



FCC TEST REPORT

FCC ID: XUJOCP349P702

On Behalf of

Launch Tech Co., Ltd.

Professional Diagnostic Tool

Model No.: Creader Professional 919S(359), Creader Professional 919X 2.0, Creader Professional 919E 2.0, Creader Professional 919I 2.0, Creader Professional 919 EV, Millennium Max, Creader Professional 919y 2.0 (y=A~Z, indicate configuration difference)

Prepared for : Launch Tech Co., Ltd.
Address : Launch Industrial Park, North of Wuhe Rd. Banxuegang, Longgang, 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 : A2403109-C01-R14
Date of Receipt : July 09, 2024
Date of Test : July 09, 2024 - July 26, 2024
Date of Report : July 26, 2024
Version Number : V0
Test Result : Pass

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TEST REPORT DECLARATION

Applicant : Launch Tech Co., Ltd.
Address : Launch Industrial Park, North of Wuhe Rd. Banxuegang, Longgang, Shenzhen, China
Manufacturer : Launch Tech Co., Ltd.
Address : Launch Industrial Park, North of Wuhe Rd. Banxuegang, Longgang, Shenzhen, China
EUT Description : Professional Diagnostic Tool
(A) Model No. : Creader Professional 919S(359), Creader Professional 919X 2.0, Creader Professional 919E 2.0, Creader Professional 919I 2.0, Creader Professional 919 EV, Millennium Max, Creader Professional 919y 2.0 (y=A~Z, indicate configuration difference)
(B) Trademark : **LAUNCH**

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart E

RSS-247 Issue 3, RSS-Gen Issue 5, ANSI C63.10:2013, CISPR 16-1-4:2010

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).....:

Yannis Wen
Project Engineer


.....

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

Jack Xu
Project Manager


.....

Date of issue.....:

July 26, 2024

Revision History

Revision	Issue Date	Revisions	Revised By
V0	July 26, 2024	Initial released Issue	Yannis Wen

1 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	Section 15.203 Section 7.1.4	PASS
AC Power Line Conducted Emission	Section 15.207 Section 7.2.4	PASS
Emission Bandwidth and 99% Occupied Bandwidth	FCC Part15 E Section 15.407, RSS-Gen Issue 5	PASS
Peak Transmit Power	Section 15.407(a)	PASS
Power Spectral Density	Section 15.407(a)	PASS
Undesirable Emission	Section 15.407(b)	PASS
Radiated Emission	Section 15.407(b)&15.209 Section 5.5	PASS
Band Edge	15.205	PASS
Frequency Stability	15.407(f)	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 (18GHz to 40GHz)	4.31 dB(Polarize: V)
	4.30 dB(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	: Professional Diagnostic Tool
Model No.	: Creader Professional 919S(359), Creader Professional 919X 2.0, Creader Professional 919E 2.0, Creader Professional 919I 2.0, Creader Professional 919 EV, Millennium Max, Creader Professional 919y 2.0 (y=A~Z, indicate configuration difference)
DIFF.	: The products of the above models are the same except for the color of shell or rubber sleeves and the model name. All the test were performed on the model Creader Professional 919S(359).
Power supply	: DC 3.7V by battery, DC 5V from adapter
Radio Technology	: 5G WIFI
Operation Frequency	: 802.11a/n(HT20)/ac(HT20): 5180~5240MHz; 5745~5825MHz 802.11n(HT40)/ac(HT40): 5190~5230MHz; 5755~5795MHz 802.11ac(HT80): 5210MHz, 5775MHz
Channel separation	: 20MHz for 802.11a/ 802.11ac20/ 802.11n(HT20) 40MHz for 802.11ac40/ 802.11n(HT40) 80MHz for 802.11ac80
Modulation technology:	: IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (64QAM, 16QAM, QPSK, BPSK) FPC antenna
Antenna Type	: For 5150~5250MHz: 5.15dBi; For 5725~5875MHz: 5.53dBi (Antenna information is provided by applicant.)
Software version	: V100
Hardware version	: V1
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 15, 2019 Certificated by IC
Registration Number: 12135A

2.4 Description of Support Units

Accessories : SWITCHING POWER SUPPLY
Manufacturer : SHENZHEN PENGSHENGYE ELECTRONIC CO.,LTD
Model : PSY0502000 18
INPUT : 100-240V~50/60Hz 0.6A Max
OUTPUT : 5.0V=2.0A

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

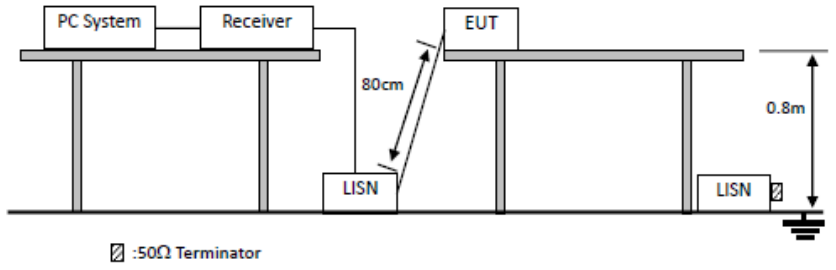
Software Information			
Test Item	Software Name	Manufacturer	Version
RE	EZ-EMC	EZ	Alpha-3A1
CE	EZ-EMC	EZ	Alpha-3A1
RF-CE	MTS 8310	MW	V2.0.0.0

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 FPC antenna. The best case gain of the antenna is 5.53dBi for 5.15~5.25GHz, 5.725~5.85GHz	

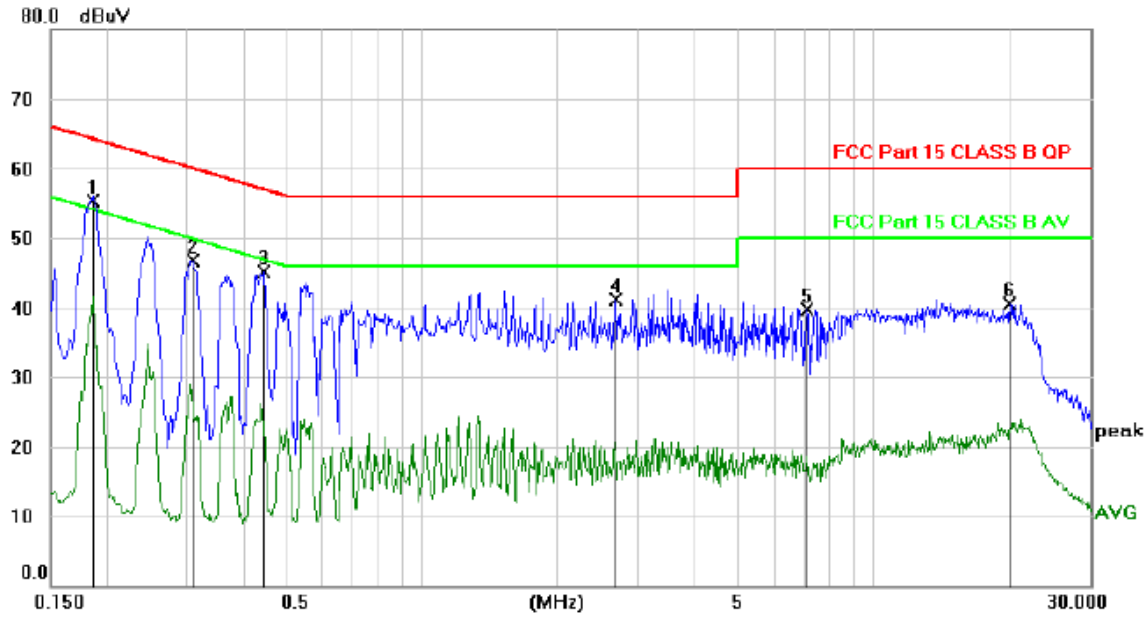
4.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207		
Test Method:	ANSI C63.10:2013		
Test Frequency Range:	150KHz to 30MHz		
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:	 Diagram illustrating the test setup for conducted emissions. The setup includes a PC System, Receiver, EUT (Equipment Under Test), and LISN (Line Impedance Stabilization Network). The distance between the Receiver and the EUT is 80cm. The height of the EUT is 0.8m. A 50Ω Terminator is connected to the LISN.		
Test Instruments:	Refer to section 3 for details		
Test mode:	Refer to section 2.2 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:

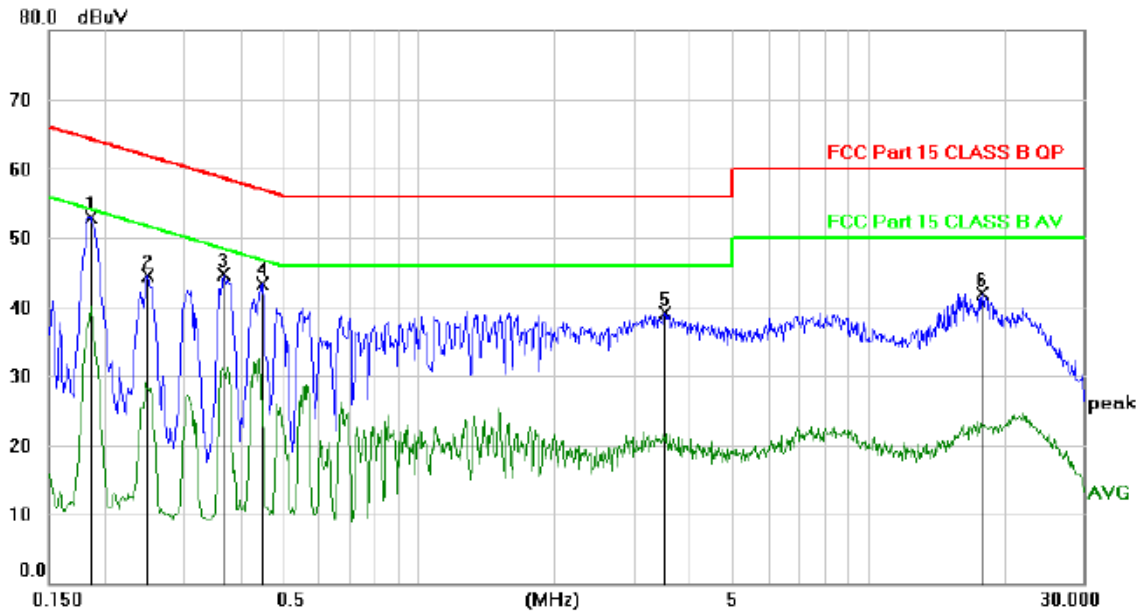


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1859	45.36	9.92	55.28	64.22	-8.94	QP	
2		0.3089	36.83	9.93	46.76	60.00	-13.24	peak	
3		0.4440	35.11	9.95	45.06	56.99	-11.93	peak	
4		2.6669	31.13	9.92	41.05	56.00	-14.95	peak	
5		7.0800	29.62	10.12	39.74	60.00	-20.26	peak	
6		19.8475	30.00	10.47	40.47	60.00	-19.53	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	*	0.1859	43.06	9.92	52.98	64.22	-11.24	peak	
2		0.2489	34.44	9.97	44.41	61.79	-17.38	peak	
3		0.3689	34.78	9.95	44.73	58.53	-13.80	peak	
4		0.4470	33.34	9.95	43.29	56.93	-13.64	peak	
5		3.5249	29.23	9.96	39.19	56.00	-16.81	peak	
6		17.9130	31.59	10.41	42.00	60.00	-18.00	peak	

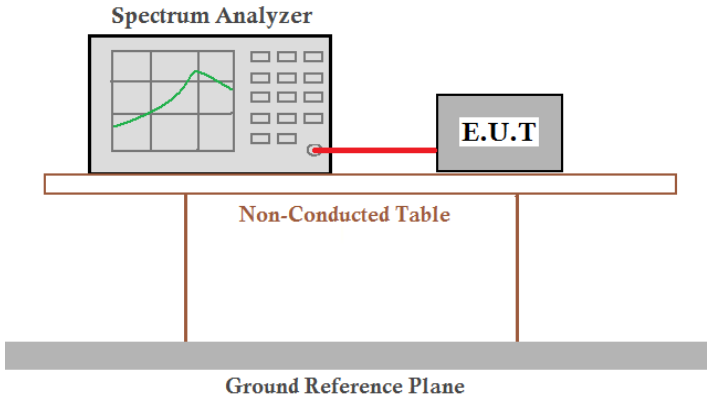
*:Maximum data x:Over limit !:over margin

(Reference Only)

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

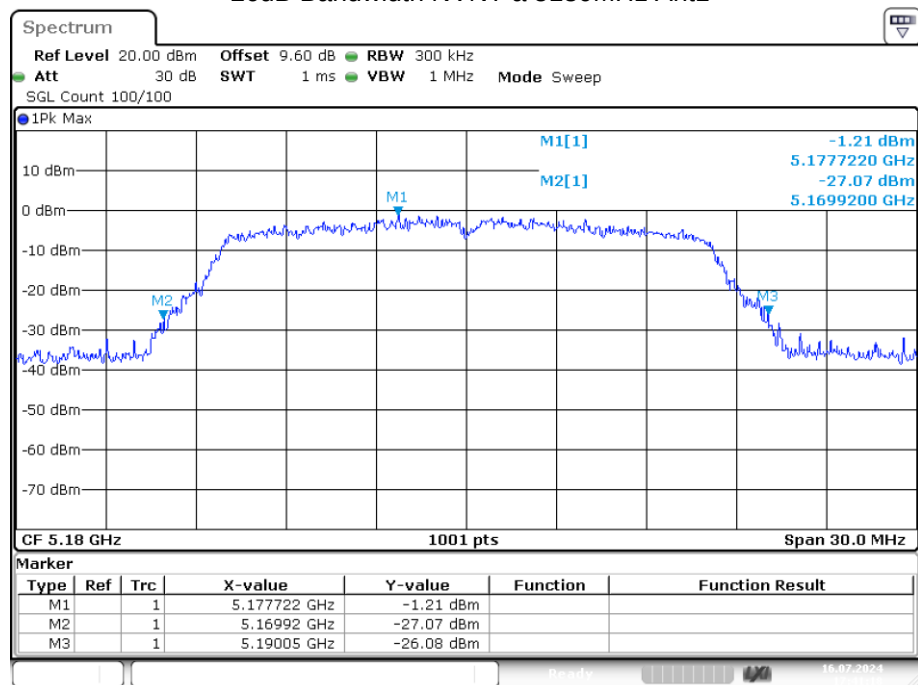
Note: All modes and channels have been tested and only the a 5180MHz mode with the worst data is listed.

4.3 Emission Bandwidth and 99% Occupied Bandwidth

Test Requirement:	FCC Part15 E Section 15.407, RSS-Gen Issue 5
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Limit:	N/A
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer, shown with a grid and a green curve, 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 table labeled 'Non-Conducted Table'. This table is supported by two vertical legs that rest on a thick grey horizontal bar labeled 'Ground Reference Plane'.
Test procedure:	According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

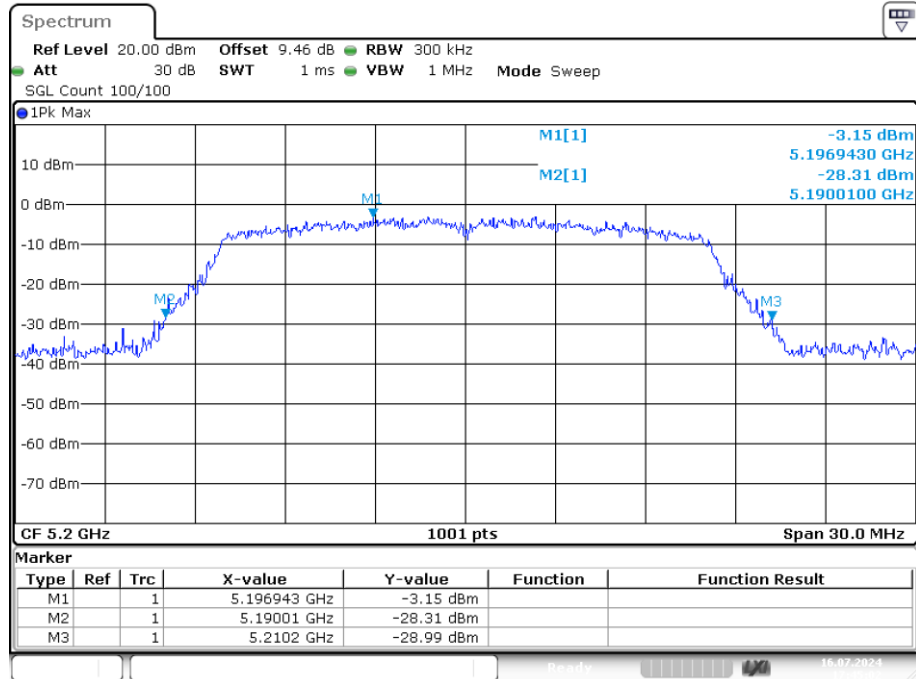
Measurement Data:**Band 1 (5150-5250 MHz):
-26dB Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	Ant1	20.13	Pass
NVNT	a	5200	Ant1	20.19	Pass
NVNT	a	5240	Ant1	19.92	Pass
NVNT	ac20	5180	Ant1	20.34	Pass
NVNT	ac20	5200	Ant1	20.22	Pass
NVNT	ac20	5240	Ant1	20.61	Pass
NVNT	ac40	5190	Ant1	40.08	Pass
NVNT	ac40	5230	Ant1	40.38	Pass
NVNT	ac80	5210	Ant1	83.4	Pass
NVNT	n20	5180	Ant1	20.34	Pass
NVNT	n20	5200	Ant1	21	Pass
NVNT	n20	5240	Ant1	20.31	Pass
NVNT	n40	5190	Ant1	40.32	Pass
NVNT	n40	5230	Ant1	39.96	Pass

-26dB Bandwidth NVNT a 5180MHz Ant1

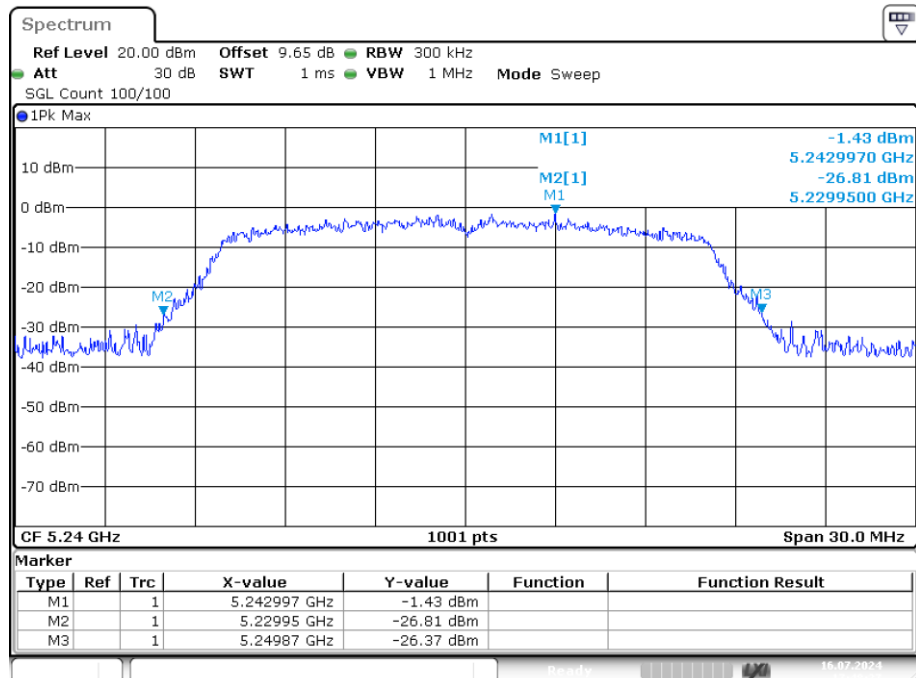
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-26dB Bandwidth NVNT a 5200MHz Ant1



