



FCC RF Test Report

APPLICANT : Quetel Wireless Solutions Co., Ltd.
EQUIPMENT : Wi-Fi & Bluetooth Module
BRAND NAME : Quetel
MODEL NAME : FCM362K
FCC ID : XMR2023FCM362K
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure
TEST DATE(S) : Nov. 29, 2023 ~ Dec. 18, 2023

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia



Sporton International Inc. (Kunshan)

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China**



TABLE OF CONTENTS

REVISION HISTORY..... 3

SUMMARY OF TEST RESULT 4

1 GENERAL DESCRIPTION 5

 1.1 Applicant 5

 1.2 Manufacturer..... 5

 1.3 Product Feature of Equipment Under Test..... 5

 1.4 Product Specification of Equipment Under Test..... 6

 1.5 Modification of EUT 7

 1.6 Testing Location 8

 1.7 Test Software..... 8

 1.8 Applicable Standards..... 8

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST 9

 2.1 Carrier Frequency and Channel 9

 2.2 Test Mode..... 10

 2.3 Connection Diagram of Test System..... 11

 2.4 Support Unit used in test configuration and system 12

 2.5 EUT Operation Test Setup 12

 2.6 Measurement Results Explanation Example..... 12

3 TEST RESULT..... 13

 3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement 13

 3.2 Maximum Conducted Output Power Measurement 15

 3.3 Power Spectral Density Measurement 17

 3.4 Unwanted Emissions Measurement 19

 3.5 AC Conducted Emission Measurement..... 24

 3.6 Antenna Requirements 26

4 LIST OF MEASURING EQUIPMENT 27

5 MEASUREMENT UNCERTAINTY 28

APPENDIX A. CONDUCTED TEST RESULTS

APPENDIX B. AC CONDUCTED EMISSION TEST RESULT

APPENDIX C. RADIATED SPURIOUS EMISSION

APPENDIX D. DUTY CYCLE PLOTS

APPENDIX E. SETUP PHOTOGRAPHS



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR3N1003D	Rev. 01	Initial issue of report	Dec. 21, 2023



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit for U-NII-1/2A/2C	Limit for U-NII-3	Result	Remark
3.1	2.1049 & 15.403(i)	6dB, 26dB & 99% Bandwidth	-	6dB Bandwidth > 500kHz	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 24 dBm	≤ 30 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 11 dBm/MHz	≤ 30 dBm/500kHz	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b) & 15.209(a)	15.407(b)(4)(i) & 15.209(a)	Pass	Under limit 3.07 dB at 5725.20 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	15.207(a)	Pass	Under limit 12.56 dB at 0.527 MHz
3.6	15.203 & 15.407(a)	Antenna Requirement	15.203 & 15.407(a)	15.203 & 15.407(a)	Pass	-

Conformity Assessment Condition:

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
- The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty"

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



1 General Description

1.1 Applicant

Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

1.2 Manufacturer

Quectel Wireless Solutions Co., Ltd.

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Wi-Fi & Bluetooth Module
Brand Name	Quectel
Model Name	FCM362K
FCC ID	XMR2023FCM362K
SN Code	Conducted: E1M23HV03000182 Conduction: E1M23DB0A000189 Radiation: E1M23EA08000081
HW Version	R1.0
SW Version	FCM362KAAR01A01
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5700 MHz 5745 MHz ~ 5825 MHz
Maximum Output Power to Antenna	<p><5180 MHz ~ 5240 MHz> 802.11a : 17.83 dBm / 0.0607 W 802.11n HT20 : 17.76 dBm / 0.0597 W 802.11n HT40 : 17.71 dBm / 0.0590 W 802.11ac VHT20: 17.72 dBm / 0.0592 W 802.11ac VHT40: 17.66 dBm / 0.0583 W 802.11ax HE20: 17.85 dBm / 0.0610 W 802.11ax HE40: 17.81 dBm / 0.0604 W</p> <p><5260 MHz ~ 5320 MHz> 802.11a : 18.25 dBm / 0.0668 W 802.11n HT20 : 18.24 dBm / 0.0667 W 802.11n HT40 : 18.19 dBm / 0.0659 W 802.11ac VHT20: 18.19 dBm / 0.0659 W 802.11ac VHT40: 18.14 dBm / 0.0652 W 802.11ax HE20: 18.32 dBm / 0.0679 W 802.11ax HE40: 18.28 dBm / 0.0673 W</p> <p><5500 MHz ~ 5700 MHz > 802.11a : 17.97 dBm / 0.0627 W 802.11n HT20 : 17.77 dBm / 0.0598 W 802.11n HT40 : 18.26 dBm / 0.0670 W 802.11ac VHT20: 17.73 dBm / 0.0593 W 802.11ac VHT40: 18.23 dBm / 0.0665 W 802.11ax HE20: 17.86 dBm / 0.0611 W 802.11ax HE40: 18.35 dBm / 0.0684 W</p> <p><5745 MHz ~ 5825 MHz> 802.11a : 18.02 dBm / 0.0634 W 802.11n HT20 : 18.31 dBm / 0.0678 W 802.11n HT40 : 18.43 dBm / 0.0697 W 802.11ac VHT20: 18.27 dBm / 0.0671 W 802.11ac VHT40: 18.41 dBm / 0.0693 W 802.11ax HE20: 18.39 dBm / 0.0690 W 802.11ax HE40: 18.47 dBm / 0.0703 W</p>
99% Occupied Bandwidth	<p><5180 MHz ~ 5240 MHz> 802.11a : 18.342 MHz 802.11n HT20 : 19.381 MHz 802.11n HT40 : 37.722 MHz 802.11ax HE20: 19.740 MHz 802.11ax HE40: 38.521 MHz</p> <p><5260 MHz ~ 5320 MHz> 802.11a : 18.382 MHz 802.11n HT20 : 19.381 MHz 802.11n HT40 : 37.642 MHz 802.11ax HE20: 19.700 MHz 802.11ax HE40: 38.601 MHz</p> <p><5500 MHz ~ 5700 MHz> 802.11a : 18.781 MHz 802.11n HT20 : 19.580 MHz</p>



	802.11n HT40 : 37.962 MHz 802.11ax HE20: 19.940 MHz 802.11ax HE40: 38.841 MHz <5745 MHz ~ 5825 MHz> 802.11a : 18.581 MHz 802.11n HT20 : 19.740 MHz 802.11n HT40 : 38.122 MHz 802.11ax HE20: 19.900 MHz 802.11ax HE40: 39.001 MHz
Antenna Type / Gain	<5180 MHz ~ 5240 MHz> PCB Antenna with gain -1.8 dBi <5260 MHz ~ 5320 MHz> PCB Antenna with gain 0 dBi <5500 MHz ~ 5700 MHz> PCB Antenna with gain 0.1 dBi <5745 MHz ~ 5825 MHz> PCB Antenna with gain 0 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11ax : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)

Note:

1. WLAN operation in 5600 MHz ~ 5650 MHz is notched.
2. For 802.11n & 11ac mode, the whole testing were assessed 11n mode to cover 11ac mode by referring to the maximum output power.
3. The device only support 802.11ax Full RU, not support 11ax Partial RU.
4. The device does not support 802.11ax channel puncturing.

1.5 Modification of EUT

No modifications are made to the EUT during all test items.



1.6 Testing Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO01-KS 03CH08-KS TH01-KS	CN1257	314309

1.7 Test Software

Item	Site	Manufacturer	Name	Version
1.	TH01-KS	Tonscend	JS1120-3 test system China_210602	3.3.10
2.	03CH08-KS	AUDIX	E3	210616
3.	CO01-KS	AUDIX	E3	6.2009-8-24

1.8 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 15 Subpart E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq.(MHz)	Channel	Freq. (MHz)
5180-5240 MHz U-NII-1	36	5180	44	5220
	38*	5190	46*	5230
	40	5200	48	5240

Frequency Band	Channel	Freq.(MHz)	Channel	Freq. (MHz)
5260-5320 MHz U-NII-2A	52	5260	60	5300
	54*	5270	62*	5310
	56	5280	64	5320

Frequency Band	Channel	Freq.(MHz)	Channel	Freq. (MHz)
5500-5700MHz U-NII-2C	100	5500	116	5580
	102*	5510	132	5660
	104	5520	134*	5670
	108	5540	136	5680
	110*	5550	140	5700
	112	5560	-	-

Frequency Band	Channel	Freq.(MHz)	Channel	Freq. (MHz)
5745-5825 MHz U-NII-3	149	5745	159*	5795
	151*	5755	161	5805
	153	5765	165	5825
	157	5785	-	-

Note: The above Frequency and Channel in "*" are 40MHz bandwidth.



2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

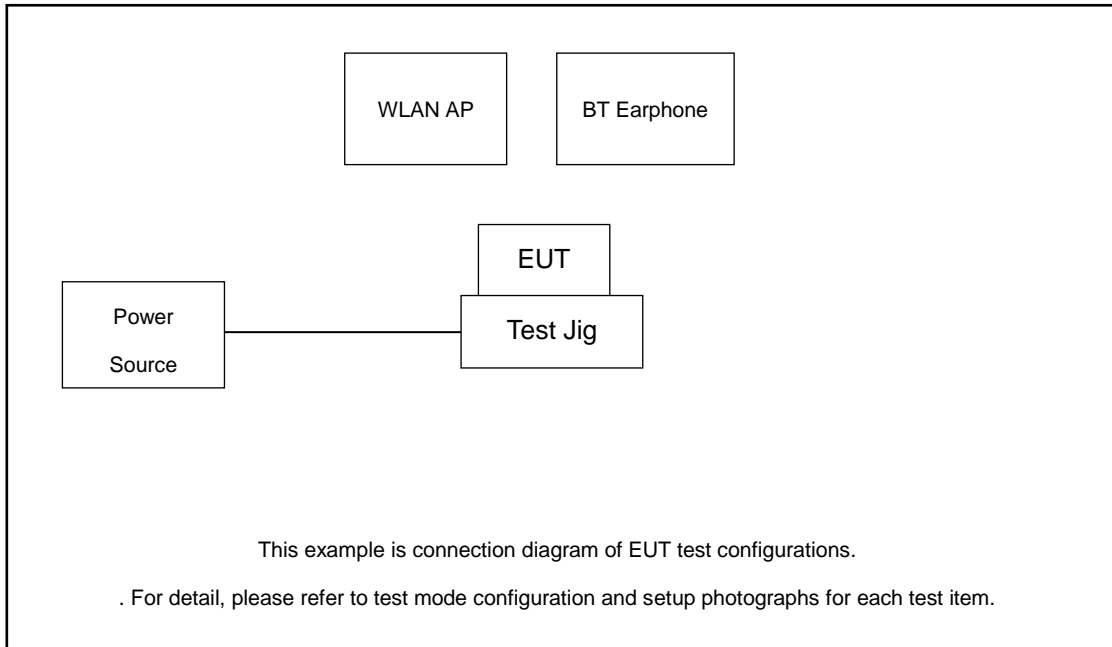
SISO Mode

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0

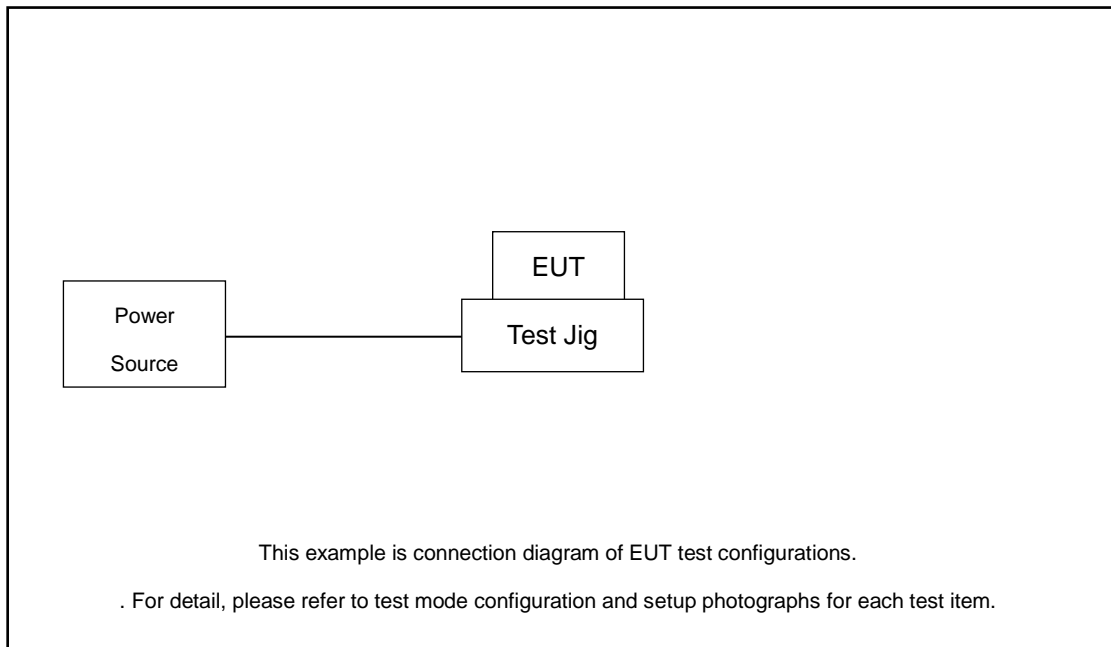
AC Conducted Emission	Mode 1 : Bluetooth Link + WLAN Link(5G) + Bluetooth Idle + Power from Test Jig
Remark: For Radiated Test Cases, The tests were performance with Test Jig.	

2.3 Connection Diagram of Test System

AC Conducted Emission:



Radiated Emission:





2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-link	DIR-655	KA21R655B1	N/A	Unshielded,1.8m
2.	BT Earphone	Xiaomi	N/A	N/A	N/A	N/A
3.	Adapter	N/A	N/A	N/A	N/A	N/A
4.	Test Jig	N/A	N/A	N/A	N/A	N/A

2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuously transmit.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 5.35 dB and 10dB attenuator.

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\
 &= 5.35 + 10 = 15.35 \text{ (dB)}
 \end{aligned}$$



3 Test Result

3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

3.1.1 Description of 6dB and 26dB and 99% Occupied Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

26dB and 99% Occupied bandwidth are reporting only.

3.1.2 Measuring Instruments

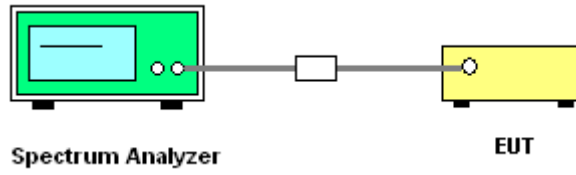
The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

- The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

<input checked="" type="checkbox"/>	Section C) Bandwidth Measurement 1. Emission Bandwidth (EBW) and 99% OBW
	<ol style="list-style-type: none"> Set RBW = approximately 1% of the emission bandwidth. Set the VBW > RBW. Detector = Peak. Trace mode = max hold Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set to 1%~5% of the OBW and set the Video bandwidth (VBW) ≥ 3 * RBW. Measure and record the results in the test report.
<input checked="" type="checkbox"/>	Section C) Bandwidth Measurement 2. Minimum Emission Bandwidth for the band 5.725 - 5.85 GHz
	<ol style="list-style-type: none"> Set RBW = 100kHz. Set the VBW ≥ 3 x RBW. Detector = Peak. Trace mode = max hold Measure the maximum width of the emission that is 6 dB down from the peak of the emission. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.



3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

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.

For the 5.25–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

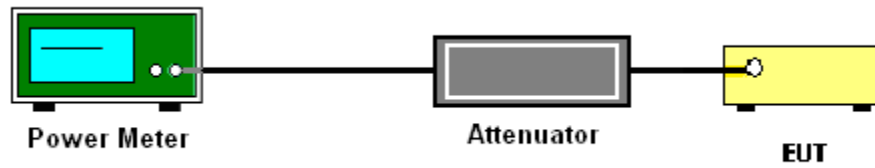
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

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

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x is the duty cycle.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

<FCC 14-30 CFR 15.407>

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band.

For the 5.25–5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

For the band 5.725–5.85 GHz, 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, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04. Section F) Maximum power spectral density.

For devices operating in the bands UNII-1/2A/2C

Method SA-2

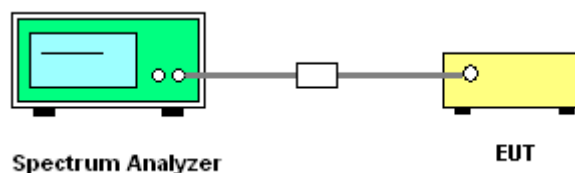
(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz.
- Set VBW \geq 3 MHz.
- Number of points in sweep \geq 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.

For devices operating in the band UNII-3**# Method SA-2 #**

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 500KHz (or 300 kHz if the SA can't set RBW=500KHz).
 - Set VBW \geq 1 MHz.
 - Number of points in sweep \geq 2 Span / RBW.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - If the SA can't set RBW=500KHz, then add $10 \log(500\text{kHz}/\text{RBW})$ to the test result.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.
1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
 2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup**3.3.5 Test Result of Power Spectral Density**

Please refer to Appendix A.



3.4 Unwanted Emissions Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part 15.205.

3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz.
- (2) For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.
- (3) For transmitters operating in the 5470-5600 MHz and 5650-5725 MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725 MHz band shall not exceed an EIRP of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.



