



FCC TEST REPORT

FCC ID: 2AI56-Q27CMA11

On Behalf of

HKC Corporation Limited

intelligent signage

Model No.: Q27CMA11, Q27C** (*=0-9, A-Z, a-z, blank)**

Prepared for : HKC Corporation Limited
Address : Building 1,2,3, Huike Industrial Park, Mingying Industrial Zone,
ShuiTian, ShiYan, Baoan, Shenzhen, China

Prepared By : Shenzhen Alpha Product Testing Co., Ltd.
Address : Building i, No.2, Lixin Road, Fuyong Street, Bao'an District,
518103, Shenzhen, Guangdong, China

Report Number : A2310034-C01-R05
Date of Receipt : October 16, 2023
Date of Test : October 16, 2023- November 1, 2023
Date of Report : November 1, 2023
Version Number : V0

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TEST REPORT DECLARATION

Applicant : HKC Corporation Limited

Address : Building 1,2,3, Huike Industrial Park, Mingying Industrial Zone, ShuiTian, ShiYan, Baoan, Shenzhen, China

Manufacturer : HKC Corporation Limited

Address : Building 1,2,3, Huike Industrial Park, Mingying Industrial Zone, ShuiTian, ShiYan, Baoan, Shenzhen, China

EUT Description : intelligent signage

(A) Model No. : Q27CMA11, Q27C**** (*=0-9, A-Z, a-z, blank)

(B) Trademark : N/A

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart E

ANSI C63.4:2014, ANSI C63.10:2013

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart E limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

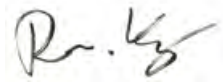
Tested by (name + signature).....:

Lucas Pang
Project Engineer



Approved by (name + signature).....:

Reak Yang
Project Manager



Date of issue.....:

November 1, 2023

Revision History

Revision	Issue Date	Revisions	Revised By
V0	November 1, 2023	Initial released Issue	Lucas Pang

1 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	Section 15.203 Section 7.1.4 RSS-Gen Issue 5	PASS
AC Power Line Conducted Emission	Section 15.207 Section 7.2.4 RSS-GEN(8.8), ANSI C63.10	PASS
Max Transmit Power	Section 15.407(a), RSS-247 5.4(2)	PASS
Power Spectral Density	Section 15.407(a), RSS-247 5.2(2)	PASS
Undesirable Emission	Section 15.407(b), RSS-247 5.5	PASS
Radiated Emission	Section 15.407(b)&15.209 Section 5.5 RSS-Gen(8.9), RSS-247(5.5), ANSI C63.10	PASS
Emission bandwidth and occupied bandwidth	47 CFR Part 15.407(e)	PASS
Band Edge	15.205, RSS-247 Issue 2, ANSI C63.10	PASS
Frequency Stability	15.407(f), RSS-GEN(6.11)	PASS

Remark:

1. Pass: The EUT complies with the essential requirements in the standard.
2. Frequency Stability: The manufacturer stated in the user's manual.
3. The conclusion of this test report is judged by actual test data without considering measurement uncertainty.

1.1 Measurement Uncertainty

Item	Uncertainty
Uncertainty for Power point Conducted Emissions Test	1.63dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	3.5dB
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.74dB(Polarize: V) 3.76dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	3.77dB(Polarize: V) 3.80dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (25GHz to 40GHz)	4.31dB(Polarize: V) 4.30dB(Polarize: H)
Uncertainty for radio frequency	5.06×10^{-8} GHz
Uncertainty for conducted RF Power	0.40dB
Uncertainty for temperature	0.2°C
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

2 General Information

2.1 General Description of EUT

EUT Name : intelligent signage
Model No. : Q27CMA11, Q27C**** (*=0-9, A-Z, a-z, blank)
DIFF. : There is no difference except the name of the model. All tests are made with the Q27CMA11 model.
Power supply : DC 24V from adapter, DC 19.2V from battery.

Radio Technology : 5G WIFI

Operation Frequency : 802.11a/n(HT20)/ac(VHT20): 5180~5240MHz; 5745~5825MHz
802.11n(HT40)/ac(VHT40): 5190~5230MHz, 5755~5795MHz
802.11ac(VHT80): 5210MHz, 5775MHz

Channel separation : 20MHz for 802.11a/ 802.11ac(VHT20)/ 802.11n(HT20)
40MHz for 802.11ac(VHT40)/ 802.11n(HT40)
80MHz for 802.11ac(VHT80)

Modulation technology: : IEEE 802.11n/a/ac: OFDM (64QAM, 16QAM, QPSK, BPSK)

Antenna Type : Internal antenna 1, max gain -5.24dBi
Internal antenna 2, max gain -5.24dBi
The antenna MIMO combining gain is -2.24dBi.
(Antenna information is provided by applicant.)

Software version : V1.0

Hardware version : V1.0

Intend use environment : Residential, commercial and light industrial environment

2.2 Test mode

Transmitting mode Keep the EUT in transmitting with modulation.
EUT was test with 99% duty cycle at its maximum power control level.

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.

2.3 Test Facility

Shenzhen Alpha Product Testing Co., Ltd
Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission
Registration Number: 293961

July 25, 2017 Certificated by IC
Registration Number: 12135A

2.4 Description of Support Units

Accessories : AC ADAPTOR
Manufacturer : Shenzhen Guijin Technology Co., Ltd.
Model : GJ100WD-2400400W1
Ratings : INPUT: 100-240V~50/60Hz 1.5A
 OUTPUT: 24.0V=4.0A 96.0W

2.5 Deviation from Standards

None.

2.6 Abnormalities from Standard Conditions

None.

2.7 Other Information Requested by the Customer

None.

2.8 Additional instructions

Software (Used for test) from client

Channel	Power level
Lowest	Default
Middle	Default
Highest	Default

3 Test Instruments list

Equipment	Manufacture	Model No.	Firmware version	Serial No.	Last cal.	Cal Interval
9*6*6 anechoic chamber	CHENYU	9*6*6	/	N/A	2022.05.17	3Year
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	2.3	102137	2023.08.16	1Year
Spectrum analyzer	Agilent	N9020A	A.14.16	MY499100060	2023.08.16	1Year
Receiver	ROHDE&SCHWARZ	ESR	2.28 SP1	1316.3003K03-102082-Wa	2023.08.16	1Year
Receiver	R&S	ESCI	4.42 SP1	101165	2023.08.16	1Year
Bilog Antenna	Schwarzbeck	VULB 9168	/	VULB 9168#627	2023.08.28	1Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	/	2106	2023.08.19	1Year
Loop Antenna	SCHWARZBECK	FMZB 1519B	/	00128	2023.08.19	1Year
RF Cable	Resenberger	Cable 1	/	RE1	2023.08.16	1Year
RF Cable	Resenberger	Cable 2	/	RE2	2023.08.16	1Year
RF Cable	Resenberger	Cable 3	/	CE1	2023.08.16	1Year
Pre-amplifier	HP	HP8347A	/	2834A00455	2023.08.16	1Year
Pre-amplifier	Agilent	8449B	/	3008A02664	2023.08.16	1Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	/	8126-466	2023.08.16	1Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	/	101043	2023.08.16	1Year
Horn Antenna	SCHWARZBECK	BBHA 9170	/	00946	2023.08.19	1Year
Preamplifier	SKET	LNPA_1840 -50	/	SK2018101801	2023.08.16	1 Year
Power Meter	Agilent	E9300A	/	MY41496628	2023.08.16	1 Year
Power Sensor	DARE	RPR3006W	/	15100041SNO91	2023.08.16	1 Year
Temp. & Humid. Chamber	Teelong	TL-HW408S	/	TL-20191205-01	2023.07.25	1 Year
Switching Mode Power Supply	JUNKE	JK12010S	/	20140927-6	2023.08.16	1 Year
Adjustable attenuator	MWRFTest	N/A	/	N/A	N/A	N/A
10dB Attenuator	Mini-Circuits	DC-6G	/	N/A	N/A	N/A

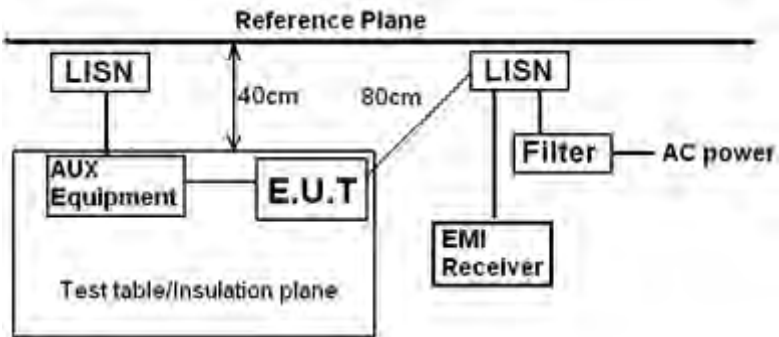
Software Information			
Test Item	Software Name	Manufacturer	Version
RE	EZ-EMC	Farad	Alpha-3A1
CE	EZ-EMC	Farad	Alpha-3A1
RF-CE	MTS 8310	MWRFTest	V2.0.0.0

4 Test results and Measurement Data

4.1 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.	
E.U.T Antenna:	
The antenna is internal antenna. The best case gain of the antenna is -5.24dBi for 5.15~5.25GHz/5.725~5.85GHz.	

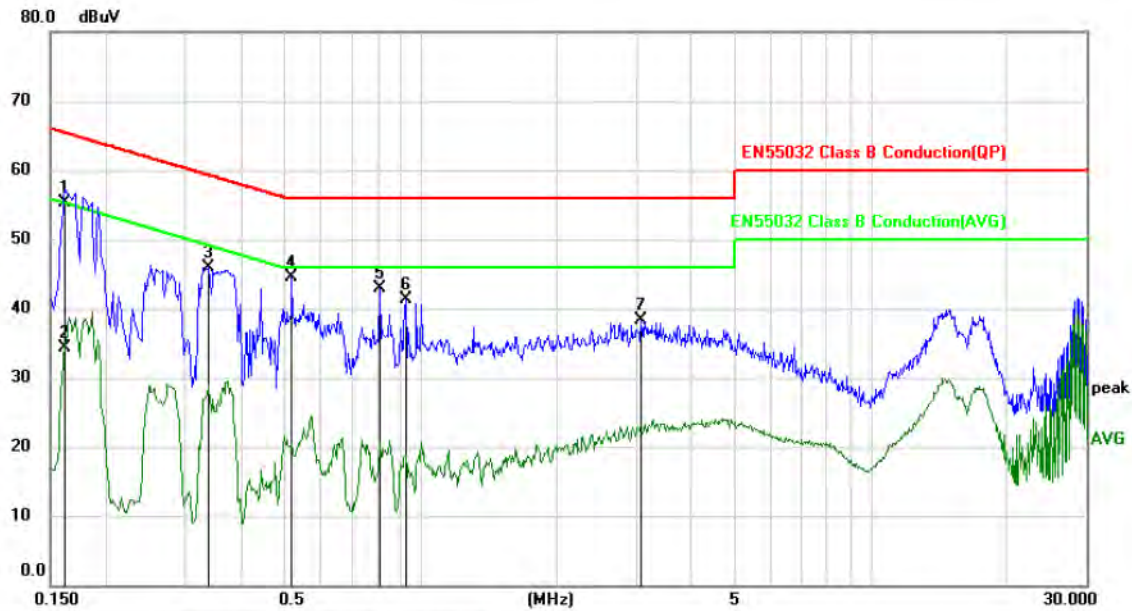
4.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207		
Test Method:	ANSI C63.10:2013		
Test Frequency Range:	150KHz to 30MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9KHz, VBW=30KHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
* Decreases with the logarithm of the frequency.			
Test procedure	The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.		
Test setup:	 Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height= 0.1m		
Test Instruments:	Refer to section 5.10 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Pass		

Measurement Data

An initial pre-scan was performed on the line and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Line:

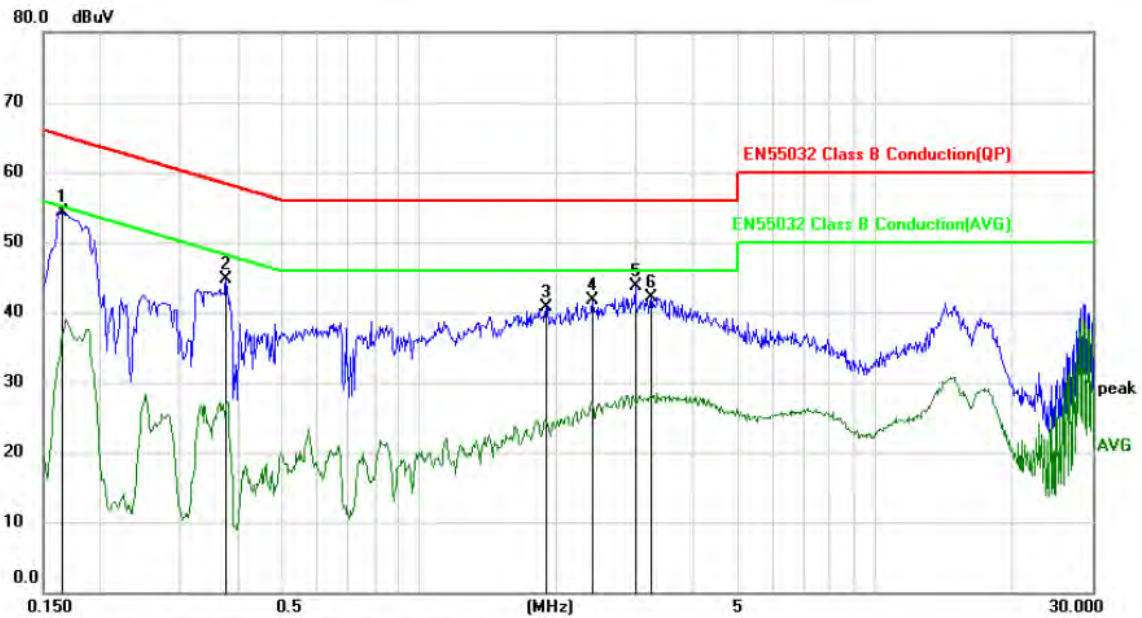


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1620	45.29	9.93	55.22	65.36	-10.14	QP	
2		0.1620	24.40	9.93	34.33	55.36	-21.03	AVG	
3		0.3390	36.00	9.94	45.94	59.23	-13.29	peak	
4		0.5160	34.52	9.95	44.47	56.00	-11.53	peak	
5		0.8130	32.88	9.94	42.82	56.00	-13.18	peak	
6		0.9240	31.35	9.96	41.31	56.00	-14.69	peak	
7		3.0780	28.26	9.96	38.22	56.00	-17.78	peak	

*:Maximum data x:Over limit !:over margin

(Reference Only)

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

Neutral:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1650	44.29	9.93	54.22	65.21	-10.99	peak	
2		0.3780	34.81	9.94	44.75	58.32	-13.57	peak	
3		1.9050	30.78	9.88	40.66	56.00	-15.34	peak	
4		2.4000	31.77	9.90	41.67	56.00	-14.33	peak	
5		2.9790	33.77	9.95	43.72	56.00	-12.28	peak	
6		3.2340	32.15	9.96	42.11	56.00	-13.89	peak	

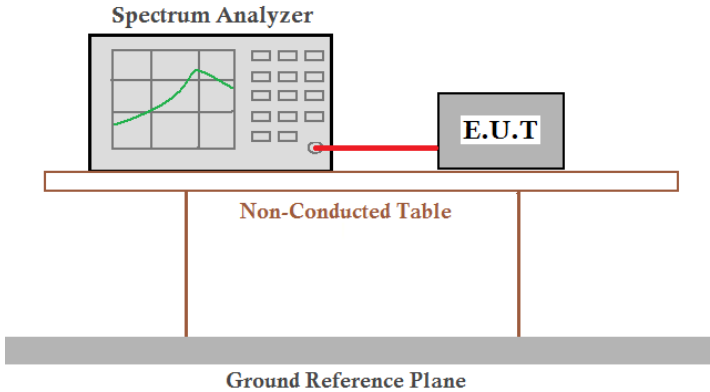
*:Maximum data x:Over limit !:over margin

(Reference Only)

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

Note: All modes and channels have been tested and only the A 5180MHz mode with the worst data is listed.

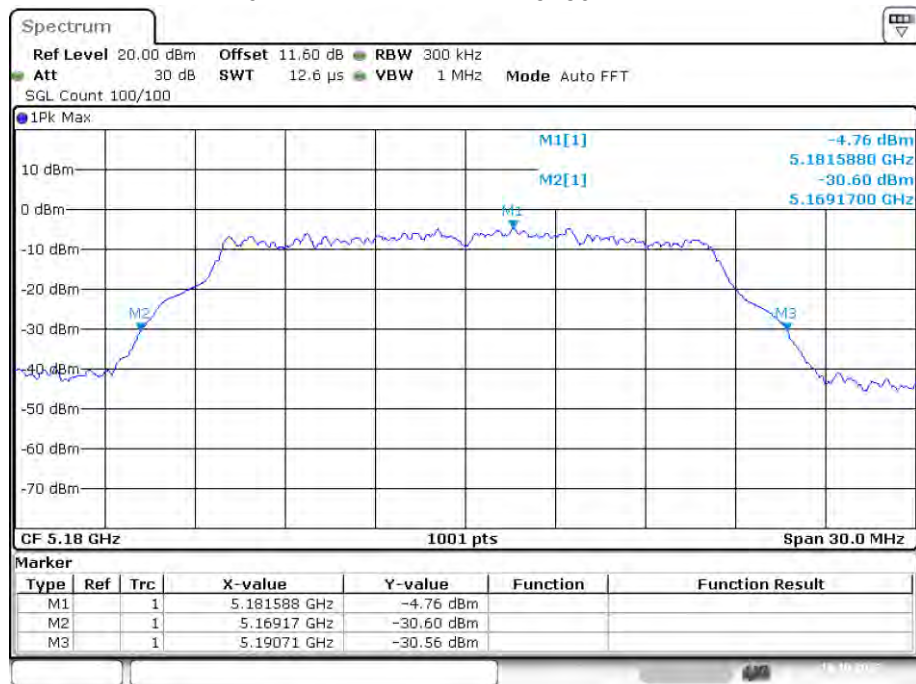
4.3 Emission Bandwidth and 99% Occupied Bandwidth

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Limit:	>500kHz for 6 dB bandwidth
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer, shown with a grid and a green trace, is connected to an E.U.T. (Equipment Under Test) box by a red cable. Both the Spectrum Analyzer and the E.U.T. are positioned on a Non-Conducted Table, which is supported by two vertical legs. Below the table, a Ground Reference Plane is indicated by a thick grey bar.
Test procedure:	According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

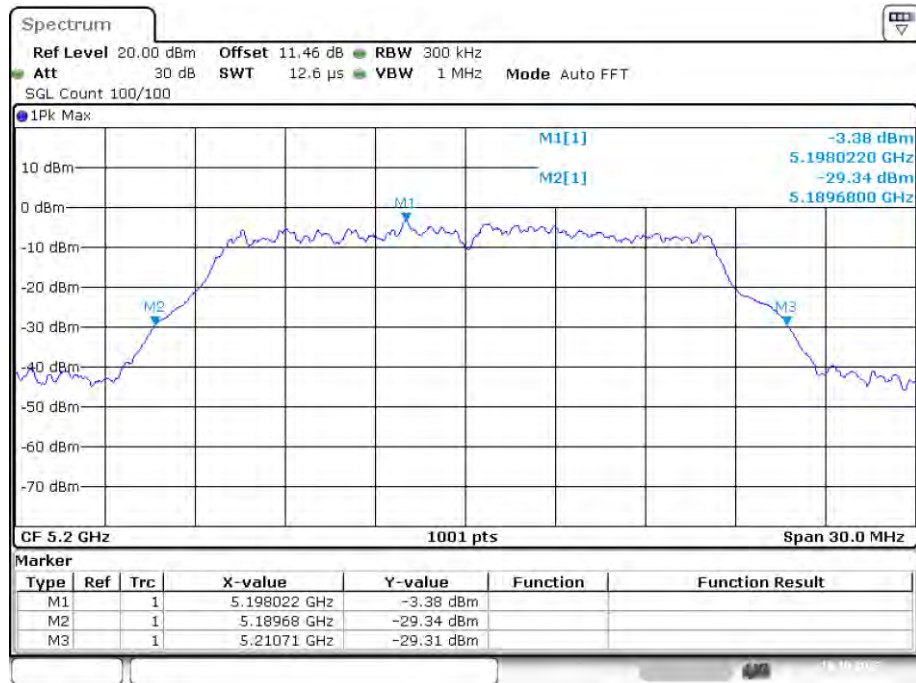
Measurement Data:

**Band 1 (5150-5250 MHz):
-26dB Bandwidth**

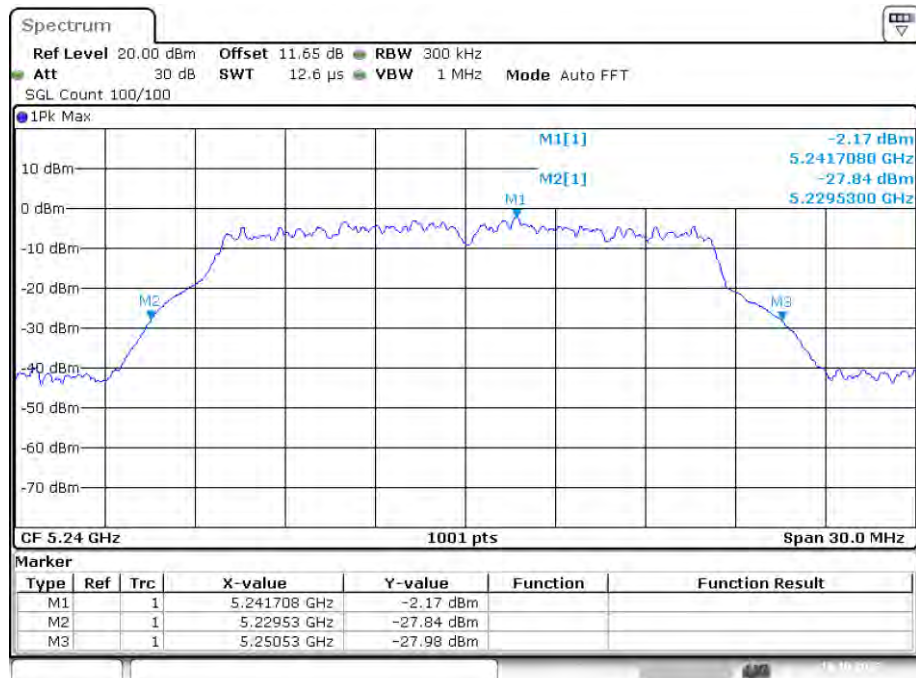
Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)
NVNT	a	5180	Ant1	21.54
NVNT	a	5200	Ant1	21.03
NVNT	a	5240	Ant1	21
NVNT	ac20	5180	Ant1	21.18
NVNT	ac20	5200	Ant1	21.33
NVNT	ac20	5240	Ant1	21.39
NVNT	ac40	5190	Ant1	39.84
NVNT	ac40	5230	Ant1	39.24
NVNT	ac80	5210	Ant1	80.16
NVNT	n20	5180	Ant1	21.3
NVNT	n20	5200	Ant1	21.33
NVNT	n20	5240	Ant1	21.27
NVNT	n40	5190	Ant1	39.84
NVNT	n40	5230	Ant1	39.72