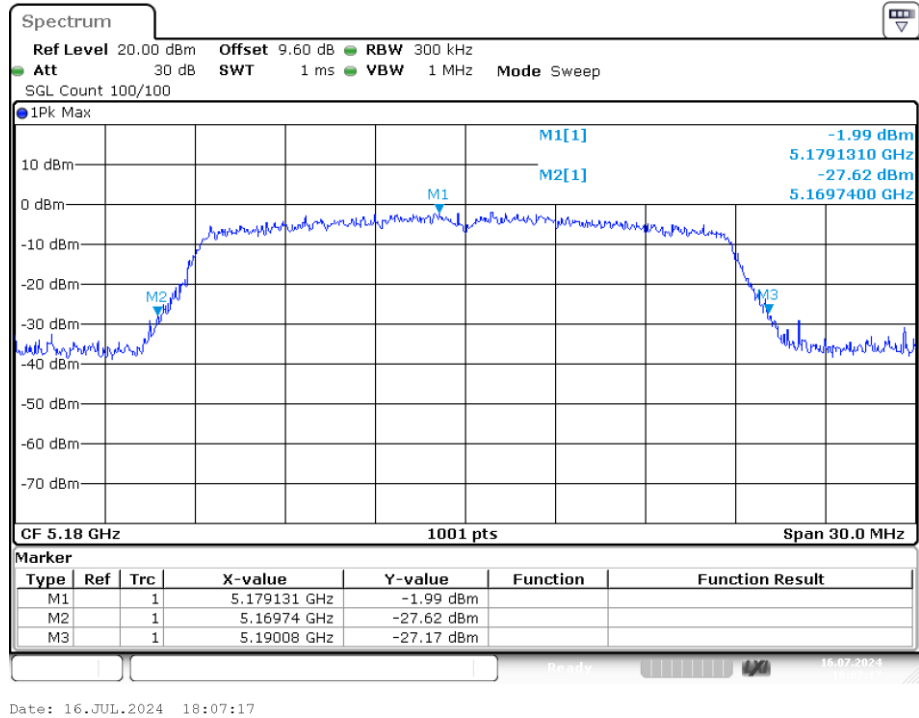
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-26dB Bandwidth NVNT a 5240MHz Ant1

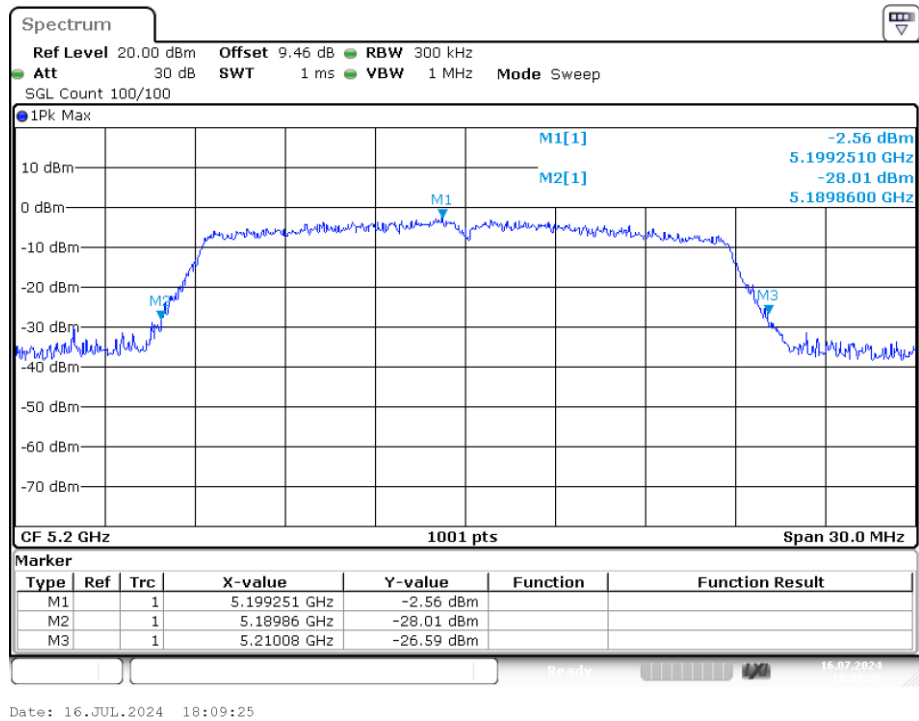


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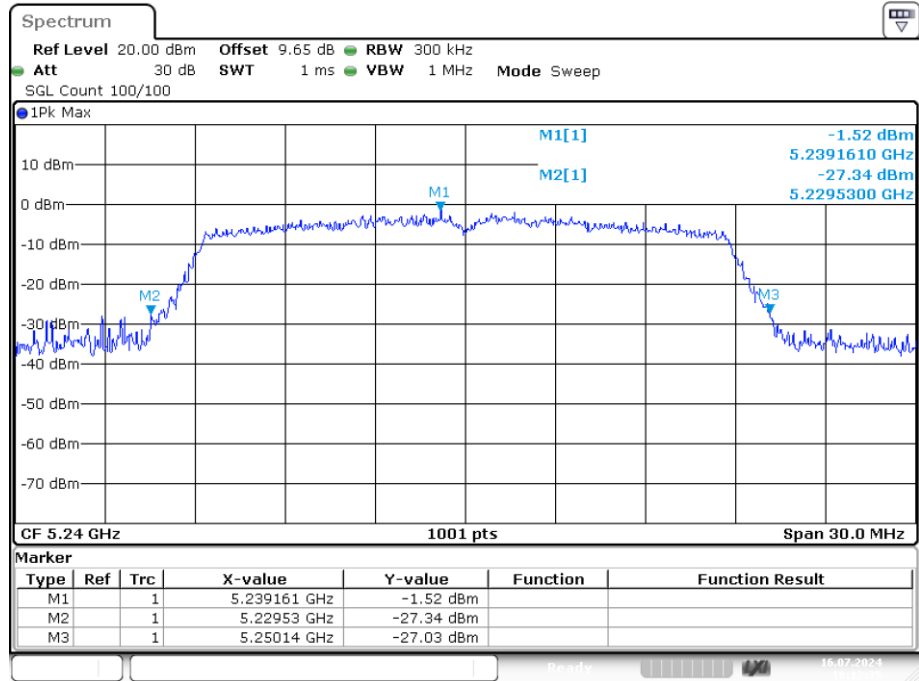
-26dB Bandwidth NVNT ac20 5180MHz Ant1



-26dB Bandwidth NVNT ac20 5200MHz Ant1

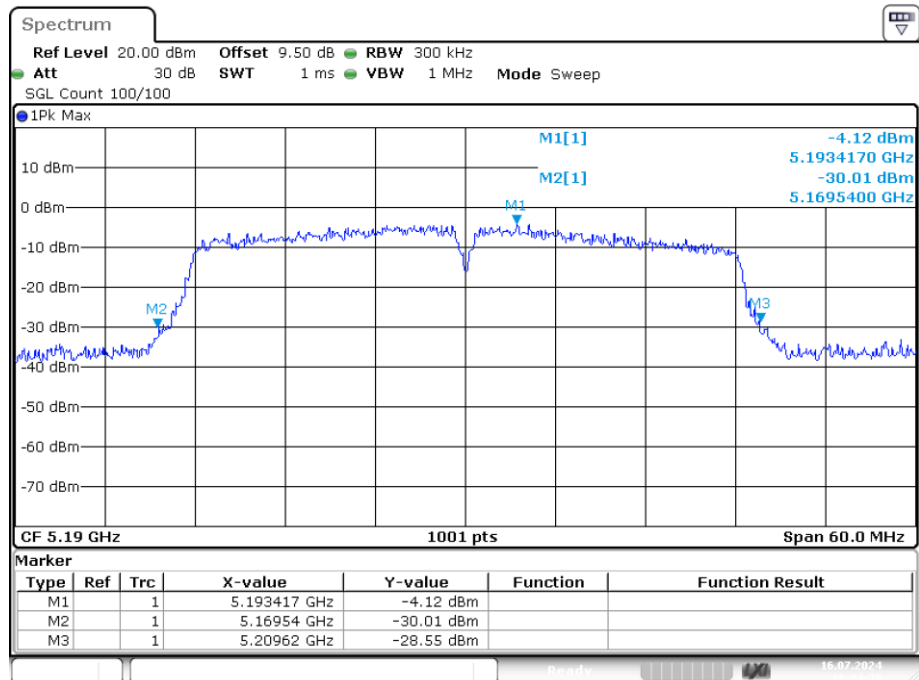


-26dB Bandwidth NVNT ac20 5240MHz Ant1

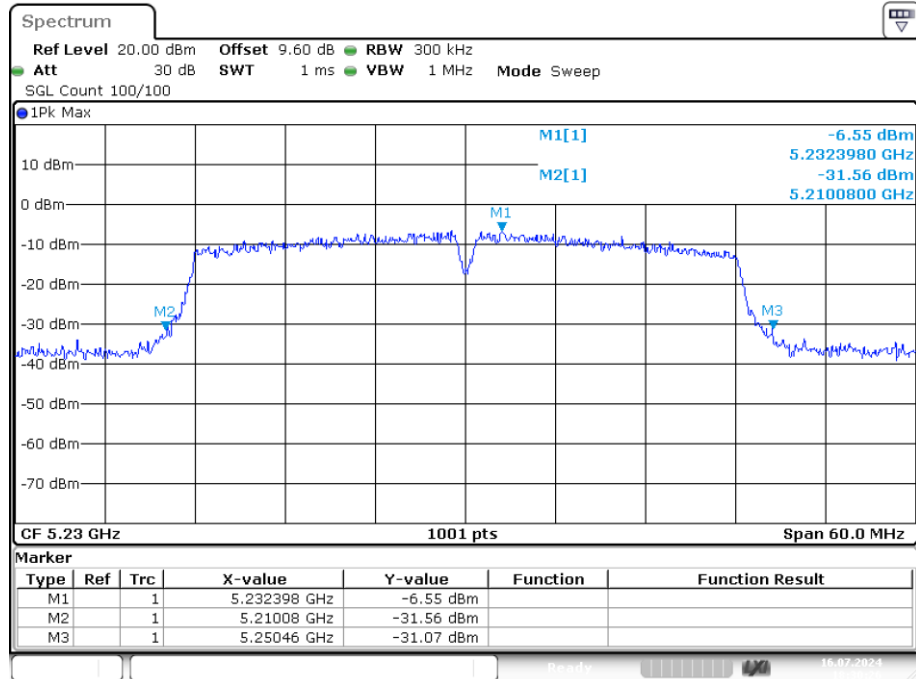


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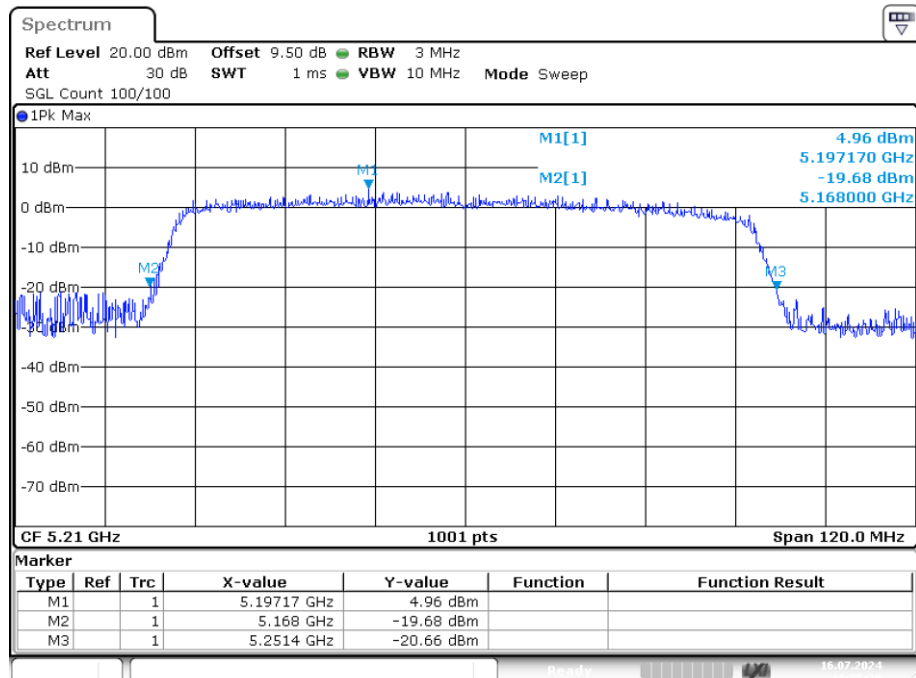
-26dB Bandwidth NVNT ac40 5190MHz Ant1



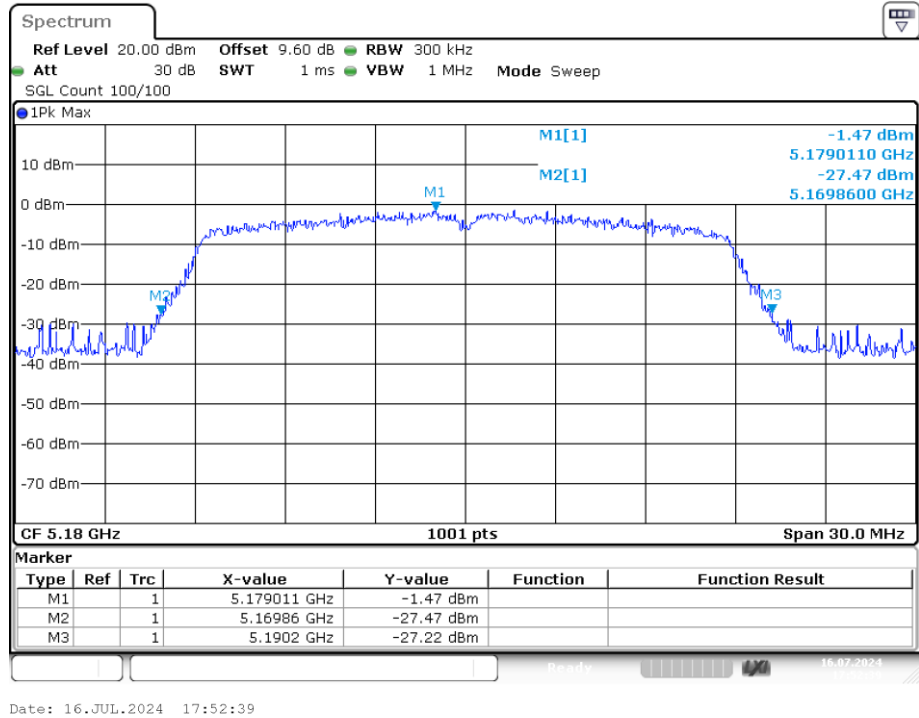
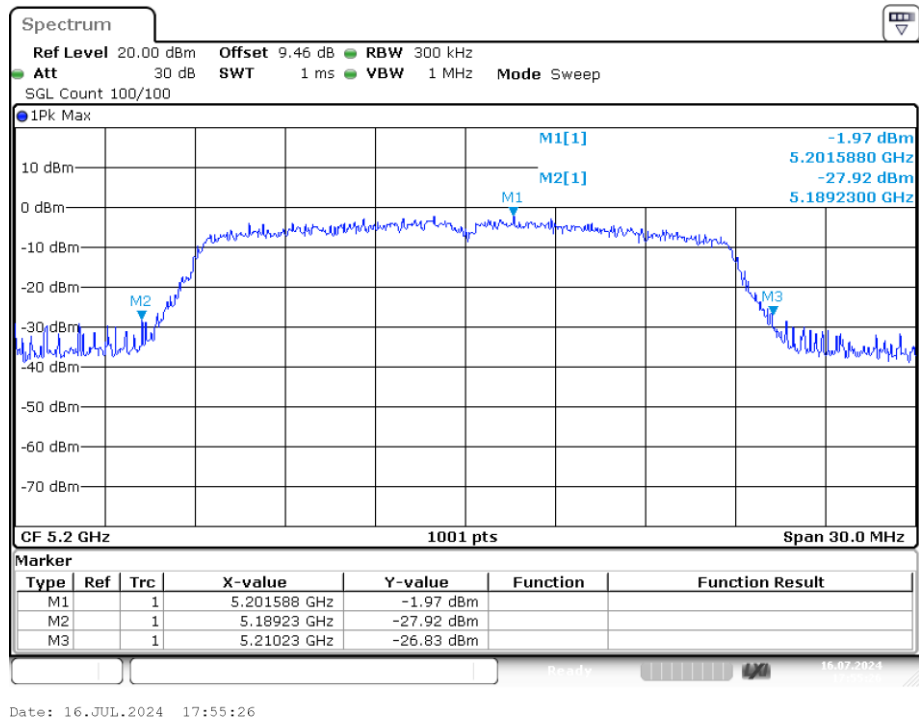
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-26dB Bandwidth NVNT ac40 5230MHz Ant1

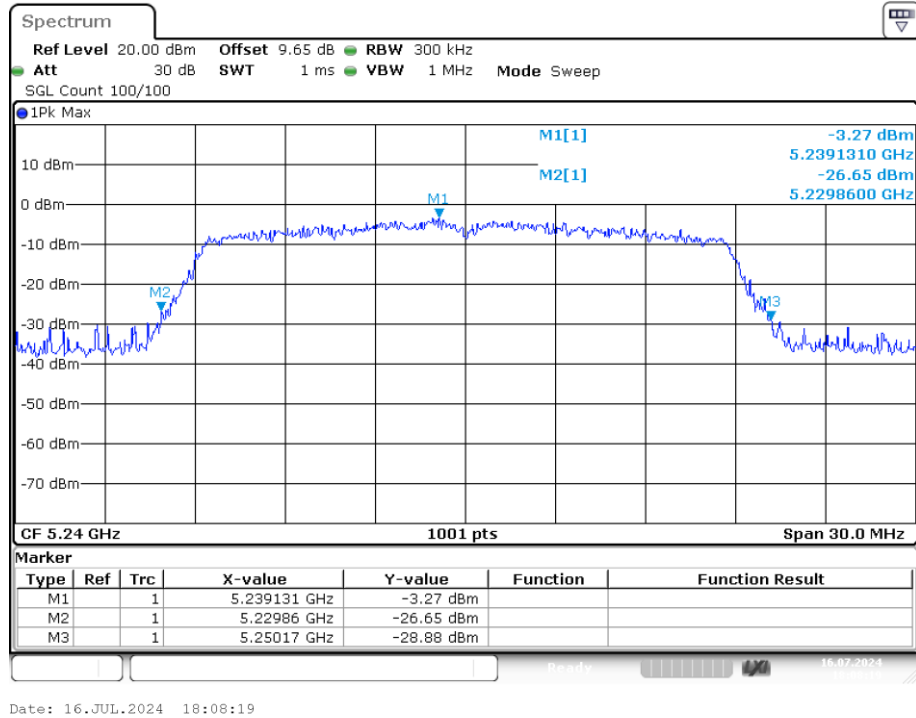
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-26dB Bandwidth NVNT ac80 5210MHz Ant1