(5) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table,

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

(6) EIRP (dBm)	Field Strength at 3m (dBµV/m)
- 27	68.2

Note: The following formula is used to convert the EIRP to field strength.

$$EIRP = E_{Meas} + 20\log (d_{Meas}) - 104.7$$

where

EIRP is the equivalent isotropically radiated power, in dBm

E_{Meas} is the field strength of the emission at the measurement distance, in dBµV/m

d_{Meas} is the measurement distance, in m

3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

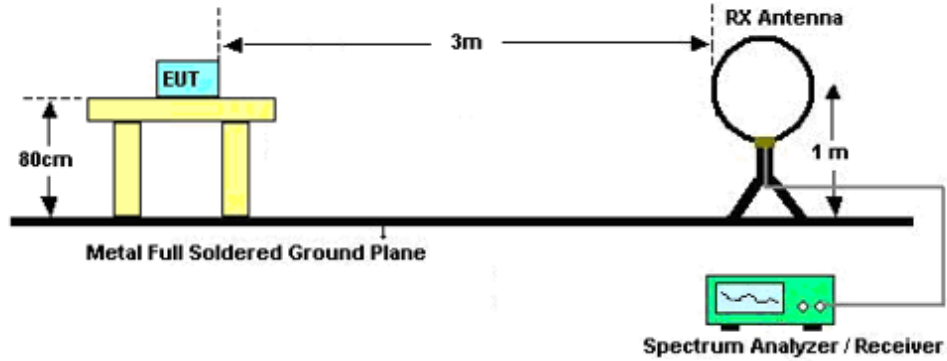


3.4.3 Test Procedures

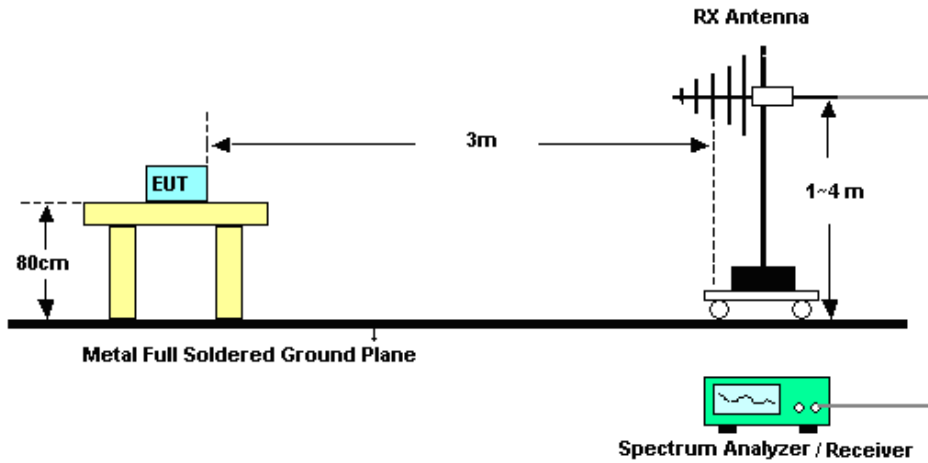
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW \geq 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW \geq 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on.
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.4.4 Test Setup

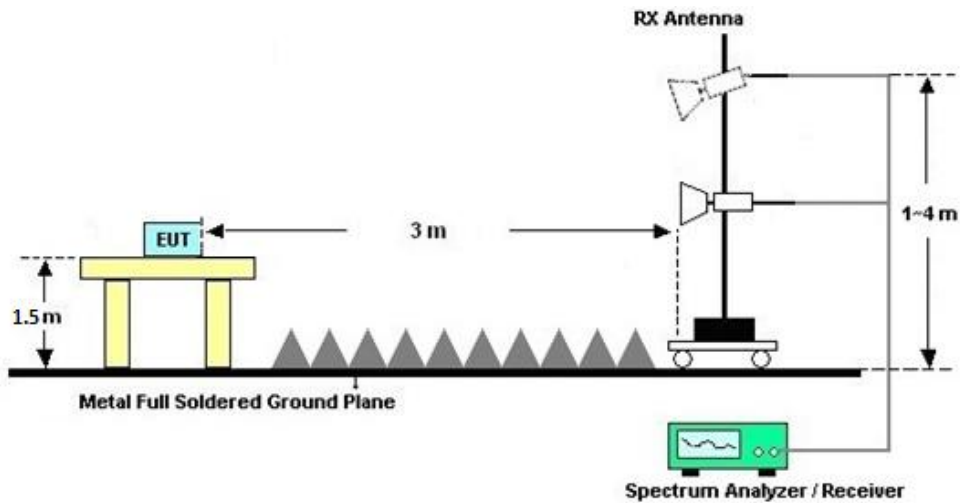
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.4.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.4.7 Duty Cycle

Please refer to Appendix D.

3.4.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix C.



3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBµV)	
	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.

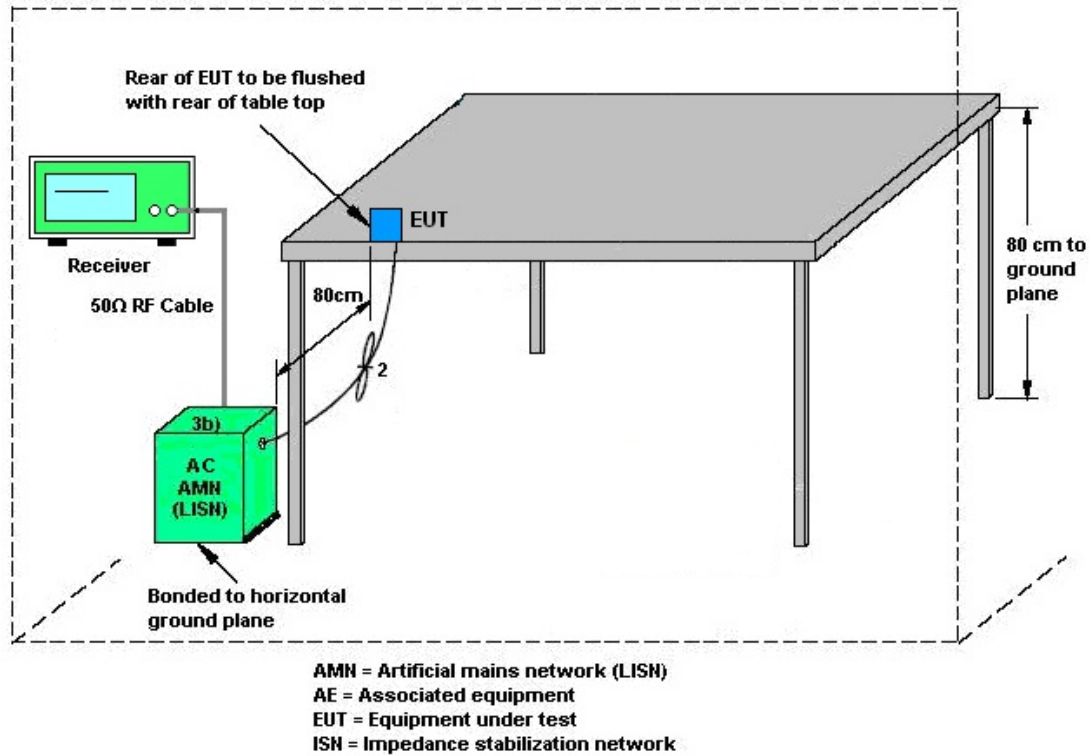
3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.6 Antenna Requirements

3.6.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2), if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.6.2 Antenna Anti-Replacement Construction

Non-standard antenna connector is used.

3.6.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 11, 2023	Nov. 29, 2023~Dec. 13, 2023	Oct. 10, 2024	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 05, 2023	Nov. 29, 2023~Dec. 13, 2023	Jan. 04, 2024	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 05, 2023	Nov. 29, 2023~Dec. 13, 2023	Jan. 04, 2024	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400023	3Hz~8.5GHz;Max x 30dBm	Jan. 05, 2023	Dec. 15, 2023	Jan. 04, 2024	Radiation (03CH08-KS)
Spectrum Analyzer	R&S	FSV40	101932	10kHz~40GHz; Max 30dBm	Oct. 10, 2023	Dec. 15, 2023	Oct. 09, 2024	Radiation (03CH08-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Oct. 10, 2023	Dec. 15, 2023	Oct. 09, 2024	Radiation (03CH08-KS)
Bilog Antenna	TESEQ& VGT	CBL 61110	59915	30MHz-1GHz	Aug. 12, 2023	Dec. 15, 2023	Aug. 11, 2024	Radiation (03CH08-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75959	1GHz~18GHz	Mar. 18, 2023	Dec. 15, 2023	Mar. 17, 2024	Radiation (03CH08-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 08, 2023	Dec. 15, 2023	Jan. 07, 2024	Radiation (03CH08-KS)
Amplifier	SONOMA	310N	413741	9KHz-1GHz	Jan. 05, 2023	Dec. 15, 2023	Jan. 04, 2024	Radiation (03CH08-KS)
Amplifier	EM	EM01G18GA	060834	1Ghz-18Ghz	Oct. 10, 2023	Dec. 15, 2023	Oct. 09, 2024	Radiation (03CH08-KS)
high gain Amplifier	EM	EM01G18GA	060845	1Ghz-18Ghz	Jan. 05, 2023	Dec. 15, 2023	Jan. 04, 2024	Radiation (03CH08-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2023	Dec. 15, 2023	Jan. 04, 2024	Radiation (03CH08-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Dec. 15, 2023	NCR	Radiation (03CH08-KS)
Turn Table	EM	EM 1000-T	N/A	0~360 degree	NCR	Dec. 15, 2023	NCR	Radiation (03CH08-KS)
Antenna Mast	EM	EM 1000-A	N/A	1 m~4 m	NCR	Dec. 15, 2023	NCR	Radiation (03CH08-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	May 16, 2023	Dec. 18, 2023	May 15, 2024	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 11, 2023	Dec. 18, 2023	Oct. 10, 2024	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	May 16, 2023	Dec. 18, 2023	May 15, 2024	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 11, 2023	Dec. 18, 2023	Oct. 10, 2024	Conduction (CO01-KS)

NCR: No Calibration Required



5 Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement

Conducted Spurious Emission & Bandedge	±2.26 dB
Occupied Channel Bandwidth	±0.1%
Conducted Power	±0.46 dB
Conducted Power Spectral Density	±0.88 dB
Frequency	±0.4 Hz

Uncertainty of AC Conducted Emission Measurement (0.15 MHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.94 dB
---	---------

Uncertainty of Radiated Emission Measurement (9 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.32 dB
---	---------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	6.28 dB
---	---------

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.90 dB
---	---------

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.26 dB
---	---------

----- THE END -----



Appendix A. Conducted Test Results

A1. Conducted Test Results

Test Engineer:	Long Wu	Temperature:	21~25	°C
Test Date:	2023.11.29~2023.12.13	Relative Humidity:	51~54	%

TEST RESULTS DATA
Average Power Table

FCC 5180 MHz ~ 5240 MHz> single antenna									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
					Ant 1	Ant 1	Ant 1		
11a	6Mbps	1	36	5180	17.83	24.00	-1.80		Pass
11a	6Mbps	1	44	5220	17.80	24.00	-1.80		Pass
11a	6Mbps	1	48	5240	17.74	24.00	-1.80		Pass
HT20	MCS0	1	36	5180	17.75	24.00	-1.80		Pass
HT20	MCS0	1	44	5220	17.76	24.00	-1.80		Pass
HT20	MCS0	1	48	5240	17.69	24.00	-1.80		Pass
HT40	MCS0	1	38	5190	17.71	24.00	-1.80		Pass
HT40	MCS0	1	46	5230	17.62	24.00	-1.80		Pass
VHT20	MCS0	1	36	5180	17.71	24.00	-1.80		Pass
VHT20	MCS0	1	44	5220	17.72	24.00	-1.80		Pass
VHT20	MCS0	1	48	5240	17.62	24.00	-1.80		Pass
VHT40	MCS0	1	38	5190	17.66	24.00	-1.80		Pass
VHT40	MCS0	1	46	5230	17.59	24.00	-1.80		Pass

TEST RESULTS DATA
Average Power Table

FCC 5180 MHz ~ 5240 MHz> single antenna										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Conducted Power with duty factor (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)		Pass/Fail
						Ant 1	Ant 1	Ant 1		
HE20	MCS0	1	36	5180	Full	17.81	24.00	-1.80		Pass
HE20	MCS0	1	44	5220	Full	17.85	24.00	-1.80		Pass
HE20	MCS0	1	48	5240	Full	17.76	24.00	-1.80		Pass
HE40	MCS0	1	38	5190	Full	17.81	24.00	-1.80		Pass
HE40	MCS0	1	46	5230	Full	17.70	24.00	-1.80		Pass

TEST RESULTS DATA
Average Power Table

FCC 5260 MHz ~ 5320 MHz> single antenna									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 1	Ant 1		
11a	6Mbps	1	52	5260	18.14	23.98	0.00	26.99	Pass
11a	6Mbps	1	60	5300	18.25	23.98	0.00	26.99	Pass
11a	6Mbps	1	64	5320	18.17	23.98	0.00	26.99	Pass
HT20	MCS0	1	52	5260	18.24	23.98	0.00	26.99	Pass
HT20	MCS0	1	60	5300	18.22	23.98	0.00	26.99	Pass
HT20	MCS0	1	64	5320	18.12	23.98	0.00	26.99	Pass
HT40	MCS0	1	54	5270	18.19	23.98	0.00	26.99	Pass
HT40	MCS0	1	62	5310	18.13	23.98	0.00	26.99	Pass
VHT20	MCS0	1	52	5260	18.19	23.98	0.00	26.99	Pass
VHT20	MCS0	1	60	5300	18.17	23.98	0.00	26.99	Pass
VHT20	MCS0	1	64	5320	18.08	23.98	0.00	26.99	Pass
VHT40	MCS0	1	54	5270	18.14	23.98	0.00	26.99	Pass
VHT40	MCS0	1	62	5310	18.09	23.98	0.00	26.99	Pass

TEST RESULTS DATA
Average Power Table

FCC 5260 MHz ~ 5320 MHz> single antenna										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Conducted Power with duty factor (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
						Ant 1	Ant 1	Ant 1		
HE20	MCS0	1	52	5260	Full	18.32	23.98	0.00	26.99	Pass
HE20	MCS0	1	60	5300	Full	18.29	23.98	0.00	26.99	Pass
HE20	MCS0	1	64	5320	Full	18.22	23.98	0.00	26.99	Pass
HE40	MCS0	1	54	5270	Full	18.28	23.98	0.00	26.99	Pass
HE40	MCS0	1	62	5310	Full	18.24	23.98	0.00	26.99	Pass

TEST RESULTS DATA
Average Power Table

FCC 5500 MHz ~ 5700 MHz single antenna									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 1	Ant 1		
11a	6Mbps	1	100	5500	17.07	23.98	0.10	26.99	Pass
11a	6Mbps	1	116	5580	16.62	23.98	0.10	26.99	Pass
11a	6Mbps	1	140	5700	17.97	23.98	0.10	26.99	Pass
HT20	MCS0	1	100	5500	16.79	23.98	0.10	26.99	Pass
HT20	MCS0	1	116	5580	17.77	23.98	0.10	26.99	Pass
HT20	MCS0	1	140	5700	15.93	23.98	0.10	26.99	Pass
HT40	MCS0	1	102	5510	16.89	23.98	0.10	26.99	Pass
HT40	MCS0	1	110	5550	18.26	23.98	0.10	26.99	Pass
HT40	MCS0	1	134	5670	17.36	23.98	0.10	26.99	Pass
VHT20	MCS0	1	100	5500	16.81	23.98	0.10	26.99	Pass
VHT20	MCS0	1	116	5580	17.73	23.98	0.10	26.99	Pass
VHT20	MCS0	1	140	5700	15.96	23.98	0.10	26.99	Pass
VHT40	MCS0	1	102	5510	16.95	23.98	0.10	26.99	Pass
VHT40	MCS0	1	110	5550	18.23	23.98	0.10	26.99	Pass
VHT40	MCS0	1	134	5670	17.27	23.98	0.10	26.99	Pass

TEST RESULTS DATA
Average Power Table

FCC 5500 MHz ~ 5700 MHz single antenna										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Conducted Power with duty factor (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
						Ant 1	Ant 1	Ant 1		
HE20	MCS0	1	100	5500	Full	16.95	23.98	0.10	26.99	Pass
HE20	MCS0	1	116	5580	Full	17.86	23.98	0.10	26.99	Pass
HE20	MCS0	1	140	5700	Full	16.11	23.98	0.10	26.99	Pass
HE40	MCS0	1	102	5510	Full	16.15	23.98	0.10	26.99	Pass
HE40	MCS0	1	110	5550	Full	18.35	23.98	0.10	26.99	Pass
HE40	MCS0	1	134	5670	Full	18.34	23.98	0.10	26.99	Pass

TEST RESULTS DATA
Average Power Table

5745 MHz ~ 5825 MHz single antenna								
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	Pass/Fail
					Ant 1	Ant 1	Ant 1	
11a	6Mbps	1	149	5745	17.73	30.00	0.00	Pass
11a	6Mbps	1	157	5785	17.70	30.00	0.00	Pass
11a	6Mbps	1	165	5825	18.02	30.00	0.00	Pass
HT20	MCS0	1	149	5745	18.31	30.00	0.00	Pass
HT20	MCS0	1	157	5785	17.81	30.00	0.00	Pass
HT20	MCS0	1	165	5825	18.10	30.00	0.00	Pass
HT40	MCS0	1	151	5755	18.24	30.00	0.00	Pass
HT40	MCS0	1	159	5795	18.43	30.00	0.00	Pass
VHT20	MCS0	1	149	5745	18.27	30.00	0.00	Pass
VHT20	MCS0	1	157	5785	17.78	30.00	0.00	Pass
VHT20	MCS0	1	165	5825	18.04	30.00	0.00	Pass
VHT40	MCS0	1	151	5755	18.17	30.00	0.00	Pass
VHT40	MCS0	1	159	5795	18.41	30.00	0.00	Pass

TEST RESULTS DATA
Average Power Table

5745 MHz ~ 5825 MHz single antenna									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Conducted Power with duty factor (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	Pass/Fail
						Ant 1	Ant 1	Ant 1	
HE20	MCS0	1	149	5745	Full	18.39	30.00	0.00	Pass
HE20	MCS0	1	157	5785	Full	17.87	30.00	0.00	Pass
HE20	MCS0	1	165	5825	Full	18.15	30.00	0.00	Pass
HE40	MCS0	1	151	5755	Full	18.29	30.00	0.00	Pass
HE40	MCS0	1	159	5795	Full	18.47	30.00	0.00	Pass