-26dB Bandwidth NVNT a 5180MHz Ant1


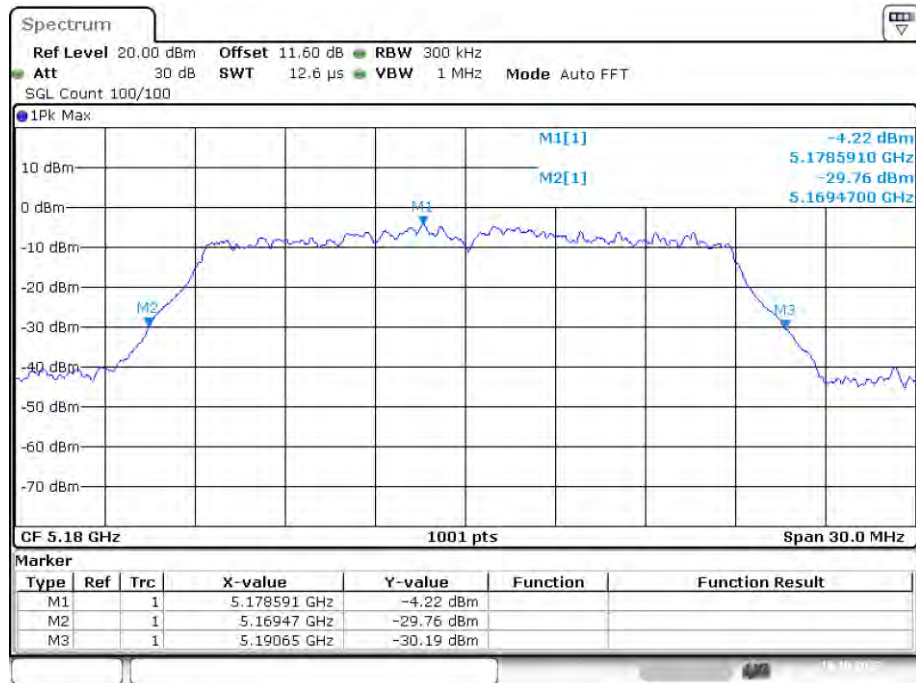
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-26dB Bandwidth NVNT a 5200MHz Ant1

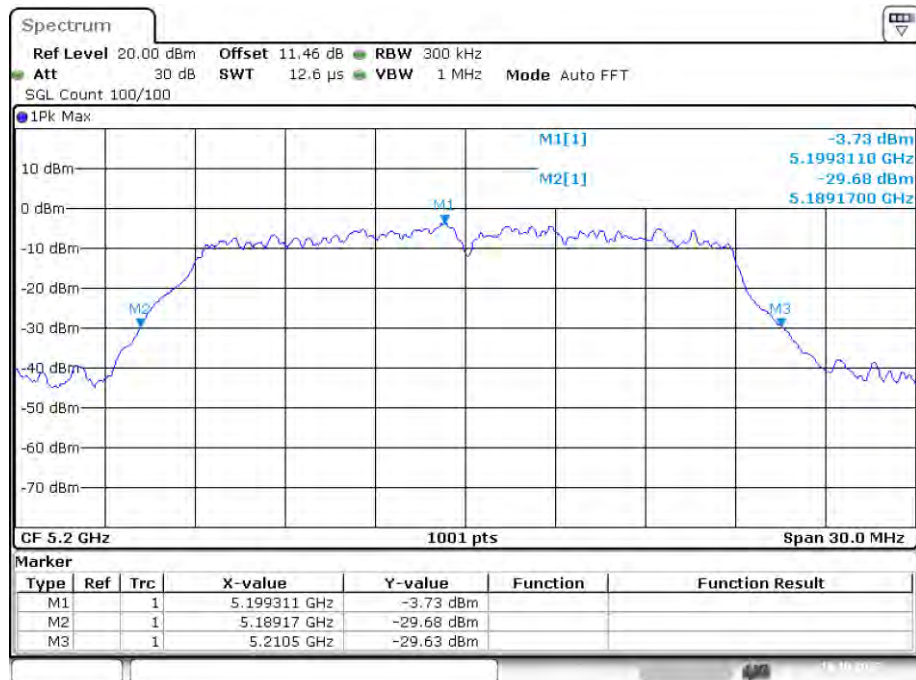
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-26dB Bandwidth NVNT a 5240MHz Ant1

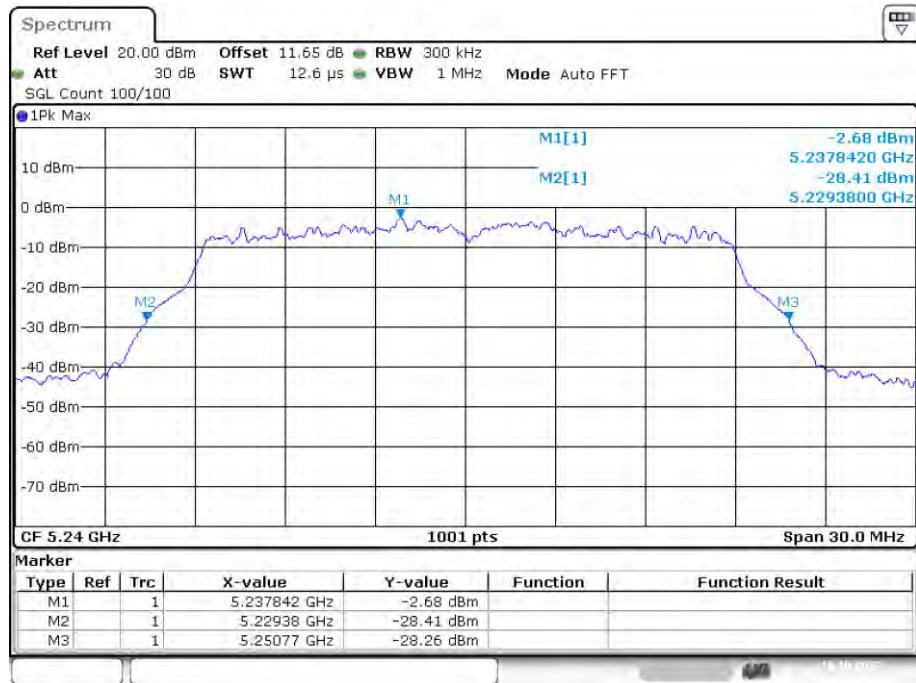
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-26dB Bandwidth NVNT ac20 5180MHz Ant1

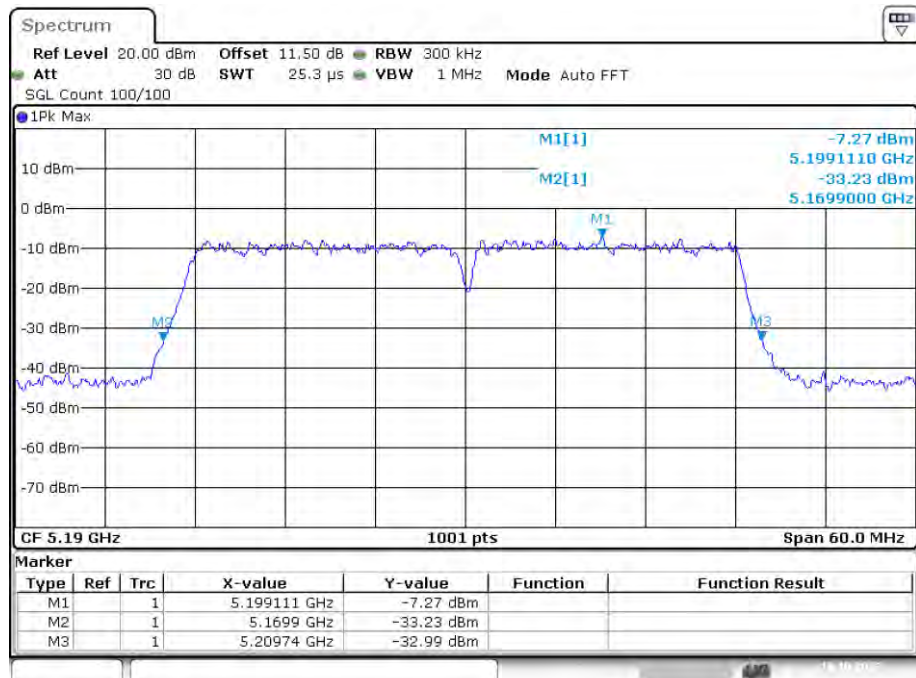
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-26dB Bandwidth NVNT ac20 5200MHz Ant1

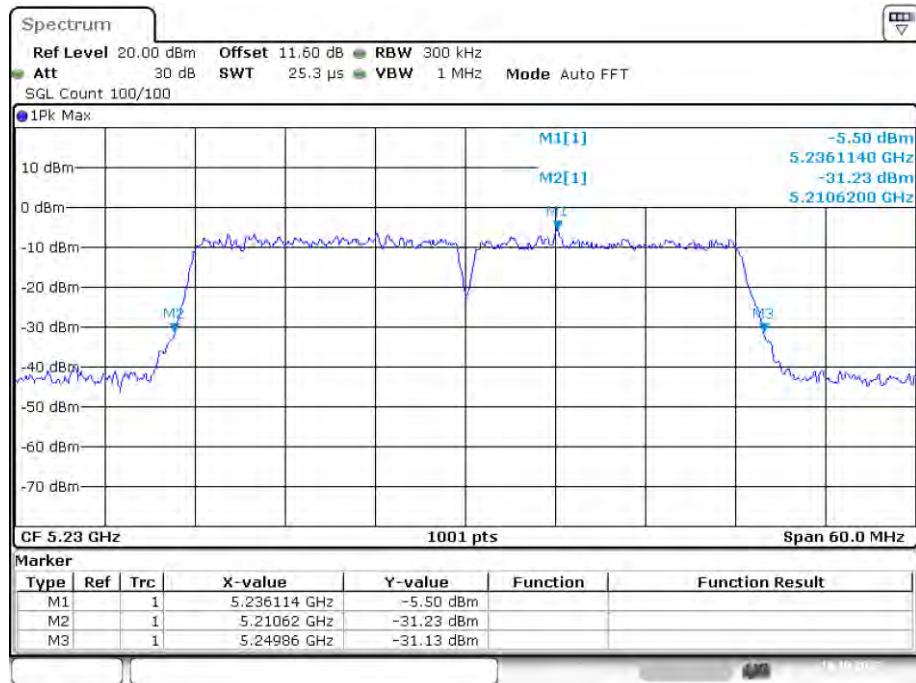
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-26dB Bandwidth NVNT ac20 5240MHz Ant1

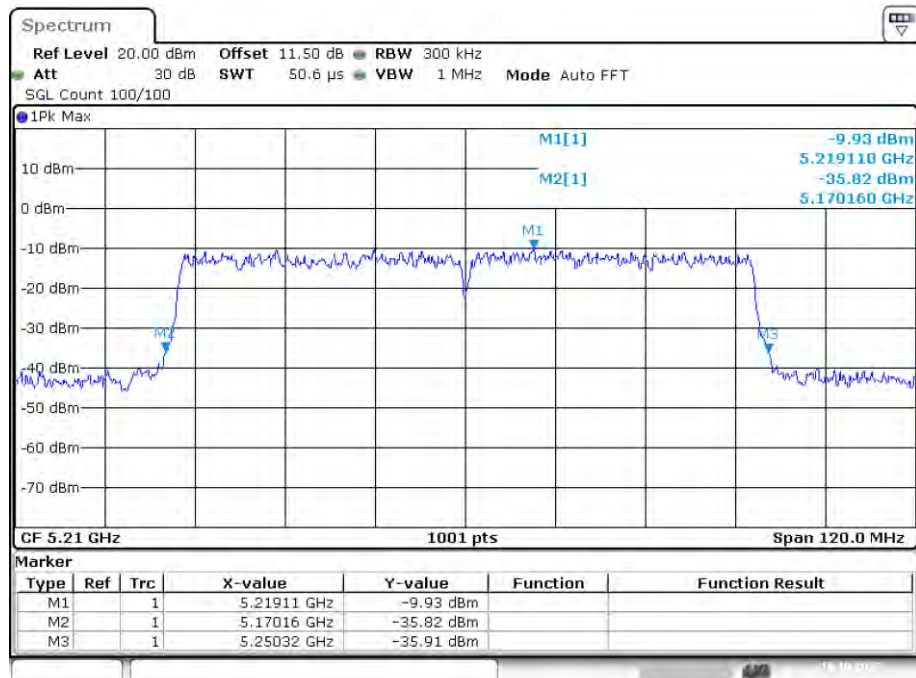
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-26dB Bandwidth NVNT ac40 5190MHz Ant1

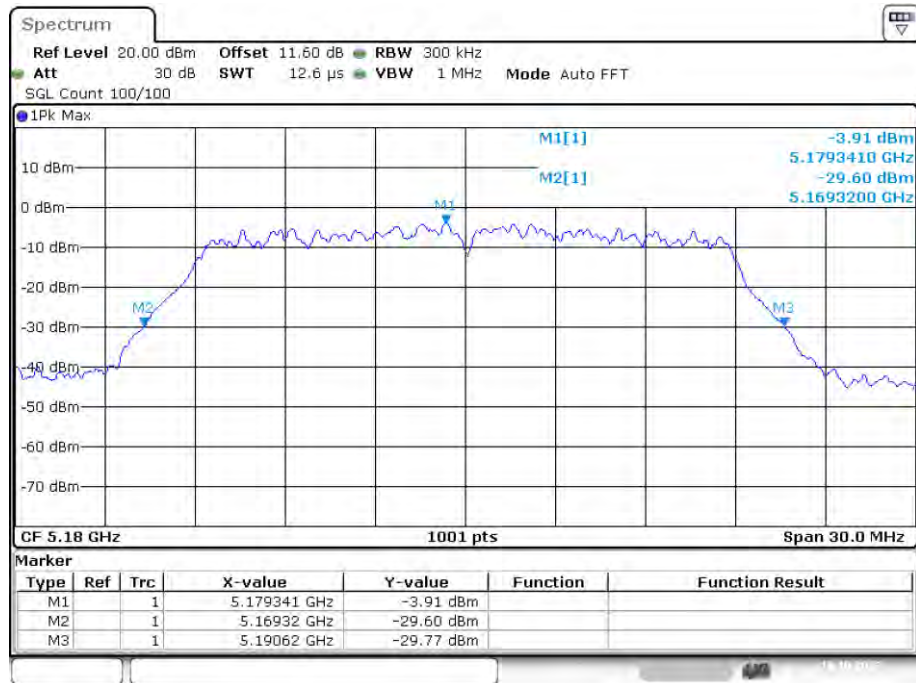
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-26dB Bandwidth NVNT ac40 5230MHz Ant1

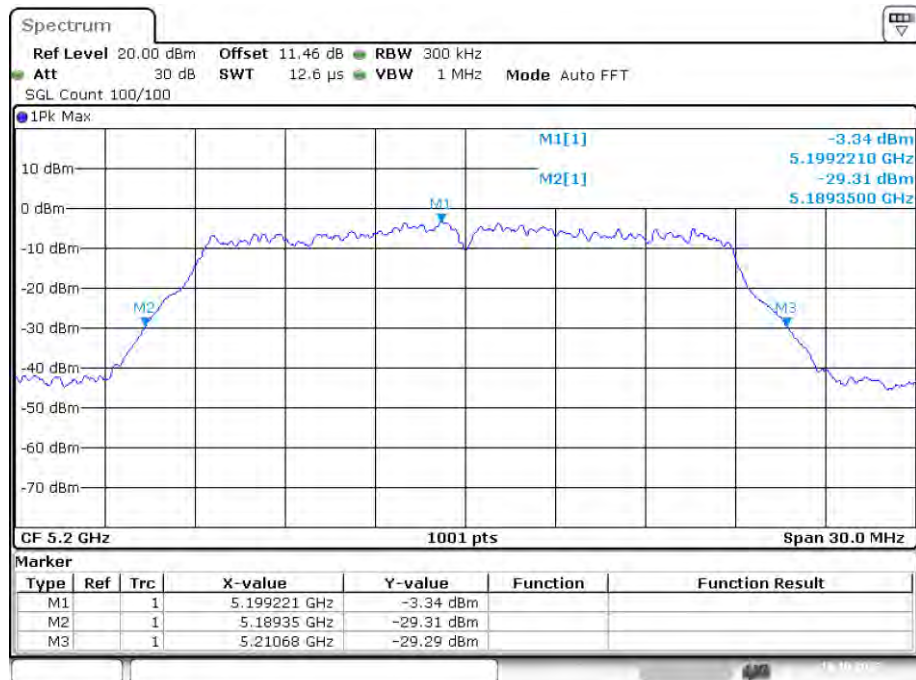
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-26dB Bandwidth NVNT ac80 5210MHz Ant1

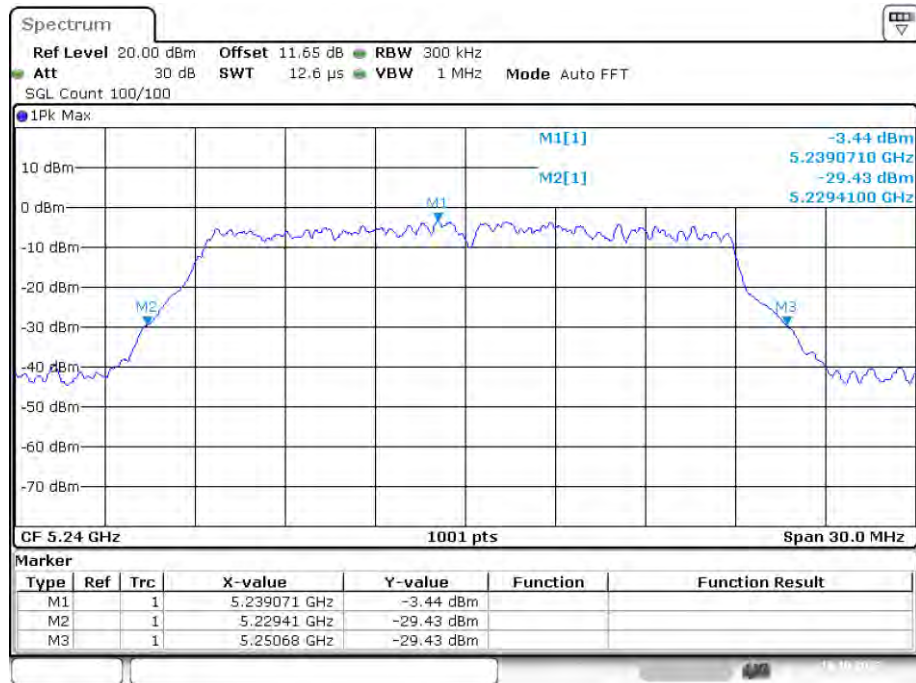
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-26dB Bandwidth NVNT n20 5180MHz Ant1

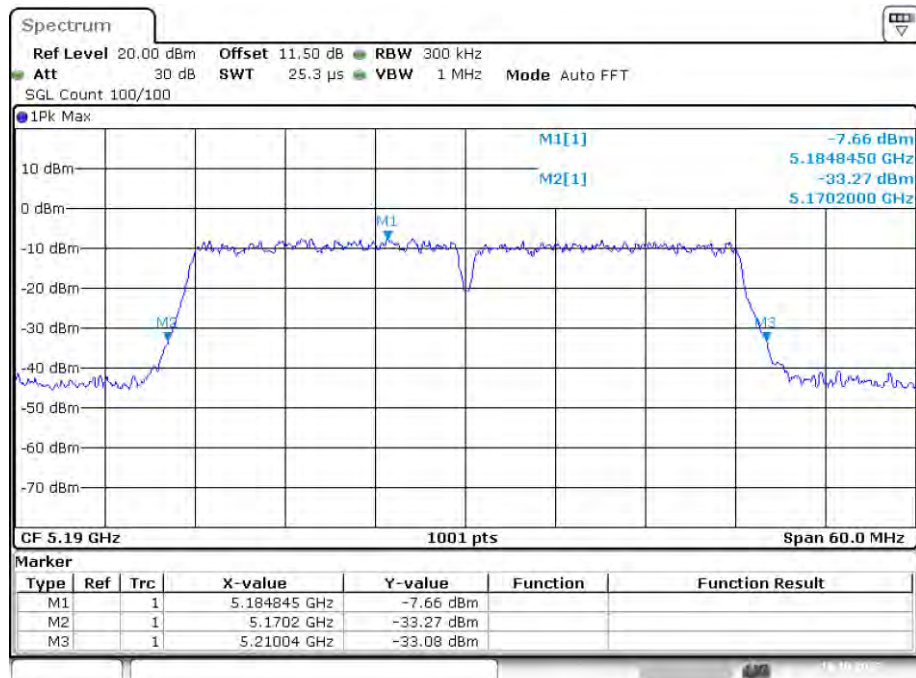
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-26dB Bandwidth NVNT n20 5200MHz Ant1

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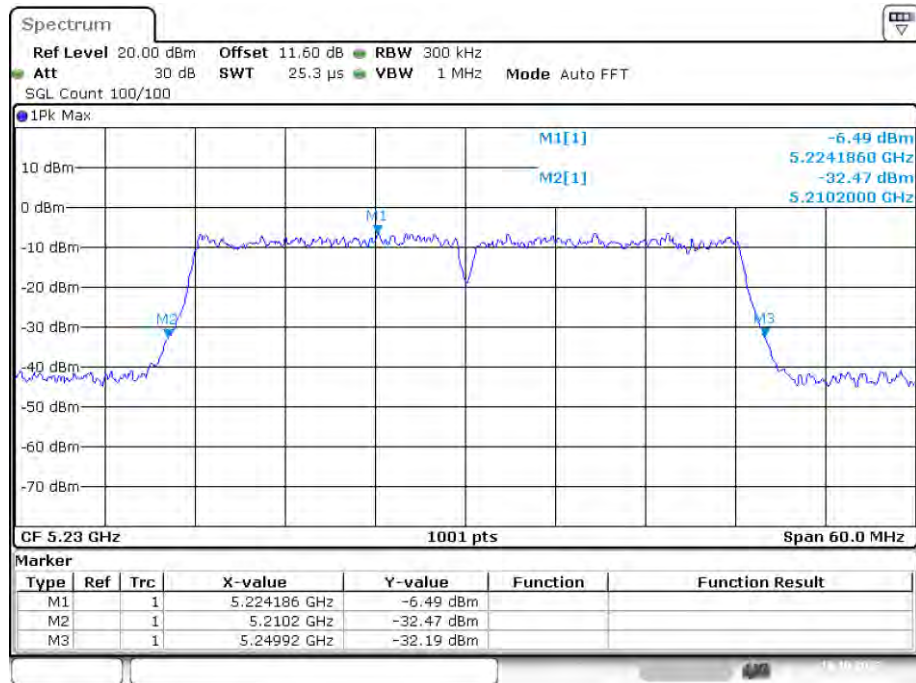
-26dB Bandwidth NVNT n20 5240MHz Ant1