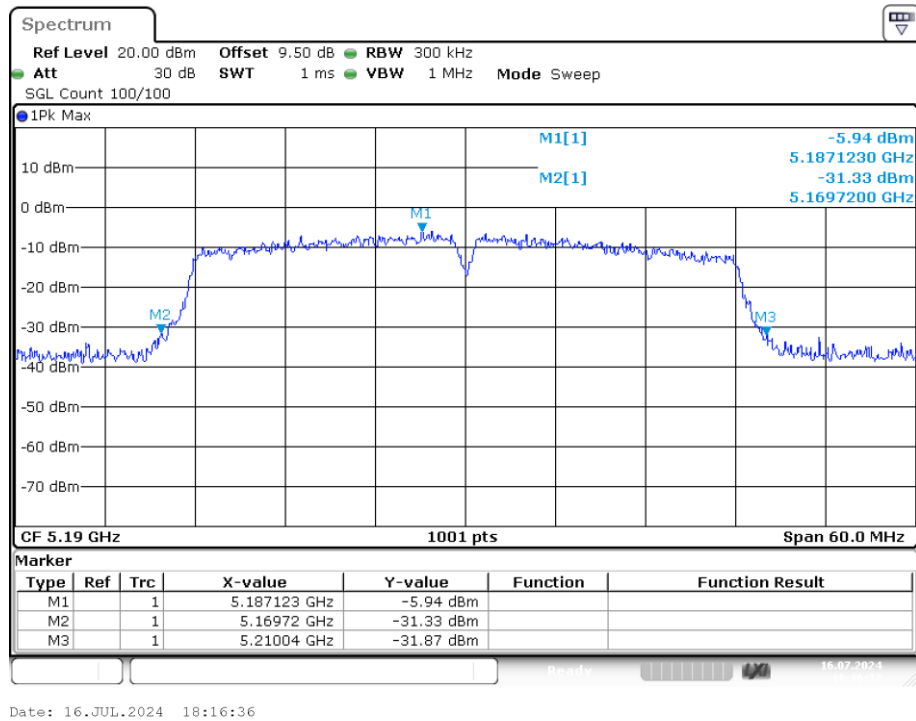
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-26dB Bandwidth NVNT n20 5180MHz Ant1**-26dB Bandwidth NVNT n20 5200MHz Ant1**

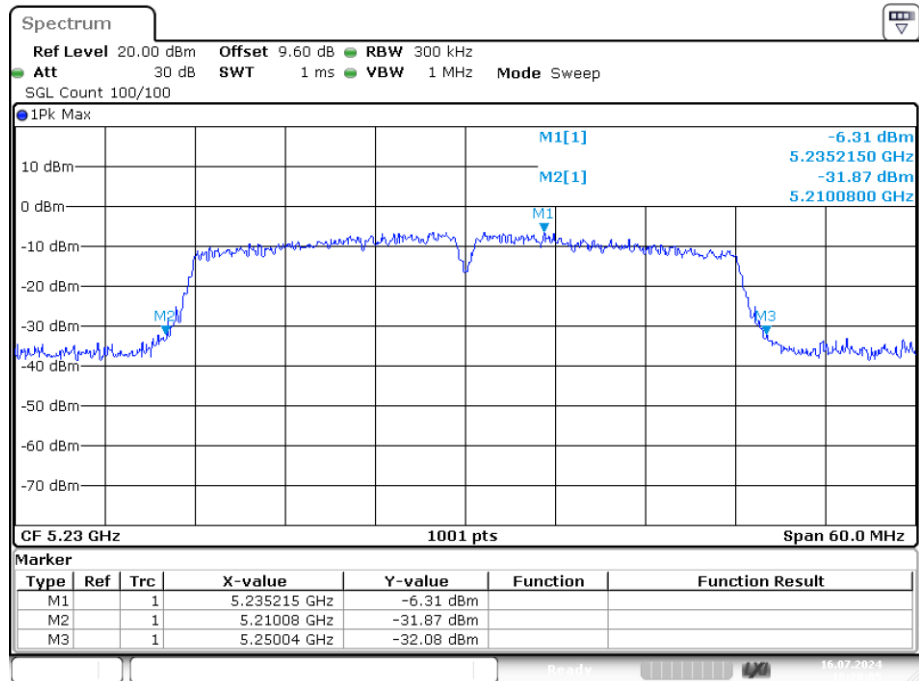
-26dB Bandwidth NVNT n20 5240MHz Ant1



-26dB Bandwidth NVNT n40 5190MHz Ant1



-26dB Bandwidth NVNT n40 5230MHz Ant1

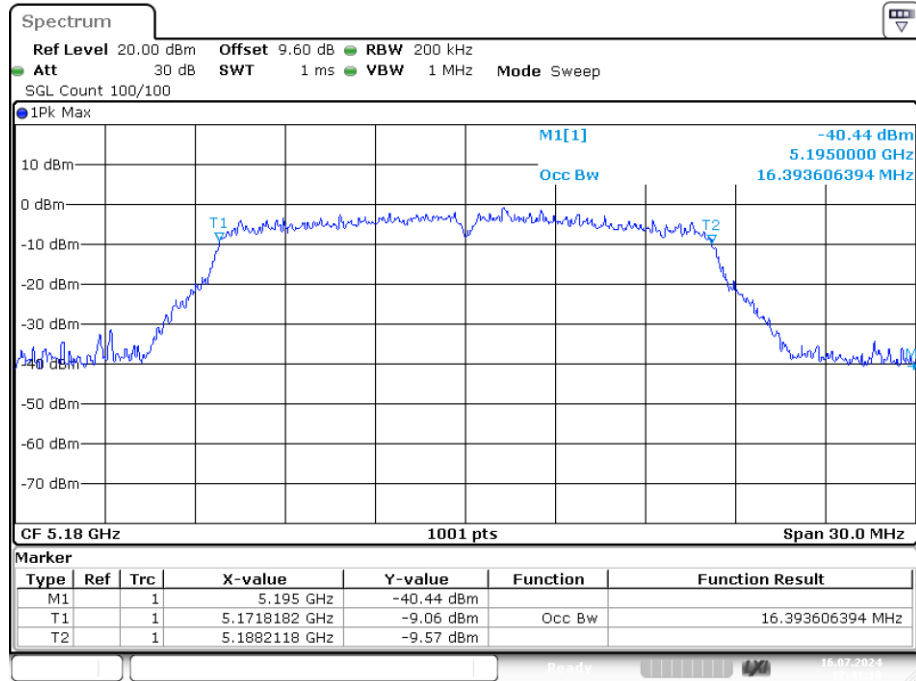


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Occupied Channel Bandwidth

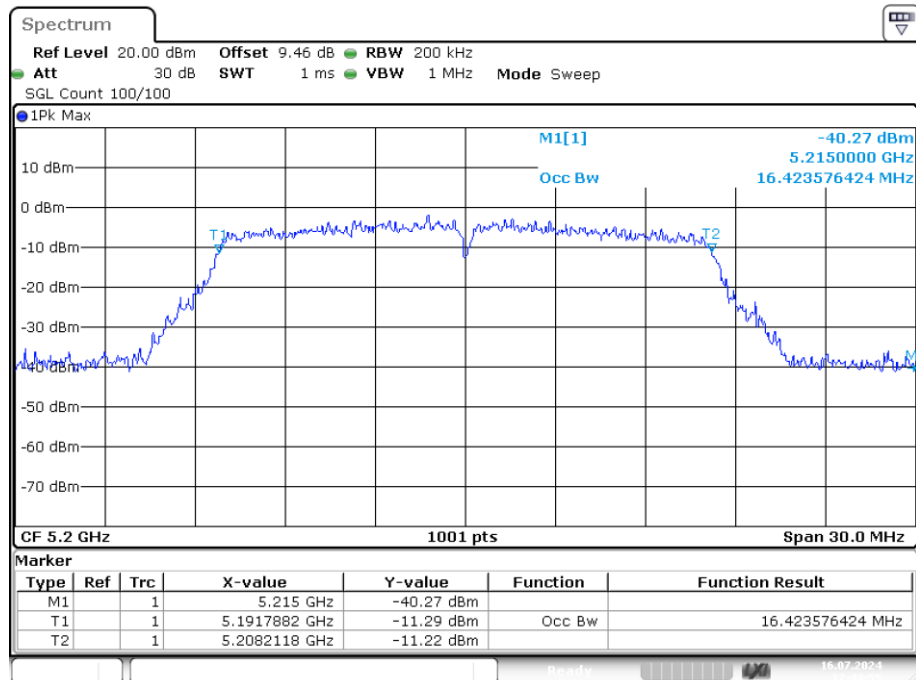
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5180	Ant1	16.394
NVNT	a	5200	Ant1	16.424
NVNT	a	5240	Ant1	16.424
NVNT	ac20	5180	Ant1	17.562
NVNT	ac20	5200	Ant1	17.592
NVNT	ac20	5240	Ant1	17.562
NVNT	ac40	5190	Ant1	35.964
NVNT	ac40	5230	Ant1	36.144
NVNT	ac80	5210	Ant1	76.004
NVNT	n20	5180	Ant1	17.562
NVNT	n20	5200	Ant1	17.532
NVNT	n20	5240	Ant1	17.592
NVNT	n40	5190	Ant1	36.084
NVNT	n40	5230	Ant1	36.144

OBW NVNT a 5180MHz Ant1



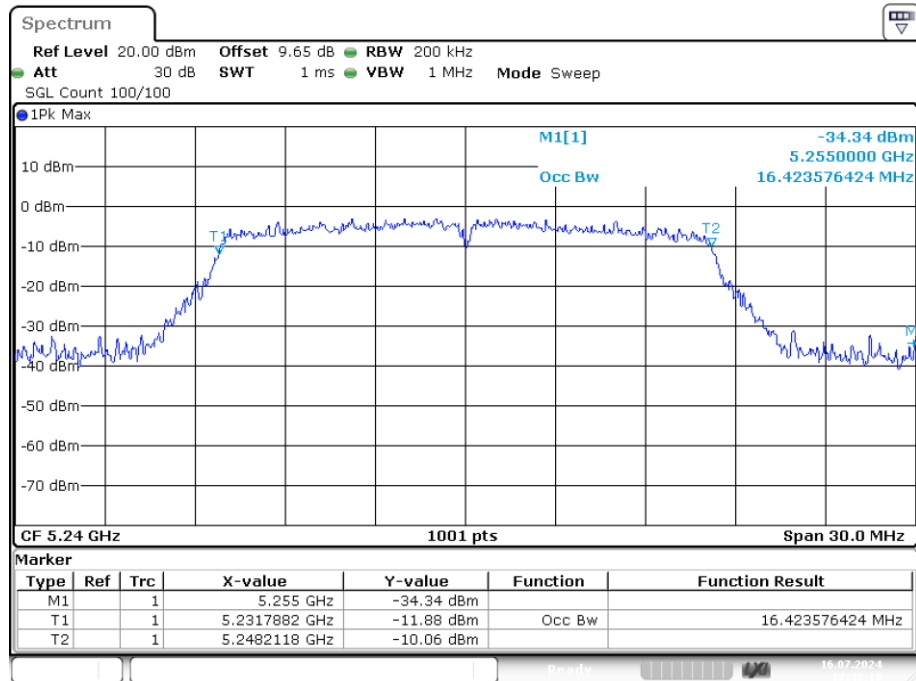
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OBW NVNT a 5200MHz Ant1



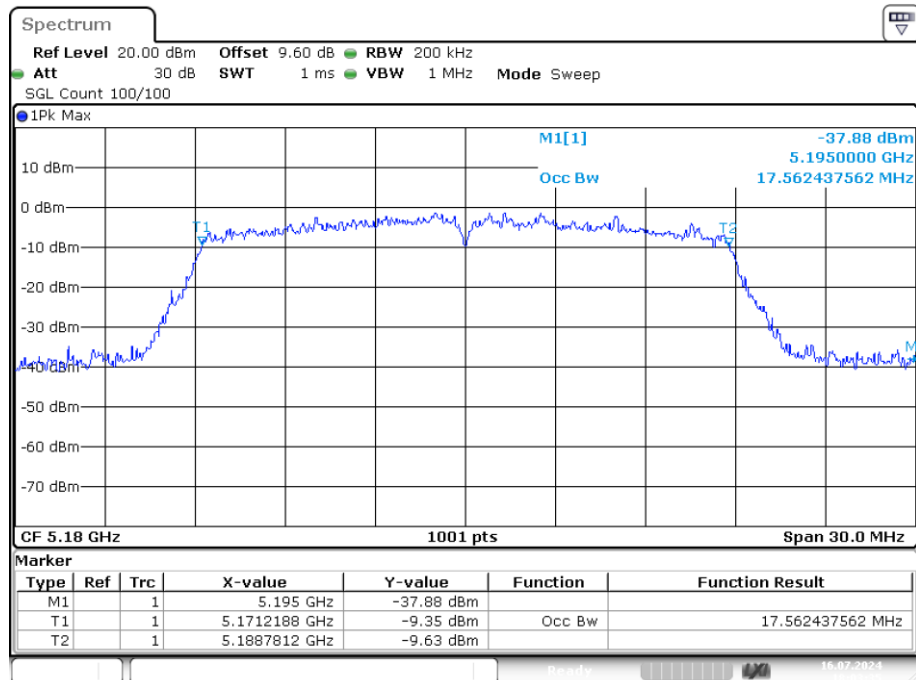
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OBW NVNT a 5240MHz Ant1



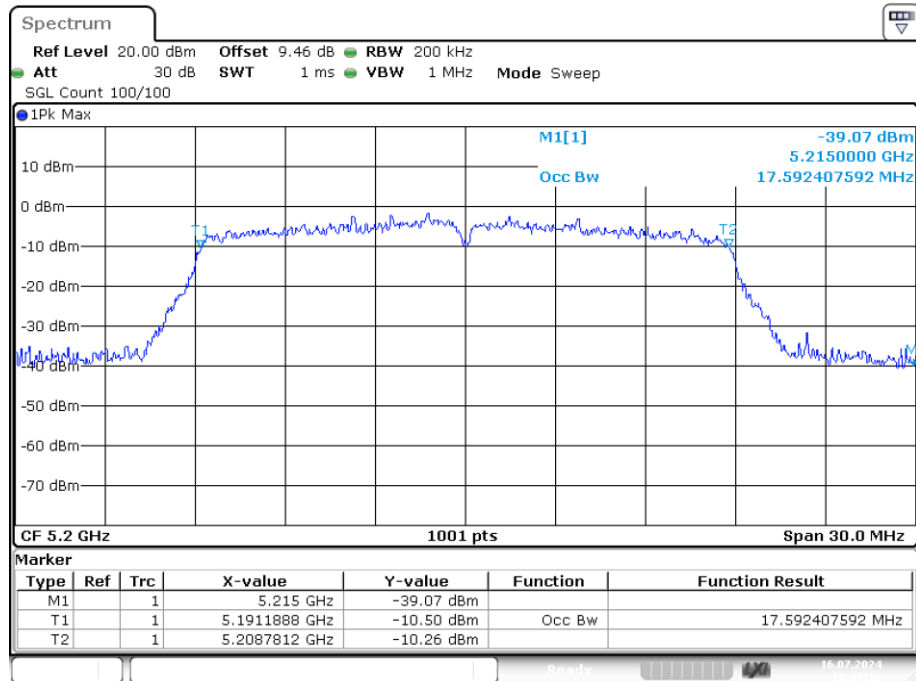
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OBW NVNT ac20 5180MHz Ant1



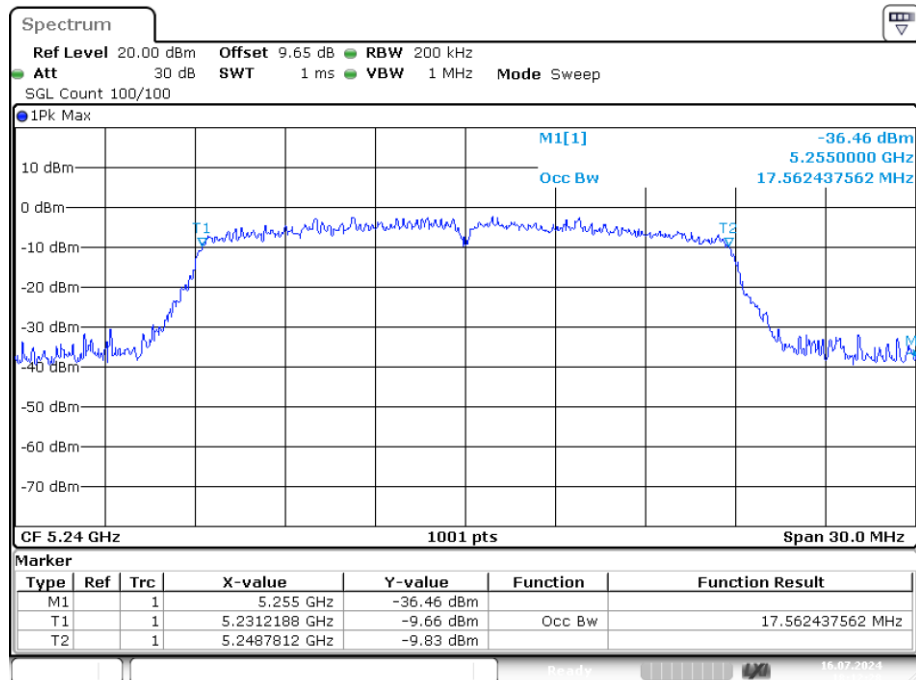
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OBW NVNT ac20 5200MHz Ant1