Emission Bandwidth

Test Result

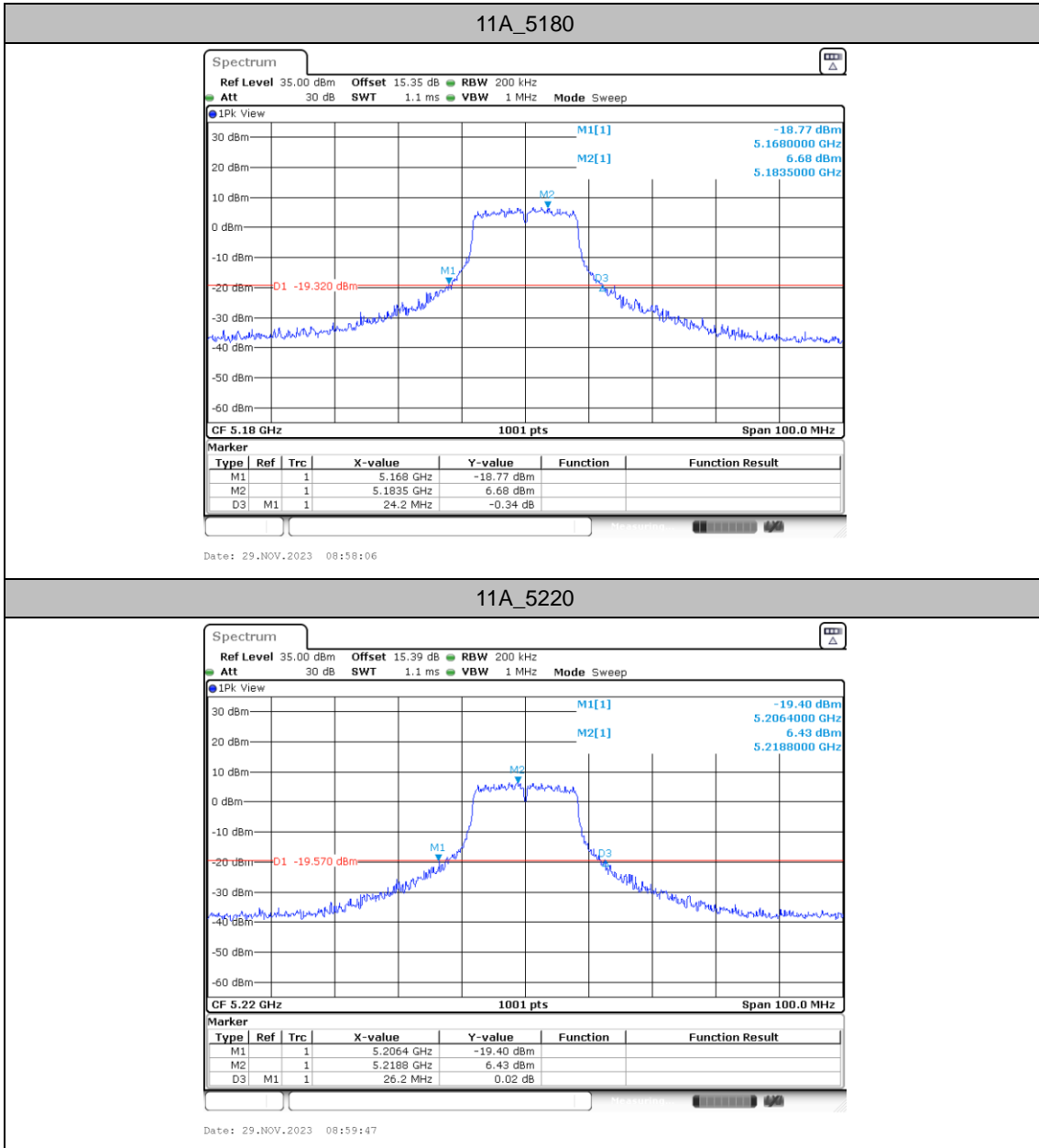
TestMode	Freq(MHz)	26dB EBW [MHz]	FL[MHz]	FH[MHz]
11A	5180	24.20	5168.00	5192.20
	5220	26.20	5206.40	5232.60
	5240	23.90	5228.10	5252.00
	5260	25.30	5247.00	5272.30
	5300	23.70	5288.00	5311.70
	5320	26.50	5306.50	5333.00
	5500	26.00	5486.80	5512.80
	5580	25.60	5567.50	5593.10
	5700	27.90	5685.30	5713.20
	5745	26.00	5732.50	5758.50
	5785	25.80	5771.80	5797.60
5825	28.60	5809.00	5837.60	
11N20SISO	5180	26.40	5167.30	5193.70
	5220	25.50	5207.00	5232.50
	5240	24.60	5228.00	5252.60
	5260	24.70	5247.50	5272.20
	5300	26.90	5285.90	5312.80
	5320	27.40	5306.40	5333.80
	5500	27.30	5487.00	5514.30
	5580	26.00	5567.20	5593.20
	5700	26.40	5686.40	5712.80
	5745	27.70	5730.40	5758.10
	5785	28.20	5770.90	5799.10
5825	29.70	5810.60	5840.30	
11N40SISO	5190	46.60	5166.80	5213.40
	5230	59.00	5199.60	5258.60
	5270	59.80	5240.20	5300.00
	5310	48.40	5286.20	5334.60
	5510	48.00	5486.40	5534.40
	5550	63.40	5516.80	5580.20
	5670	66.60	5642.20	5708.80
	5755	58.20	5722.40	5780.60
5795	66.40	5758.40	5824.80	
11AX20SISO	5180	24.90	5168.00	5192.90
	5220	24.50	5207.80	5232.30
	5240	25.80	5227.20	5253.00
	5260	24.40	5247.60	5272.00
	5300	24.90	5287.30	5312.20
	5320	24.40	5307.60	5332.00
5500	24.70	5487.90	5512.60	

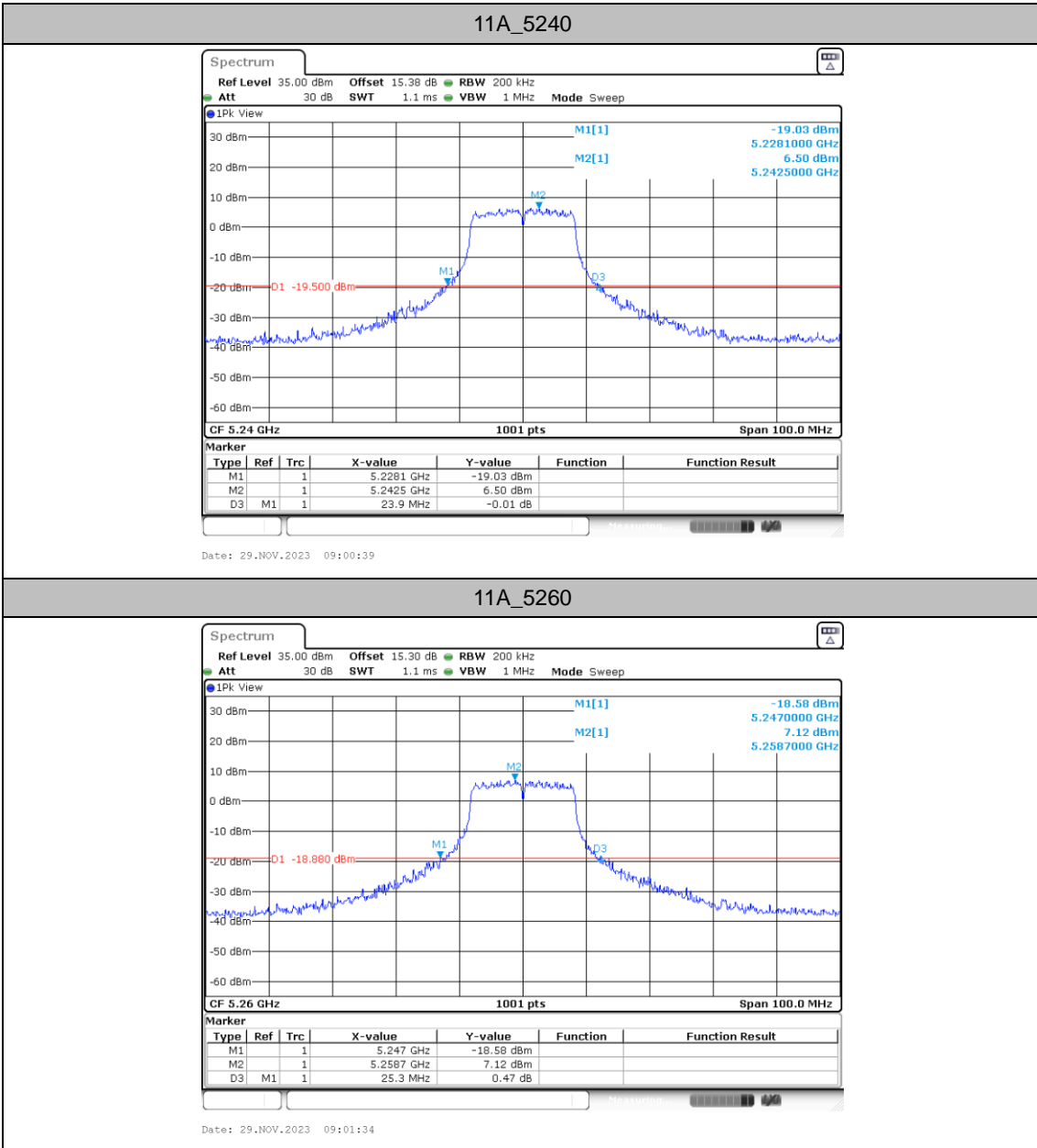


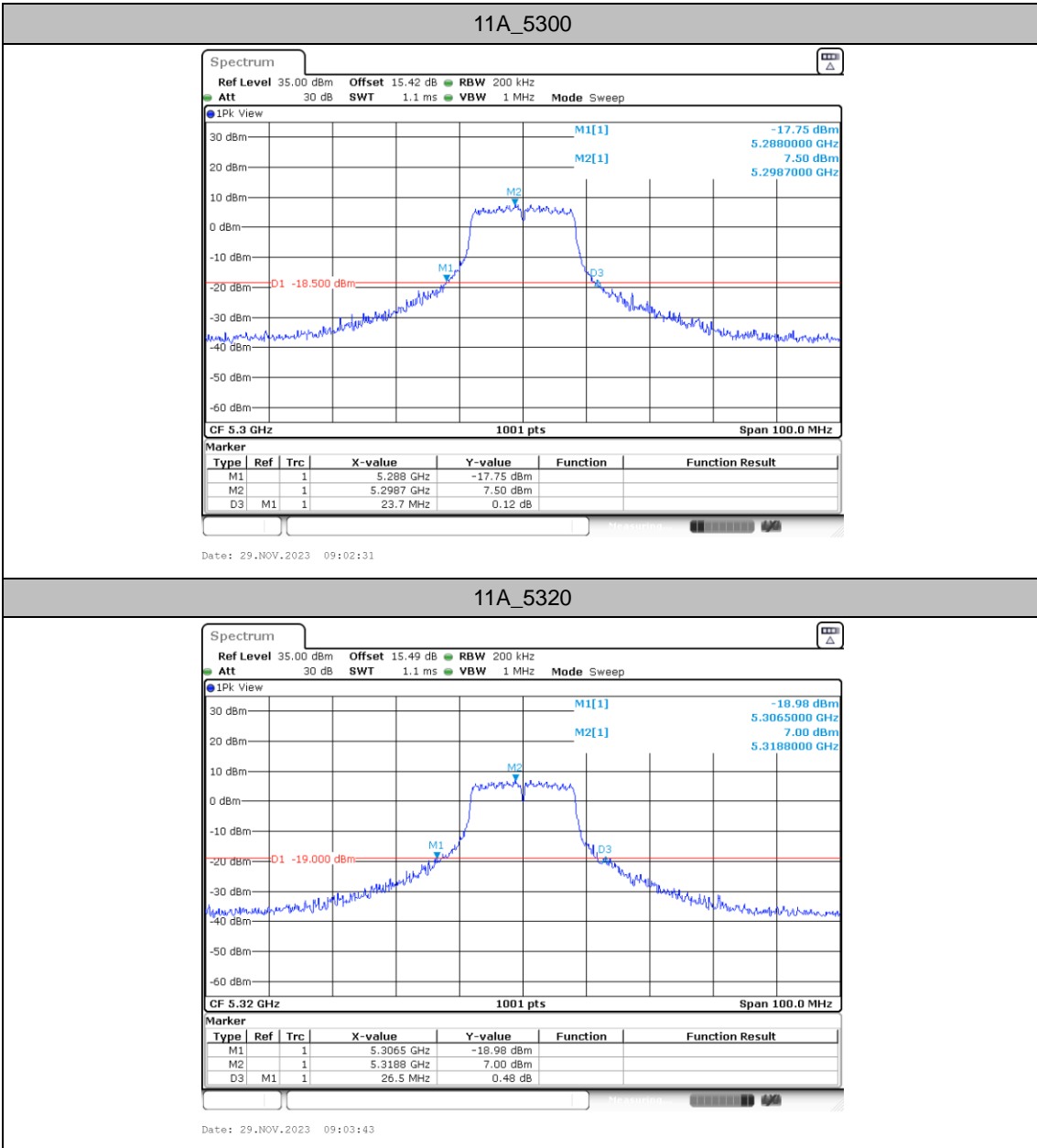
	5580	26.80	5566.90	5593.70
	5700	29.60	5686.20	5715.80
	5745	24.20	5732.90	5757.10
	5785	27.30	5770.80	5798.10
	5825	27.60	5810.30	5837.90
11AX40SISO	5190	46.00	5167.00	5213.00
	5230	46.40	5206.80	5253.20
	5270	46.00	5247.00	5293.00
	5310	45.40	5287.20	5332.60
	5510	47.00	5485.60	5532.60
	5550	46.40	5527.20	5573.60
	5670	49.00	5647.00	5696.00
	5755	45.20	5732.40	5777.60
	5795	52.00	5766.20	5818.20

