EMTEK
Access to the World

TEST REPORT

Product Name : Tablet
Model Number : MS-NDA2
FCC ID : I4L-MSNDA201

Prepared for	:	Micro-Star Int'l Co.,Ltd.
Address	:	No.69, Lide St., Zhonghe Dist., New Taipei City 235, Taiwan
Prepared by	:	EMTEK (SHENZHEN) CO., LTD.
Address	:	Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China Tel: (0755) 26954280 Fax: (0755) 26954282
Report Number	:	ENS2408260033W00204R
Date(s) of Tests	:	September 13, 2024 to October 22, 2024
Date of issue	:	October 25, 2024

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Modified Information

Version	Report No.	Revision Date	Summary
Ver.1.0	ENS2408260033W00204R	/	Original Report

1 TEST RESULT CERTIFICATION

Applicant	:	Micro-Star Int'l Co.,Ltd.
Address :		No.69, Lide St., Zhonghe Dist., New Taipei City 235, Taiwan
Manufacturer	:	Micro-Star International Co., Ltd.
Address :		No.88 East Qianjin Road, Kunshan city, Jiangsu province, China
EUT	:	Tablet
Model Name	:	MS-NDA2
Trademark	:	MSI

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
FCC 47 CFR Part 2, Subpart J FCC 47 CFR Part 15, Subpart E	**PASS**

The above equipment was tested by EMTEK (SHENZHEN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the above table standards requirement.
The test results of this report relate only to the tested sample identified in this report.

Date of Test	:	September 13, 2024 to October 22, 2024
Prepared by	:	Una Yu/Editor
Reviewer	:	Joe Xia/Supervisor
Approved & Authorized Signer	:	Lisa Wang/Manager

2 EUT TECHNICAL DESCRIPTION

Product Name:	Tablet
Model Number:	MS-NDA2
Wifi Type:	UNII-1: 5150MHz-5250MHz Band UNII-2A: with 5250MHz-5350MHz Band UNII-2C: with 5470MHz-5725MHz Band UNII-3: with 5725MHz-5850MHz Band
WLAN Supported:	802.11a 802.11n(20MHz channel bandwidth) 802.11n(40MHz channel bandwidth) 802.11ac(20MHz channel bandwidth) 802.11ac(40MHz channel bandwidth) 802.11ac(80MHz channel bandwidth)
Modulation:	OFDM, OFDMA
Frequency Range:	5150MHz-5250MHz Band
	5180-5240MHz for 802.11a 5180-5240MHz for 802.11n(HT20) 5190-5230MHz for 802.11n(HT40) 5180-5240MHz for 802.11ac(HT20) 5190-5230MHz for 802.11ac(HT40) 5210MHz for 802.11ac(HT80)
	5250MHz-5350MHz Band
	5260-5320MHz for 802.11a 5260-5320MHz for 802.11n(HT20) 5270-5310MHz for 802.11n(HT40) 5260-5320MHz for 802.11ac(HT20) 5270-5310MHz for 802.11ac(HT40) 5290MHz for 802.11ac(HT80)
	5470MHz-5725MHz Band
	5500-5700MHz for 802.11a 5500-5700MHz for 802.11n(HT20) 5510-5670MHz for 802.11n(HT40) 5500-5700MHz for 802.11ac(HT20) 5510-5670MHz for 802.11ac(HT40) 5530-5610MHz for 802.11ac(HT80)
	5725MHz-5850MHz Band
	5745-5825MHz for 802.11a 5745-5825MHz for 802.11n(HT20) 5755-5795MHz for 802.11n(HT40) 5745-5825MHz for 802.11ac(HT20) 5755-5795MHz for 802.11ac(HT40) 5775MHz for 802.11ac(HT80)
TPC Function:	Not Support

Beamforming:	Not Support
Antenna Type:	Integrated Antenna
Antenna Gain:	3.34dBi (Note: The antenna information is provided by the customers, which will have a certain impact on the test results.)
Power Supply:	Rechargeable Li-ion Cylindrical Battery Model: 18650-2S3P 2INR19/66-3 Rating: 7.2V, 9447mAh, 68Wh
Temperature Range:	0℃~ 50℃

Note: for more details, please refer to the user's manual of the EUT.

3 SUMMARY OF TEST RESULT

FCC Part Clause	Test Parameter	Verdict	Remark
15.407 (a) 15.407 (e)	99% , 6dB and 26dB Bandwidth	PASS	
15.407 (a)	Maximum Conducted Output Power	PASS	
15.407 (a)	Peak Power Spectral Density	PASS	
15.407 (b)	Radiated Spurious Emission	PASS	
15.407 (b)(6) 15.207	Power Line Conducted Emission	N/A	
15.407(a) 15.203	Antenna Application	PASS	
NOTE1: N/A is an abbreviation for not applicable. NOTE2: The results of this report do not take into account the uncertainty. NOTE3: According to FCC OET KDB 789033 D2 General UNII Test Procedures New Rules v02r01, In addition, the radiated test is also performed to ensure the emissions emanating from the device cabinet also comply with the applicable limits.			

RELATED SUBMITTAL(S) / GRANT(S):

This submittal(s) (test report) is filing to comply with the above table standards requirement.

4 TEST METHODOLOGY

4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards:
FCC 47 CFR Part 2, Subpart J
FCC 47 CFR Part 15, Subpart E
FCC KDB 789033 D2 General UNII Test Procedures New Rules v02r01

4.2 MEASUREMENT EQUIPMENT USED

For Spurious Emissions Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Pre-Amplifier	Bonn	BLMA 011001N	2213967A	2023/10/23	1Year
EMI Test Receiver	Rohde & Schwarz	ESR7	102551	2023/10/23	1Year
Bilog Antenna	Schwarzbeck	VULB9163	9163142	2024/7/8	2Year
Horn antenna	Schwarzbeck	BBHA9120D	9120D-1198	2023/6/2	2Year
Pre-Amplifier	Bonn	BLMA 0118-5G	2213967B-01	2023/10/23	1Year
Spectrum Analyzer	Rohde & Schwarz	FSV3044	101290	2023/10/23	1Year
Horn antenna	Schwarzbeck	BBHA9170	9170-399	2023/5/12	2Year
Pre-Amplifier	Lunar EM	LNA18G26-40	J1012131010001	2024/5/11	1Year
Pre-Amplifier	Lunar EM	LNA26G40-40	J1013131028001	2024/5/11	1Year
Loop Antenna	Schwarzbeck	FMZB1519	1519-012	2023/5/12	2Year
Wideband Radio Communication Tester	R&S	CMW500	147366	2024/5/10	1Year
Coaxial Cable	TIMES	NmNm-7-C15702	N/A	2024/5/23	1Year
Coaxial Cable	TIMES	HF290-NMSM-6.5M	N/A	2024/5/23	1Year

For Other Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Wideband Radio Communication Tester	R&S	CMW500	171168	2023/9/19 2024/9/18	1Year
Frequency Extender	R&S	CMW-Z800A	100430	2023/9/19 2024/9/18	1Year
Spectrum Analyzer	R&S	FSV3044	101289	2023/9/19 2024/9/18	1Year
Analog Signal Generator	R&S	SMB100A	183237	2023/9/19 2024/9/18	1Year
Vector Signal Generator	R&S	SMM100A	101808	2023/9/19 2024/9/18	1Year
RF Control Unit(Power Meter)	Tonscend	JS0806-2	22C8060567	2023/9/19 2024/9/18	1Year
Temperature&Humidity Chamber	ESPEC	EL-02KA	12107166	2024/5/10	1 Year
DC Power Supply	KEYSIGHT	E3642A	MY53030016	2023/9/19 2024/9/18	1 Year

4.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition.
The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.
The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.
Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.
Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

WIFI 5G with 5150-5250MHz

Frequency and Channels list for 802.11a/n(20)/ac(20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220		
40	5200	48	5240		

Frequency and Channels list for 802.11n (40)/ac(40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190				
46	5230				

Frequency and Channel list for 802.11ac(80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210				

Test Frequency and Channels for 802.11a/n(20)/ac(20):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	40	5200	48	5240

Test Frequency and channels for 802.11n (40)/ 802.11ac(40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	N/A	N/A	46	5230

Test Frequency and channels for 802.11ac(80):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	N/A	N/A	N/A	N/A

WIFI 5G with 5250-5350MHz

Frequency and Channels list for 802.11a/n(20)/ac(20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300		
56	5280	64	5320		

Frequency and Channels list for 802.11n (40)/ 802.11ac(40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270				
62	5310				

Frequency and Channels list for 802.11ac(80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
58	5290				

Test Frequency and Channels for 802.11a/n(20)/ac(20):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	56	5280	64	5320

Test Frequency and channels for 802.11n(40)/ 802.11ac(40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270	N/A	N/A	62	5310

Test Frequency and channels for 802.11ac(80):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
58	5290				

WIFI 5G with 5470-5725MHz

Frequency and Channels list for 802.11a/n(20)/ac(20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	116	5580	132	5660
104	5520	120	5600	136	5680
108	5540	124	5620	140	5700
112	5560	128	5640		

Frequency and Channels list for 802.11n(40)/ 802.11ac(40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
102	5510	118	5590	134	5670
110	5550	126	5630		

Frequency and Channels list for 802.11ac(80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
106	5530	138	5690		

Test Frequency and Channels for 802.11a/n(20)/ac(20):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	116	5580	140	5700

Test Frequency and channels for 802.11n(40)/ac(40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
102	5510			134	5670

Test Frequency and channels for 802.11ac(80):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
106	5530	138	5690		

WIFI 5G with 5725MHz-5850MHz

Frequency and Channels list for 802.11a/n(20)/ac(20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785	165	5825
153	5765	161	5805		

Frequency and Channels list for 802.11n (40)/ 802.11ac(40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755				
159	5795				

Frequency and Channels list for 802.11ac(80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
155	5775				

Test Frequency and Channels for 802.11a/n(20)/ac(20):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785	165	5825

Test Frequency and channels for 802.11n (40)/ac(40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755			159	5795

Test Frequency and channels for 802.11ac(80):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
155	5775				

5 FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

Site Description

EMC Lab. : **Accredited by CNAS**
The Certificate Registration Number is L2291
The Laboratory has been assessed and proved to be in compliance with CNAS-CL01 (identical to ISO/IEC 17025:2017)

Accredited by FCC
Designation Number: CN1204
Test Firm Registration Number: 882943

Accredited by A2LA
The Certificate Number is 4321.01

Accredited by Industry Canada
The Conformity Assessment Body Identifier is CN0008

Name of Firm : EMTEK (SHENZHEN) CO., LTD.
Site Location : Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with preselectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

6 TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

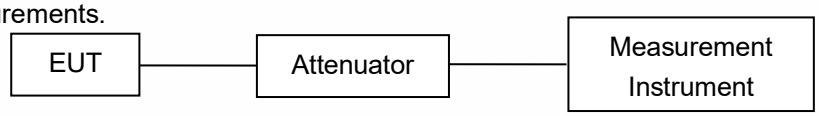
Parameter	Uncertainty
Radio Frequency	±1x10^-5
Maximum Peak Output Power Test	±1.0dB
Conducted Emissions Test	±2.0dB
Radiated Emission Test	±2.0dB
Power Density	±2.0dB
Occupied Bandwidth Test	±1.0dB
Band Edge Test	±3dB
All emission, radiated	±3dB
Antenna Port Emission	±3dB
Temperature	±0.5℃
Humidity	±3%

Measurement Uncertainty for a level of Confidence of 95%.

7 SETUP OF EQUIPMENT UNDER TEST

7.1 RADIO FREQUENCY TEST SETUP

The WLAN component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.



7.2 RADIO FREQUENCY TEST SETUP

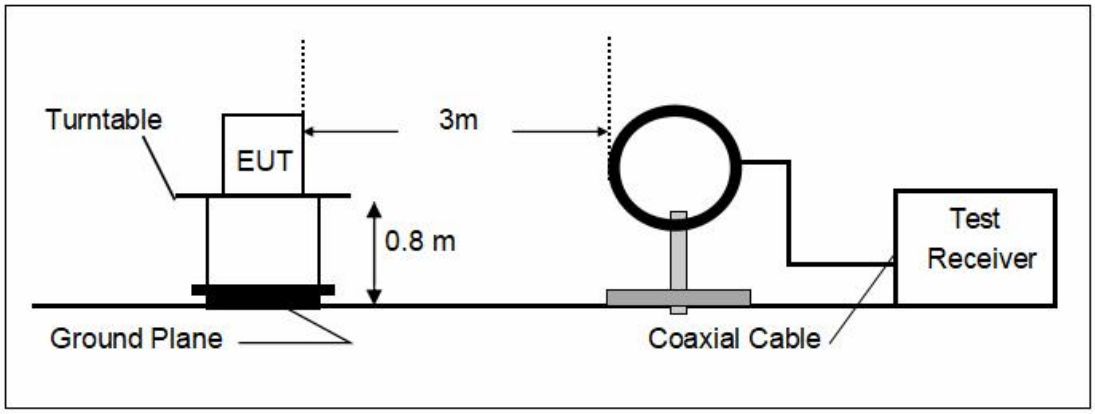
The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10. The test distance is 3m.The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

Below 30MHz：
The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The Antenna should be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT.

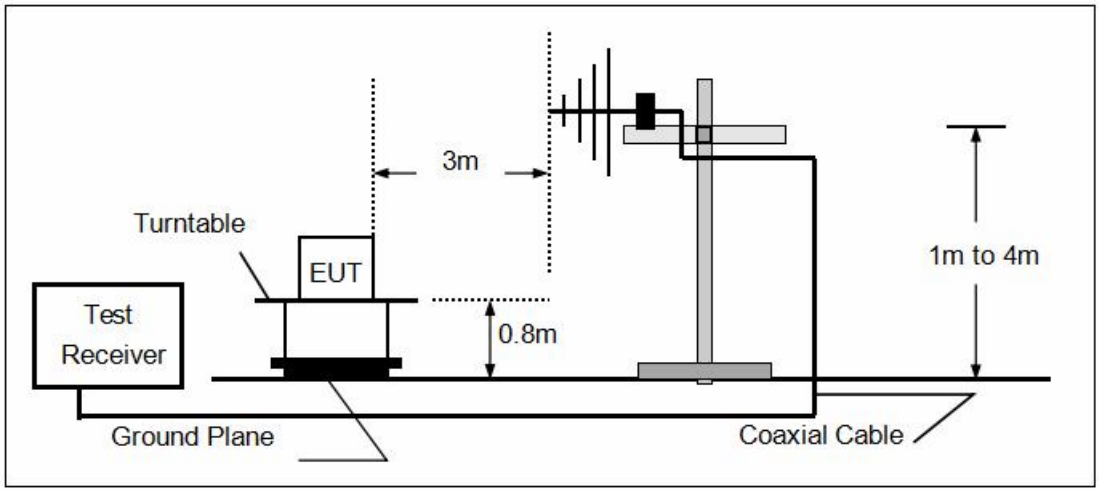
Above 30MHz：
The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

Above 1GHz：
(Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.)
The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

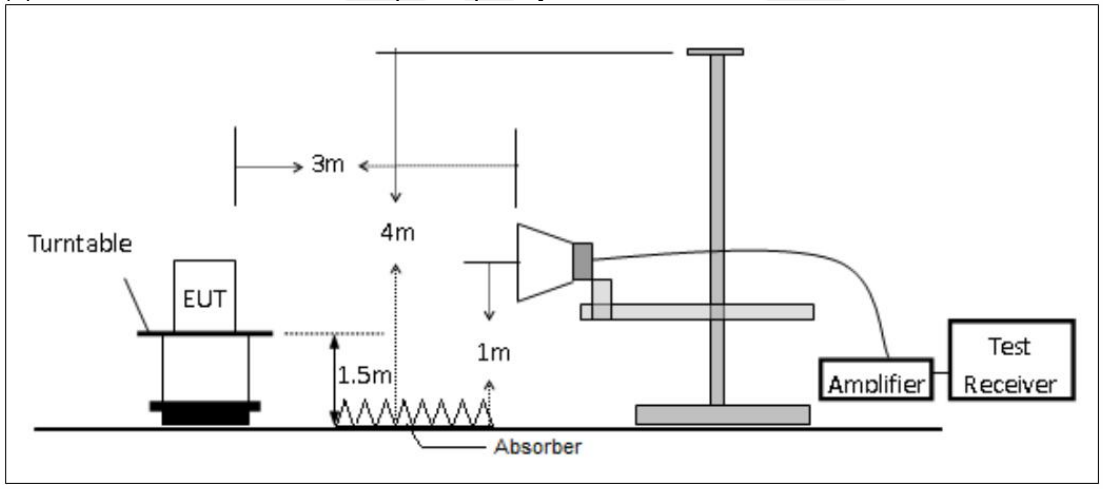
(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



(b) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(c) Radiated Emission Test Set-Up, Frequency above 1000MHz

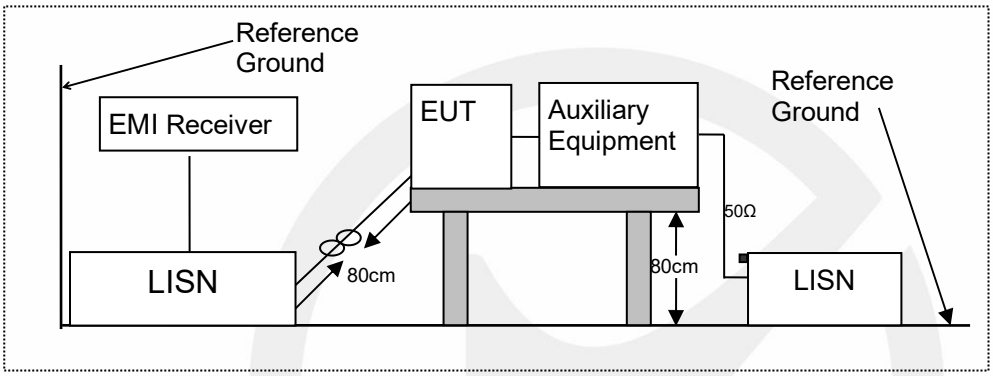


7.3 CONDUCTED EMISSION TEST SETUP

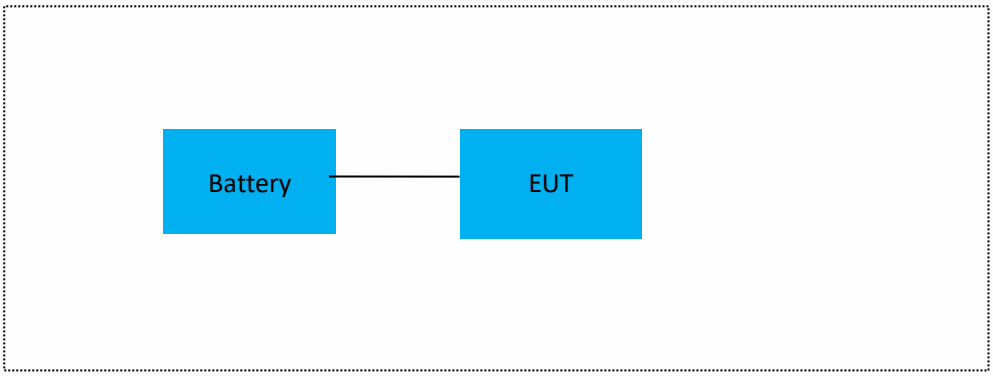
The mains cable of the EUT (maybe per AC/DC Adapter) must be connected to LISN. The LISN shall be placed 0.8 m from the boundary of EUT and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance is between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8m from the LISN.

Ground connections, where required for safety purposes, shall be connected to the reference ground point of the LISN and, where not otherwise provided or specified by the manufacturer, shall be of same length as the mains cable and run parallel to the mains connection at a separation distance of not more than 0.1 m.

According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.



7.4 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM



7.5 SUPPORT EQUIPMENT

N/A

Notes:

1.All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2.Grounding was established in accordance with the manufacturer’s requirements and conditions for the intended use.

8 TEST REQUIREMENTS

8.1 BANDWIDTH MEASUREMENT

8.1.1 Applicable Standard

According to FCC Part 15.407(a)(1) for UNII Band I
According to FCC Part 15.407(a)(2) for UNII Band II-A and UNII Band II-C
According to FCC Part 15.407(a)(3) for UNII Band III
According to FCC Part 15.407(e) for UNII Band III
According to 789033 D02 Section II(C)
According to 789033 D02 Section II(D)

8.1.2 Conformance Limit

(1) For the band 5.15-5.25 GHz.
(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(e) Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

8.1.3 Test Configuration

Test according to clause 6.1 radio frequency test setup.

8.1.4 Test Procedure

According to 789033 D02 v02r01 section C&D, the following is the measurement procedure.

1. Emission Bandwidth (EBW)
a) Set RBW = approximately 1% of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) 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%.

2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

D. 99 Percent Occupied Bandwidth
The 99-percent occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99-percent occupied bandwidth is required only as a condition for using the optional band-edge measurement techniques described in section II.G.3.d). Measurements of 99-percent occupied bandwidth may also optionally be used in lieu of the EBW to 789033 D02 v01r02 General UNII Test Procedures New Rules v01 define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in section II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

The following procedure shall be used for measuring (99 %) power bandwidth:
1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the 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. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

8.1.5 Test Results

Temperature :	25℃	ATM Pressure:	1011 mbar
Humidity :	45 %	Test Engineer:	GJ

Emission Bandwidth (26dB)

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	22.72	5168.64	5191.36	---	---
		5200	22.64	5188.72	5211.36	---	---
		5240	23.28	5228.24	5251.52	---	---
		5260	22.76	5248.48	5271.24	---	---
		5280	23.28	5268.04	5291.32	---	---
		5320	23.48	5308.08	5331.56	---	---
		5500	23.44	5488.64	5512.08	---	---
		5580	23.20	5568.36	5591.56	---	---
		5700	23.16	5688.20	5711.36	---	---
		5745	24.64	5732.72	5757.36	---	---
		5785	24.20	5772.68	5796.88	---	---
		5825	24.08	5812.40	5836.48	---	---
11N20SISO	Ant1	5180	23.92	5168.04	5191.96	---	---
		5200	23.80	5188.04	5211.84	---	---
		5240	24.16	5228.08	5252.24	---	---
		5260	23.40	5248.32	5271.72	---	---
		5280	24.52	5267.72	5292.24	---	---
		5320	25.20	5306.80	5332.00	---	---
		5500	24.04	5488.28	5512.32	---	---
		5580	23.76	5568.16	5591.92	---	---
		5700	23.52	5688.04	5711.56	---	---
		5745	24.88	5732.36	5757.24	---	---
		5785	25.16	5771.80	5796.96	---	---
		5825	23.96	5812.76	5836.72	---	---
11N40SISO	Ant1	5190	41.84	5169.12	5210.96	---	---
		5230	41.84	5208.96	5250.80	---	---
		5270	42.00	5248.88	5290.88	---	---
		5310	41.92	5288.96	5330.88	---	---
		5510	41.68	5489.12	5530.80	---	---
		5550	41.76	5529.04	5570.80	---	---
		5670	42.00	5649.04	5691.04	---	---
		5755	42.24	5733.56	5775.80	---	---
		5795	42.24	5773.80	5816.04	---	---
11AC20SISO	Ant1	5180	23.12	5168.64	5191.76	---	---
		5200	23.68	5188.08	5211.76	---	---
		5240	23.48	5228.20	5251.68	---	---
		5260	23.76	5247.88	5271.64	---	---
		5280	24.28	5268.12	5292.40	---	---
		5320	23.68	5307.92	5331.60	---	---
		5500	23.72	5488.28	5512.00	---	---
		5580	23.76	5568.24	5592.00	---	---
		5700	23.36	5688.28	5711.64	---	---
		5745	25.20	5732.40	5757.60	---	---
		5785	24.48	5772.40	5796.88	---	---
		5825	24.80	5812.40	5837.20	---	---
11AC40SISO	Ant1	5190	41.68	5169.20	5210.88	---	---

		5230	42.08	5208.80	5250.88	---	---
		5270	41.92	5248.96	5290.88	---	---
		5310	42.00	5288.80	5330.80	---	---
		5510	41.60	5489.28	5530.88	---	---
		5550	41.76	5529.12	5570.88	---	---
		5670	41.84	5649.20	5691.04	---	---
		5755	42.40	5733.64	5776.04	---	---
		5795	42.40	5773.64	5816.04	---	---
11AC80SISO	Ant1	5210	85.12	5167.60	5252.72	---	---
		5290	84.64	5247.44	5332.08	---	---
		5530	84.64	5488.08	5572.72	---	---
		5610	84.16	5567.76	5651.92	---	---
		5775	84.48	5732.44	5816.92	---	---

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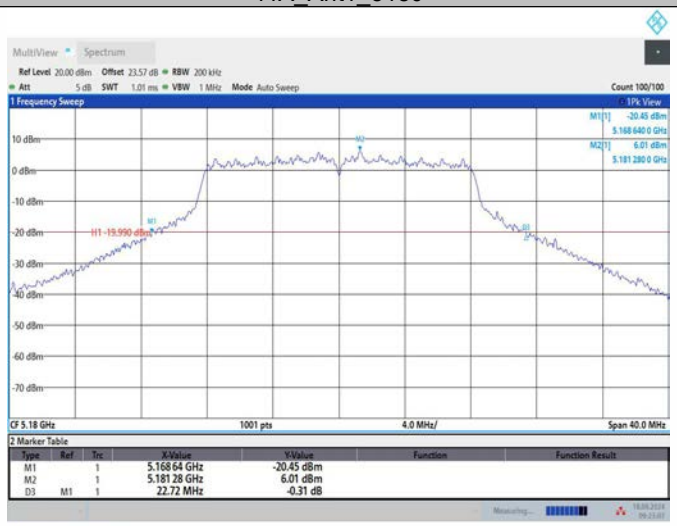

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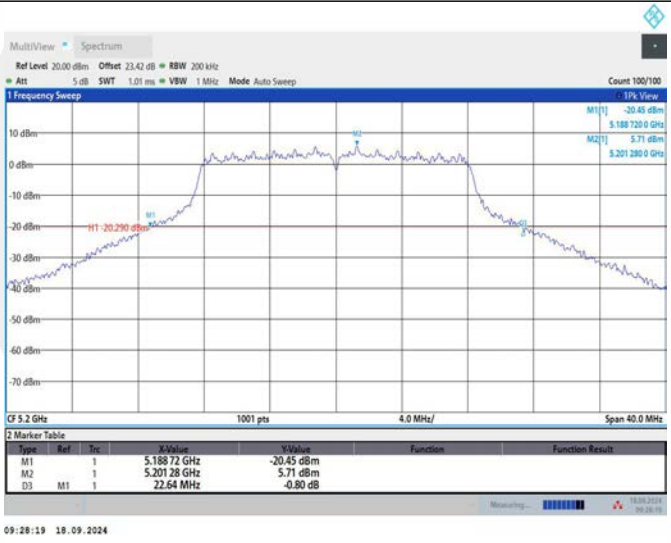