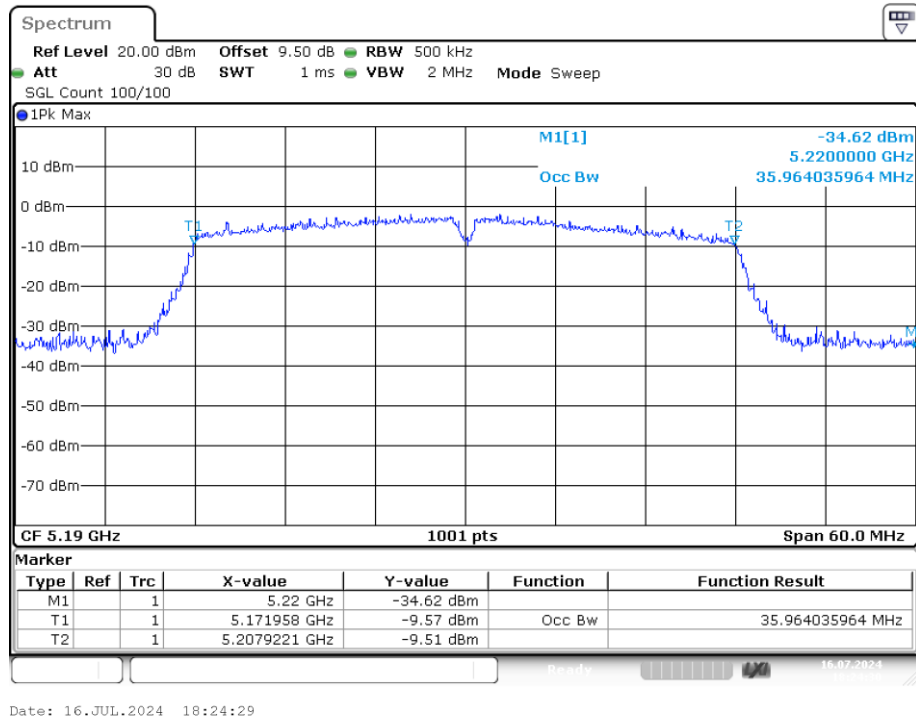
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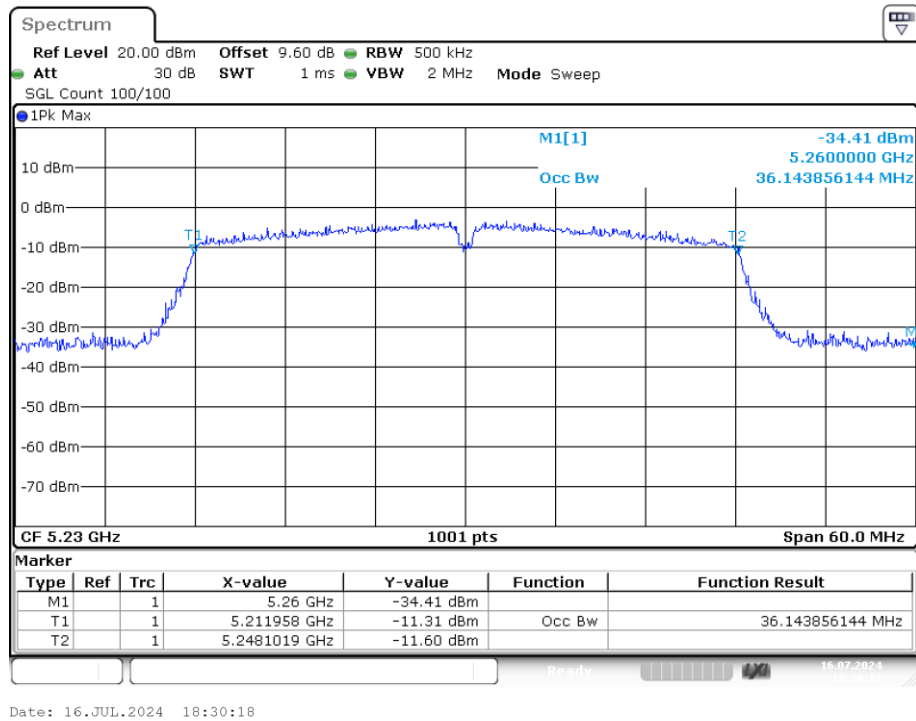


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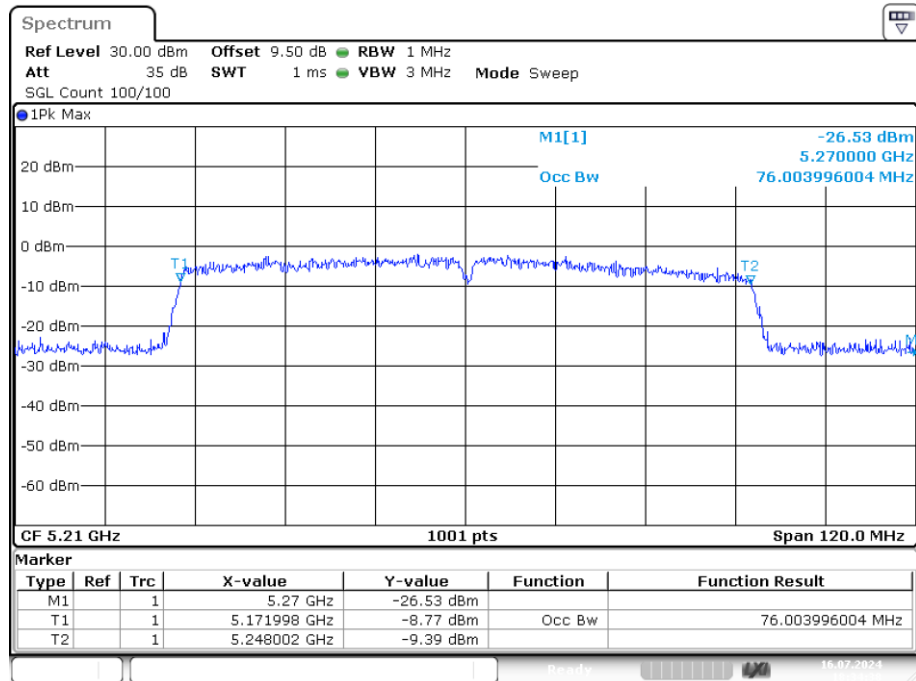
OBW NVNT ac40 5190MHz Ant1



