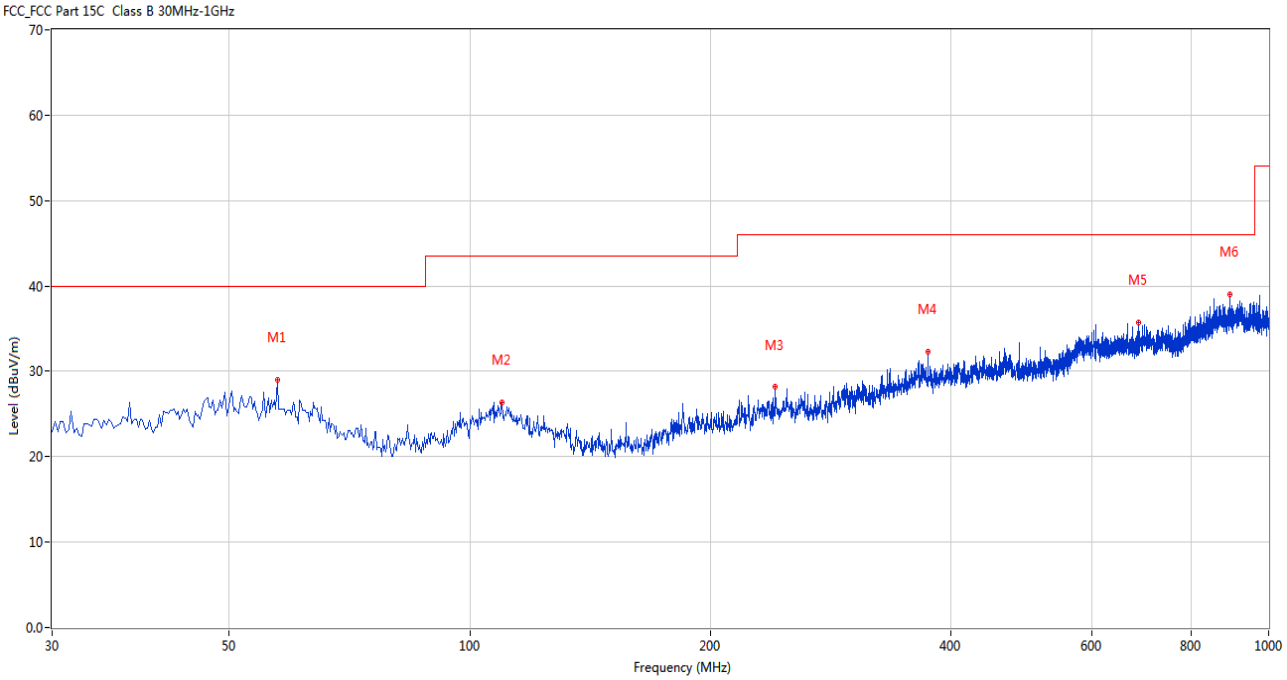
H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	63.457	27.37	-5.73	40.0	12.63	Peak	321.00	100	Horizontal	Pass
2	99.580	27.09	-7.37	43.5	16.41	Peak	149.00	100	Horizontal	Pass
3	131.097	29.19	-8.75	43.5	14.31	Peak	34.00	100	Horizontal	Pass
4	295.714	29.15	-3.95	46.0	16.85	Peak	218.00	100	Horizontal	Pass
5	635.371	35.73	1.45	46.0	10.27	Peak	287.00	100	Horizontal	Pass
6	849.203	38.50	4.29	46.0	7.50	Peak	355.00	100	Horizontal	Pass

Test Figure:

V



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	57.396	29.00	-4.92	40.0	11.00	Peak	104.00	100	Vertical	Pass
2	109.763	26.35	-5.96	43.5	17.15	Peak	92.00	100	Vertical	Pass
3	241.407	28.15	-5.64	46.0	17.85	Peak	206.00	100	Vertical	Pass
4	374.749	32.33	-2.00	46.0	13.67	Peak	183.00	100	Vertical	Pass
5	688.223	35.70	2.08	46.0	10.30	Peak	150.00	100	Vertical	Pass
6	895.024	39.02	4.86	46.0	6.98	Peak	38.00	100	Vertical	Pass

Operation Mode: Keeping Transmitting under CH149 for 11a at 6Mbps

Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
5745.00	93.22（PK）	V	Fundamental Frequency
5745.00	82.59（PK）	H	
11490	--	V	74(Peak)/ 54(AV)
11490	--	H	74(Peak)/ 54(AV)
17235	--	H/V	74(Peak)/ 54(AV)
22980	--	H/V	74(Peak)/ 54(AV)
28725	--	H/V	74(Peak)/ 54(AV)
34470	--	H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit
2. Remark “---” means that the emissions level is too low to be measured

Operation Mode: Keeping Transmitting under CH157 for 11a at 6Mbps

Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
5785.00	96.87（PK）	V	Fundamental Frequency
5785.00	85.43（PK）	H	
11570	--	V	74(Peak)/ 54(AV)
11570	--	H	74(Peak)/ 54(AV)
17355	--	H/V	74(Peak)/ 54(AV)
23140	--	H/V	74(Peak)/ 54(AV)
28925	--	H/V	74(Peak)/ 54(AV)
34710	--	H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit
2. Remark “---” means that the emissions level is too low to be measured

Operation Mode: Keeping Transmitting under CH161 for 11a at 6Mbps

Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
5825.00	94.39（PK）	V	Fundamental Frequency
5825.00	83.57（PK）	H	
11650	--	V	74(Peak)/ 54(AV)
11650	--	H	74(Peak)/ 54(AV)
17475	--	H/V	74(Peak)/ 54(AV)
23300	--	H/V	74(Peak)/ 54(AV)
29125	--	H/V	74(Peak)/ 54(AV)
34950	--	H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit
2. Remark “---” means that the emissions level is too low to be measured

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 149 (5745MHz)-11a
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	47.6 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-47.6		
Polarity	Horizontal		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 47.6dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=47.6-95.2= -47.6dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 149 (5745MHz)-11a
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	43.2 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-52.0		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 43.2dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=43.2-95.2= -52.0dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 161 (5825MHz)-11a
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	49.3(PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-45.9		
Polarity	Horizontal		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 49.3dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=49.3-95.2= -45.9dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 161 (5825MHz)-11a
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	45.2 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-50.0		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 45.2dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=45.2-95.2=-50.0dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 149 (5745MHz)-11n/HT20
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	47.0 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-48.2		
Polarity	Horizontal		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 47.0dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=47.0-95.2= -48.2dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 149 (5745MHz)-11n/HT20
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	44.5 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-50.7		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 44.5dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=44.5-95.2= -50.7dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 161 (5825MHz)-11n/HT20
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	52.8(PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-42.4		
Polarity	Horizontal		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 52.8dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=52.8-95.2= -42.4dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 161 (5825MHz)-11n/HT20
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	46.9 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-48.3		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 46.9dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=46.9-95.2= -48.3dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 151 (5755MHz)-11n/HT40
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	46.6 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-48.6		
Polarity	Horizontal		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]=46.6dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=46.6 -95.2= -48.6dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 151 (5755MHz)-11n/HT40
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	43.9 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-51.3		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 43.9dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=43.9-95.2= -51.3dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 159 (5795MHz)-11n/HT40
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	56.3 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-38.9		
Polarity	Horizontal		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 56.3dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=56.3-95.2= -38.9dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 159 (5795MHz)-11n/HT40
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	49.6(PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-45.6		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 49.6 dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=49.6-95.2= -45.6dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 149 (5745MHz)- 11ac VHT20
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	50.1(PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-45.1		
Polarity	Horizontal		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 50.1dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=50.1-95.2=-45.1dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 149 (5745MHz)- 11ac VHT20
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	48.2 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-47.0		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 48.2dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=48.2-95.2= -47.0dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 161 (5825MHz)- 11ac VHT20
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	56.7 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-38.5		
Polarity	Horizontal		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 56.7dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=56.7-95.2= -38.5dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 161 (5825MHz)- 11ac VHT20
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	50.5(PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-44.7		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]=50.5dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=50.5-95.2=-44.7dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 151 (5755MHz)- 11ac VHT40
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	50.3(PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-44.9		
Polarity	Horizontal		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 50.3dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=50.3-95.2= -44.9dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 151 (5755MHz)- 11ac VHT40
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	46.7 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-48.5		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 46.7dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=46.7-95.2= -48.5dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 159 (5795MHz)- 11ac VHT40
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	55.1 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-40.1		
Polarity	Horizontal		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]=55.1dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=55.1-95.2=-40.1dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 159 (5795MHz)- 11ac VHT40
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	50.7 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-44.5		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] – 95.2
For Example, if E[dBμV/m]= 50.7dBμV/m,
EIRP[dBm] = E[dBμV/m] – 95.2= 50.7-95.2= -44.5dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 155 (5775MHz)- 11ac VHT80
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	46.8 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-48.4		
Polarity	Horizontal		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] – 95.2
For Example, if E[dBμV/m]= 46.8dBμV/m,
EIRP[dBm] = E[dBμV/m] – 95.2=46.8-95.2=-48.4dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 155 (5775MHz)- 11ac VHT80
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5725	PK (dBμV/m)	40.6 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-54.6		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] – 95.2
For Example, if E[dBμV/m]= 40.6dBμV/m,
EIRP[dBm] = E[dBμV/m] – 95.2=40.6-95.2= -54.6dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 155 (5775MHz)- 11ac VHT80
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	55.7 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-39.5		
Polarity	Horizontal		--	--

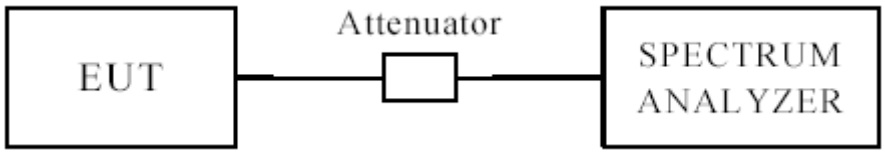
Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] – 95.2
For Example, if E[dBμV/m]= 55.7dBμV/m,
EIRP[dBm] = E[dBμV/m] – 95.2=55.7-95.2=-39.5dBm
2. RBW=1MHz, VBW=3MHz

Restricted band Measurement				
EUT	Remote Control		Test Mode:	Channel 155 (5775MHz)- 11ac VHT80
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
5850	PK (dBμV/m)	48.9 (PK)	Limit	-17dBm/MHz
	EIRP (dBm)	-46.3		
Polarity	Vertical		--	--

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:
EIRP[dBm] = E[dBμV/m] - 95.2
For Example, if E[dBμV/m]= 48.9dBμV/m,
EIRP[dBm] = E[dBμV/m] - 95.2=48.9-95.2= -46.3dBm
2. RBW=1MHz, VBW=3MHz

8.0 Emission Bandwidth

8.1 Test Setup



8.3 Test Procedure for Emission Bandwidth

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set VBW> RBW
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

8.4 Test Procedure for Minimum Bandwidth for the Band 5725-5850MHz

1. Set RBW = 100 kHz.
2. Set VBW≥ 3 × RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. 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.

8.5 Test Procedure for 99% Bandwidth

1. Set center frequency to the nominal EUT channel center frequency
2. Set span = 1.5 times to 5.0 times OBW
3. Set RBW= 1% TO 5% of the OBW
4. Set VBW≥ 3 × RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Other, peak detection and max mode (until trace stabilizes) shall be used.
6. Use the 99% power bandwidth function of the instrument

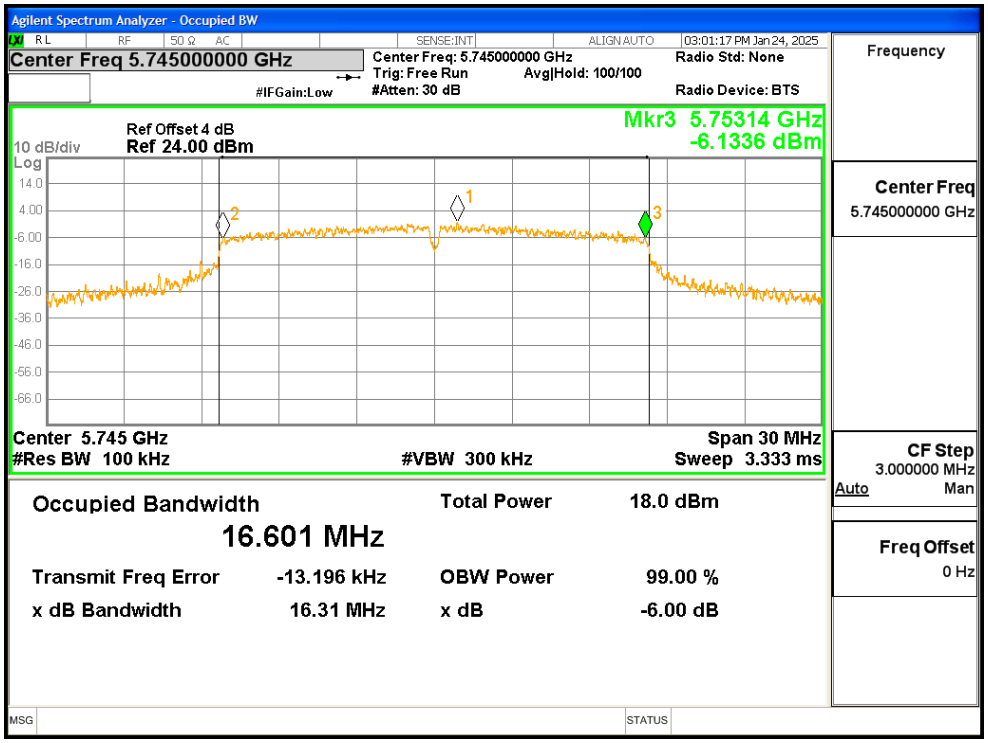
8.6 Test Result

-6dB Bandwidth

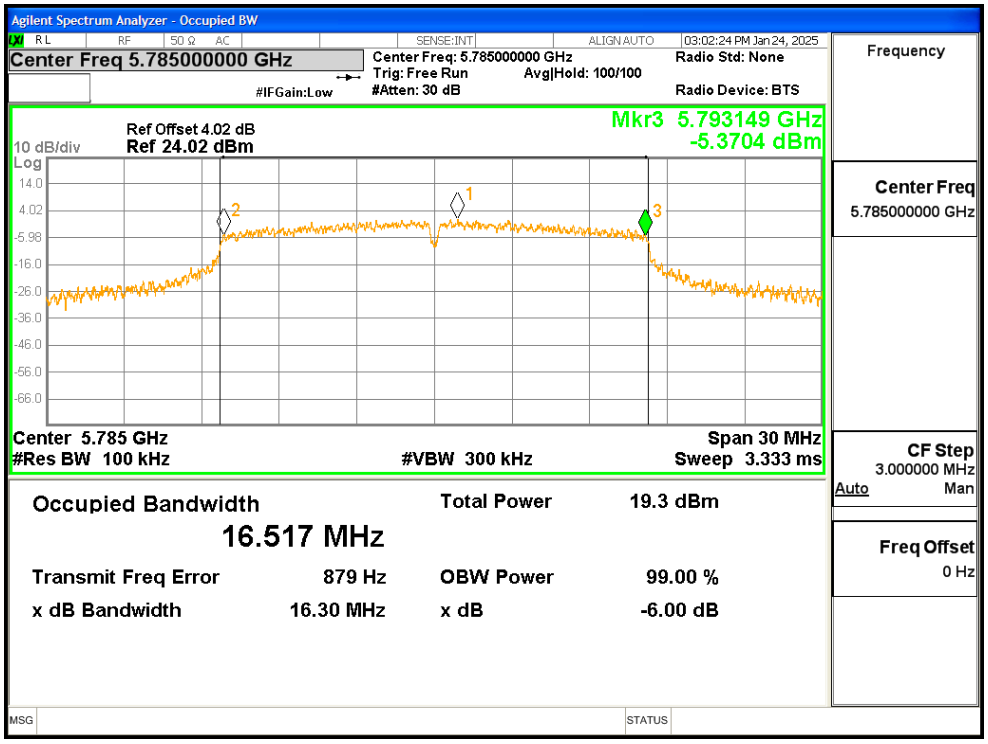
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	16.307	0.5	Pass
		5785		16.296	0.5	Pass
		5825		16.298	0.5	Pass
	n20	5745		17.297	0.5	Pass
		5785		16.945	0.5	Pass
		5825		17.272	0.5	Pass
	n40	5755		33.446	0.5	Pass
		5795		36.304	0.5	Pass
	ac20	5745		17.006	0.5	Pass
		5785		16.857	0.5	Pass
		5825		16.667	0.5	Pass
	ac40	5755		34.762	0.5	Pass
		5795		35.758	0.5	Pass
	ac80	5775		76.419	0.5	Pass