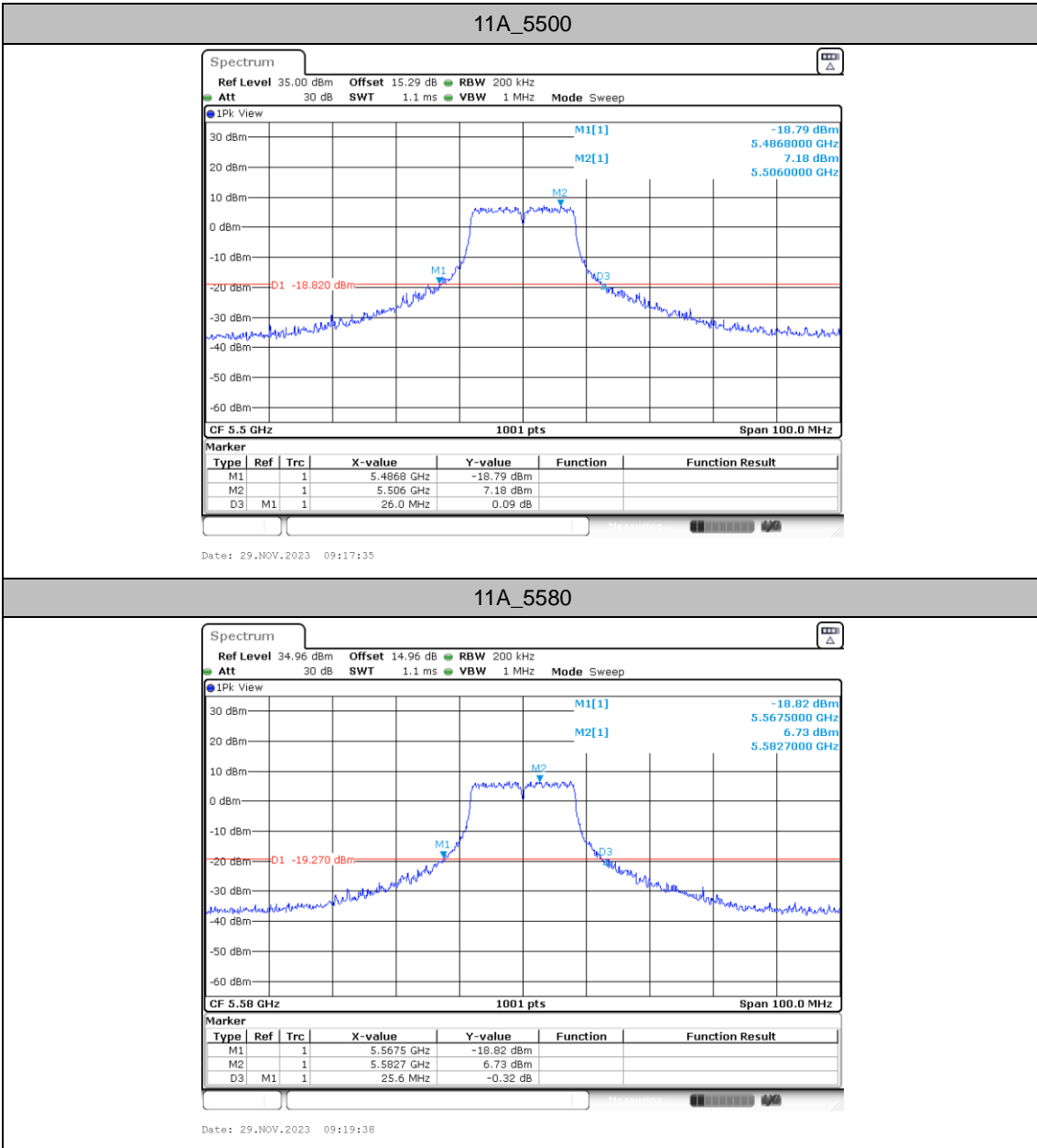


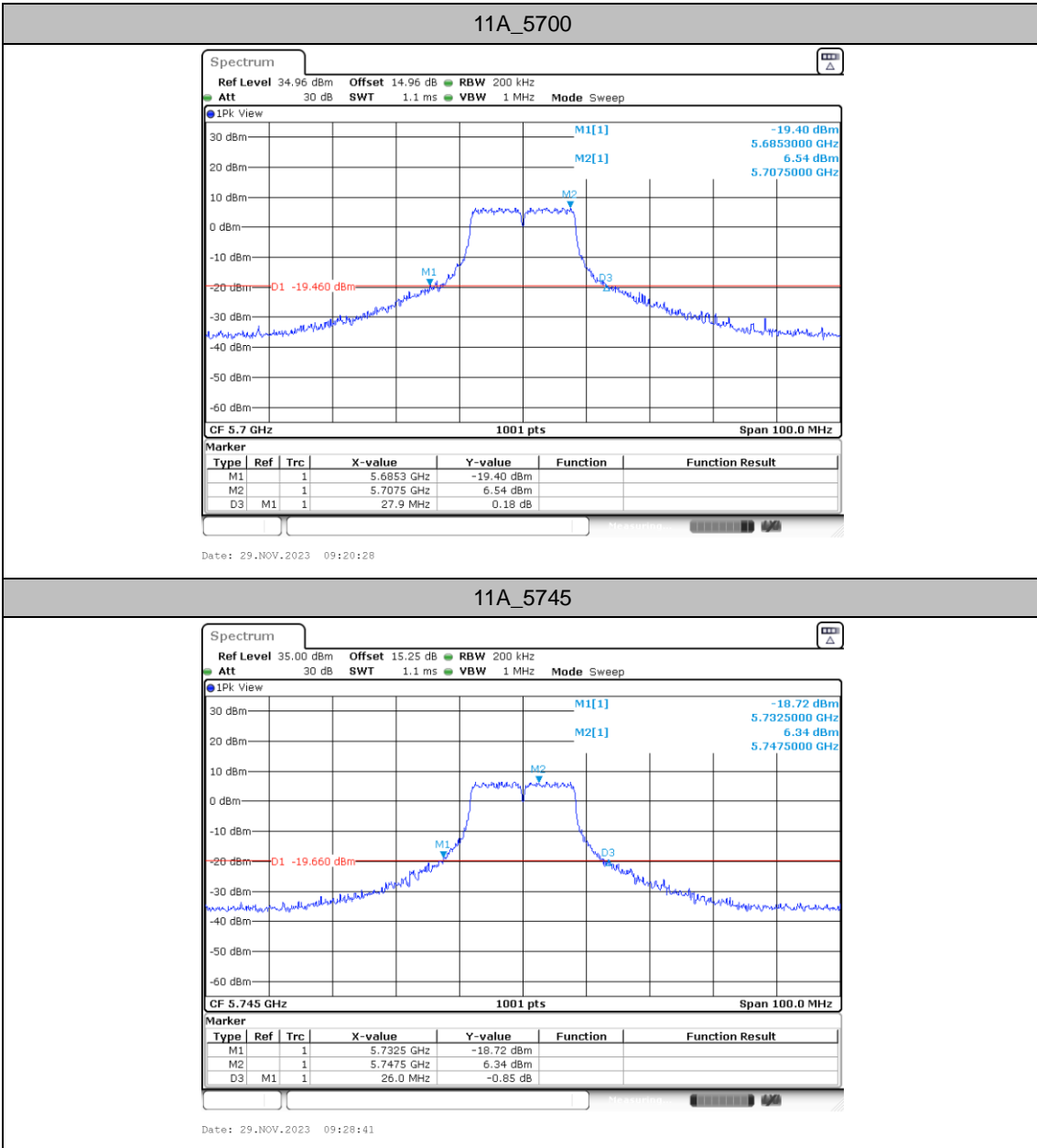
Test Graphs

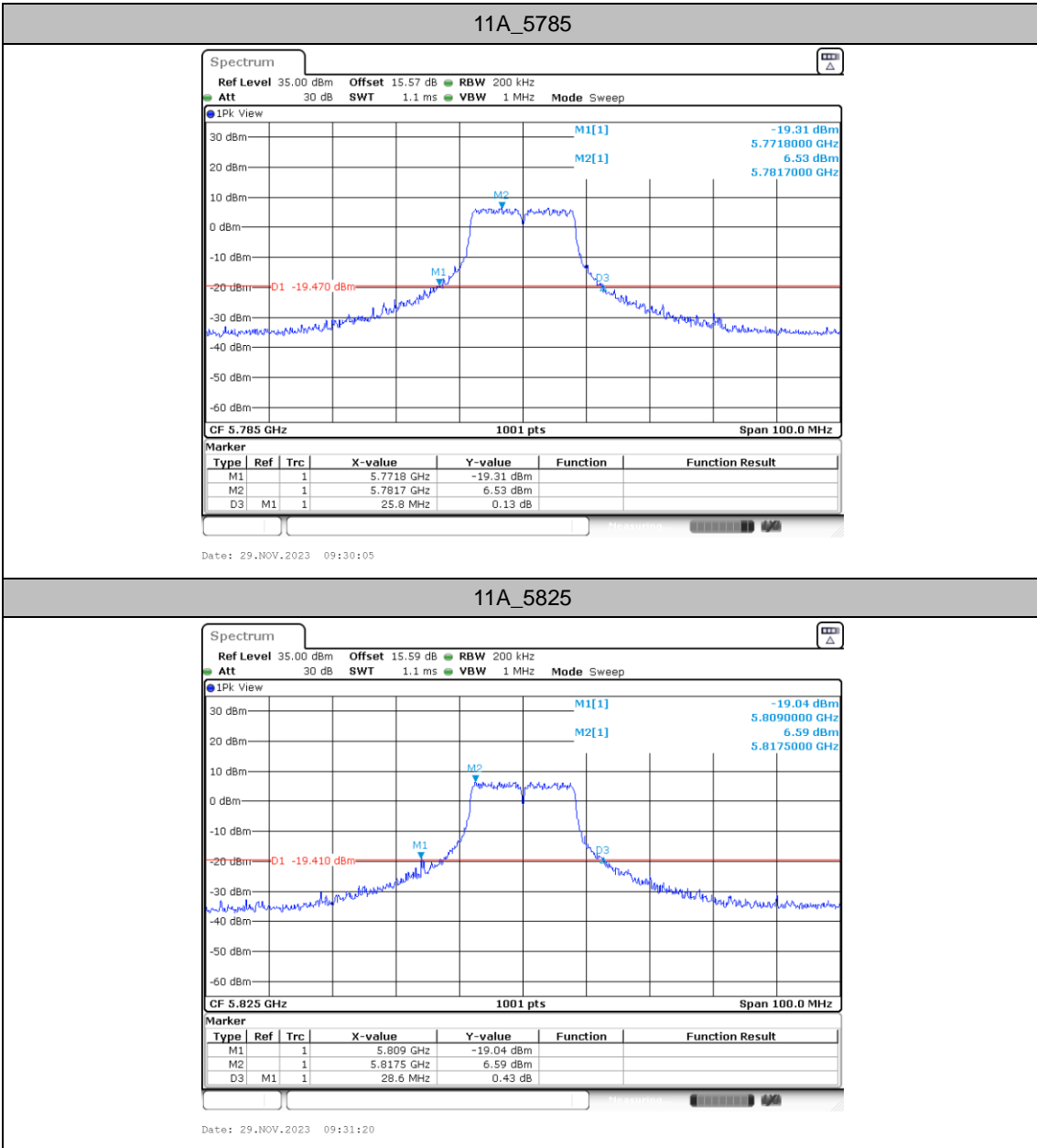


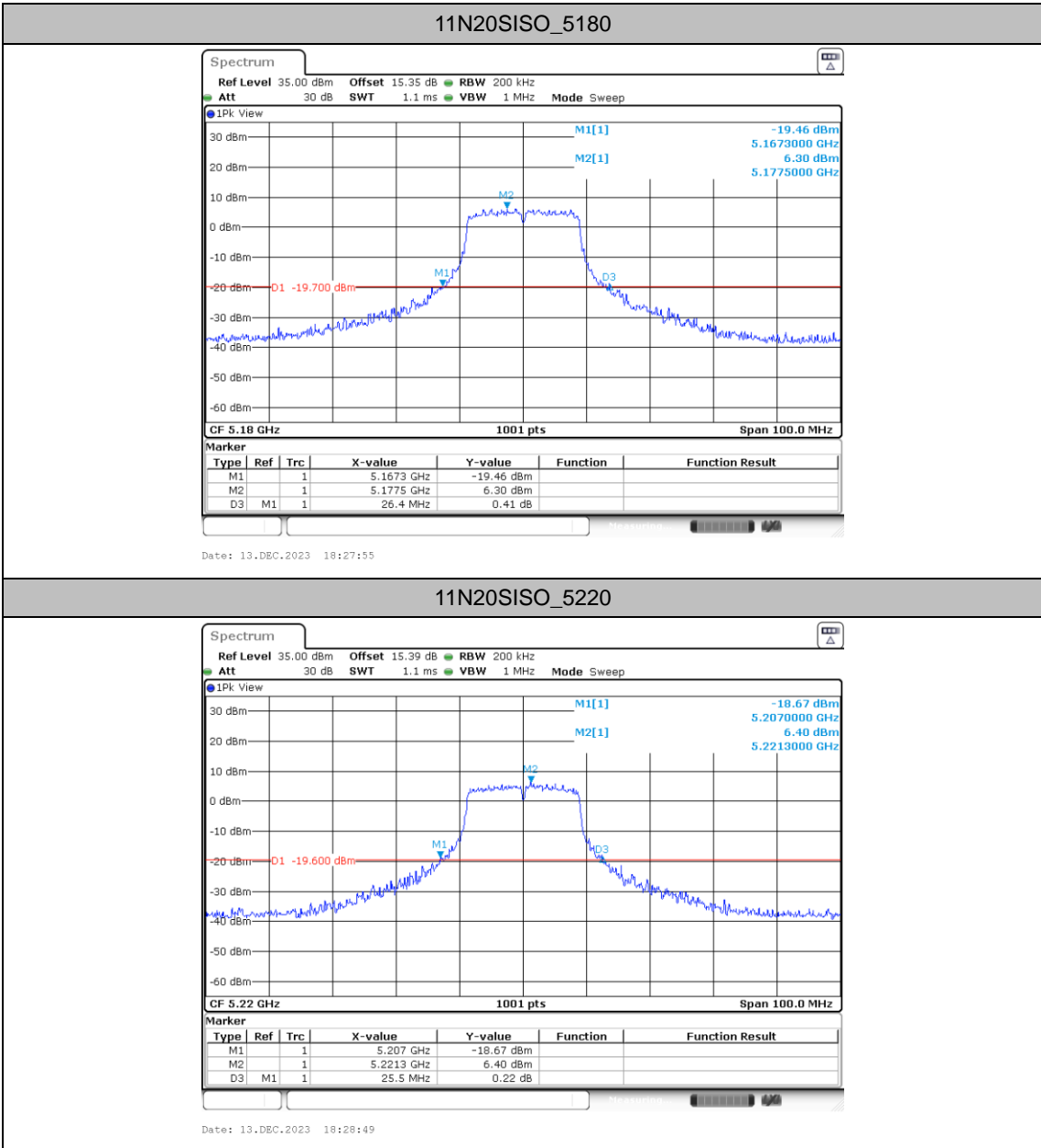


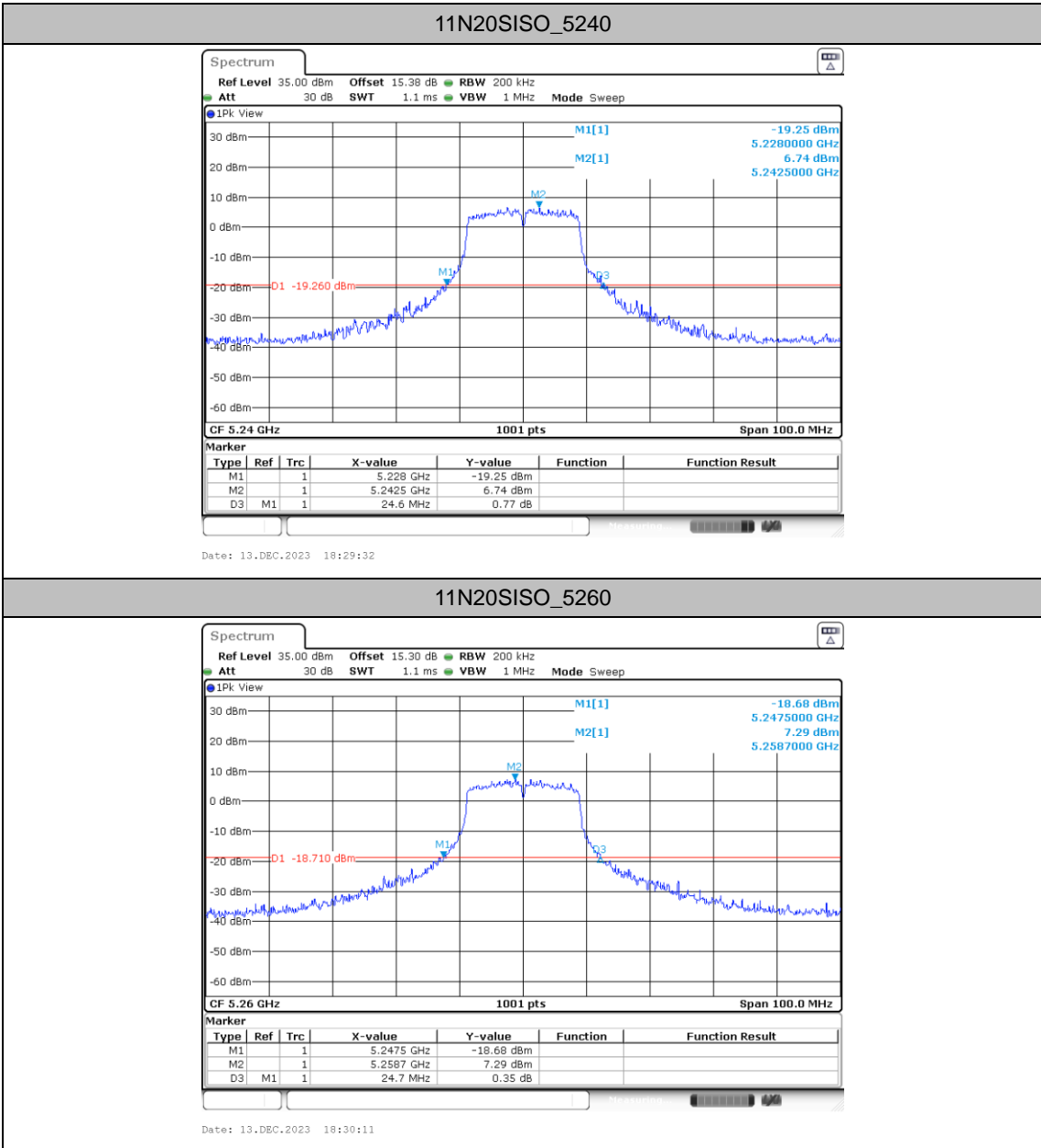


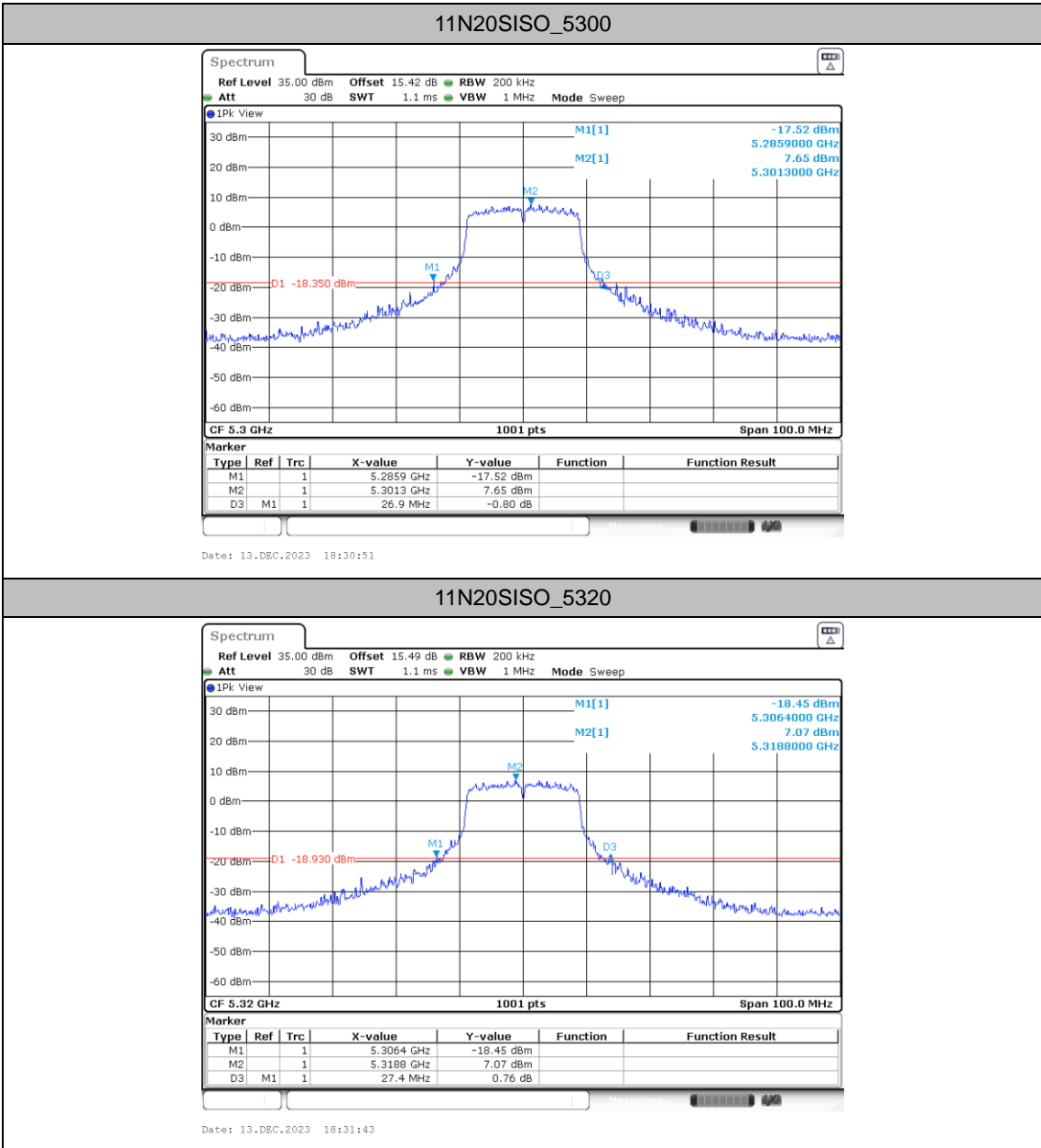


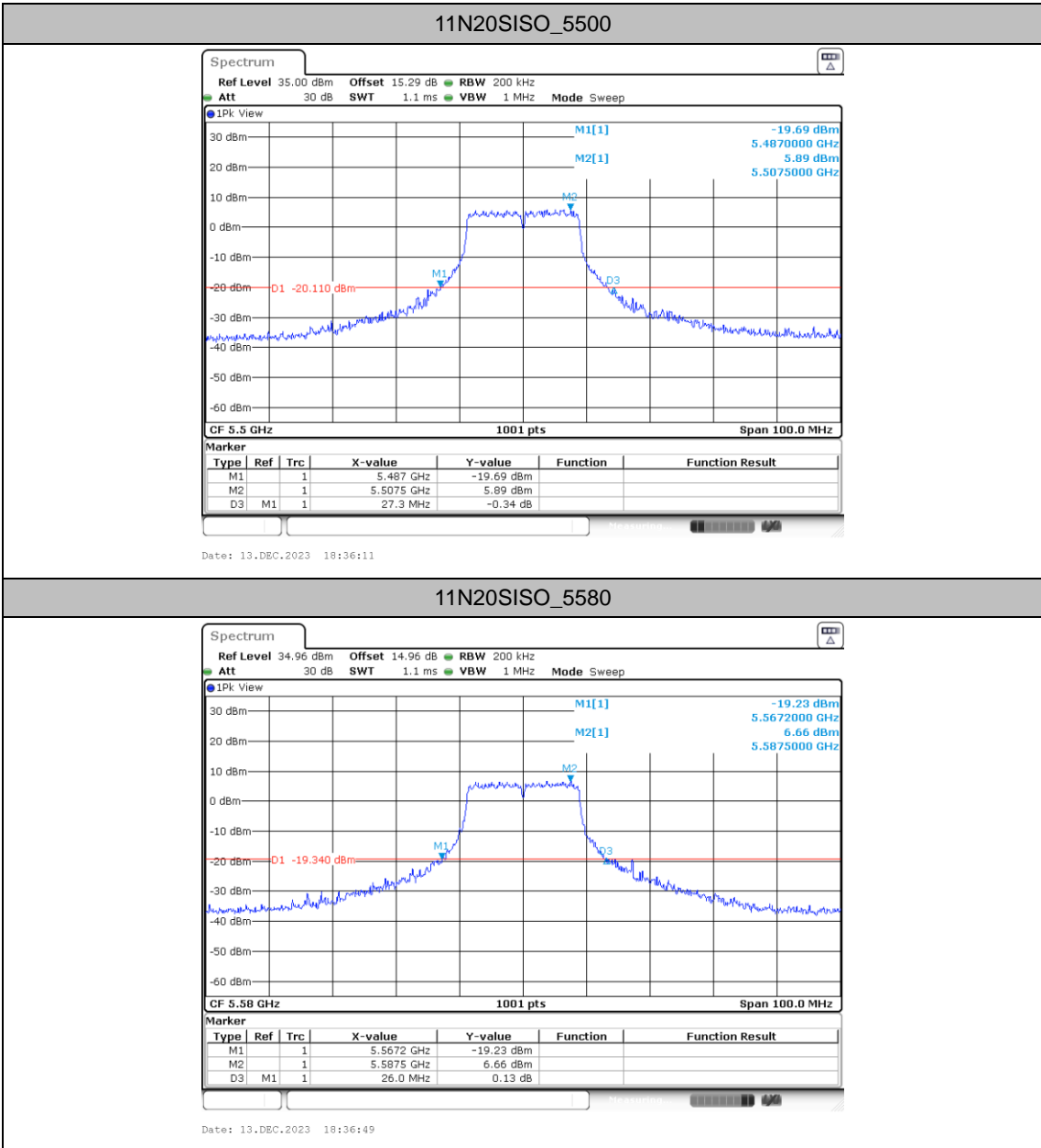


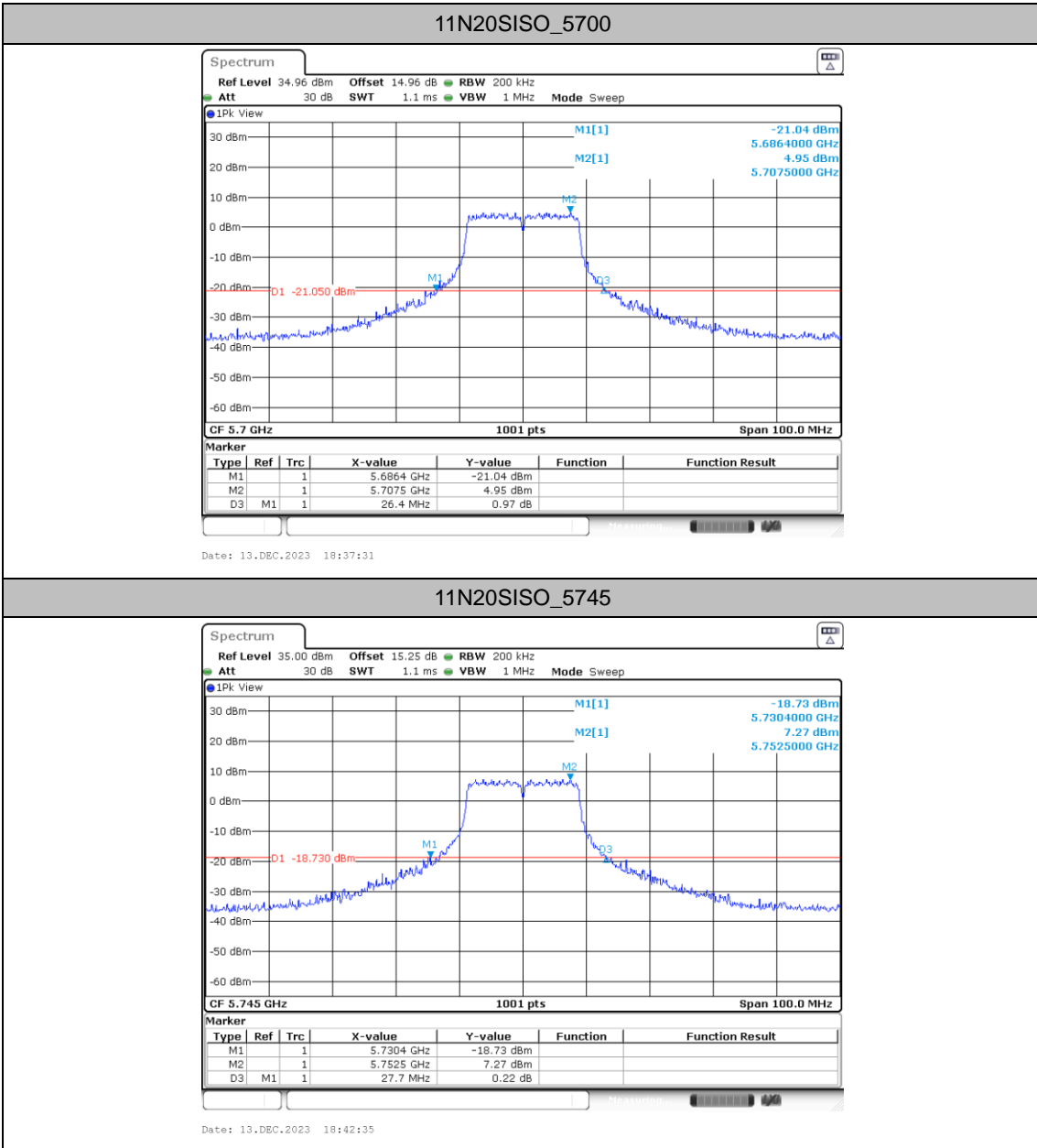


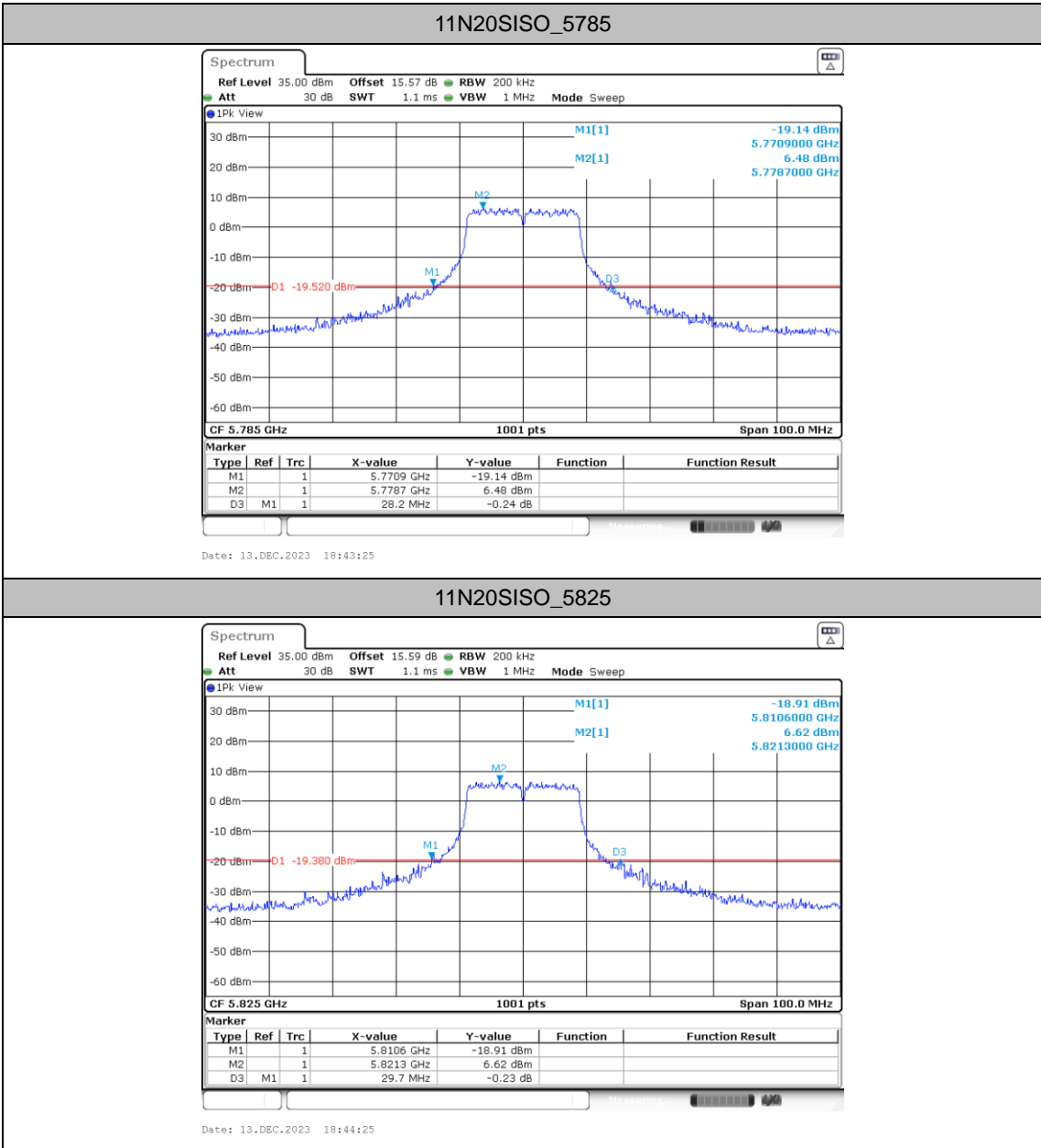


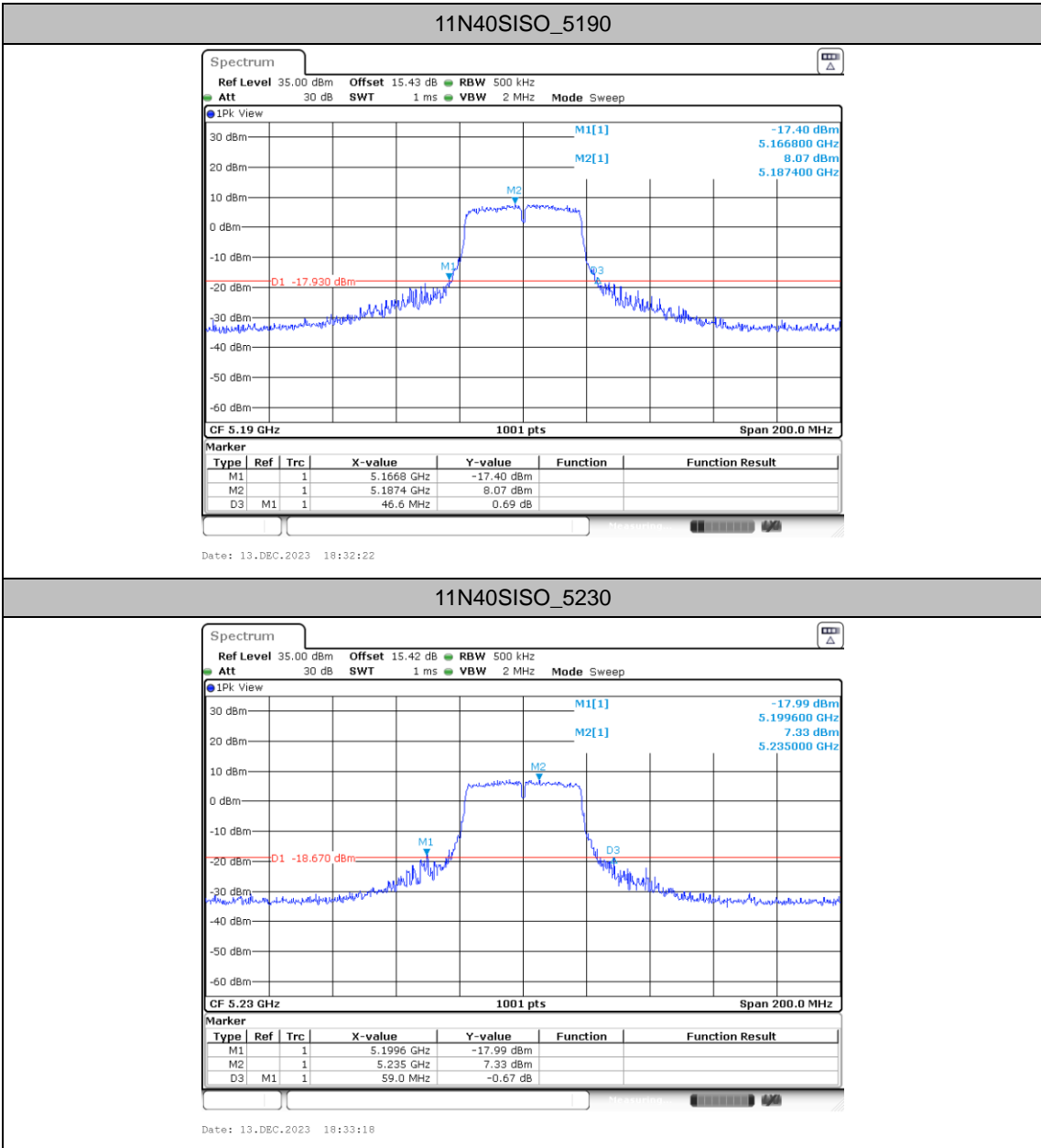


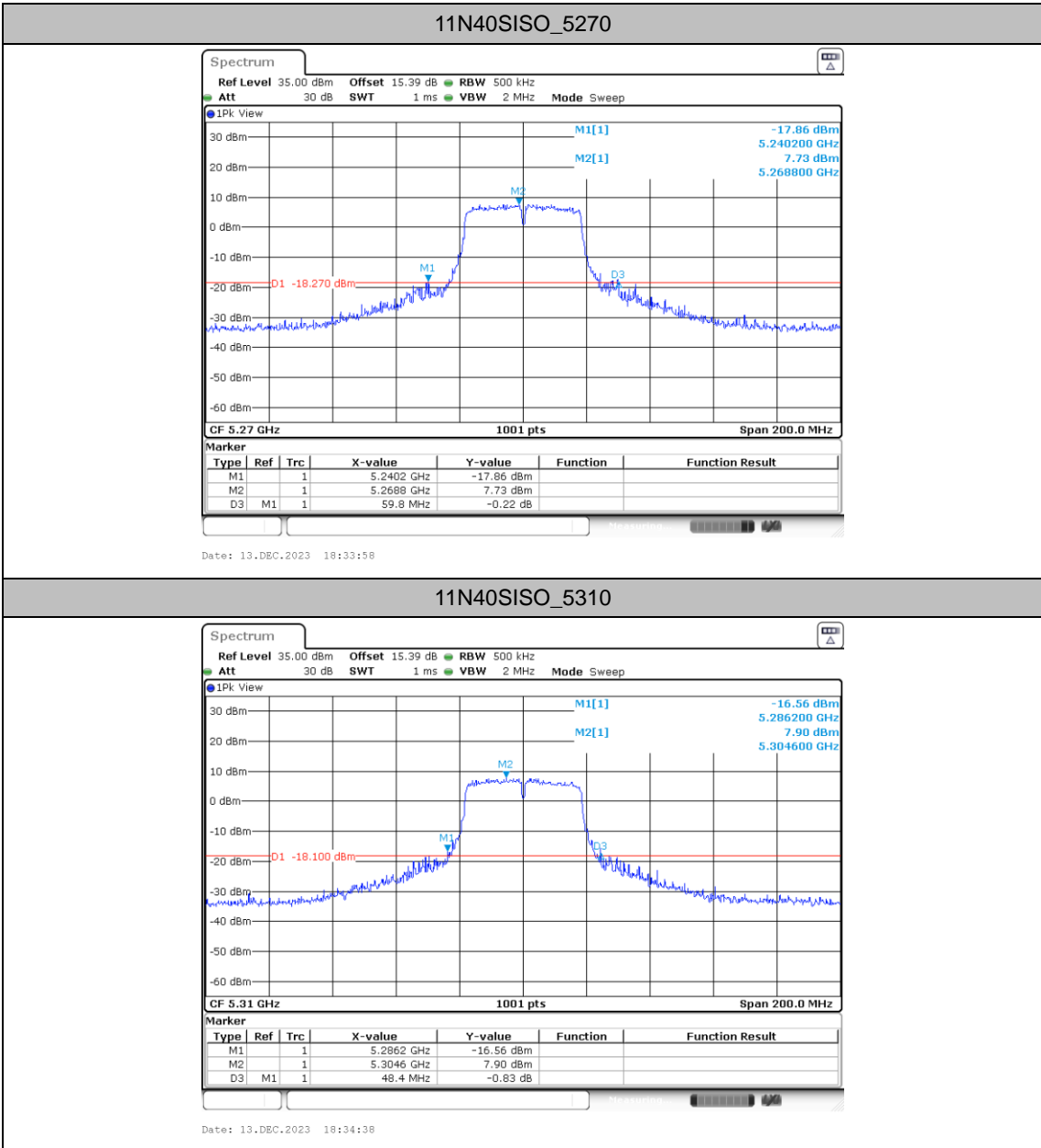


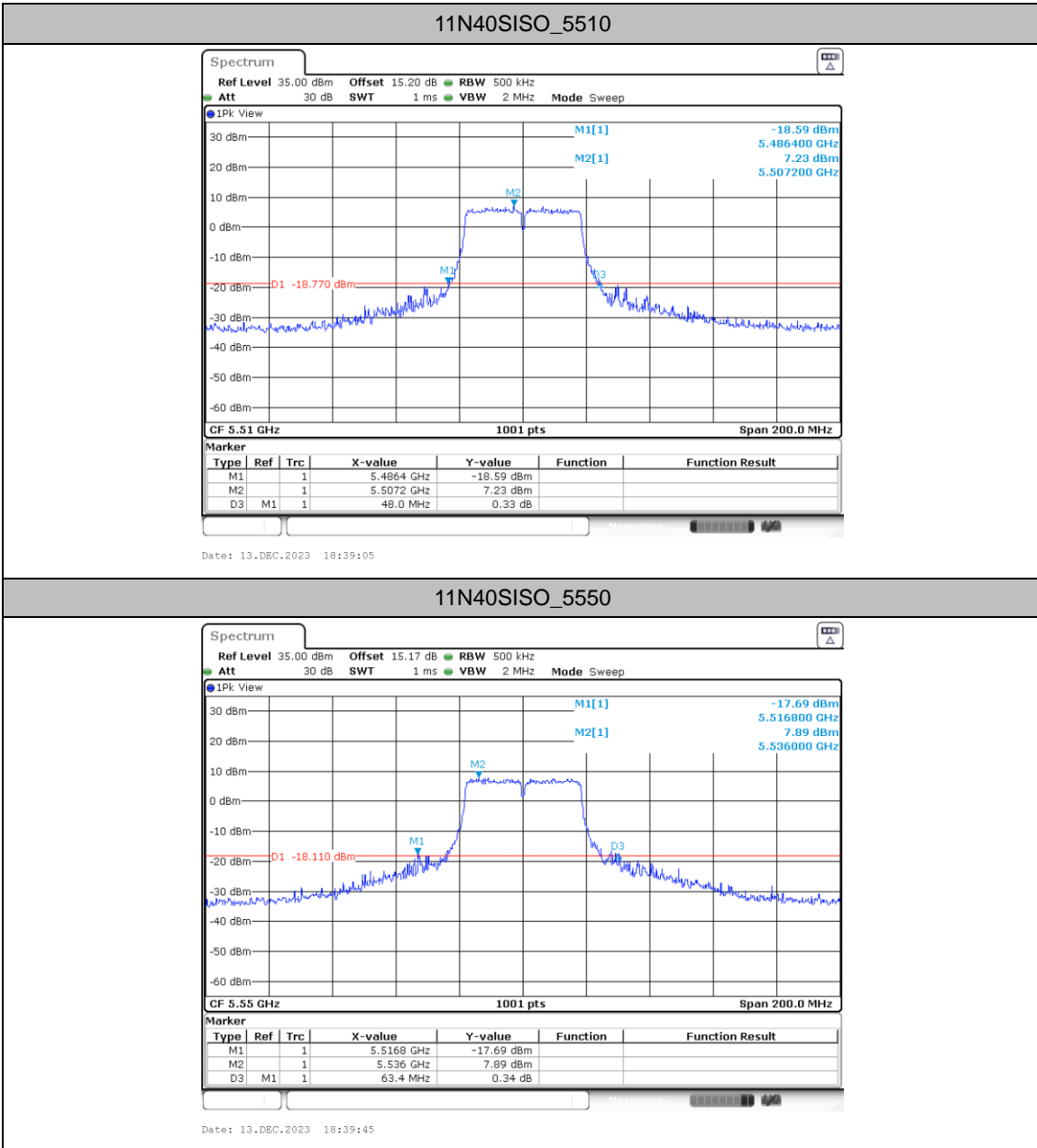


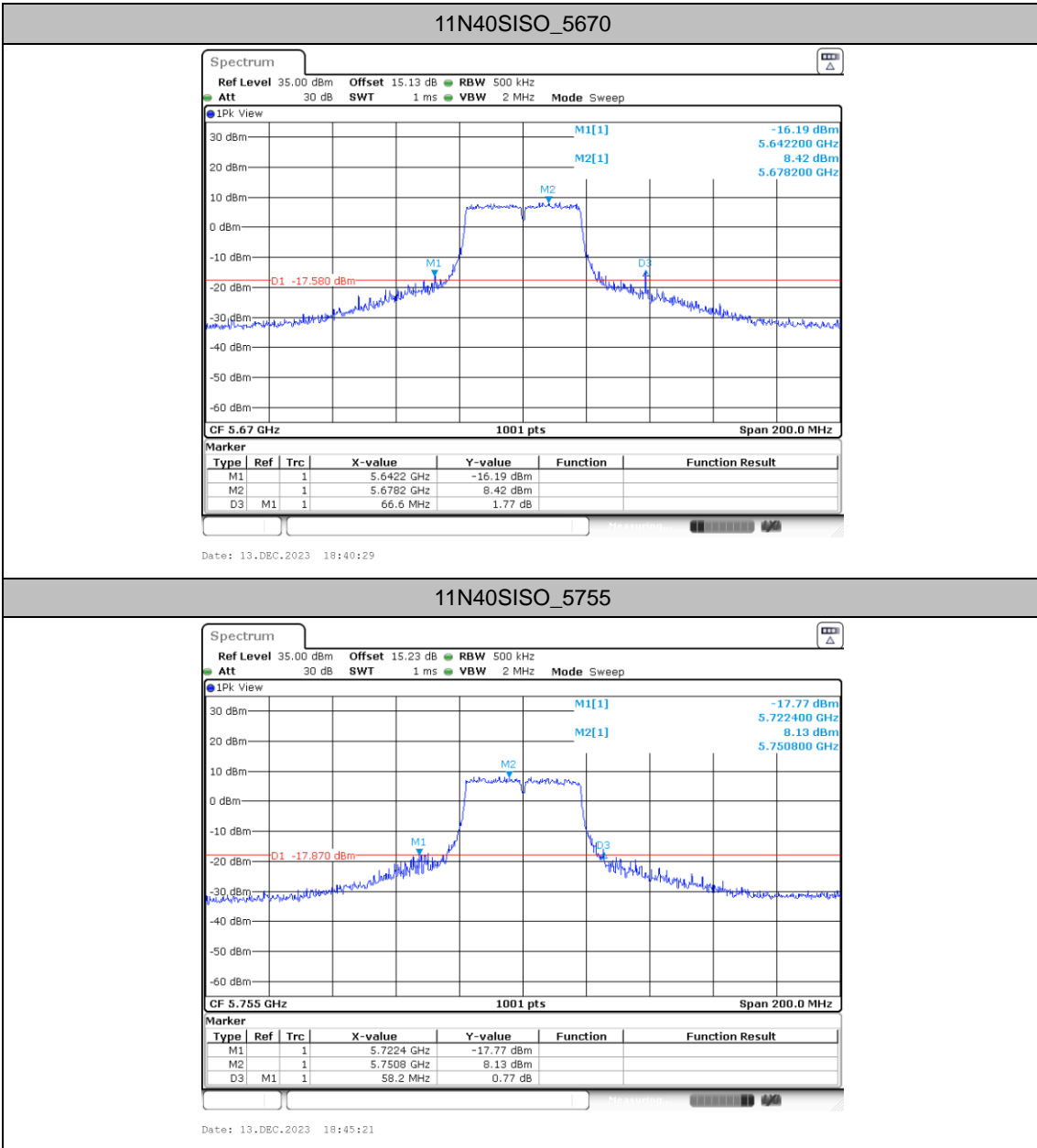