OBW NVNT ac40 5230MHz Ant1

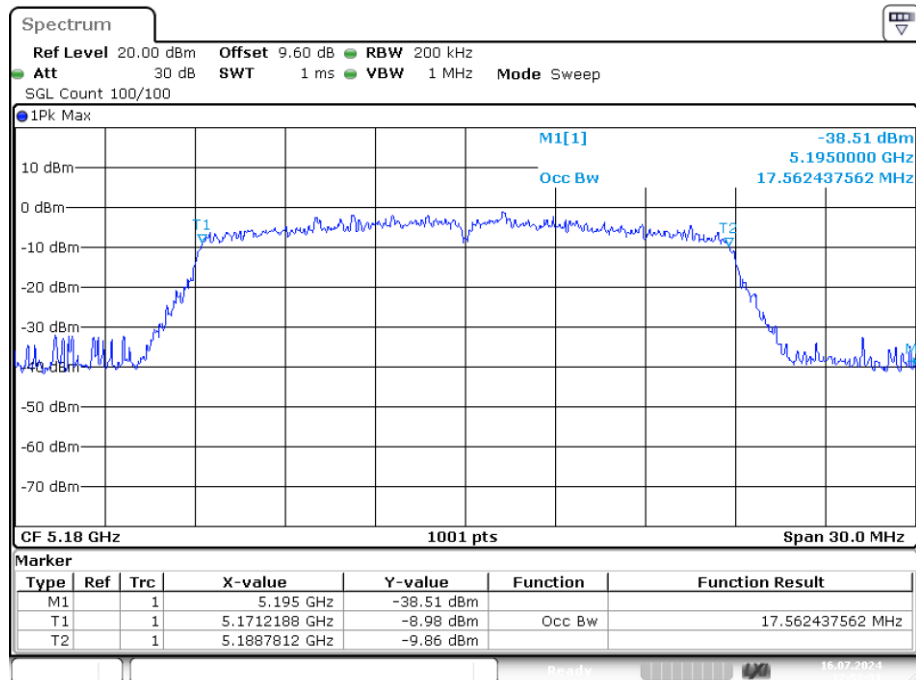


OBW NVNT ac80 5210MHz Ant1



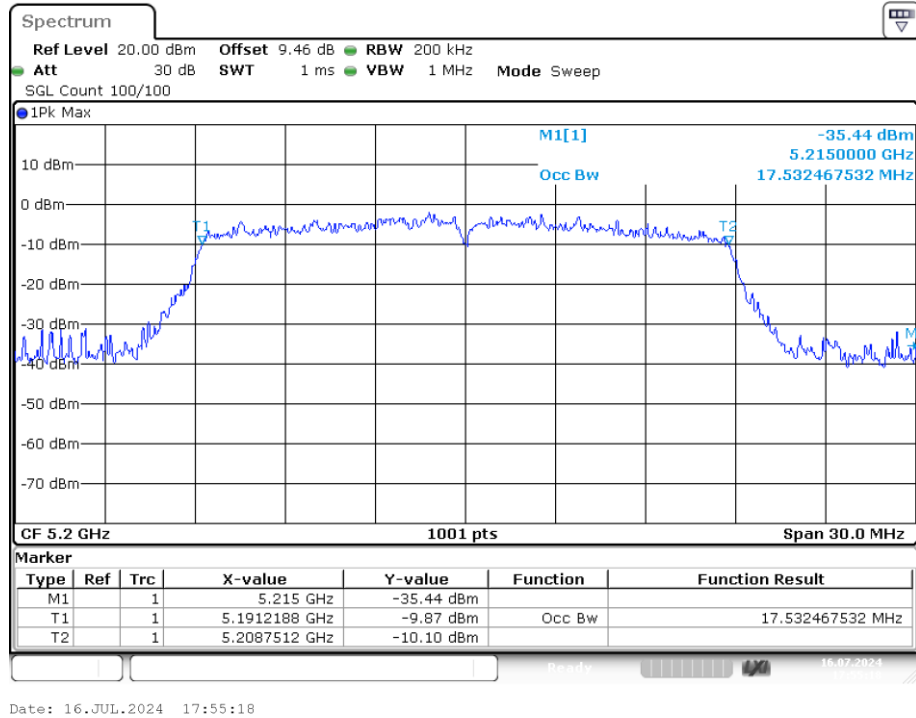
Date: 16.JUL.2024 18:34:38

OBW NVNT n20 5180MHz Ant1

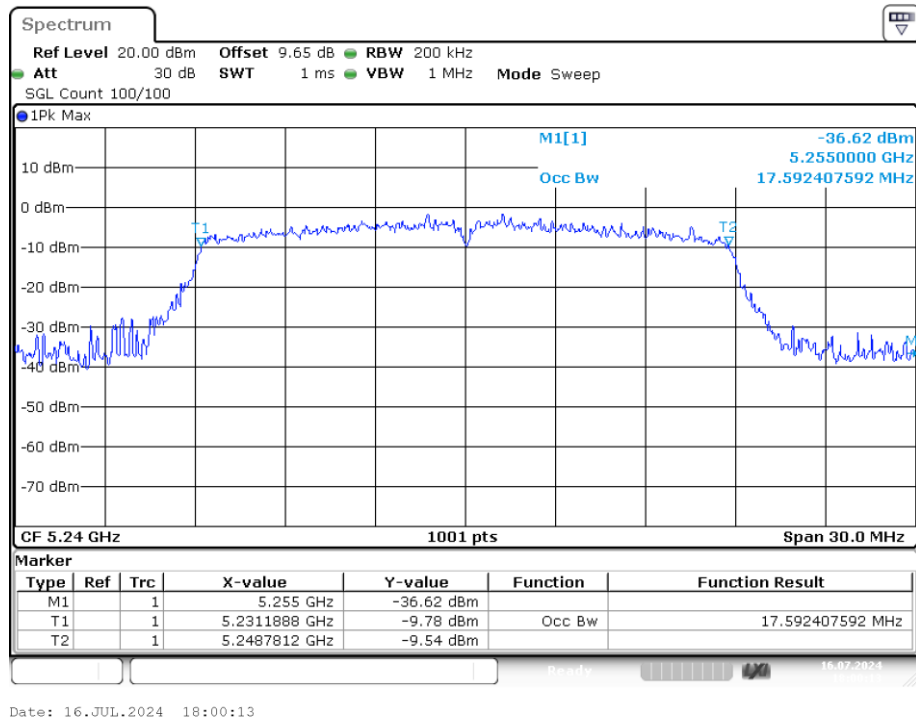


Date: 16.JUL.2024 17:52:31

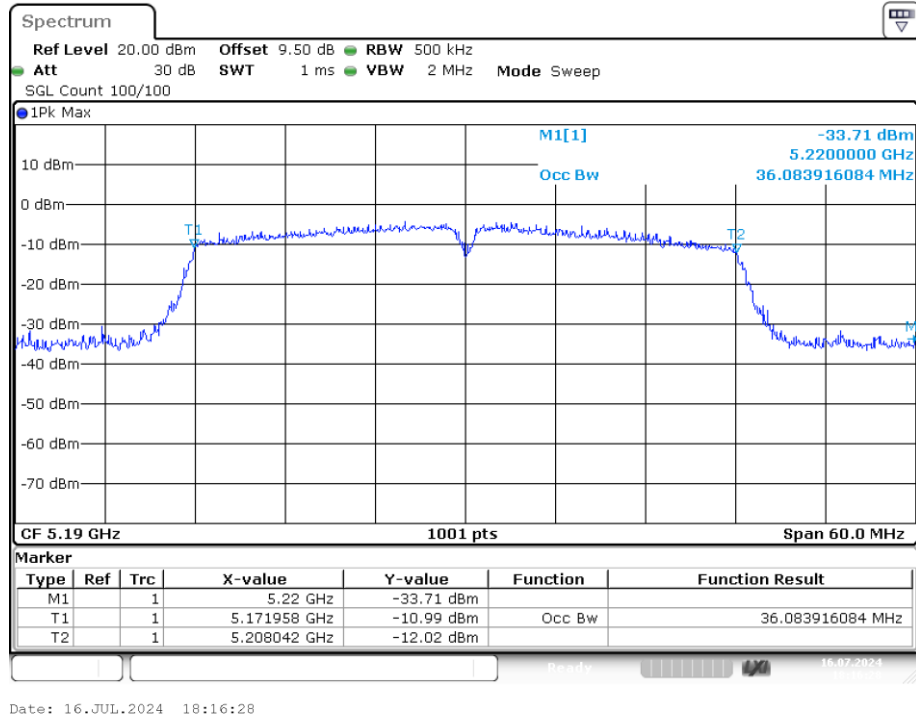
OBW NVNT n20 5200MHz Ant1



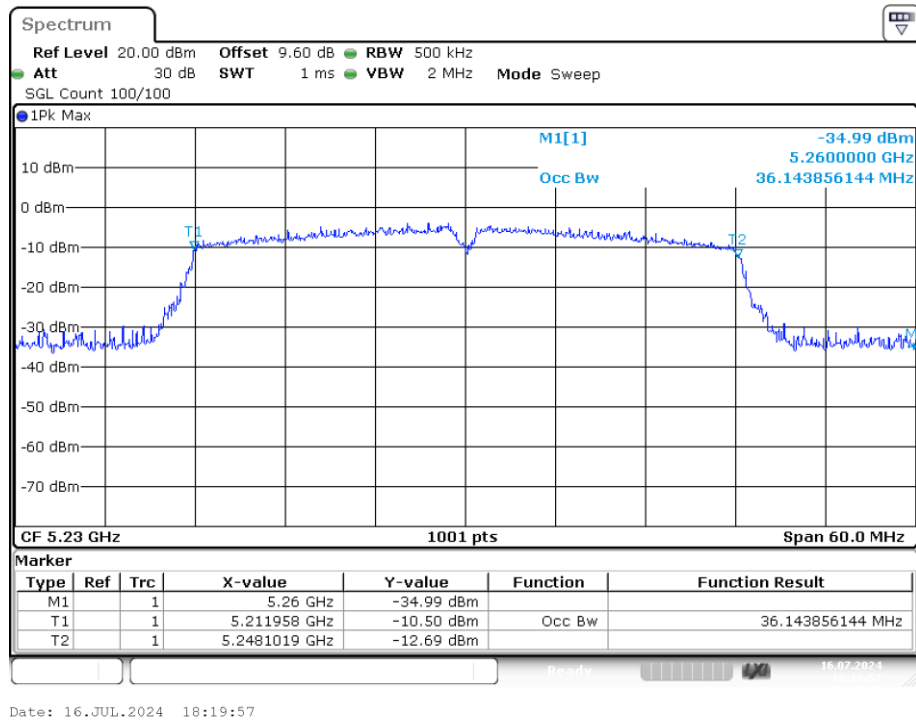
OBW NVNT n20 5240MHz Ant1



OBW NVNT n40 5190MHz Ant1



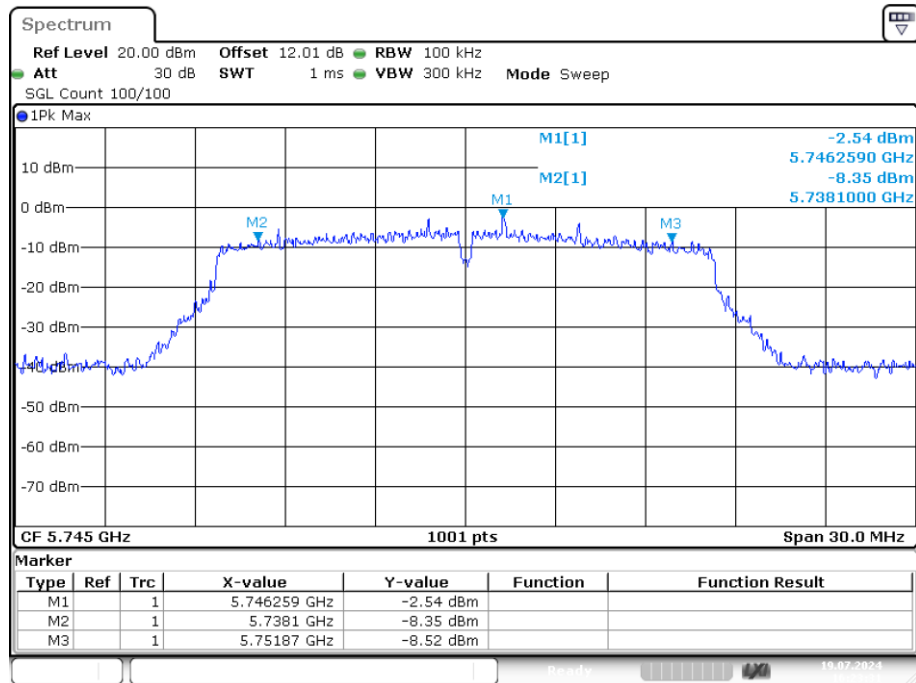
OBW NVNT n40 5230MHz Ant1

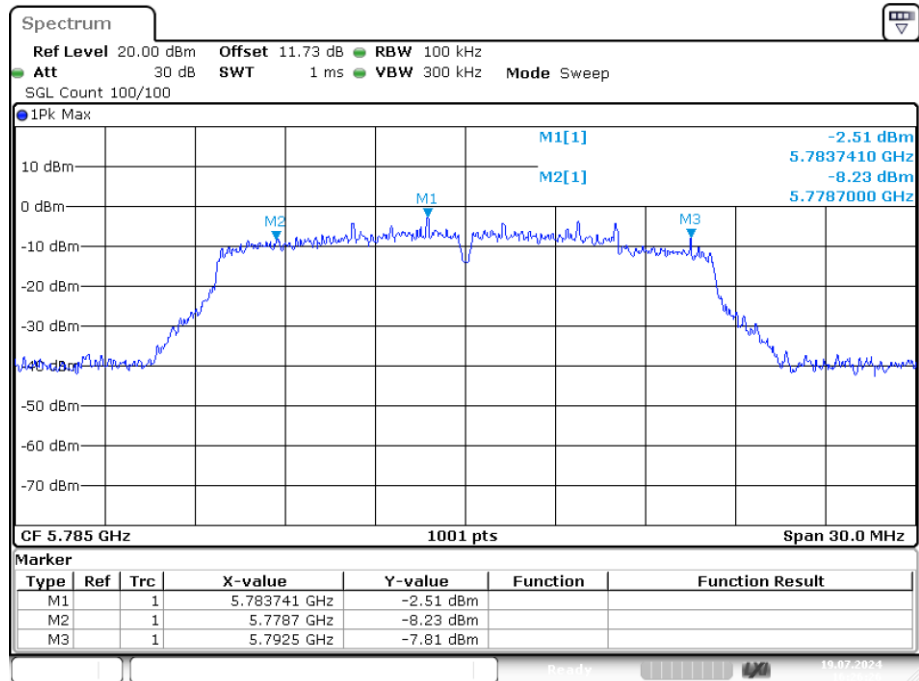


**Band 4 (5725-5850 MHz):
-6dB Bandwidth**

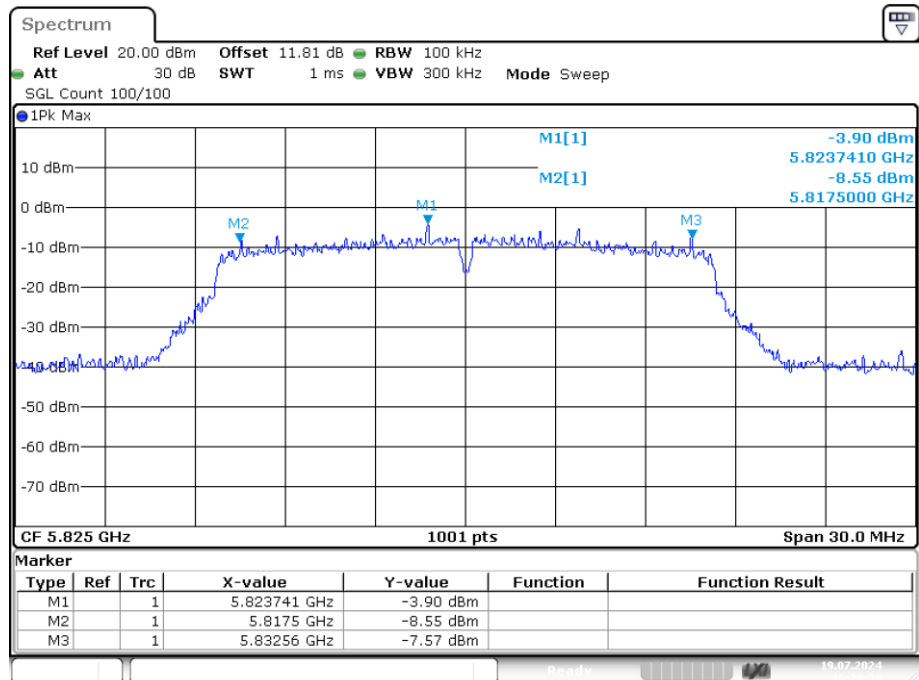
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	13.77	Pass
NVNT	a	5785	Ant1	13.8	Pass
NVNT	a	5825	Ant1	15.06	Pass
NVNT	ac20	5745	Ant1	15.06	Pass
NVNT	ac20	5785	Ant1	13.83	Pass
NVNT	ac20	5825	Ant1	15.54	Pass
NVNT	ac40	5755	Ant1	33.9	Pass
NVNT	ac40	5795	Ant1	33.84	Pass
NVNT	ac80	5775	Ant1	75.12	Pass
NVNT	n20	5745	Ant1	15.45	Pass
NVNT	n20	5785	Ant1	13.41	Pass
NVNT	n20	5825	Ant1	15.12	Pass
NVNT	n40	5755	Ant1	35.04	Pass
NVNT	n40	5795	Ant1	35.1	Pass