Test Graphs

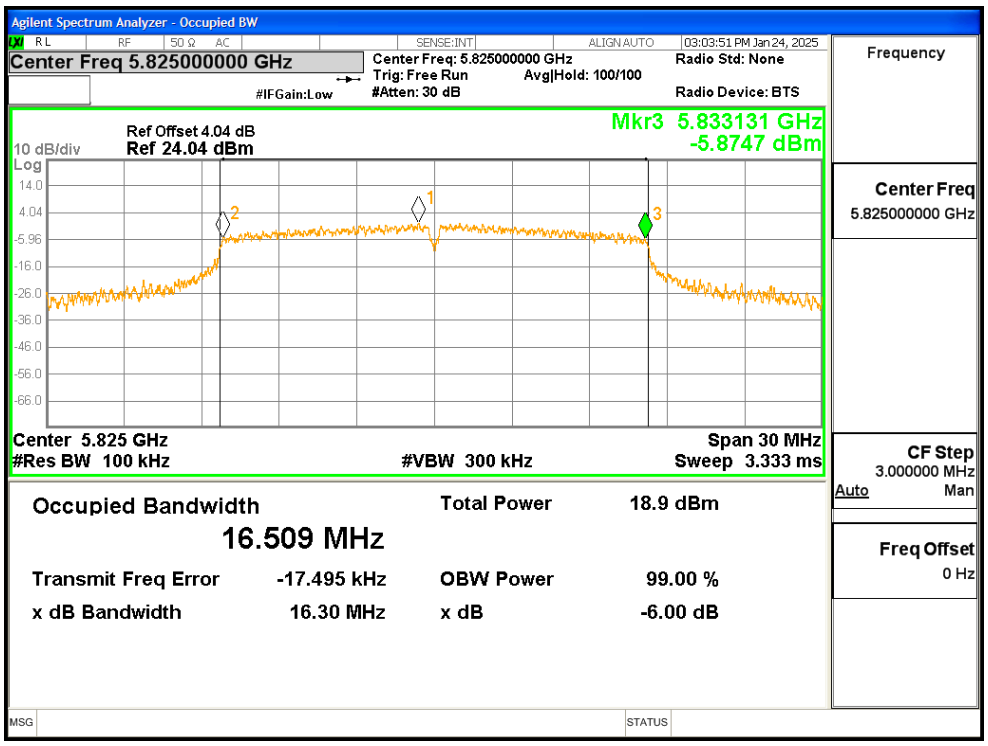
-6dB Bandwidth NVNT a 5745MHz Ant1



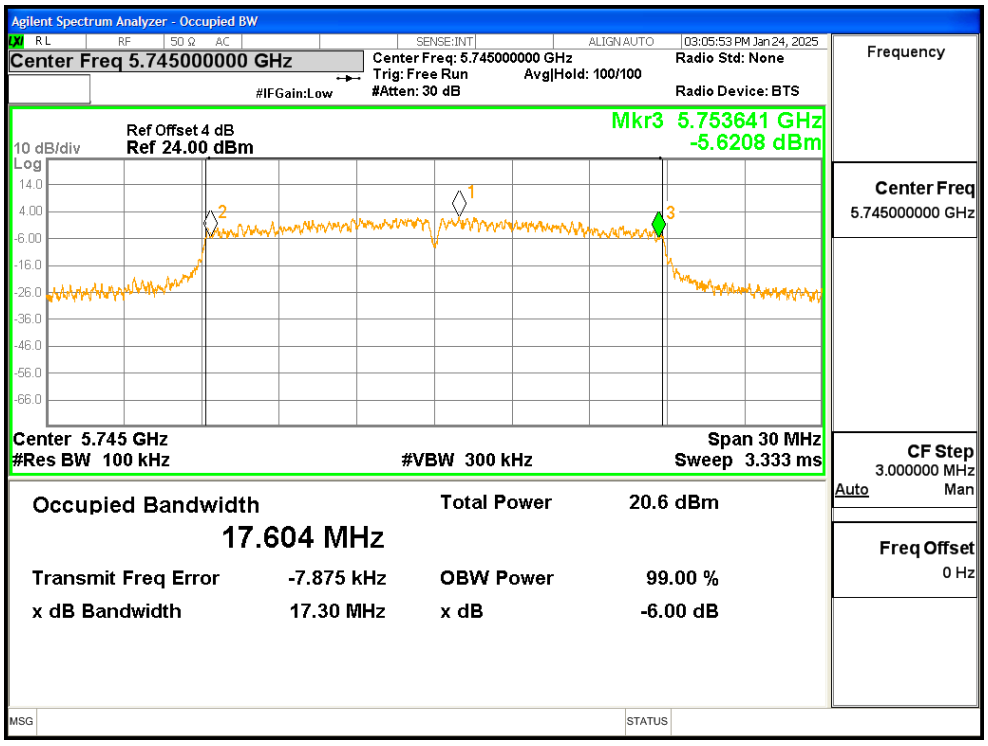
-6dB Bandwidth NVNT a 5785MHz Ant1



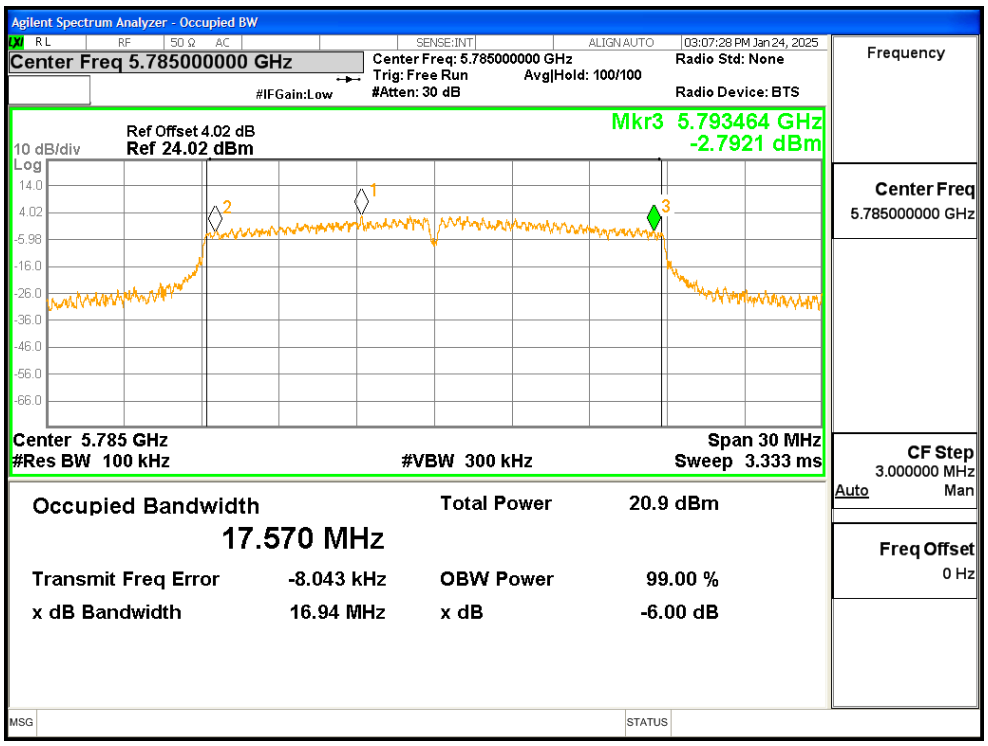
-6dB Bandwidth NVNT a 5825MHz Ant1



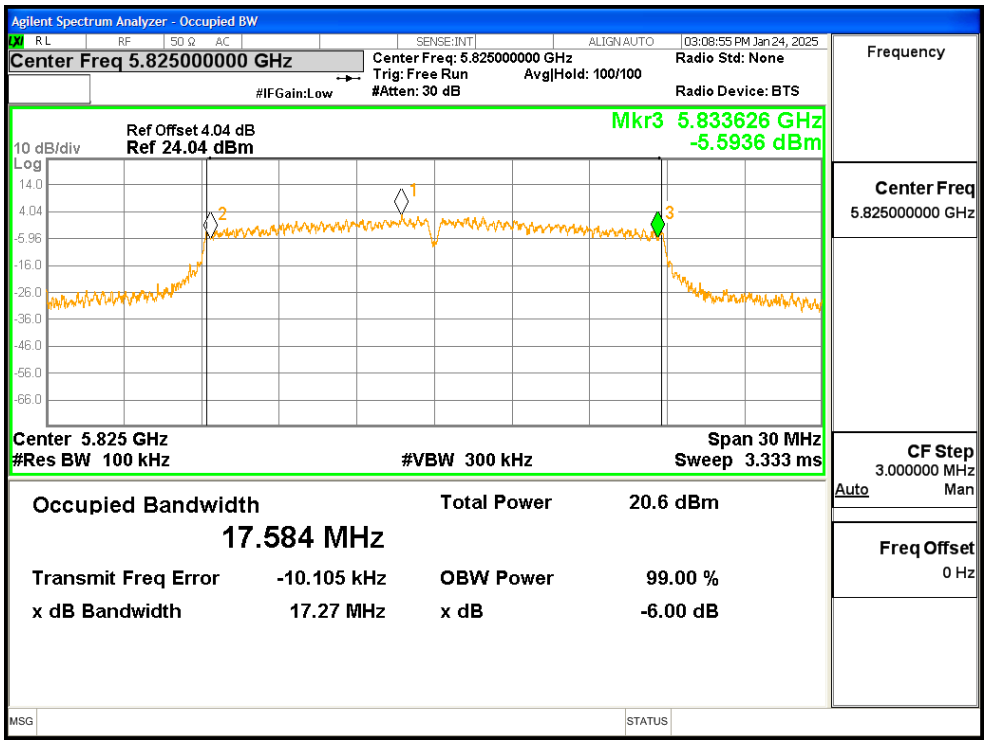
-6dB Bandwidth NVNT n20 5745MHz Ant1



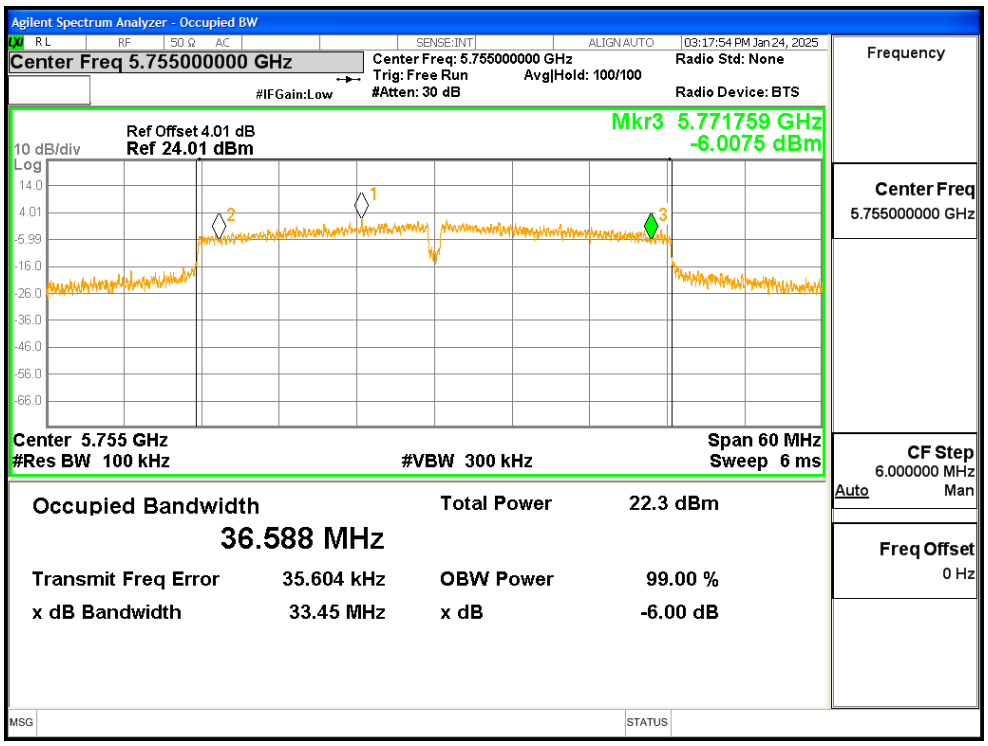
-6dB Bandwidth NVNT n20 5785MHz Ant1



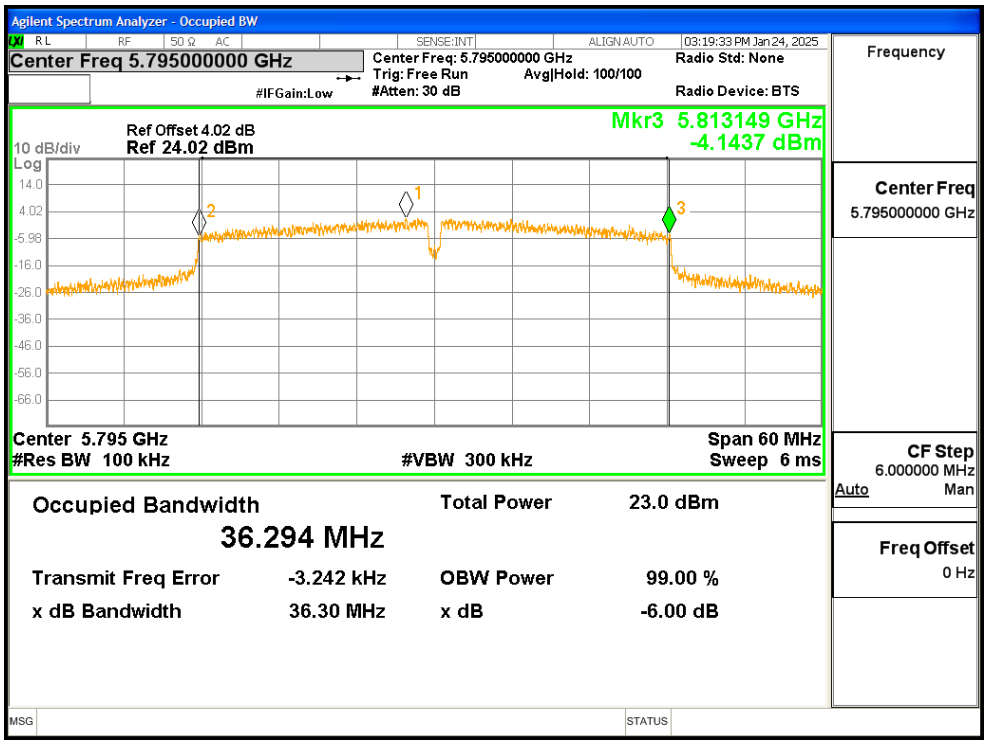
-6dB Bandwidth NVNT n20 5825MHz Ant1



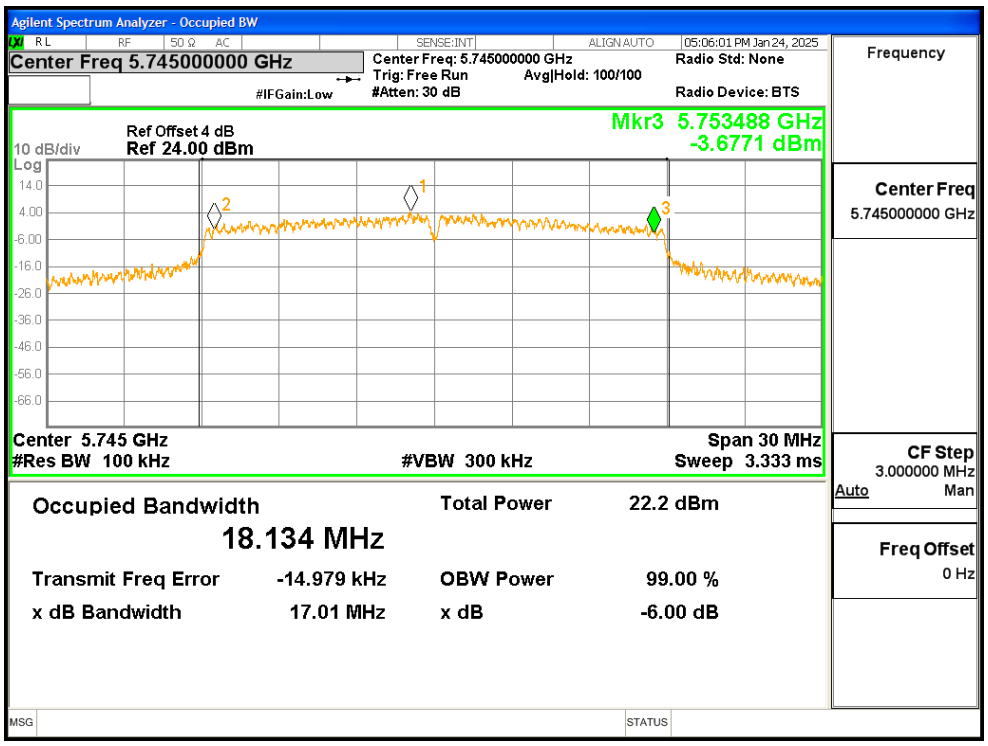
-6dB Bandwidth NVNT n40 5755MHz Ant1



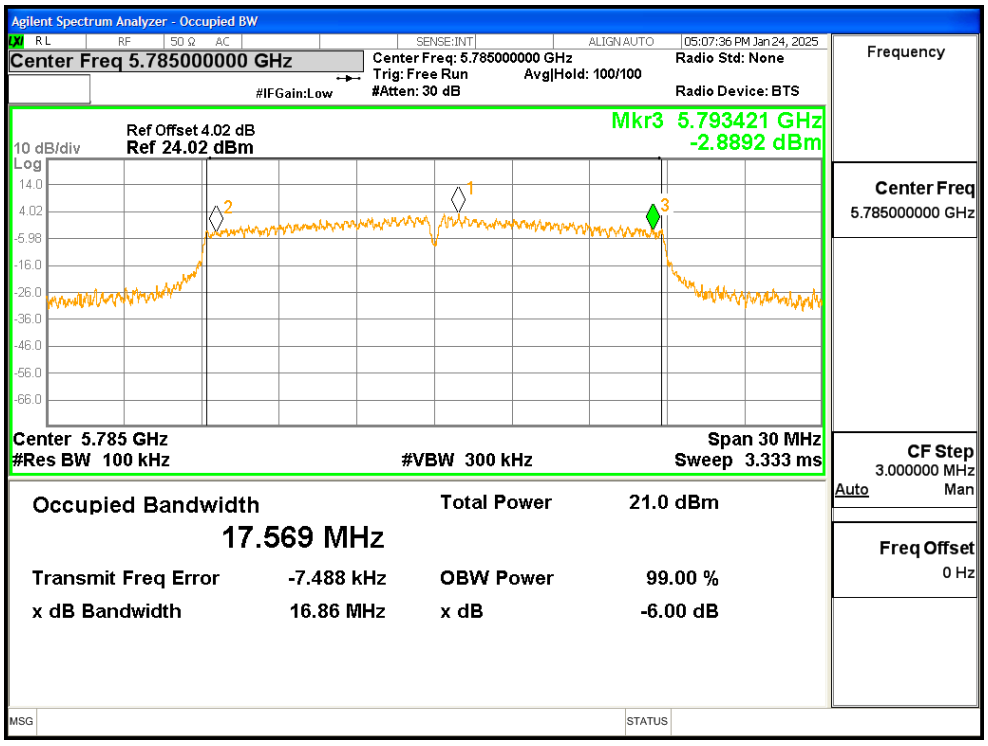
-6dB Bandwidth NVNT n40 5795MHz Ant1



-6dB Bandwidth NVNT ac20 5745MHz Ant1



-6dB Bandwidth NVNT ac20 5785MHz Ant1



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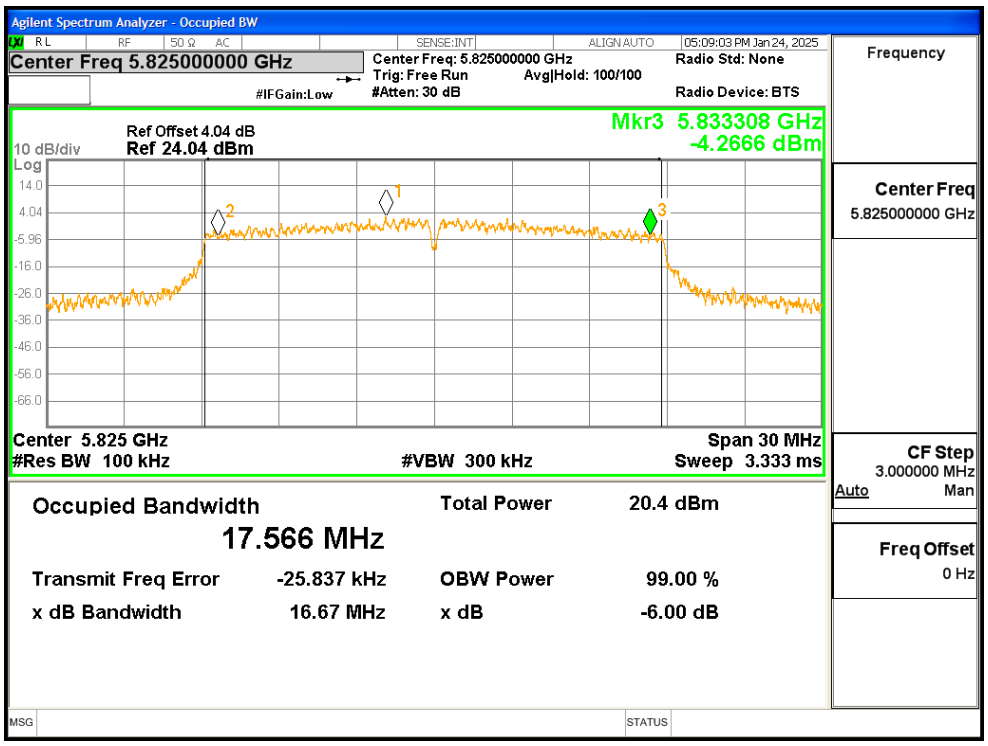
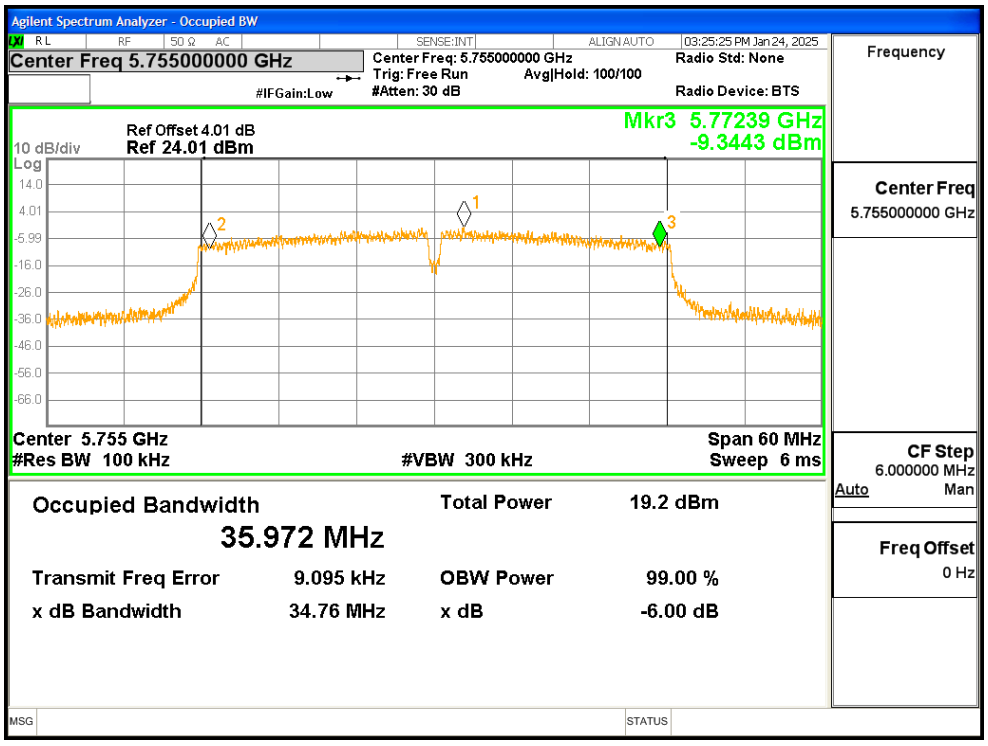
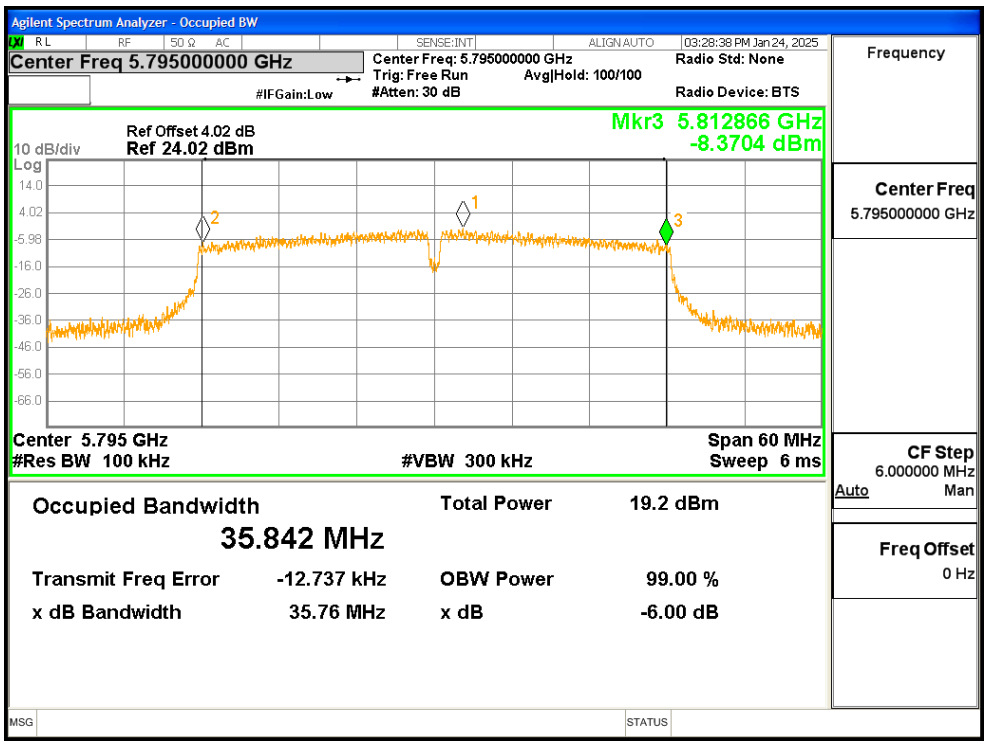