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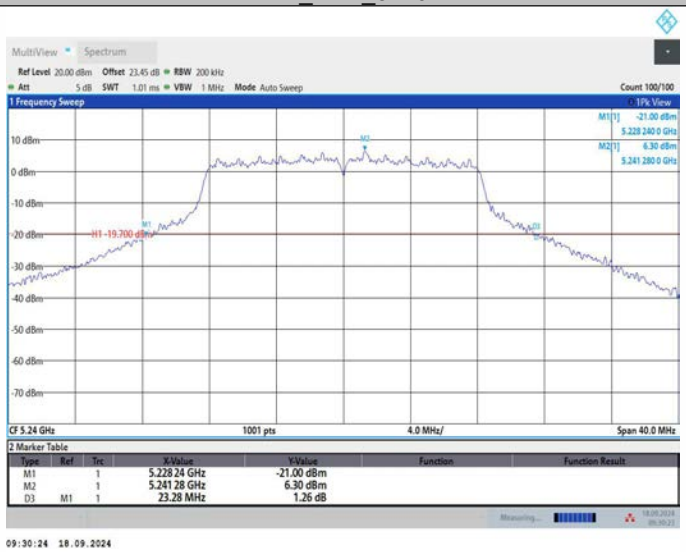

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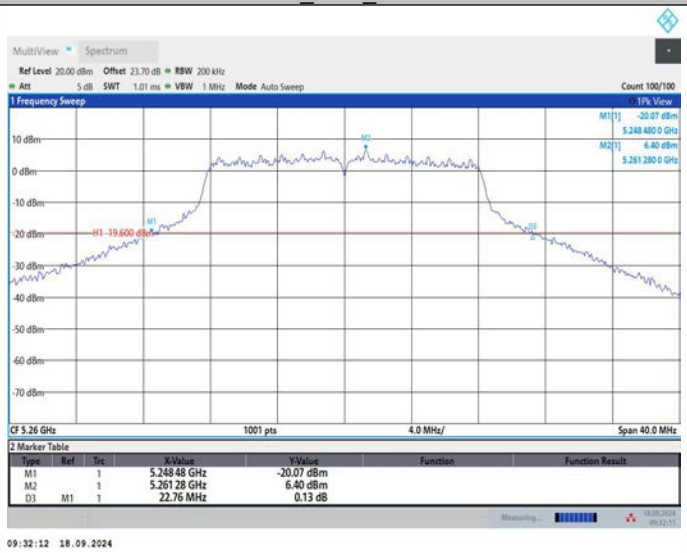

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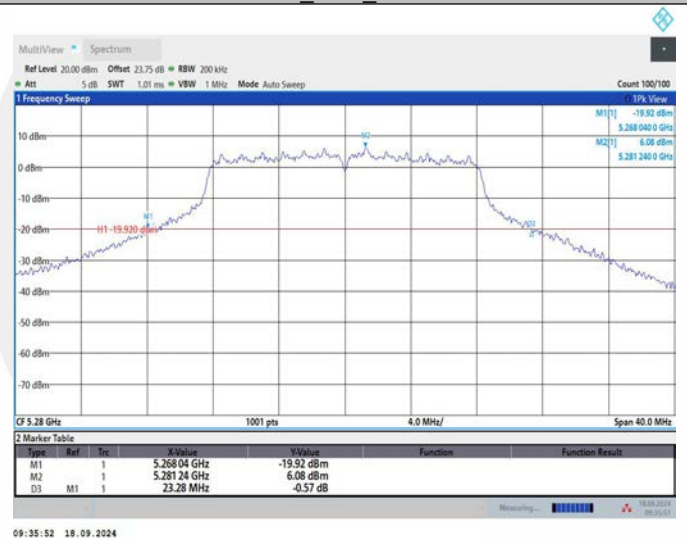

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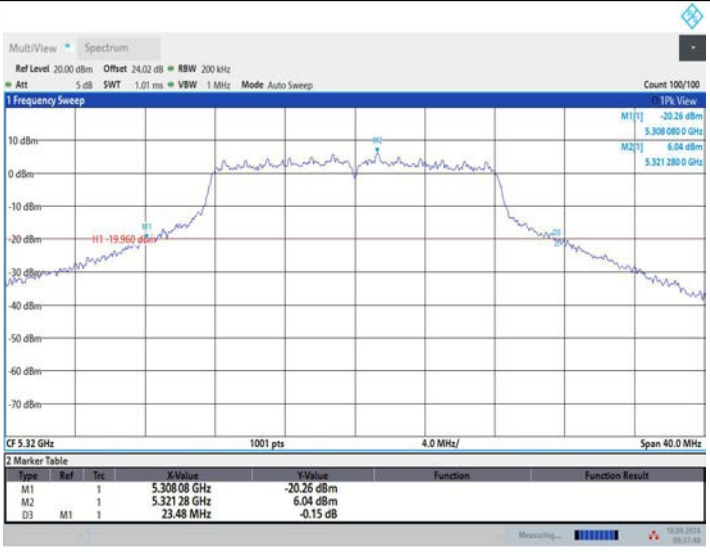

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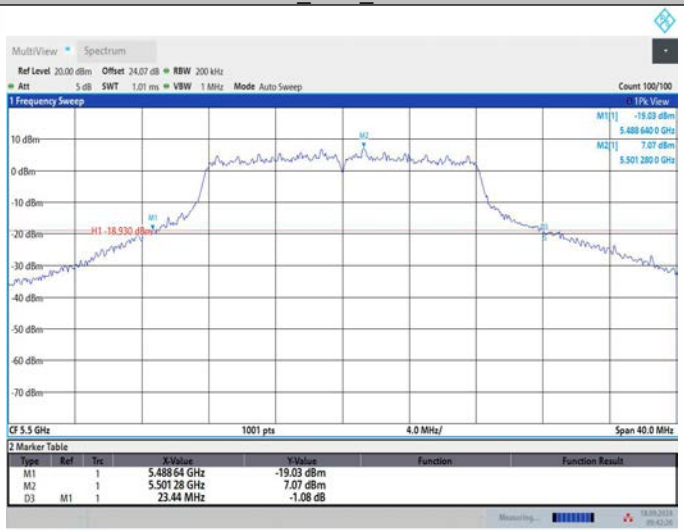

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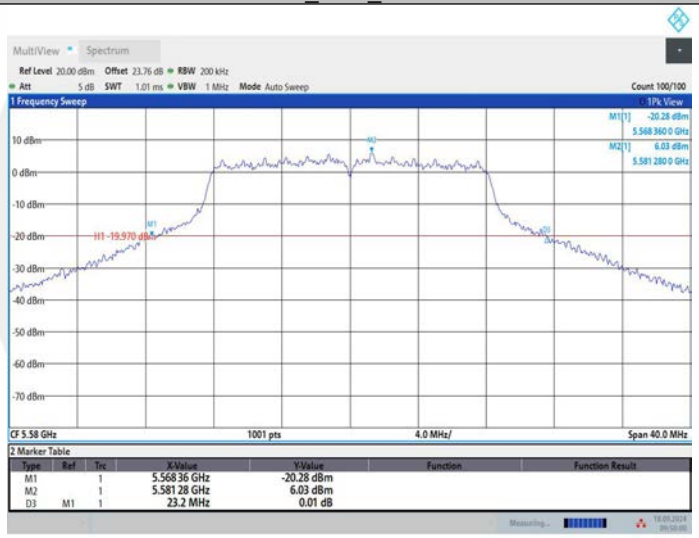

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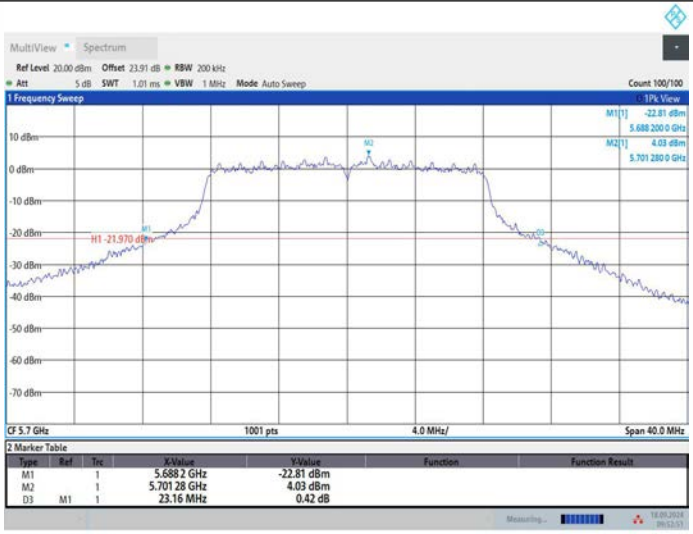

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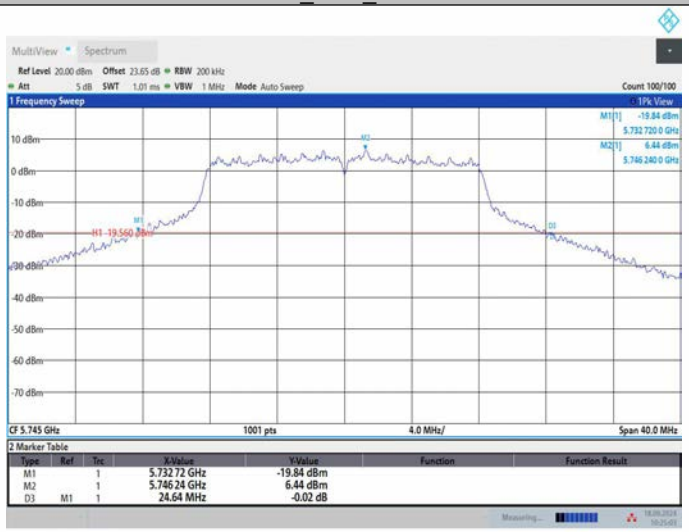

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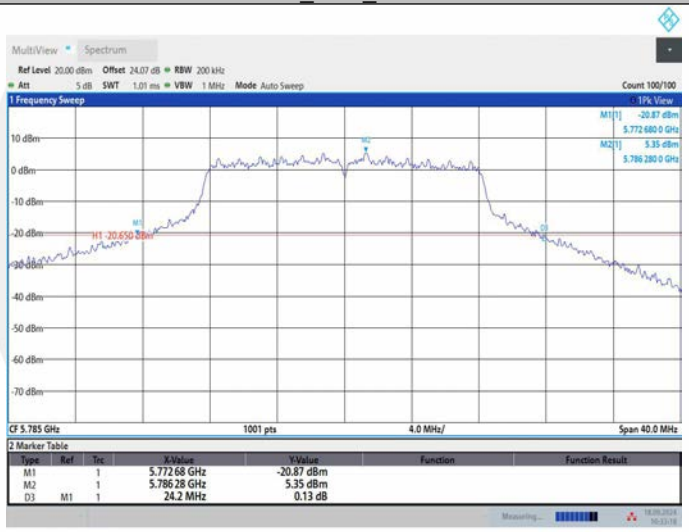

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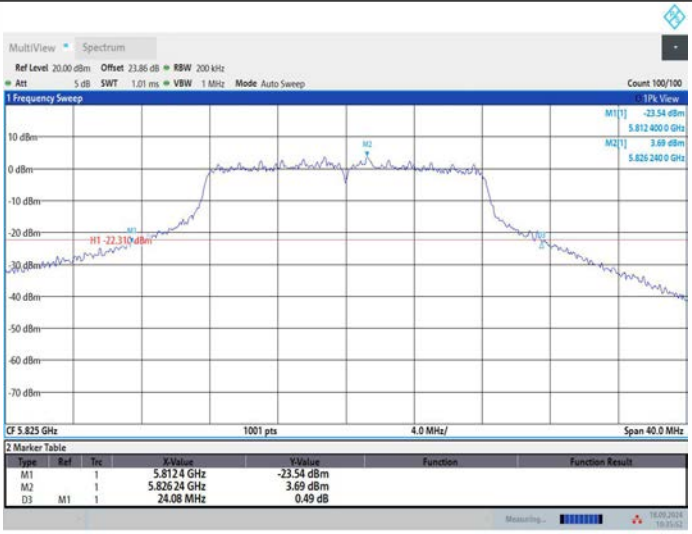

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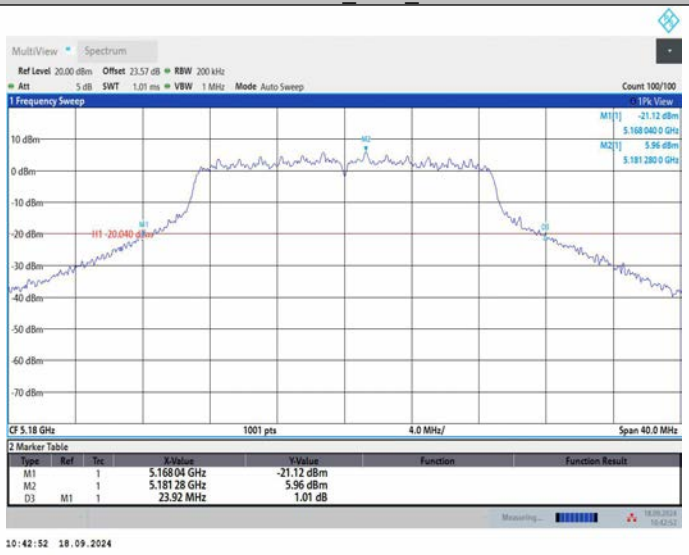

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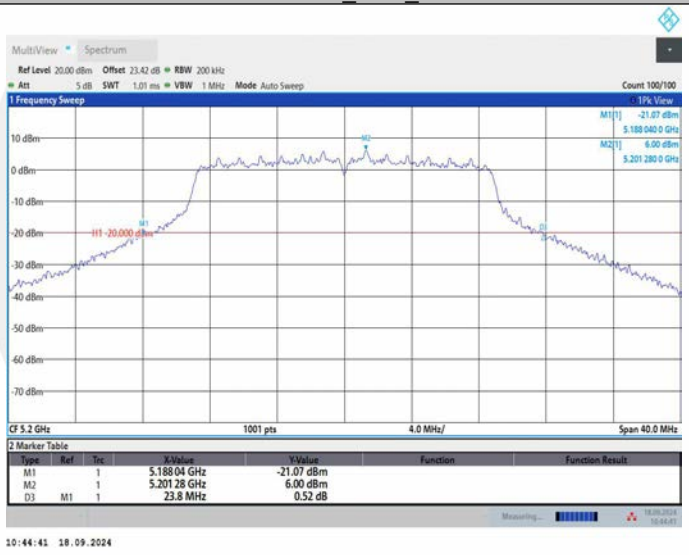

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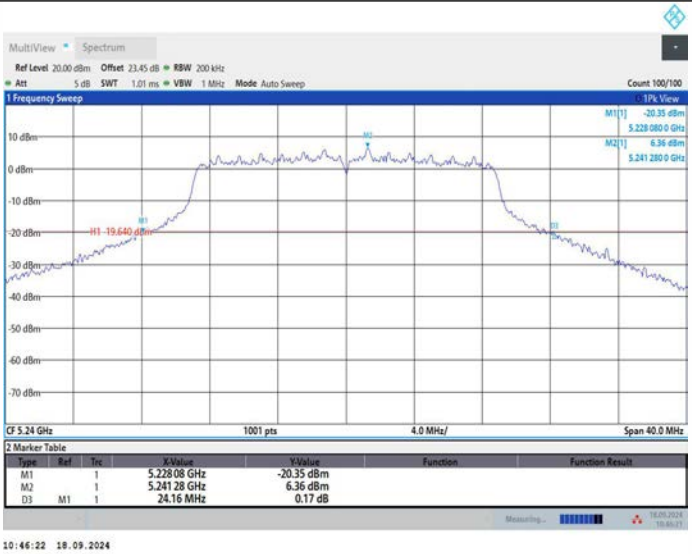

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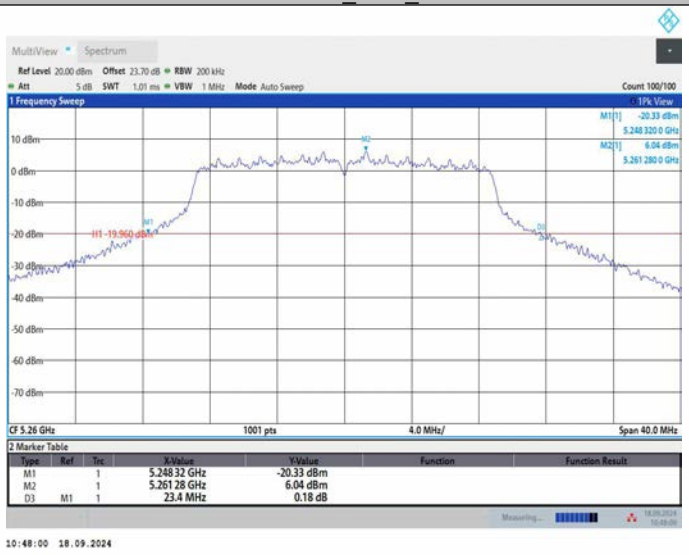

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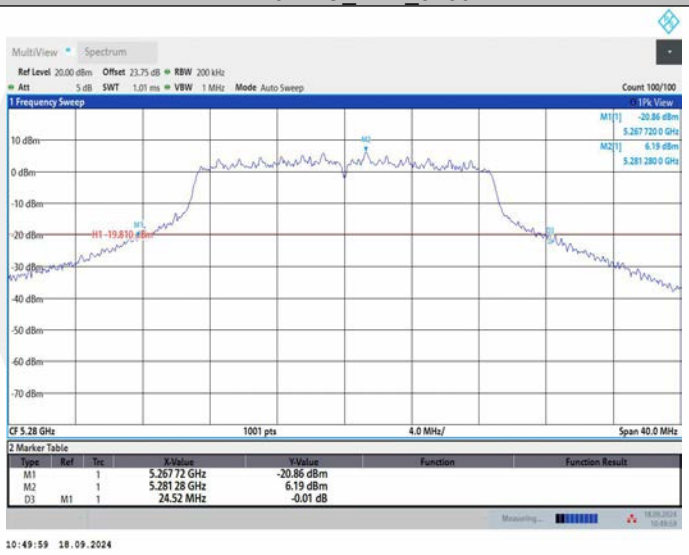

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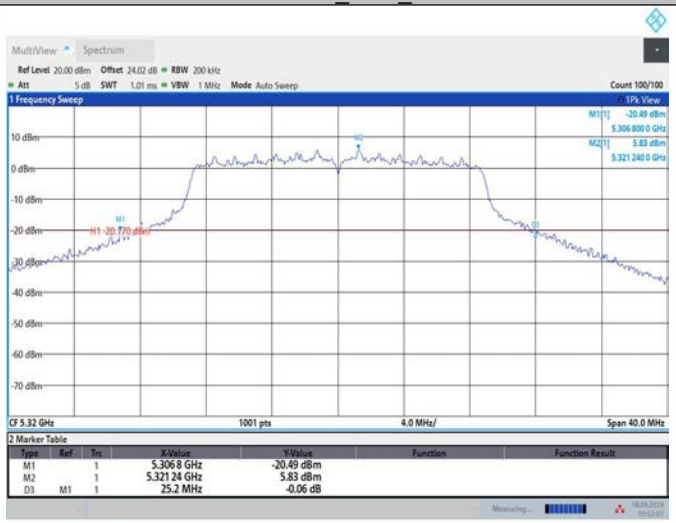

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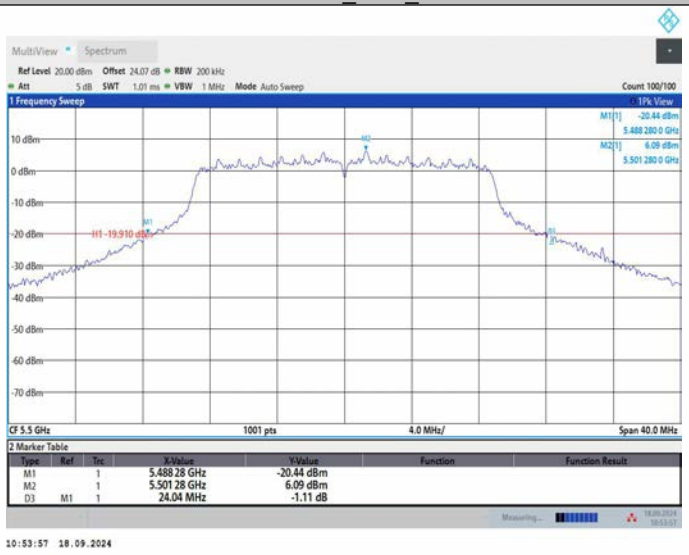

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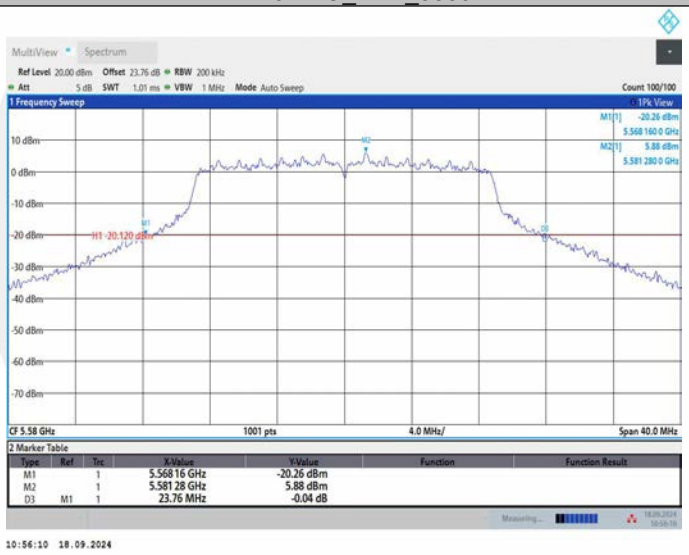

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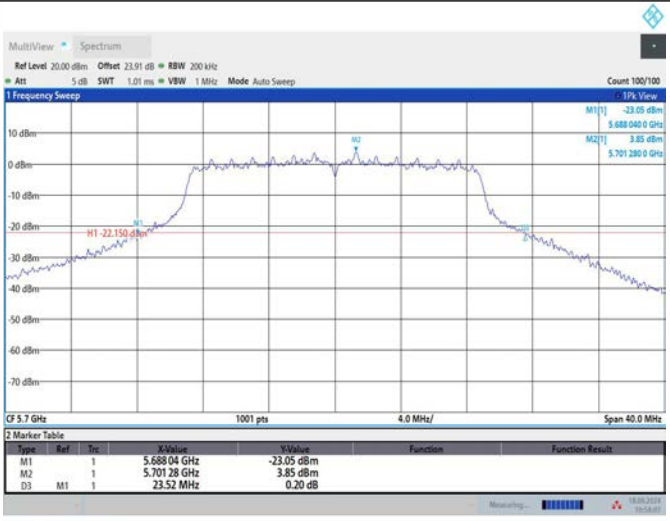

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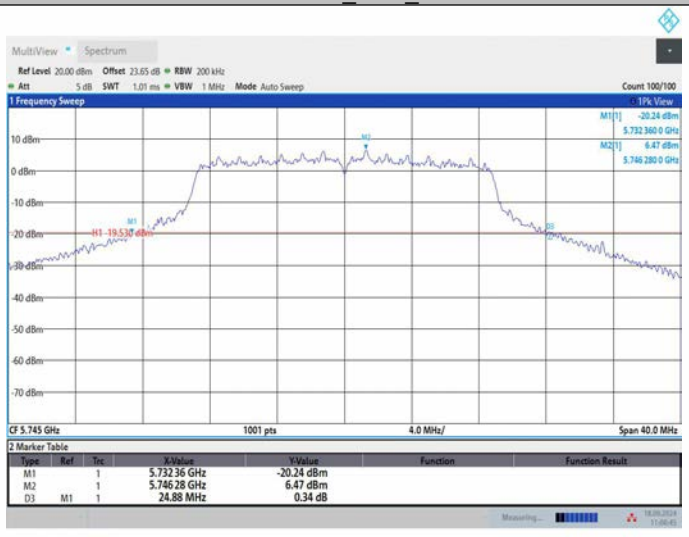
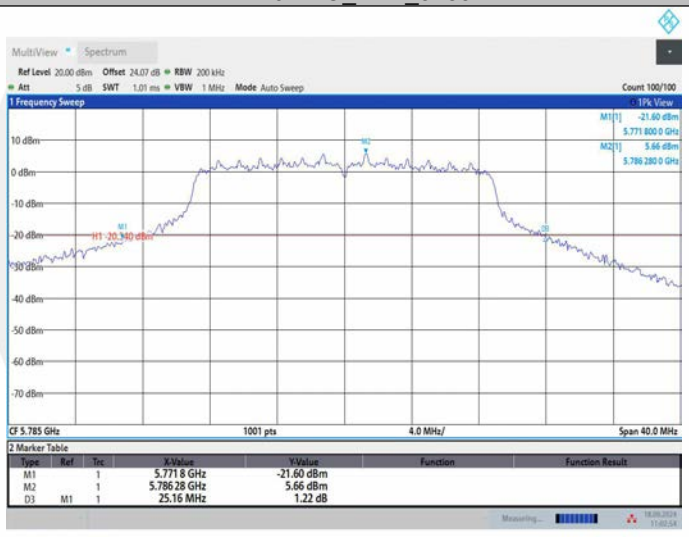
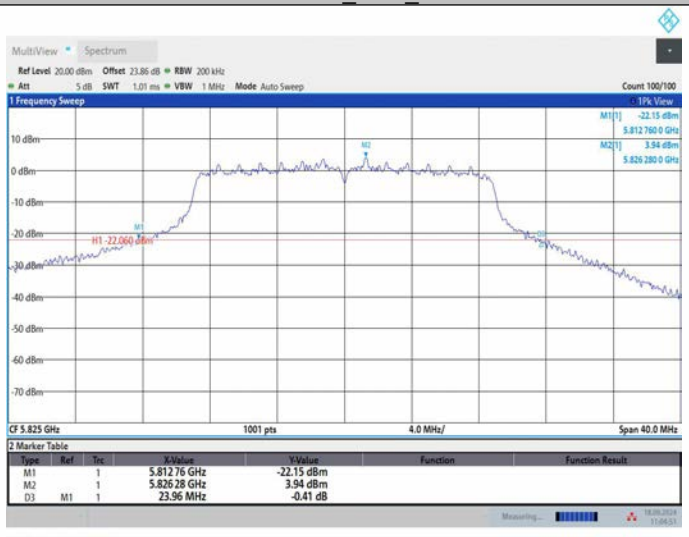


11N20SISO_Ant1_5785


11N20SISO_Ant1_5825


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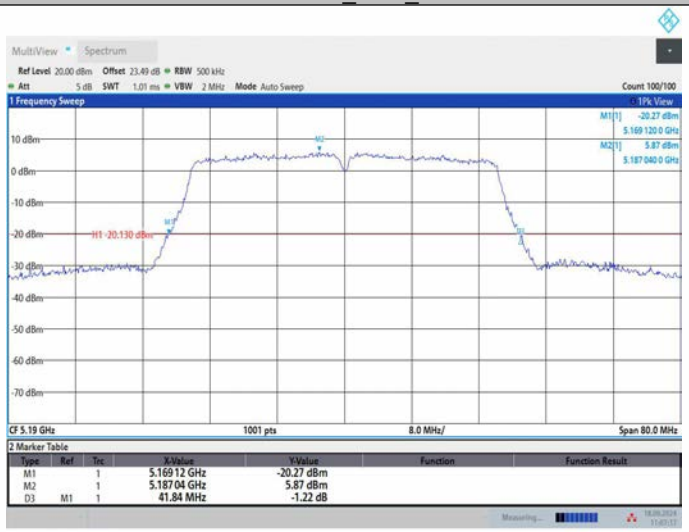