-6dB Bandwidth NVNT a 5745MHz Ant1

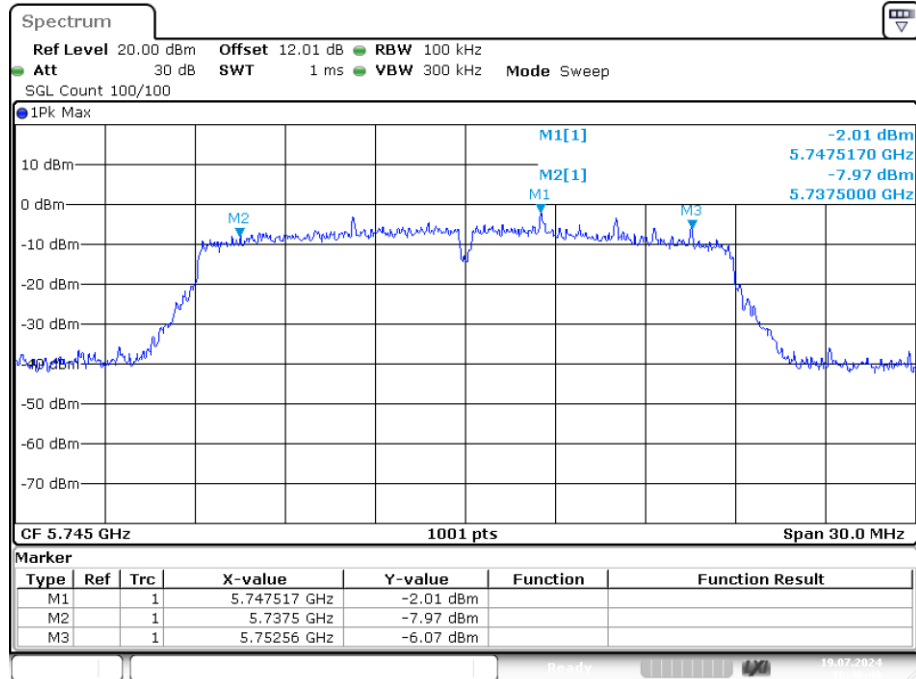


-6dB Bandwidth NVNT a 5785MHz Ant1

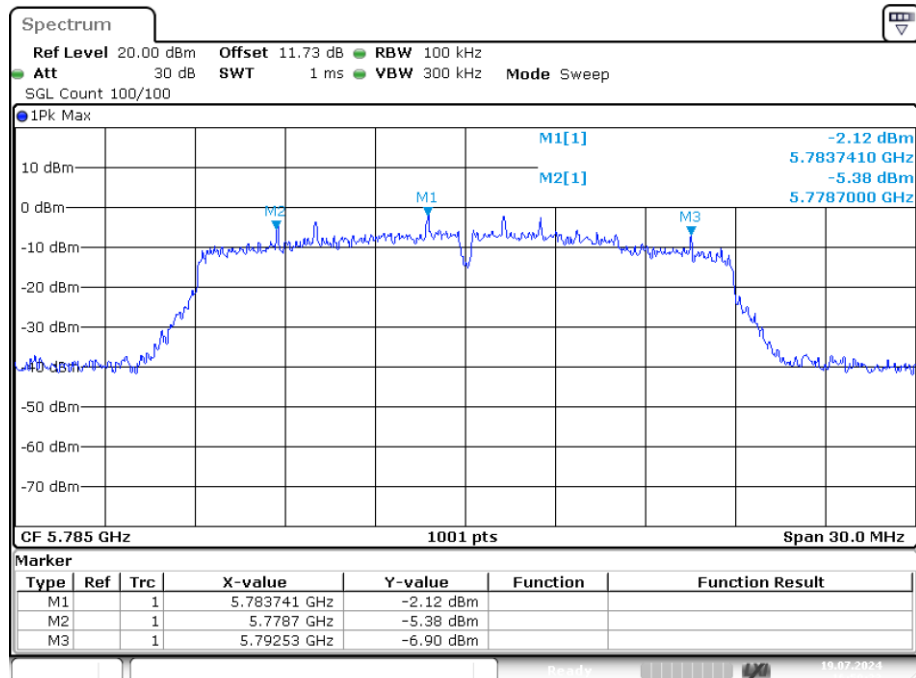
Date: 19.JUL.2024 16:26:26

-6dB Bandwidth NVNT a 5825MHz Ant1

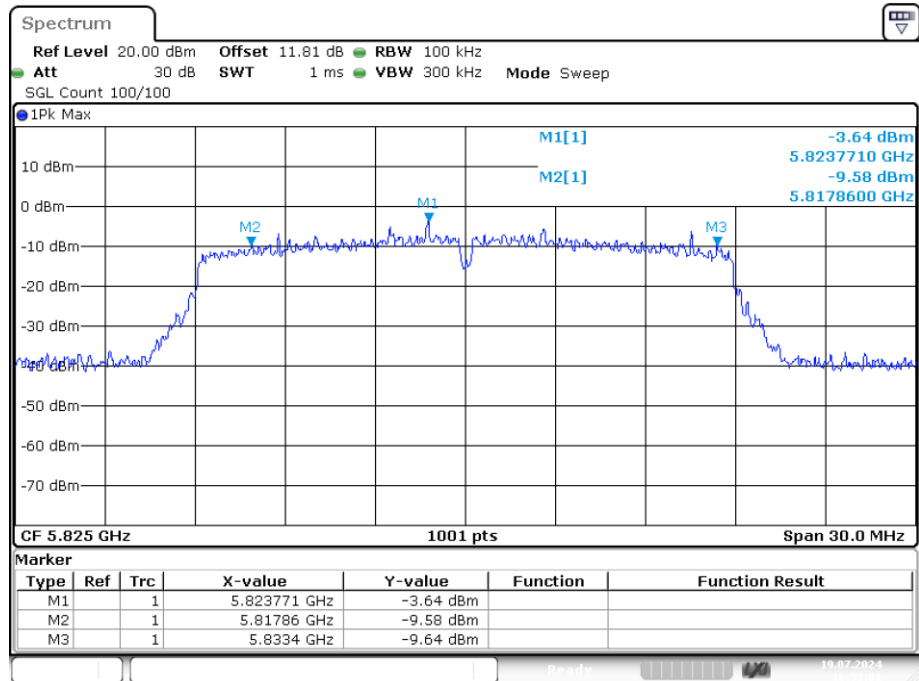
Date: 19.JUL.2024 16:28:39

-6dB Bandwidth NVNT ac20 5745MHz Ant1

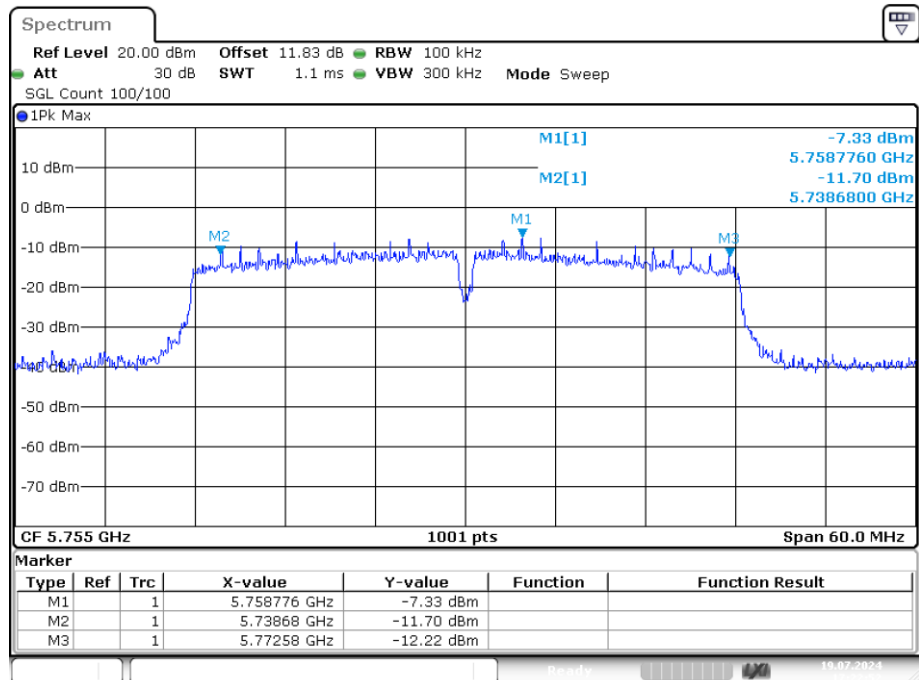
Date: 19.JUL.2024 16:46:48

-6dB Bandwidth NVNT ac20 5785MHz Ant1

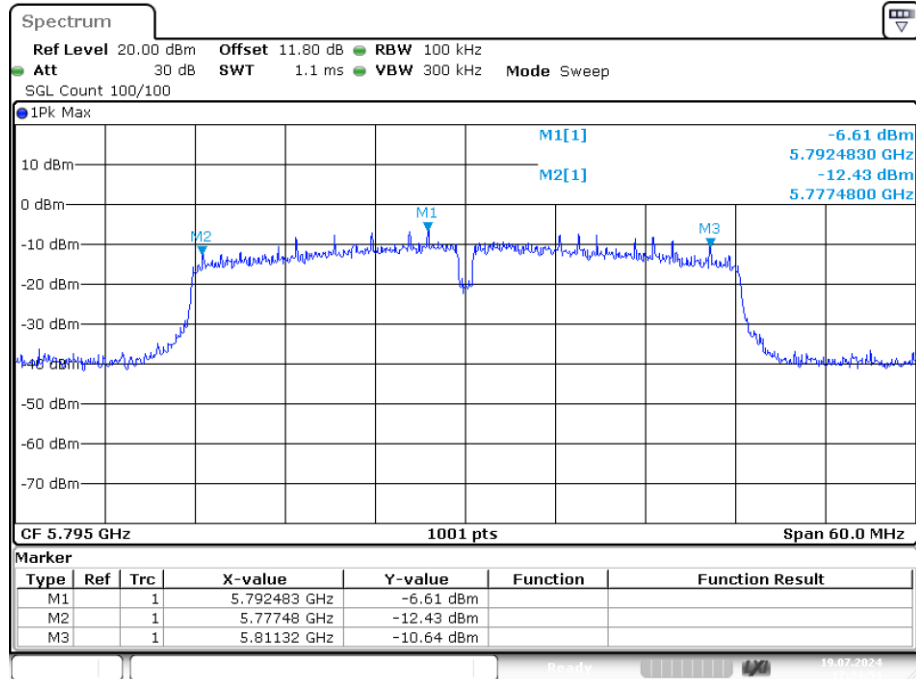
Date: 19.JUL.2024 16:50:33

-6dB Bandwidth NVNT ac20 5825MHz Ant1

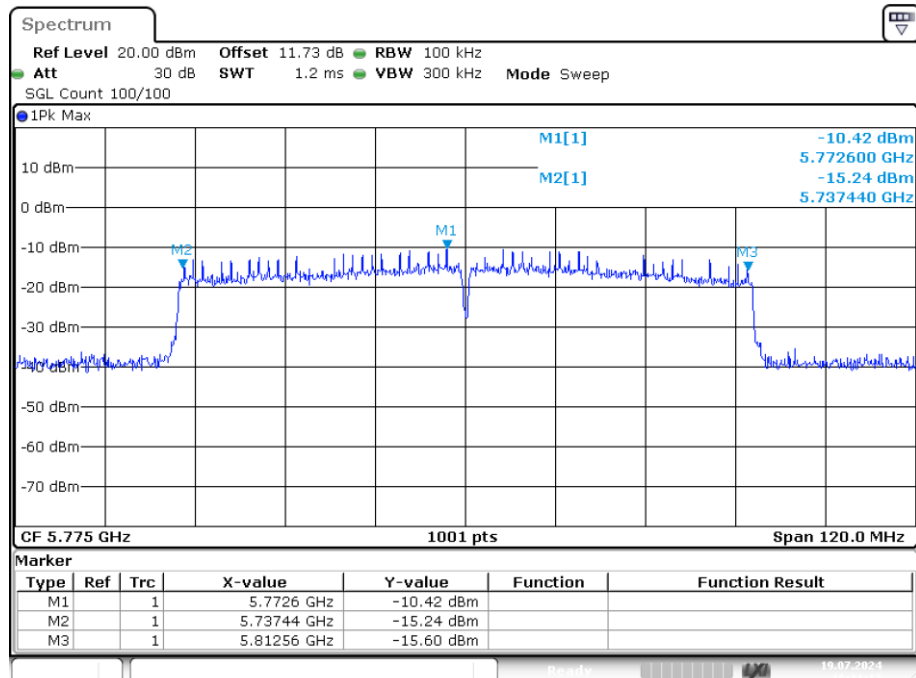
Date: 19.JUL.2024 16:53:02

-6dB Bandwidth NVNT ac40 5755MHz Ant1

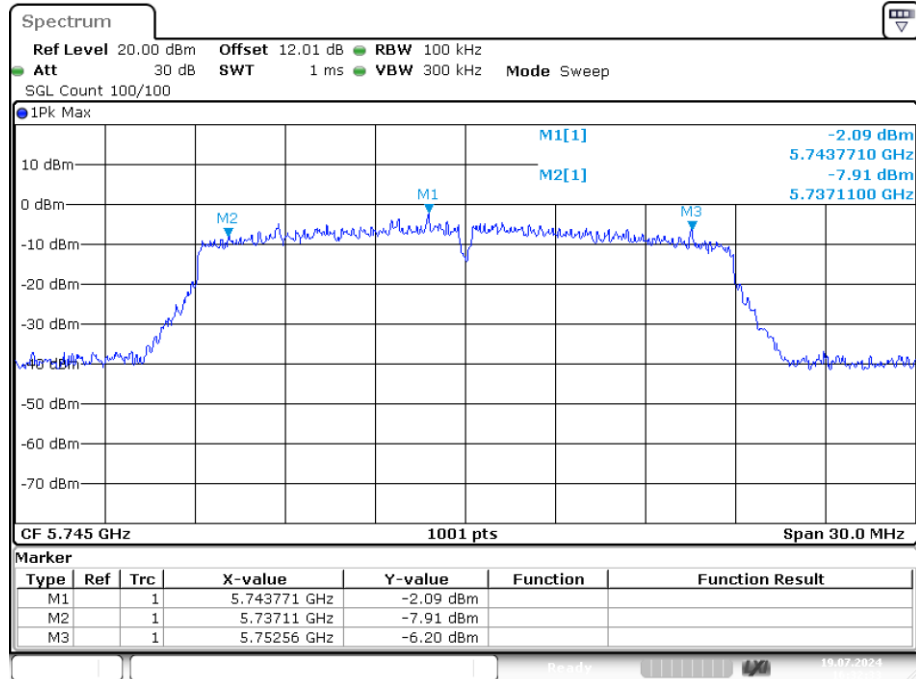
Date: 19.JUL.2024 17:22:51

-6dB Bandwidth NVNT ac40 5795MHz Ant1

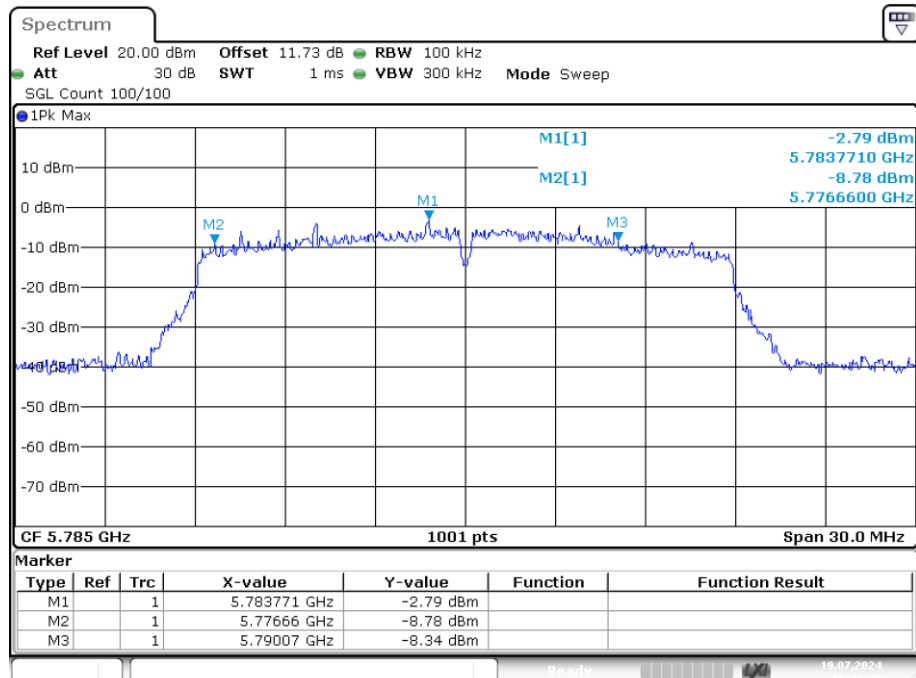
Date: 19.JUL.2024 17:24:53

-6dB Bandwidth NVNT ac80 5775MHz Ant1

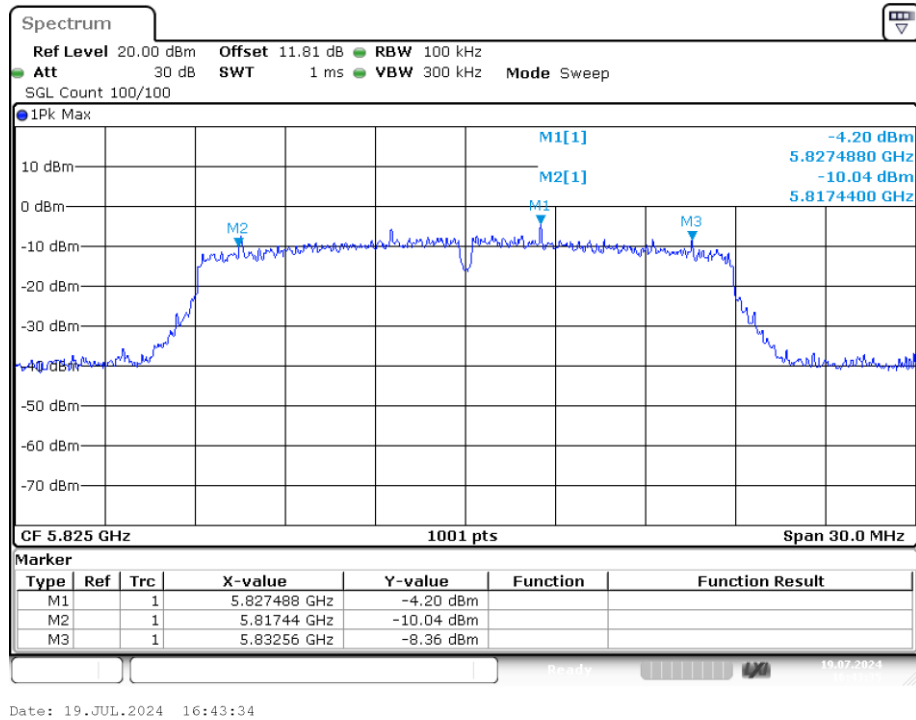
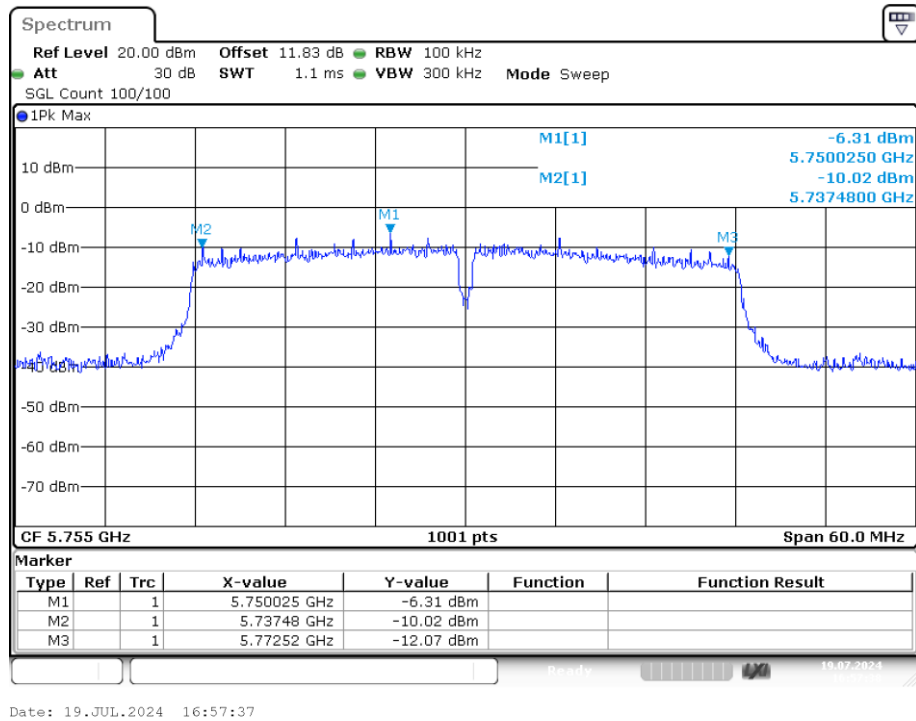
Date: 19.JUL.2024 16:11:12

-6dB Bandwidth NVNT n20 5745MHz Ant1

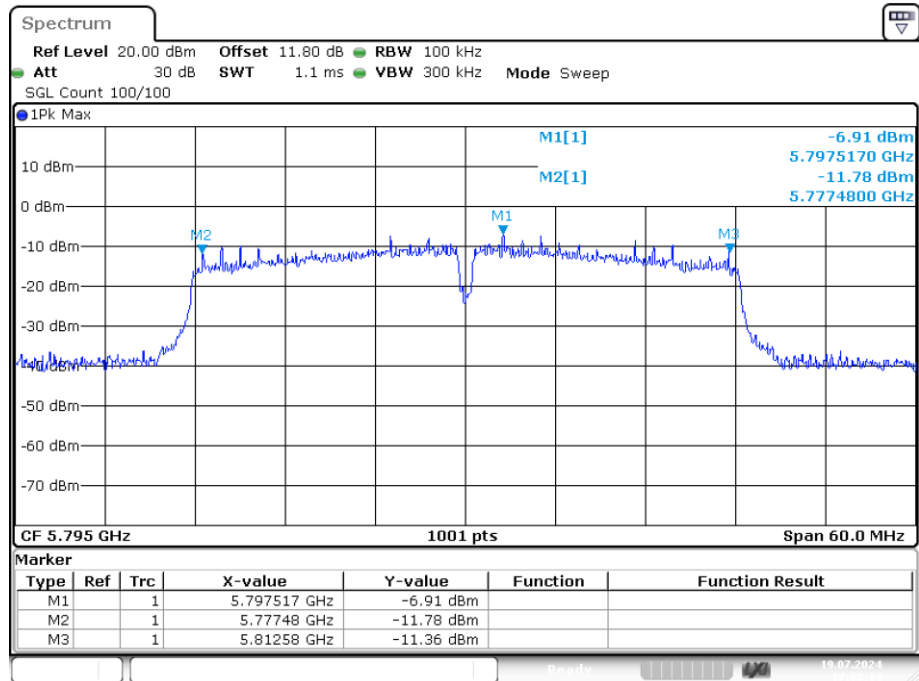
Date: 19.JUL.2024 16:32:32

-6dB Bandwidth NVNT n20 5785MHz Ant1

Date: 19.JUL.2024 16:41:38

-6dB Bandwidth NVNT n20 5825MHz Ant1**-6dB Bandwidth NVNT n40 5755MHz Ant1**

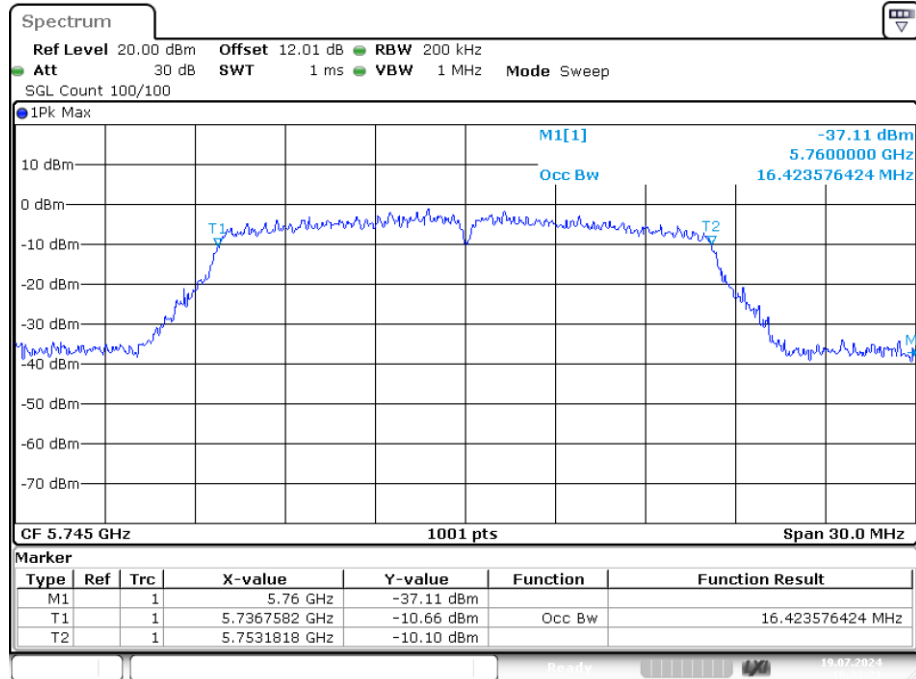
-6dB Bandwidth NVNT n40 5795MHz Ant1



Occupied Channel Bandwidth

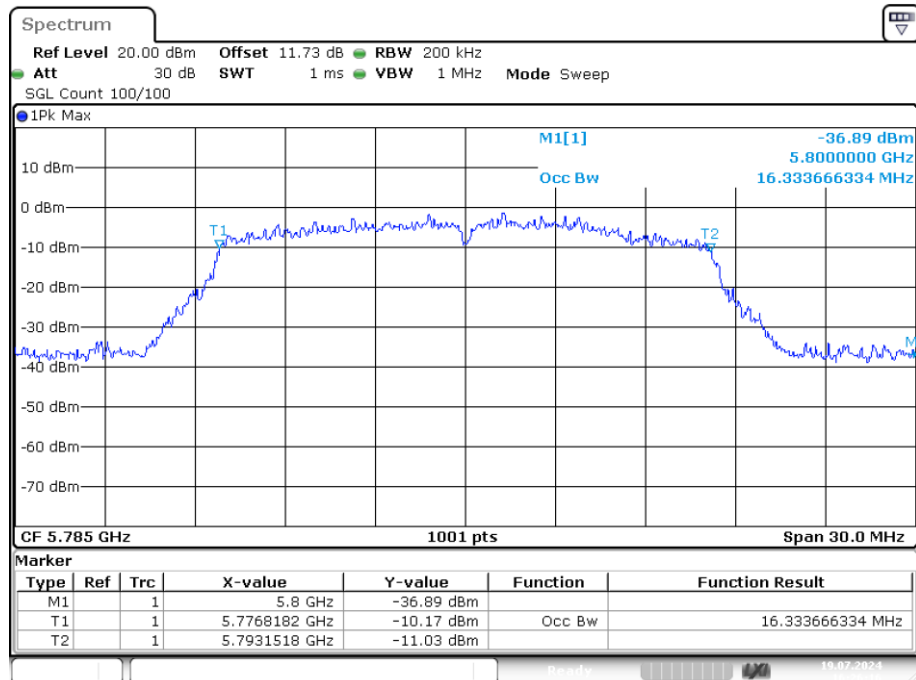
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5745	Ant1	16.424
NVNT	a	5785	Ant1	16.334
NVNT	a	5825	Ant1	16.424
NVNT	ac20	5745	Ant1	17.592
NVNT	ac20	5785	Ant1	17.473
NVNT	ac20	5825	Ant1	17.622
NVNT	ac40	5755	Ant1	36.084
NVNT	ac40	5795	Ant1	36.024
NVNT	ac80	5775	Ant1	75.644
NVNT	n20	5745	Ant1	17.532
NVNT	n20	5785	Ant1	17.502
NVNT	n20	5825	Ant1	17.592
NVNT	n40	5755	Ant1	36.204
NVNT	n40	5795	Ant1	36.144