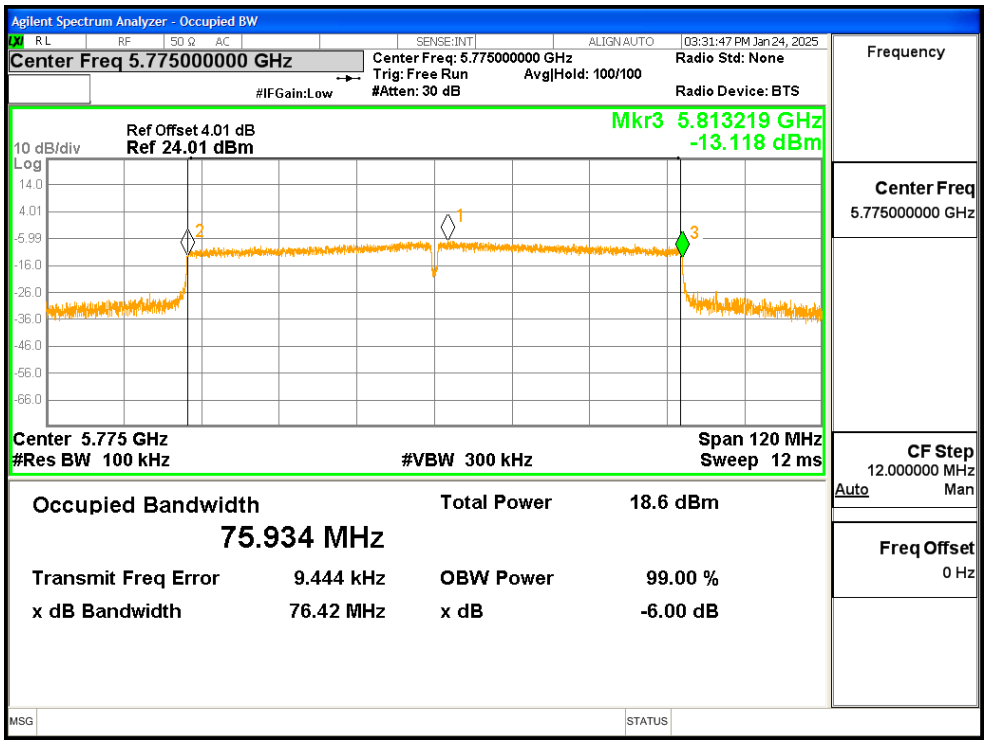
-6dB Bandwidth NVNT ac40 5755MHz Ant1



-6dB Bandwidth NVNT ac40 5795MHz Ant1



-6dB Bandwidth NVNT ac80 5775MHz Ant1

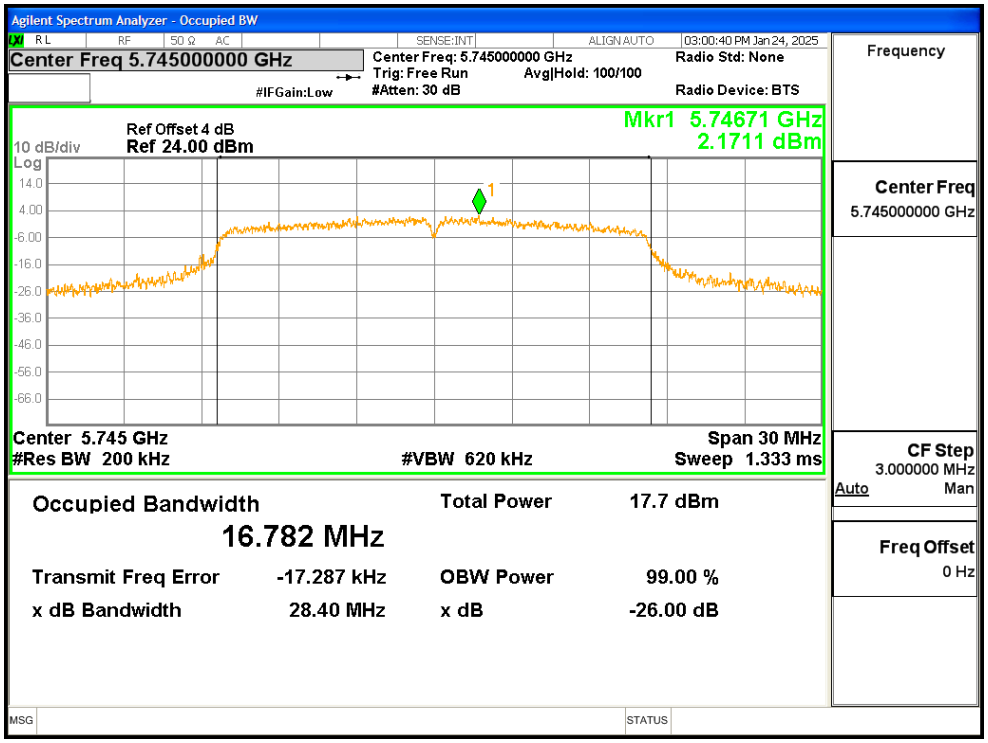


Occupied Channel Bandwidth

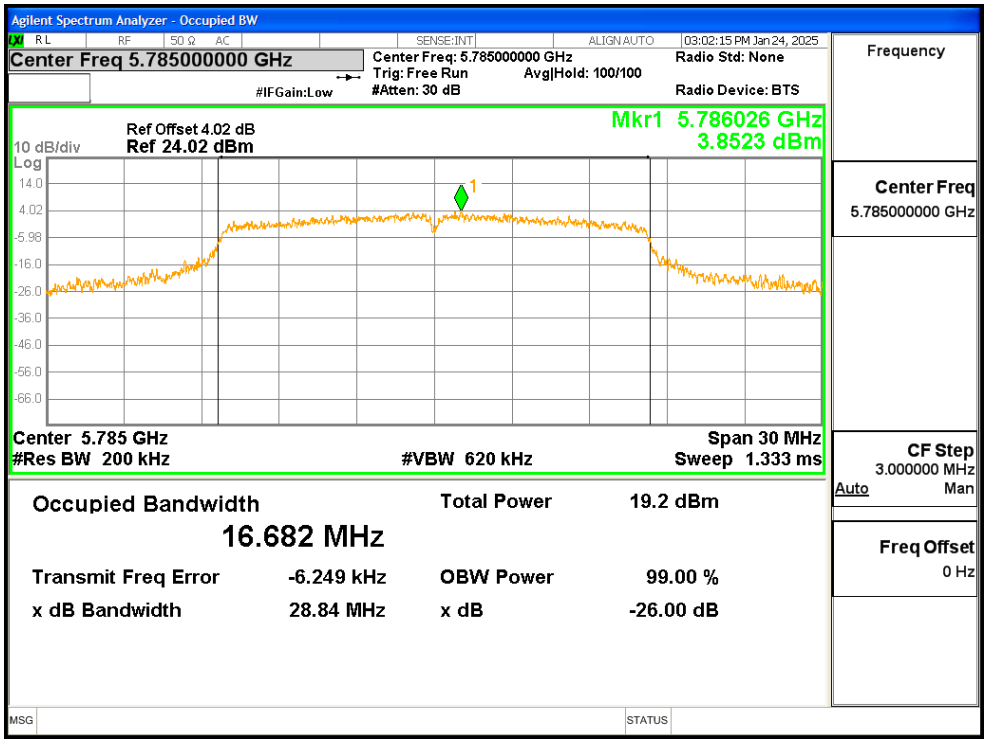
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5745	Ant1	16.782
		5785		16.682
		5825		16.643
	n20	5745		17.678
		5785		17.606
		5825		17.591
	n40	5755		36.977
		5795		36.523
	ac20	5745		18.317
		5785		17.591
		5825		17.578
	ac40	5755		36.045
		5795		35.964
	ac80	5775		75.936