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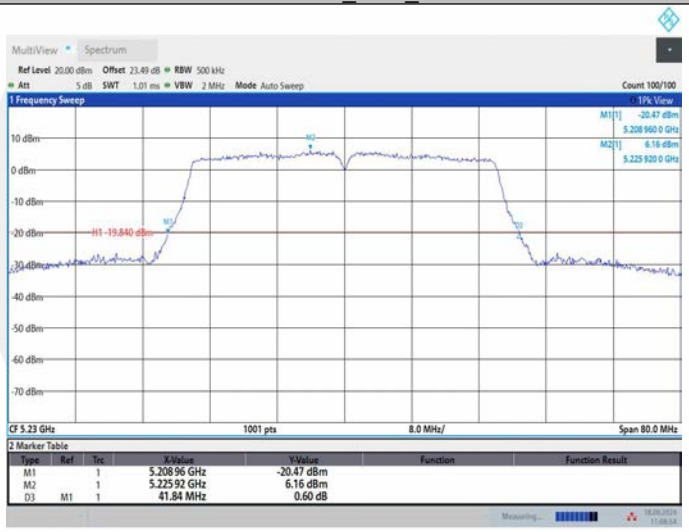

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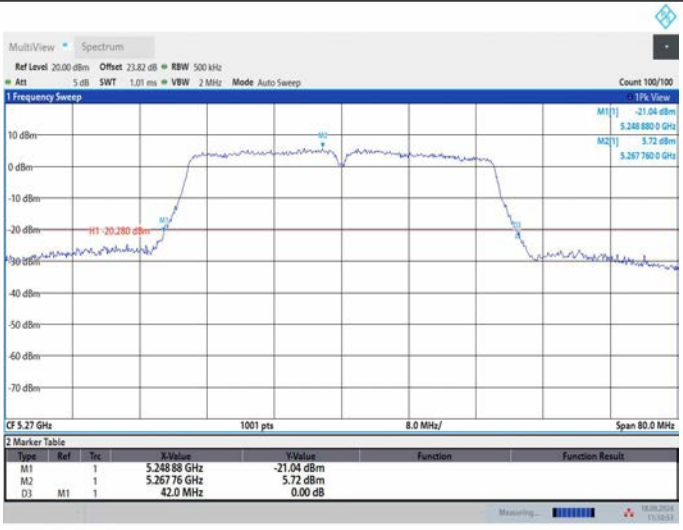

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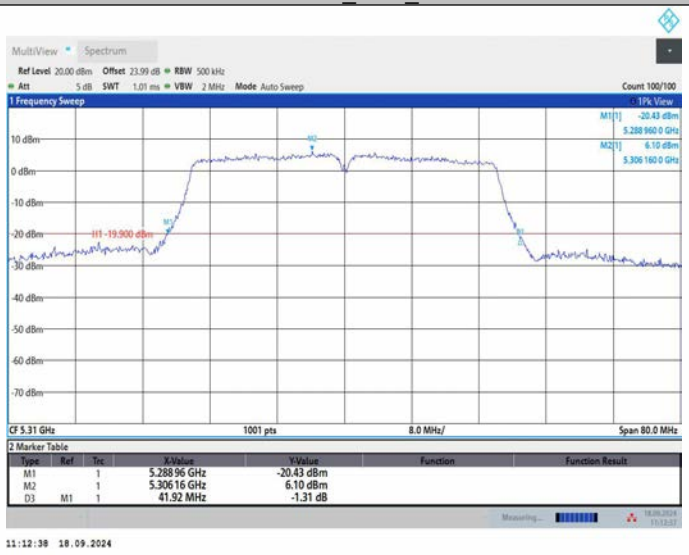

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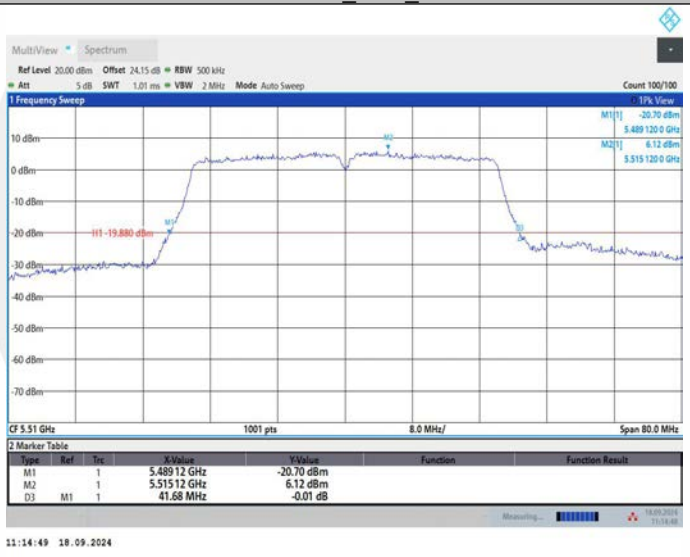

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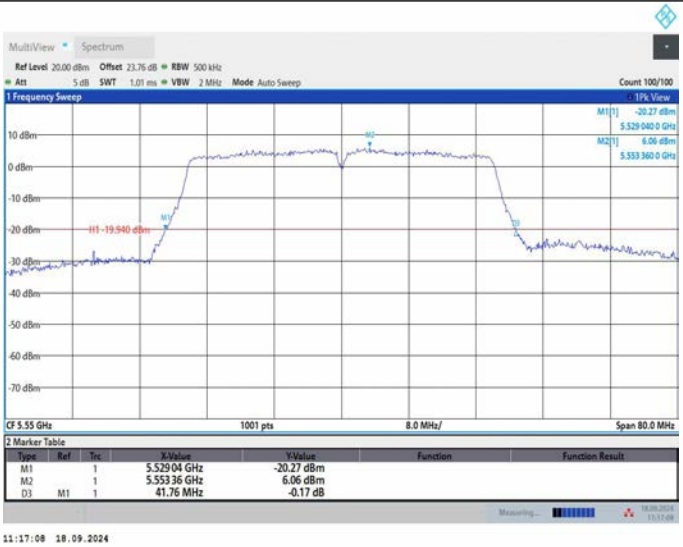

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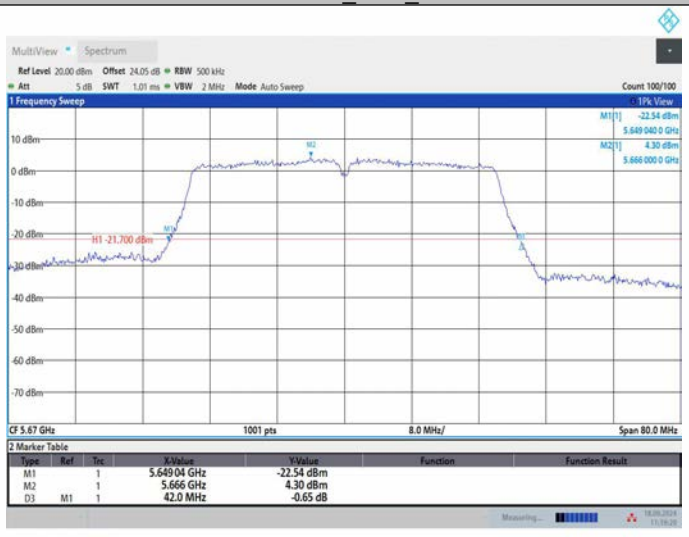

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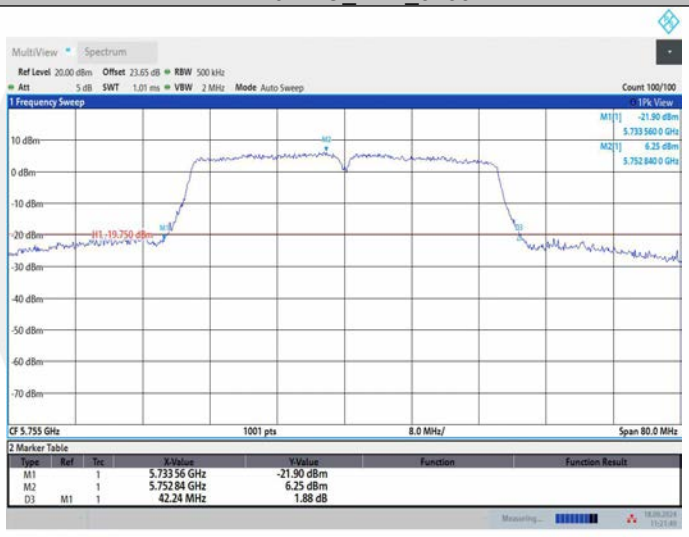
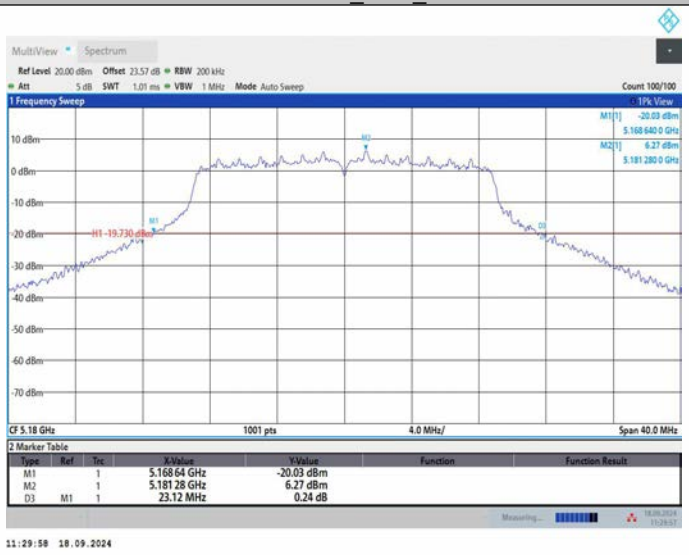


11N40SISO_Ant1_5795


11AC20SISO_Ant1_5180


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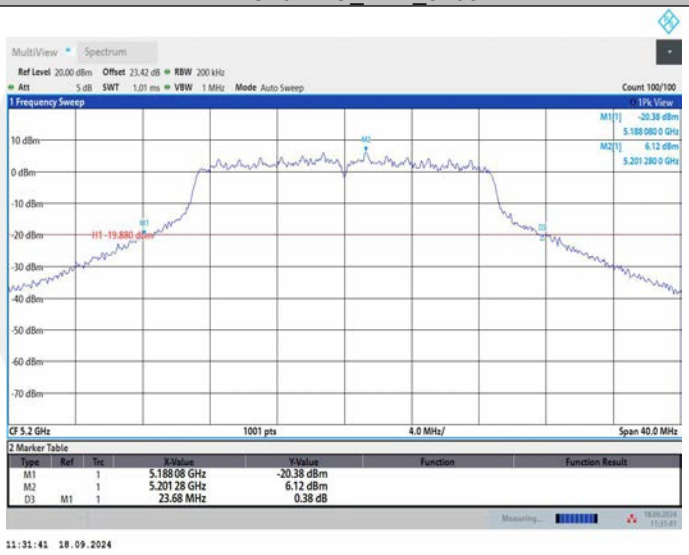

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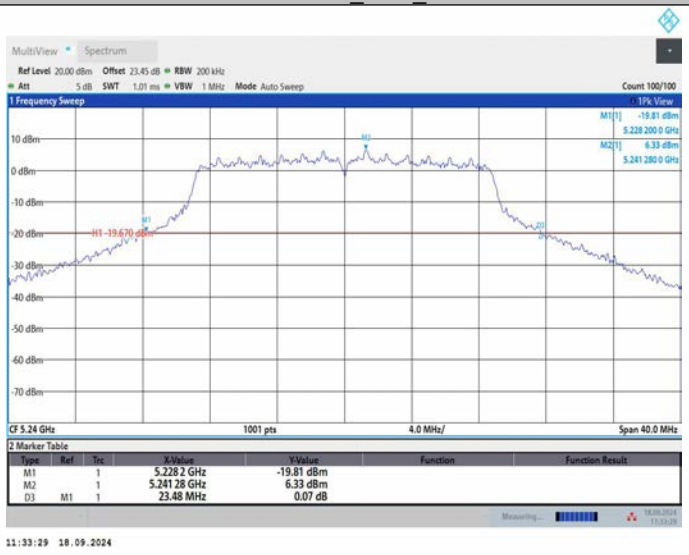

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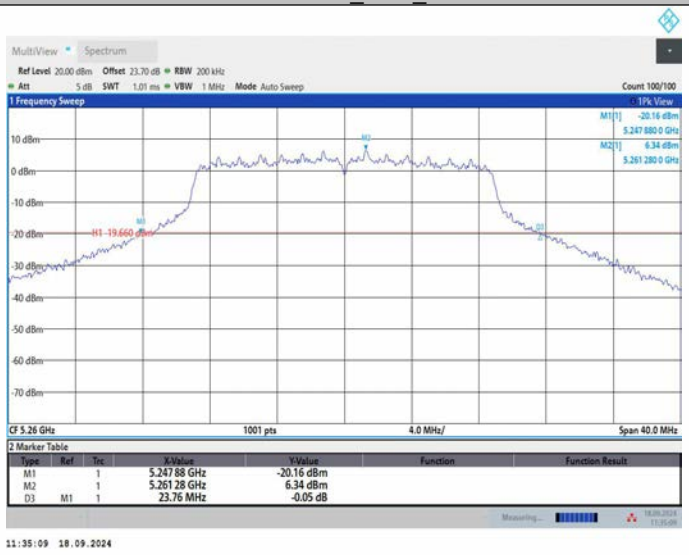

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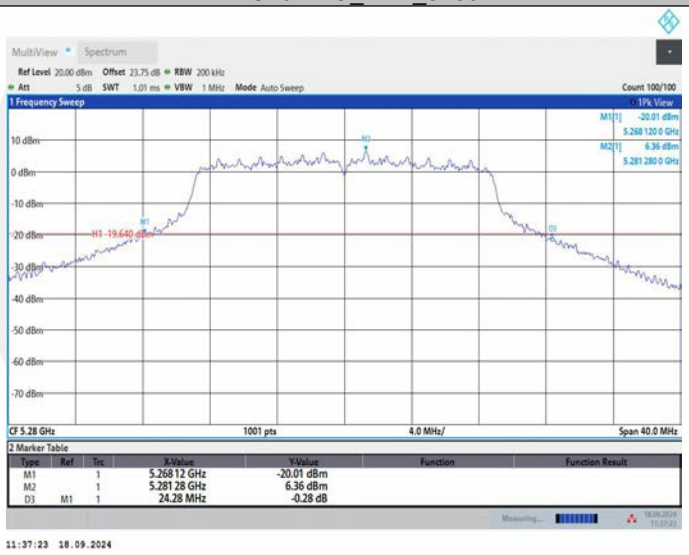

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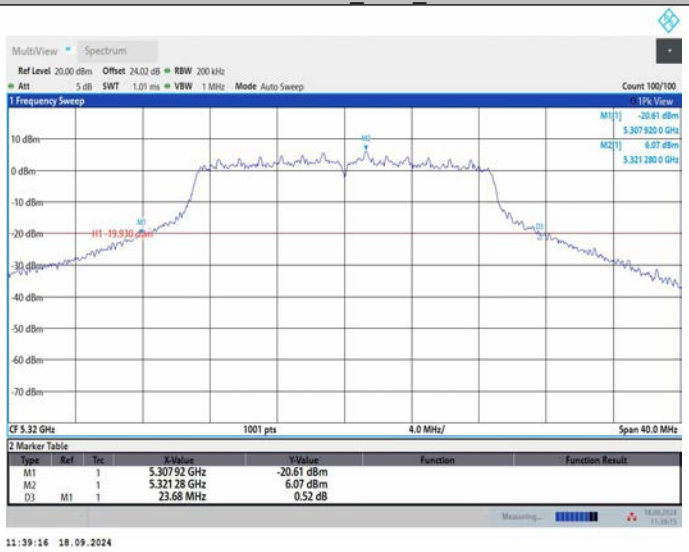

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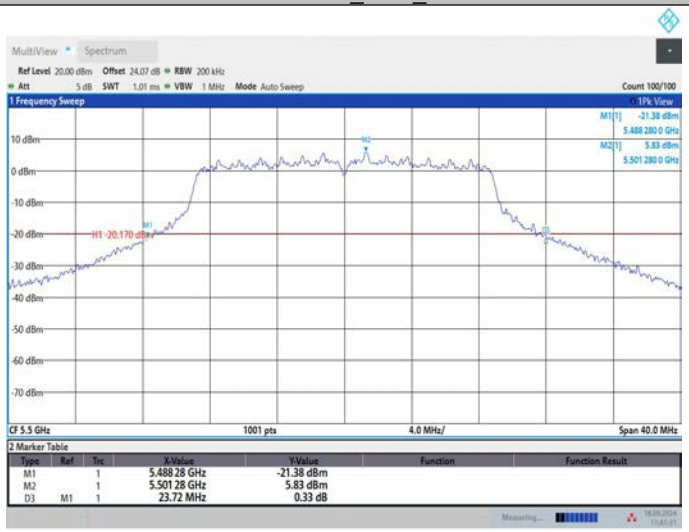

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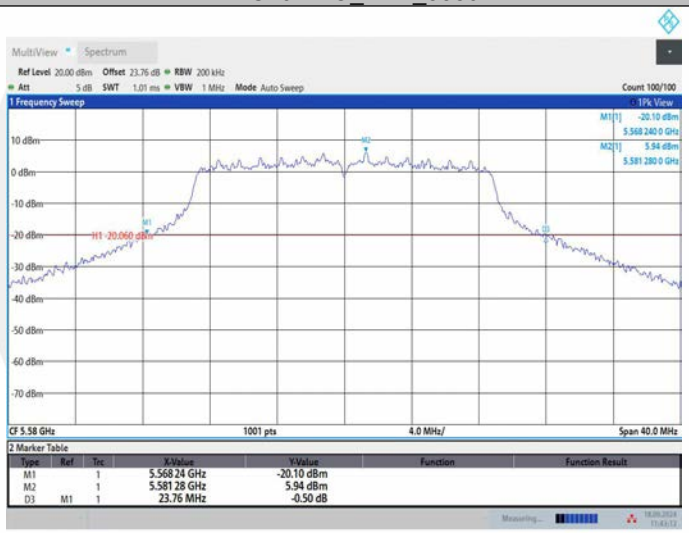

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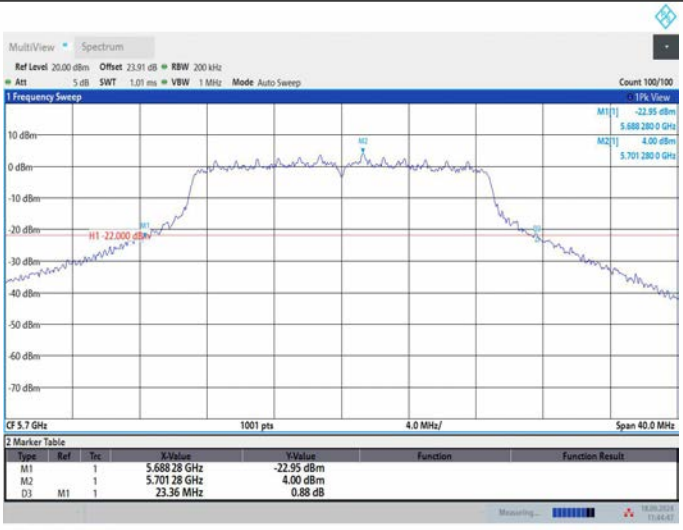

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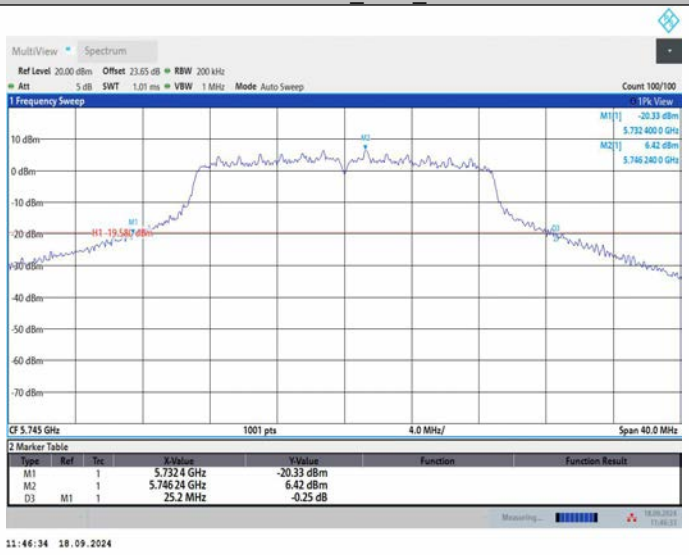

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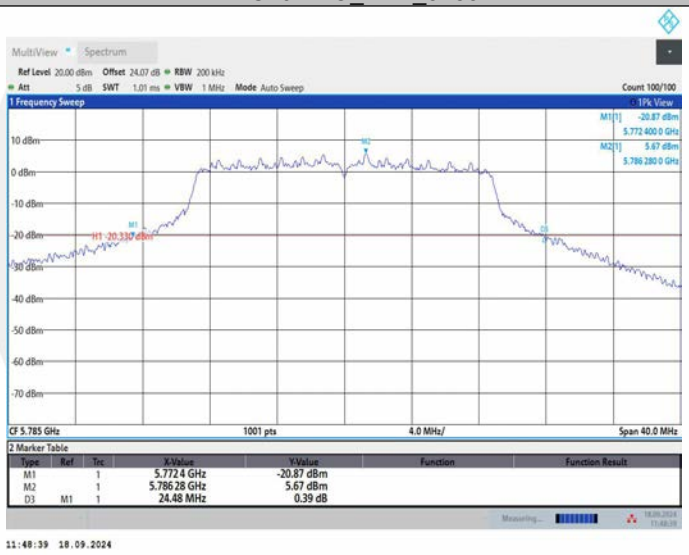

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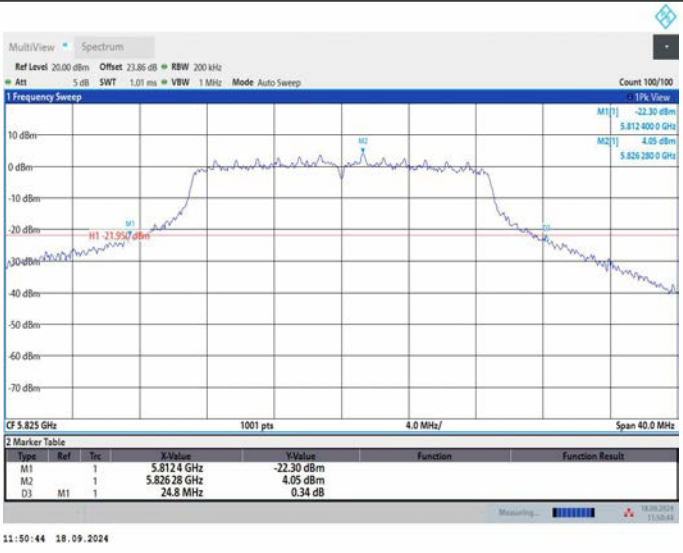
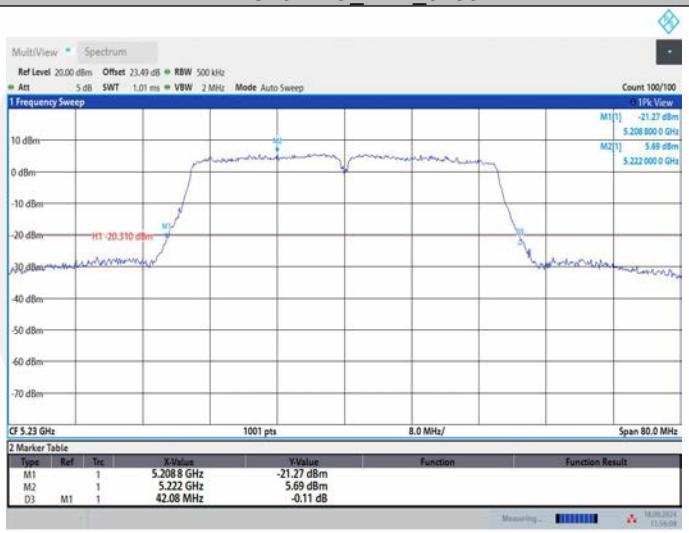


11AC40SISO_Ant1_5190


11AC40SISO_Ant1_5230


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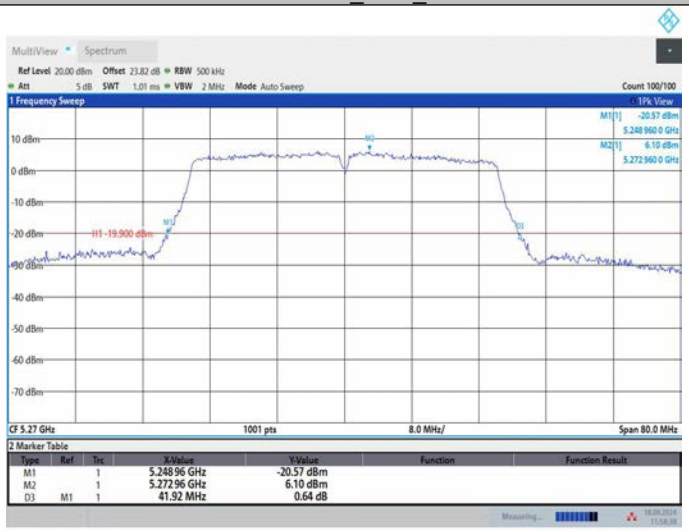

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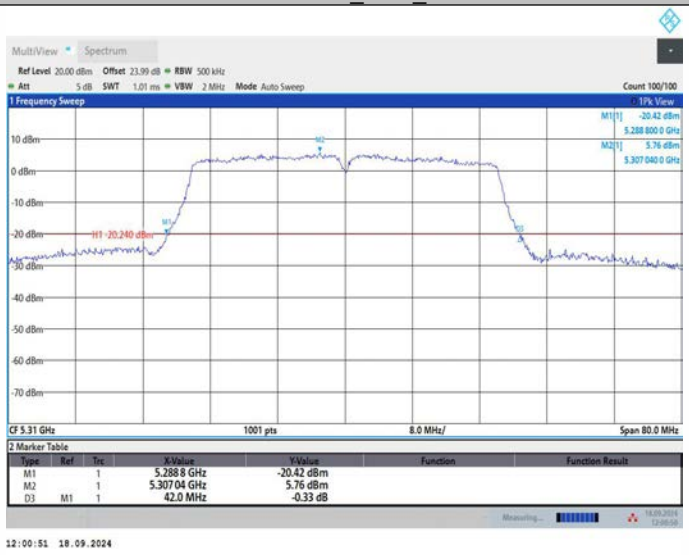