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-26dB Bandwidth NVNT n40 5190MHz Ant1

Date: 19.OCT.2023 15:01:56

-26dB Bandwidth NVNT n40 5230MHz Ant1

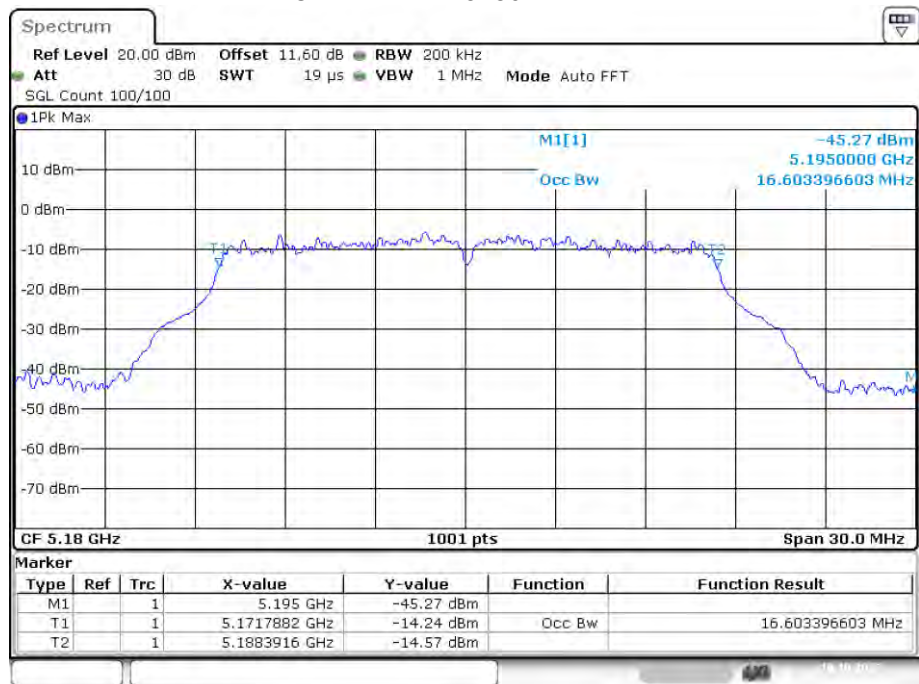


Date: 19.OCT.2023 15:07:07

Occupied Channel Bandwidth

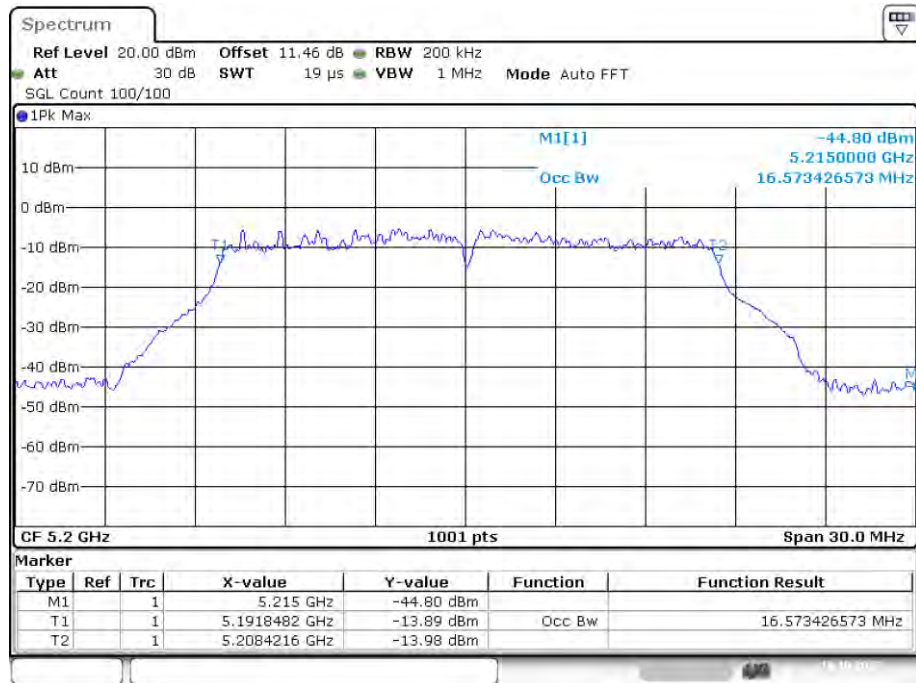
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5180	Ant1	16.603
NVNT	a	5200	Ant1	16.573
NVNT	a	5240	Ant1	16.543
NVNT	ac20	5180	Ant1	17.922
NVNT	ac20	5200	Ant1	17.742
NVNT	ac20	5240	Ant1	17.802
NVNT	ac40	5190	Ant1	36.324
NVNT	ac40	5230	Ant1	36.503
NVNT	ac80	5210	Ant1	76.004
NVNT	n20	5180	Ant1	17.712
NVNT	n20	5200	Ant1	17.682
NVNT	n20	5240	Ant1	17.622
NVNT	n40	5190	Ant1	36.563
NVNT	n40	5230	Ant1	36.503

OBW NVNT a 5180MHz Ant1



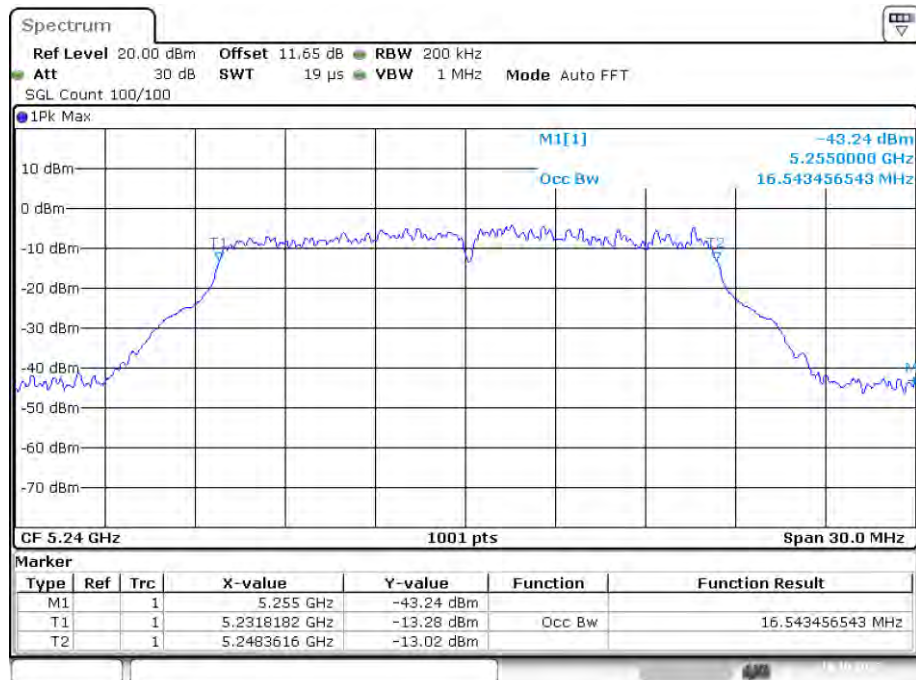
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OBW NVNT a 5200MHz Ant1



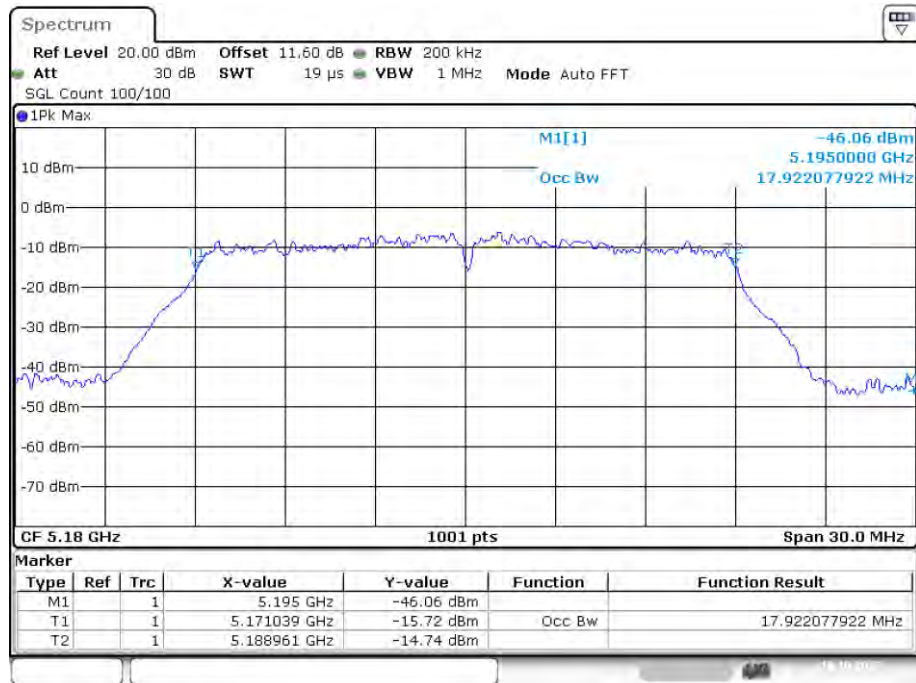
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OBW NVNT a 5240MHz Ant1



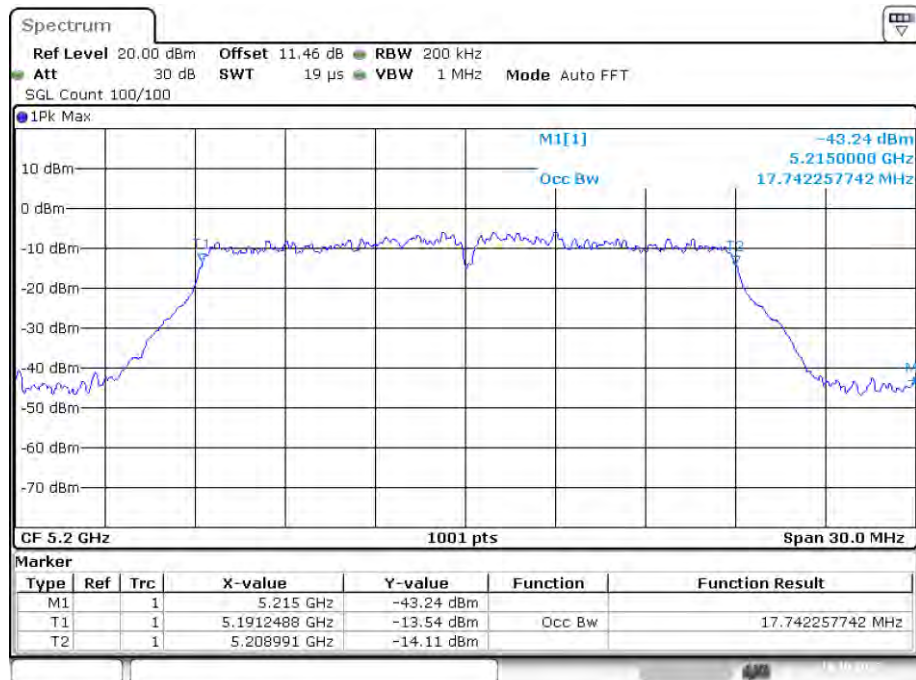
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OBW NVNT ac20 5180MHz Ant1



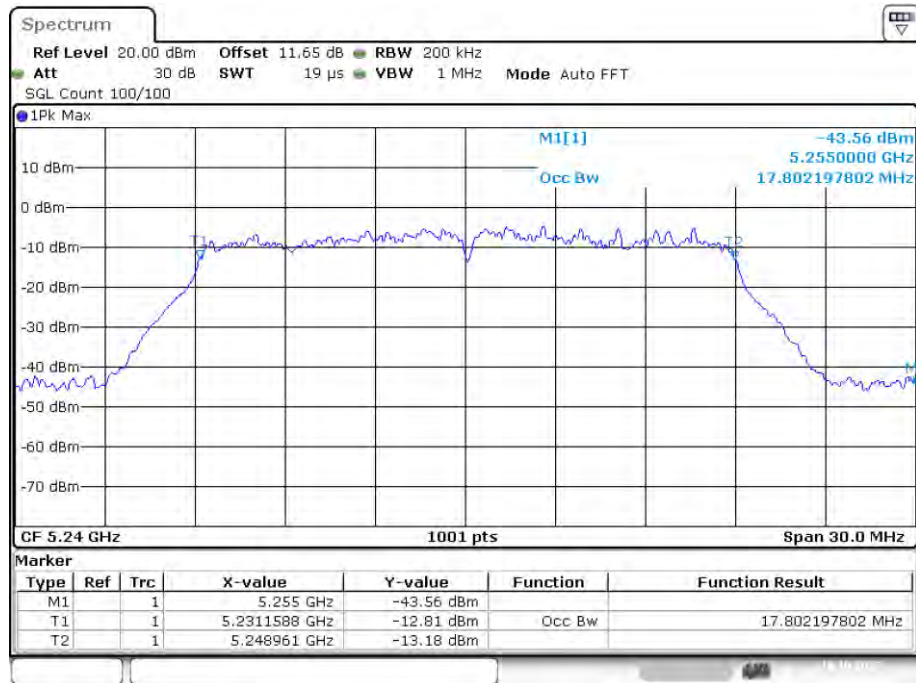
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OBW NVNT ac20 5200MHz Ant1



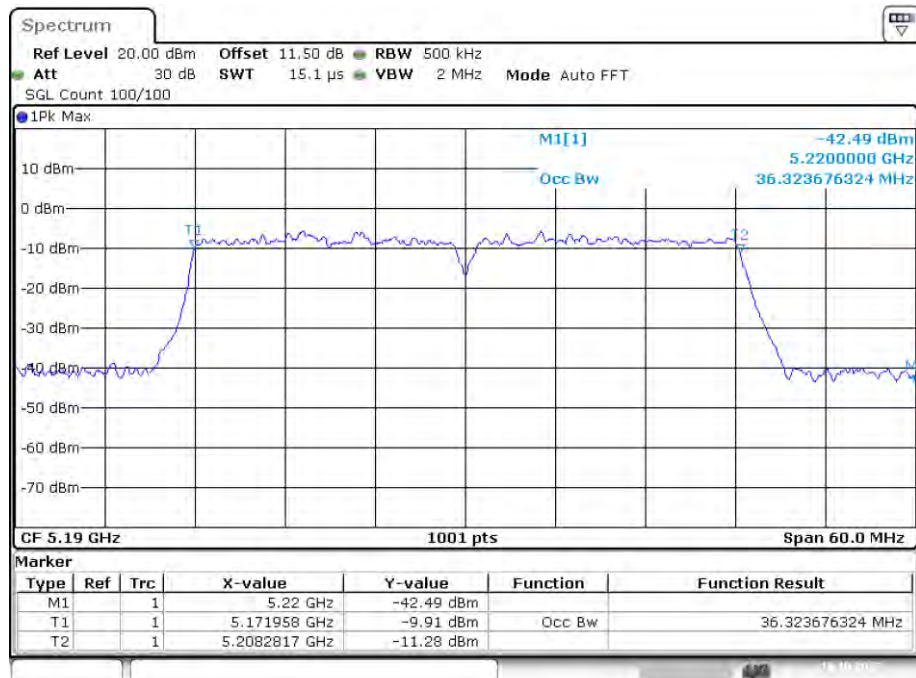
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OBW NVNT ac20 5240MHz Ant1



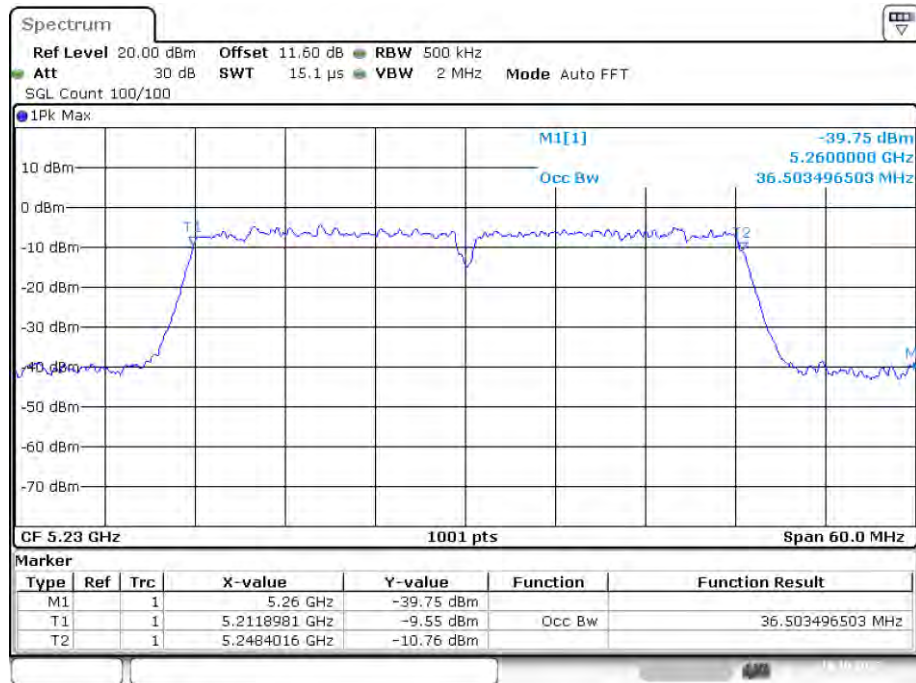
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OBW NVNT ac40 5190MHz Ant1