Test Graphs

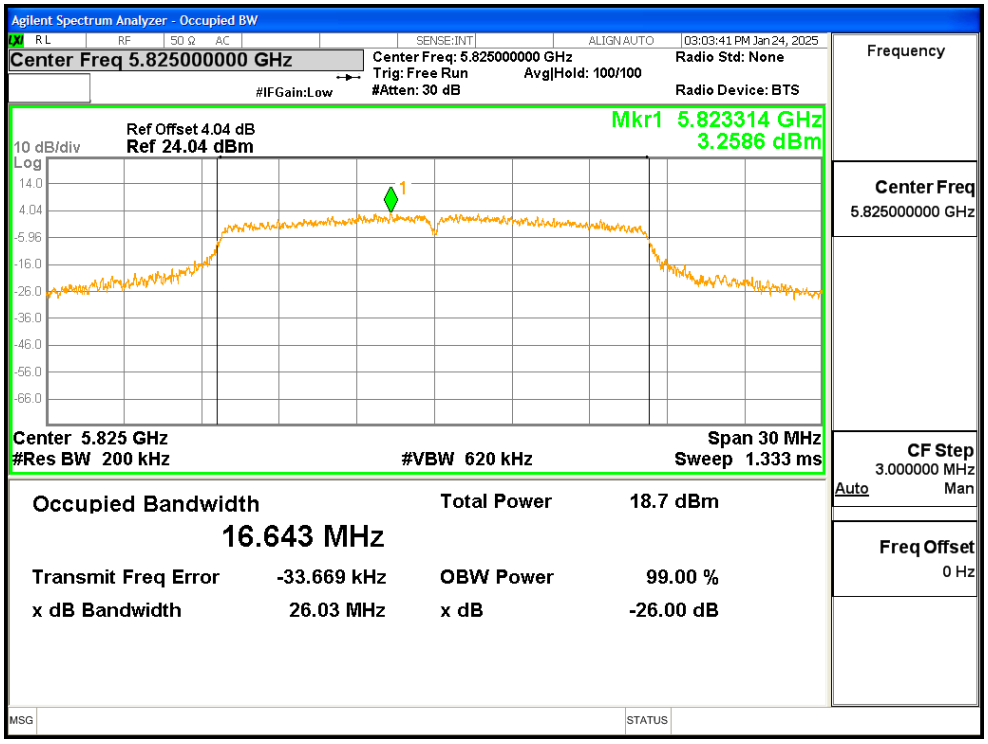
OBW NVNT a 5745MHz Ant1



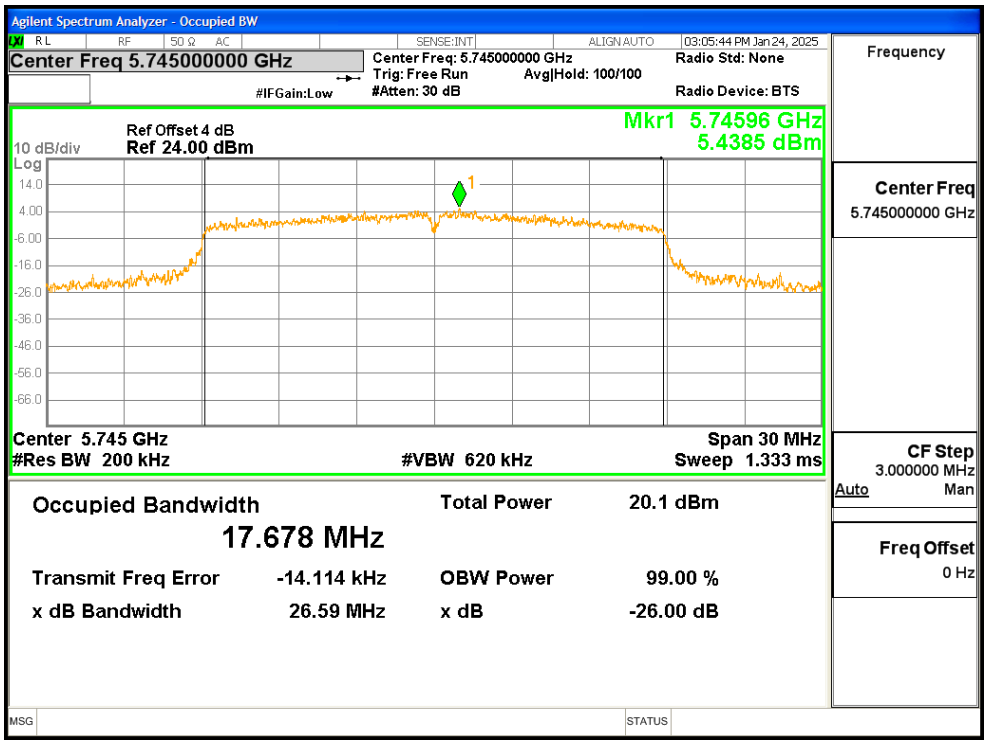
OBW NVNT a 5785MHz Ant1



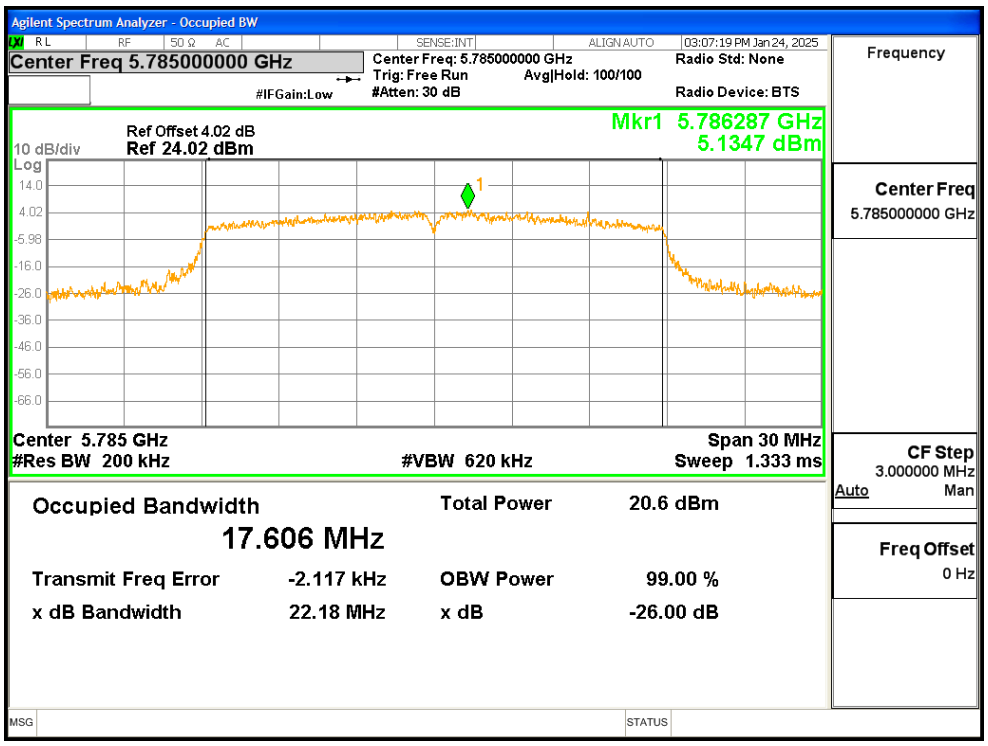
OBW NVNT a 5825MHz Ant1



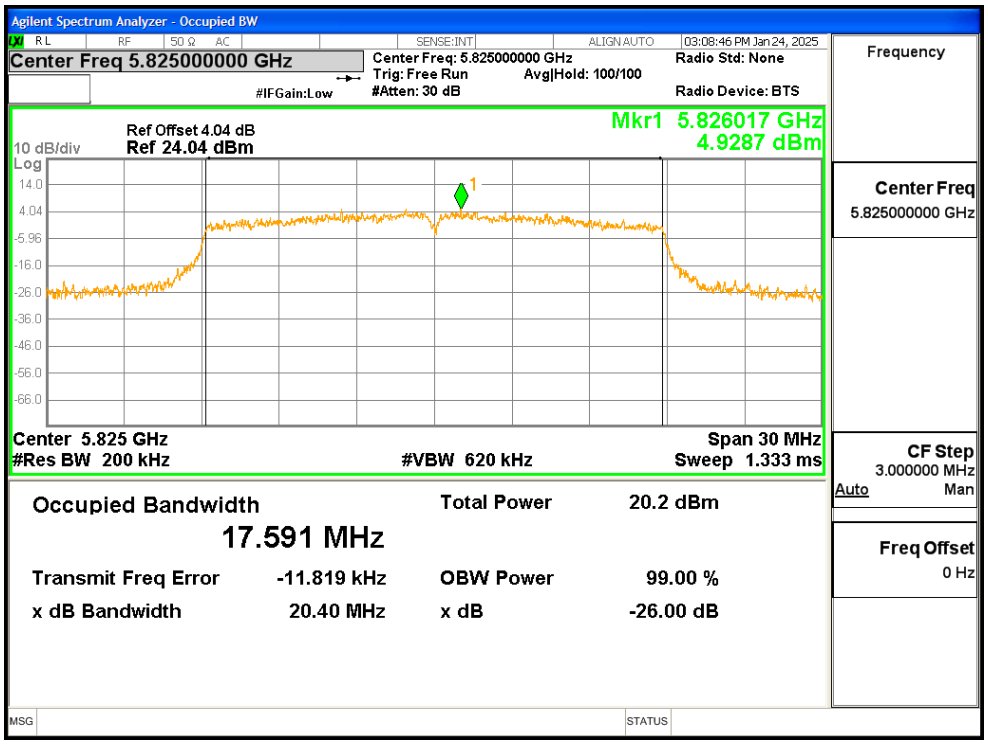
OBW NVNT n20 5745MHz Ant1



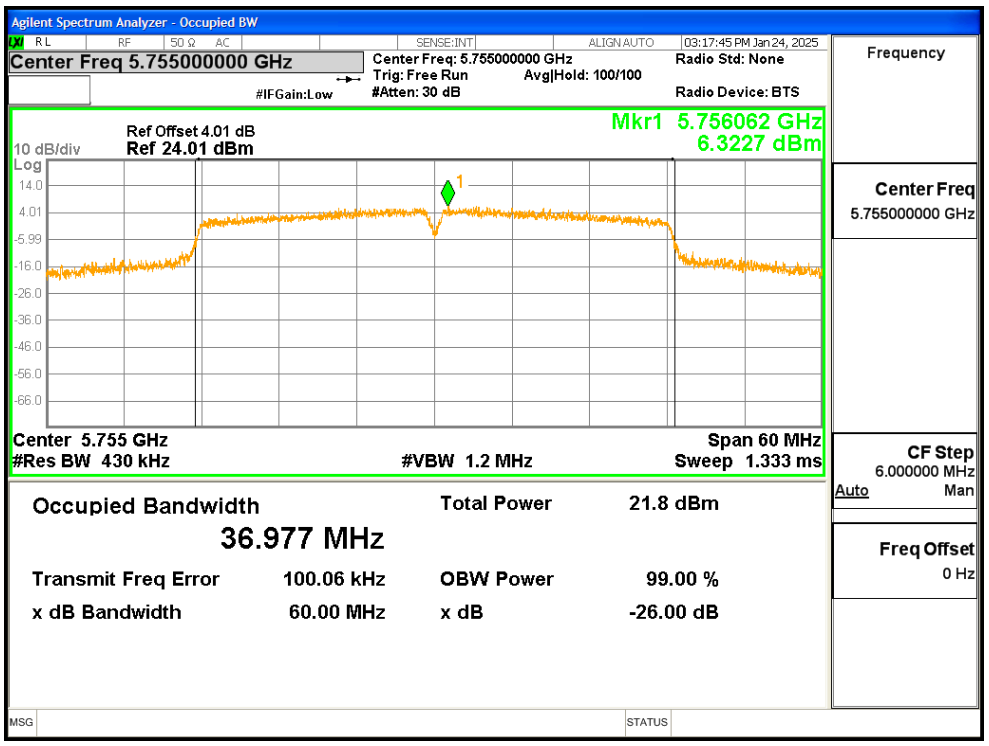
OBW NVNT n20 5785MHz Ant1



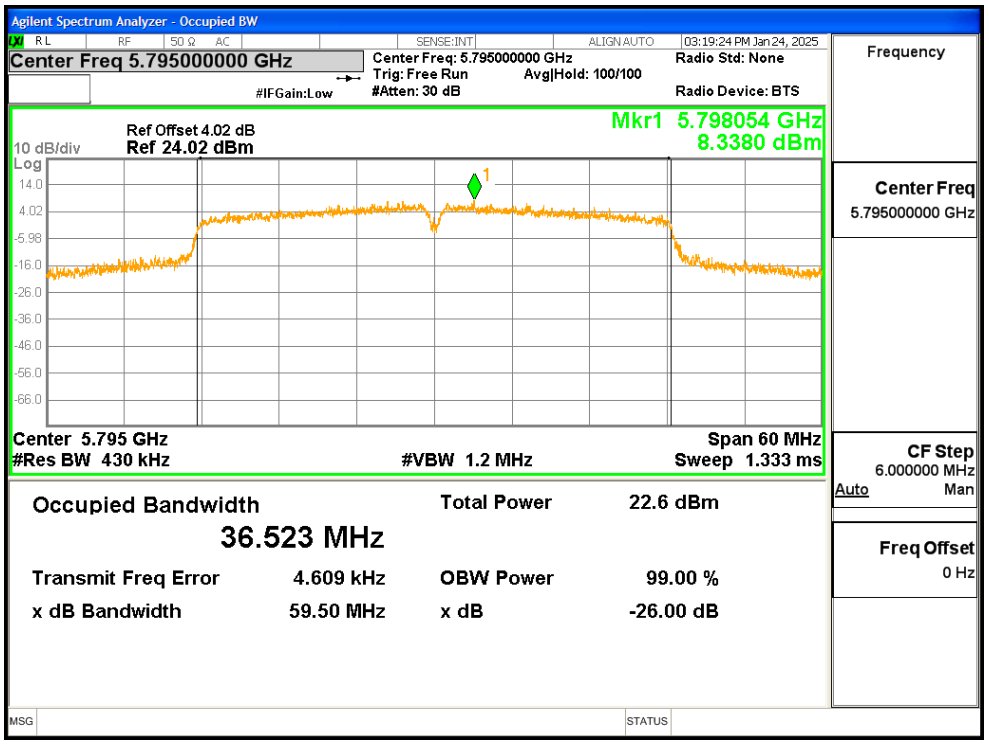
OBW NVNT n20 5825MHz Ant1



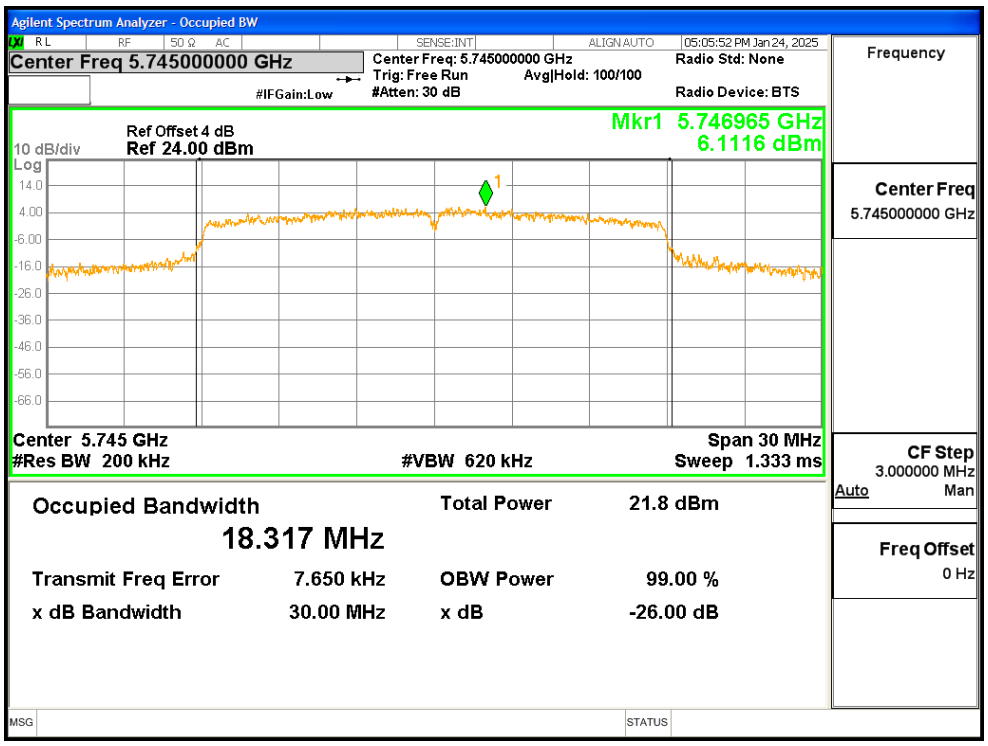
OBW NVNT n40 5755MHz Ant1



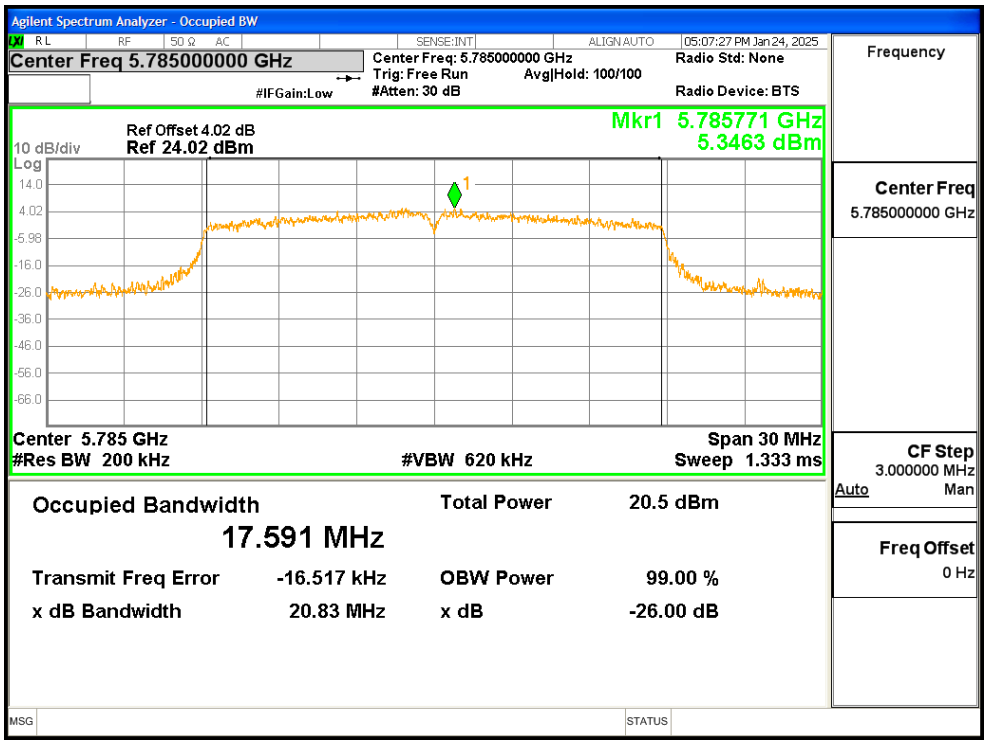
OBW NVNT n40 5795MHz Ant1



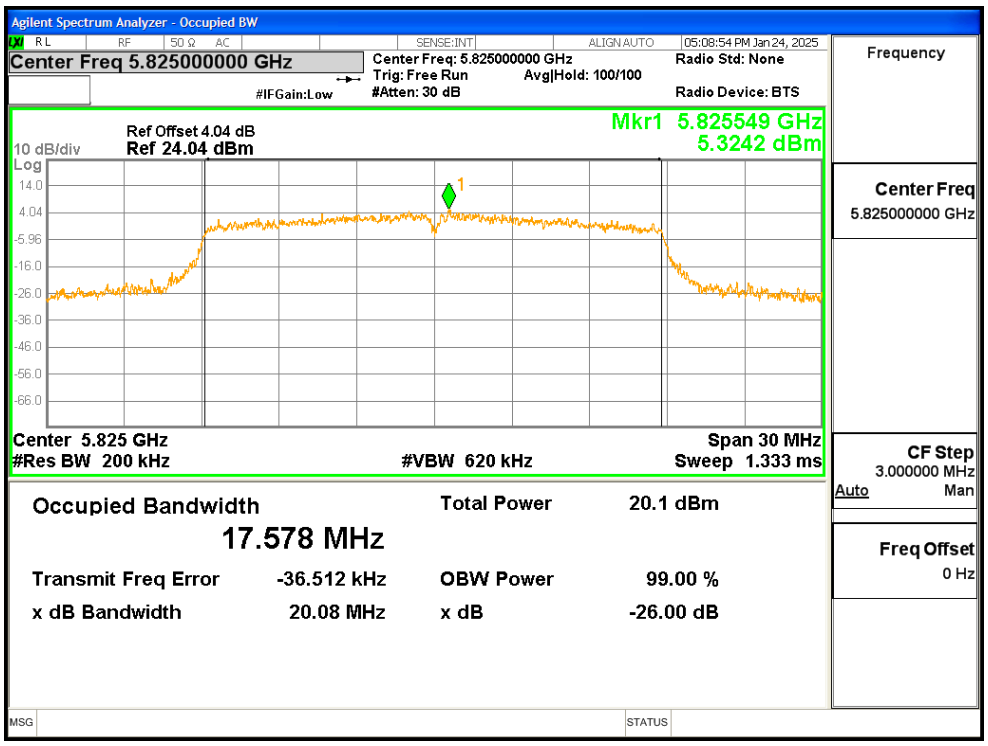
OBW NVNT ac20 5745MHz Ant1



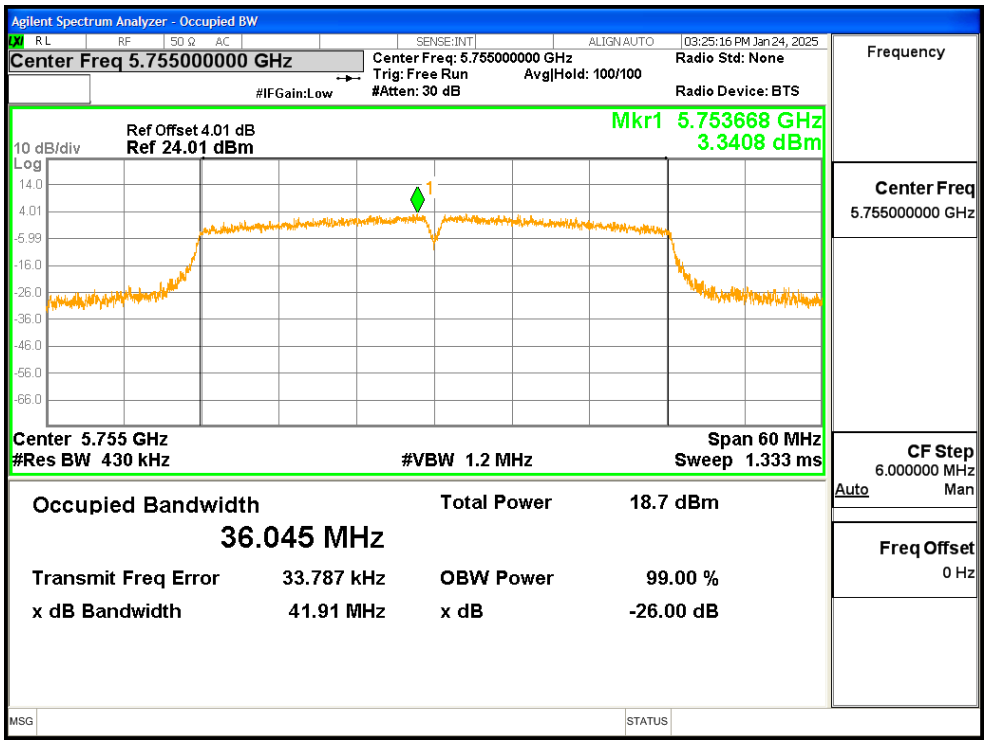
OBW NVNT ac20 5785MHz Ant1



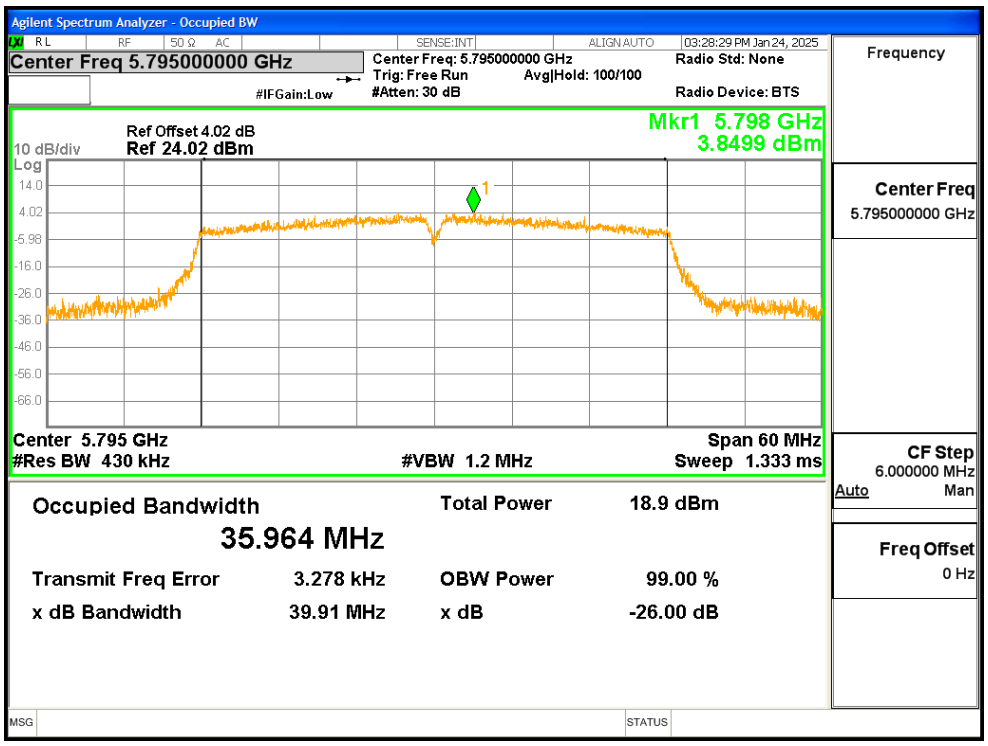
OBW NVNT ac20 5825MHz Ant1



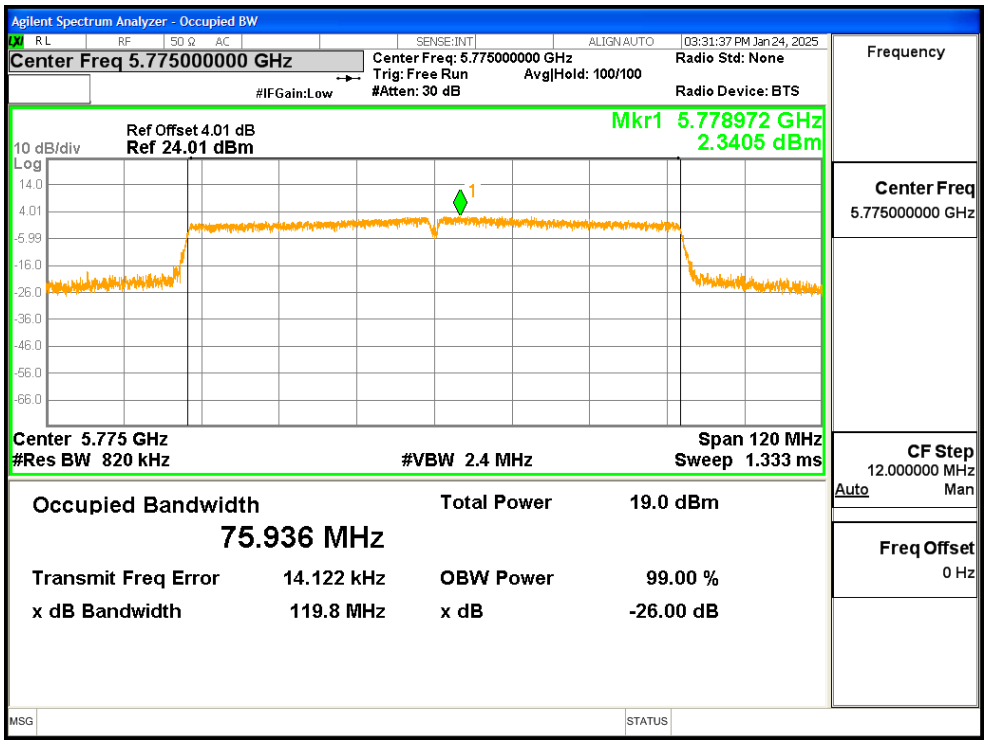
OBW NVNT ac40 5755MHz Ant1



OBW NVNT ac40 5795MHz Ant1

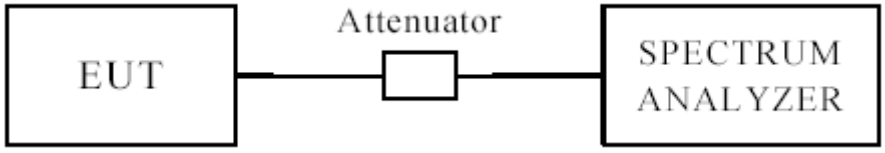


OBW NVNT ac80 5775MHz Ant1



9.0 Peak Transmit Power Measurement

9.1 Test Setup



9.2 Limits of Peak Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) ≦(Max. e.i.r.p 125mW (21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
		Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	--		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	--		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

9.3 Test Procedure

The RF power output was measured with a Spectrum analyzer connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

Note: the average power was measured

9.4Test Results

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	12.24	0	12.24	30	Pass
		5785		13.74	0	13.74	30	Pass
		5825		13.28	0	13.28	30	Pass
	n20	5745		14.1	0	14.1	30	Pass
		5785		14.53	0	14.53	30	Pass
		5825		14.1	0	14.1	30	Pass
	n40	5755		15.66	0	15.66	30	Pass
		5795		16.43	0	16.43	30	Pass
	ac20	5745		15.7	0	15.7	30	Pass
		5785		14.41	0	14.41	30	Pass
		5825		13.95	0	13.95	30	Pass
	ac40	5755		12.53	0	12.53	30	Pass
		5795		12.62	0	12.62	30	Pass
	ac80	5775		12.75	0	12.75	30	Pass

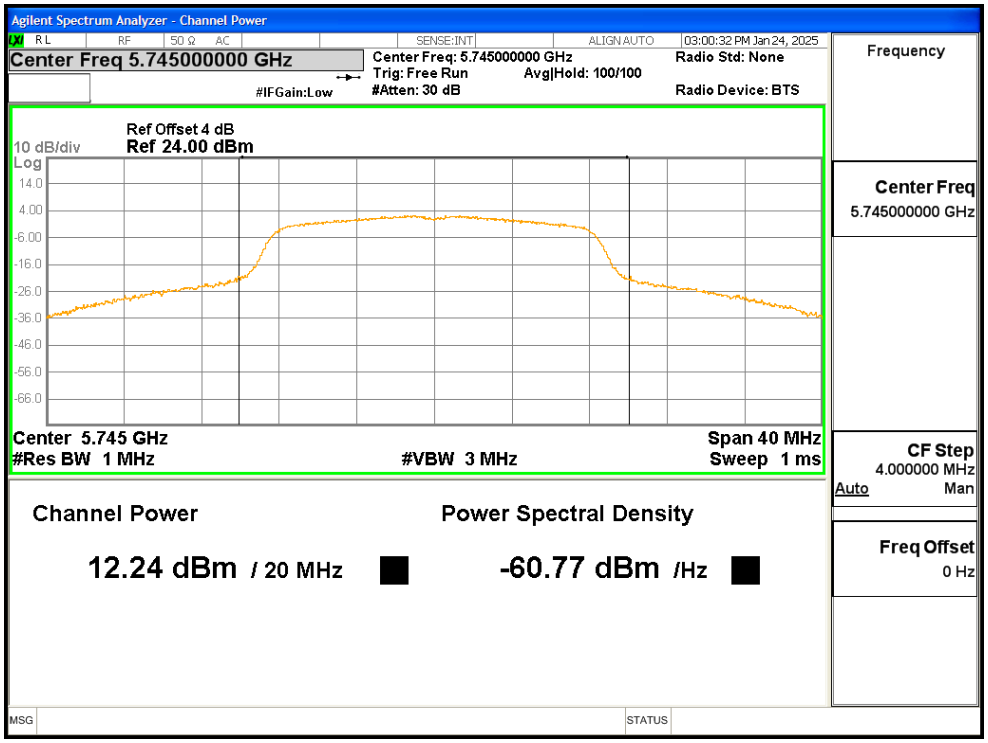
Note: 1. At finial test to get the worst-case emission at mcs0 for CH36, CH40, CH48, CH149, CH153, CH155 and CH161

2. The result basic equation calculation as follow:

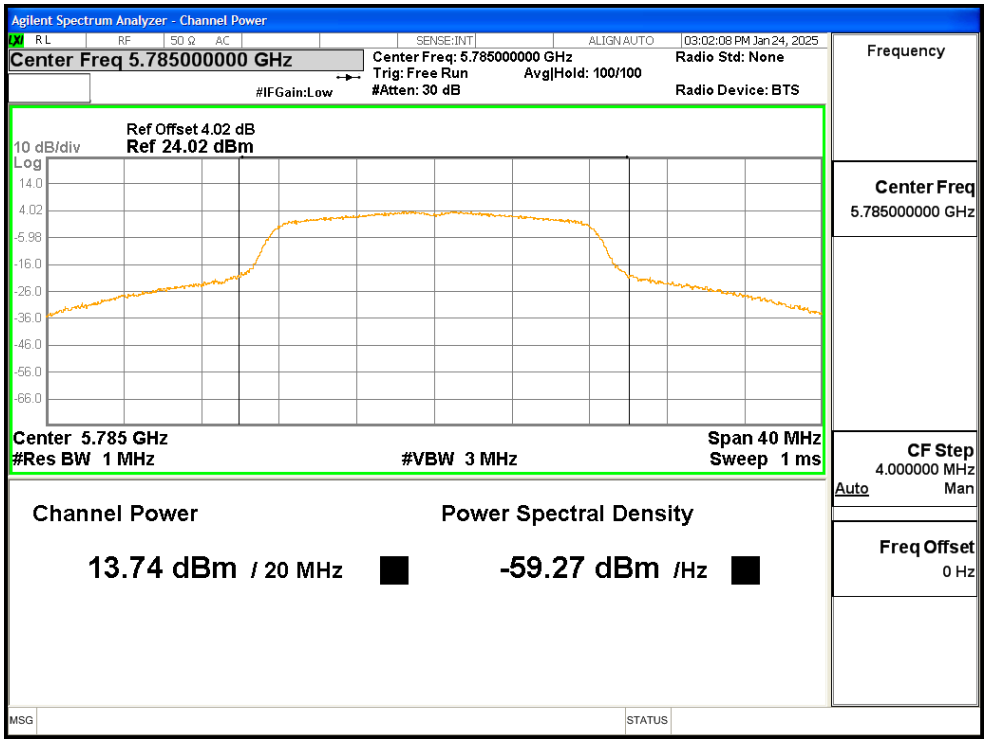
Average Power Output = AV Power Reading + Cable loss + Attenuator