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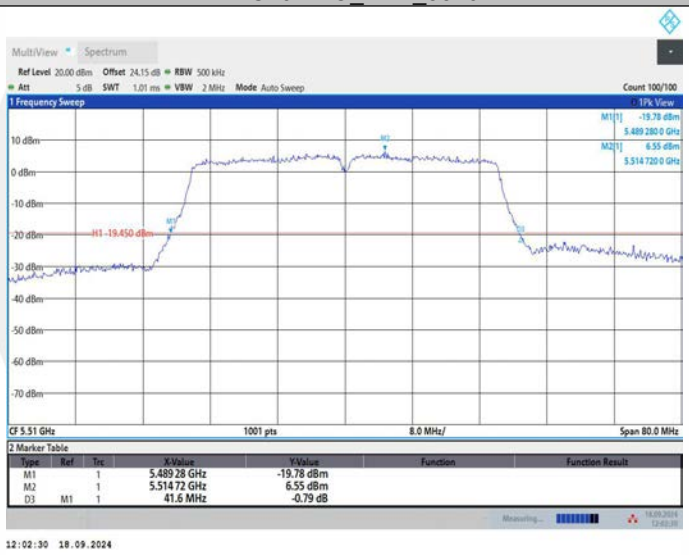
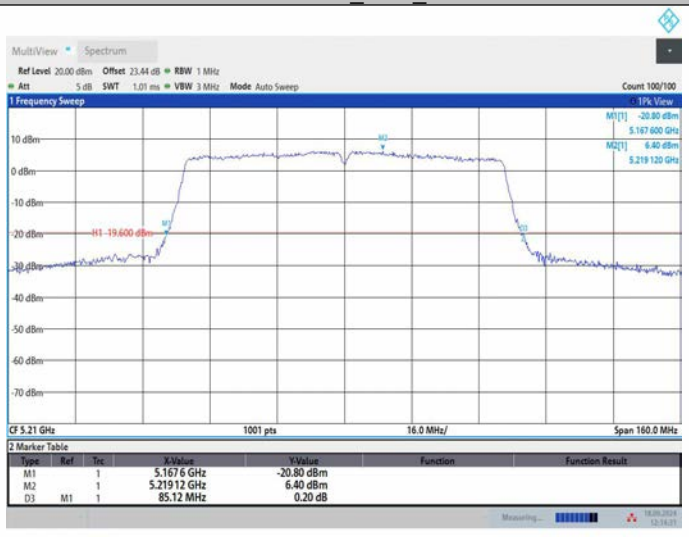


11AC40SISO_Ant1_5550


11AC40SISO_Ant1_5670


11AC40SISO_Ant1_5755


11AC40SISO_Ant1_5795


11AC80SISO_Ant1_5210


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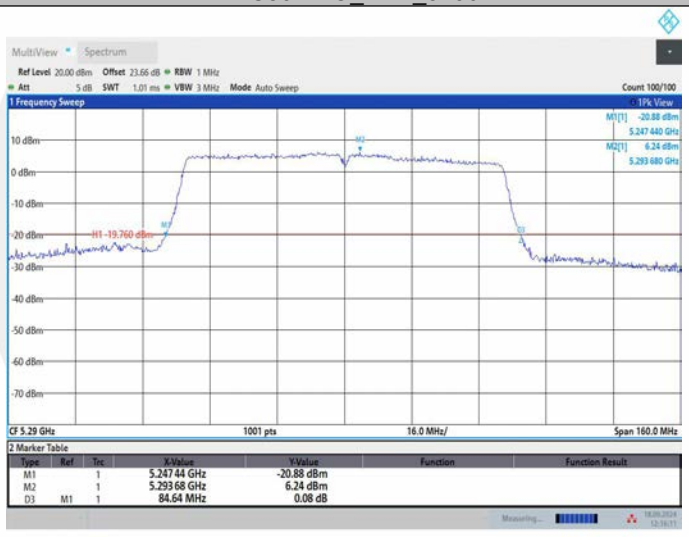

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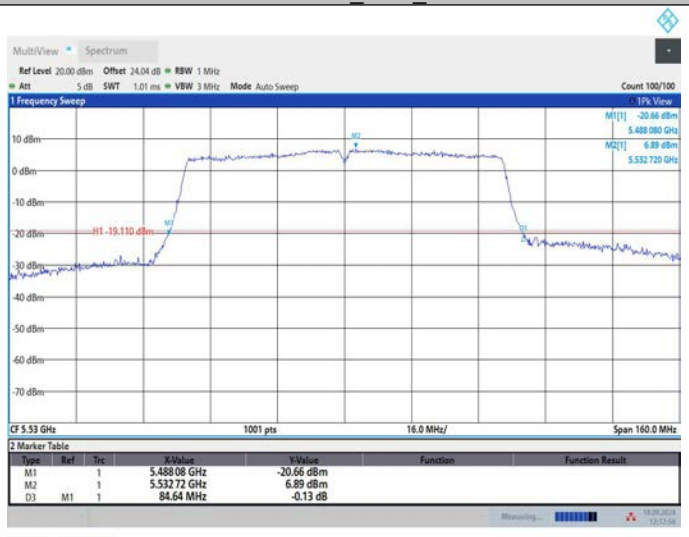

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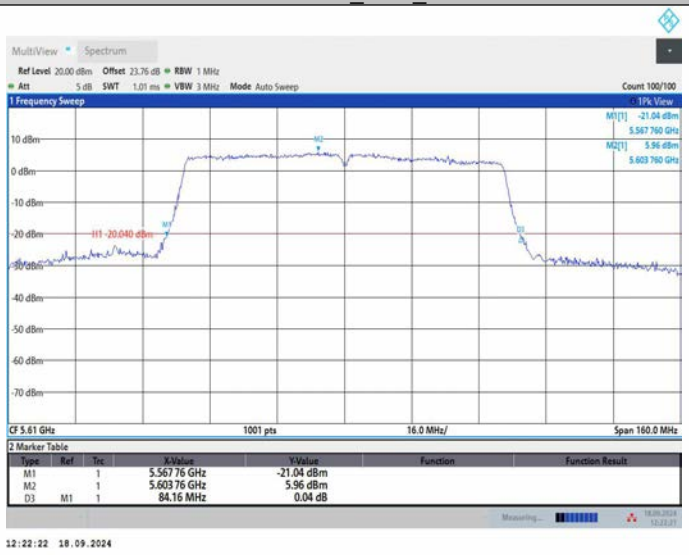
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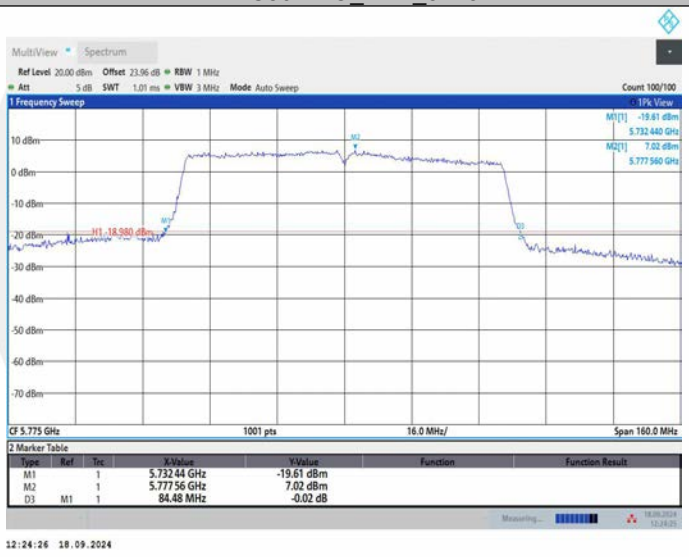
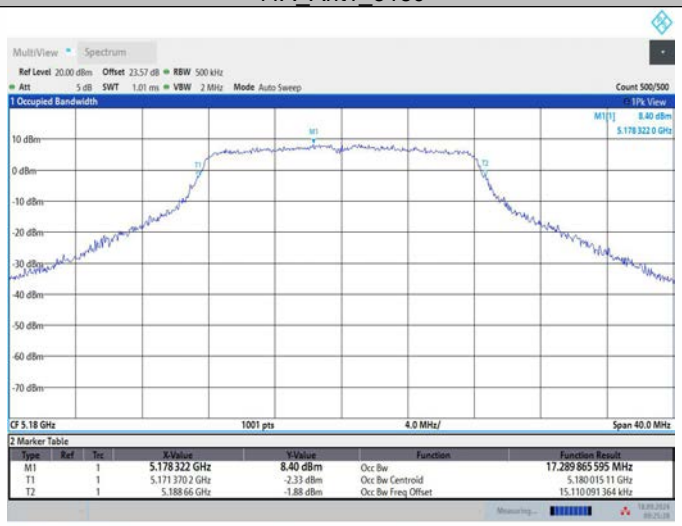


Occupied channel bandwidth (99%)

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.29	5171.3702	5188.6600	---	---
		5200	17.277	5191.3656	5208.6430	---	---
		5240	17.285	5231.3585	5248.6434	---	---
		5260	17.335	5251.3086	5268.6441	---	---
		5280	17.339	5271.2750	5288.6143	---	---
		5320	17.347	5311.3012	5328.6478	---	---
		5500	17.399	5491.3673	5508.7666	---	---
		5580	17.305	5571.3624	5588.6673	---	---
		5700	17.333	5691.3137	5708.6467	---	---
		5745	17.449	5736.2483	5753.6975	---	---
		5785	17.434	5776.1984	5793.6329	---	---
		5825	17.391	5816.2277	5833.6184	---	---
11N20SISO	Ant1	5180	18.386	5170.7994	5189.1849	---	---
		5200	18.364	5190.8012	5209.1655	---	---
		5240	18.392	5230.7832	5249.1751	---	---
		5260	18.424	5250.7252	5269.1489	---	---
		5280	18.407	5270.7680	5289.1750	---	---
		5320	18.454	5310.7272	5329.1816	---	---
		5500	18.374	5490.8409	5509.2154	---	---
		5580	18.423	5570.7826	5589.2061	---	---
		5700	18.394	5690.7657	5709.1592	---	---
		5745	18.542	5735.6844	5754.2260	---	---
		5785	18.525	5775.6357	5794.1603	---	---
		5825	18.454	5815.7126	5834.1666	---	---
11N40SISO	Ant1	5190	36.526	5171.6912	5208.2173	---	---
		5230	36.586	5211.6731	5248.2594	---	---
		5270	36.652	5251.5892	5288.2416	---	---
		5310	36.668	5291.5953	5328.2633	---	---
		5510	36.617	5491.7703	5528.3873	---	---
		5550	36.648	5531.7111	5568.3588	---	---
		5670	36.604	5651.6827	5688.2869	---	---
		5755	36.667	5736.5941	5773.2612	---	---
		5795	36.689	5776.5138	5813.2024	---	---
11AC20SISO	Ant1	5180	18.365	5170.8312	5189.1958	---	---
		5200	18.4	5190.7869	5209.1868	---	---
		5240	18.429	5230.7520	5249.1810	---	---
		5260	18.389	5250.7367	5269.1259	---	---
		5280	18.403	5270.7678	5289.1711	---	---
		5320	18.48	5310.7124	5329.1920	---	---
		5500	18.363	5490.8476	5509.2101	---	---
		5580	18.444	5570.7614	5589.2054	---	---
		5700	18.435	5690.7528	5709.1877	---	---
		5745	18.576	5735.6513	5754.2276	---	---
		5785	18.502	5775.6652	5794.1673	---	---
		5825	18.412	5815.7103	5834.1219	---	---
11AC40SISO	Ant1	5190	36.627	5171.6639	5208.2909	---	---
		5230	36.564	5211.6894	5248.2532	---	---
		5270	36.629	5251.6135	5288.2428	---	---
		5310	36.623	5291.6114	5328.2344	---	---
		5510	36.701	5491.7118	5528.4129	---	---
		5550	36.684	5531.7215	5568.4058	---	---

		5670	36.649	5651.6591	5688.3086	---	---
		5755	36.538	5736.6325	5773.1703	---	---
		5795	36.587	5776.5660	5813.1527	---	---
11AC80SISO	Ant1	5210	76.179	5171.8744	5248.0531	---	---
		5290	76.25	5251.6567	5327.9072	---	---
		5530	76.089	5492.1214	5568.2100	---	---
		5610	76.182	5571.7040	5647.8864	---	---
		5775	76.216	5736.5131	5812.7293	---	---

11A_Ant1_5180


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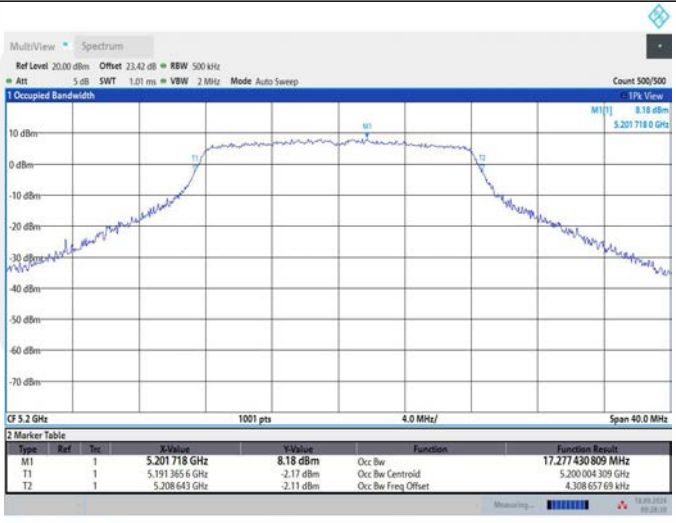

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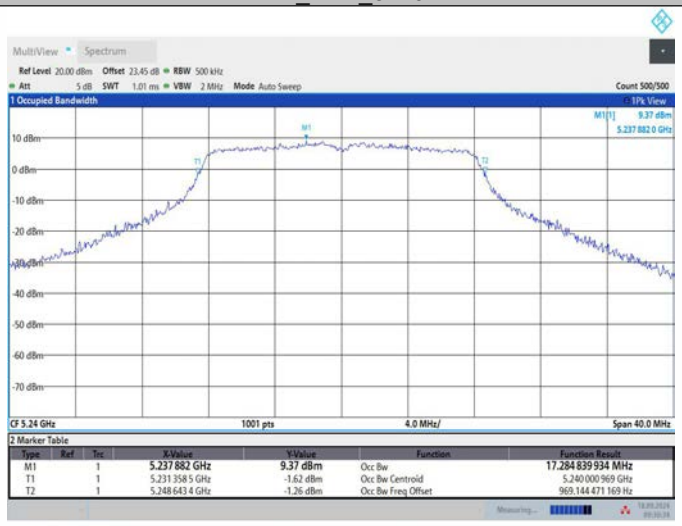

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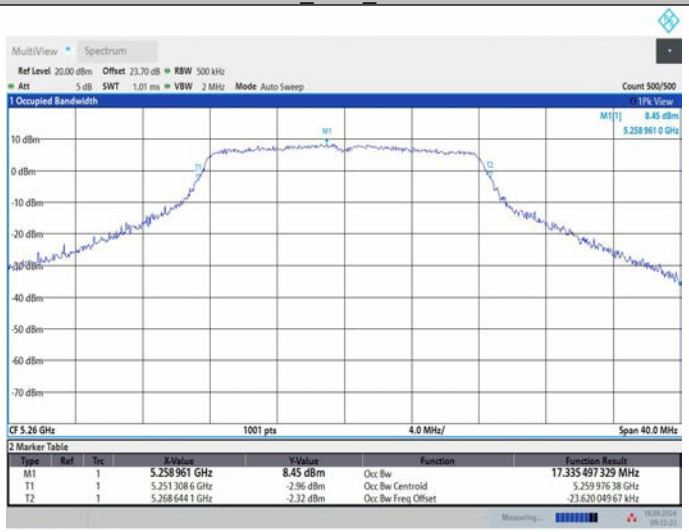

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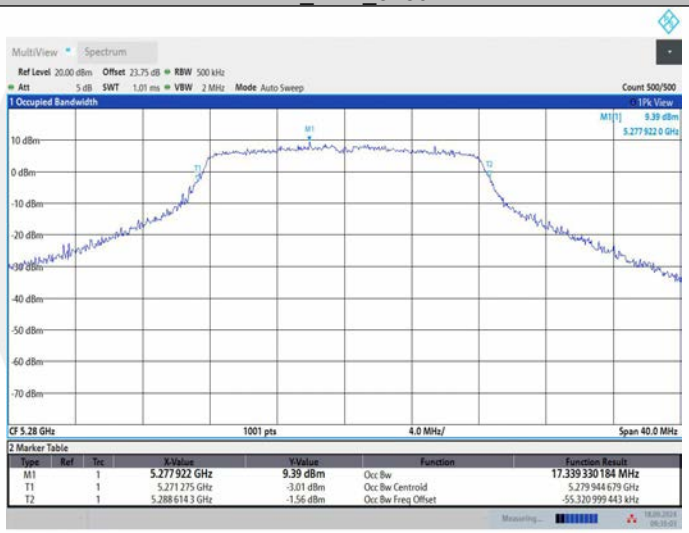

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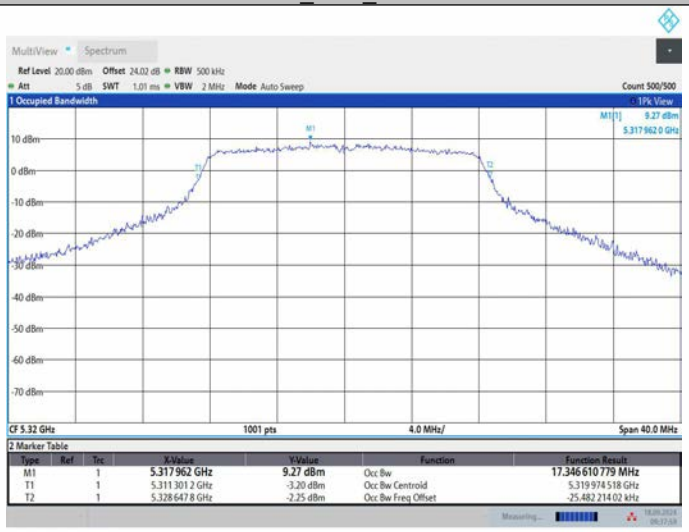

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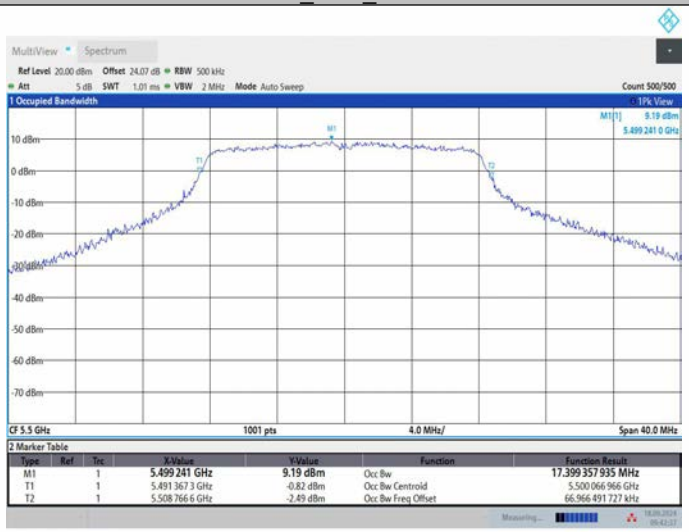

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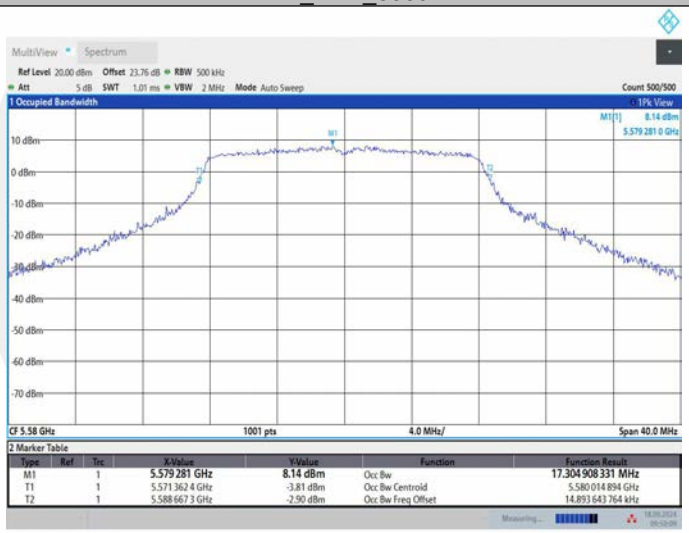

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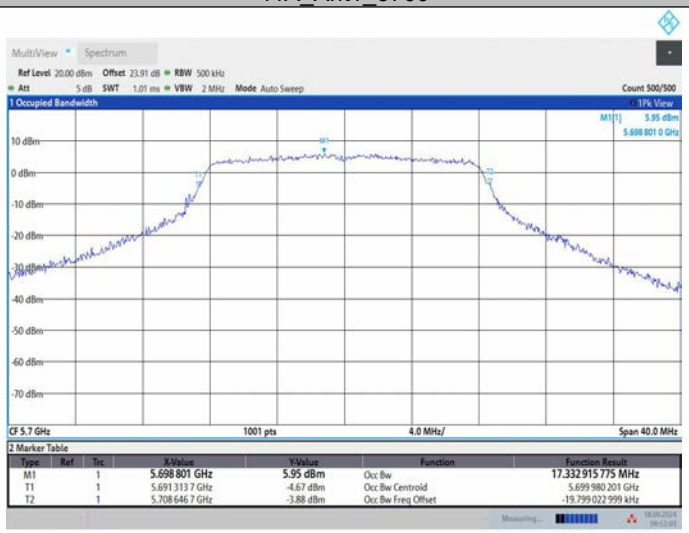

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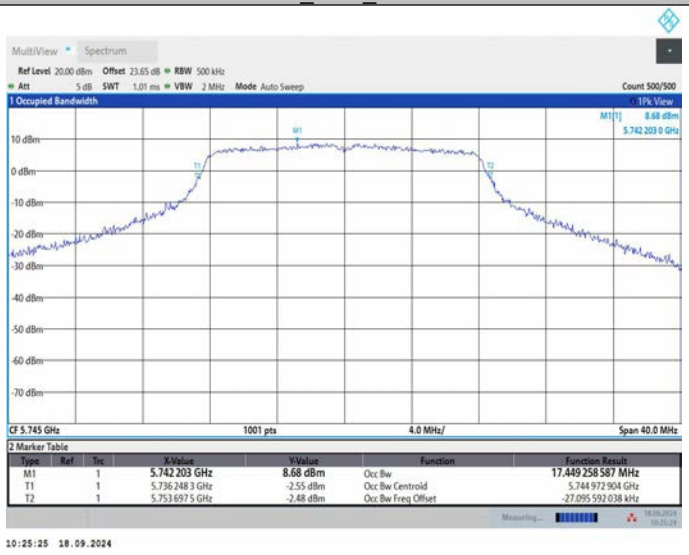

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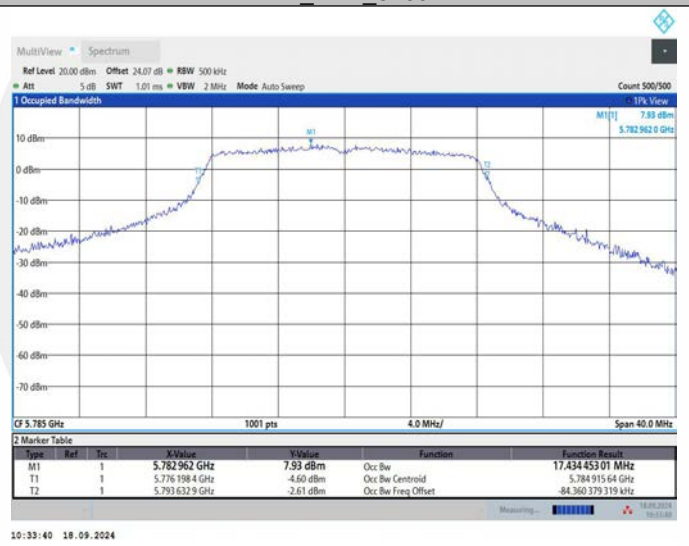

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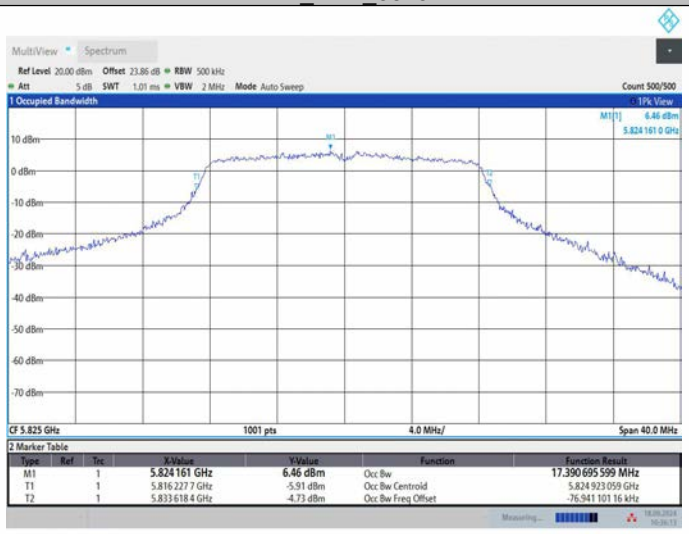

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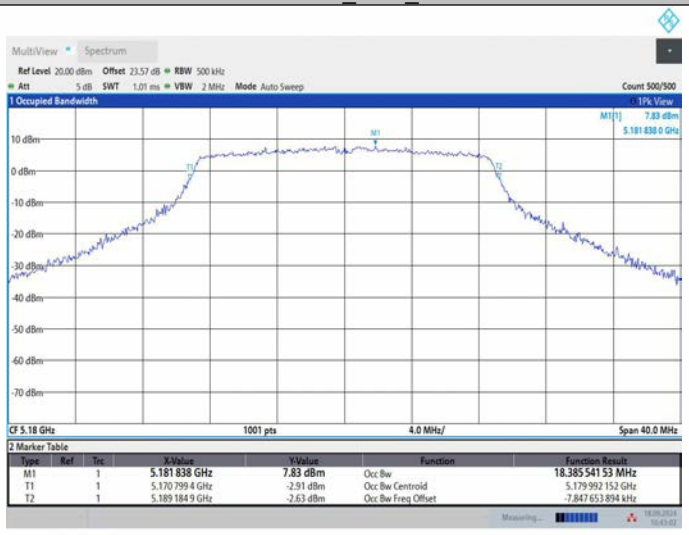