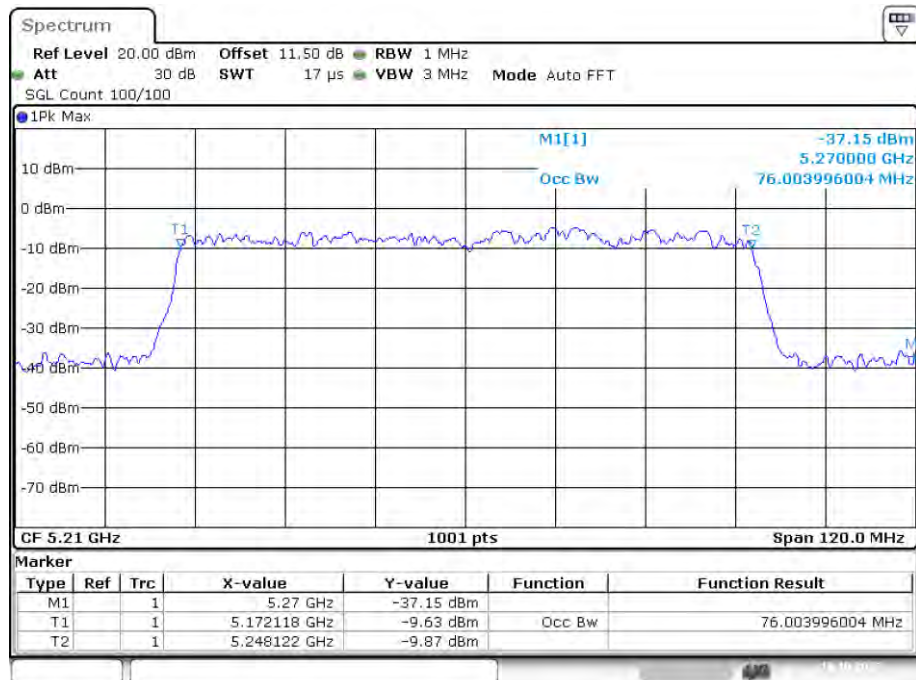
Date: 19.OCT.2023 15:31:35

OBW NVNT ac40 5230MHz Ant1



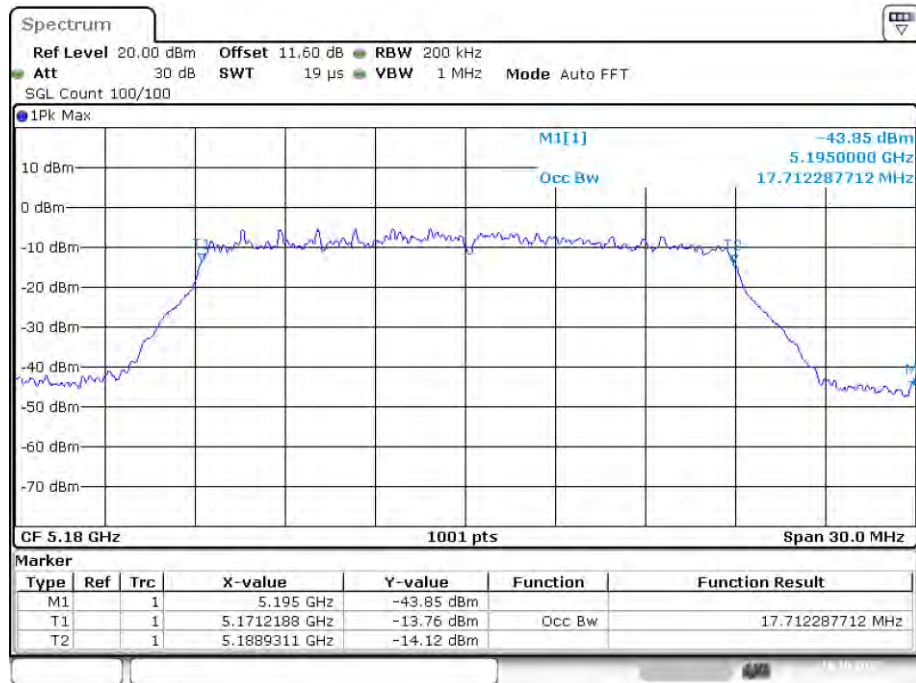
Date: 19.OCT.2023 15:36:29

OBW NVNT ac80 5210MHz Ant1



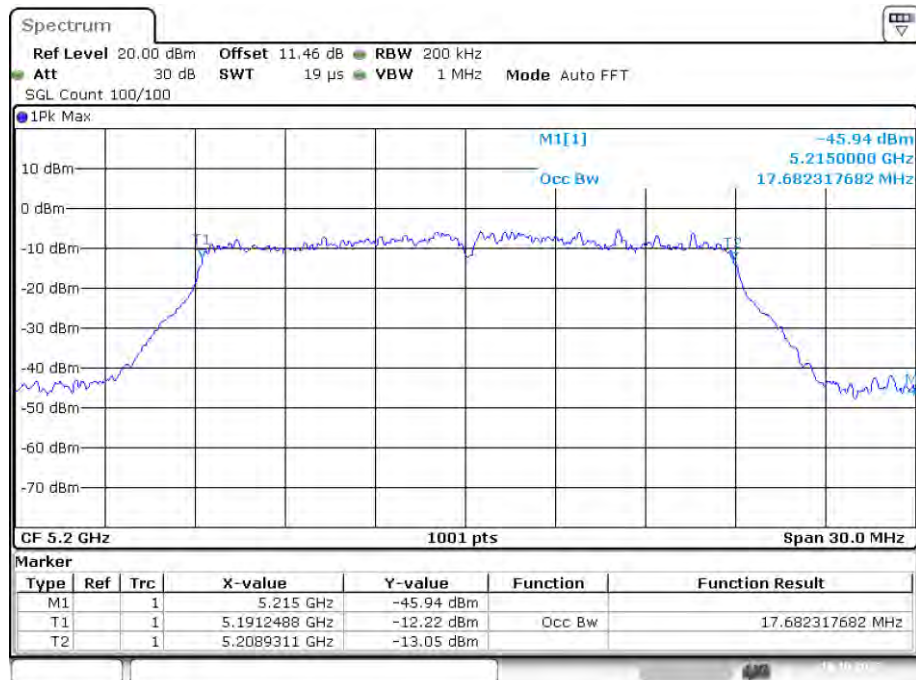
Date: 19.OCT.2023 15:46:26

OBW NVNT n20 5180MHz Ant1



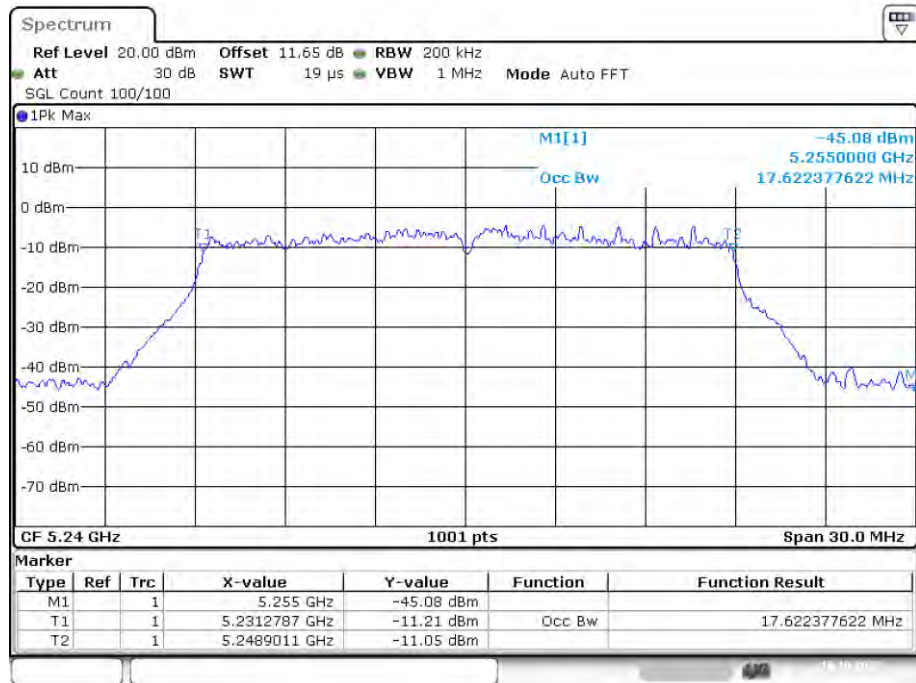
Date: 19.OCT.2023 14:37:06

OBW NVNT n20 5200MHz Ant1



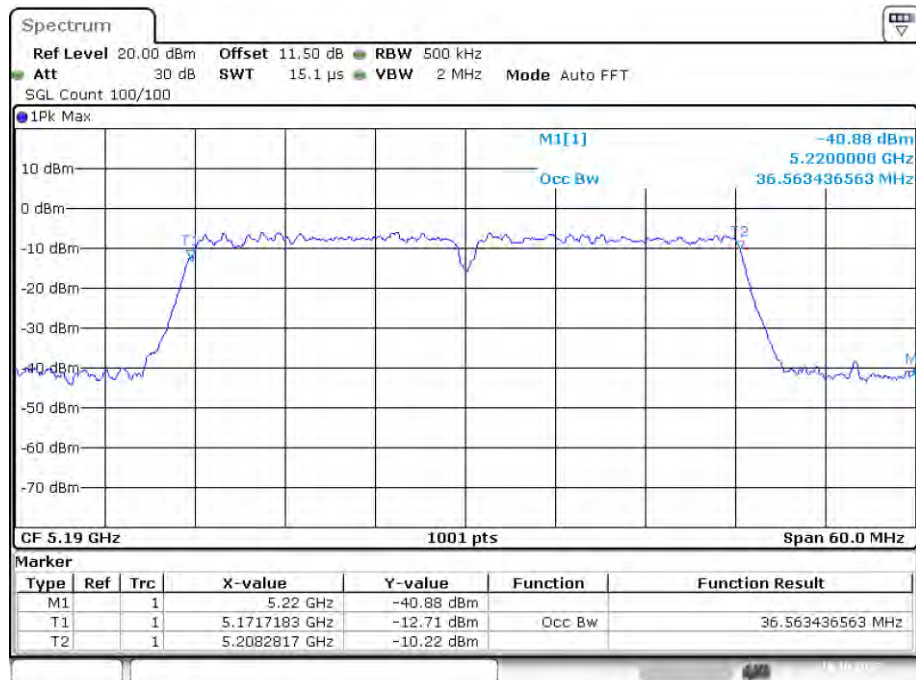
Date: 19.OCT.2023 14:41:15

OBW NVNT n20 5240MHz Ant1



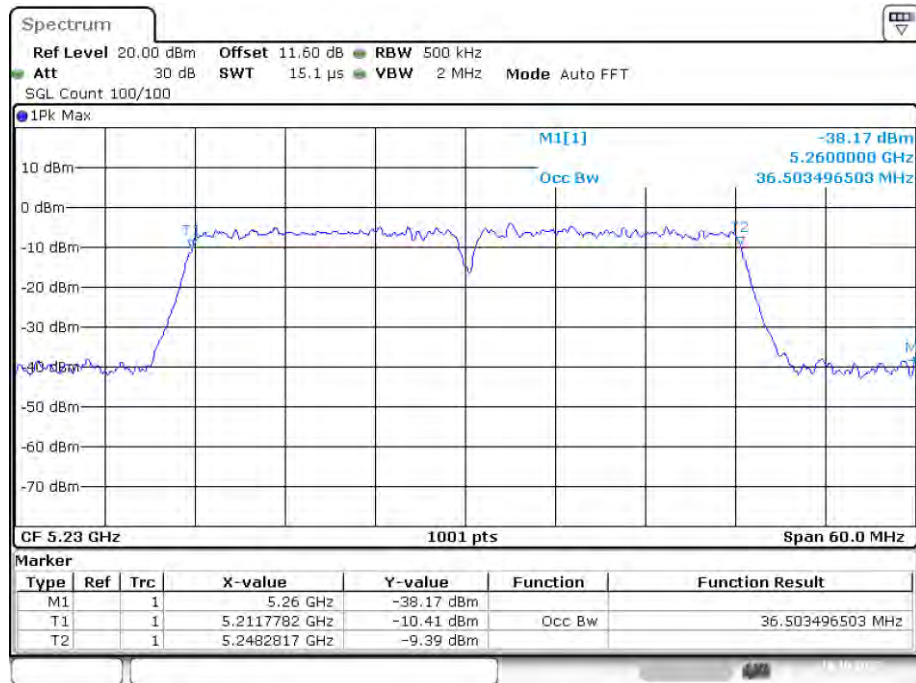
Date: 19.OCT.2023 14:48:15

OBW NVNT n40 5190MHz Ant1



Date: 19.OCT.2023 15:01:35

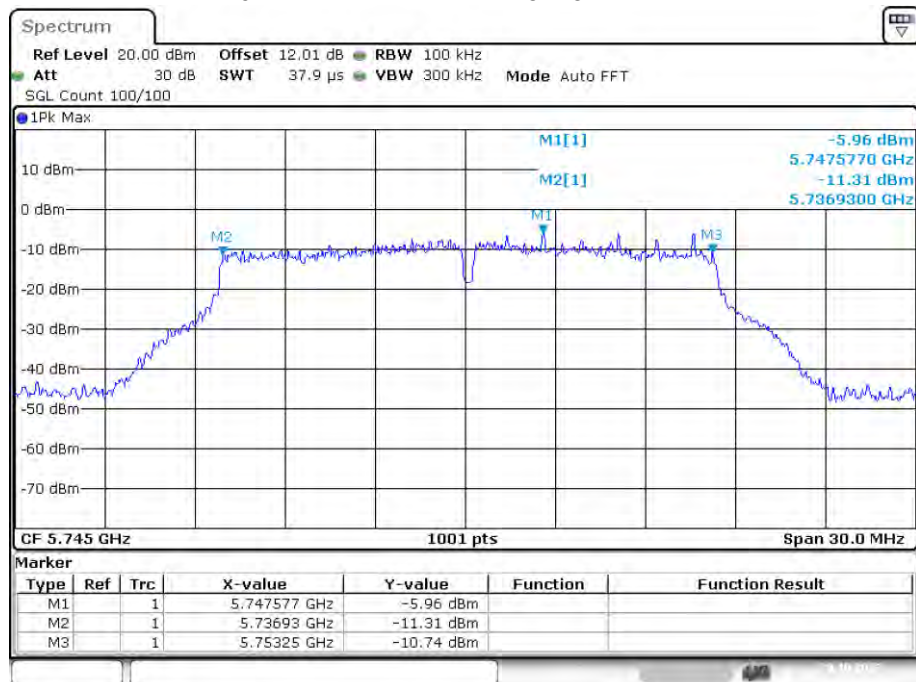
OBW NVNT n40 5230MHz Ant1



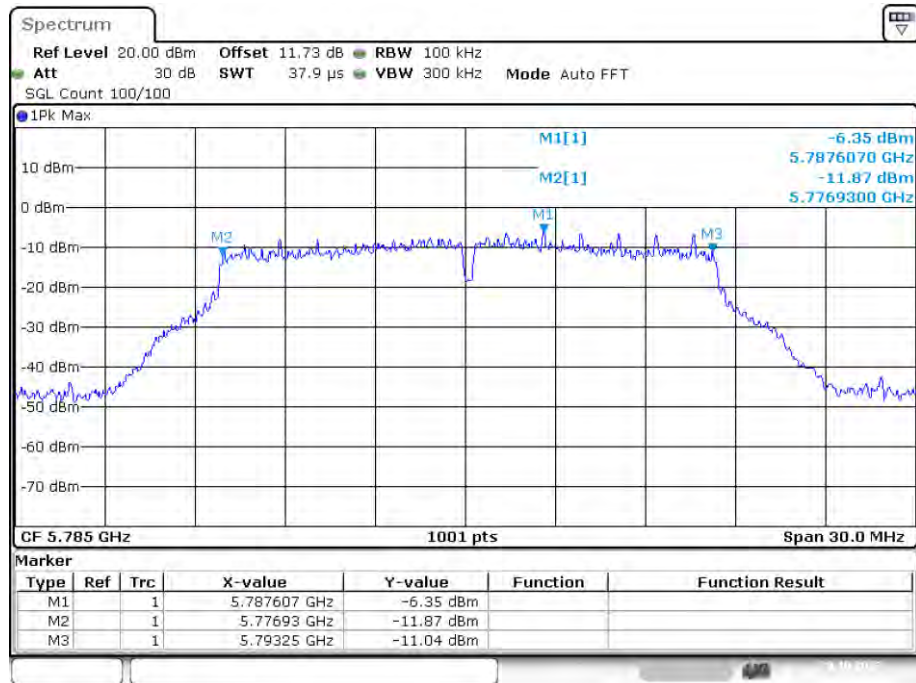
Date: 19.OCT.2023 15:08:49

Band 4 (5725-5850 MHz):**-6dB Bandwidth**

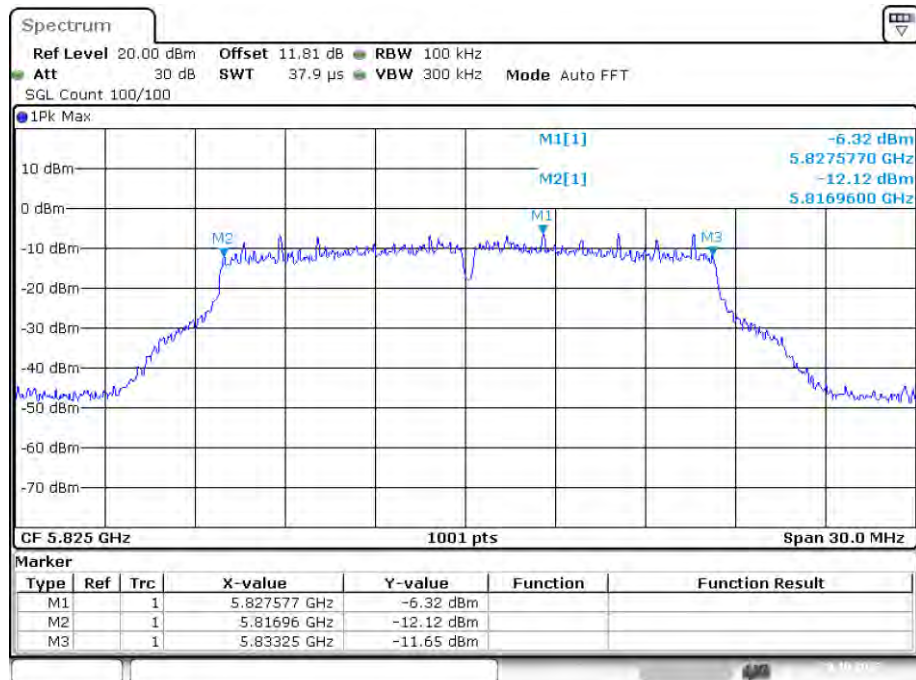
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	16.32	0.5	Pass
NVNT	a	5785	Ant1	16.32	0.5	Pass
NVNT	a	5825	Ant1	16.29	0.5	Pass
NVNT	ac20	5745	Ant1	17.55	0.5	Pass
NVNT	ac20	5785	Ant1	17.61	0.5	Pass
NVNT	ac20	5825	Ant1	17.64	0.5	Pass
NVNT	ac40	5755	Ant1	36.36	0.5	Pass
NVNT	ac40	5795	Ant1	36.3	0.5	Pass
NVNT	ac80	5775	Ant1	75.72	0.5	Pass
NVNT	n20	5745	Ant1	17.79	0.5	Pass
NVNT	n20	5785	Ant1	17.55	0.5	Pass
NVNT	n20	5825	Ant1	17.58	0.5	Pass
NVNT	n40	5755	Ant1	36.42	0.5	Pass
NVNT	n40	5795	Ant1	36.3	0.5	Pass