3. The worse case was recorded

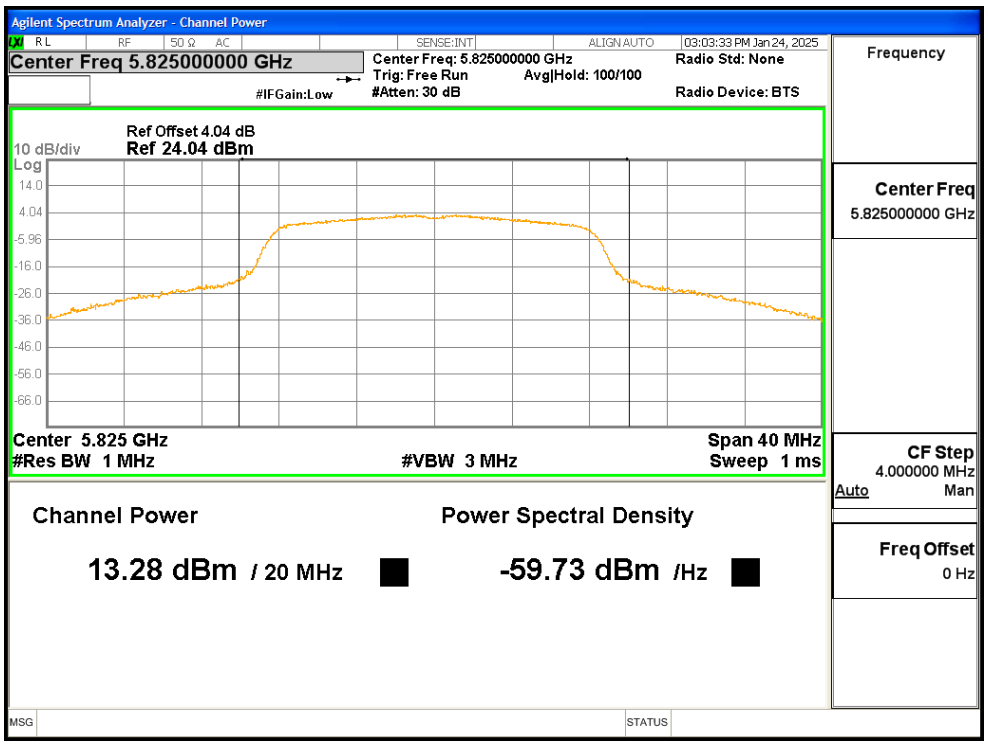
Test Graphs
Power NVNT a 5745MHz Ant1



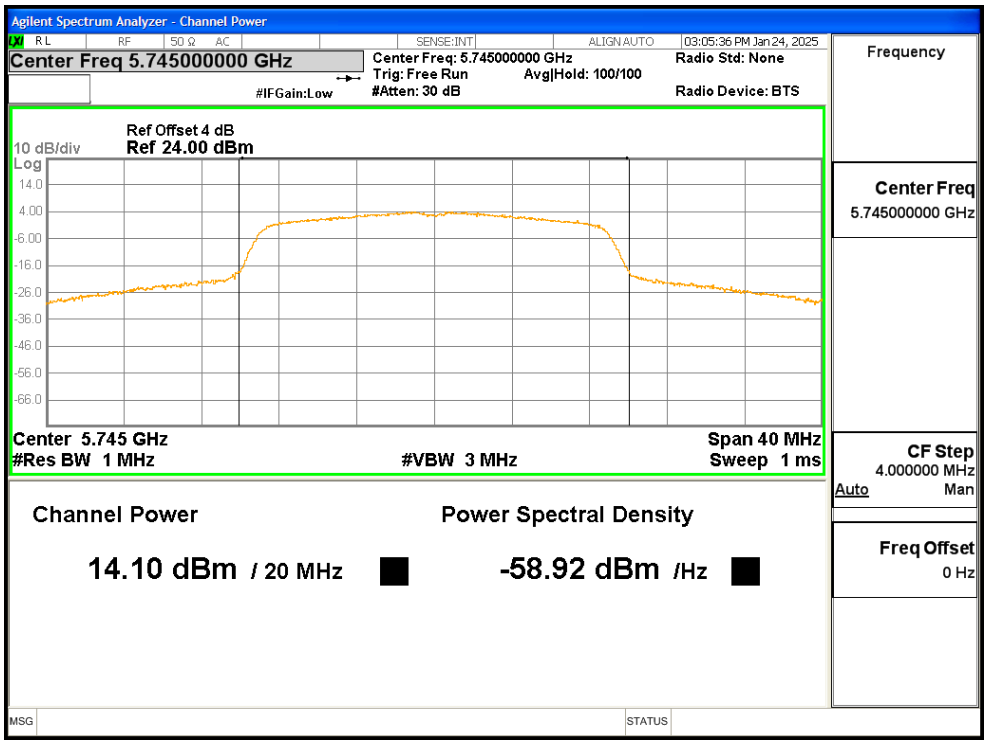
Power NVNT a 5785MHz Ant1



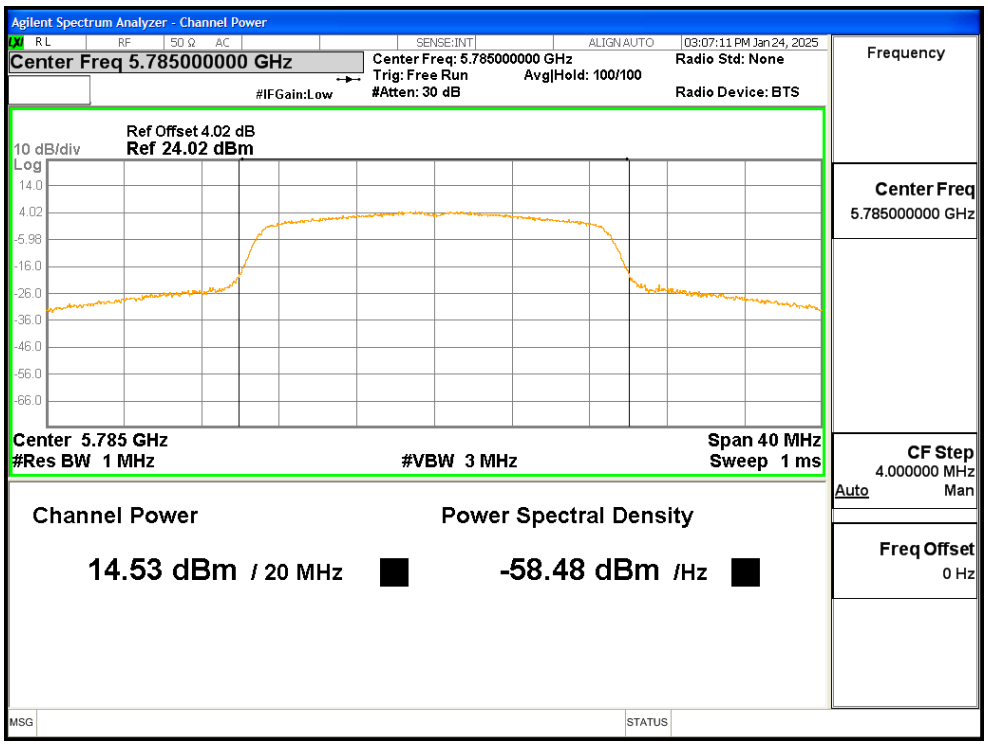
Power NVNT a 5825MHz Ant1



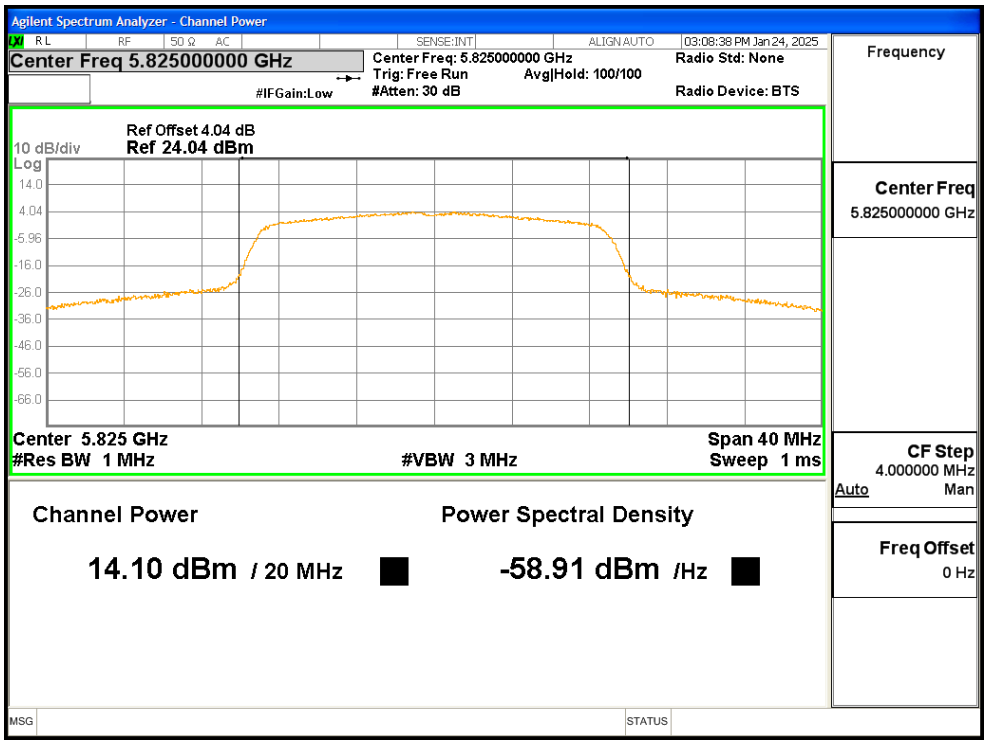
Power NVNT n20 5745MHz Ant1



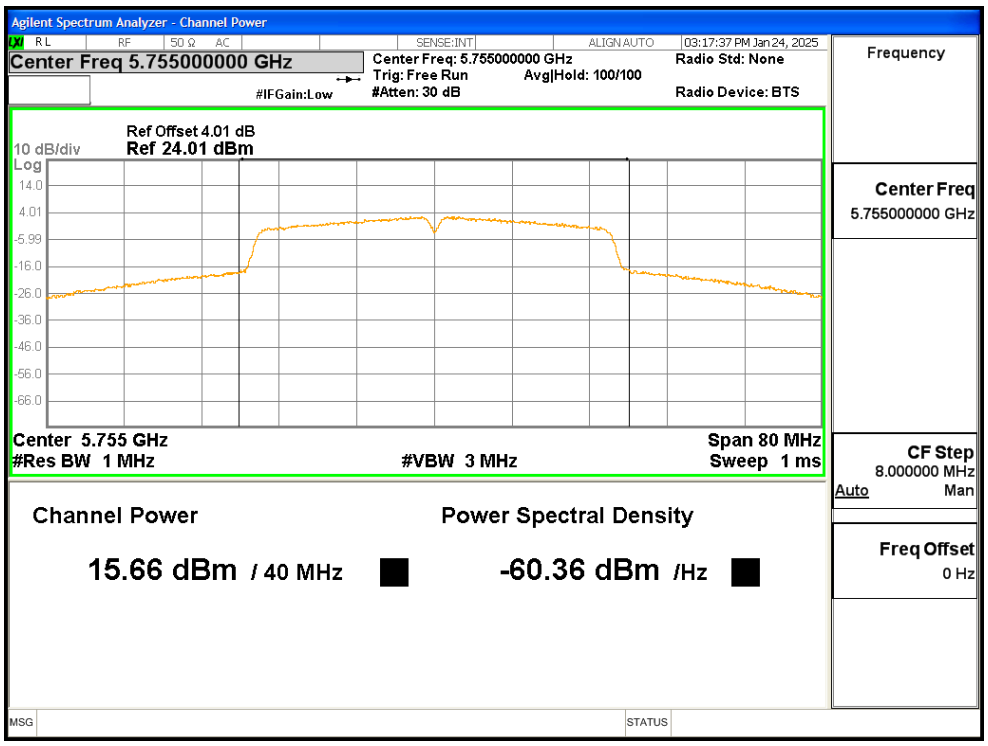
Power NVNT n20 5785MHz Ant1



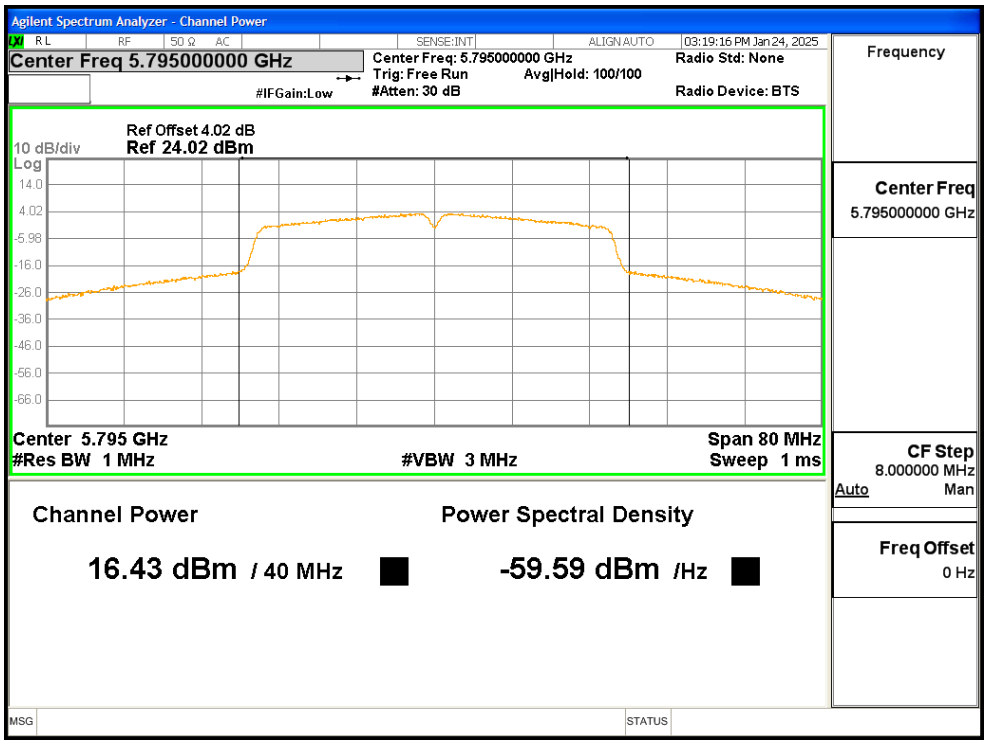
Power NVNT n20 5825MHz Ant1



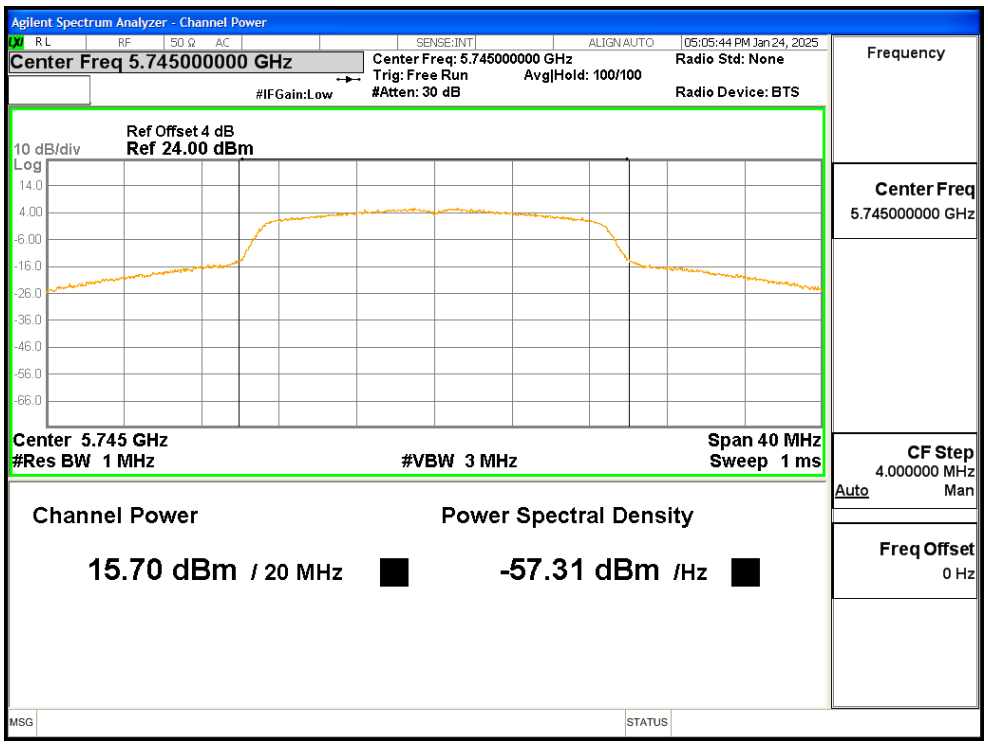
Power NVNT n40 5755MHz Ant1



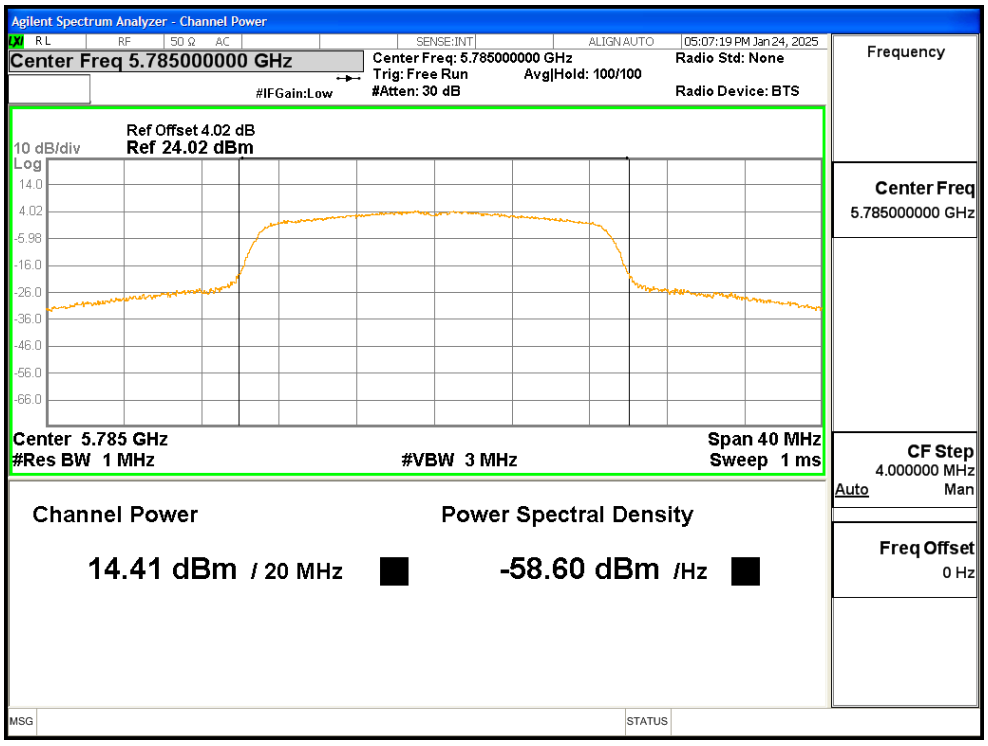
Power NVNT n40 5795MHz Ant1



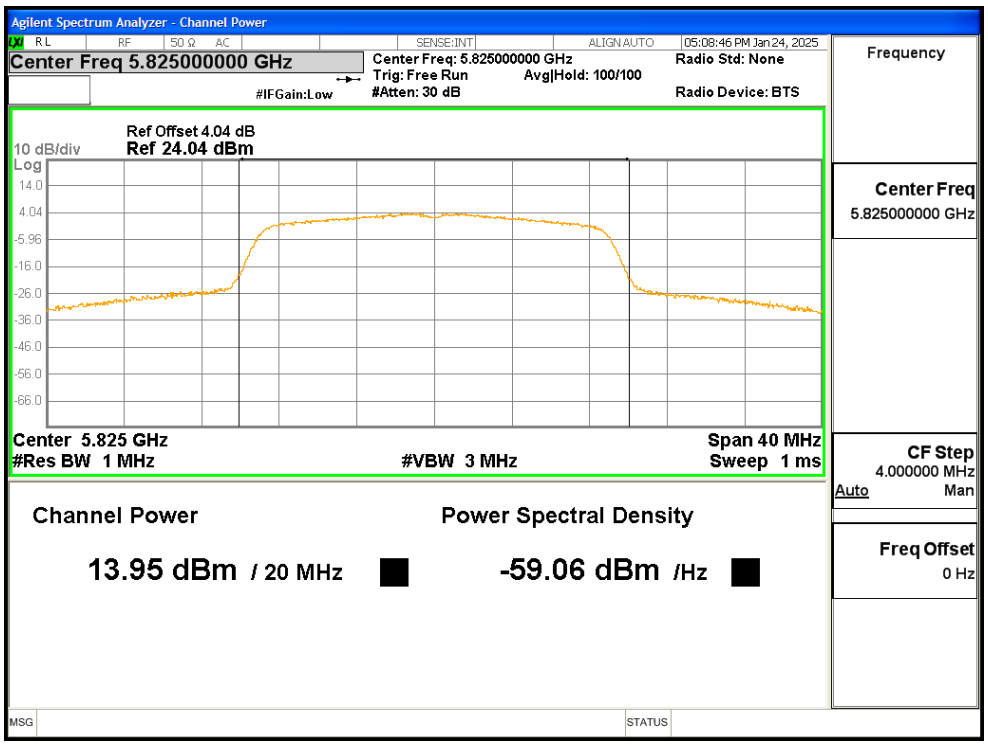
Power NVNT ac20 5745MHz Ant1



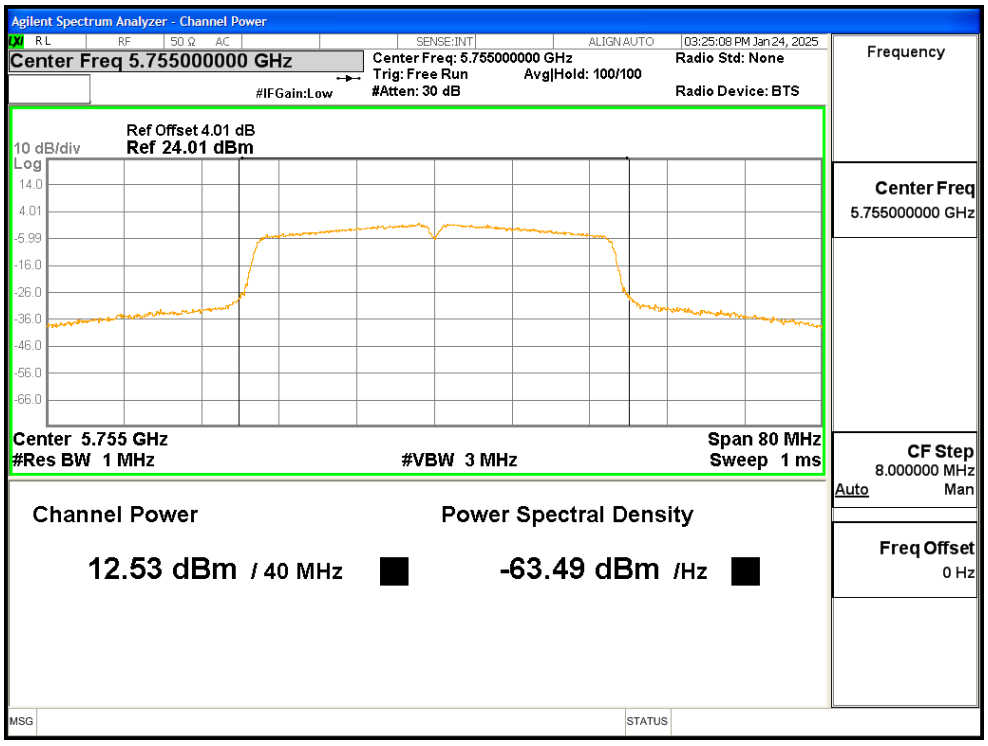
Power NVNT ac20 5785MHz Ant1



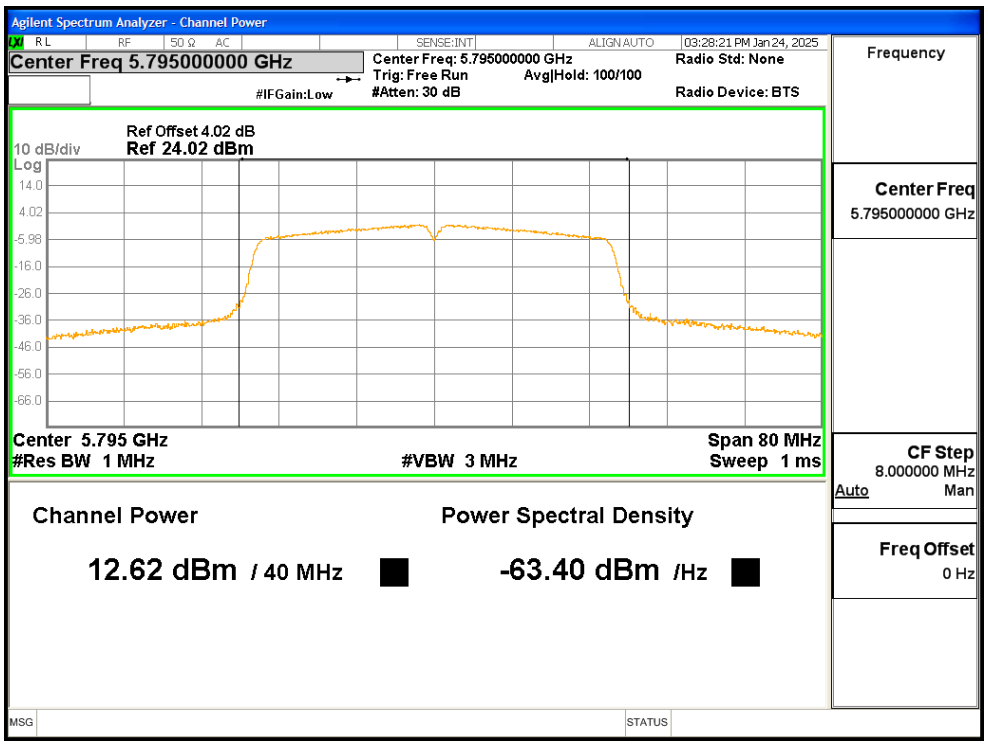
Power NVNT ac20 5825MHz Ant1



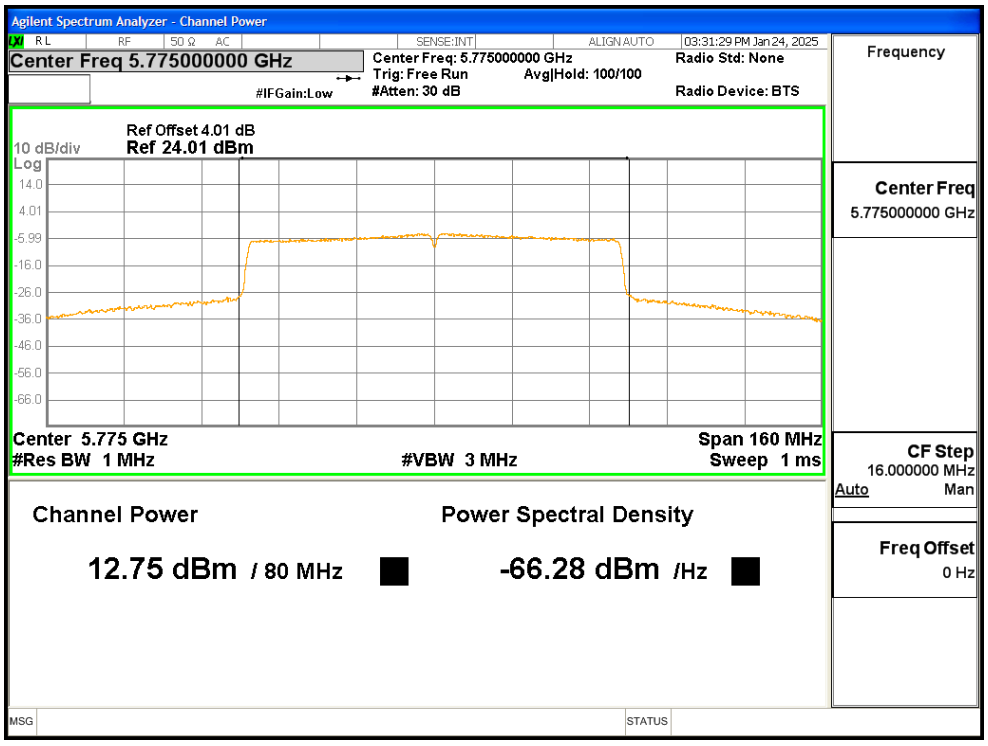
Power NVNT ac40 5755MHz Ant1



Power NVNT ac40 5795MHz Ant1

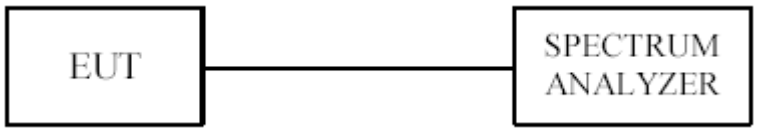


Power NVNT ac80 5775MHz Ant1



10. Power Spectral Density Measurement

10.1 Test Setup



10.2 Limits of Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
		Mobile and Portable client device	11dBm/MHz
U-NII-2A	--		11dBm/MHz
U-NII-2C	--		11dBm/MHz
U-NII-3	√		30dBm/500kHz

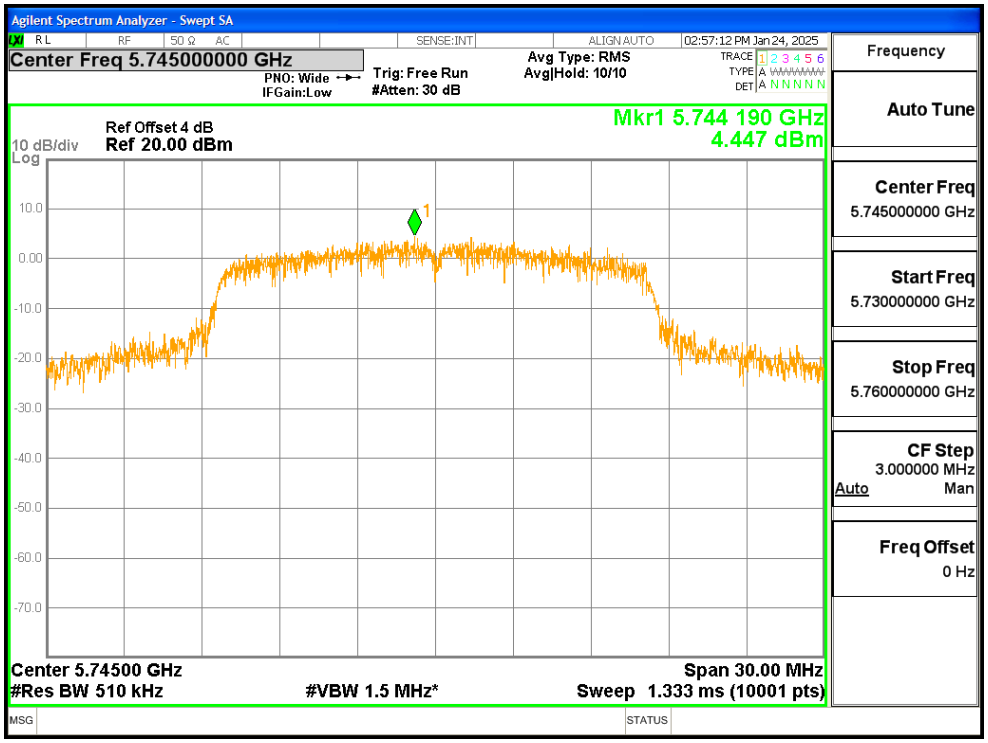
10.3 Test Procedure

1. The EUT was directly connected to the spectrum analyzer
2. Set the RBW = 510kHz
3. Set the VBW =1.5MHz
4. Set the span to encompass the entire emissions bandwidth (EBW) of the signal
5. Detector = RMS
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.