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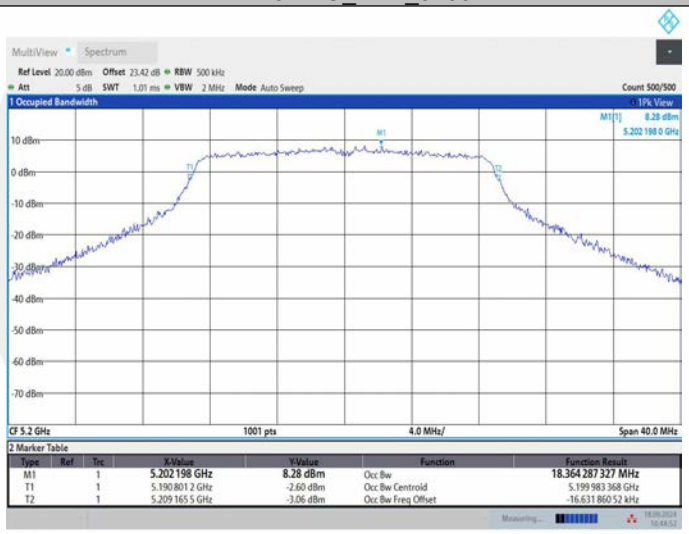

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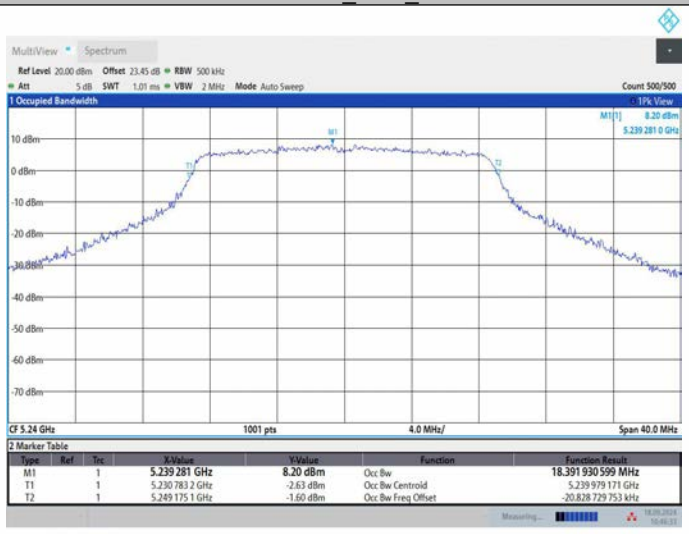

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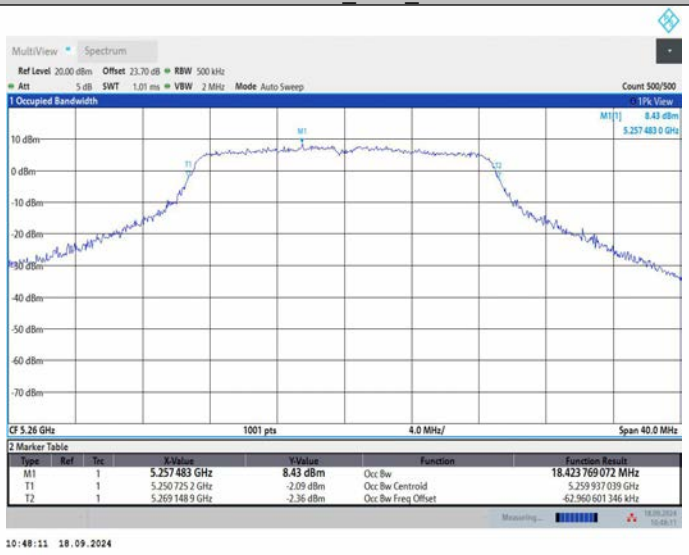

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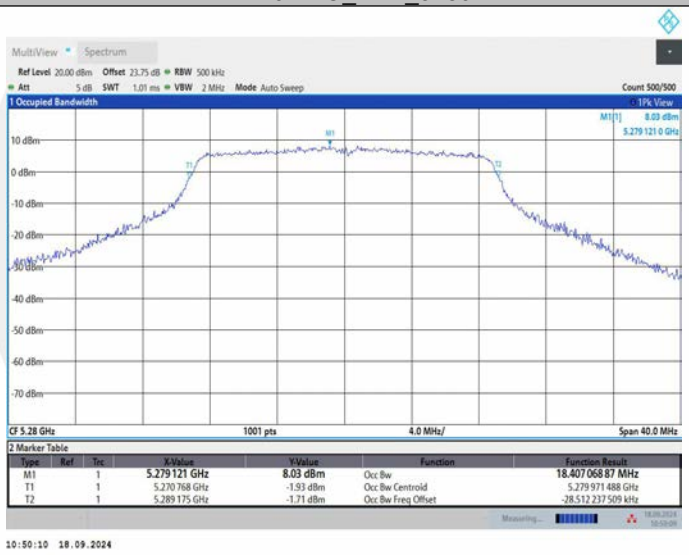

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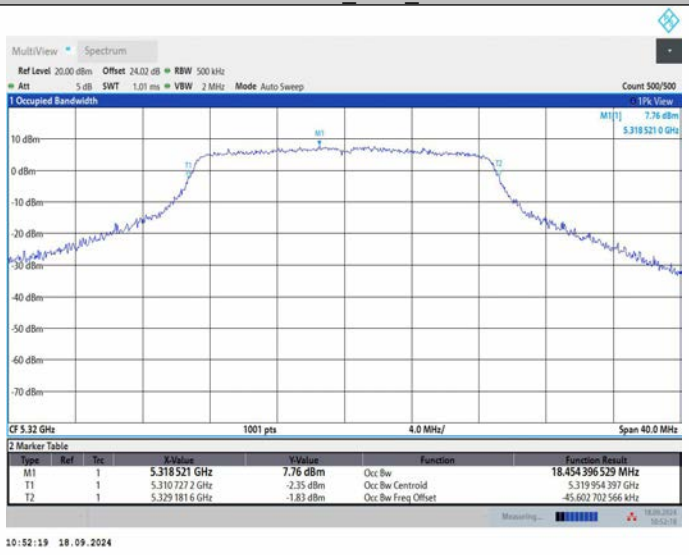

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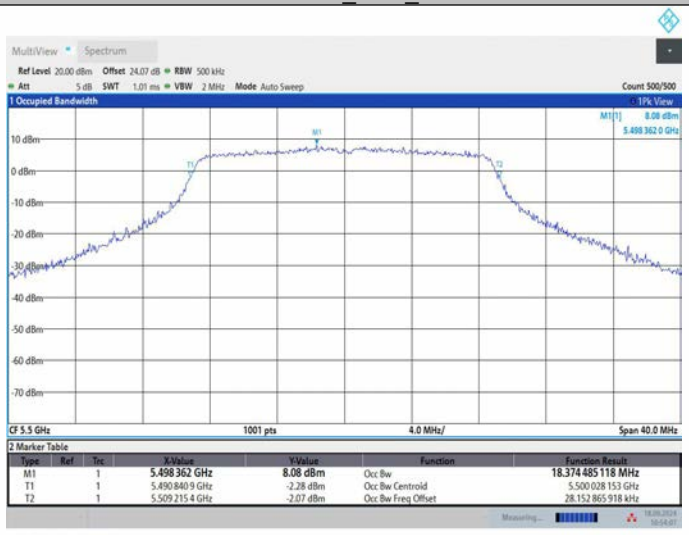

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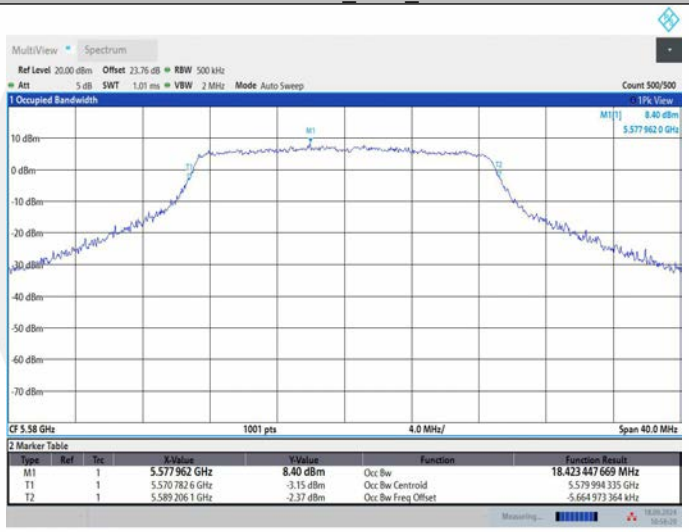

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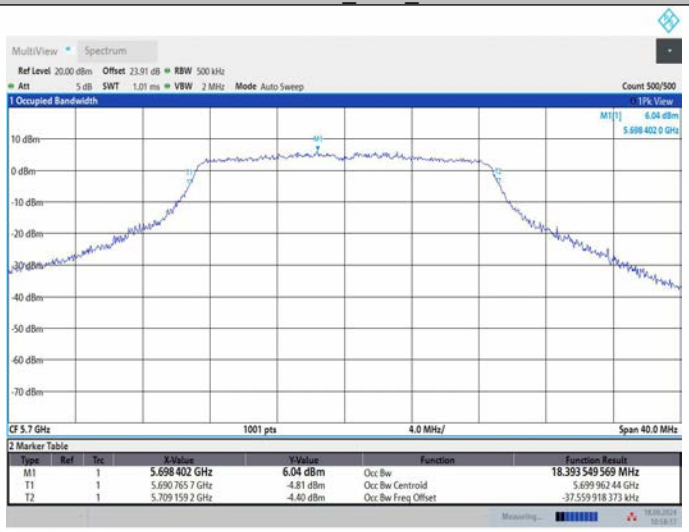

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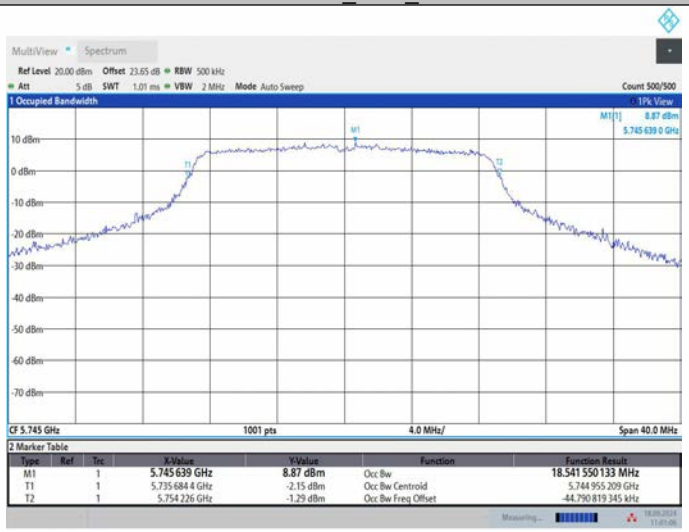

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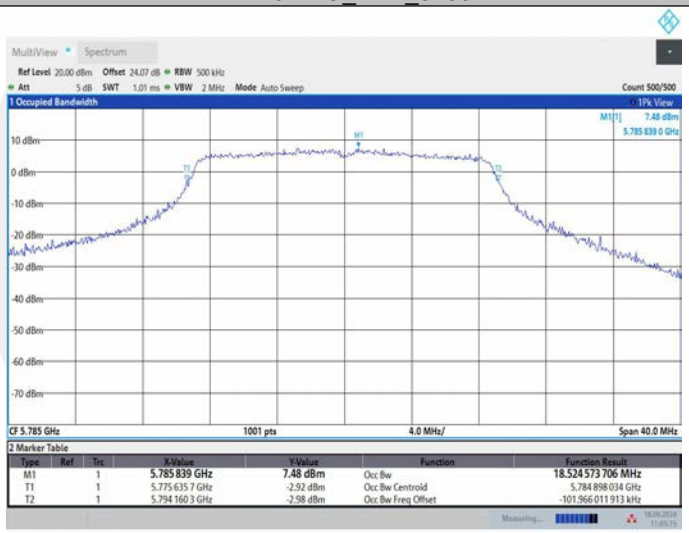

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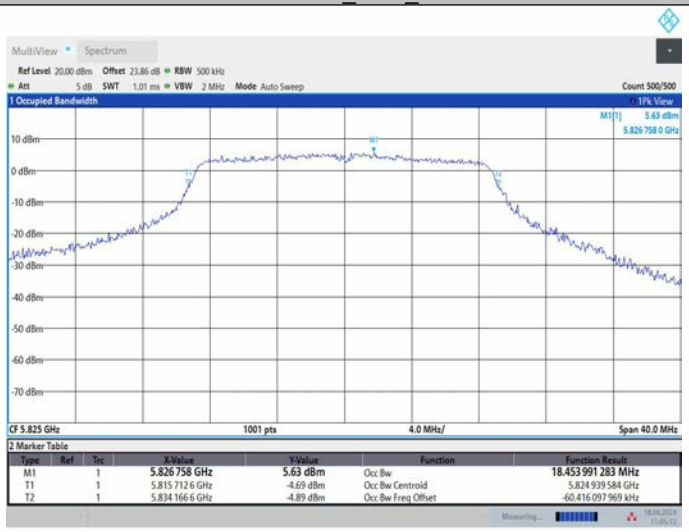

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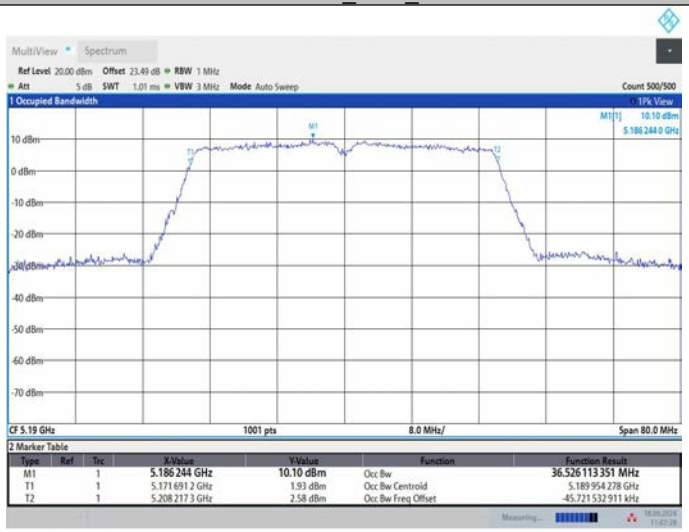

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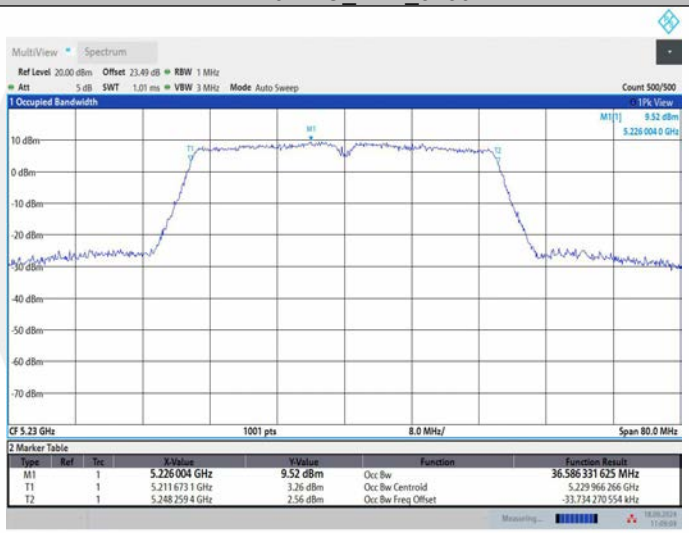

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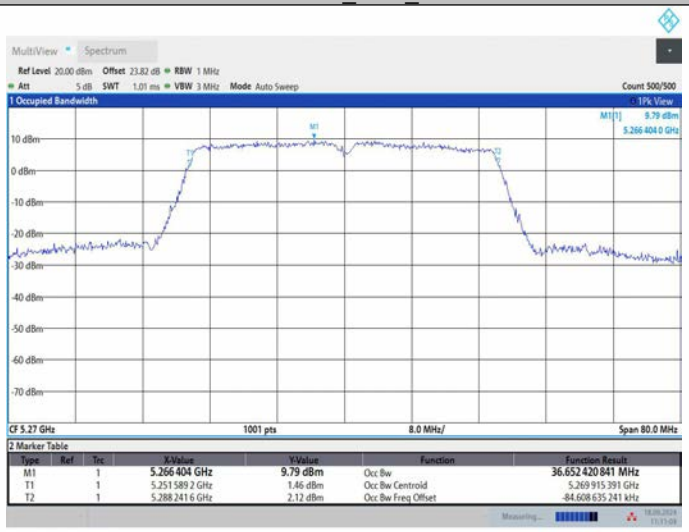

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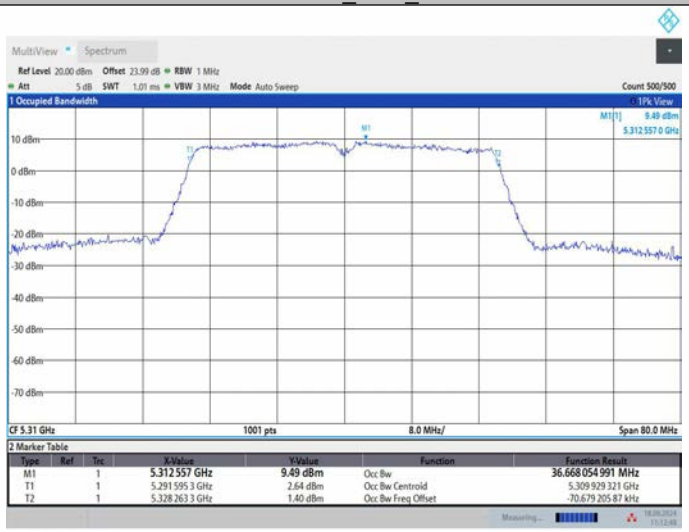

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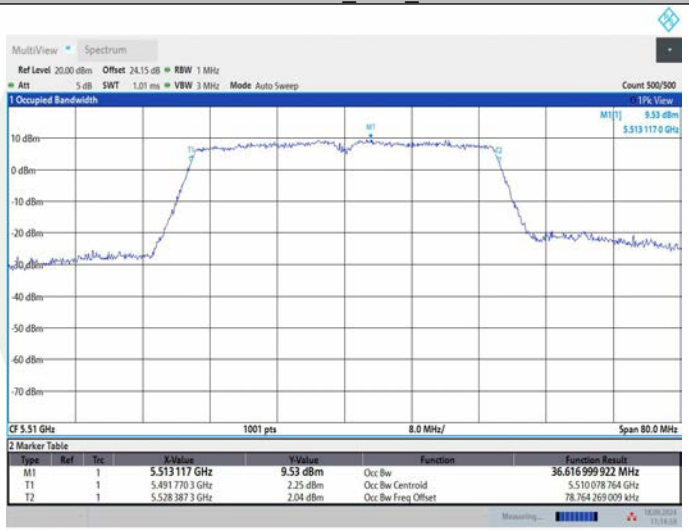

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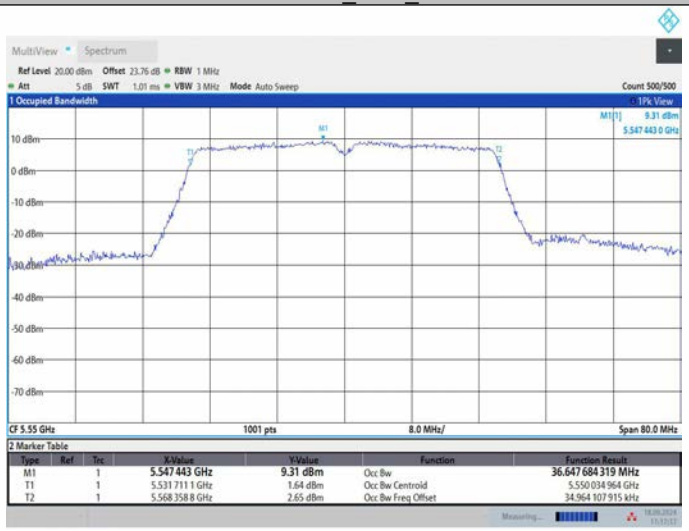

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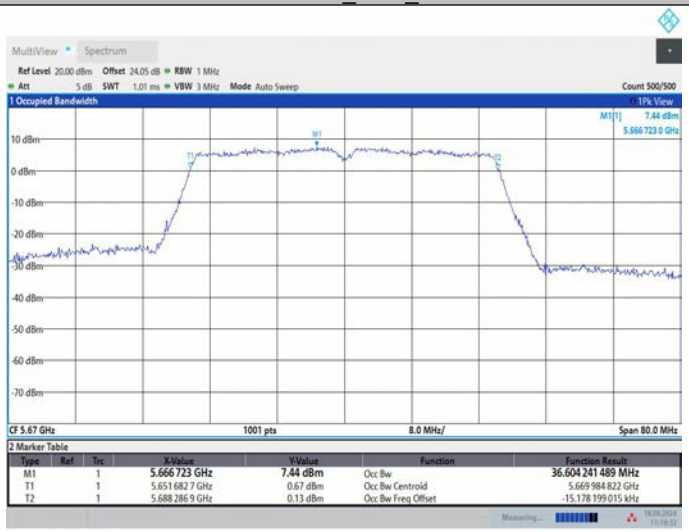

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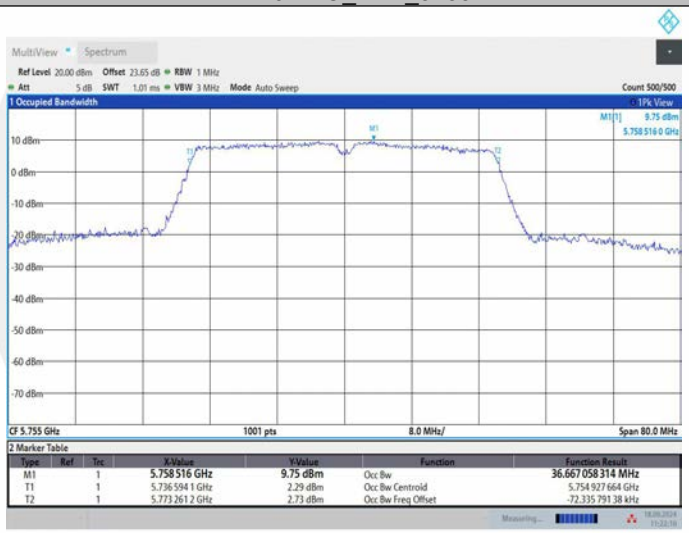

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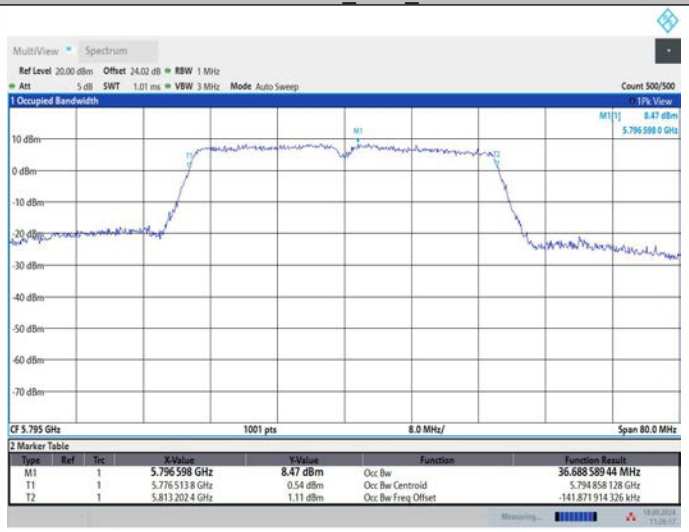

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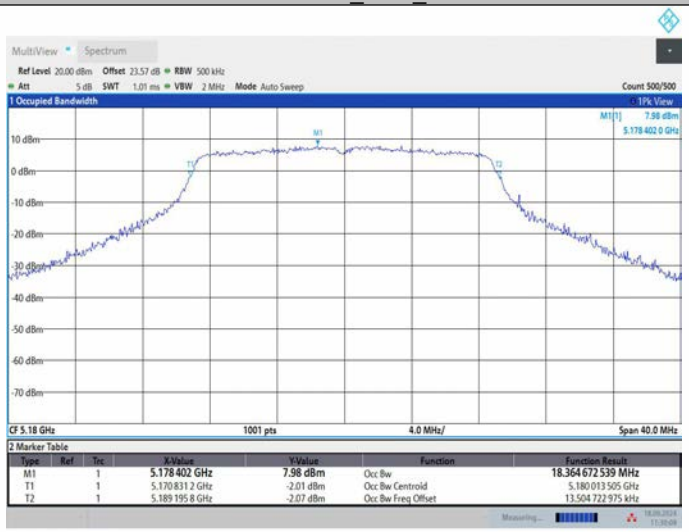

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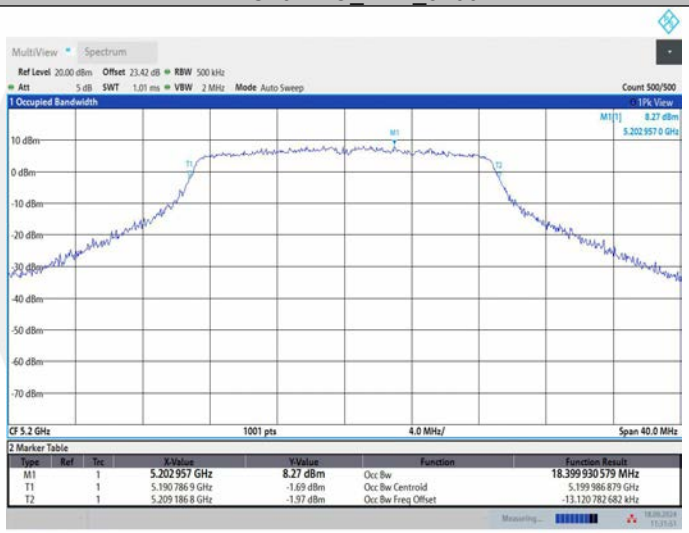

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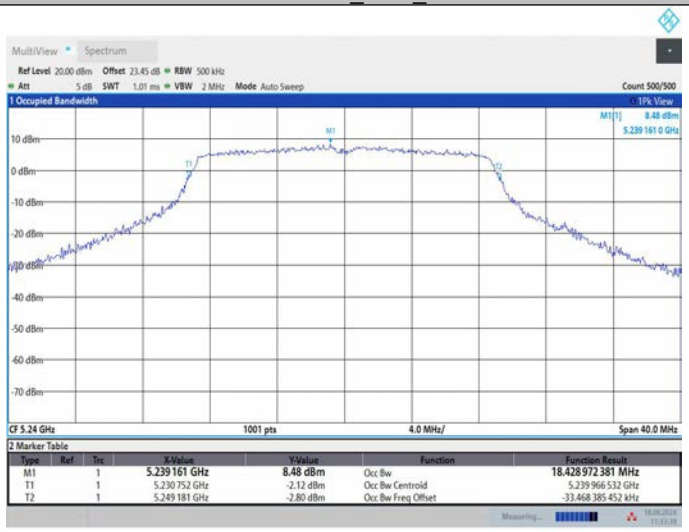