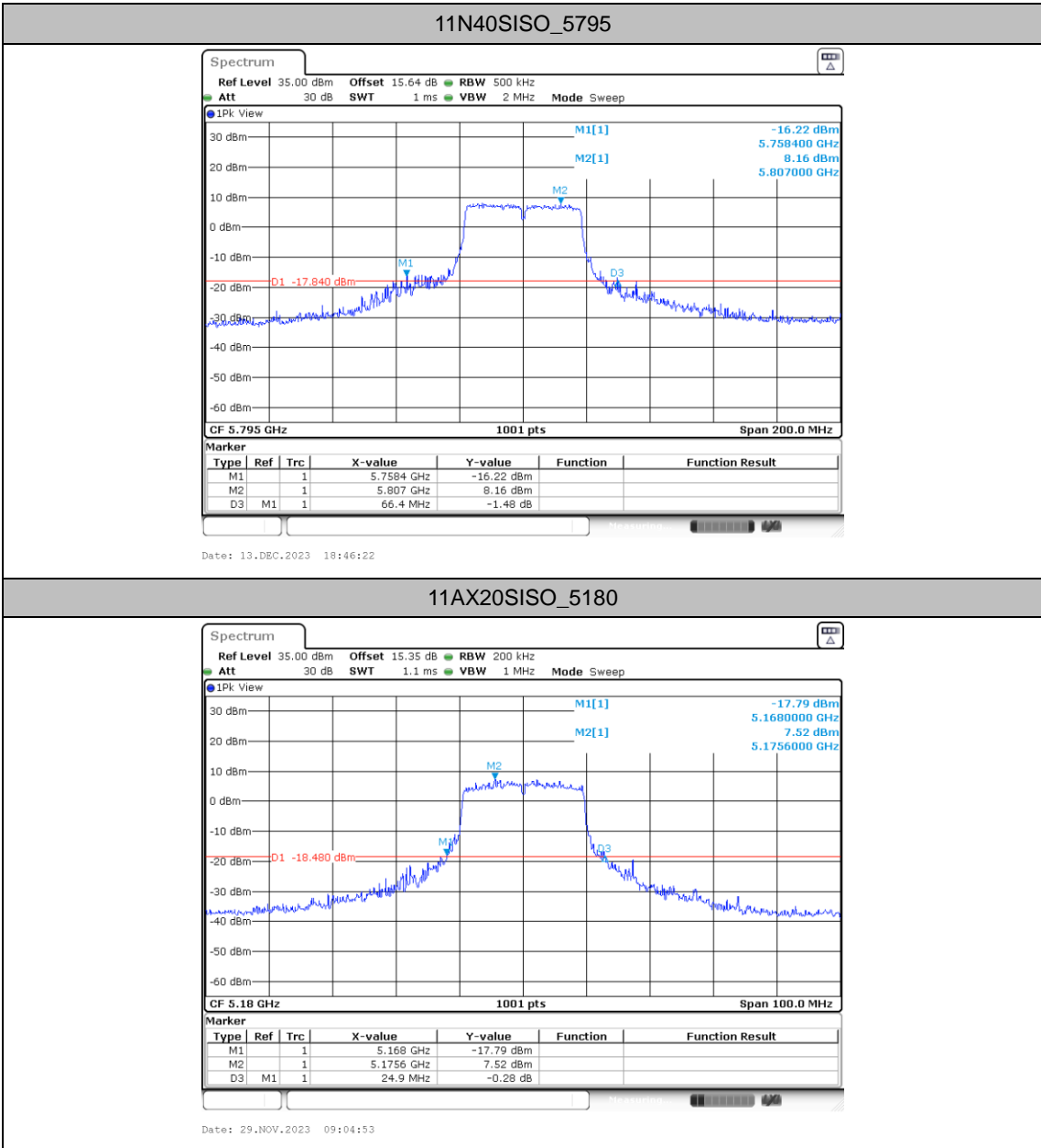


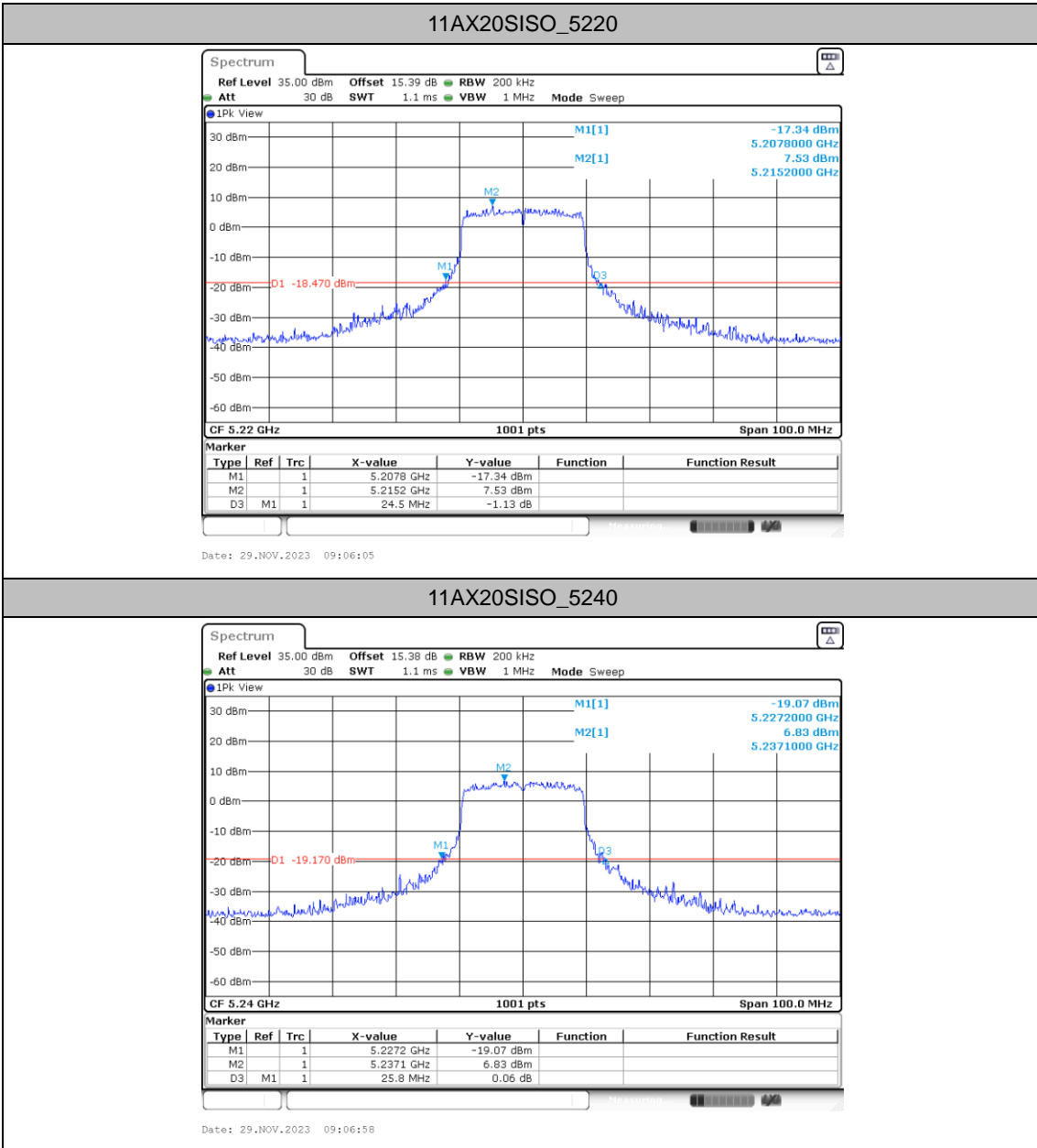


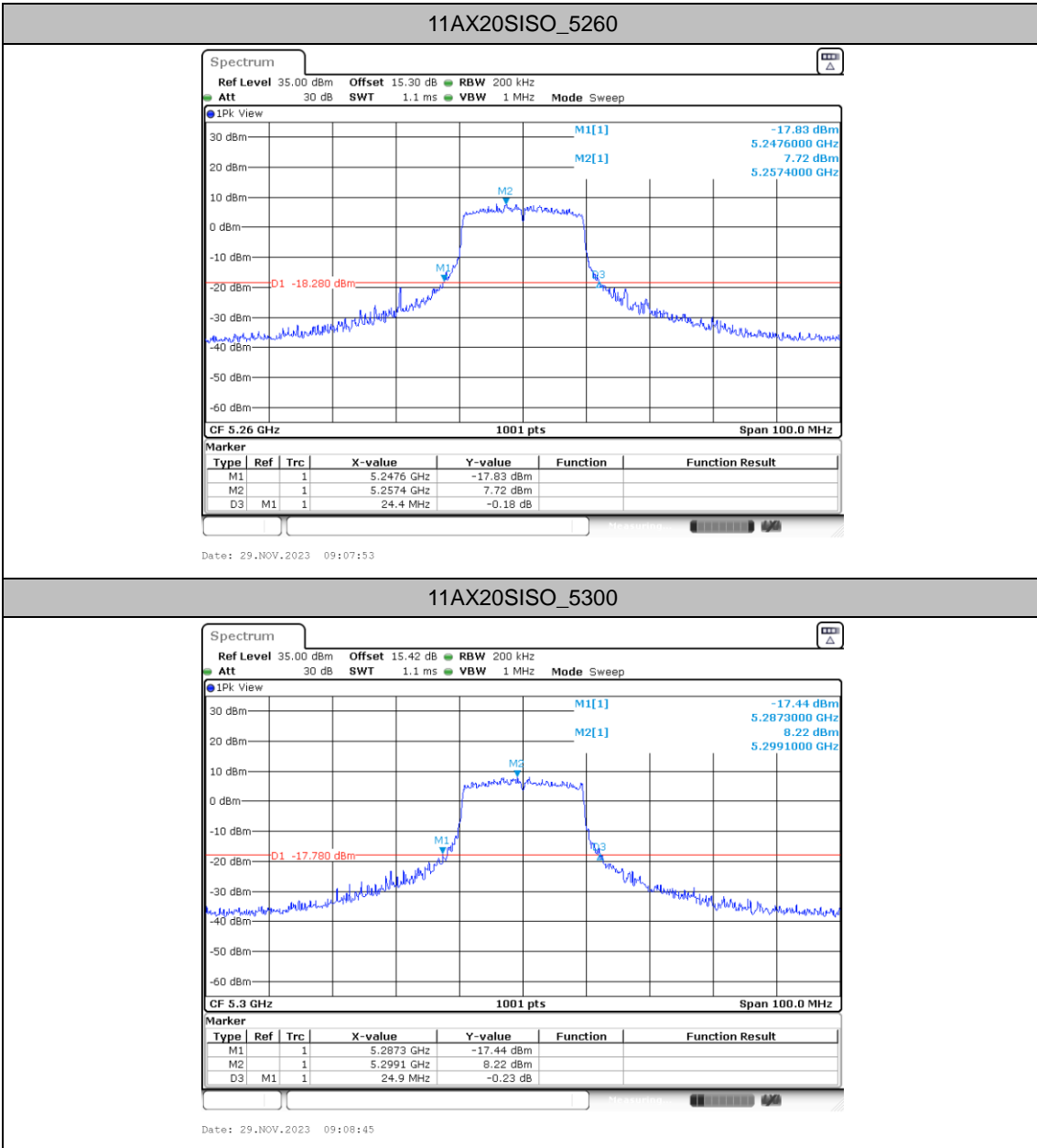






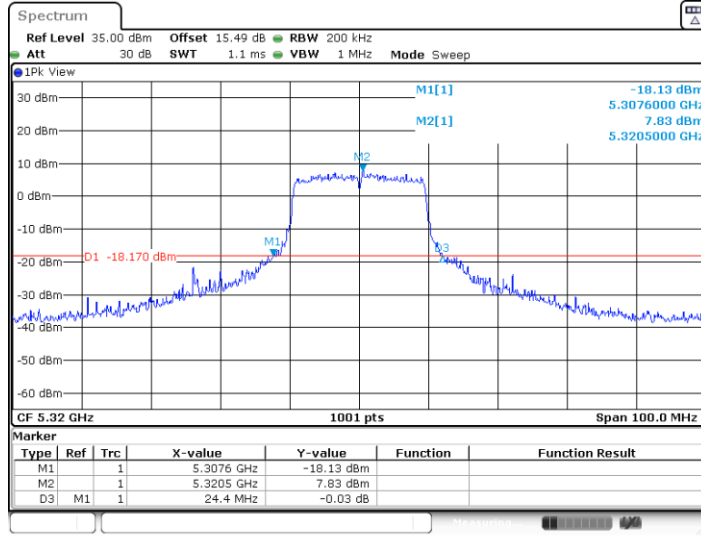




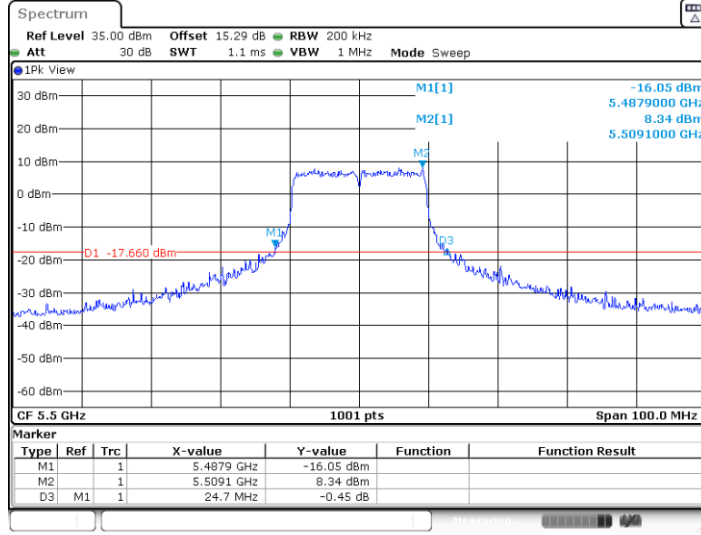


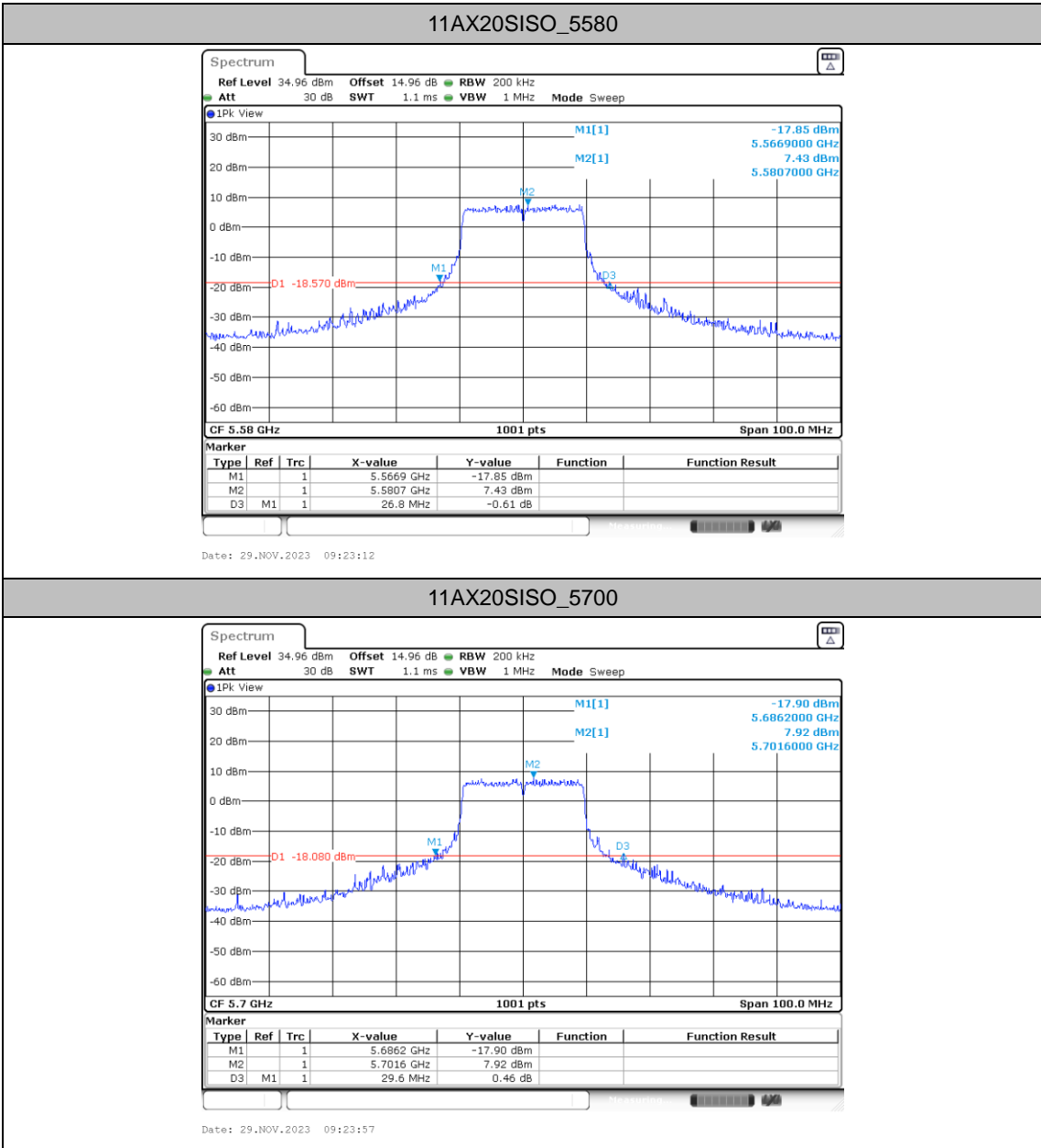


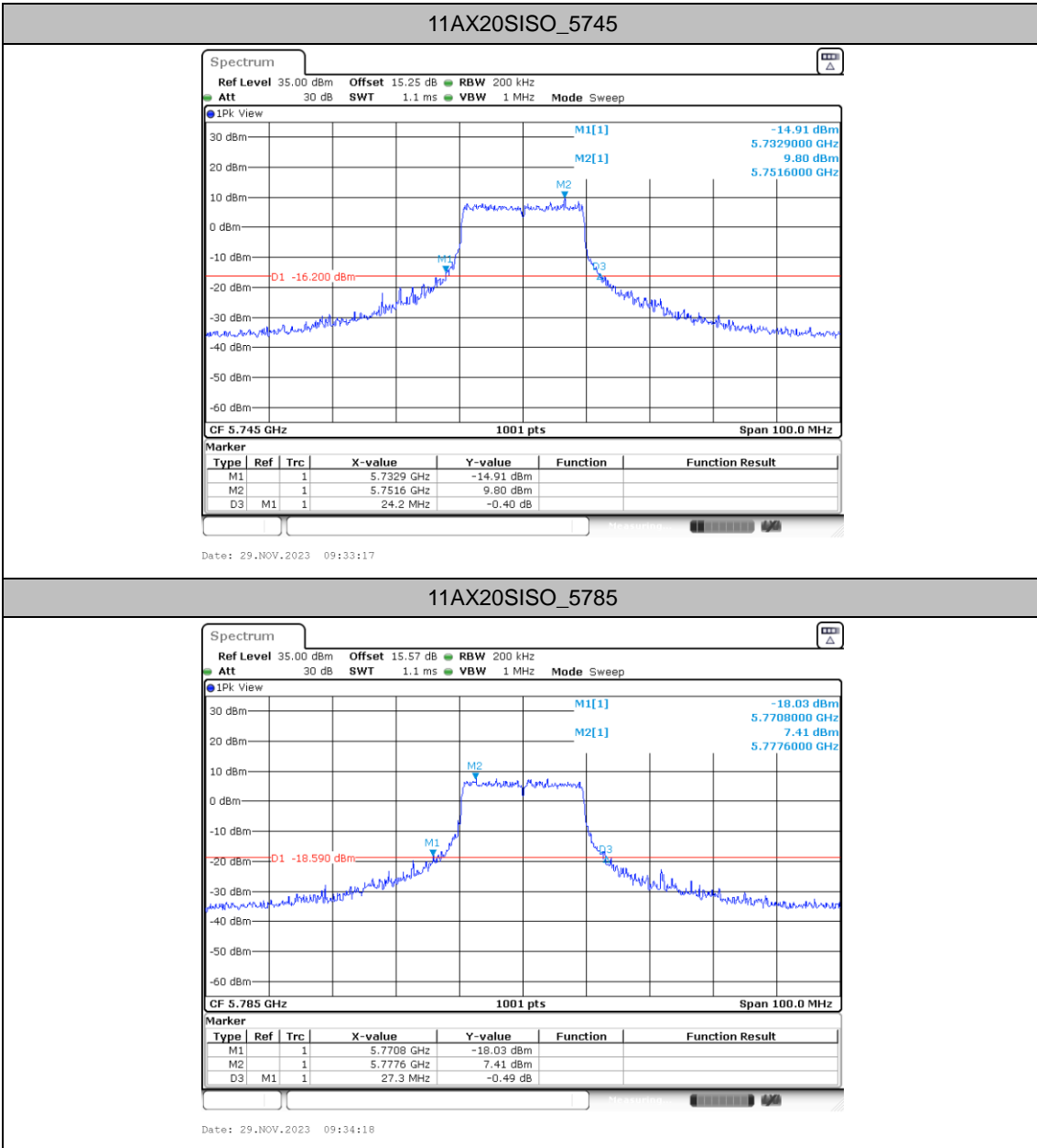
11AX20SISO_5320

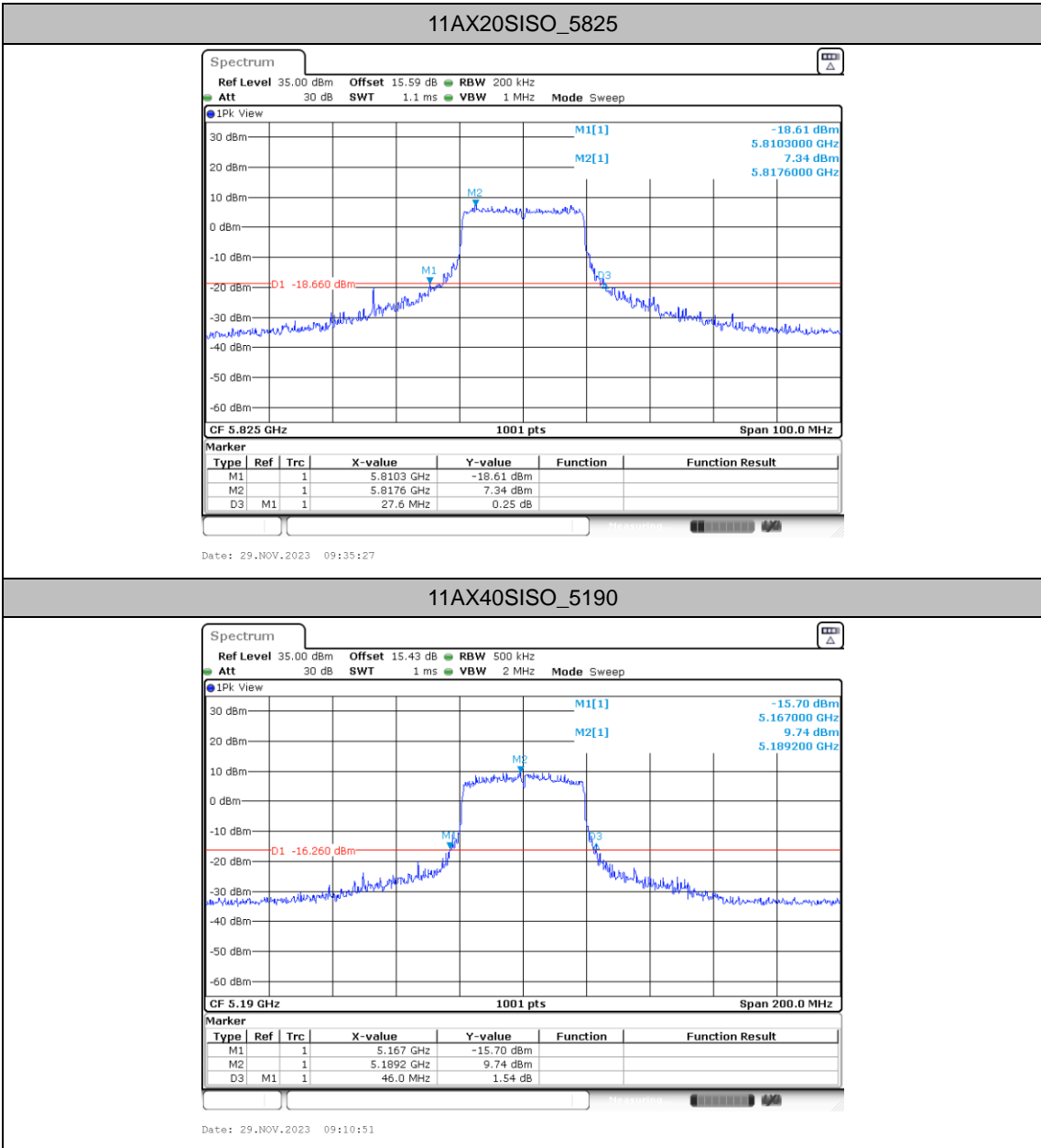


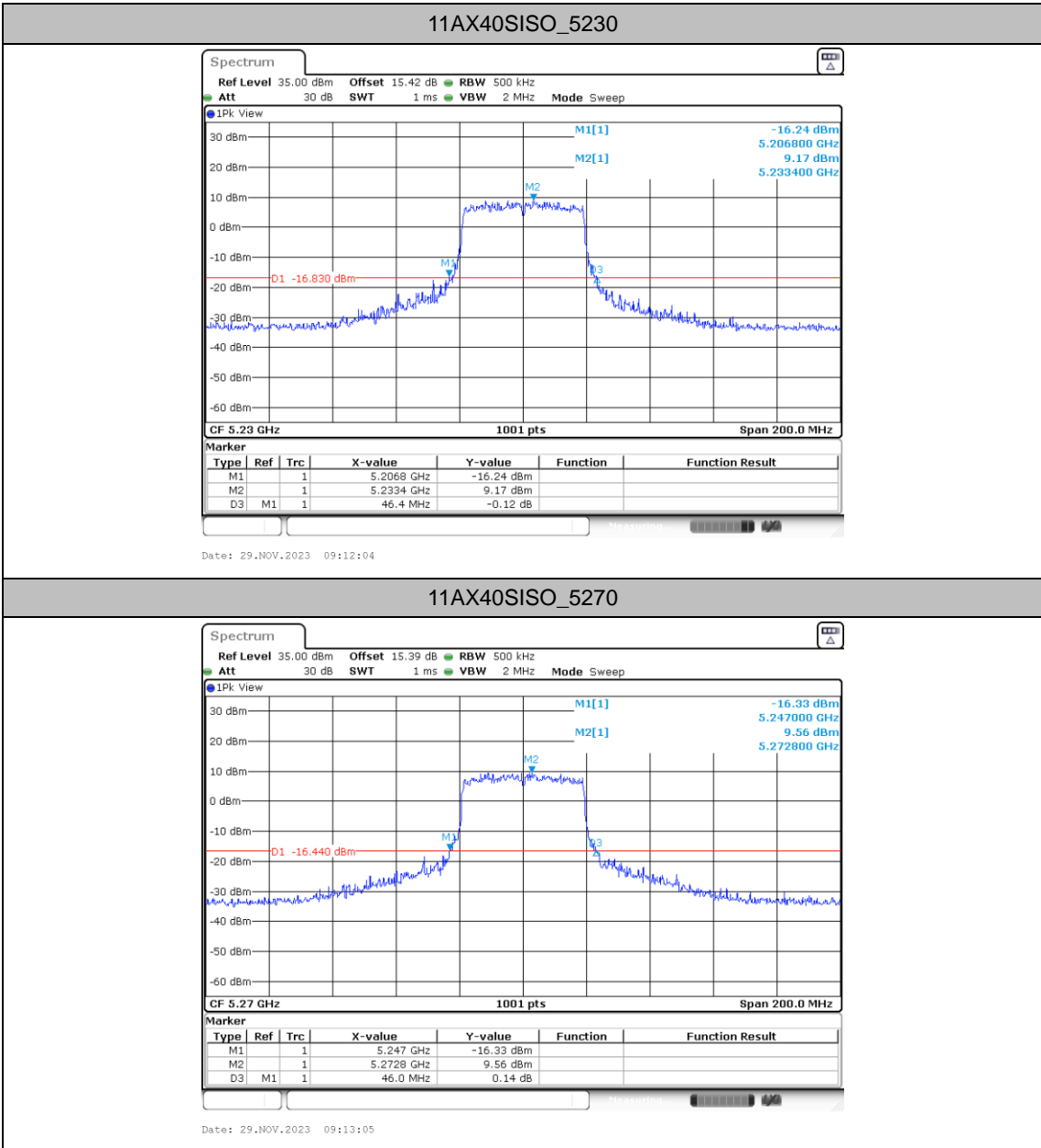
11AX20SISO_5500

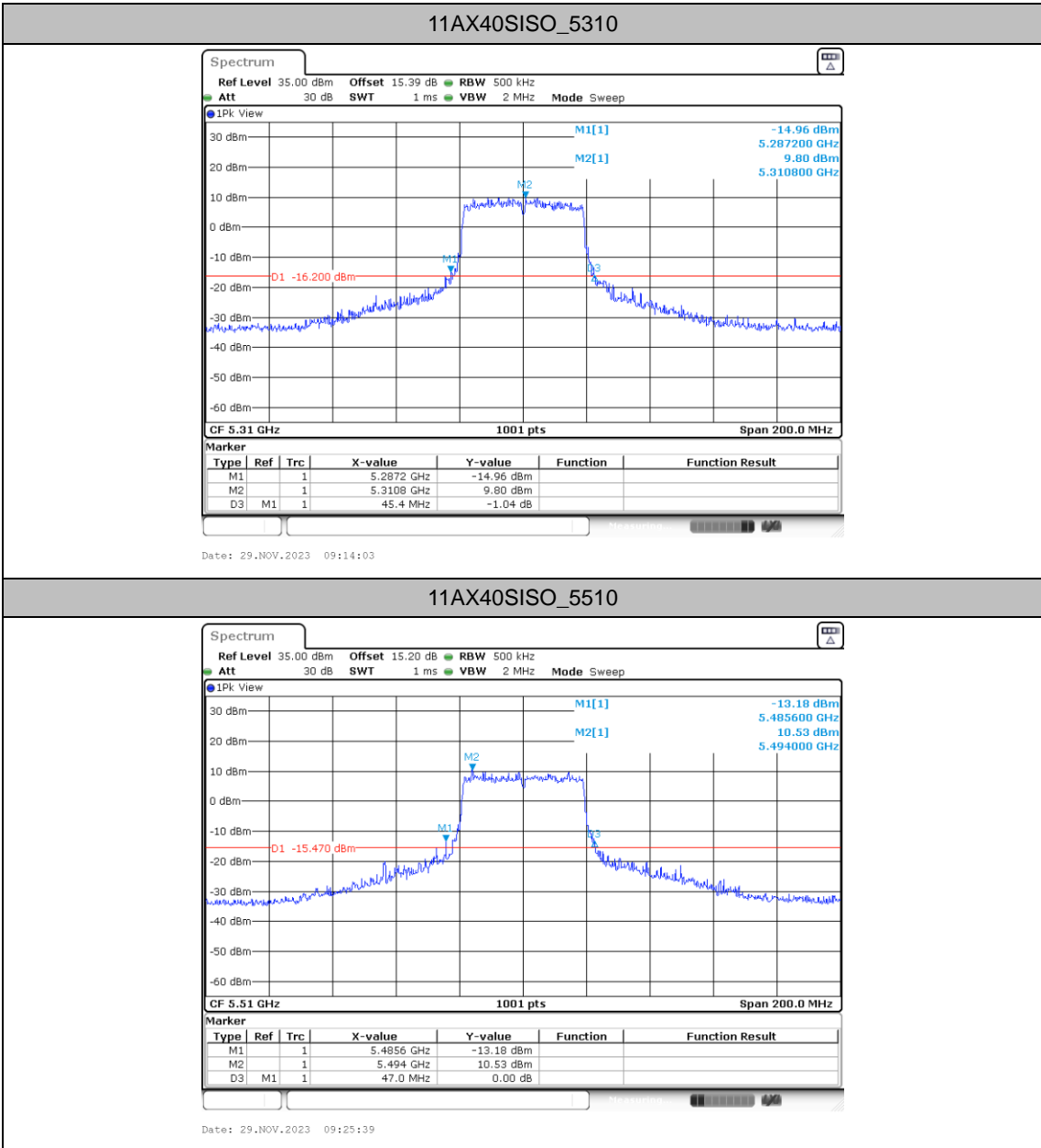


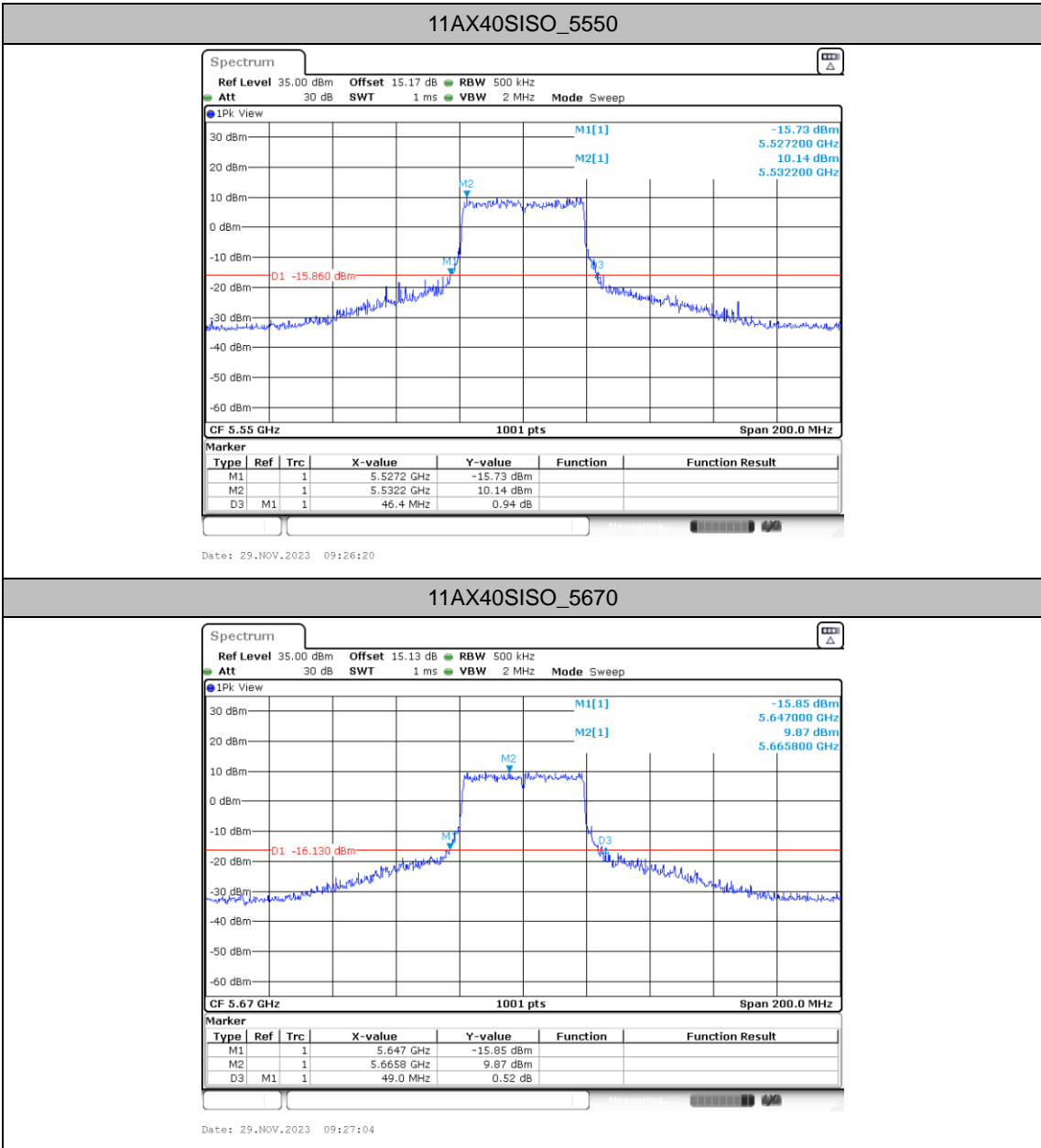


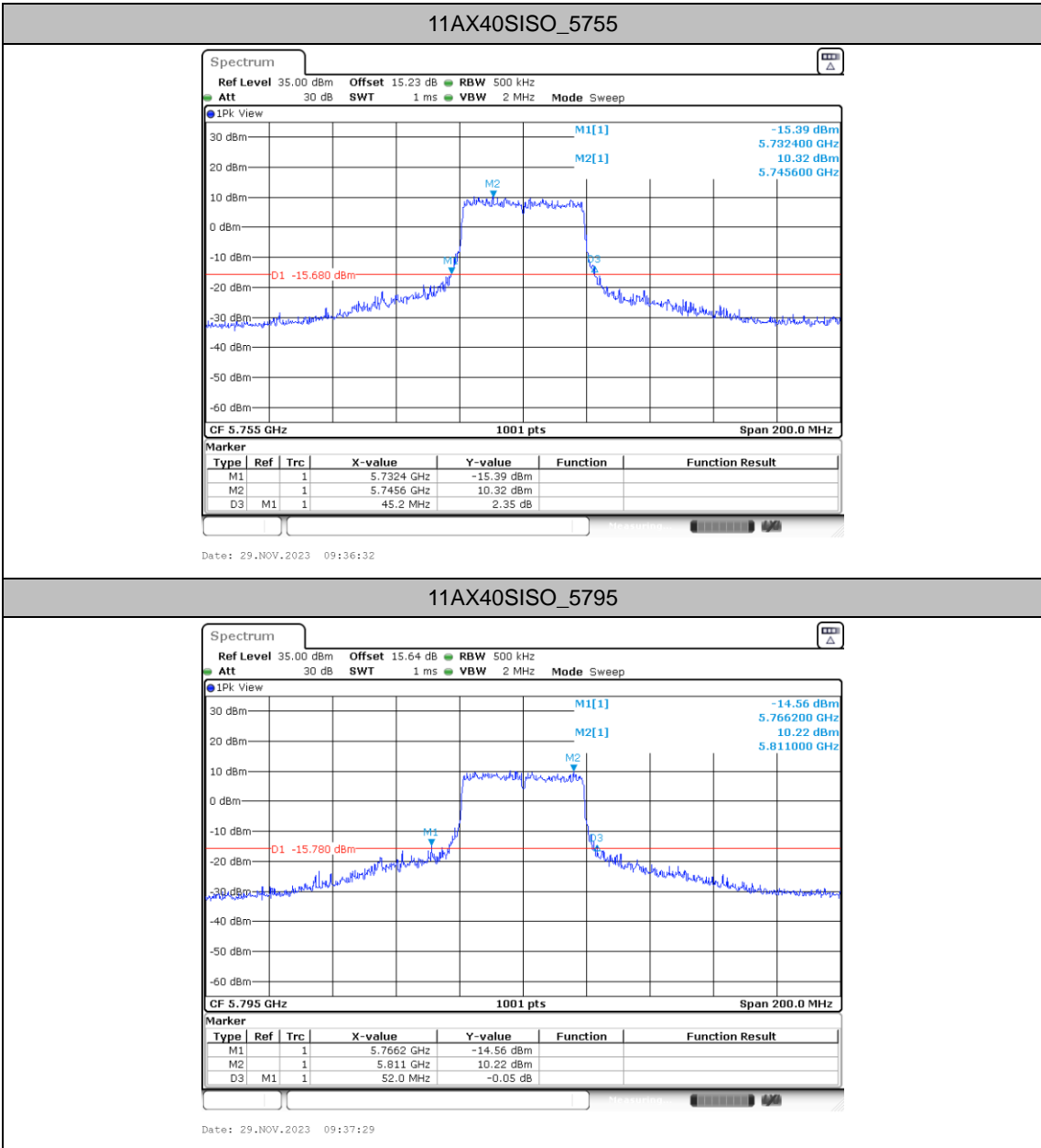