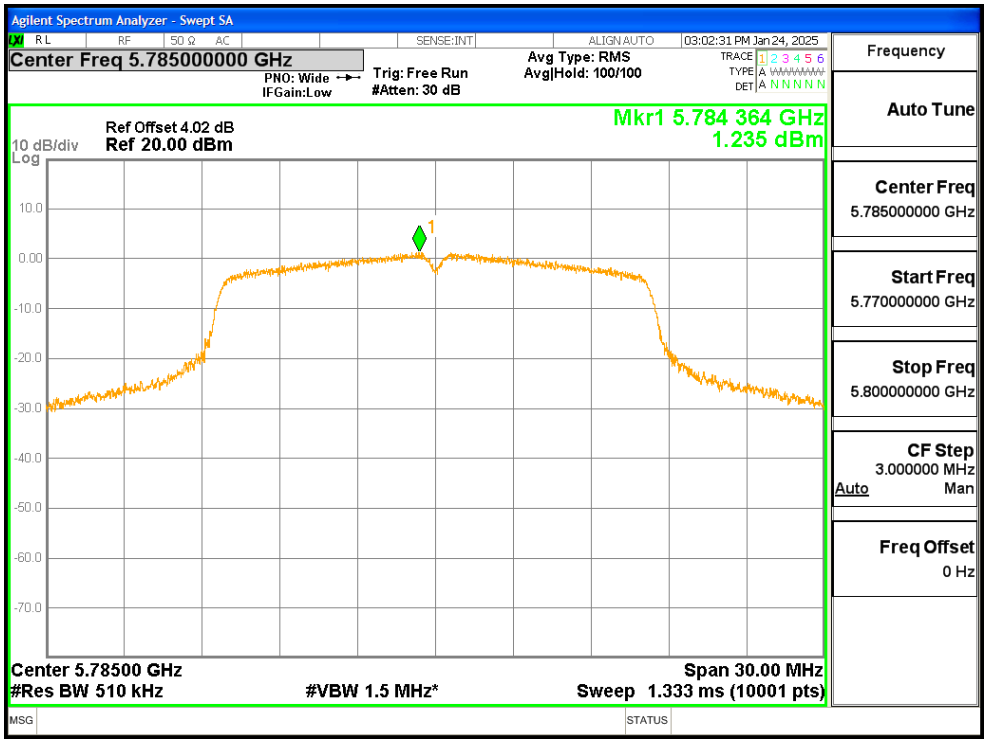
10.4Test Result

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	4.45	0	4.45	30	Pass
		5785		1.24	0	1.24	30	Pass
		5825		0.82	0	0.82	30	Pass
	n20	5745		1.68	0	1.68	30	Pass
		5785		1.97	0	1.97	30	Pass
		5825		1.57	0	1.57	30	Pass
	n40	5755		-0.15	0	-0.15	30	Pass
		5795		0.99	0	0.99	30	Pass
	ac20	5745		3.19	0	3.19	30	Pass
		5785		1.94	0	1.94	30	Pass
		5825		1.41	0	1.41	30	Pass
	ac40	5755		-2.96	0	-2.96	30	Pass
		5795		-2.49	0	-2.49	30	Pass
	ac80	5775		-6.56	0	-6.56	30	Pass

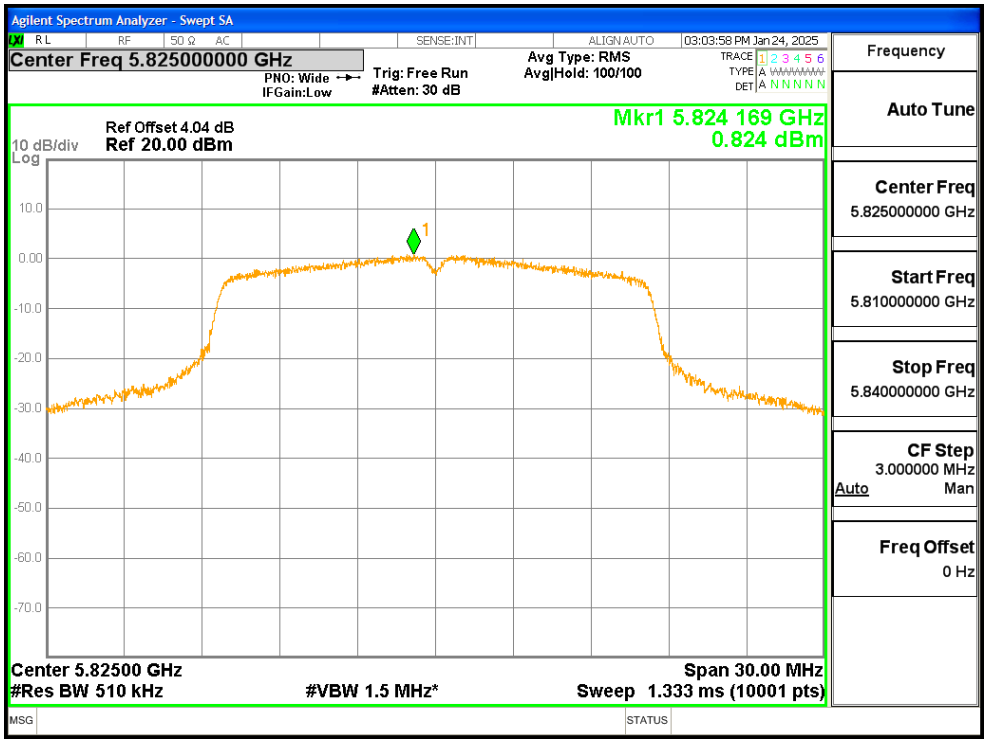
Test Graphs
PSD NVNT a 5745MHz Ant1



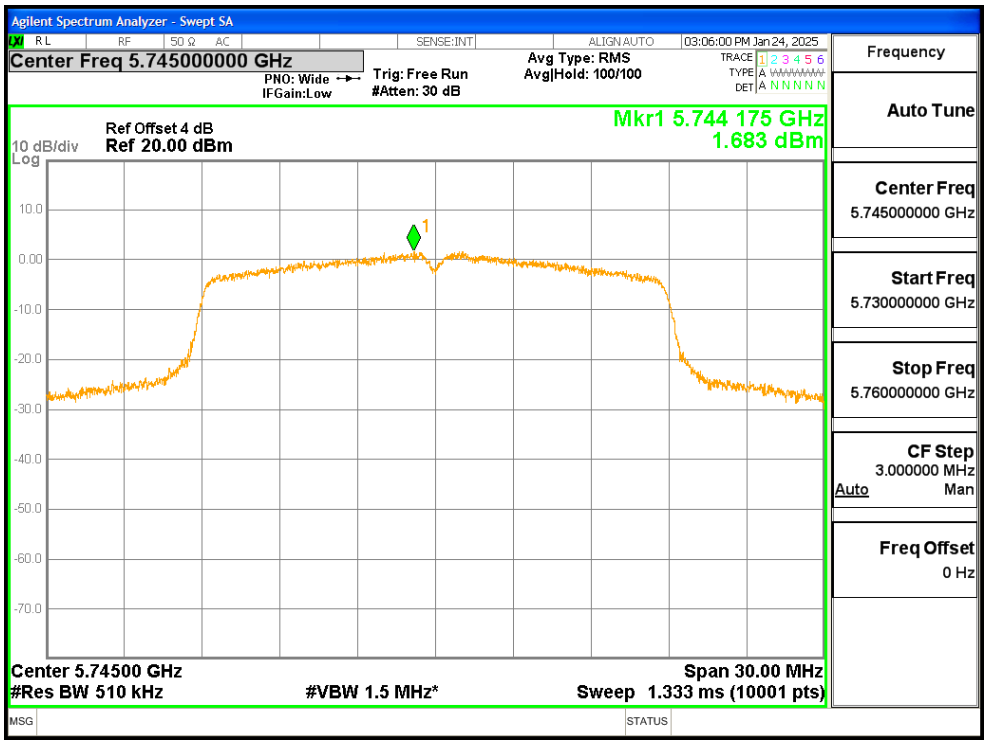
PSD NVNT a 5785MHz Ant1



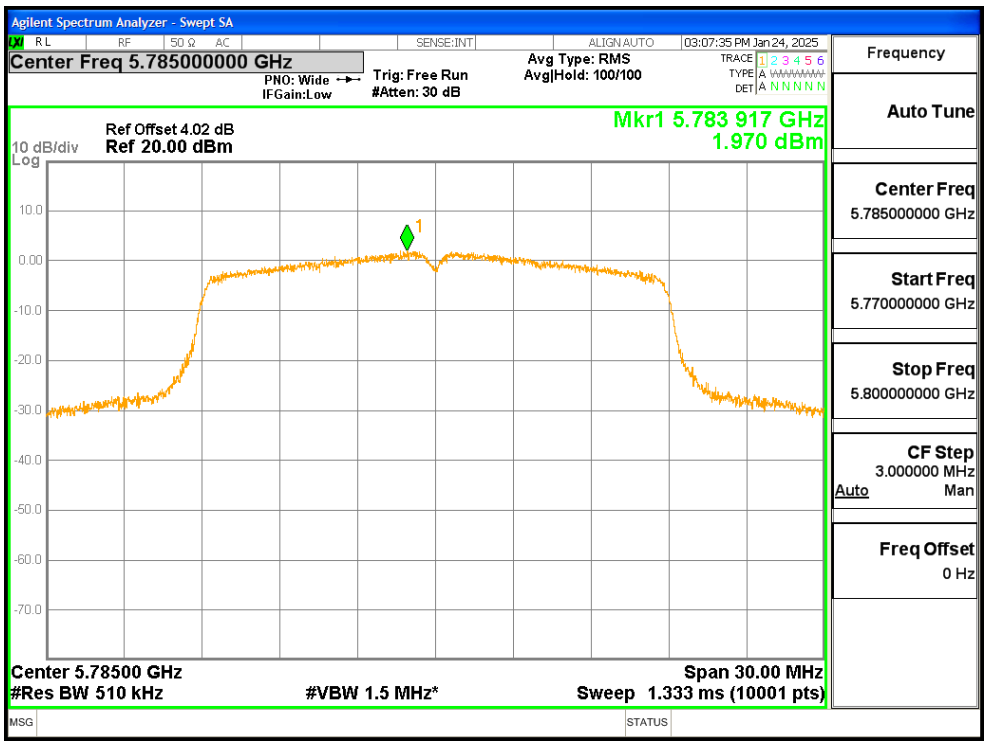
PSD NVNT a 5825MHz Ant1



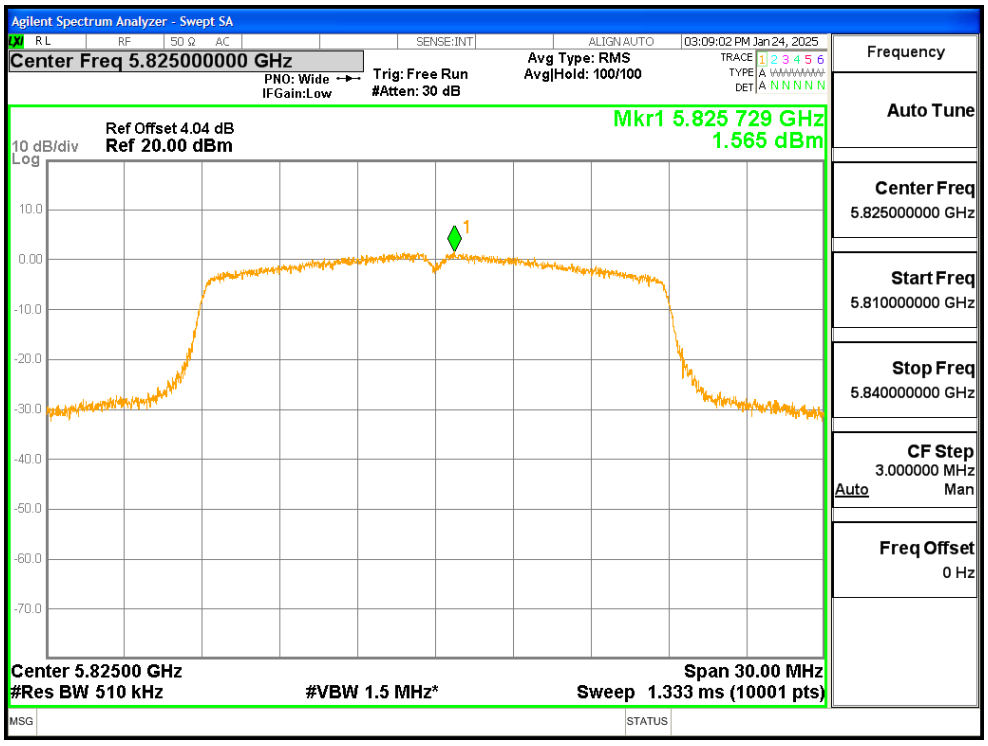
PSD NVNT n20 5745MHz Ant1



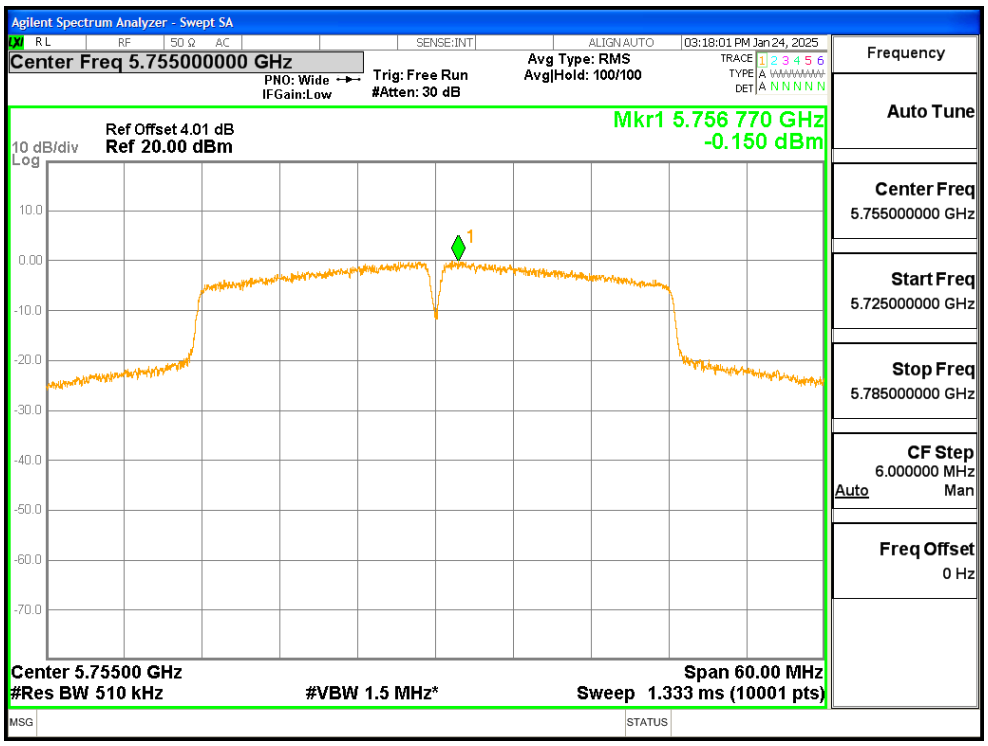
PSD NVNT n20 5785MHz Ant1



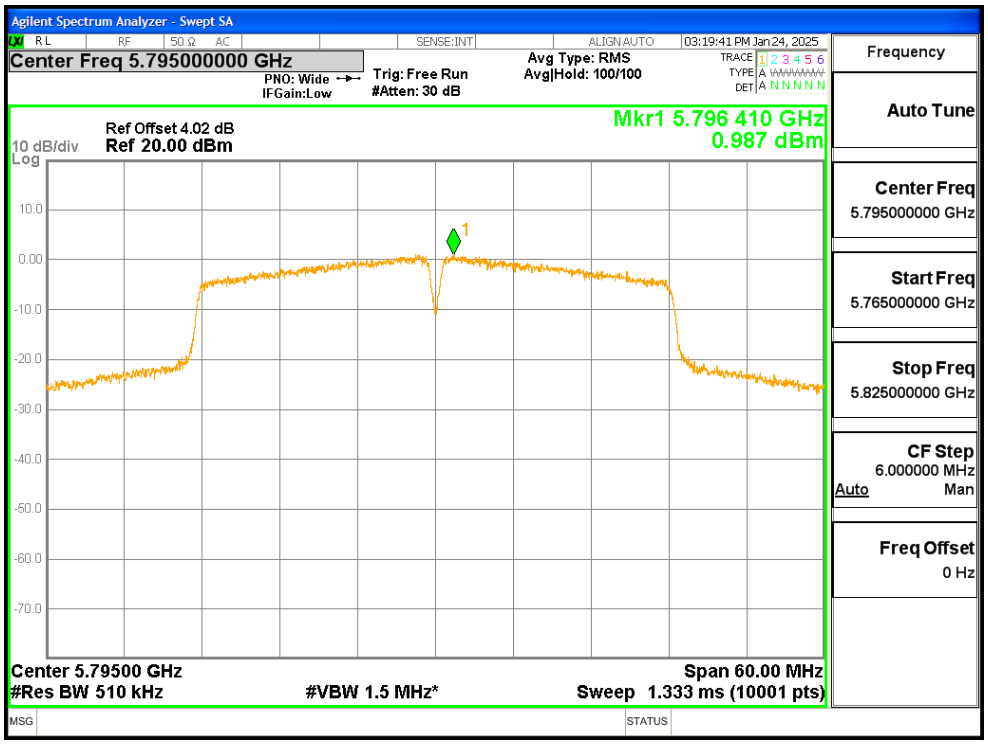
PSD NVNT n20 5825MHz Ant1



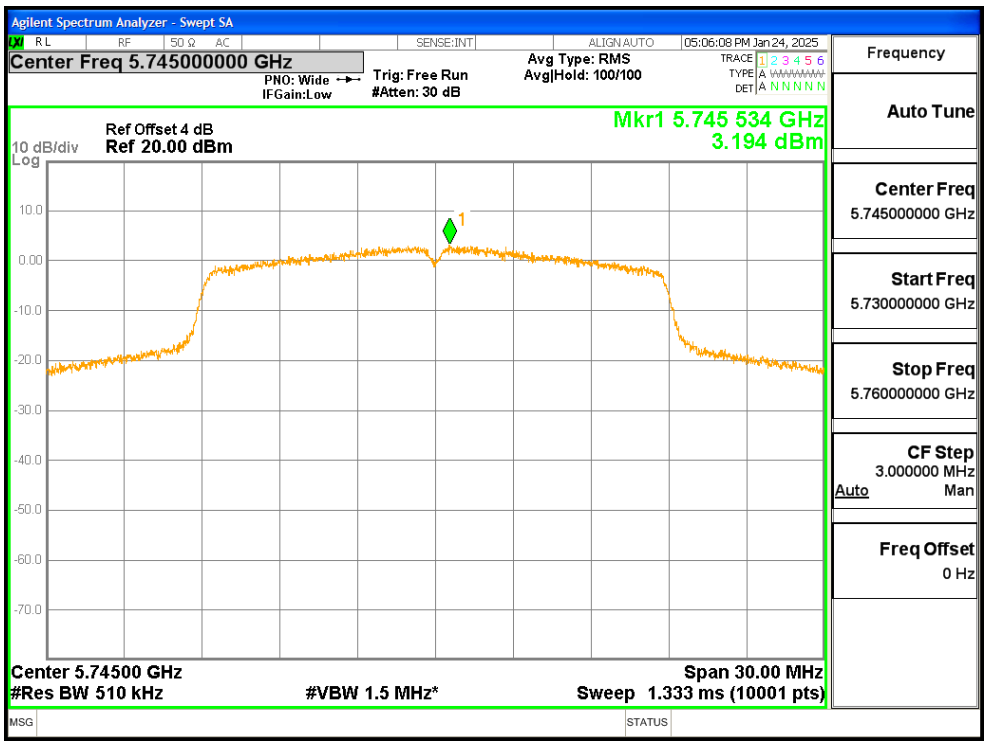
PSD NVNT n40 5755MHz Ant1



PSD NVNT n40 5795MHz Ant1



PSD NVNT ac20 5745MHz Ant1



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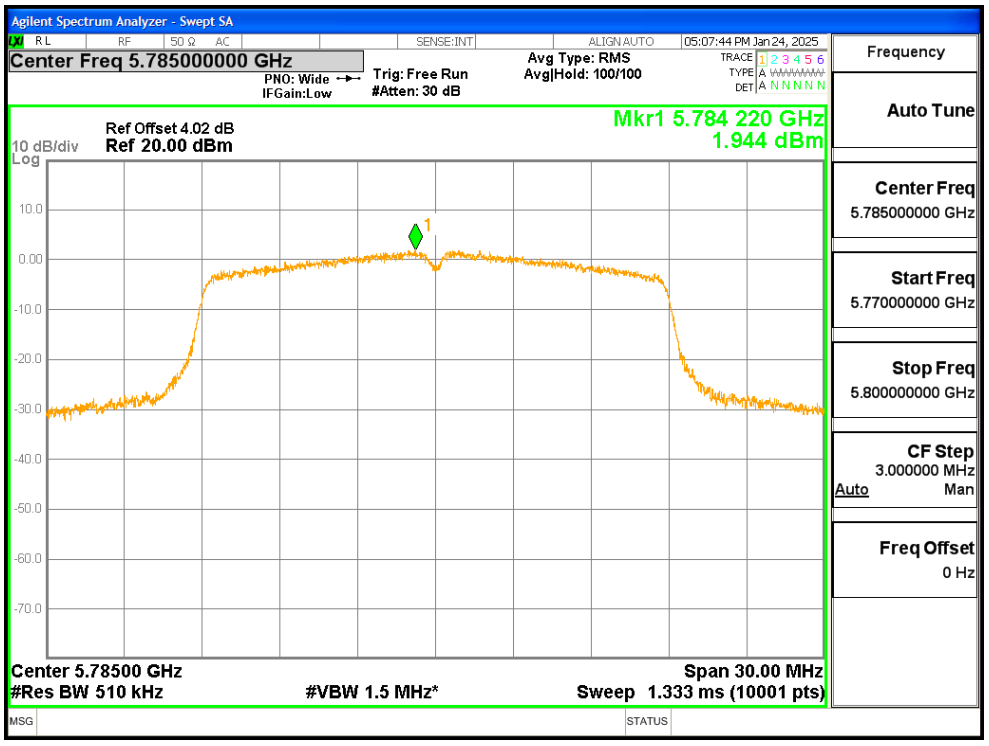