OBW NVNT a 5745MHz Ant1



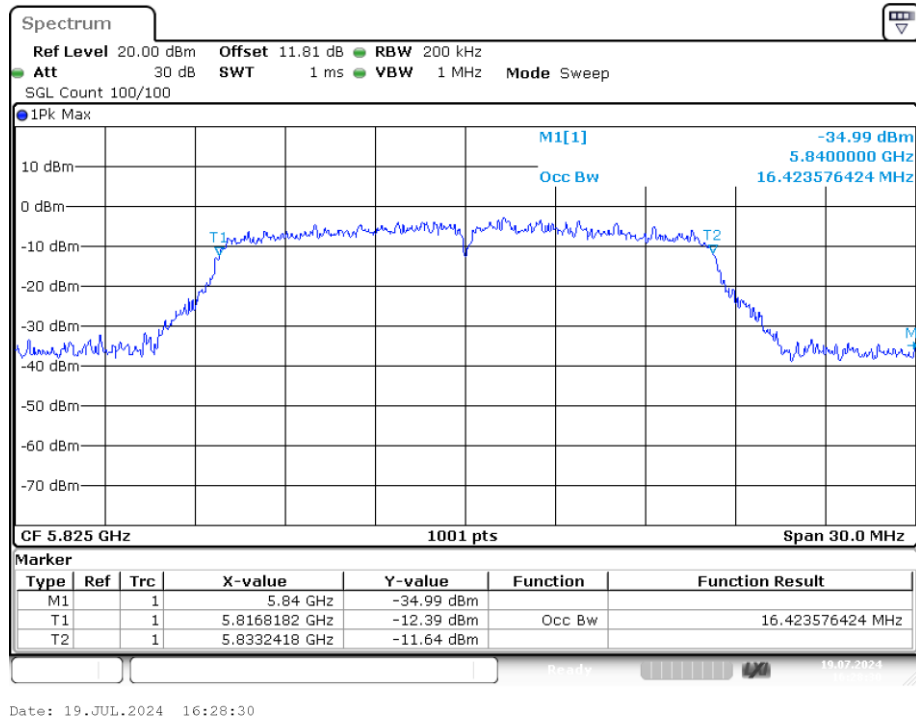
Date: 19.JUL.2024 16:23:21

OBW NVNT a 5785MHz Ant1

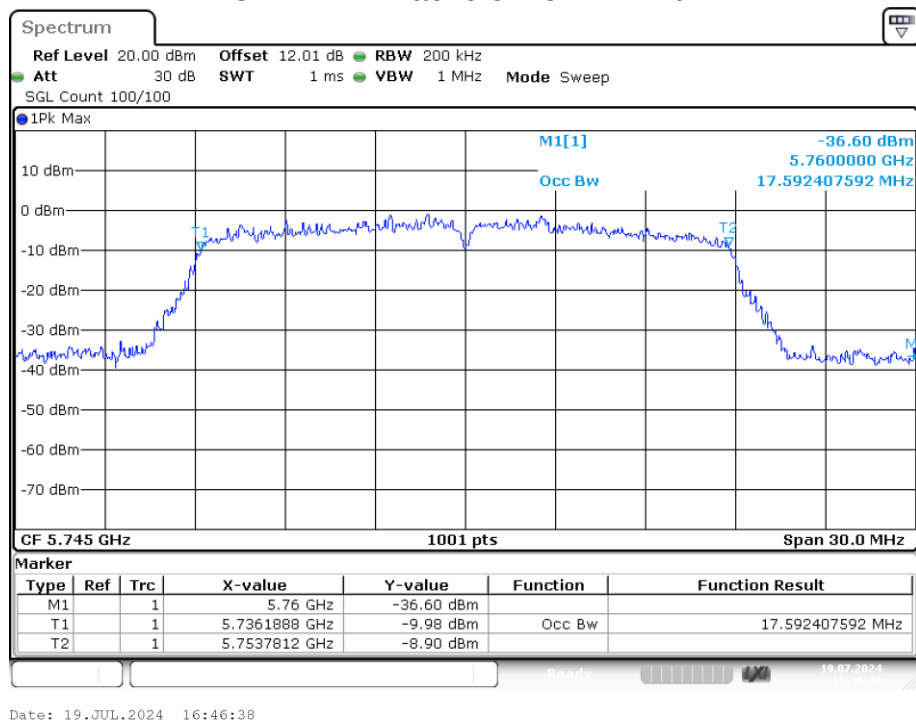


Date: 19.JUL.2024 16:26:16

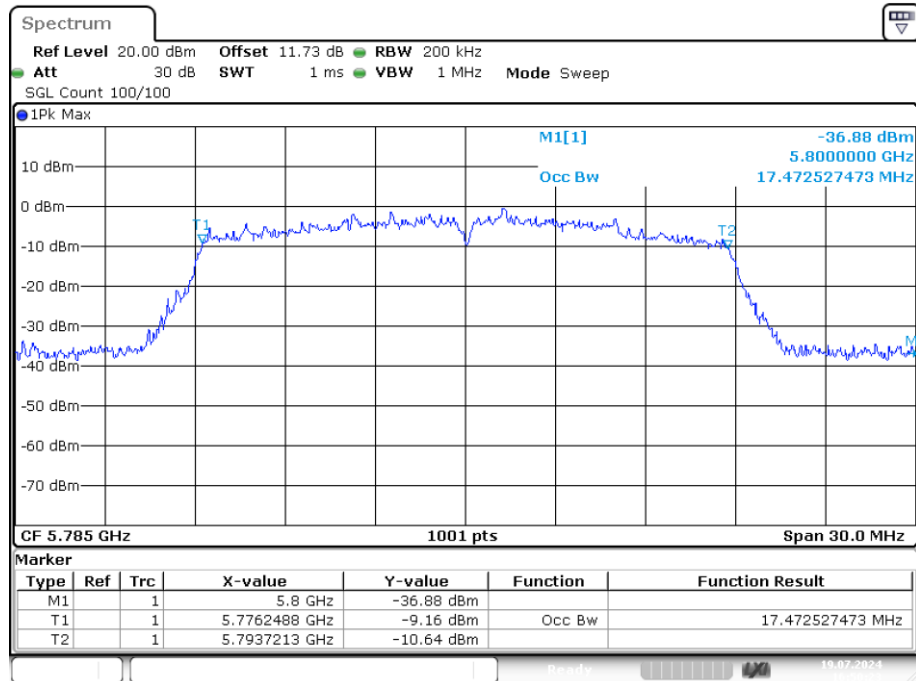
OBW NVNT a 5825MHz Ant1



OBW NVNT ac20 5745MHz Ant1

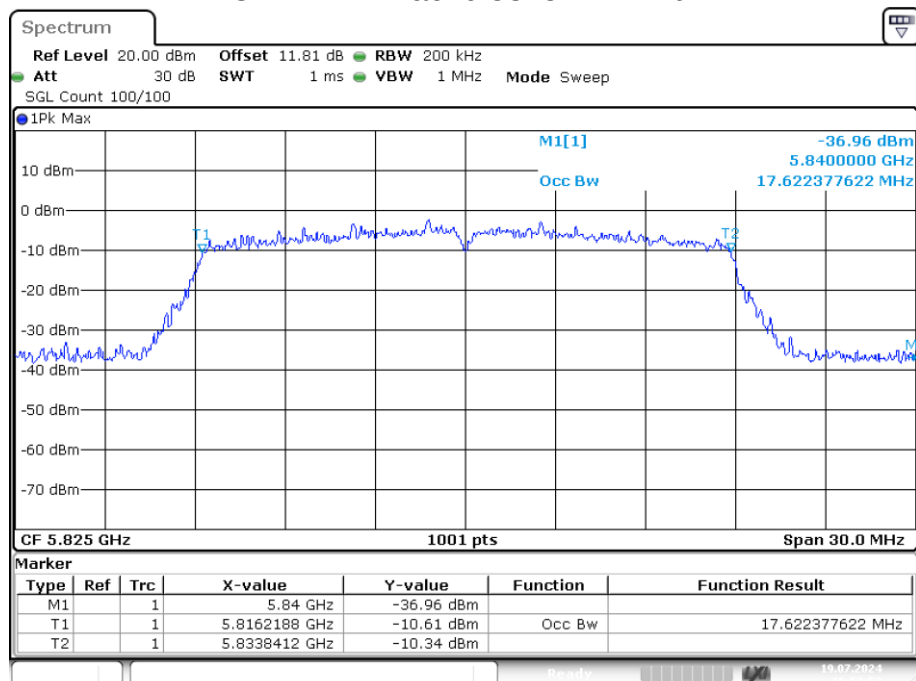


OBW NVNT ac20 5785MHz Ant1



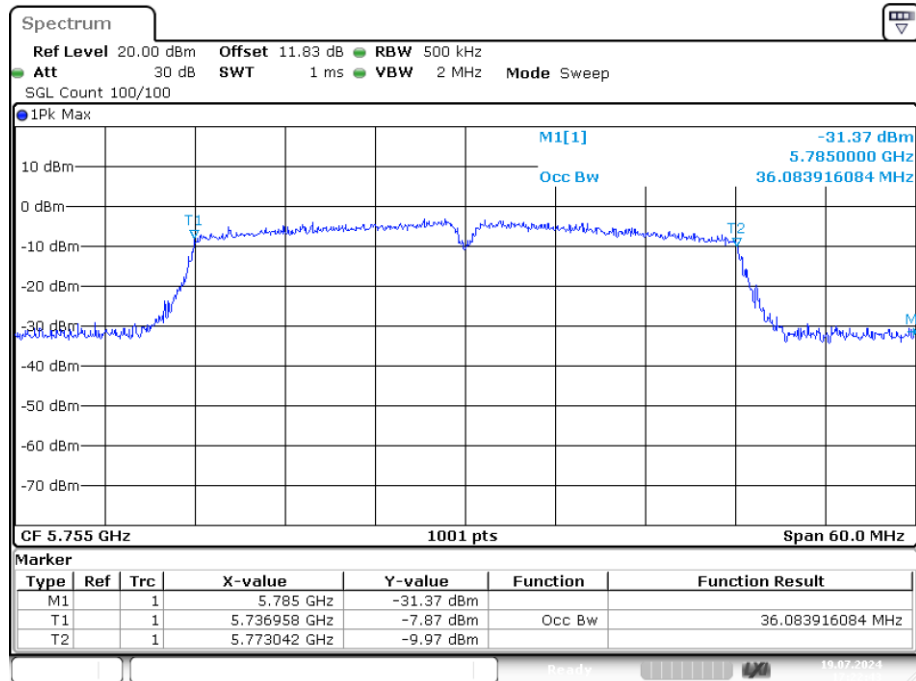
Date: 19.JUL.2024 16:50:22

OBW NVNT ac20 5825MHz Ant1



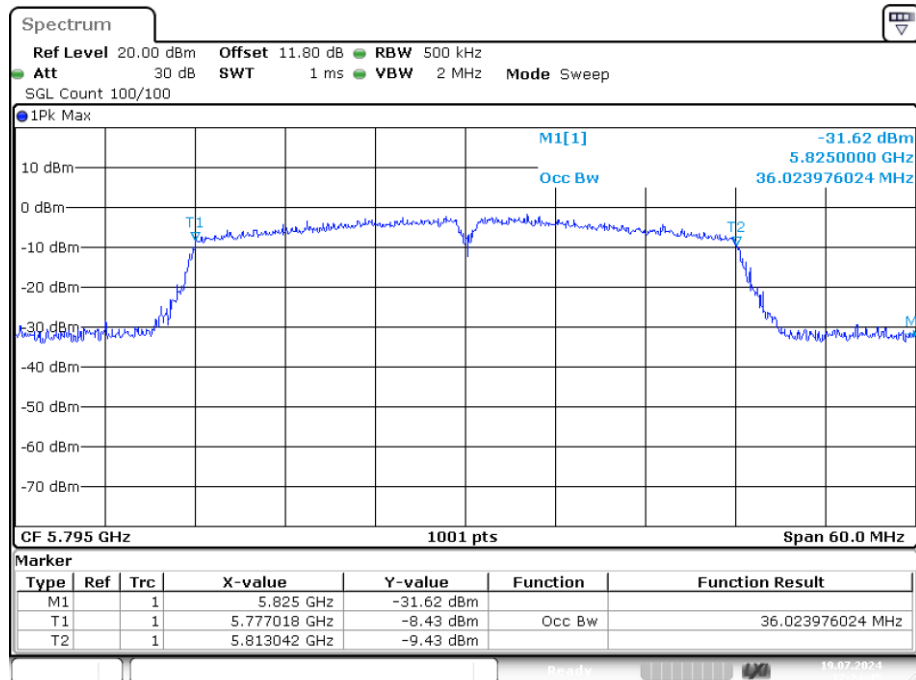
Date: 19.JUL.2024 16:52:53

OBW NVNT ac40 5755MHz Ant1



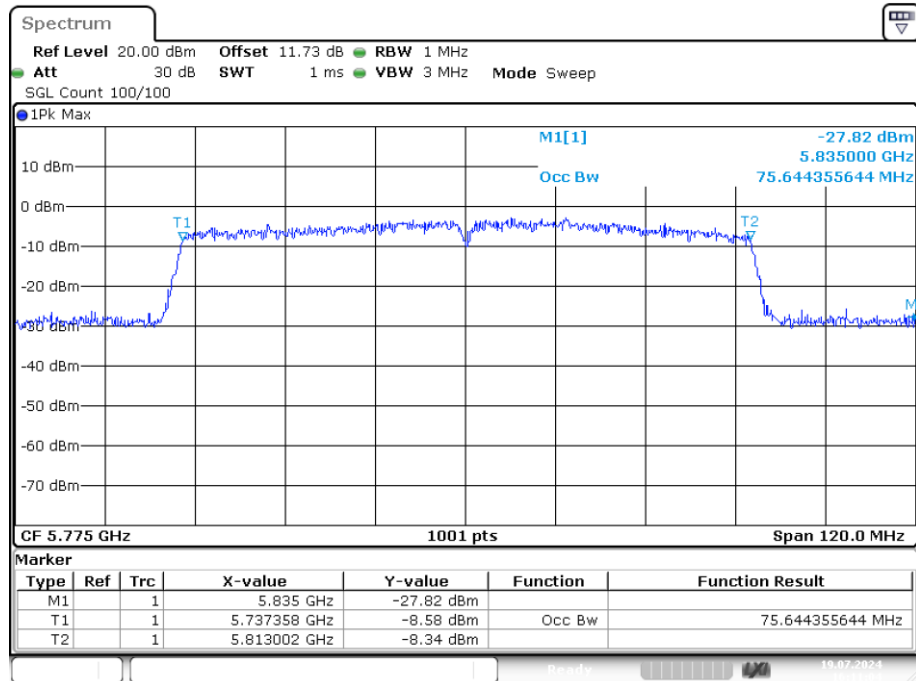
Date: 19.JUL.2024 17:22:43

OBW NVNT ac40 5795MHz Ant1



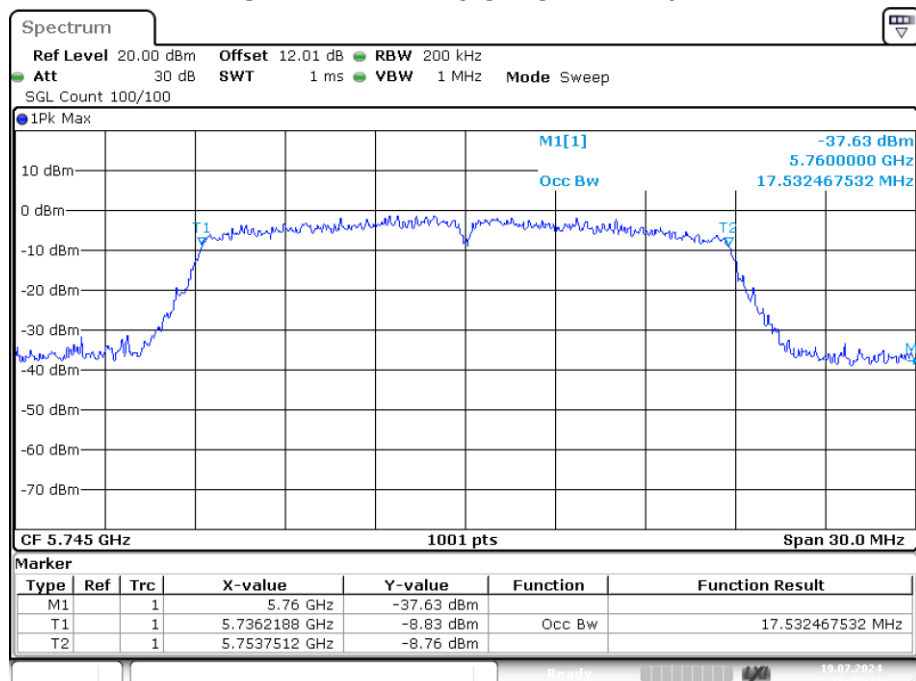
Date: 19.JUL.2024 17:24:45

OBW NVNT ac80 5775MHz Ant1



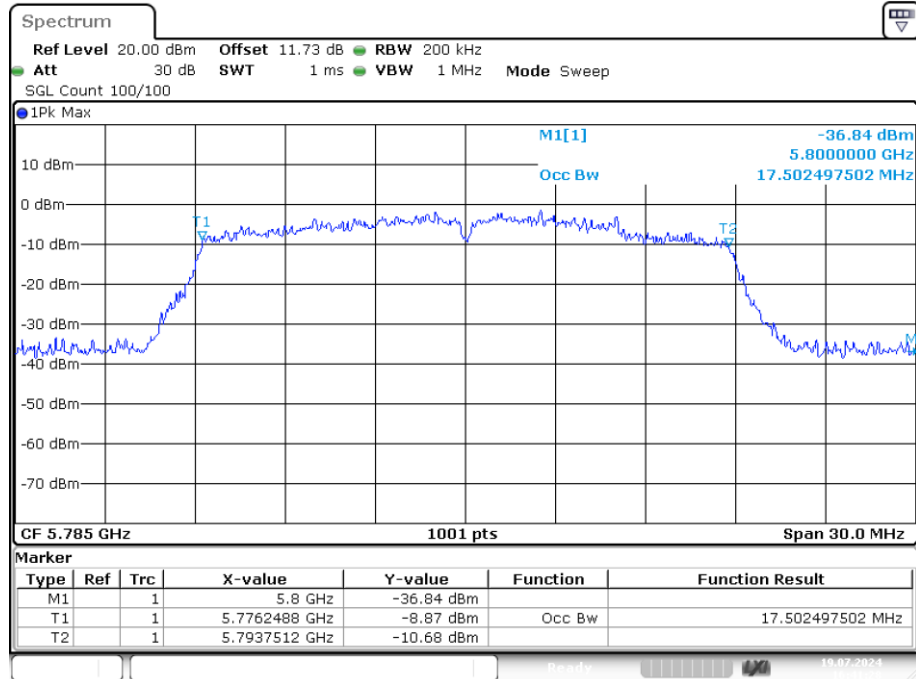
Date: 19.JUL.2024 16:11:04

OBW NVNT n20 5745MHz Ant1



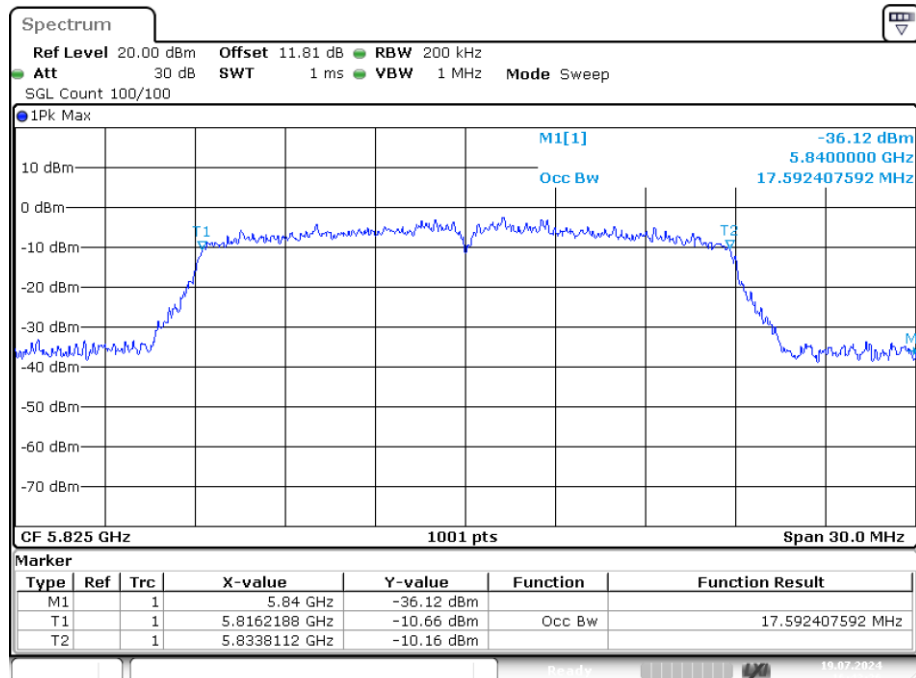
Date: 19.JUL.2024 16:32:22

OBW NVNT n20 5785MHz Ant1



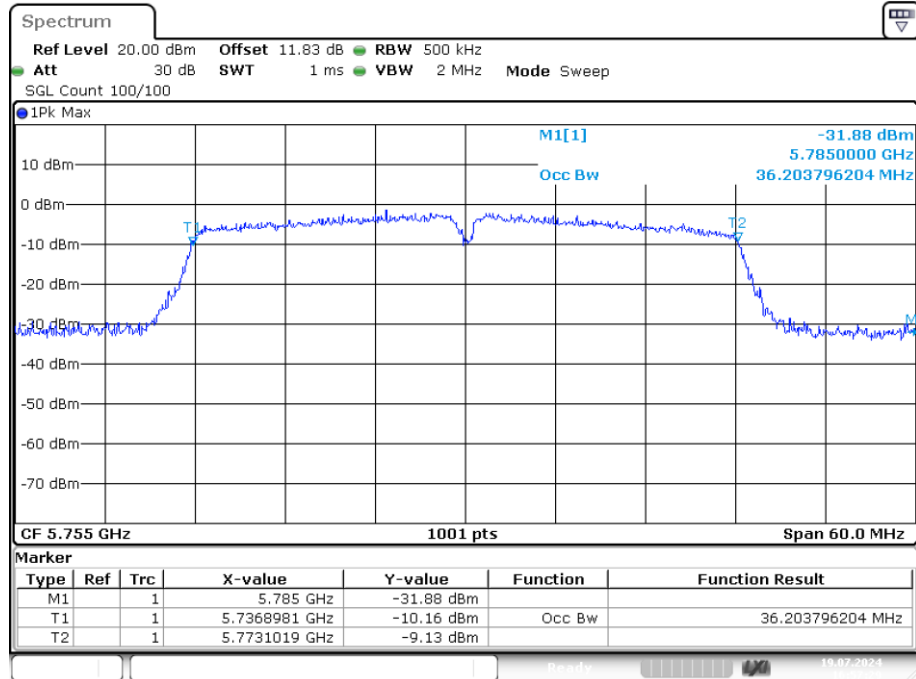
Date: 19.JUL.2024 16:41:27

OBW NVNT n20 5825MHz Ant1



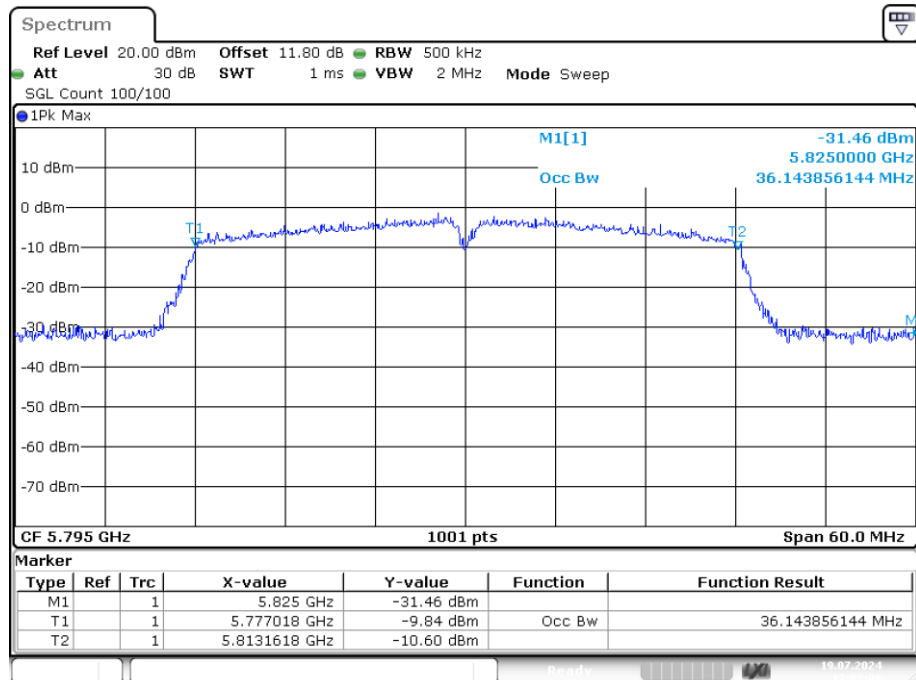
Date: 19.JUL.2024 16:43:26

OBW NVNT n40 5755MHz Ant1



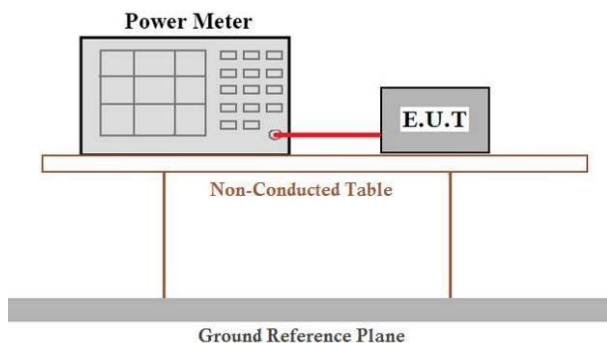
Date: 19.JUL.2024 16:57:29

OBW NVNT n40 5795MHz Ant1



Date: 19.JUL.2024 17:02:07

4.4 Peak Transmit Power

Test Requirement:	FCC Part15 E Section 15.407, RSS-247 Issue 2
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Limit:	FCC Part15 E Section 15.407: 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. RSS-247 Issue 2: Frequency band 5150-5250 MHz: For other devices, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band. Frequency band 5725-5850 MHz The maximum conducted output power shall not exceed 1 W. The output power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipointFootnote3 systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.
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 components are placed on a 'Non-Conducted Table'. The table is supported by two vertical legs. Below the table is 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 3 for details