Occupied channel bandwidth

Test Result

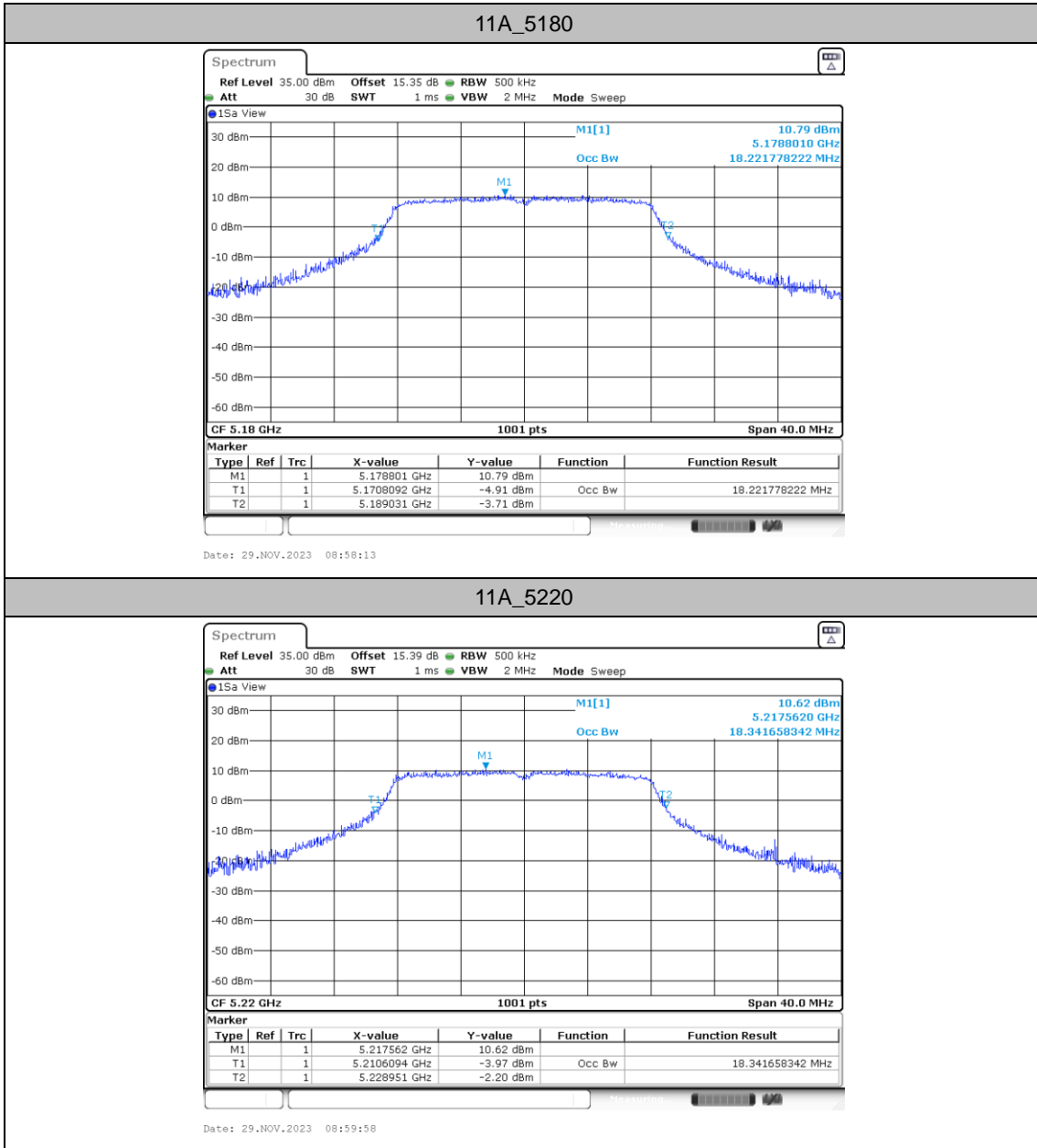
TestMode	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]
11A	5180	18.222	5170.8092	5189.0310
	5220	18.342	5210.6094	5228.9510
	5240	18.102	5230.8891	5248.9910
	5260	18.262	5250.6893	5268.9510
	5300	18.102	5290.7692	5308.8711
	5320	18.382	5310.6494	5329.0310
	5500	18.701	5490.5694	5509.2707
	5580	18.581	5570.6494	5589.2308
	5700	18.781	5690.4895	5709.2707
	5745	18.462	5735.6094	5754.0709
	5785	18.581	5775.4496	5794.0310
5825	18.541	5815.5295	5834.0709	
11N20SISO	5180	19.301	5170.3297	5189.6304