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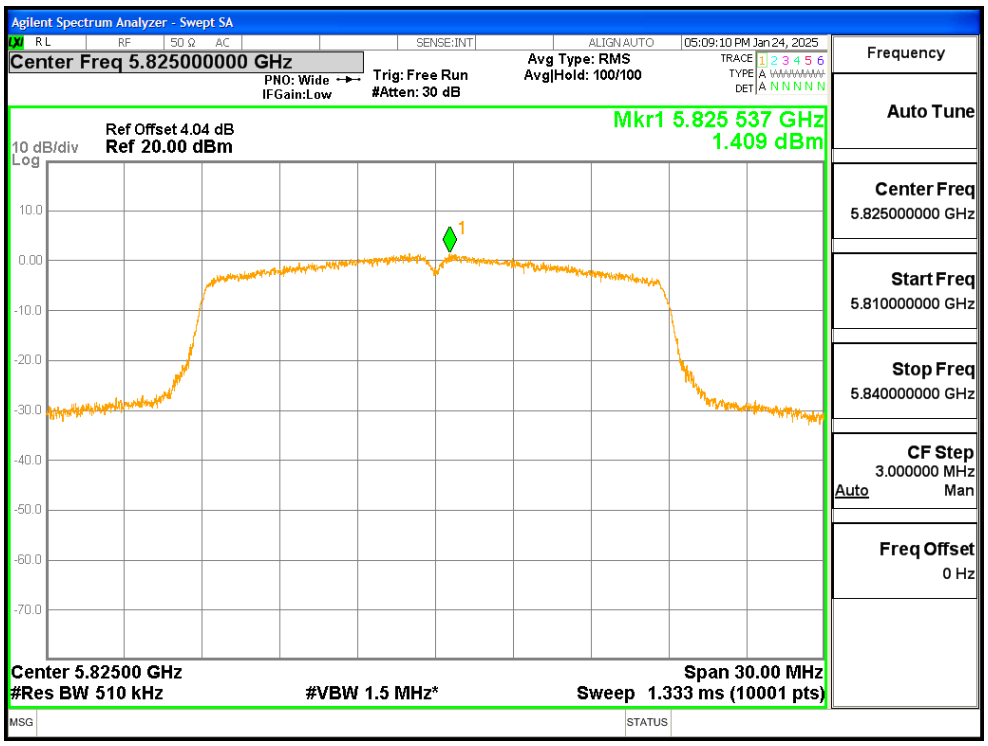
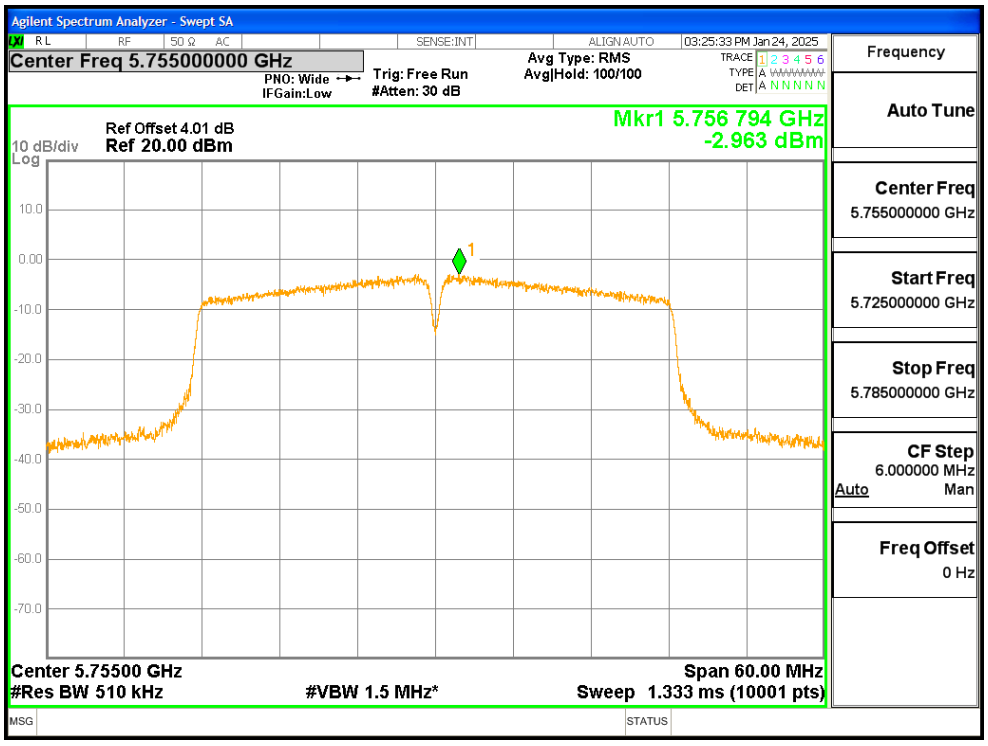
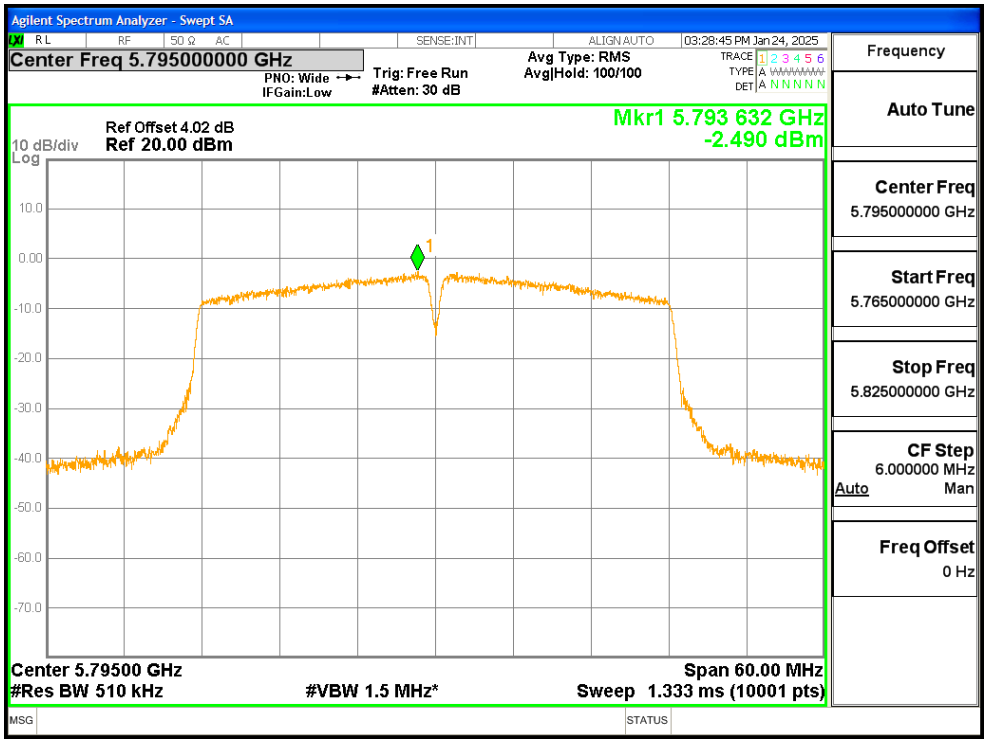


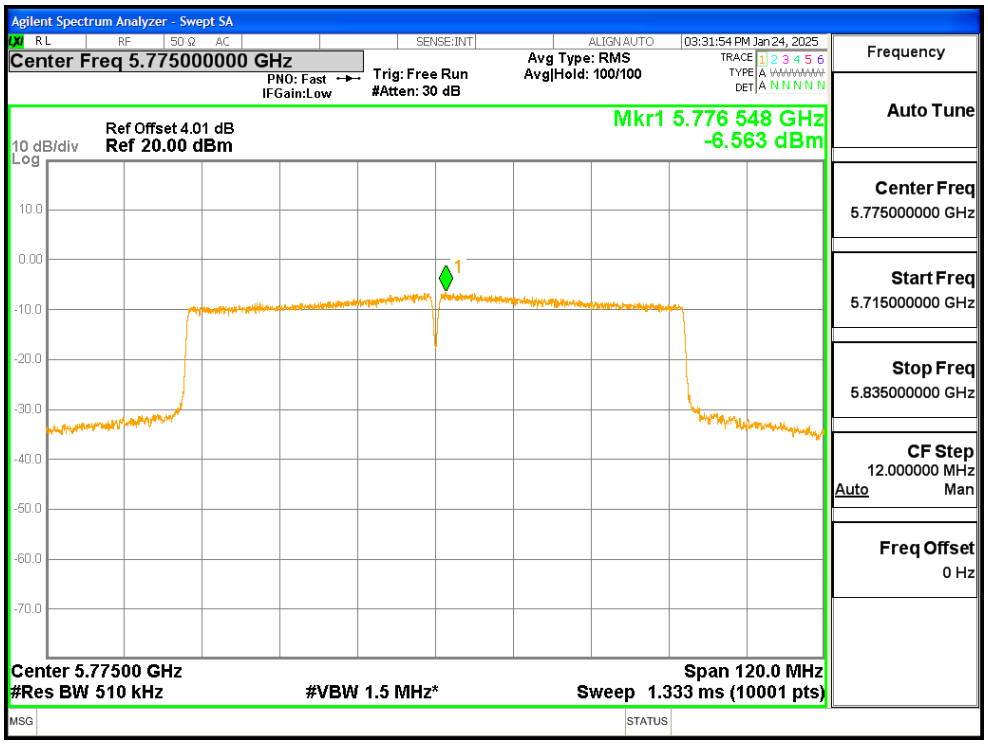
PSD NVNT ac40 5755MHz Ant1



PSD NVNT ac40 5795MHz Ant1



PSD NVNT ac80 5775MHz Ant1



11.0 Frequency Stability

11.1 Limits of Frequency Stability Measurement

The frequency tolerance of the carrier signal shall be maintained within +/- 0.02% of the operating frequency over a temperature variation of –30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees

11.2 Test Procedure

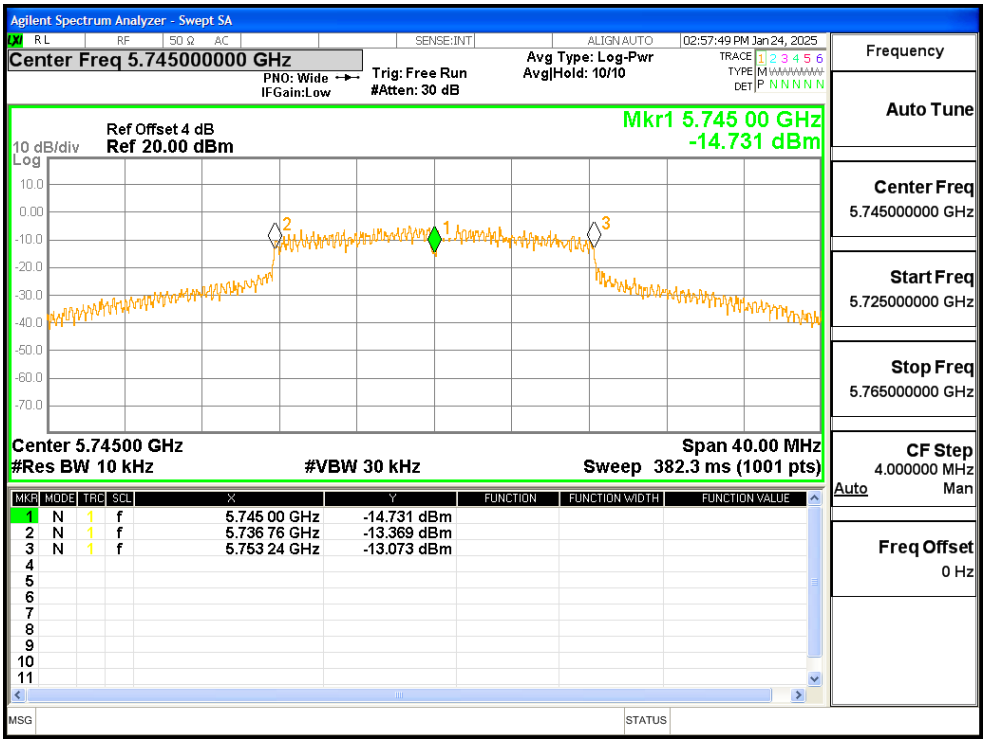
1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

11.3 Test Result

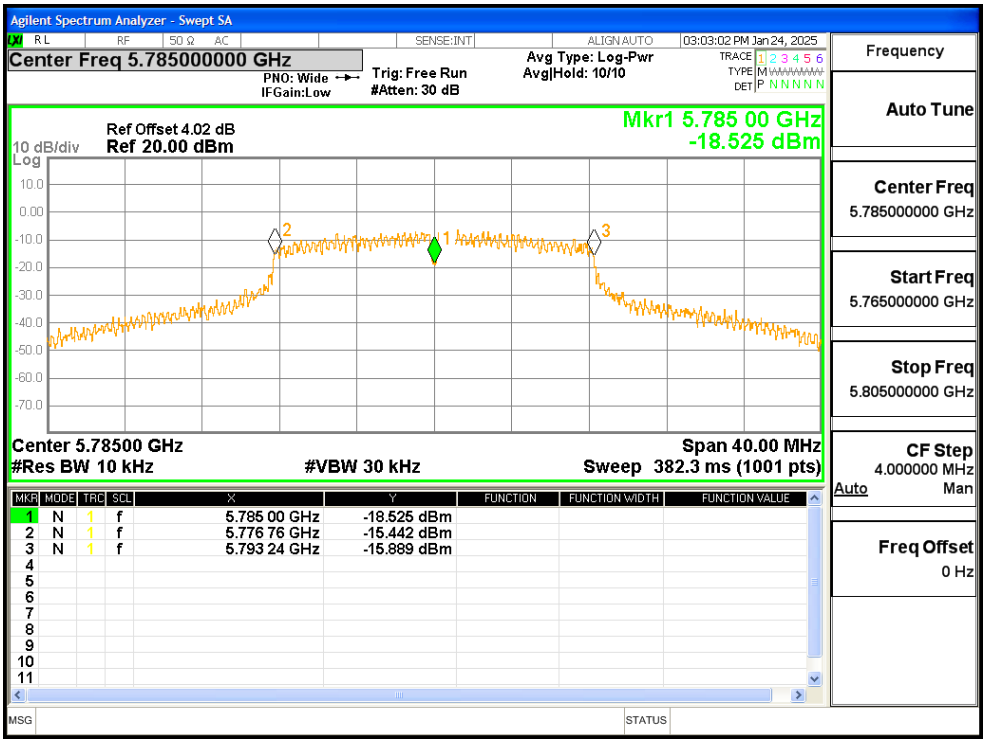
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	a	5745	Ant1	5745	0	0	25	Pass
		5785		5785	0	0	25	Pass
		5825		5825	0	0	25	Pass
	n20	5745		5745	0	0	25	Pass
		5785		5785	0	0	25	Pass
		5825		5824.98	-20000	-3.43	25	Pass
	n40	5755		5755	0	0	25	Pass
		5795		5795	0	0	25	Pass
	ac20	5745		5744.98	-20000	-3.48	25	Pass
		5785		5785	0	0	25	Pass
		5825		5825	0	0	25	Pass
	ac40	5755		5755	0	0	25	Pass
		5795		5795	0	0	25	Pass
	ac80	5775		5775	0	0	25	Pass