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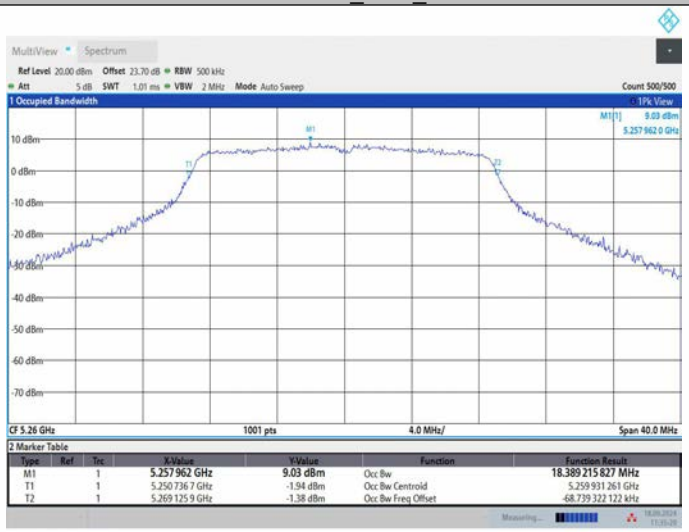

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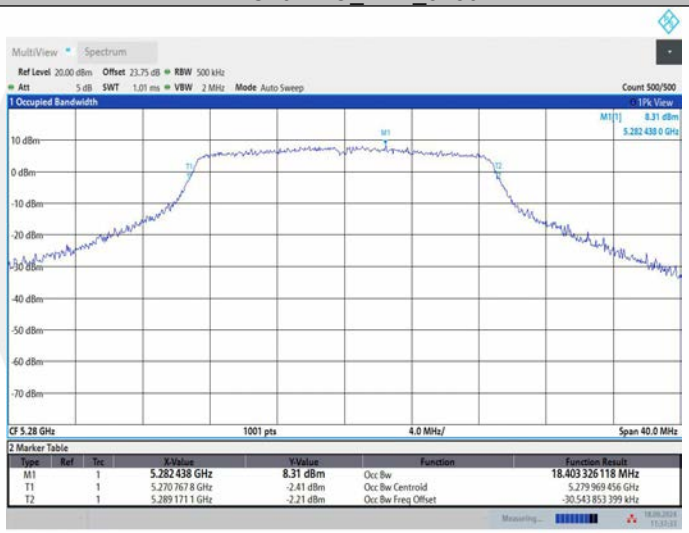

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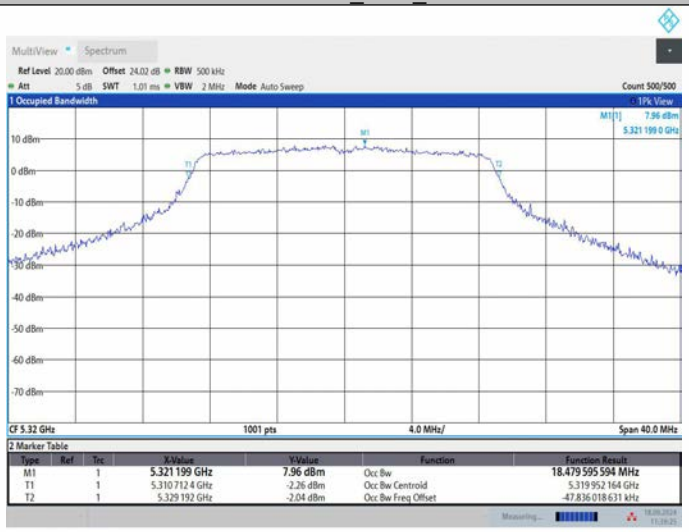

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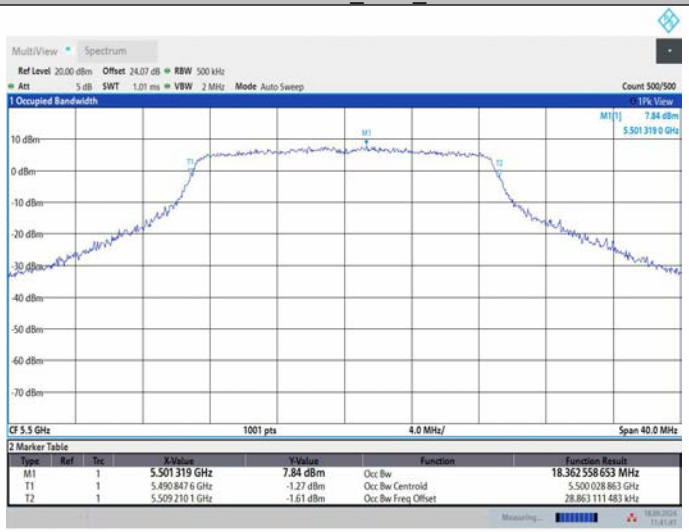

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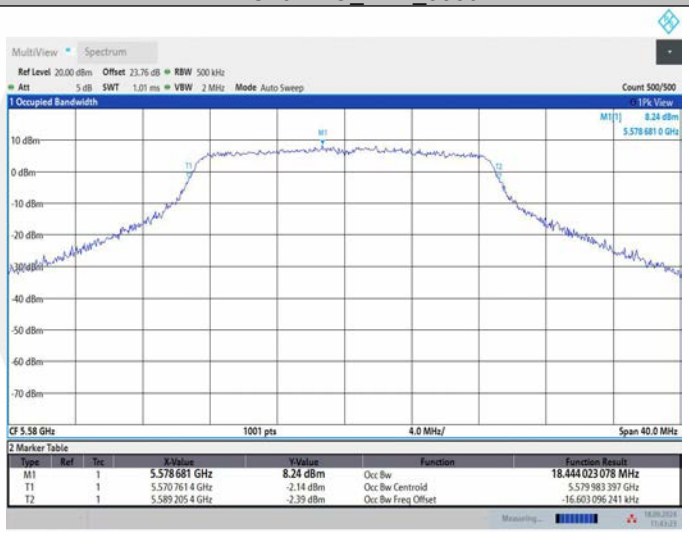
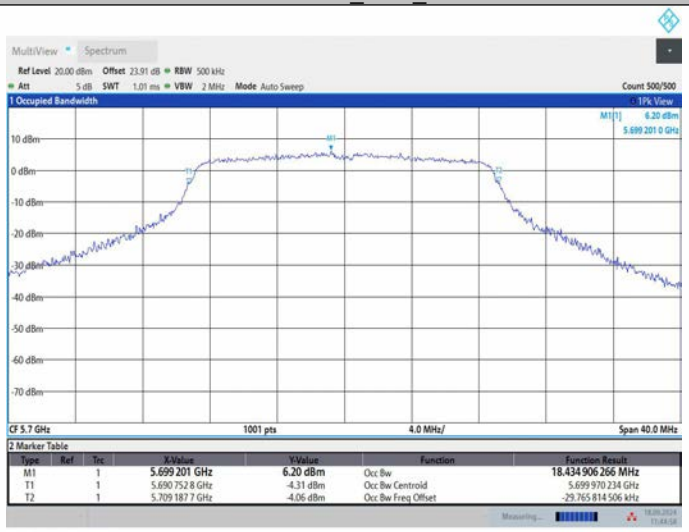


11AC20SISO_Ant1_5700


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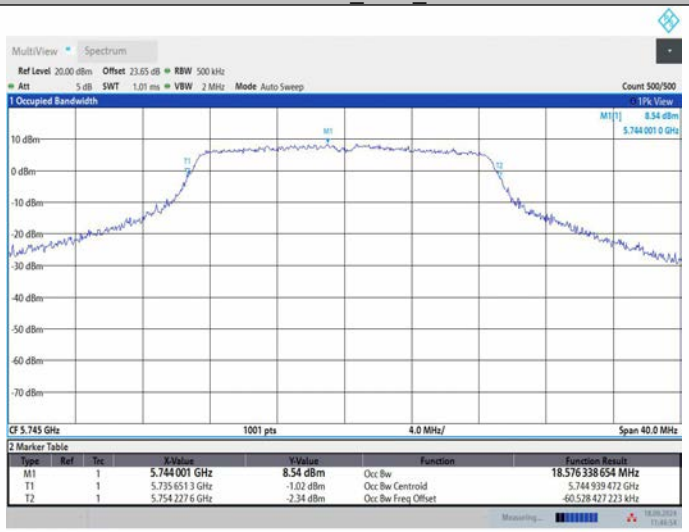

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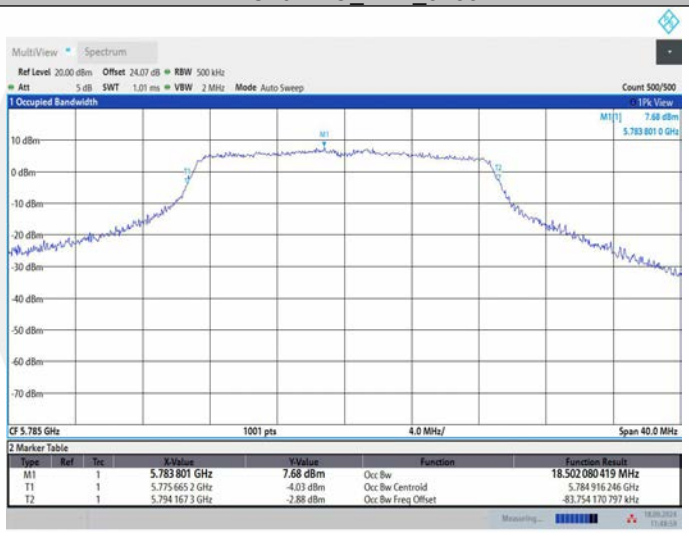

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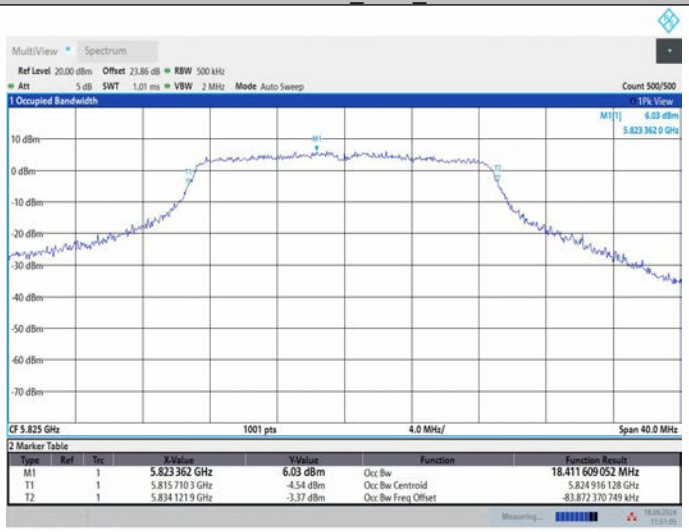

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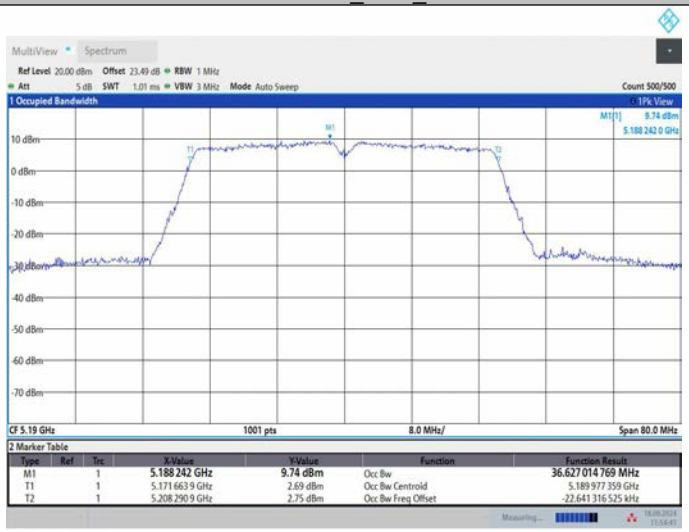

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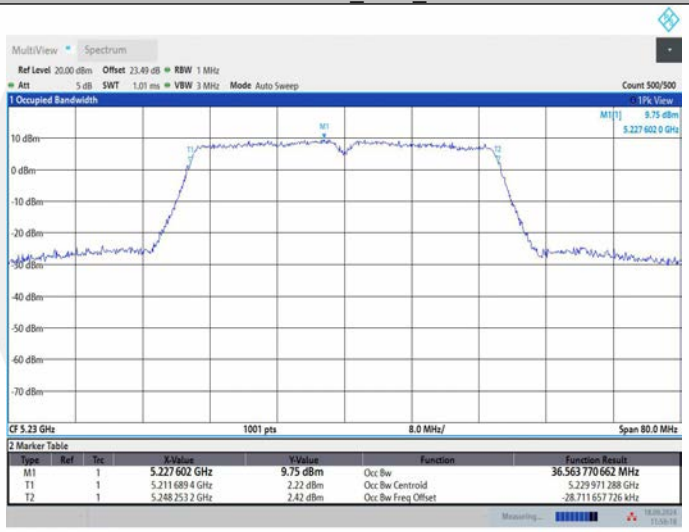

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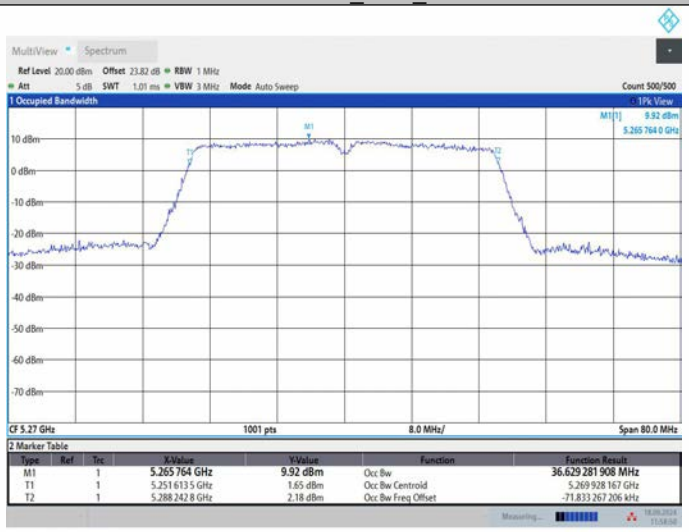

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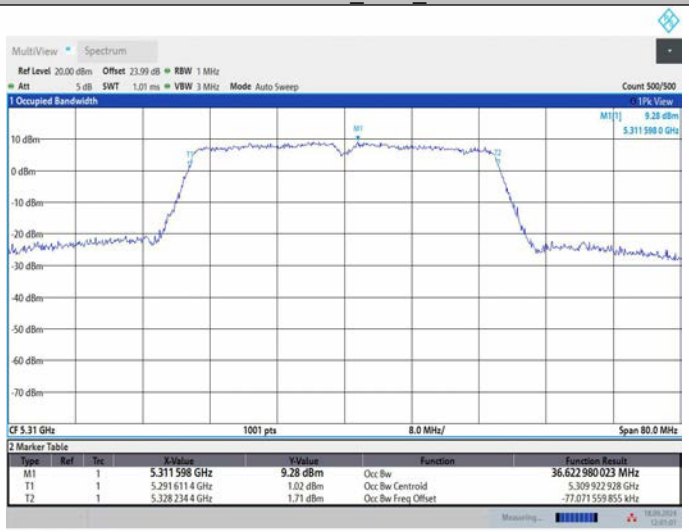

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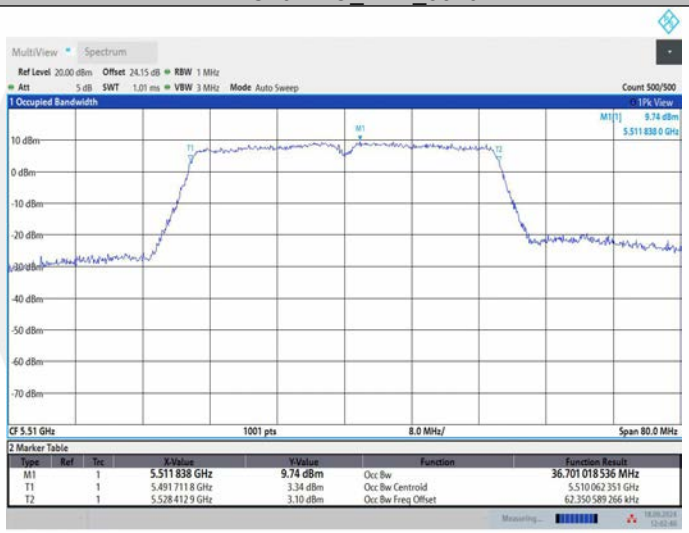

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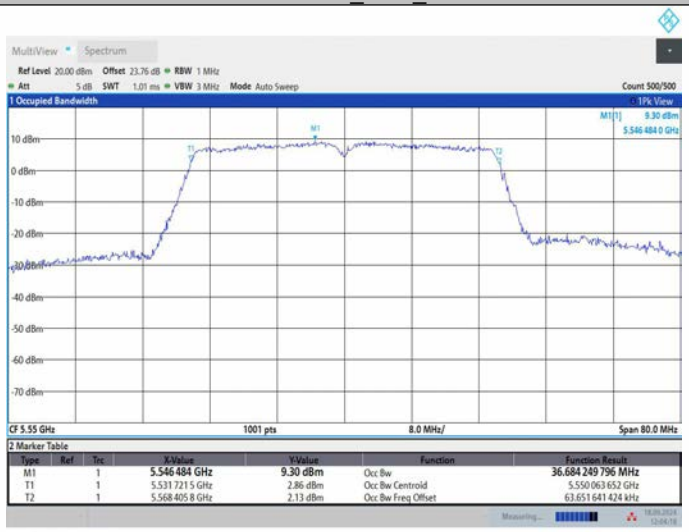

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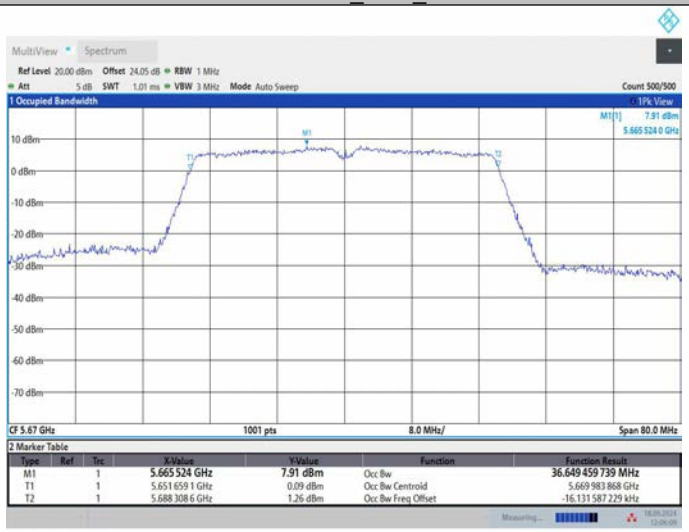

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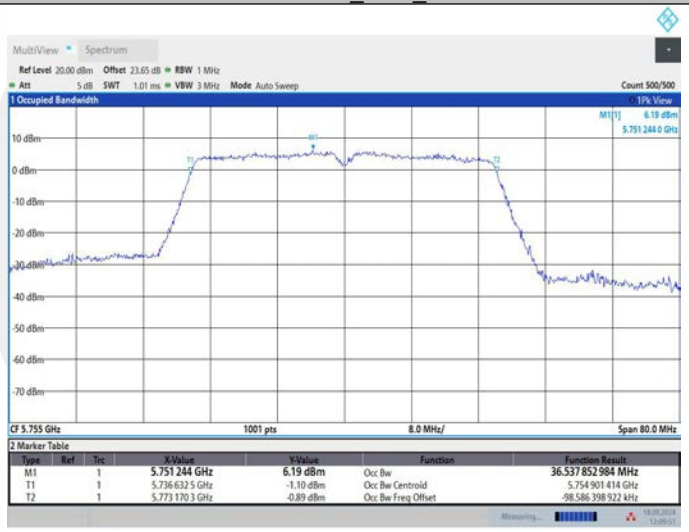

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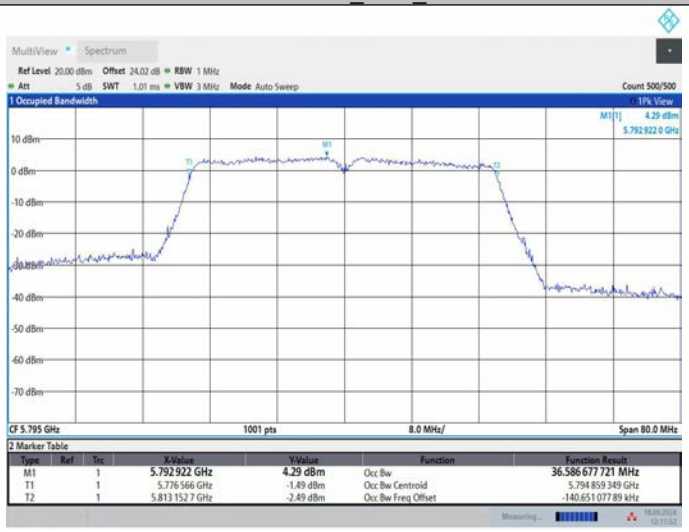

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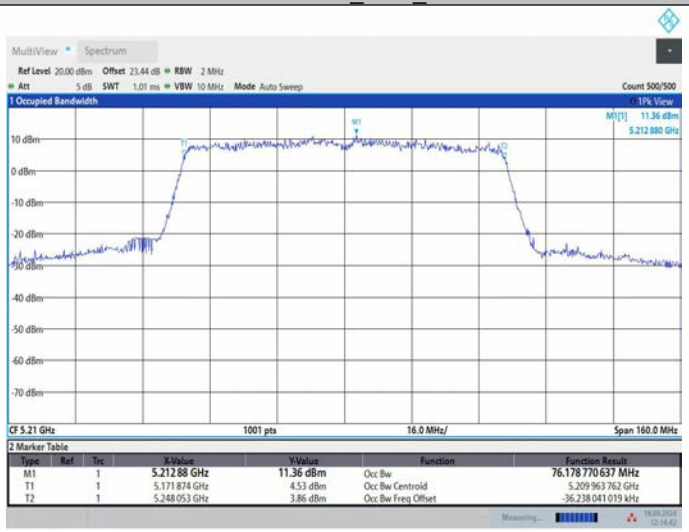

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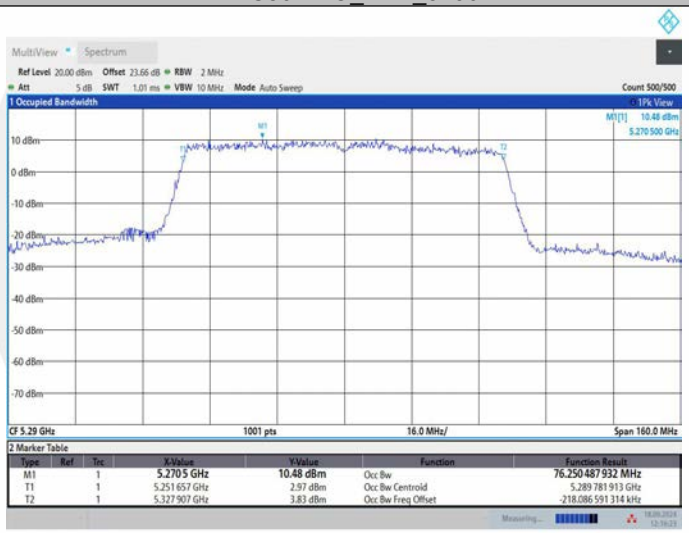
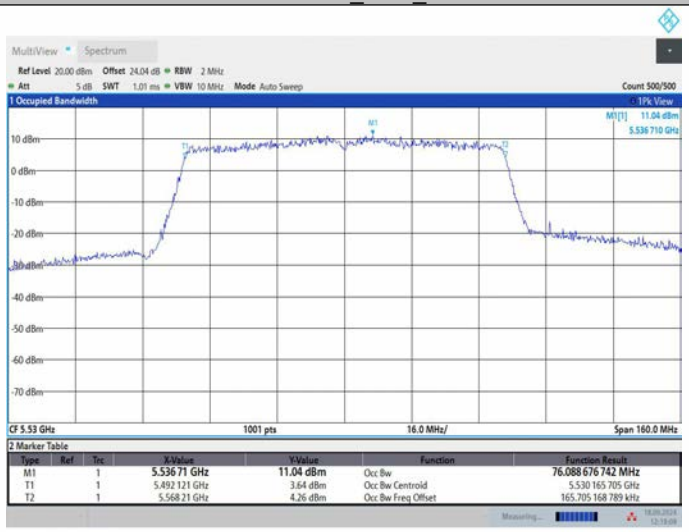