-6dB Bandwidth NVNT a 5745MHz Ant1

Date: 20.OCT.2023 04:45:46

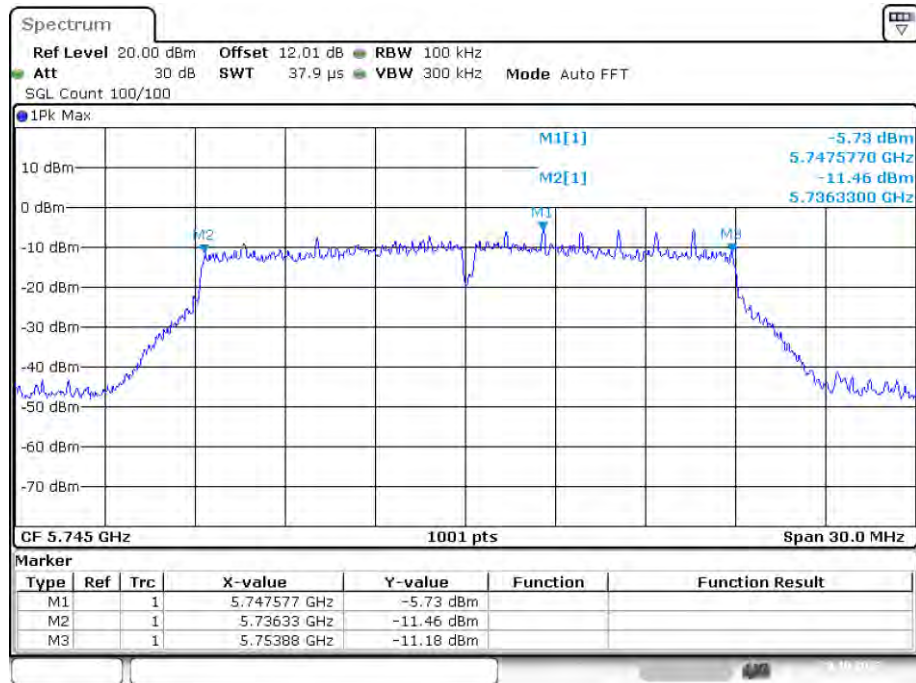
-6dB Bandwidth NVNT a 5785MHz Ant1

Date: 20.OCT.2023 04:49:06

-6dB Bandwidth NVNT a 5825MHz Ant1

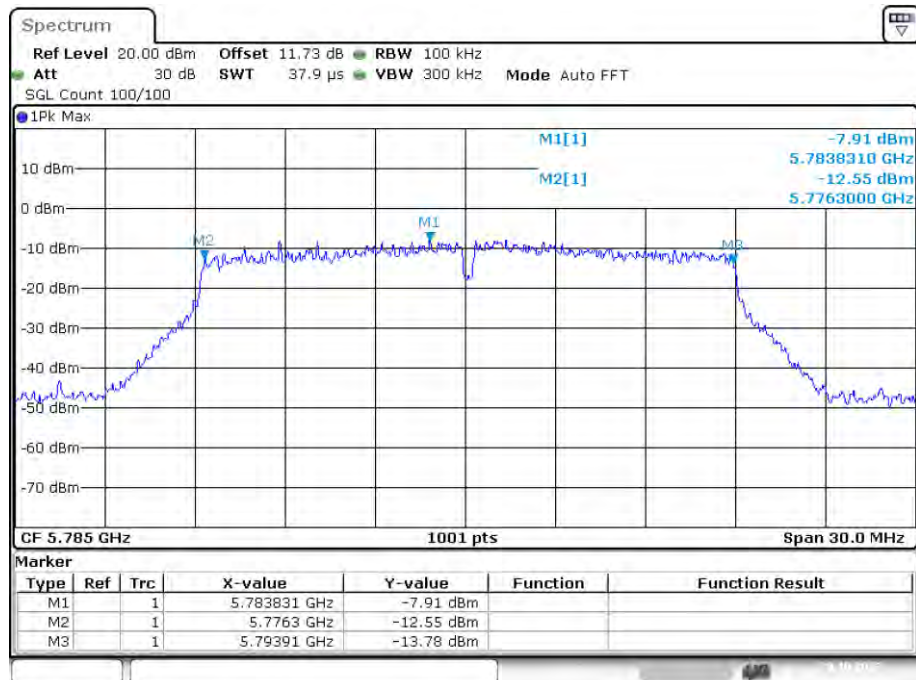
Date: 20.OCT.2023 04:53:19

-6dB Bandwidth NVNT ac20 5745MHz Ant1



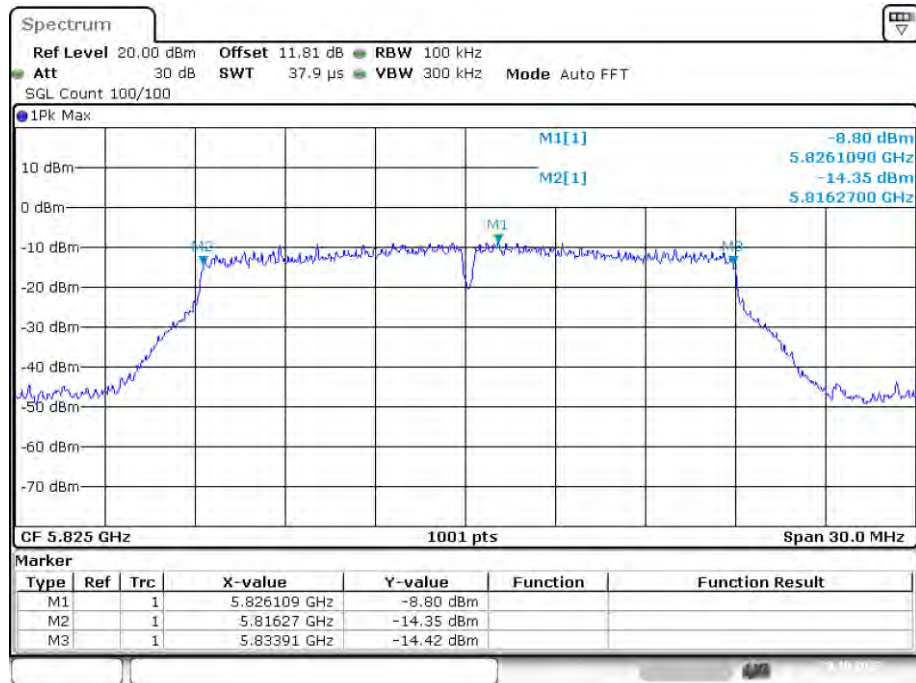
Date: 20.OCT.2023 05:27:15

-6dB Bandwidth NVNT ac20 5785MHz Ant1



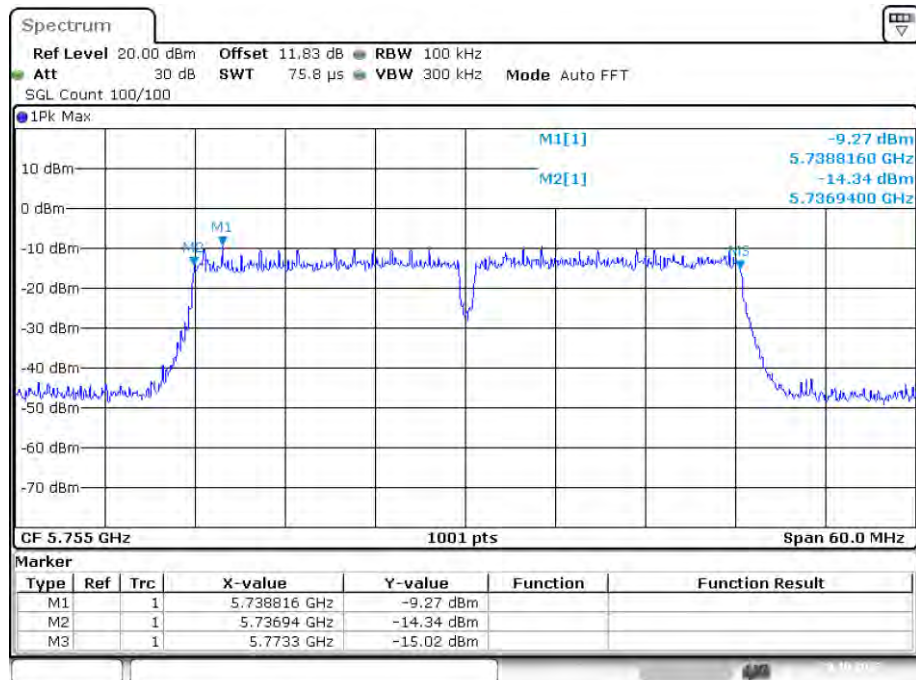
Date: 20.OCT.2023 05:35:07

-6dB Bandwidth NVNT ac20 5825MHz Ant1



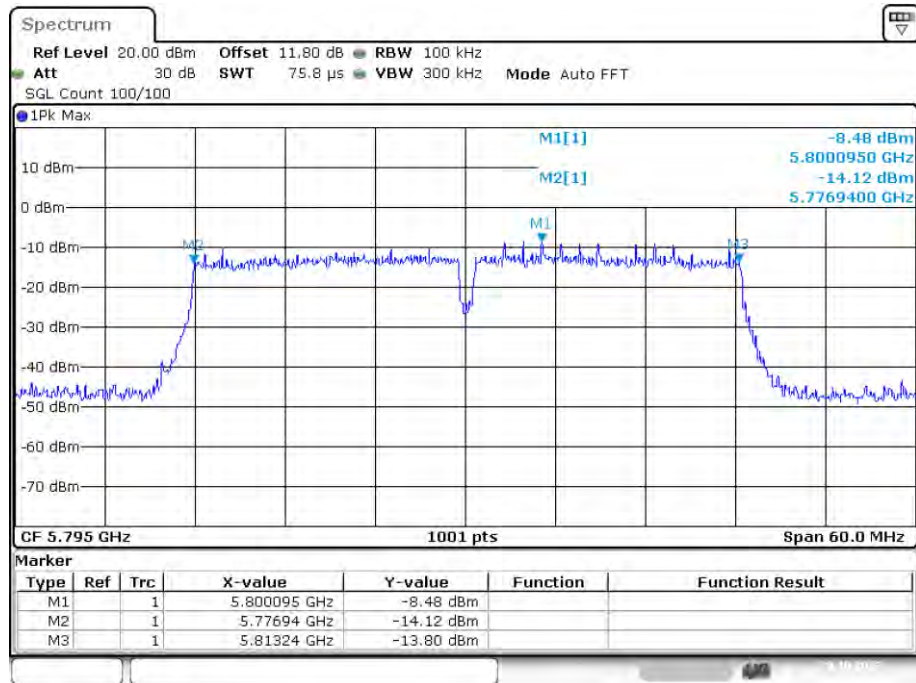
Date: 20.OCT.2023 05:38:58

-6dB Bandwidth NVNT ac40 5755MHz Ant1



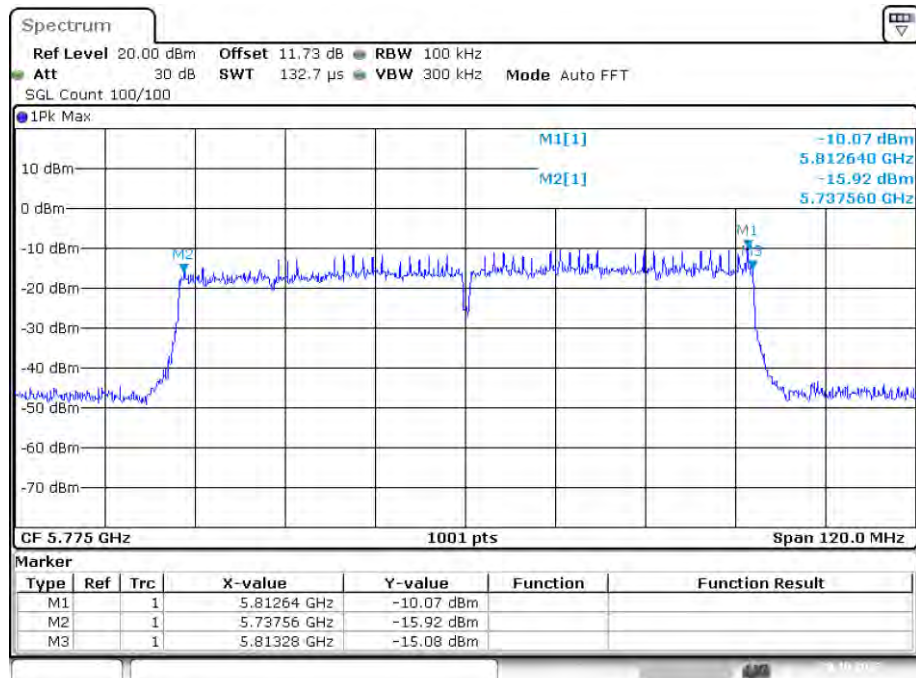
Date: 20.OCT.2023 06:16:53

-6dB Bandwidth NVNT ac40 5795MHz Ant1



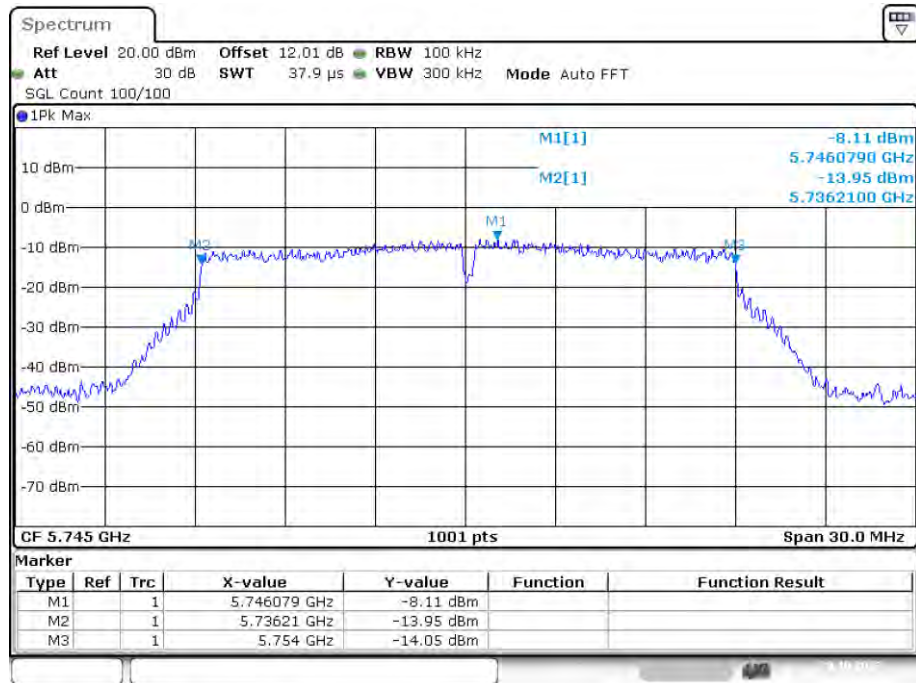
Date: 20.OCT.2023 06:45:18

-6dB Bandwidth NVNT ac80 5775MHz Ant1



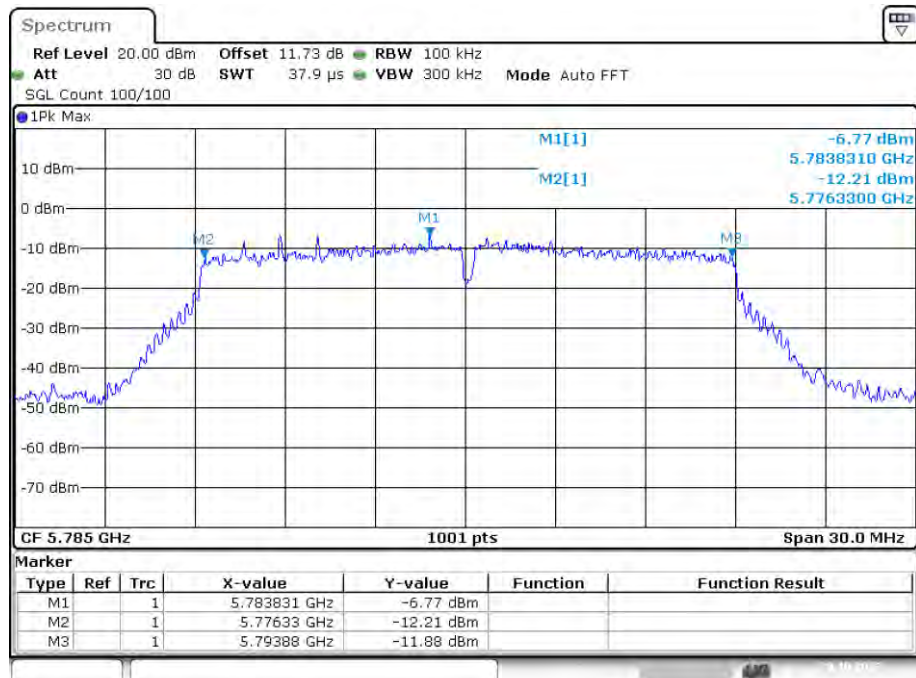
Date: 20.OCT.2023 06:53:19

-6dB Bandwidth NVNT n20 5745MHz Ant1

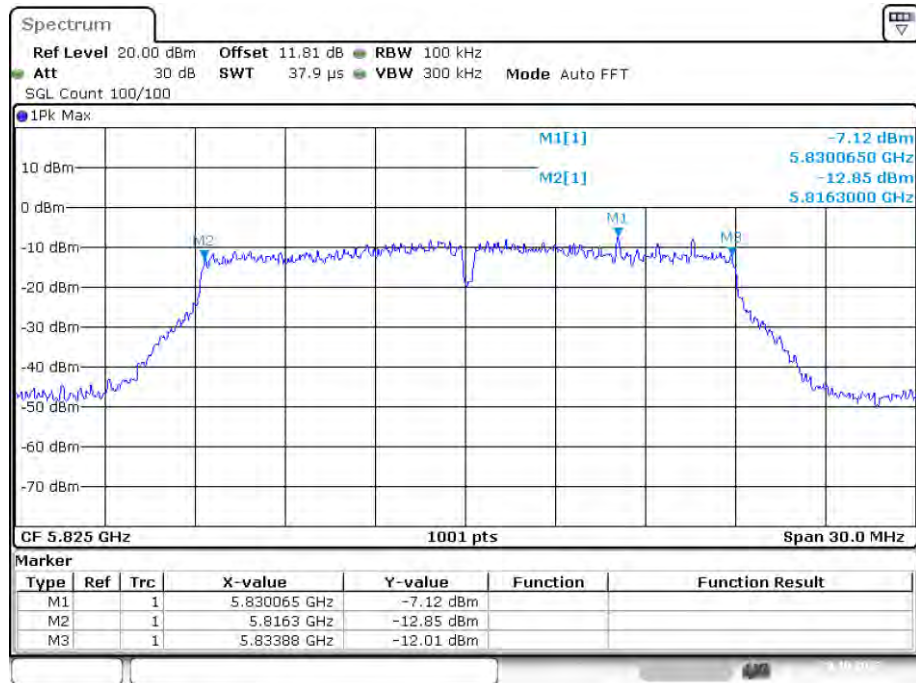


Date: 20.OCT.2023 05:04:54

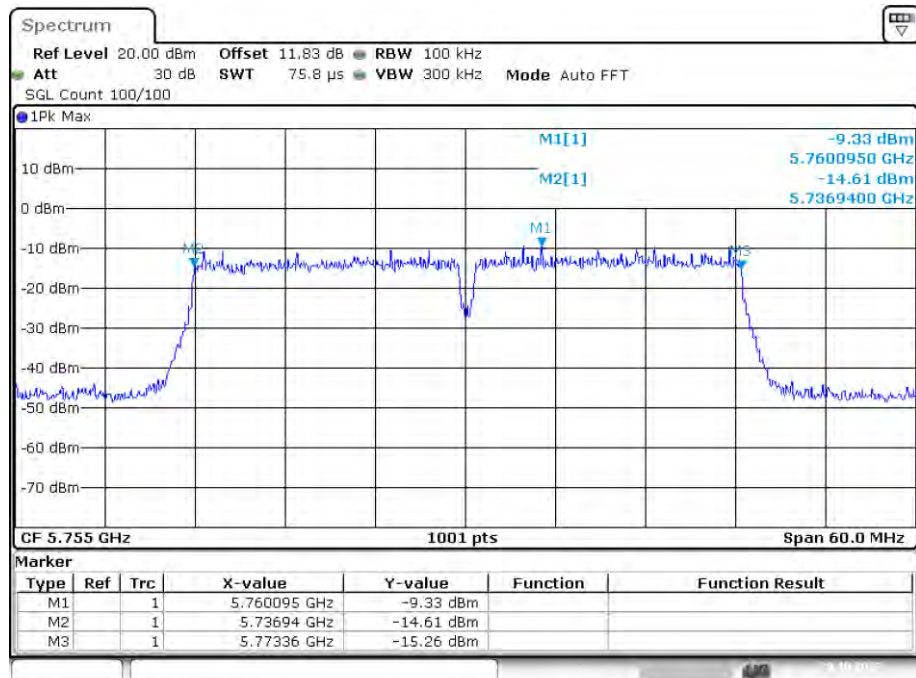
-6dB Bandwidth NVNT n20 5785MHz Ant1



Date: 20.OCT.2023 05:09:15

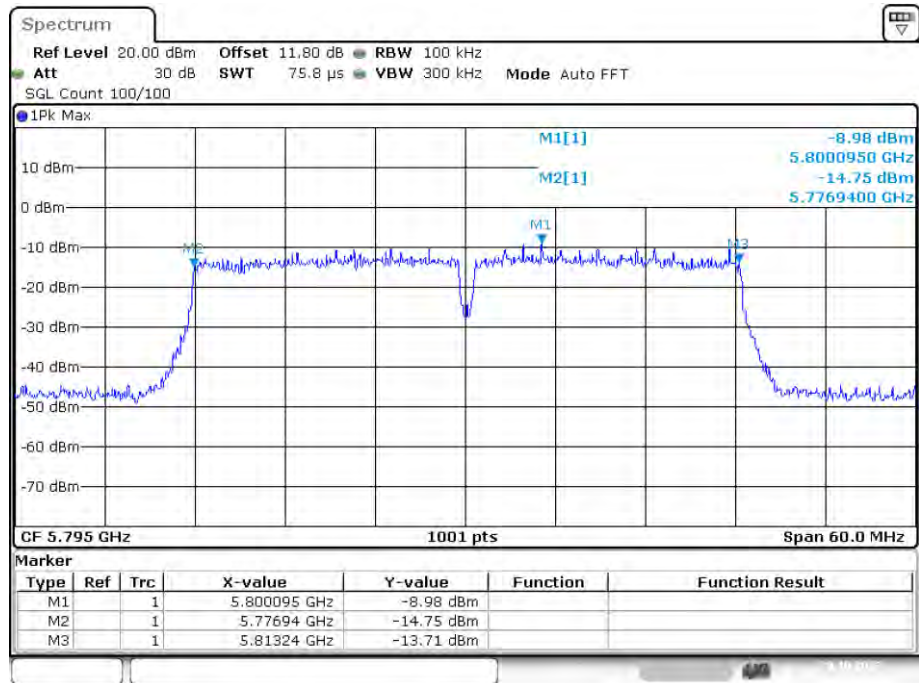
-6dB Bandwidth NVNT n20 5825MHz Ant1

Date: 20.OCT.2023 05:16:43

-6dB Bandwidth NVNT n40 5755MHz Ant1

Date: 20.OCT.2023 05:55:16

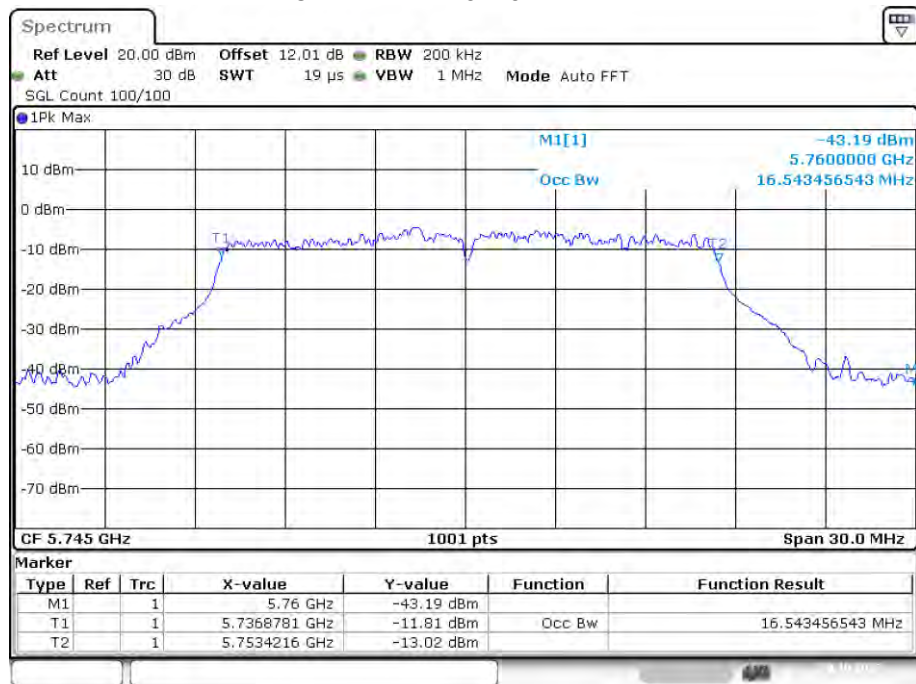
-6dB Bandwidth NVNT n40 5795MHz Ant1



Date: 20.OCT.2023 06:11:23

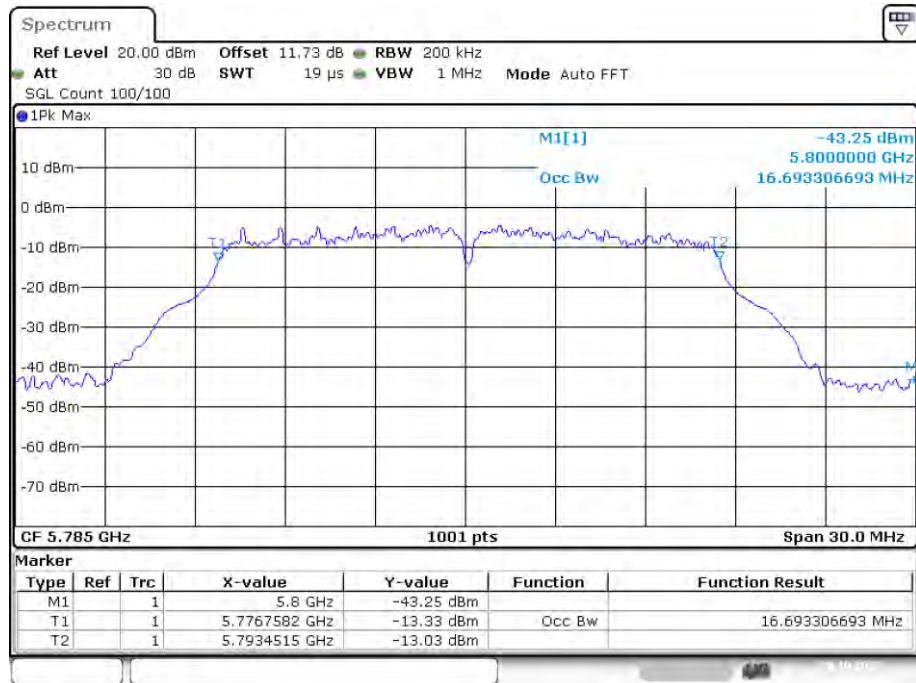
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5745	Ant1	16.543
NVNT	a	5785	Ant1	16.693
NVNT	a	5825	Ant1	16.723
NVNT	ac20	5745	Ant1	17.652
NVNT	ac20	5785	Ant1	17.652
NVNT	ac20	5825	Ant1	17.712
NVNT	ac40	5755	Ant1	36.204
NVNT	ac40	5795	Ant1	36.204
NVNT	ac80	5775	Ant1	76.004
NVNT	n20	5745	Ant1	17.682
NVNT	n20	5785	Ant1	17.682
NVNT	n20	5825	Ant1	17.772
NVNT	n40	5755	Ant1	36.324
NVNT	n40	5795	Ant1	36.264