Test Graphs

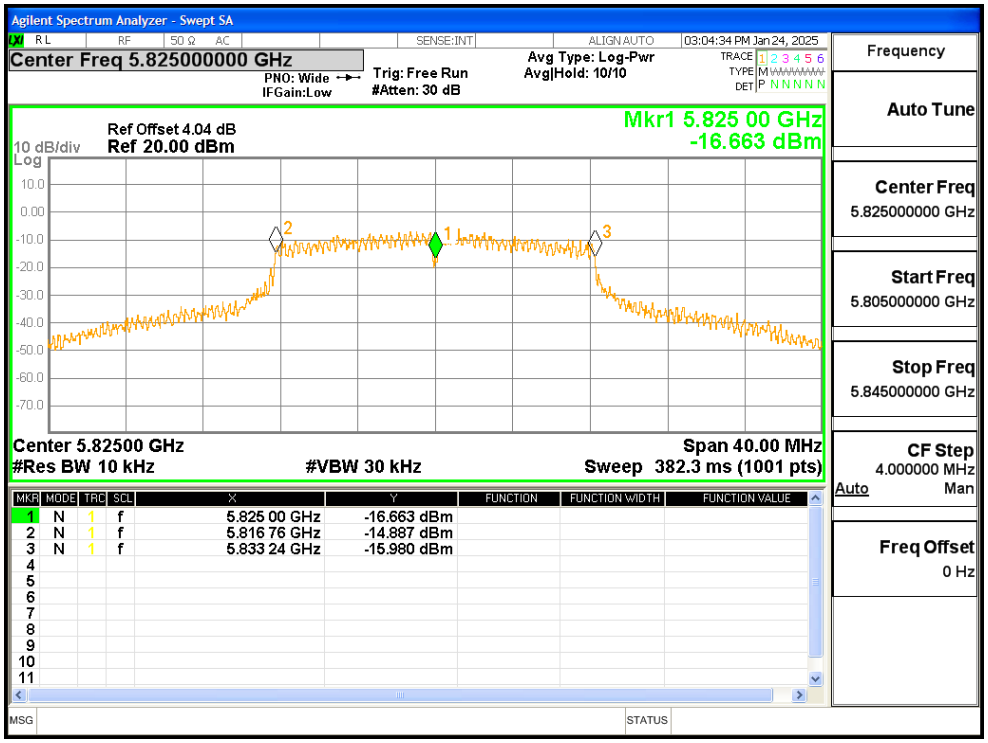
Freq. Stability NVNT a 5745MHz Ant1



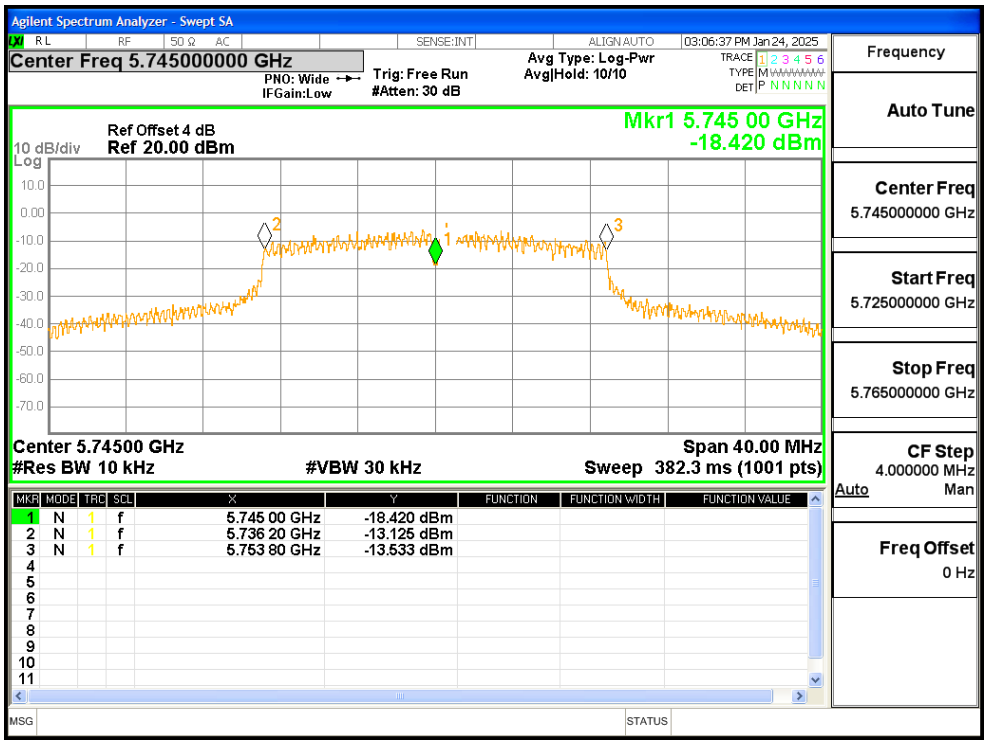
Freq. Stability NVNT a 5785MHz Ant1



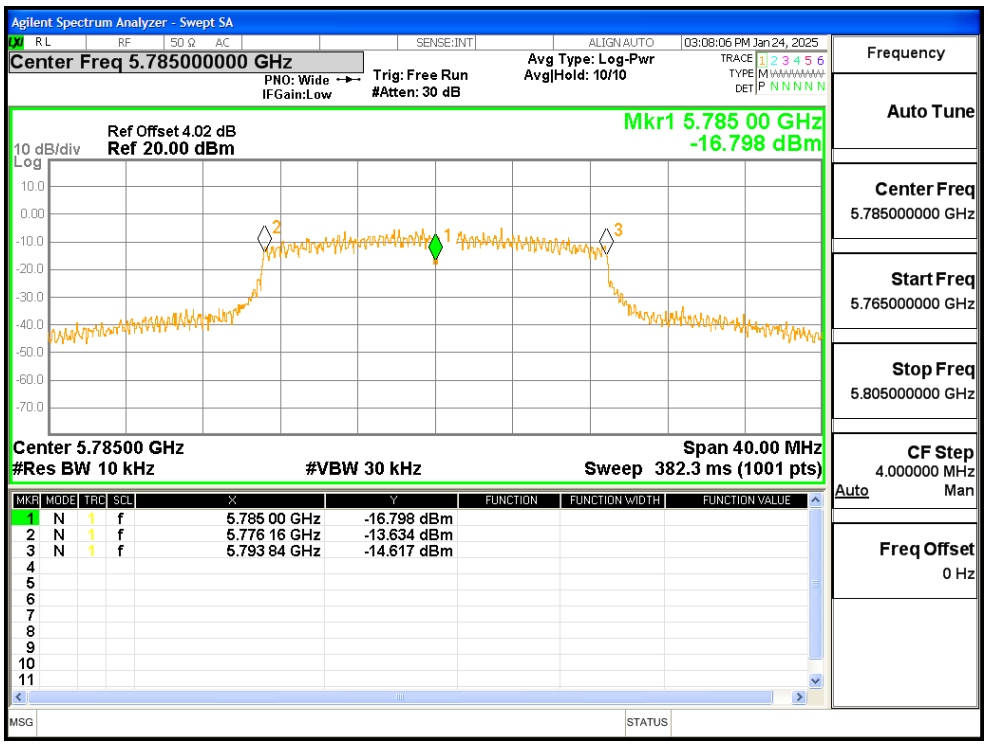
Freq. Stability NVNT a 5825MHz Ant1



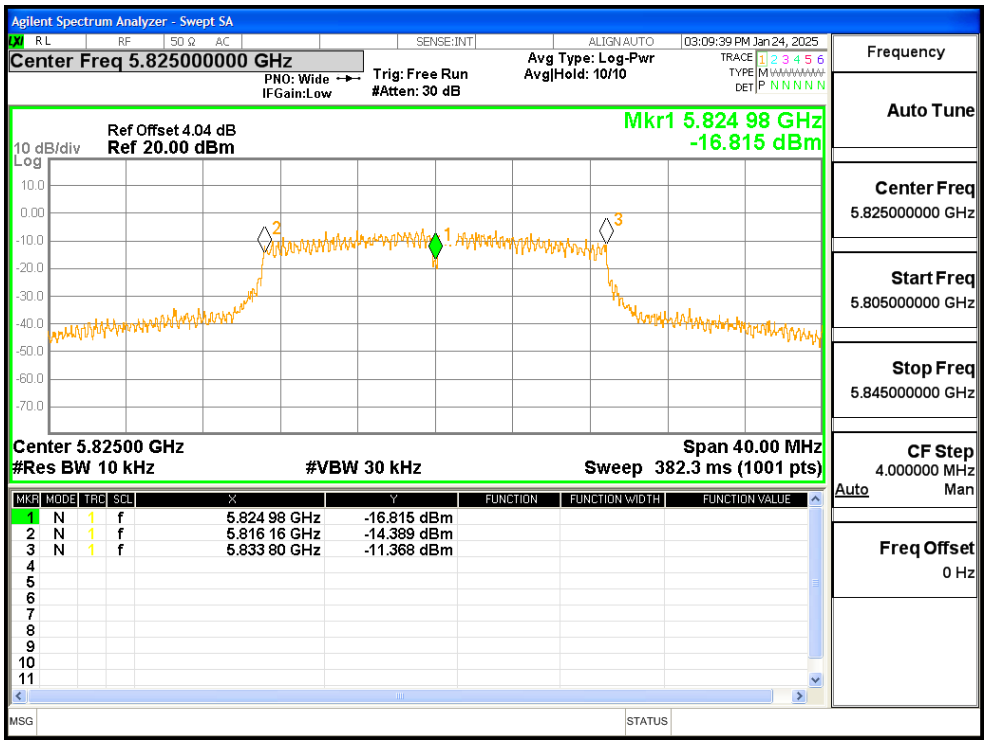
Freq. Stability NVNT n20 5745MHz Ant1



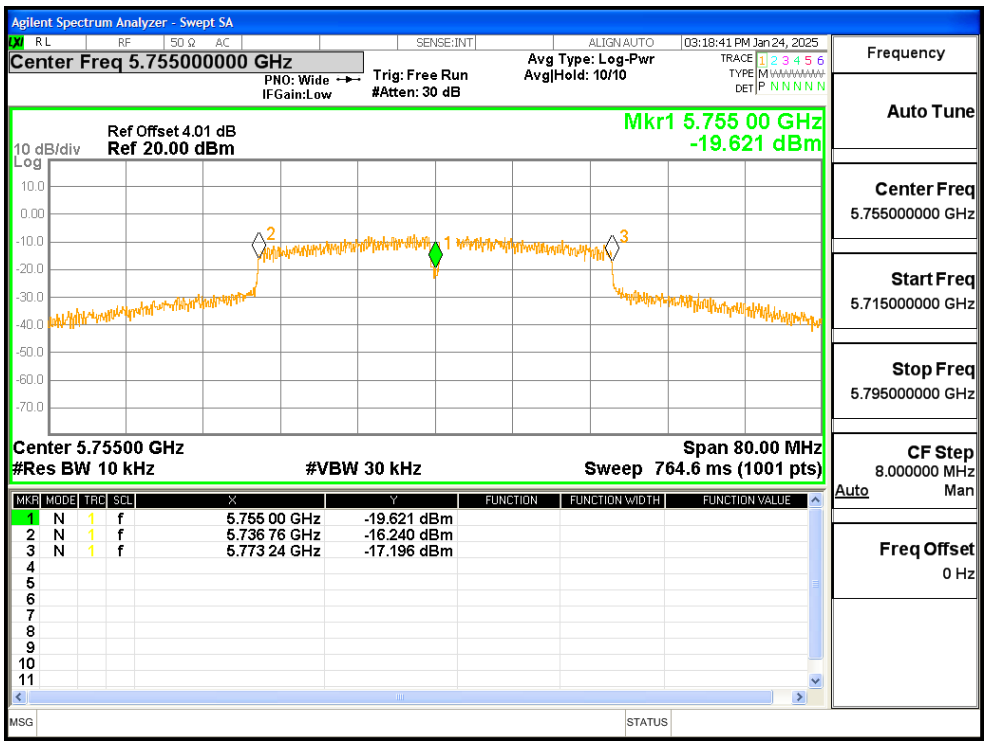
Freq. Stability NVNT n20 5785MHz Ant1



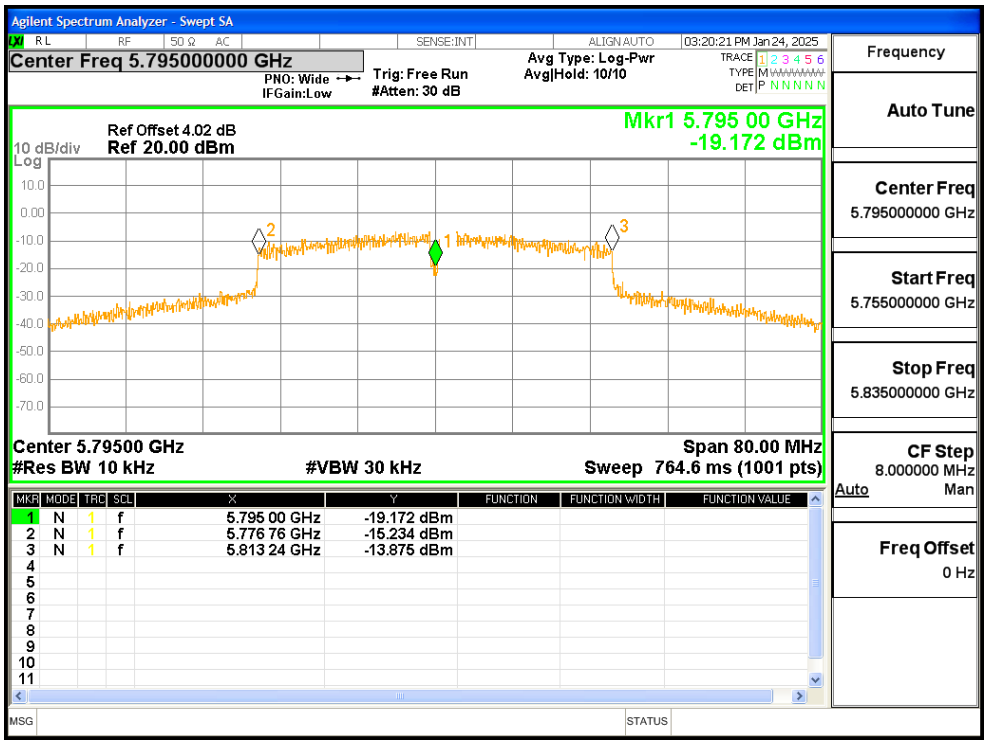
Freq. Stability NVNT n20 5825MHz Ant1



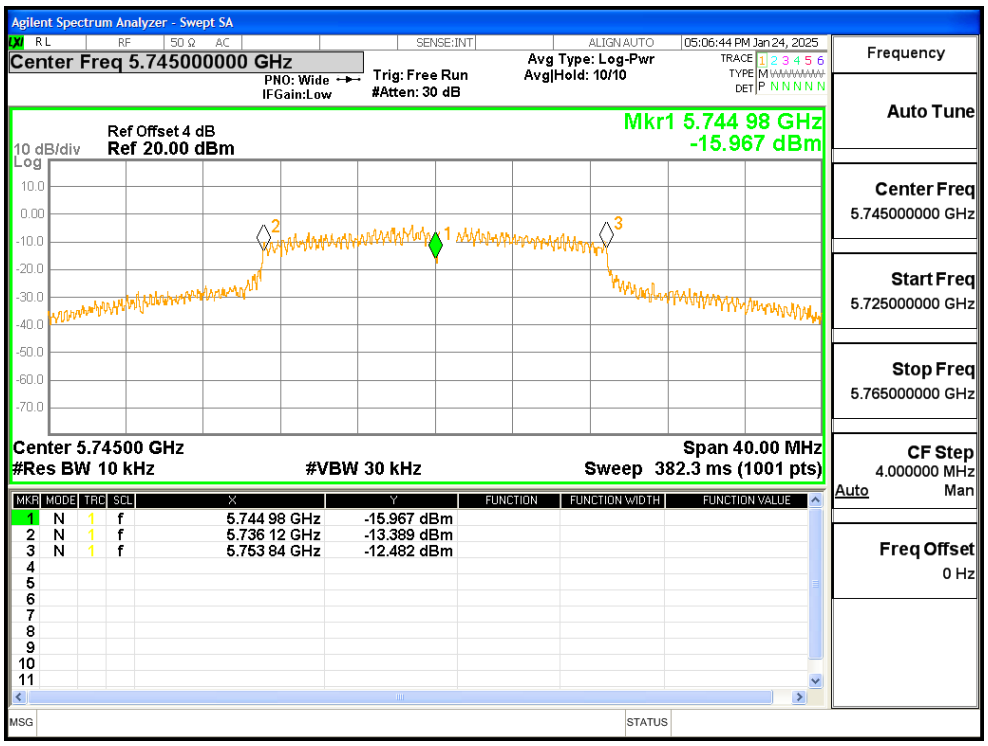
Freq. Stability NVNT n40 5755MHz Ant1



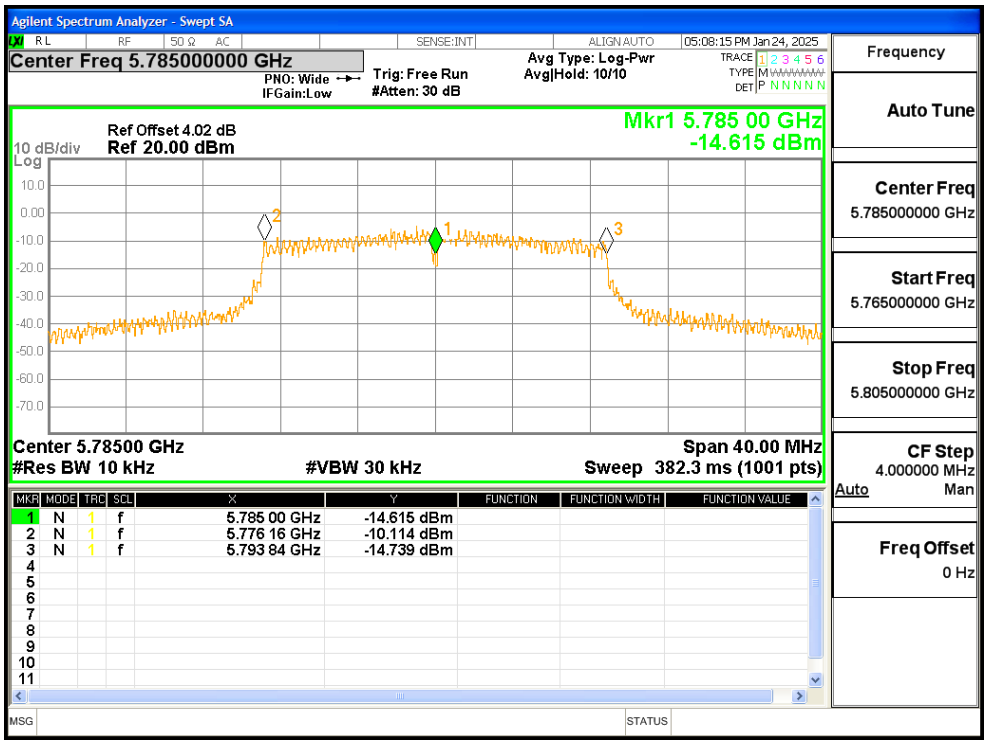
Freq. Stability NVNT n40 5795MHz Ant1



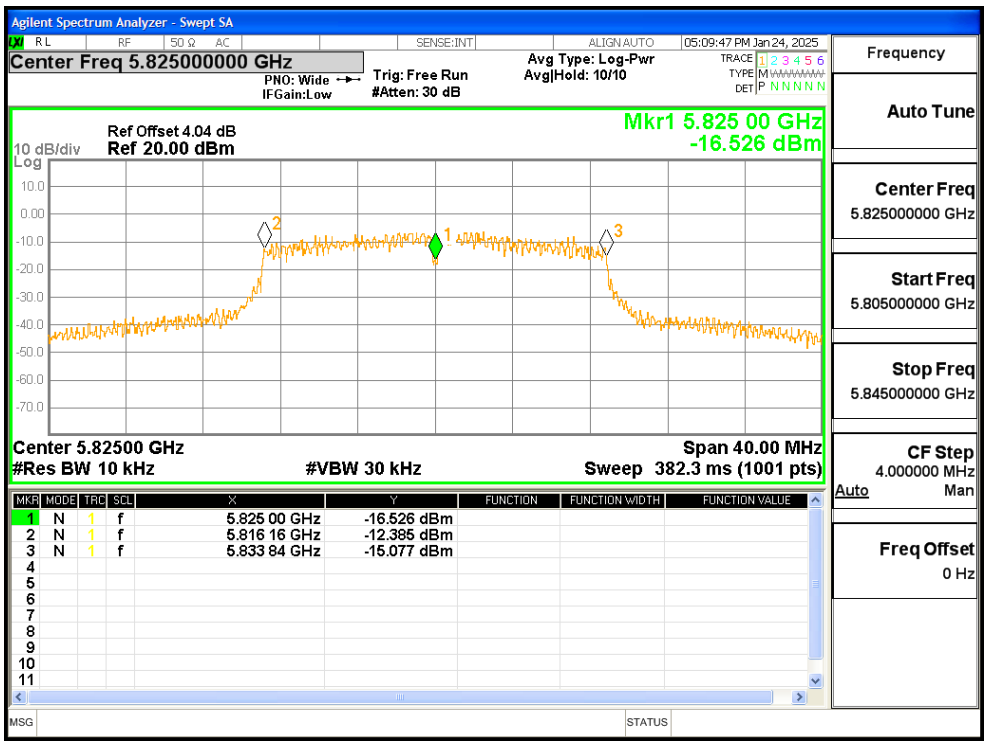
Freq. Stability NVNT ac20 5745MHz Ant1



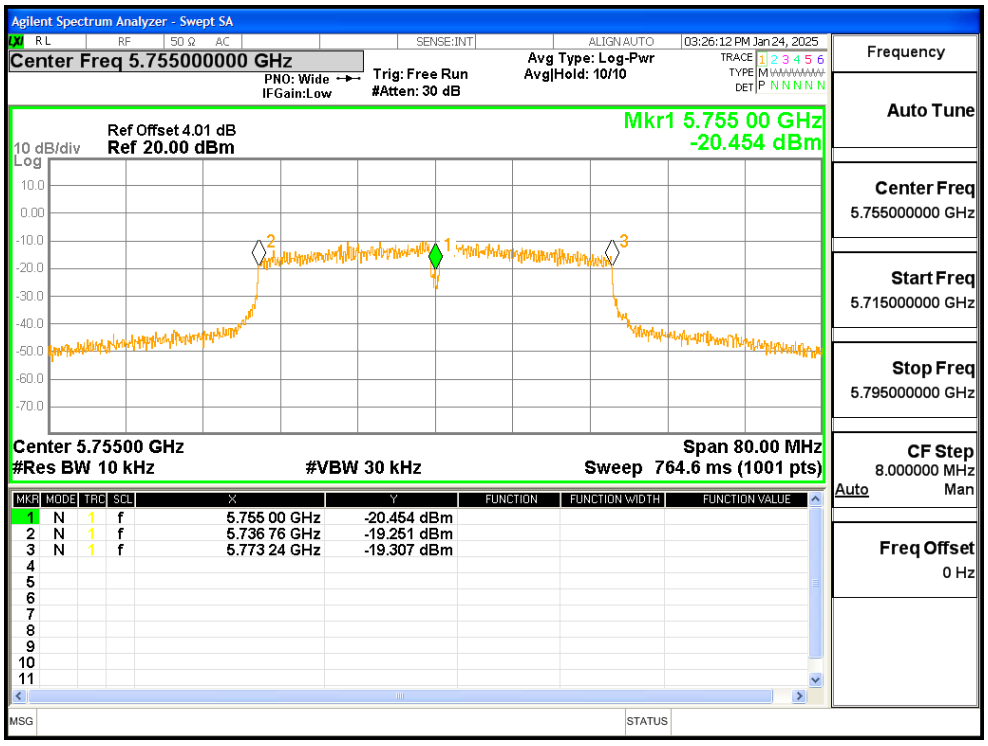
Freq. Stability NVNT ac20 5785MHz Ant1



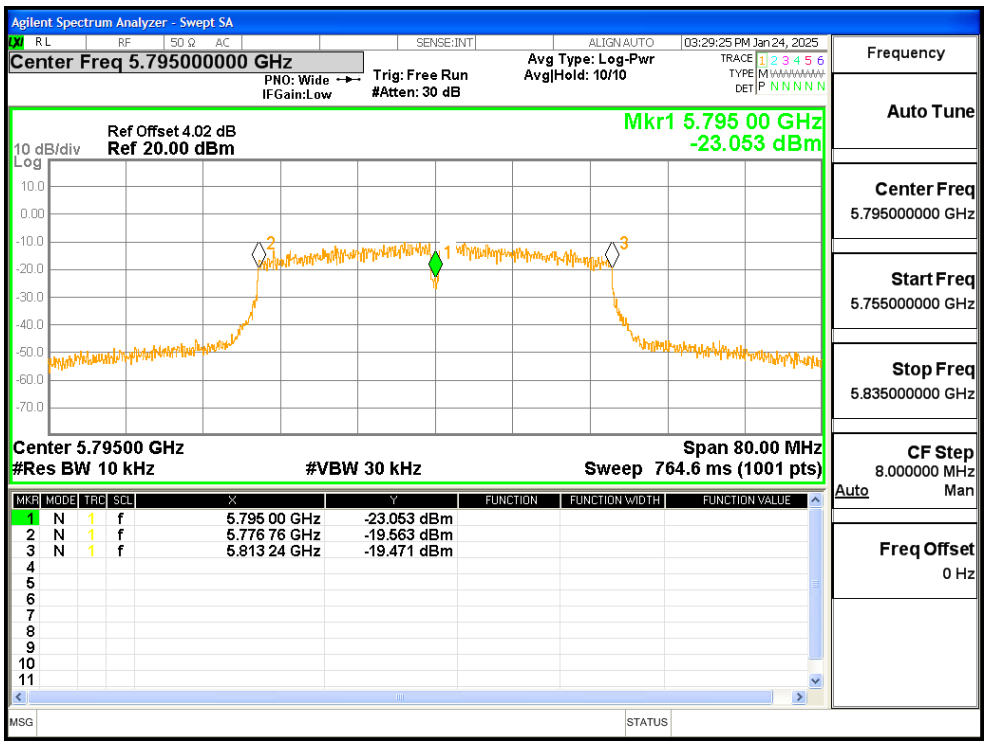
Freq. Stability NVNT ac20 5825MHz Ant1



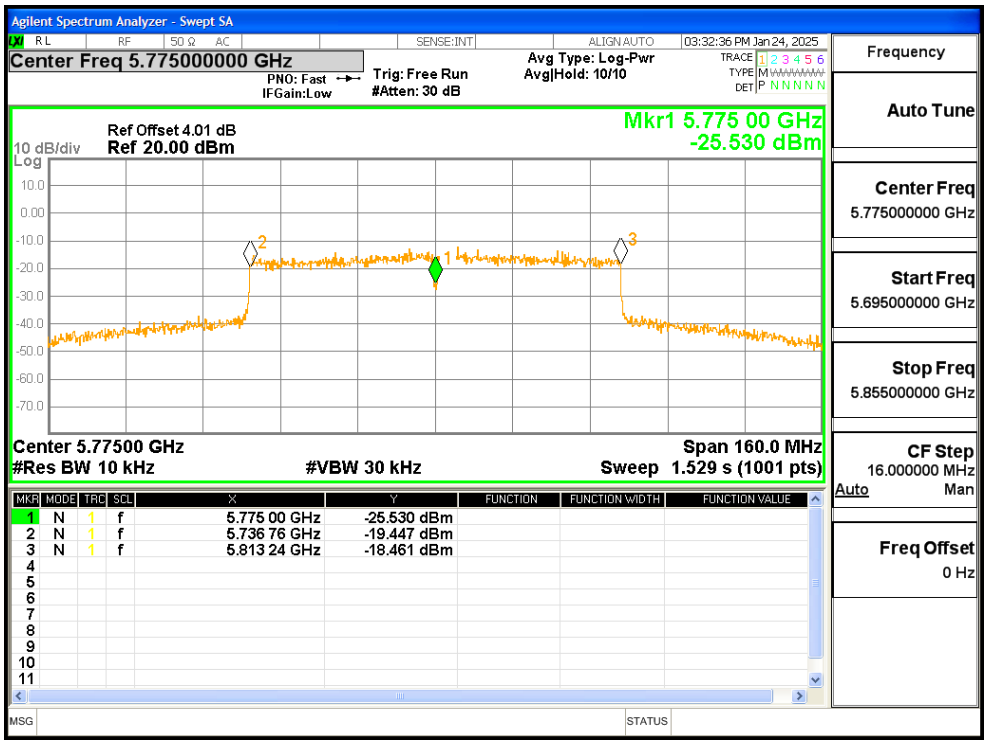
Freq. Stability NVNT ac40 5755MHz Ant1



Freq. Stability NVNT ac40 5795MHz Ant1



Freq. Stability NVNT ac80 5775MHz Ant1



12.0 Antenna Requirement

12.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

12.2 Antenna Connected construction

FPC antenna used. The gain of the antennas is 3.06dBi maximum. (Get from the antenna specification provided the applicant)

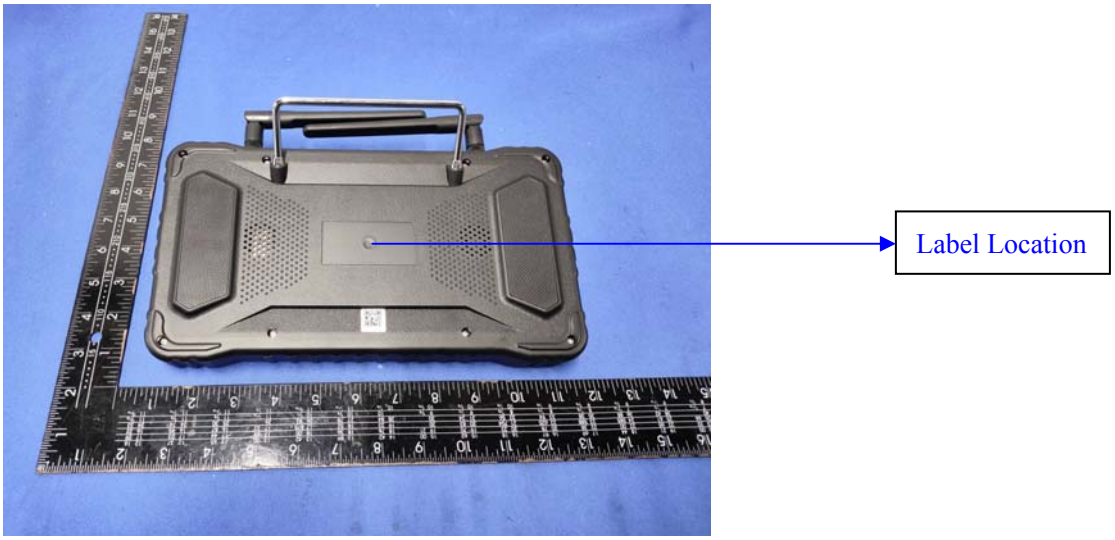
13.0 FCC ID Label

FCC ID: 2BM3J-H16

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



14.0 Photo of testing

Conducted Emission Test Setup:

Radiated Emission Test Setup

Photos of EUT

Please see test report TW2501163-01E

--End of the report--