11AC80SISO_Ant1_5530


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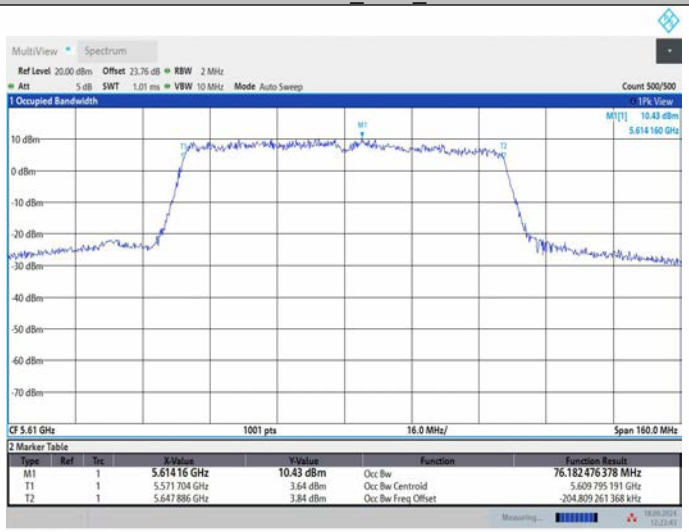
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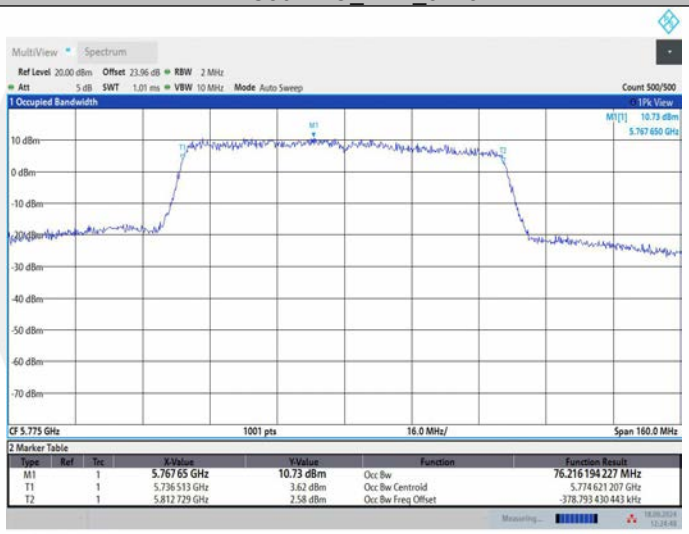
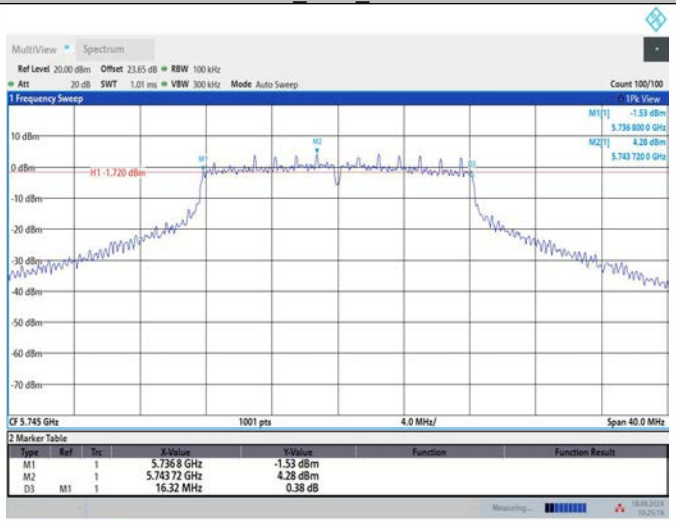
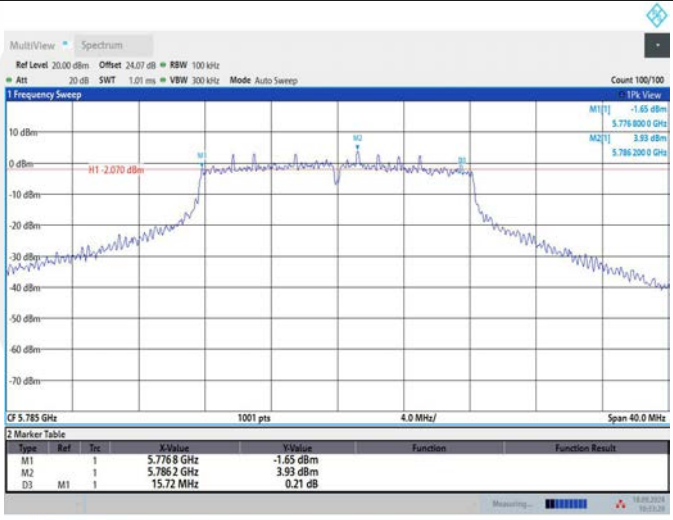
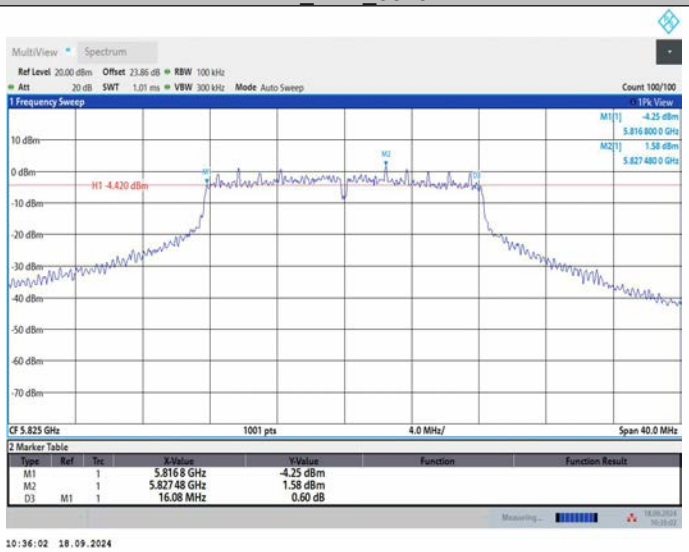


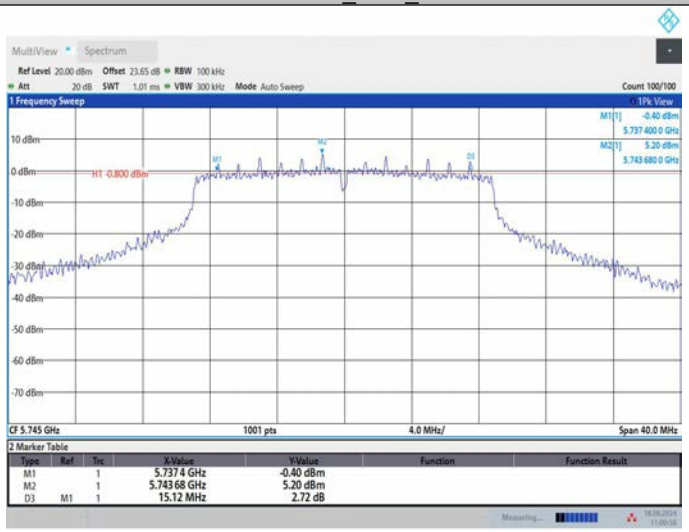
Min emission bandwidth (6dB)

TestMode	Antenna	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.32	5736.80	5753.12	0.5	PASS
		5785	15.72	5776.80	5792.52	0.5	PASS
		5825	16.08	5816.80	5832.88	0.5	PASS
11N20SISO	Ant1	5745	15.12	5737.40	5752.52	0.5	PASS
		5785	15.44	5777.08	5792.52	0.5	PASS
		5825	15.12	5817.40	5832.52	0.5	PASS
11N40SISO	Ant1	5755	35.52	5737.08	5772.60	0.5	PASS
		5795	35.76	5776.84	5812.60	0.5	PASS
11AC20SISO	Ant1	5745	15.12	5737.40	5752.52	0.5	PASS
		5785	15.04	5777.48	5792.52	0.5	PASS
		5825	15.72	5816.84	5832.56	0.5	PASS
11AC40SISO	Ant1	5755	35.36	5737.24	5772.60	0.5	PASS
		5795	35.52	5777.08	5812.60	0.5	PASS
11AC80SISO	Ant1	5610	75.20	5572.40	5647.60	0.5	PASS
		5775	75.20	5737.40	5812.60	0.5	PASS

11A_Ant1_5745


11A_Ant1_5785


11A_Ant1_5825


11N20SISO_Ant1_5745


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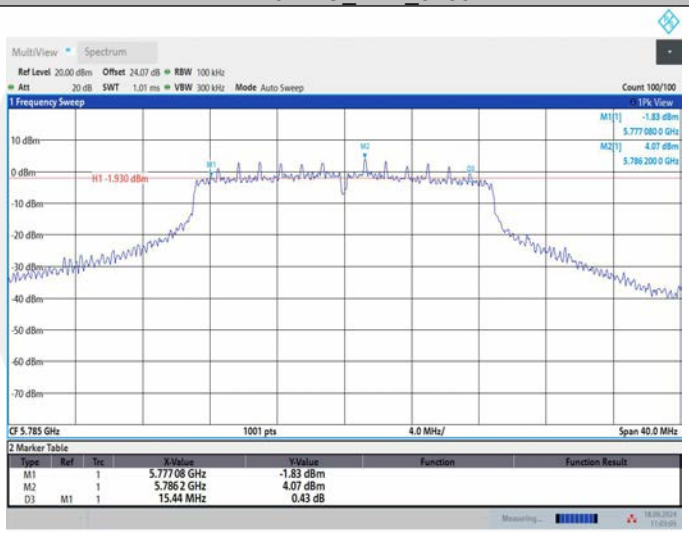

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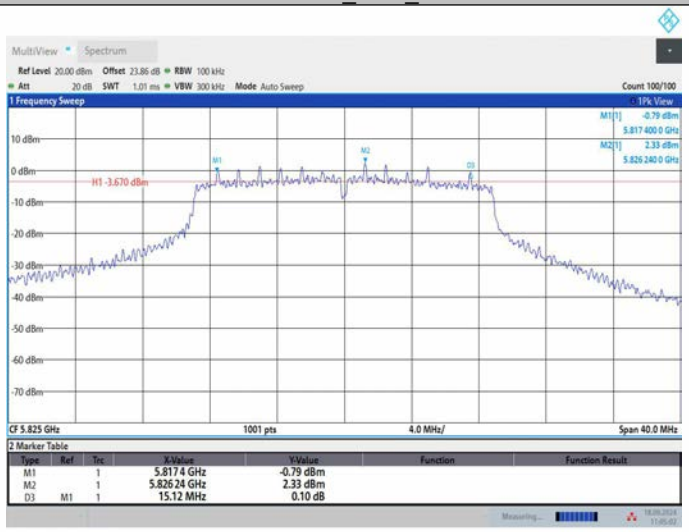

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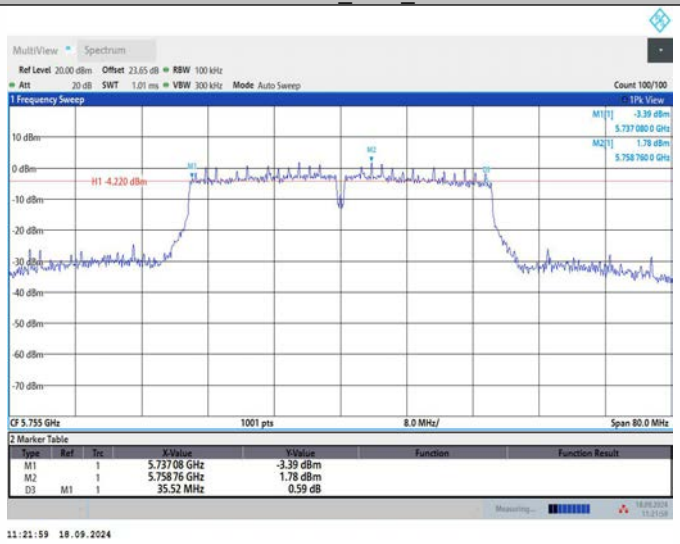
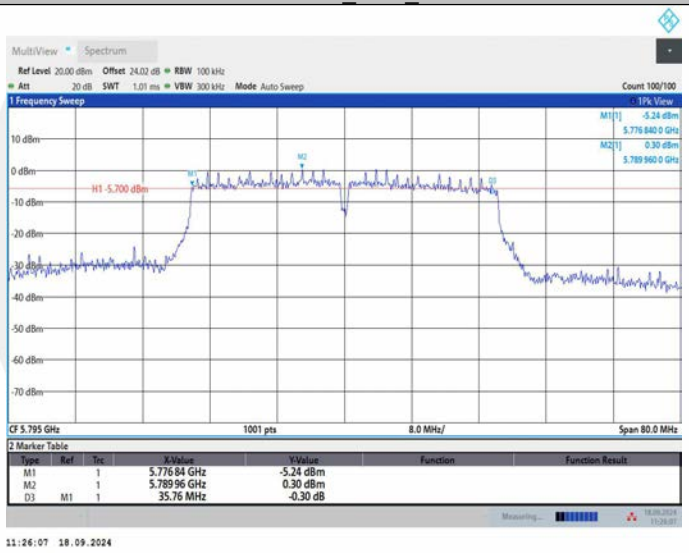


11N40SISO_Ant1_5795


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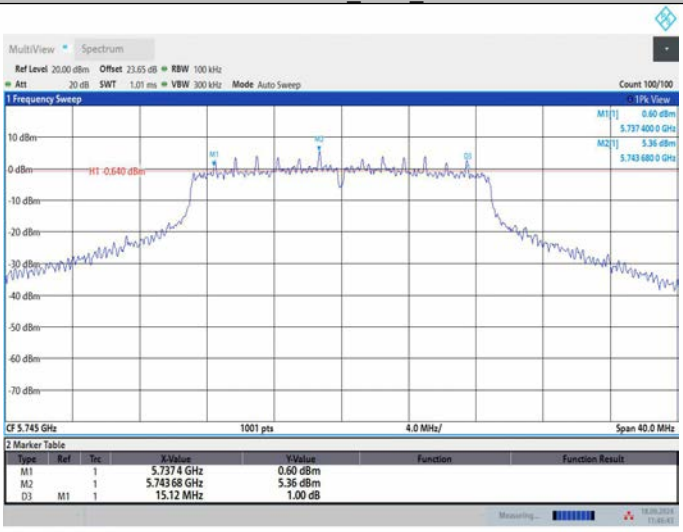

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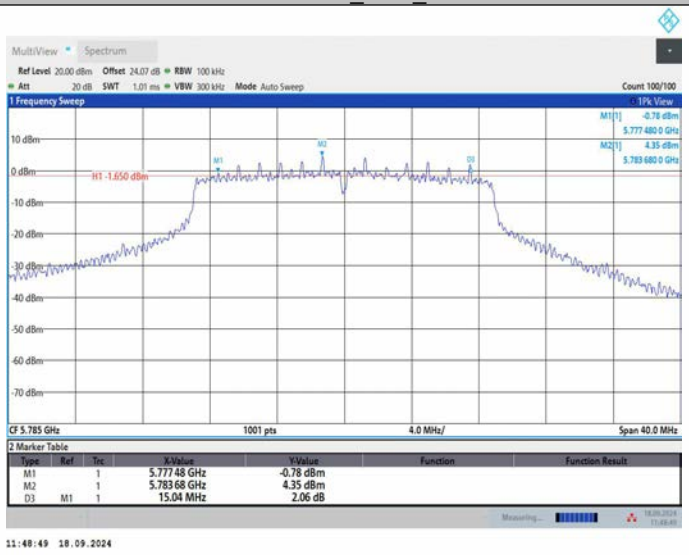

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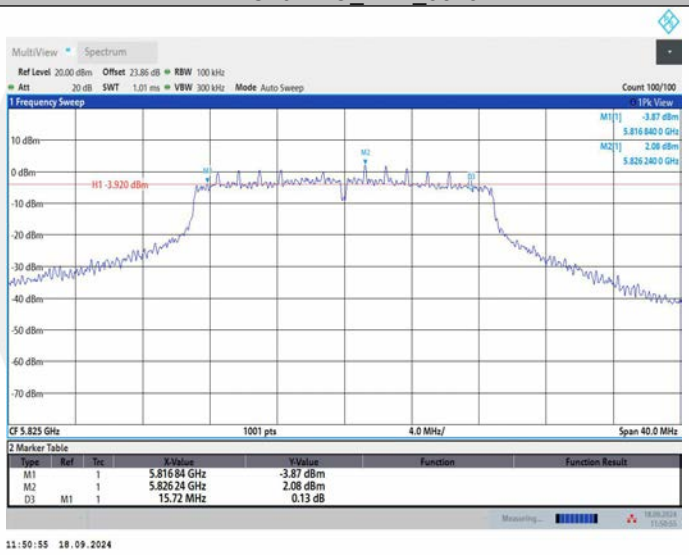

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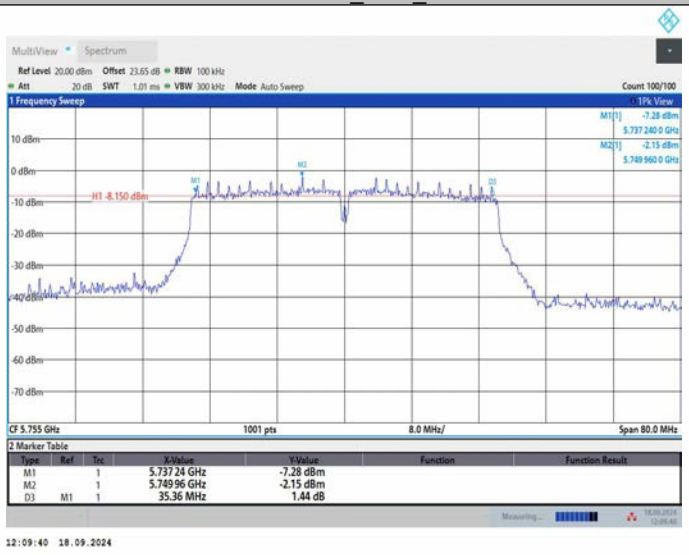
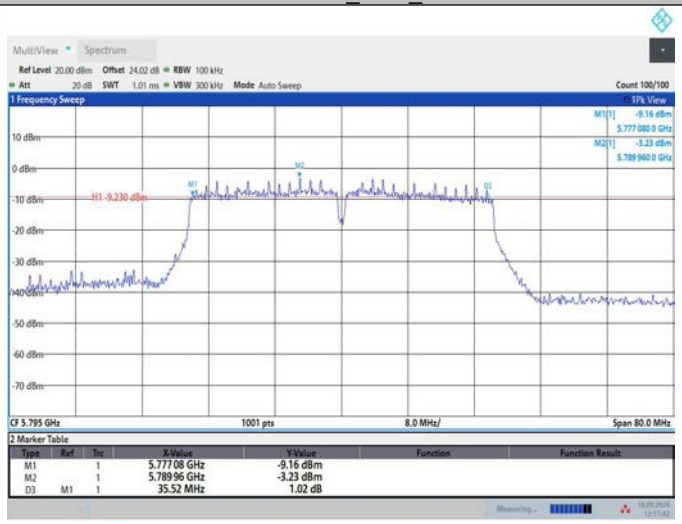
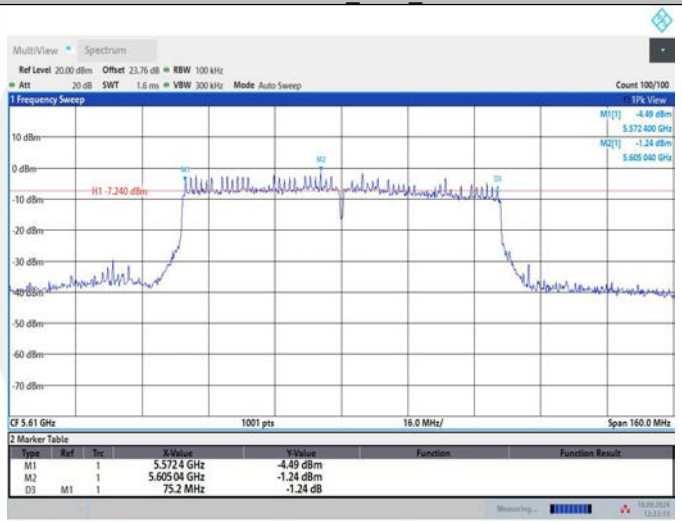
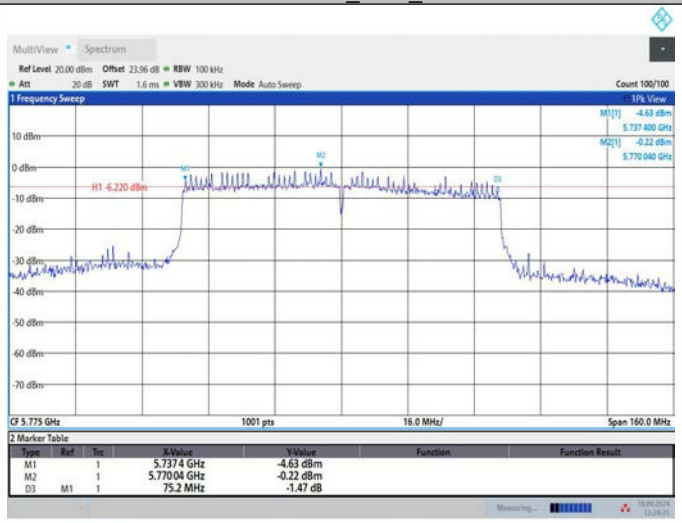


11AC40SISO_Ant1_5795


11AC80SISO_Ant1_5610


11AC80SISO_Ant1_5775


8.2 MAXIMUM CONDUCTED OUTPUT POWER

8.2.1 Applicable Standard

According to FCC Part 15.407(a)(1) for UNII Band I
According to FCC Part 15.407(a)(2) for UNII Band II-A and UNII Band II-C
According to FCC Part 15.407(a)(3) for UNII Band III
According to 789033 D02 Section II(E)

8.2.2 Conformance Limit

■ For the band 5.15-5.25 GHz,
(a) (1) (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
(a) (1) (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
(a) (1) (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
(a) (1) (iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

■ For the 5.25-5.35 GHz and 5.47-5.725 GHz bands
(a) (2) the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

■ For the band 5.725-5.85 GHz
(a) (3)For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

8.2.3 Test Configuration

Test according to clause 6.1 radio frequency test setup 1.

8.2.4 Test Procedure

The maximum average conducted output power can be measured using Method PM-G (Measurement using a gated RF average power meter):
Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

a. The Transmitter output (antenna port) was connected to the power meter.
b. Turn on the EUT and power meter and then record the power value.
c. Repeat above procedures on all channels needed to be tested.

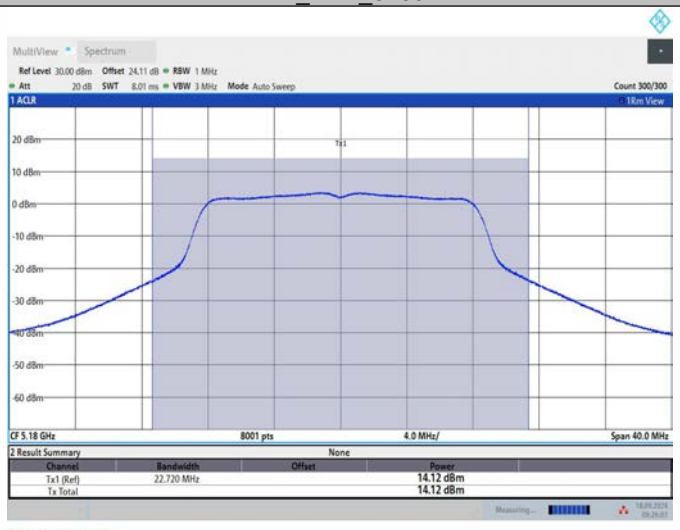
8.2.5 Test Results

Temperature :	25℃	ATM Pressure:	1011 mbar
Humidity :	45 %	Test Engineer:	GJ

Test Mode	Antenna	Frequency[MHz]	Channel Powert [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11A	Ant1	5180	13.58	88.26	0.54	14.12	3.34	17.46	---	PASS
		5200	13.55	88.26	0.54	14.09	3.34	17.43	---	PASS
		5240	13.89	88.26	0.54	14.43	3.34	17.77	---	PASS
		5260	13.90	88.26	0.54	14.44	3.34	17.78	---	PASS
		5280	13.71	88.26	0.54	14.25	3.34	17.59	---	PASS
		5320	13.65	88.26	0.54	14.19	3.34	17.53	---	PASS
		5500	13.73	88.26	0.54	14.27	3.34	17.61	---	PASS
		5580	13.47	88.26	0.54	14.01	3.34	17.35	---	PASS
		5700	11.41	88.26	0.54	11.95	3.34	15.29	---	PASS
		5745	14.07	88.26	0.54	14.61	3.34	17.95	---	PASS
		5785	13.08	88.26	0.54	13.62	3.34	16.96	---	PASS
		5825	11.31	88.26	0.54	11.85	3.34	15.19	---	PASS
11N20SISO	Ant1	5180	13.40	87.50	0.58	13.98	3.34	17.32	---	PASS
		5200	13.35	87.50	0.58	13.93	3.34	17.27	---	PASS
		5240	13.67	87.50	0.58	14.25	3.34	17.59	---	PASS
		5260	13.62	87.50	0.58	14.20	3.34	17.54	---	PASS
		5280	13.45	87.50	0.58	14.03	3.34	17.37	---	PASS
		5320	13.40	87.50	0.58	13.98	3.34	17.32	---	PASS
		5500	13.48	87.50	0.58	14.06	3.34	17.40	---	PASS
		5580	13.32	87.50	0.58	13.90	3.34	17.24	---	PASS
		5700	11.22	87.50	0.58	11.80	3.34	15.14	---	PASS
		5745	13.92	87.50	0.58	14.50	3.34	17.84	---	PASS
		5785	13.00	87.50	0.58	13.58	3.34	16.92	---	PASS
		5825	11.17	87.50	0.58	11.75	3.34	15.09	---	PASS
11N40SISO	Ant1	5190	13.42	77.50	1.11	14.53	3.34	17.87	---	PASS
		5230	13.52	77.50	1.11	14.63	3.34	17.97	---	PASS
		5270	13.65	77.50	1.11	14.76	3.34	18.10	---	PASS
		5310	13.44	77.50	1.11	14.55	3.34	17.89	---	PASS
		5510	13.53	77.31	1.12	14.65	3.34	17.99	---	PASS
		5550	13.49	77.50	1.11	14.60	3.34	17.94	---	PASS
		5670	11.65	77.50	1.11	12.76	3.34	16.10	---	PASS
		5755	13.74	77.50	1.11	14.85	3.34	18.19	---	PASS
		5795	12.64	77.50	1.11	13.75	3.34	17.09	---	PASS
11AC20SISO	Ant1	5180	13.48	87.56	0.58	14.06	3.34	17.40	---	PASS
		5200	13.44	87.56	0.58	14.02	3.34	17.36	---	PASS

		5240	13.70	87.56	0.58	14.28	3.34	17.62	---	PASS
		5260	13.72	87.56	0.58	14.30	3.34	17.64	---	PASS
		5280	13.54	87.56	0.58	14.12	3.34	17.46	---	PASS
		5320	13.45	87.56	0.58	14.03	3.34	17.37	---	PASS
		5500	13.48	87.56	0.58	14.06	3.34	17.40	---	PASS
		5580	13.40	87.56	0.58	13.98	3.34	17.32	---	PASS
		5700	11.31	87.56	0.58	11.89	3.34	15.23	---	PASS
		5745	14.00	87.56	0.58	14.58	3.34	17.92	---	PASS
		5785	13.07	87.56	0.58	13.65	3.34	16.99	---	PASS
		5825	11.29	87.56	0.58	11.87	3.34	15.21	---	PASS
11AC40SISO	Ant1	5190	13.53	77.50	1.11	14.64	3.34	17.98	---	PASS
		5230	13.63	77.50	1.11	14.74	3.34	18.08	---	PASS
		5270	13.68	77.50	1.11	14.79	3.34	18.13	---	PASS
		5310	13.51	77.50	1.11	14.62	3.34	17.96	---	PASS
		5510	13.58	77.50	1.11	14.69	3.34	18.03	---	PASS
		5550	13.55	77.50	1.11	14.66	3.34	18.00	---	PASS
		5670	11.75	77.50	1.11	12.86	3.34	16.20	---	PASS
		5755	9.95	77.50	1.11	11.06	3.34	14.40	---	PASS
		5795	8.81	77.50	1.11	9.92	3.34	13.26	---	PASS
11AC80SISO	Ant1	5210	11.98	54.22	2.66	14.64	3.34	17.98	---	PASS
		5290	11.77	54.22	2.66	14.43	3.34	17.77	---	PASS
		5530	12.03	54.22	2.66	14.69	3.34	18.03	---	PASS
		5610	11.27	54.22	2.66	13.93	3.34	17.27	---	PASS
		5775	11.96	54.22	2.66	14.62	3.34	17.96	---	PASS