OBW NVNT a 5745MHz Ant1

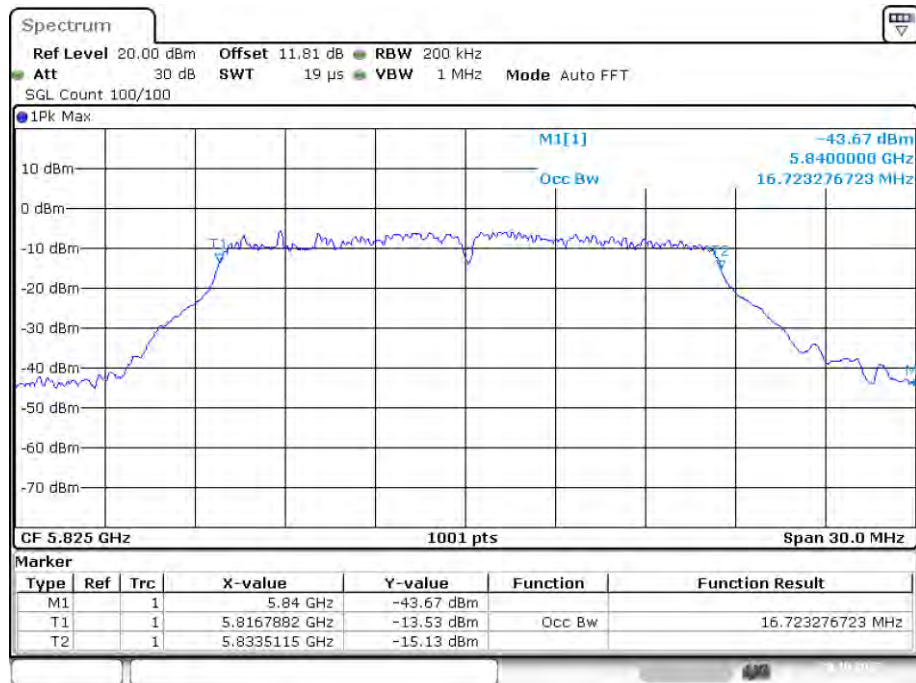


Date: 20.OCT.2023 04:45:37

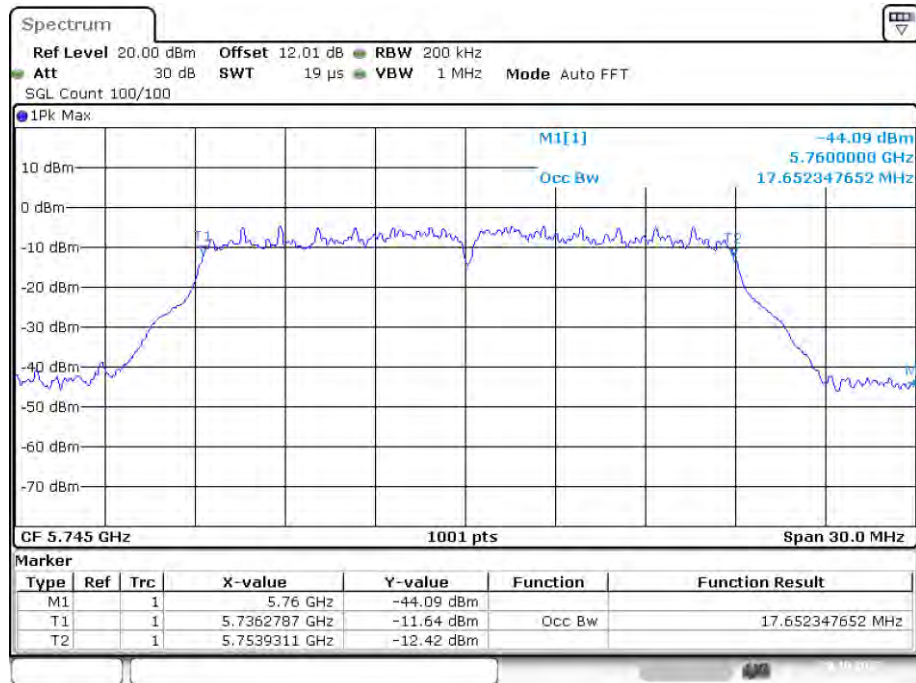
OBW NVNT a 5785MHz Ant1



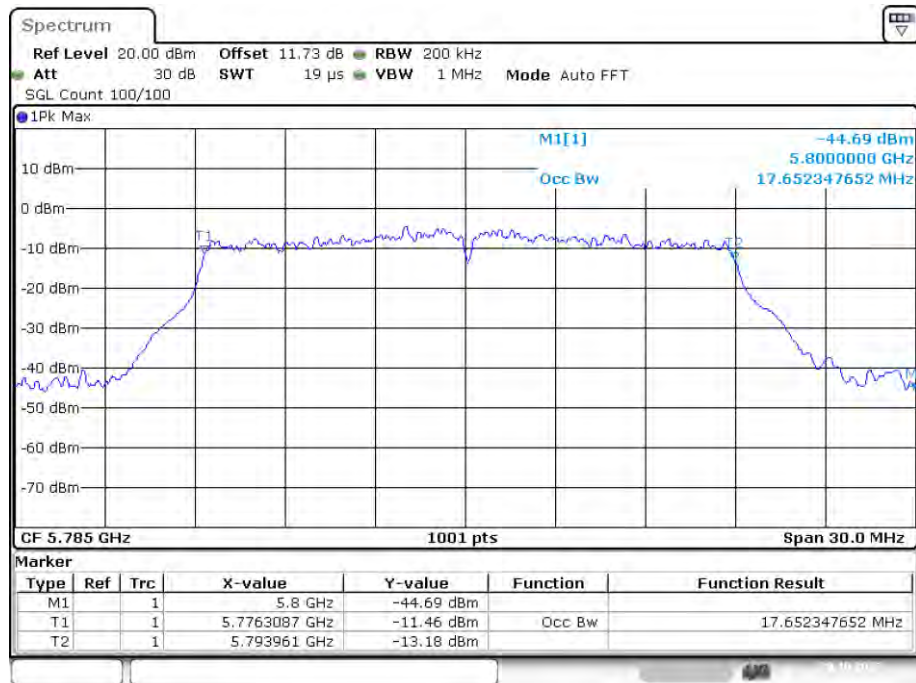
OBW NVNT a 5825MHz Ant1



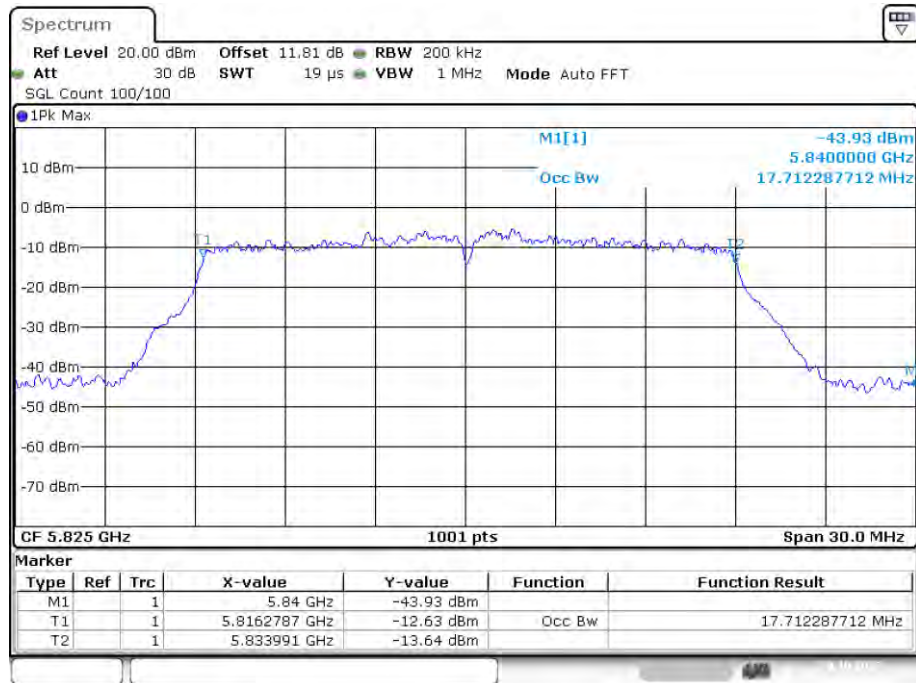
OBW NVNT ac20 5745MHz Ant1



OBW NVNT ac20 5785MHz Ant1

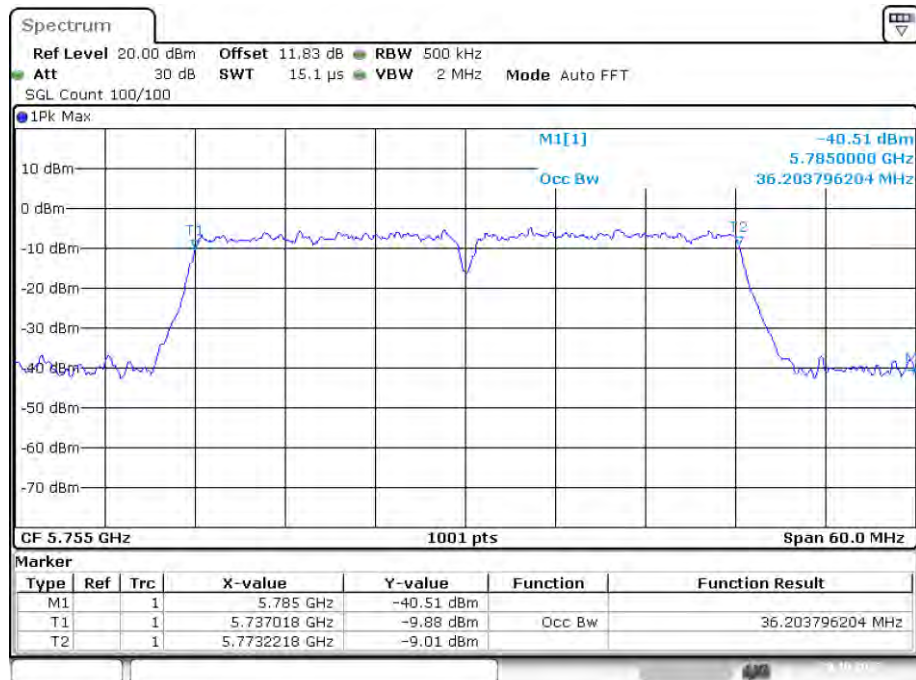


OBW NVNT ac20 5825MHz Ant1



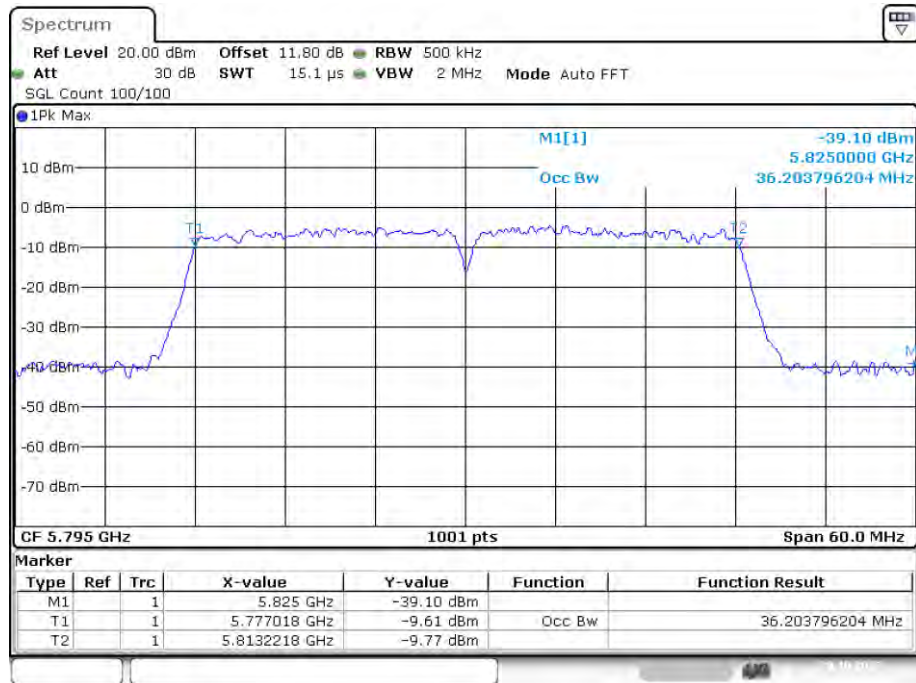
Date: 20.OCT.2023 05:38:39

OBW NVNT ac40 5755MHz Ant1



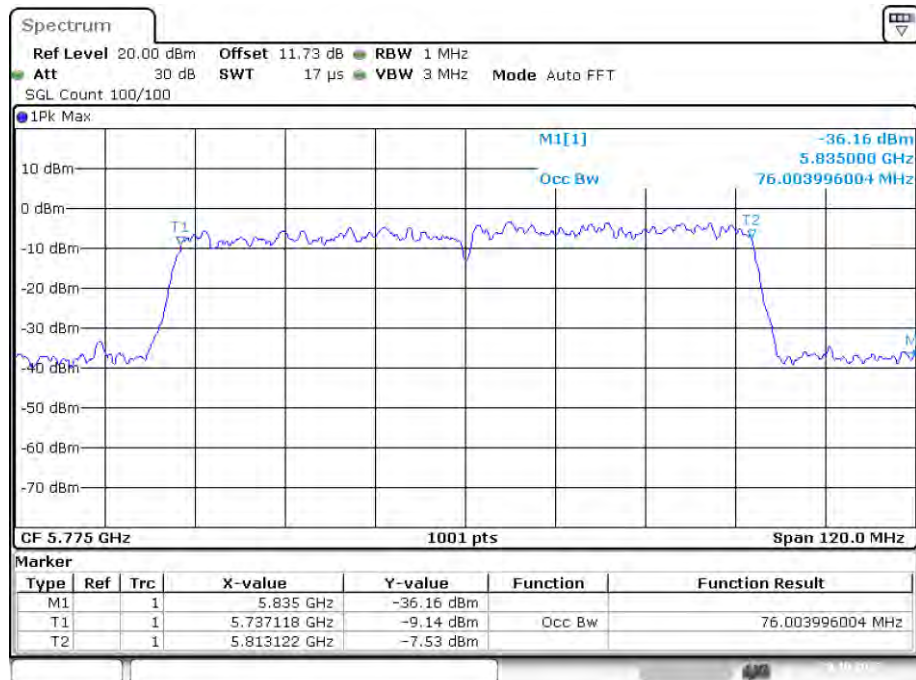
Date: 20.OCT.2023 06:16:34

OBW NVNT ac40 5795MHz Ant1



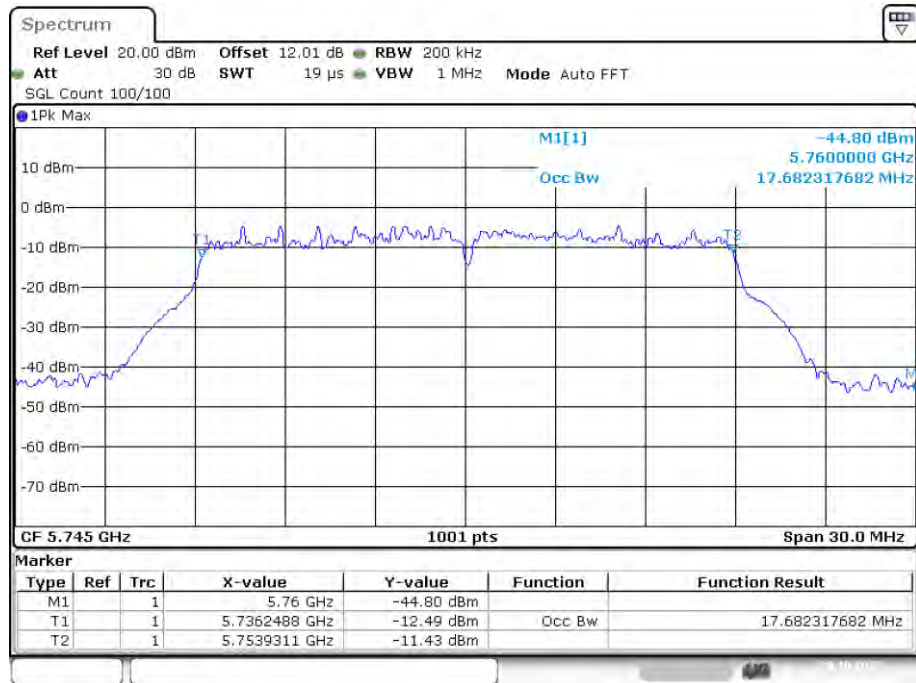
Date: 20.OCT.2023 06:44:57

OBW NVNT ac80 5775MHz Ant1



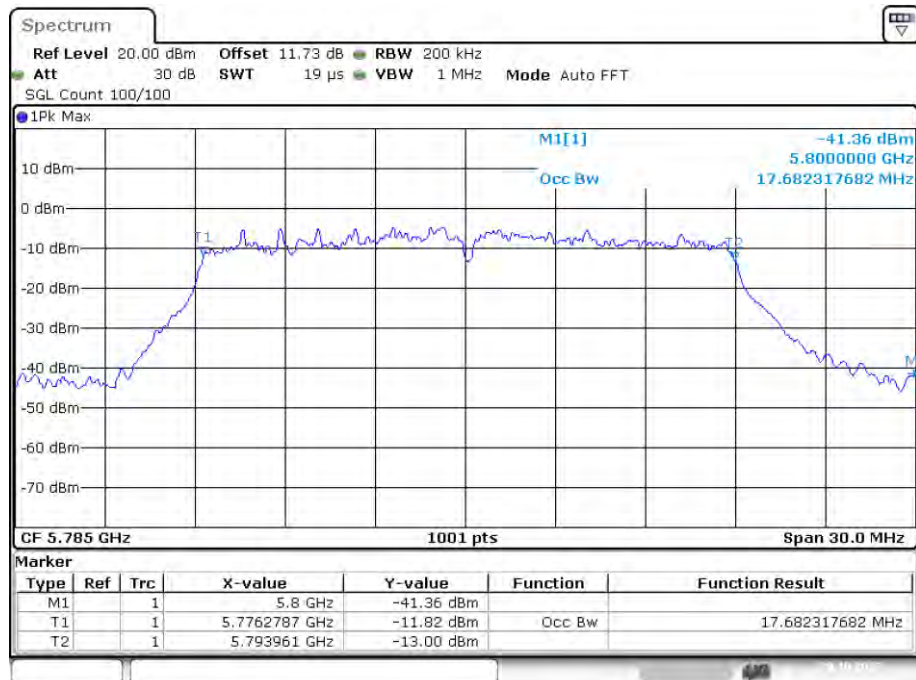
Date: 20.OCT.2023 06:53:08

OBW NVNT n20 5745MHz Ant1



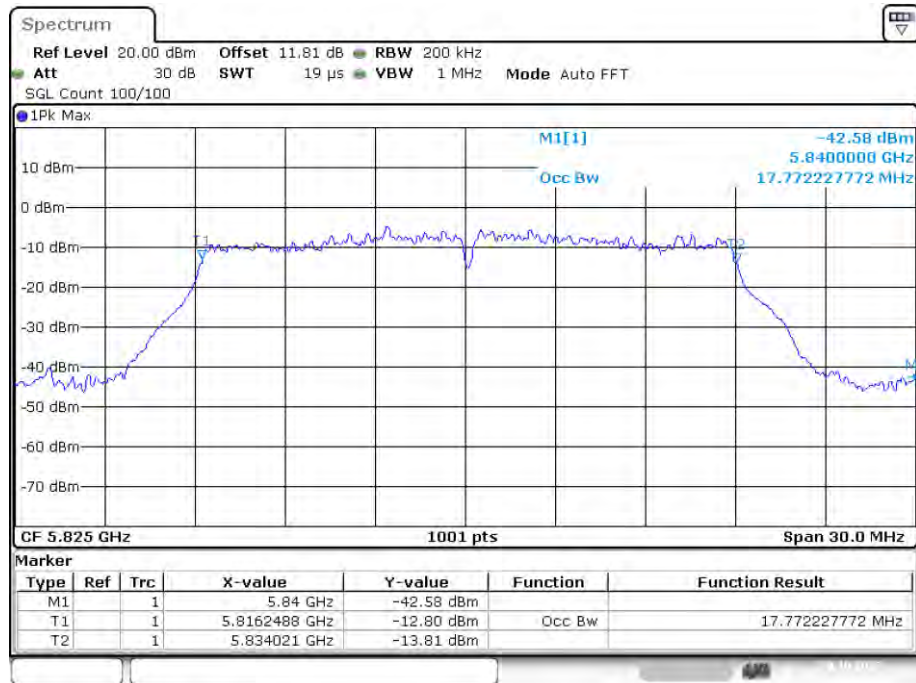
Date: 20.OCT.2023 05:04:41

OBW NVNT n20 5785MHz Ant1



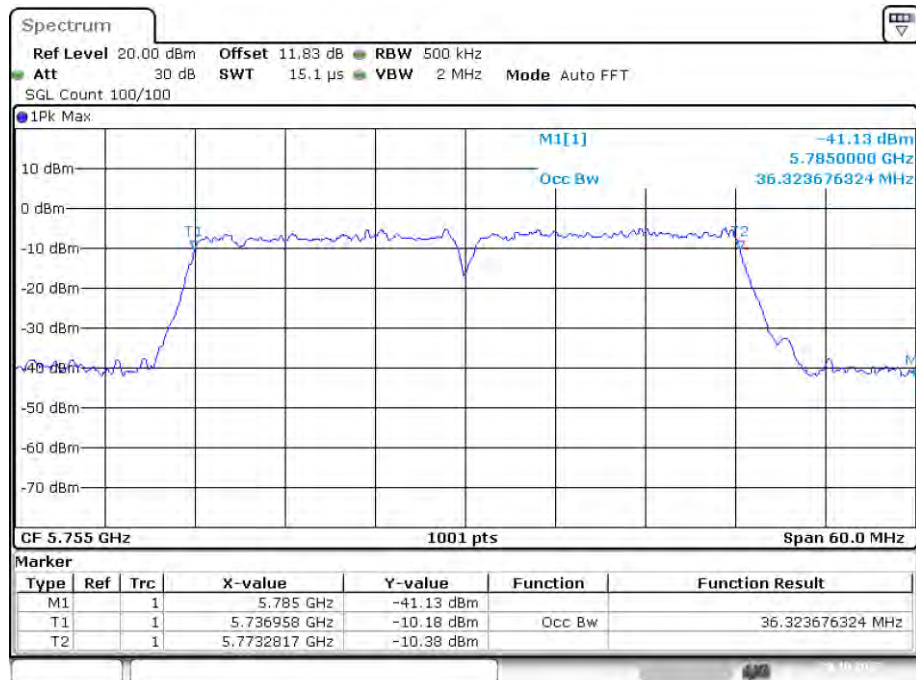
Date: 20.OCT.2023 05:09:02

OBW NVNT n20 5825MHz Ant1



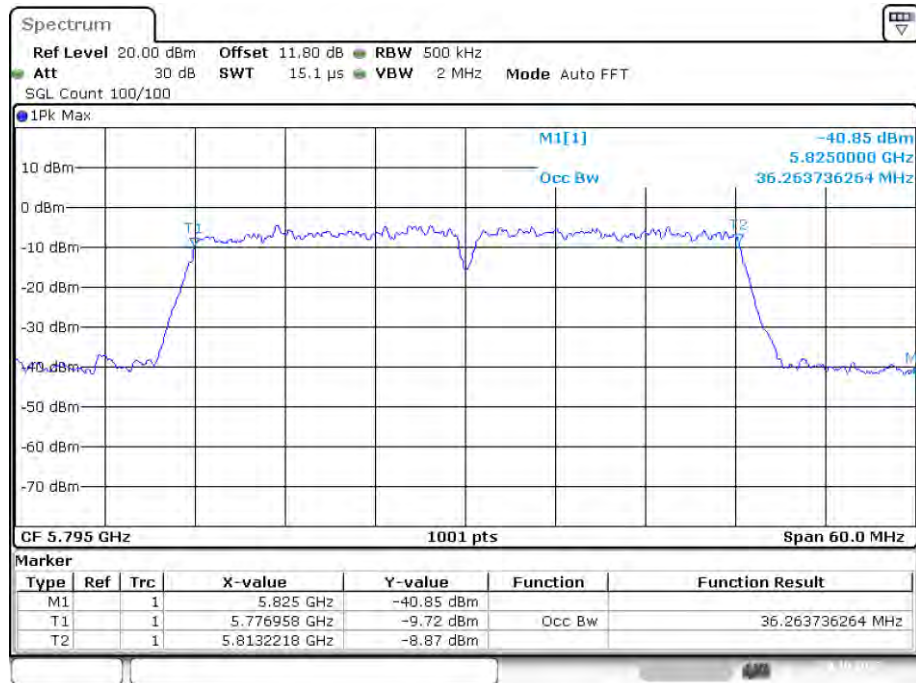
Date: 20.OCT.2023 05:16:28

OBW NVNT n40 5755MHz Ant1



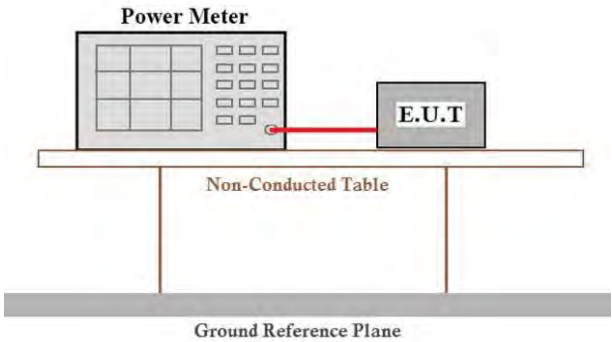
Date: 20.OCT.2023 05:54:50

OBW NVNT n40 5795MHz Ant1



Date: 20.OCT.2023 06:11:05

4.4 Max Transmit Power

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Limit:	For the band 5.15-5.25GHz, 5.25-5.35GHz, 5.47-5.725GHz, the maximum conducted output power over the frequency bands of operation shall not exceed 250mW. For the band 5.725-5.85GHz, the maximum conducted output power over the frequency bands of operation shall not exceed 1W.
Test setup:	 The diagram illustrates the test setup. A 'Power Meter' is connected to an 'E.U.T.' (Equipment Under Test) via a red cable. Both the Power Meter and the E.U.T. are placed on a 'Non-Conducted Table'. This table is supported by a 'Ground Reference Plane'.
Test procedure:	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 conditions listed below are satisfied a) The EUT is configured to transmit continuously or to transmit with a constant duty cycle. b) At all times when the EUT is transmitting, it must be transmitting at its maximum power control level. c) 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 section 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 percent).
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data**Band 1 (5150-5250 MHz)**