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

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

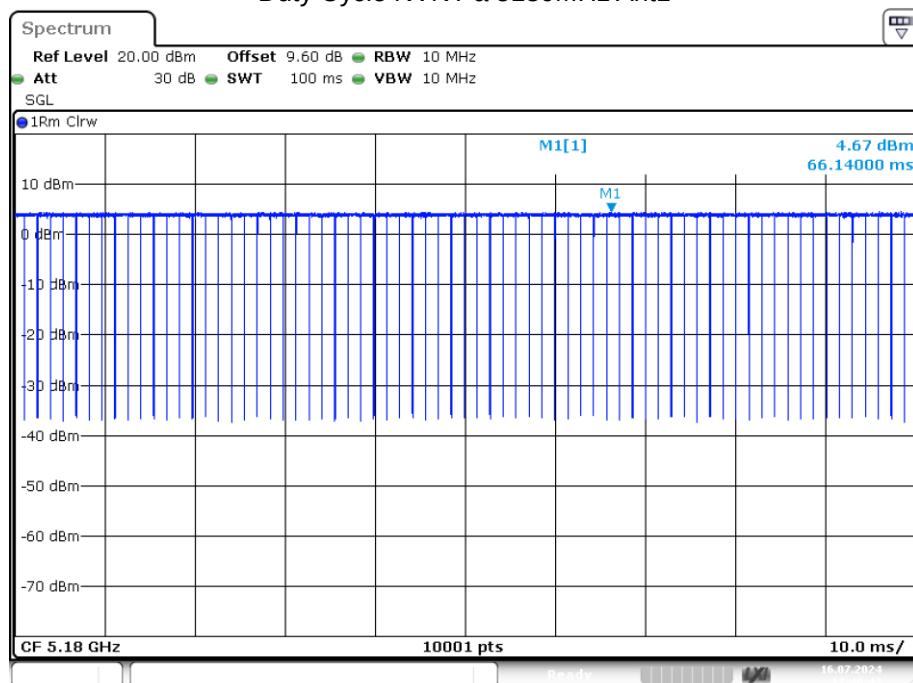
Condition	Mode	Frequency (MHz)	Antenna	Duty Factor (dB)	Conducted Power(dBm)	EIRP (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	0.11	14.505	19.545	24	Pass
NVNT	a	5200	Ant1	0.11	13.698	18.738	24	Pass
NVNT	a	5240	Ant1	0.11	14.335	19.375	24	Pass
NVNT	ac20	5180	Ant1	0.11	15.362	20.402	24	Pass
NVNT	ac20	5200	Ant1	0.11	14.451	19.491	24	Pass
NVNT	ac20	5240	Ant1	0.11	14.64	19.68	24	Pass
NVNT	ac40	5190	Ant1	0.23	15.542	20.462	24	Pass
NVNT	ac40	5230	Ant1	0.23	14.372	19.292	24	Pass
NVNT	ac80	5210	Ant1	0.47	14.935	19.615	24	Pass
NVNT	n20	5180	Ant1	0.12	15.082	20.112	24	Pass
NVNT	n20	5200	Ant1	0.12	14.403	19.433	24	Pass
NVNT	n20	5240	Ant1	0.12	14.626	19.656	24	Pass
NVNT	n40	5190	Ant1	0.24	13.803	18.713	24	Pass
NVNT	n40	5230	Ant1	0.23	14.765	19.685	24	Pass

EIRP(dBm)= Conducted Power (dBm)+Gain(dBi)

Duty Cycle

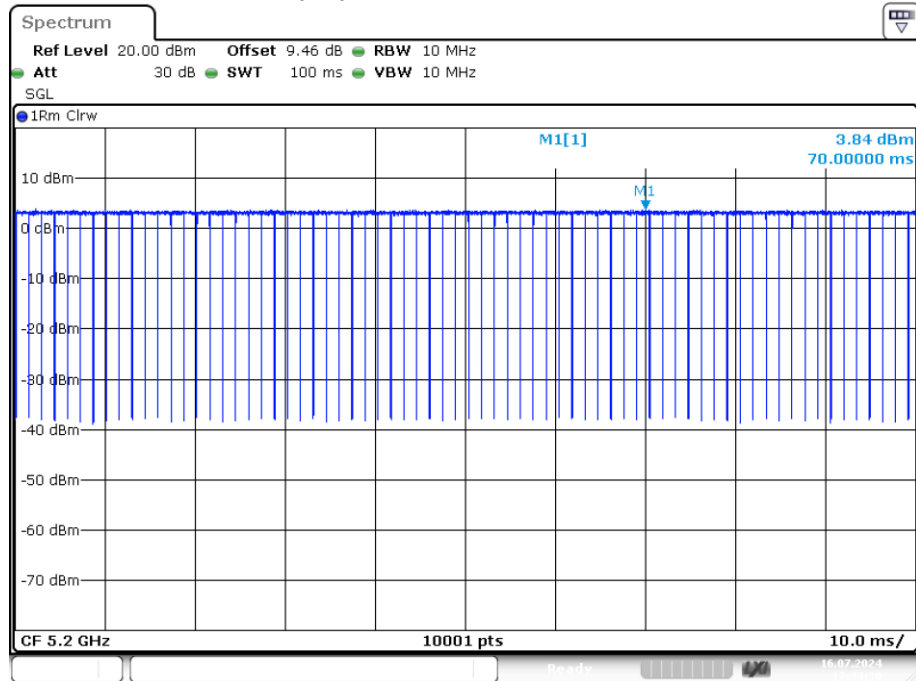
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)
NVNT	a	5180	Ant1	97.55	0.11
NVNT	a	5200	Ant1	97.49	0.11
NVNT	a	5240	Ant1	97.5	0.11
NVNT	ac20	5180	Ant1	97.4	0.11
NVNT	ac20	5200	Ant1	97.42	0.11
NVNT	ac20	5240	Ant1	97.4	0.11
NVNT	ac40	5190	Ant1	94.93	0.23
NVNT	ac40	5230	Ant1	94.86	0.23
NVNT	ac80	5210	Ant1	89.81	0.47
NVNT	n20	5180	Ant1	97.36	0.12
NVNT	n20	5200	Ant1	97.34	0.12
NVNT	n20	5240	Ant1	97.36	0.12
NVNT	n40	5190	Ant1	94.72	0.24
NVNT	n40	5230	Ant1	94.81	0.23

Duty Cycle NVNT a 5180MHz Ant1



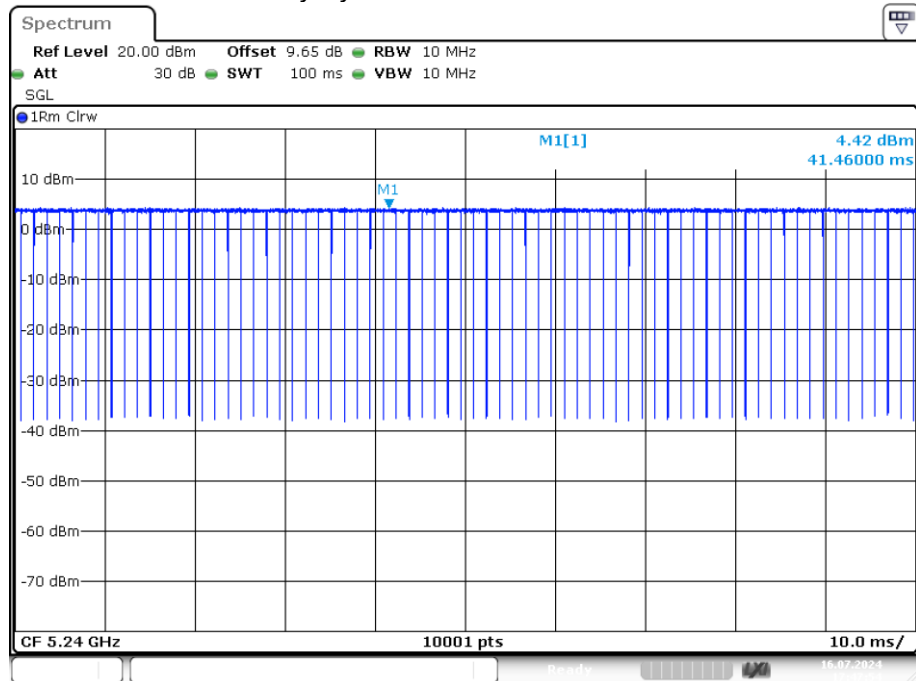
Date: 16.JUL.2024 17:40:43

Duty Cycle NVNT a 5200MHz Ant1



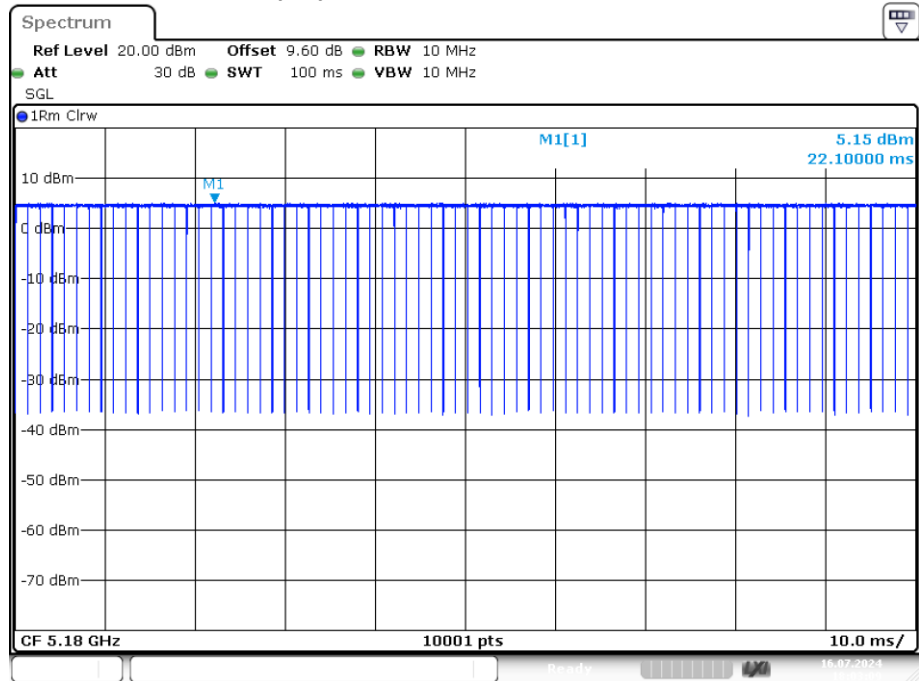
Date: 16.JUL.2024 17:44:30

Duty Cycle NVNT a 5240MHz Ant1



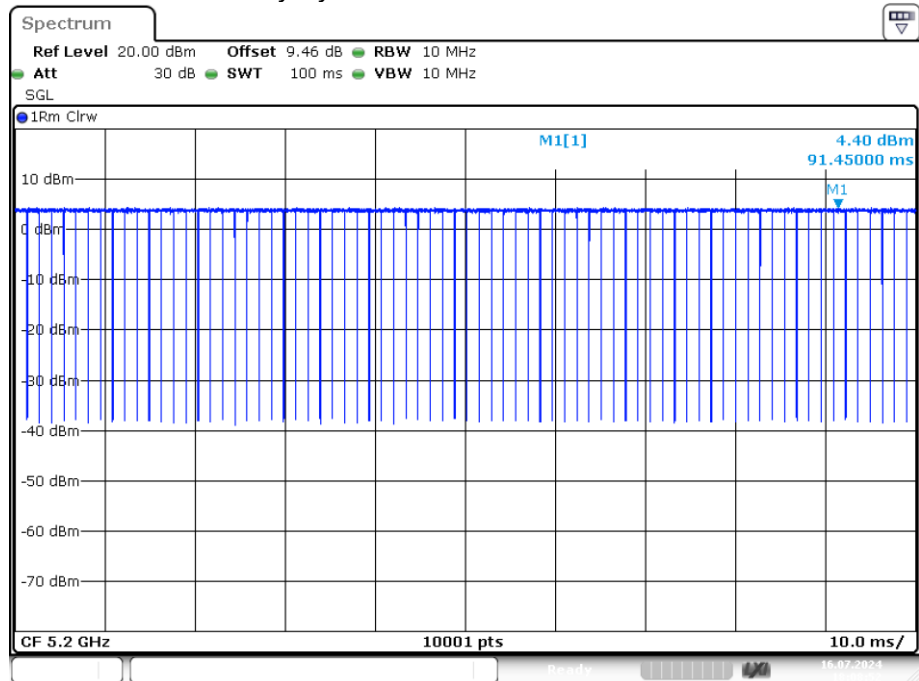
Date: 16.JUL.2024 17:47:54

Duty Cycle NVNT ac20 5180MHz Ant1



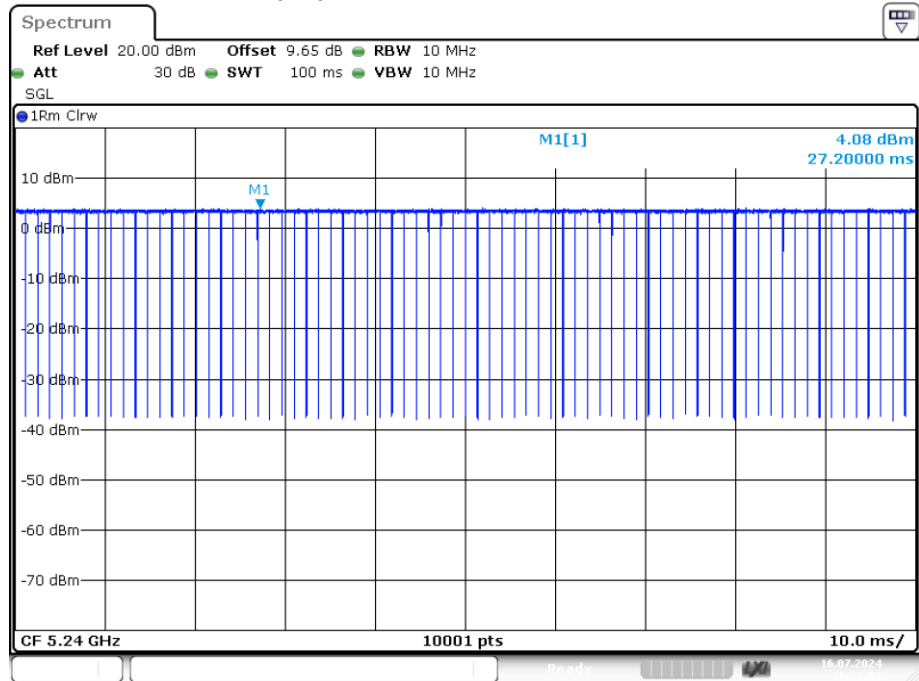
Date: 16.JUL.2024 18:03:08

Duty Cycle NVNT ac20 5200MHz Ant1



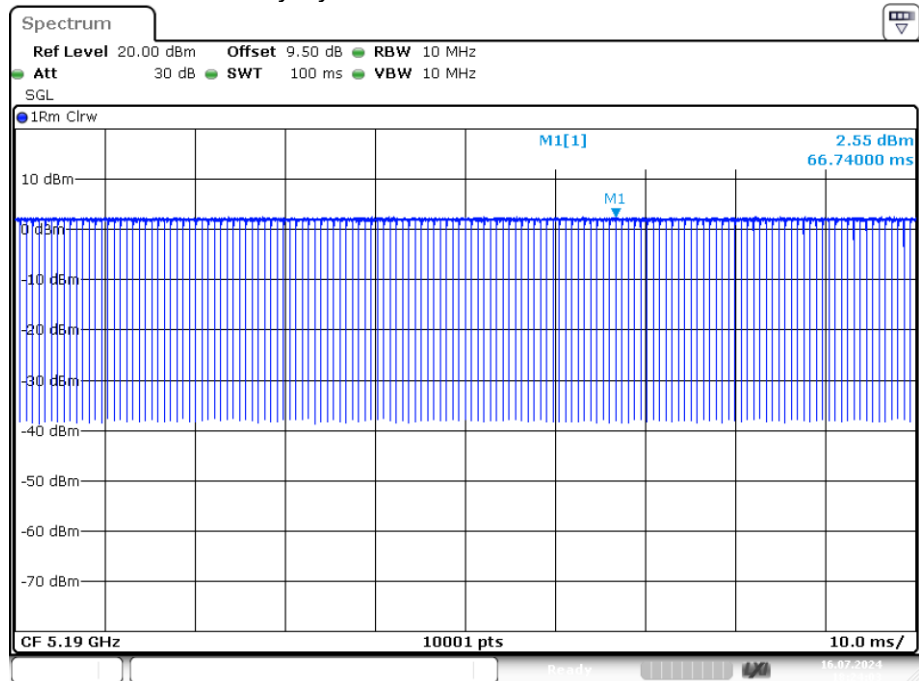
Date: 16.JUL.2024 18:08:52

Duty Cycle NVNT ac20 5240MHz Ant1



Date: 16.JUL.2024 18:12:02

Duty Cycle NVNT ac40 5190MHz Ant1



Date: 16.JUL.2024 18:24:04