Test Graphs

11A_Ant1_5180

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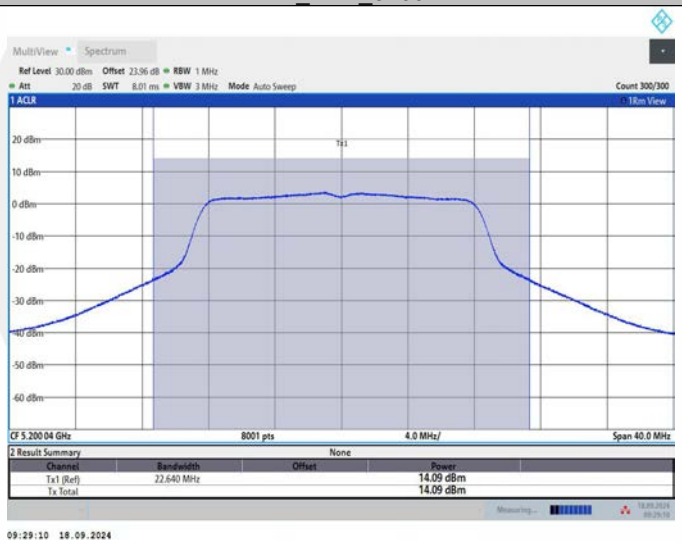
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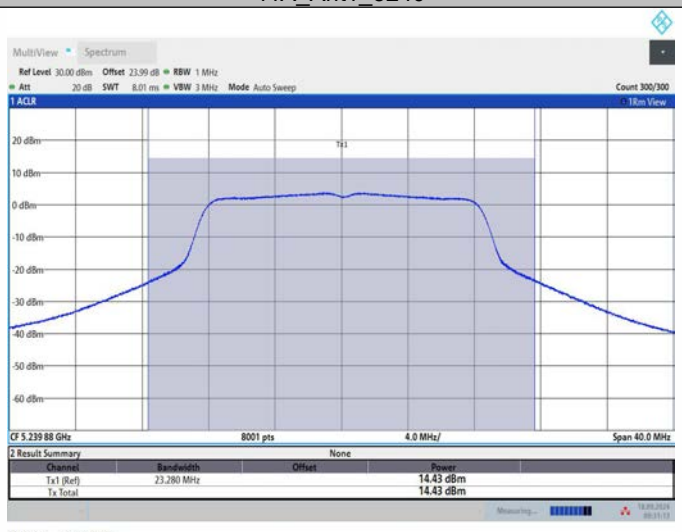

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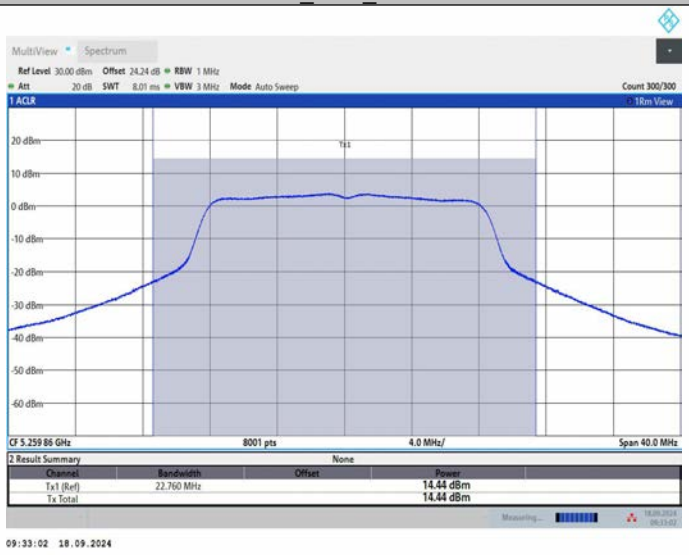
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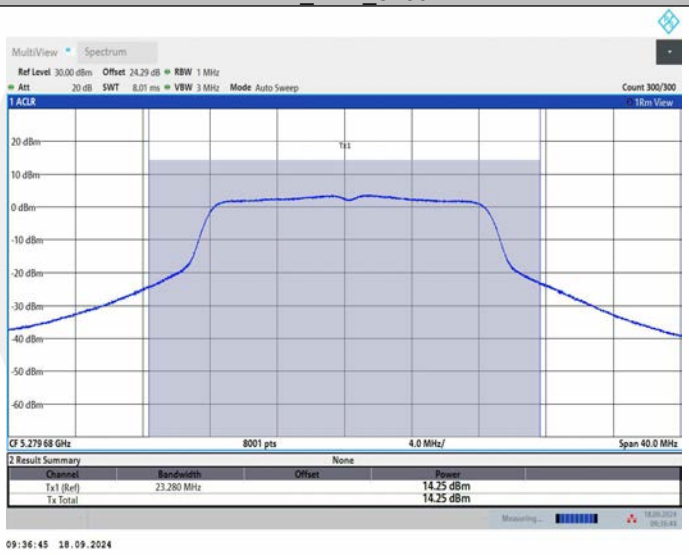
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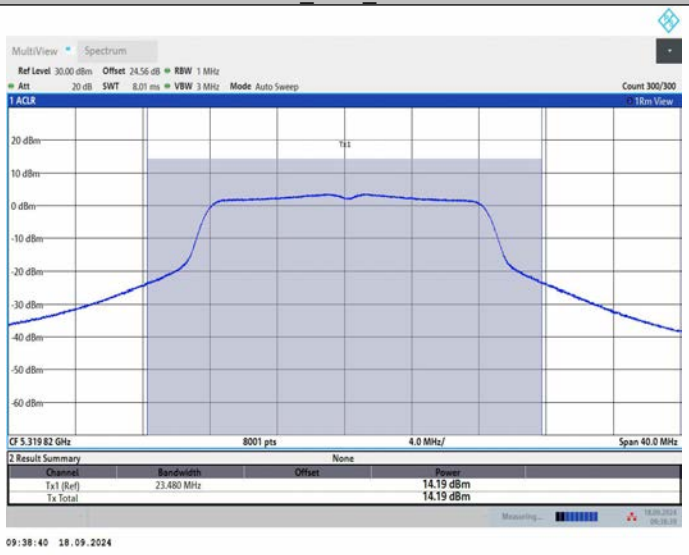

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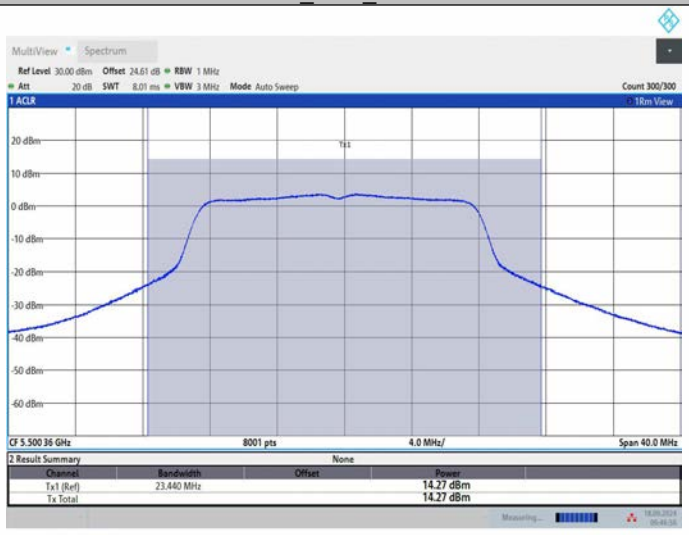

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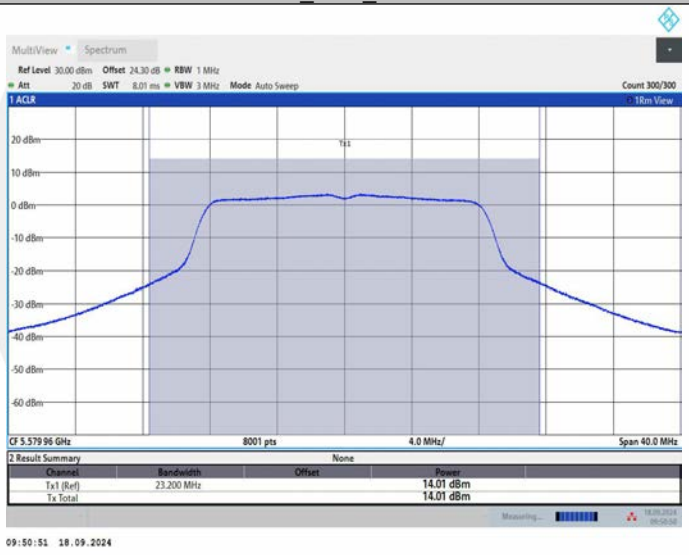

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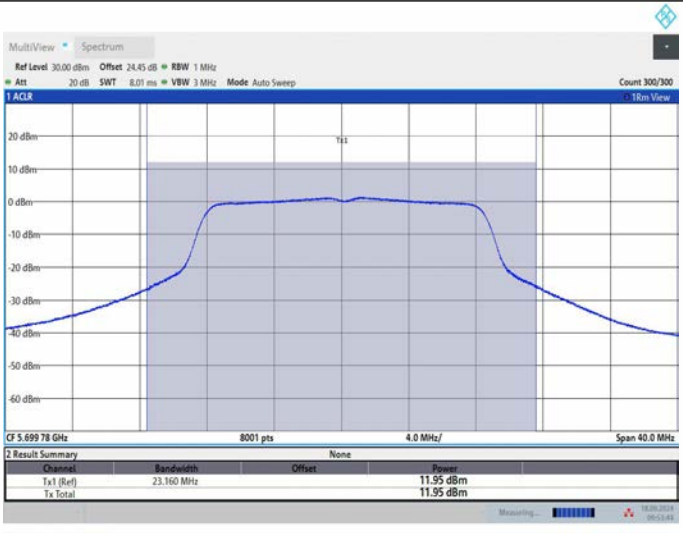

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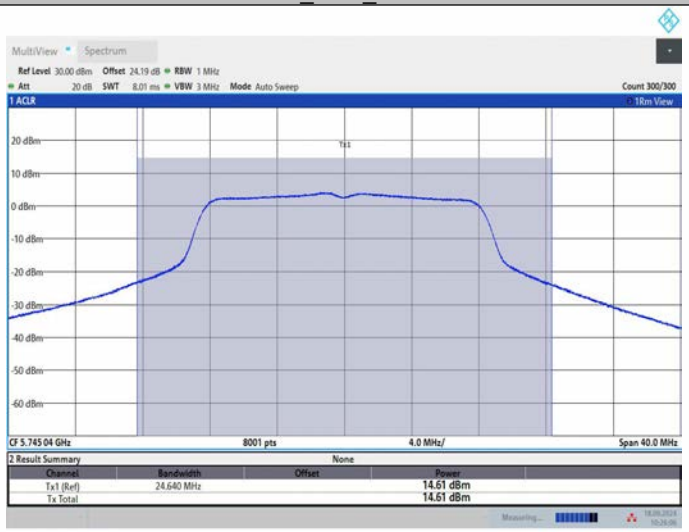
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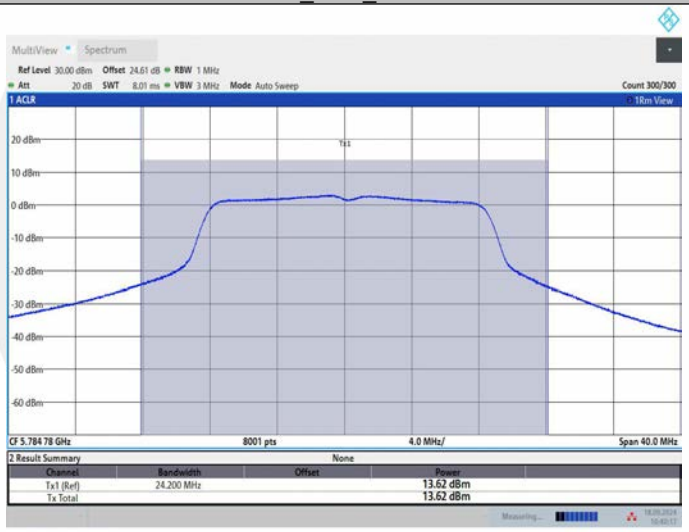
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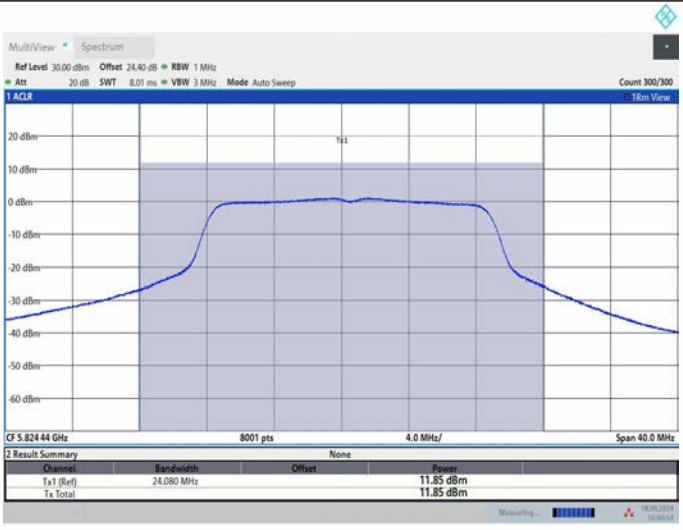
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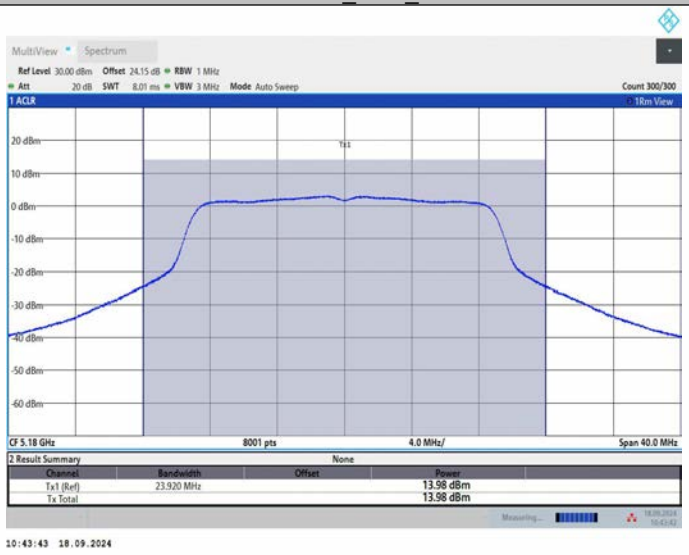

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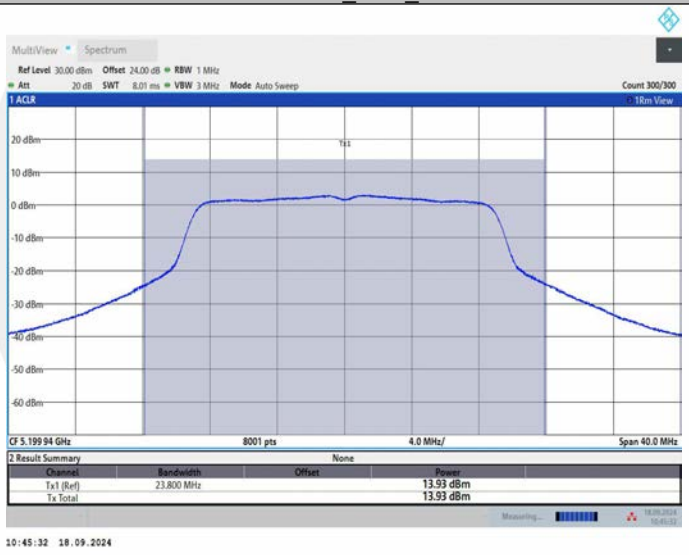

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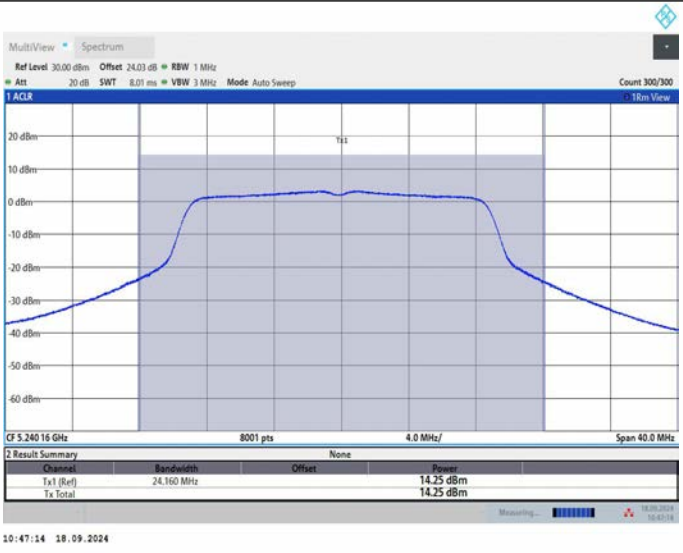

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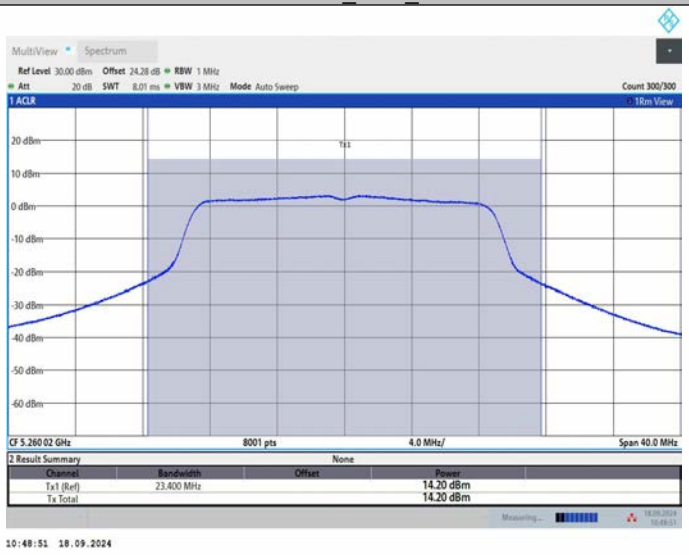
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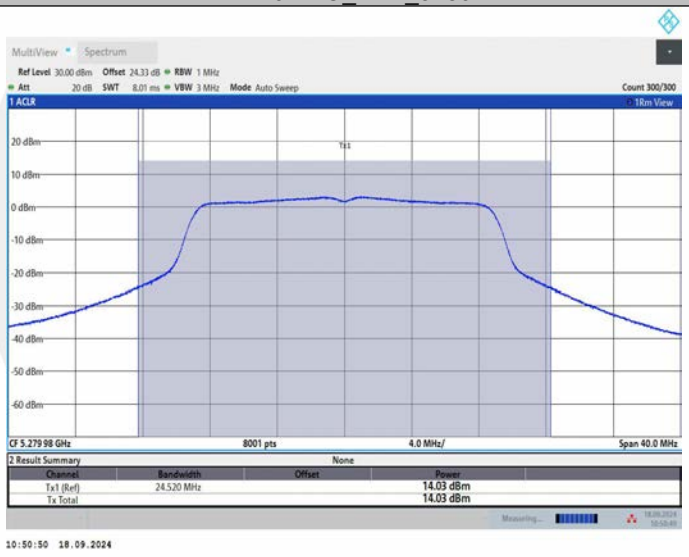
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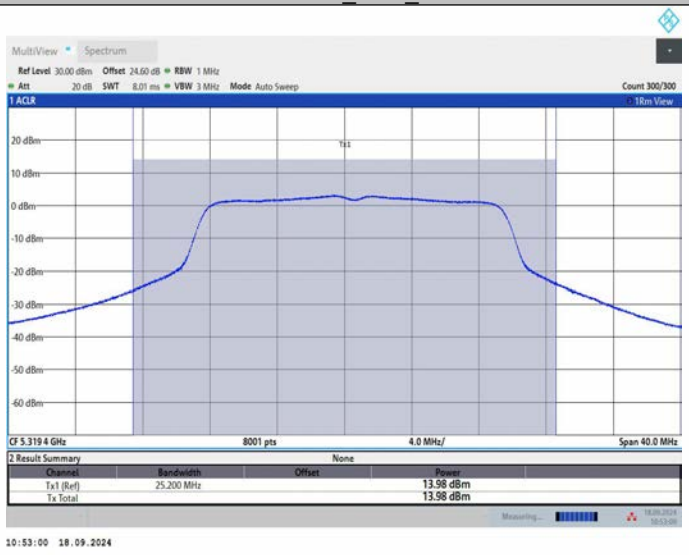

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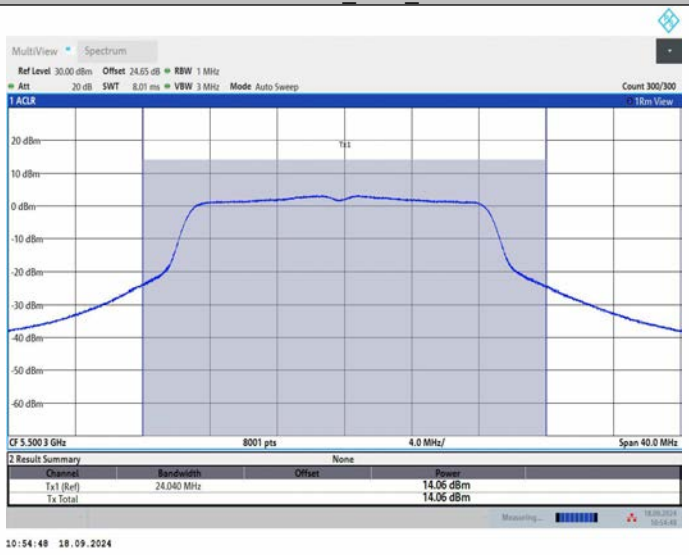

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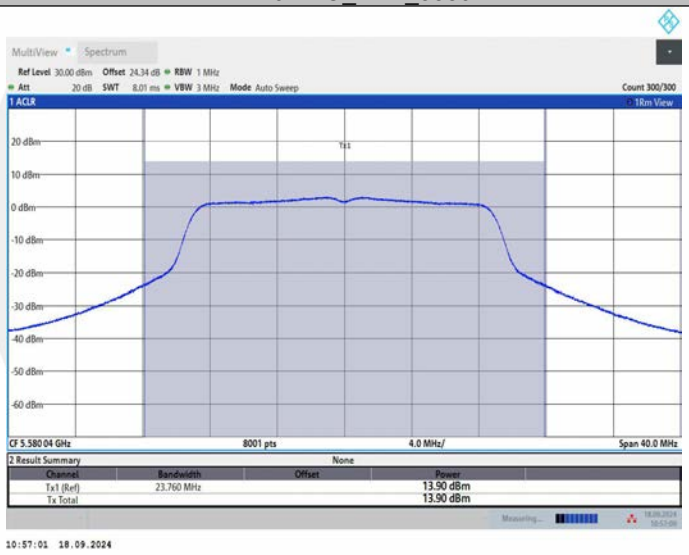

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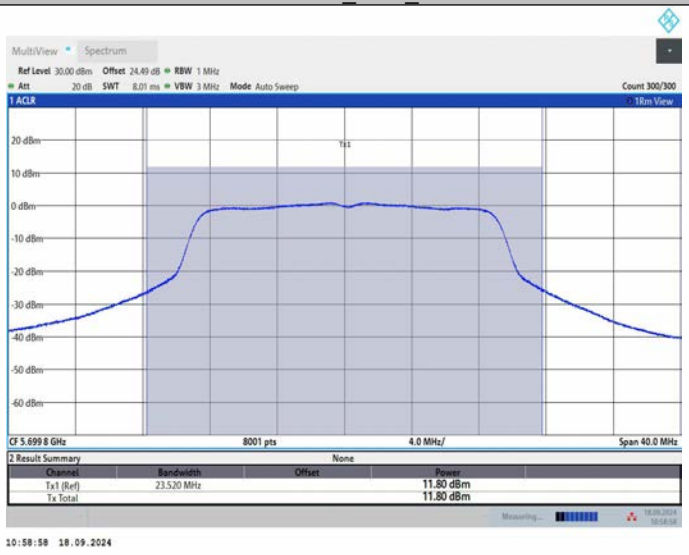

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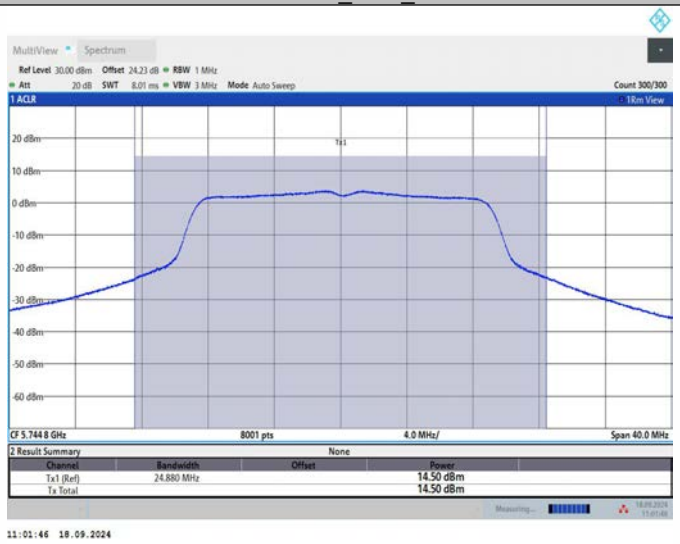

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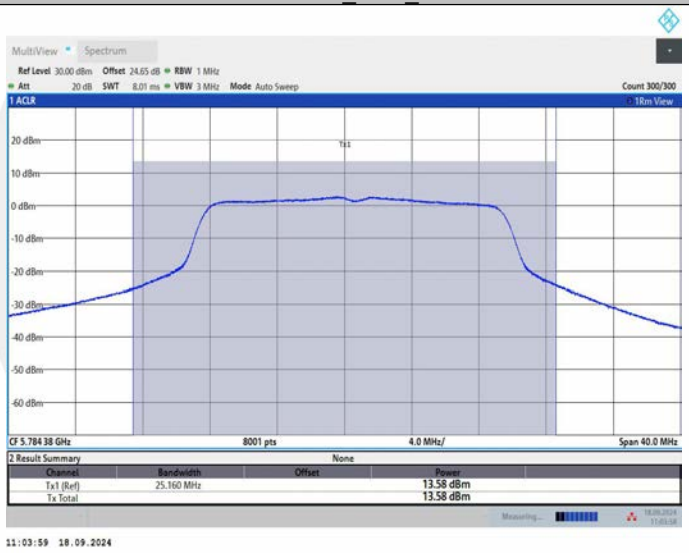

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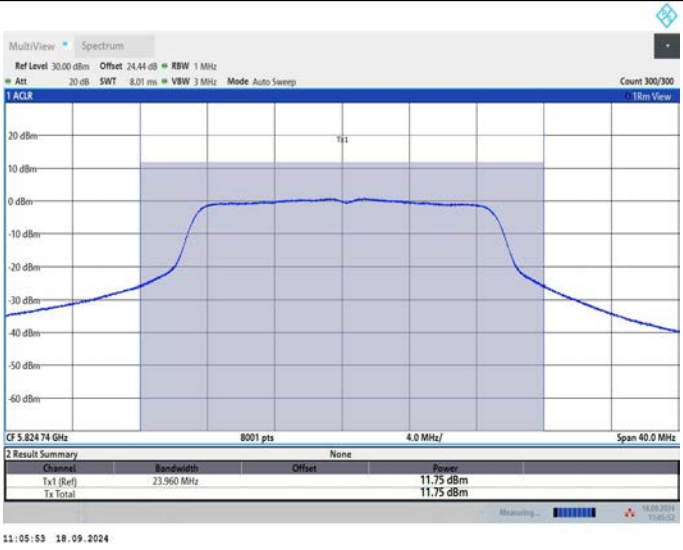

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11N40SISO_Ant1_5230

11N40SISO_Ant1_5270