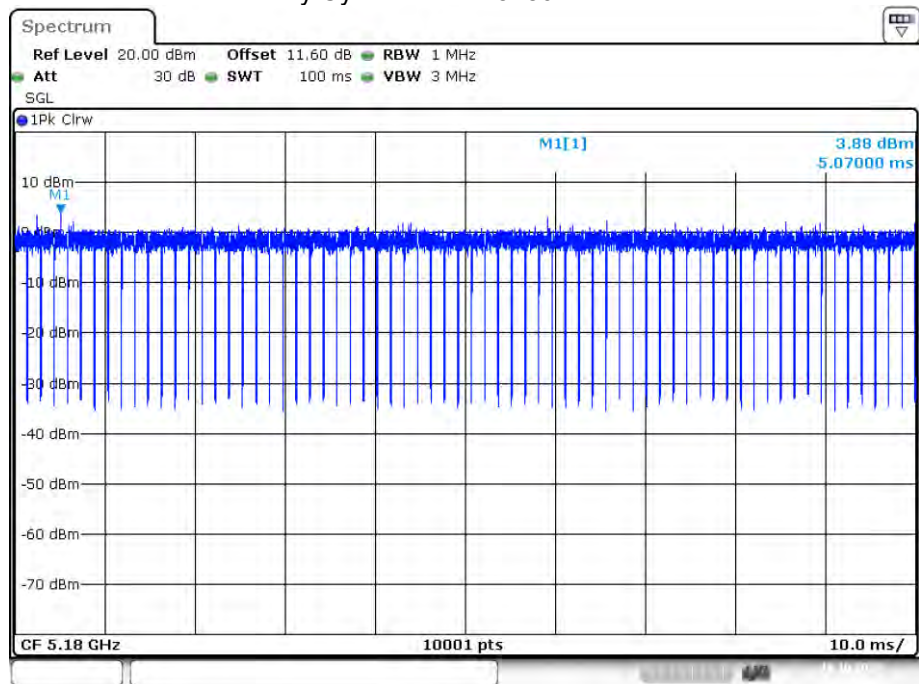
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	13.144	0	13.144	24	Pass
NVNT	a	5200	Ant1	13.711	0	13.711	24	Pass
NVNT	a	5240	Ant1	14.441	0	14.441	24	Pass
NVNT	ac20	5180	Ant1	12.321	0	12.321	24	Pass
NVNT	ac20	5200	Ant1	12.665	0	12.665	24	Pass
NVNT	ac20	5240	Ant1	13.644	0	13.644	24	Pass
NVNT	ac40	5190	Ant1	13.165	0	13.165	24	Pass
NVNT	ac40	5230	Ant1	14.007	0	14.007	24	Pass
NVNT	ac80	5210	Ant1	13.101	0	13.101	24	Pass
NVNT	n20	5180	Ant1	13.065	0	13.065	24	Pass
NVNT	n20	5200	Ant1	13.309	0	13.309	24	Pass
NVNT	n20	5240	Ant1	13.814	0	13.814	24	Pass
NVNT	n40	5190	Ant1	13.795	0	13.795	24	Pass
NVNT	n40	5230	Ant1	14.3	0	14.3	24	Pass

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant2	13.512	0	13.512	24	Pass
NVNT	a	5200	Ant2	13.496	0	13.496	24	Pass
NVNT	a	5240	Ant2	13.395	0	13.395	24	Pass
NVNT	ac20	5180	Ant2	12.682	0	12.682	24	Pass
NVNT	ac20	5200	Ant2	13.184	0	13.184	24	Pass
NVNT	ac20	5240	Ant2	13.239	0	13.239	24	Pass
NVNT	ac40	5190	Ant2	13.619	0	13.619	24	Pass
NVNT	ac40	5230	Ant2	13.779	0	13.779	24	Pass
NVNT	ac80	5210	Ant2	13.506	0	13.506	24	Pass
NVNT	n20	5180	Ant2	13.605	0	13.605	24	Pass
NVNT	n20	5200	Ant2	13.381	0	13.381	24	Pass
NVNT	n20	5240	Ant2	13.296	0	13.296	24	Pass
NVNT	n40	5190	Ant2	13.457	0	13.457	24	Pass
NVNT	n40	5230	Ant2	13.981	0	13.981	24	Pass

Duty Cycle=100%								
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	ac20	5180	MIMO	15.52	0	15.52	24	Pass
NVNT	ac20	5200	MIMO	15.94	0	15.94	24	Pass
NVNT	ac20	5240	MIMO	16.46	0	16.46	24	Pass
NVNT	ac40	5190	MIMO	16.41	0	16.41	24	Pass
NVNT	ac40	5230	MIMO	16.90	0	16.90	24	Pass
NVNT	ac80	5210	MIMO	16.32	0	16.32	24	Pass
NVNT	n20	5180	MIMO	16.35	0	16.35	24	Pass
NVNT	n20	5200	MIMO	16.36	0	16.36	24	Pass
NVNT	n20	5240	MIMO	16.57	0	16.57	24	Pass
NVNT	n40	5190	MIMO	16.64	0	16.64	24	Pass
NVNT	n40	5230	MIMO	17.15	0	17.15	24	Pass

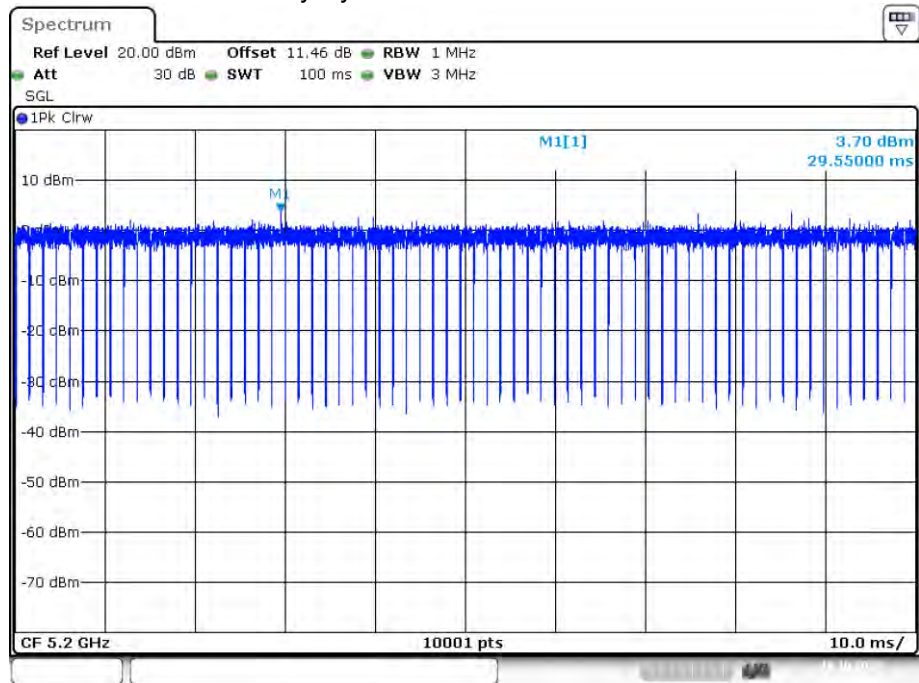
Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)
NVNT	a	5180	Ant1	100
NVNT	a	5200	Ant1	100
NVNT	a	5240	Ant1	100
NVNT	ac20	5180	Ant1	100
NVNT	ac20	5200	Ant1	100
NVNT	ac20	5240	Ant1	100
NVNT	ac40	5190	Ant1	100
NVNT	ac40	5230	Ant1	100
NVNT	ac80	5210	Ant1	100
NVNT	n20	5180	Ant1	100
NVNT	n20	5200	Ant1	100
NVNT	n20	5240	Ant1	100
NVNT	n40	5190	Ant1	100
NVNT	n40	5230	Ant1	100

Duty Cycle NVNT a 5180MHz Ant1

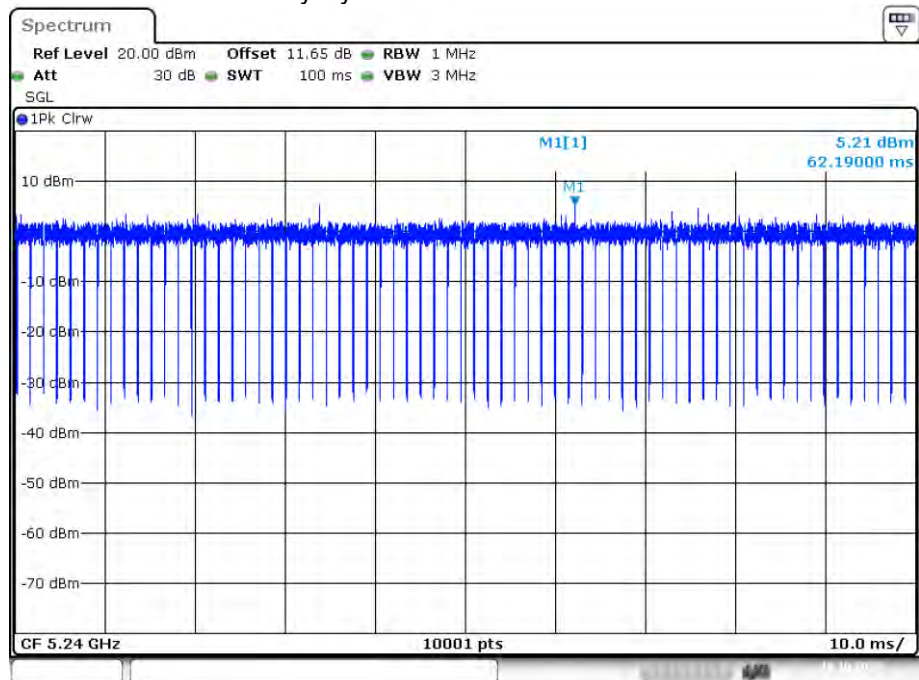
Date: 19.OCT.2023 13:16:29

Duty Cycle NVNT a 5200MHz Ant1



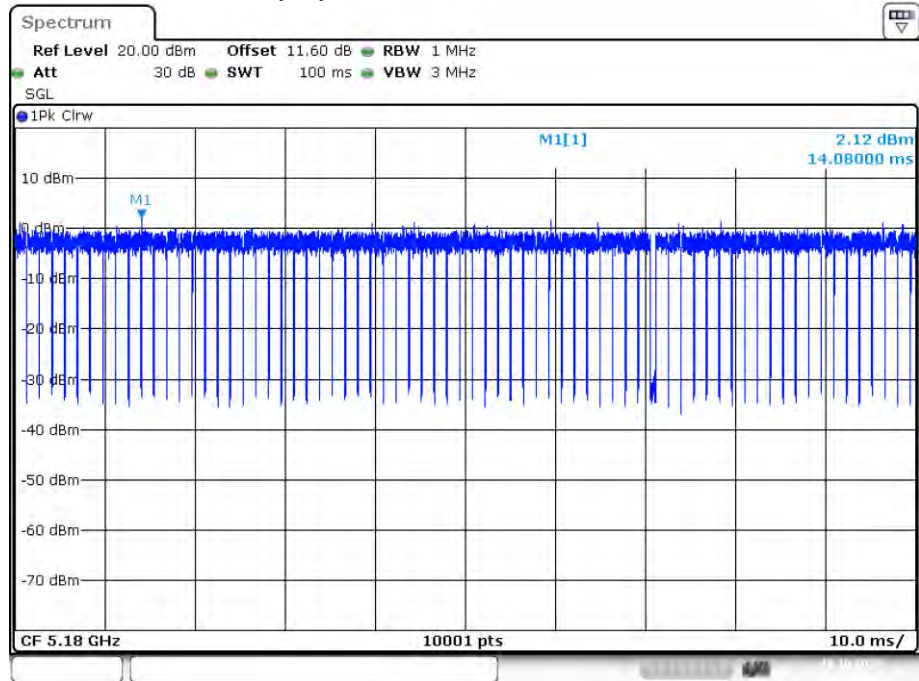
Date: 19.OCT.2023 13:20:26

Duty Cycle NVNT a 5240MHz Ant1



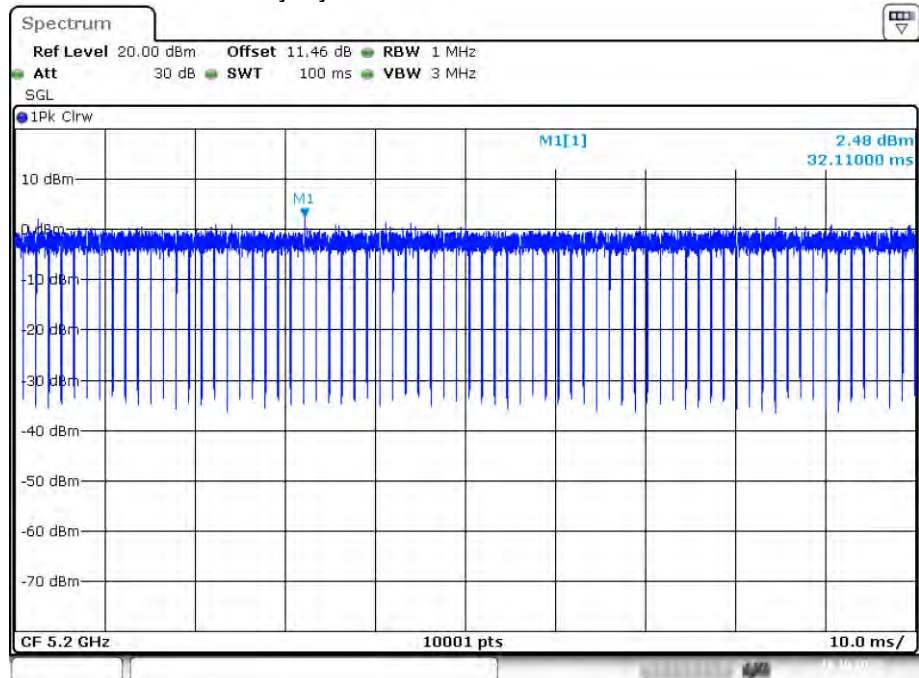
Date: 19.OCT.2023 13:26:30

Duty Cycle NVNT ac20 5180MHz Ant1



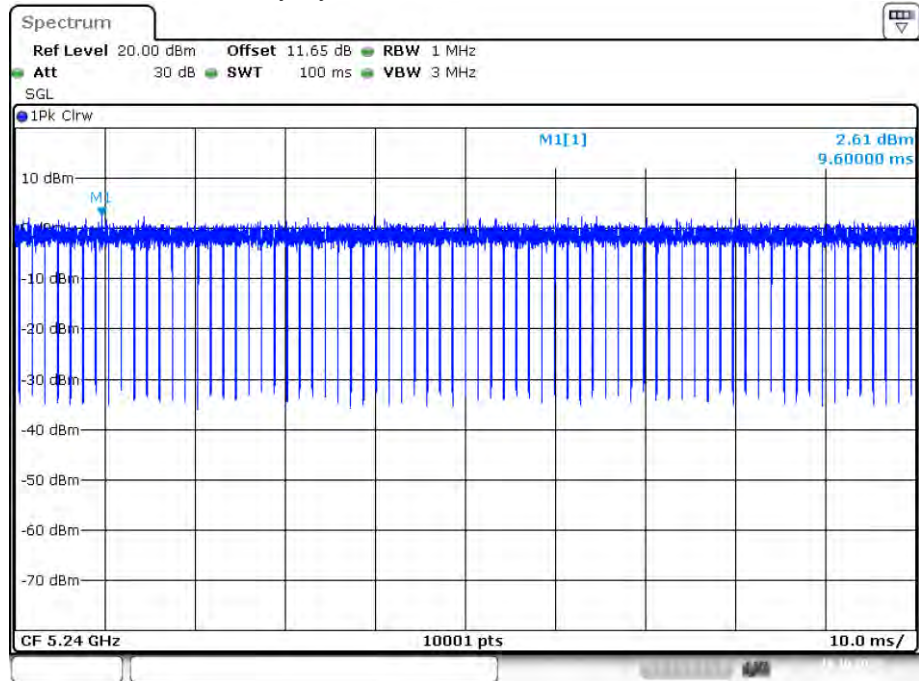
Date: 19.OCT.2023 15:13:23

Duty Cycle NVNT ac20 5200MHz Ant1



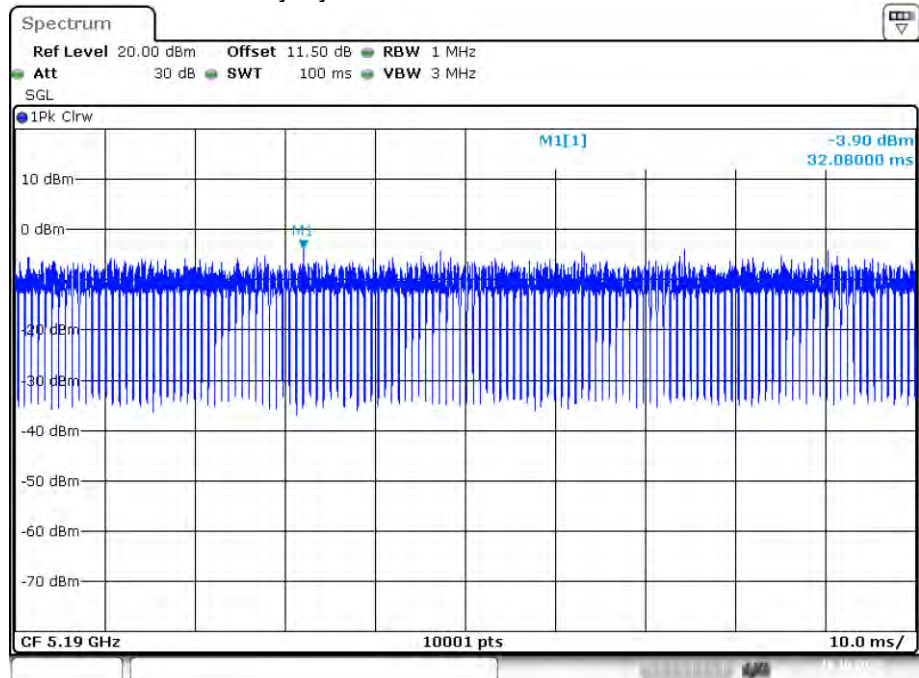
Date: 19.OCT.2023 15:18:08

Duty Cycle NVNT ac20 5240MHz Ant1



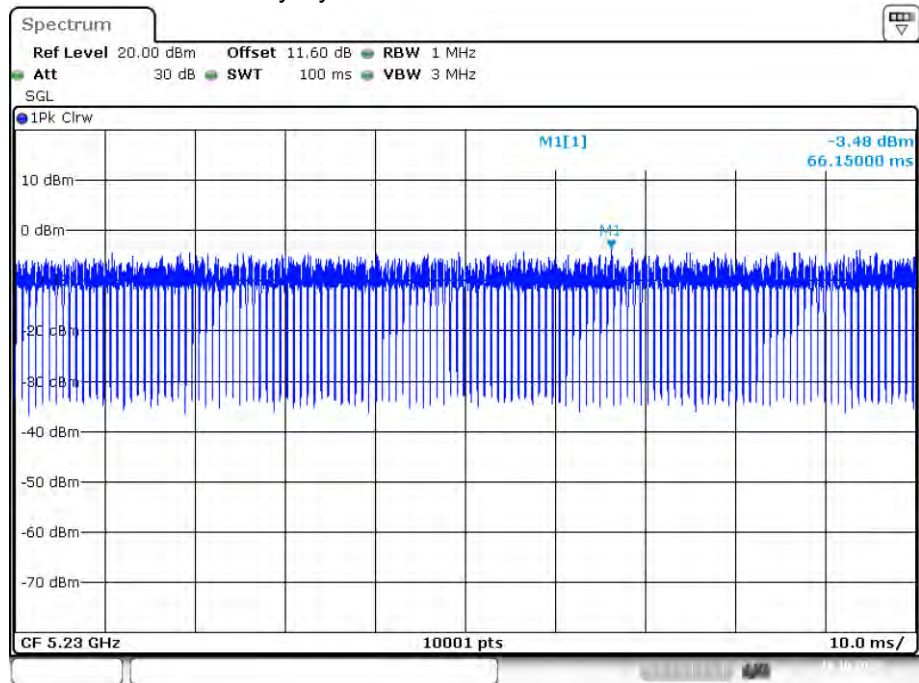
Date: 19.OCT.2023 15:23:22

Duty Cycle NVNT ac40 5190MHz Ant1



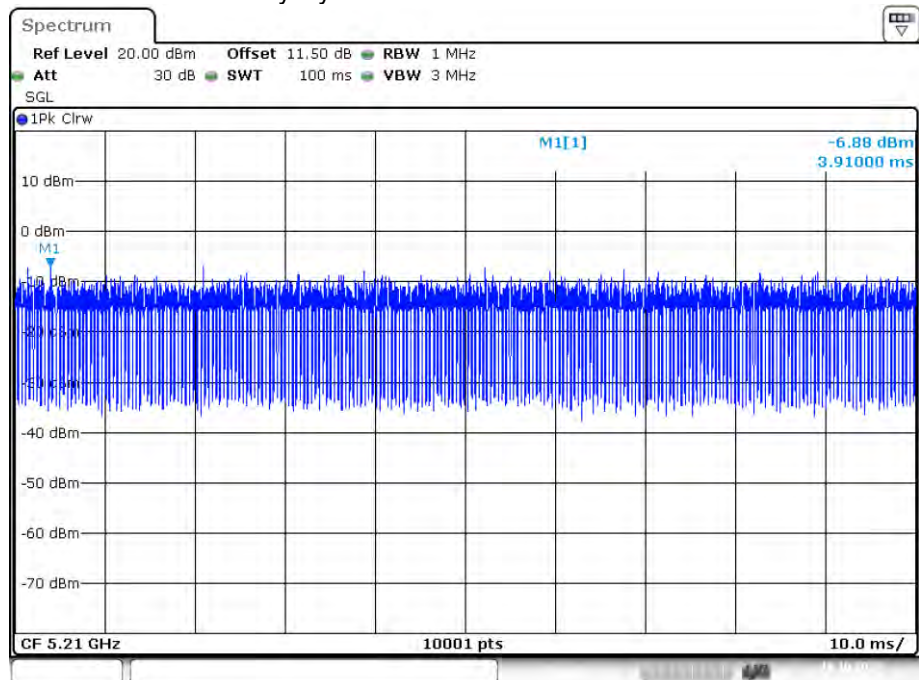
Date: 19.OCT.2023 15:30:49

Duty Cycle NVNT ac40 5230MHz Ant1



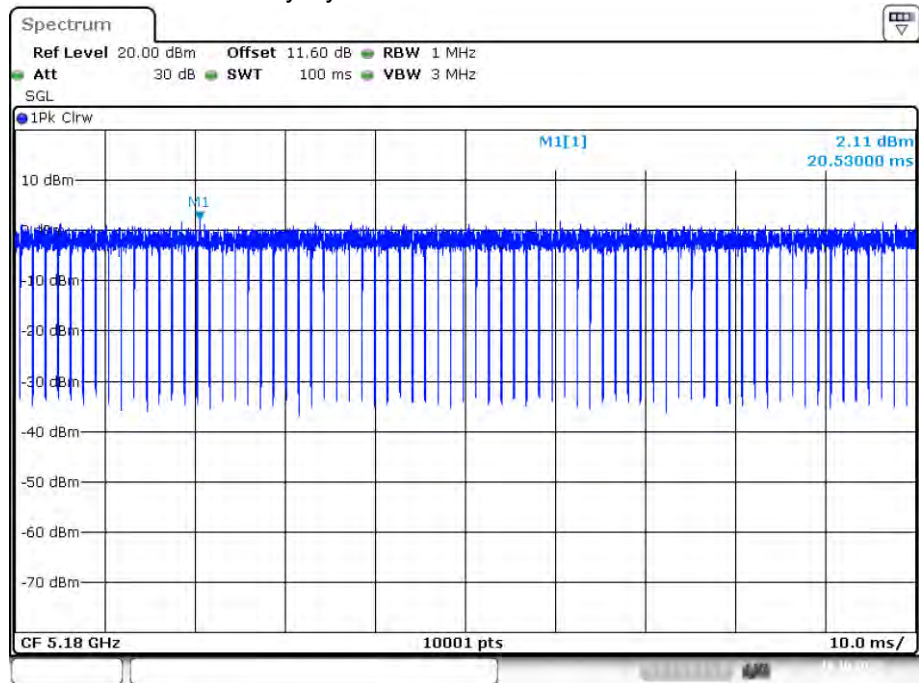
Date: 19.OCT.2023 15:35:41

Duty Cycle NVNT ac80 5210MHz Ant1



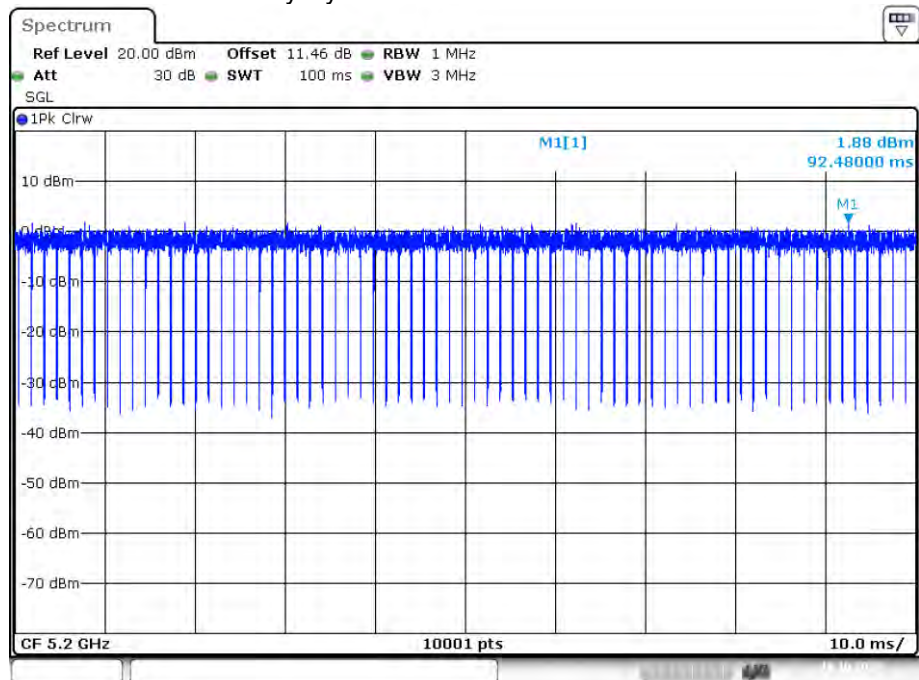
Date: 19.OCT.2023 15:45:57

Duty Cycle NVNT n20 5180MHz Ant1



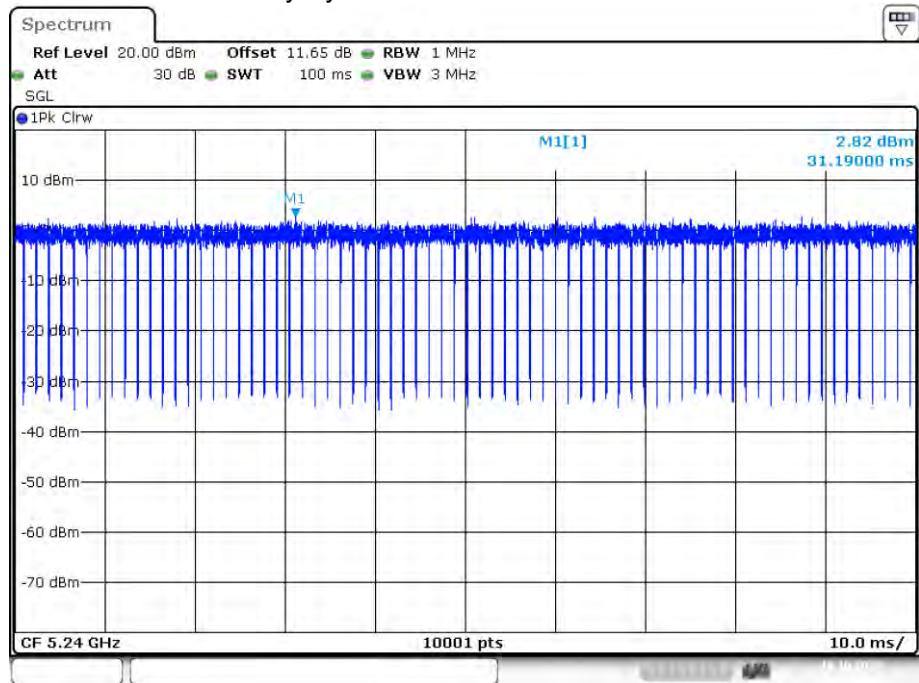
Date: 19.OCT.2023 14:36:34

Duty Cycle NVNT n20 5200MHz Ant1



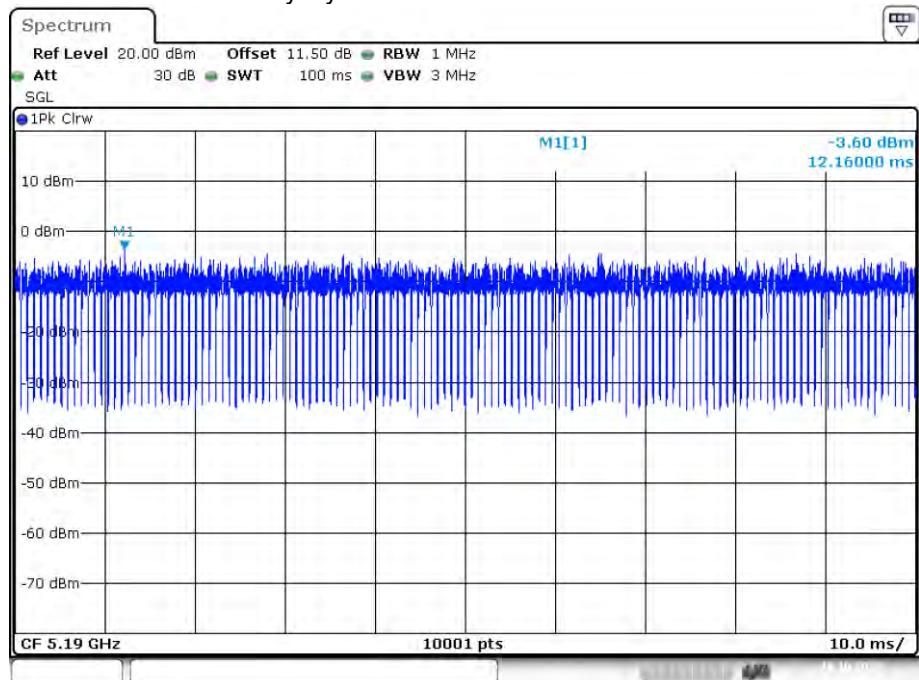
Date: 19.OCT.2023 14:40:41

Duty Cycle NVNT n20 5240MHz Ant1



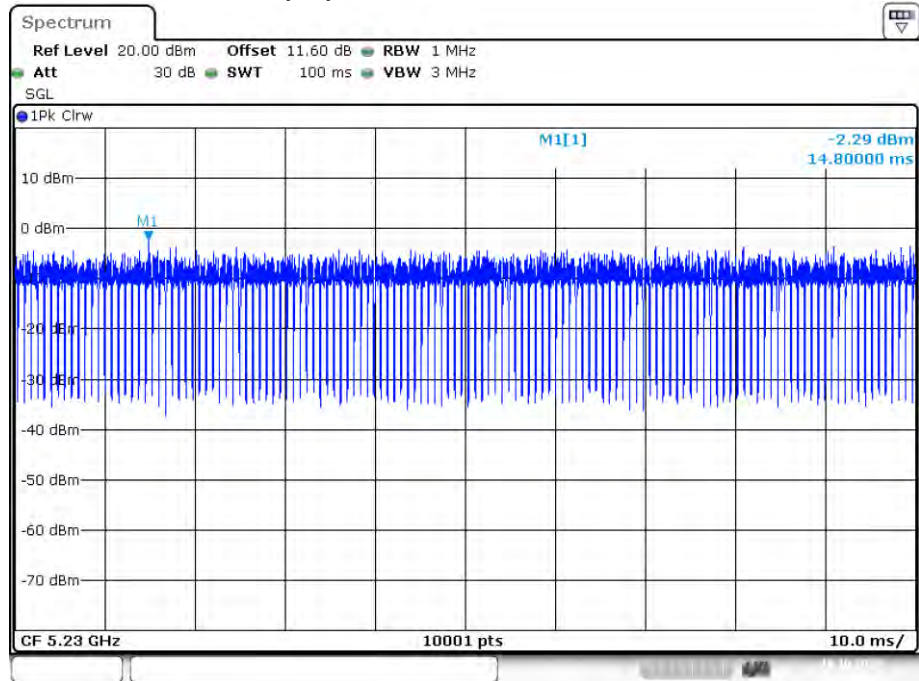
Date: 19.OCT.2023 14:47:37

Duty Cycle NVNT n40 5190MHz Ant1



Date: 19.OCT.2023 15:00:53

Duty Cycle NVNT n40 5230MHz Ant1



Date: 19.OCT.2023 15:06:02

Band 4 (5725-5850 MHz):

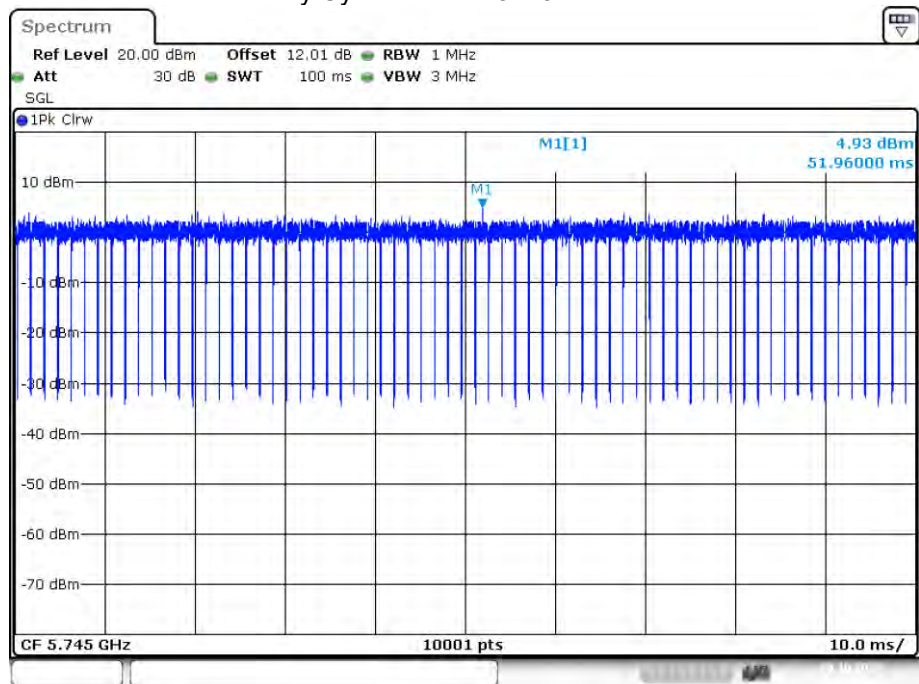
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	15.175	0	15.175	30	Pass
NVNT	a	5785	Ant1	15.129	0	15.129	30	Pass
NVNT	a	5825	Ant1	13.139	0	13.139	30	Pass
NVNT	ac20	5745	Ant1	13.015	0	13.015	30	Pass
NVNT	ac20	5785	Ant1	13.284	0	13.284	30	Pass
NVNT	ac20	5825	Ant1	12.919	0	12.919	30	Pass
NVNT	ac40	5755	Ant1	13.401	0	13.401	30	Pass
NVNT	ac40	5795	Ant1	14.538	0	14.538	30	Pass
NVNT	ac80	5775	Ant1	14.956	0	14.956	30	Pass
NVNT	n20	5745	Ant1	13.72	0	13.72	30	Pass
NVNT	n20	5785	Ant1	13.05	0	13.05	30	Pass
NVNT	n20	5825	Ant1	12.942	0	12.942	30	Pass
NVNT	n40	5755	Ant1	13.442	0	13.442	30	Pass
NVNT	n40	5795	Ant1	13.618	0	13.618	30	Pass

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant2	15.209	0	15.209	30	Pass
NVNT	a	5785	Ant2	15.443	0	15.443	30	Pass
NVNT	a	5825	Ant2	13.651	0	13.651	30	Pass
NVNT	ac20	5745	Ant2	13.294	0	13.294	30	Pass
NVNT	ac20	5785	Ant2	13.691	0	13.691	30	Pass
NVNT	ac20	5825	Ant2	13.216	0	13.216	30	Pass
NVNT	ac40	5755	Ant2	13.219	0	13.219	30	Pass
NVNT	ac40	5795	Ant2	14.513	0	14.513	30	Pass
NVNT	ac80	5775	Ant2	14.449	0	14.449	30	Pass
NVNT	n20	5745	Ant2	13.641	0	13.641	30	Pass
NVNT	n20	5785	Ant2	13.195	0	13.195	30	Pass
NVNT	n20	5825	Ant2	13.294	0	13.294	30	Pass
NVNT	n40	5755	Ant2	13.309	0	13.309	30	Pass
NVNT	n40	5795	Ant2	13.471	0	13.471	30	Pass

Duty Cycle=100%								
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	ac20	5745	MIMO	16.17	0	16.17	30	Pass
NVNT	ac20	5785	MIMO	16.50	0	16.50	30	Pass
NVNT	ac20	5825	MIMO	16.08	0	16.08	30	Pass
NVNT	ac40	5755	MIMO	16.32	0	16.32	30	Pass
NVNT	ac40	5795	MIMO	17.54	0	17.54	30	Pass
NVNT	ac80	5775	MIMO	17.72	0	17.72	30	Pass
NVNT	n20	5745	MIMO	16.69	0	16.69	30	Pass
NVNT	n20	5785	MIMO	16.13	0	16.13	30	Pass
NVNT	n20	5825	MIMO	16.13	0	16.13	30	Pass
NVNT	n40	5755	MIMO	16.39	0	16.39	30	Pass
NVNT	n40	5795	MIMO	16.56	0	16.56	30	Pass

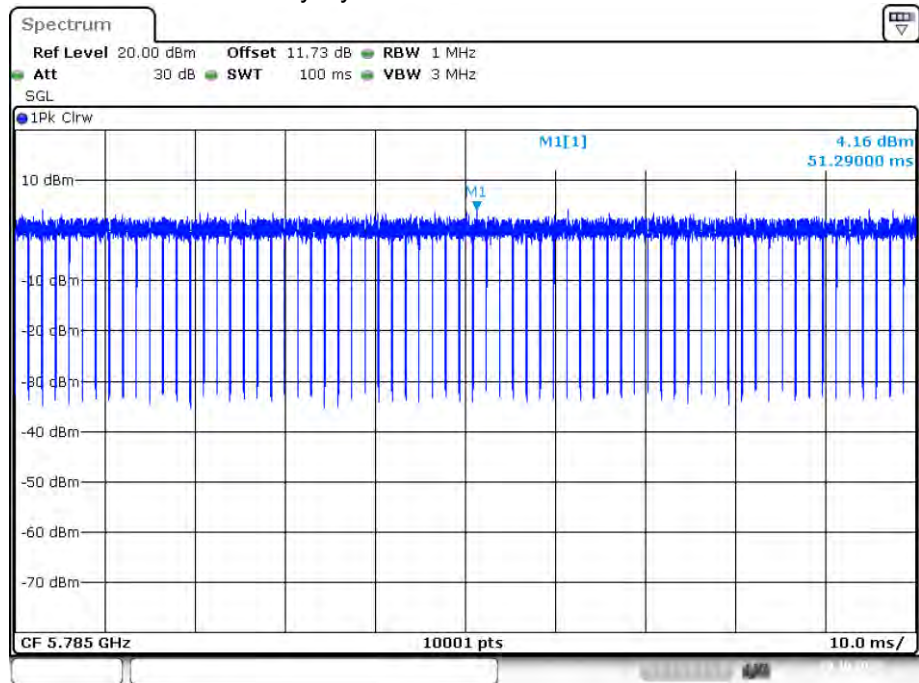
Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)
NVNT	a	5745	Ant1	100
NVNT	a	5785	Ant1	100
NVNT	a	5825	Ant1	100
NVNT	ac20	5745	Ant1	100
NVNT	ac20	5785	Ant1	100
NVNT	ac20	5825	Ant1	100
NVNT	ac40	5755	Ant1	100
NVNT	ac40	5795	Ant1	100
NVNT	ac80	5775	Ant1	100
NVNT	n20	5745	Ant1	100
NVNT	n20	5785	Ant1	100
NVNT	n20	5825	Ant1	100
NVNT	n40	5755	Ant1	100
NVNT	n40	5795	Ant1	100

Duty Cycle NVNT a 5745MHz Ant1

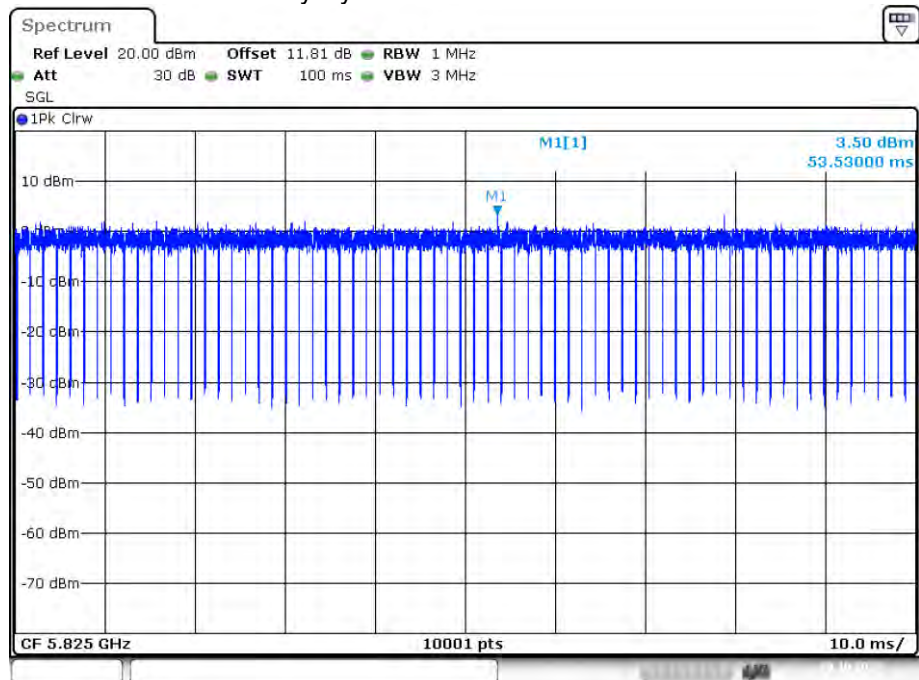
Date: 20.OCT.2023 04:45:12

Duty Cycle NVNT a 5785MHz Ant1



Date: 20.OCT.2023 04:48:29

Duty Cycle NVNT a 5825MHz Ant1



Date: 20.OCT.2023 04:52:39