	5220	19.381	5210.2098	5229.5904
	5240	19.221	5230.4096	5249.6304
	5260	19.261	5250.2897	5269.5504
	5300	19.181	5290.3297	5309.5105
	5320	19.381	5310.2098	5329.5904
	5500	19.54	5490.2098	5509.7502
	5580	19.5	5570.2498	5589.7502
	5700	19.58	5690.1698	5709.7502
	5745	19.62	5735.1299	5754.7502
	5785	19.7	5774.9700	5794.6703
5825	19.74	5814.9700	5834.7103	
11N40SISO	5190	37.403	5171.2188	5208.6214
	5230	37.722	5211.1389	5248.8611
	5270	37.642	5251.1389	5288.7812
	5310	37.642	5290.9790	5328.6214
	5510	37.722	5491.1389	5528.8611
	5550	37.802	5531.1389	5568.9411
	5670	37.962	5650.9790	5688.9411
	5755	37.802	5735.8991	5773.7013
	5795	38.122	5775.6593	5813.7812
11AX20SISO	5180	19.58	5170.1698	5189.7502
	5220	19.74	5210.0500	5229.7902
	5240	19.58	5230.1698	5249.7502
	5260	19.7	5250.0899	5269.7902
	5300	19.58	5290.1698	5309.7502
	5320	19.66	5310.0899	5329.7502
	5500	19.9	5490.0100	5509.9101
	5580	19.86	5570.0500	5589.9101
	5700	19.94	5690.0100	5709.9500
	5745	19.78	5735.0899	5754.8701
	5785	19.86	5774.9301	5794.7902
5825	19.9	5814.9700	5834.8701	
11AX40SISO	5190	38.521	5170.7393	5209.2607

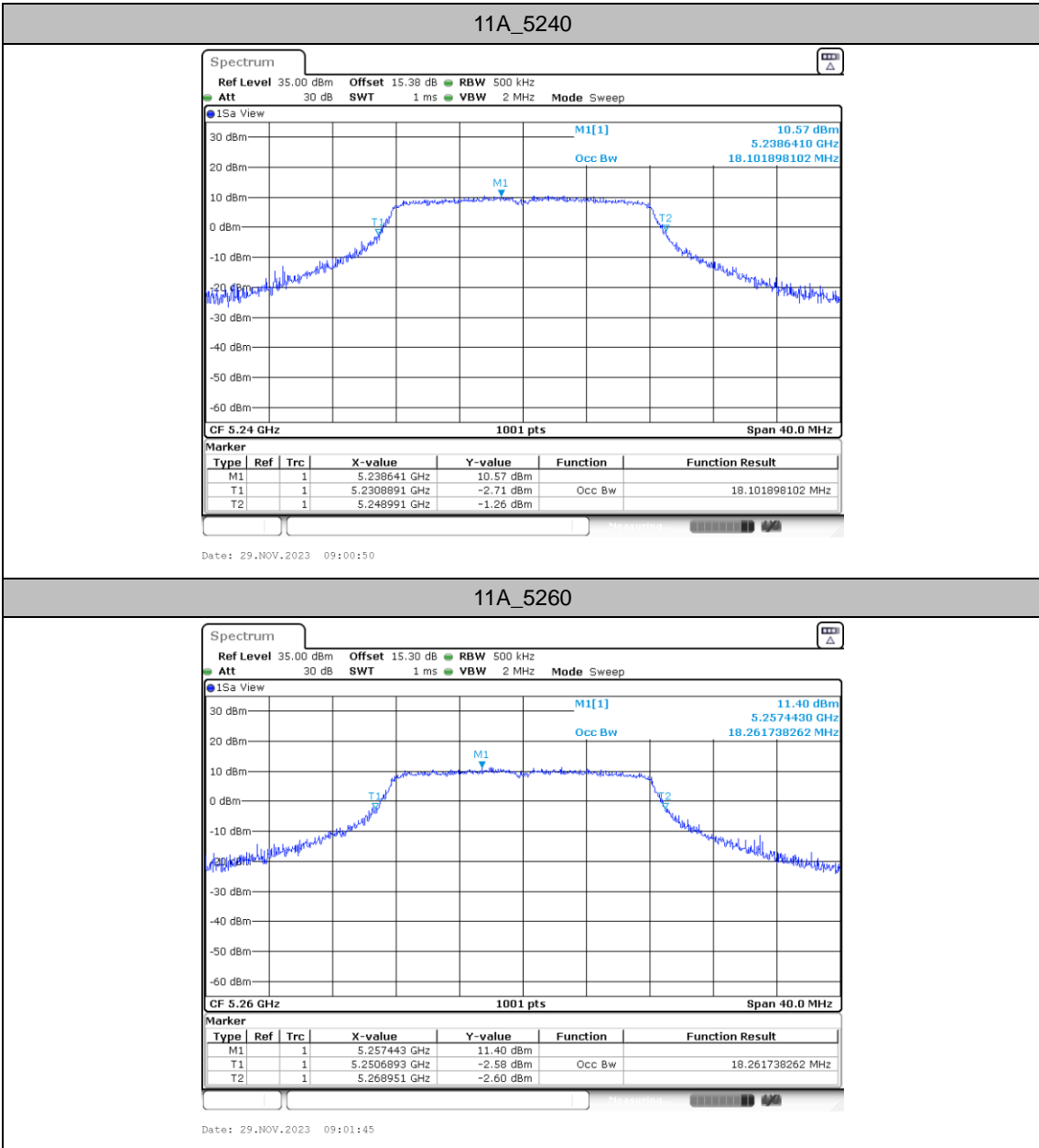


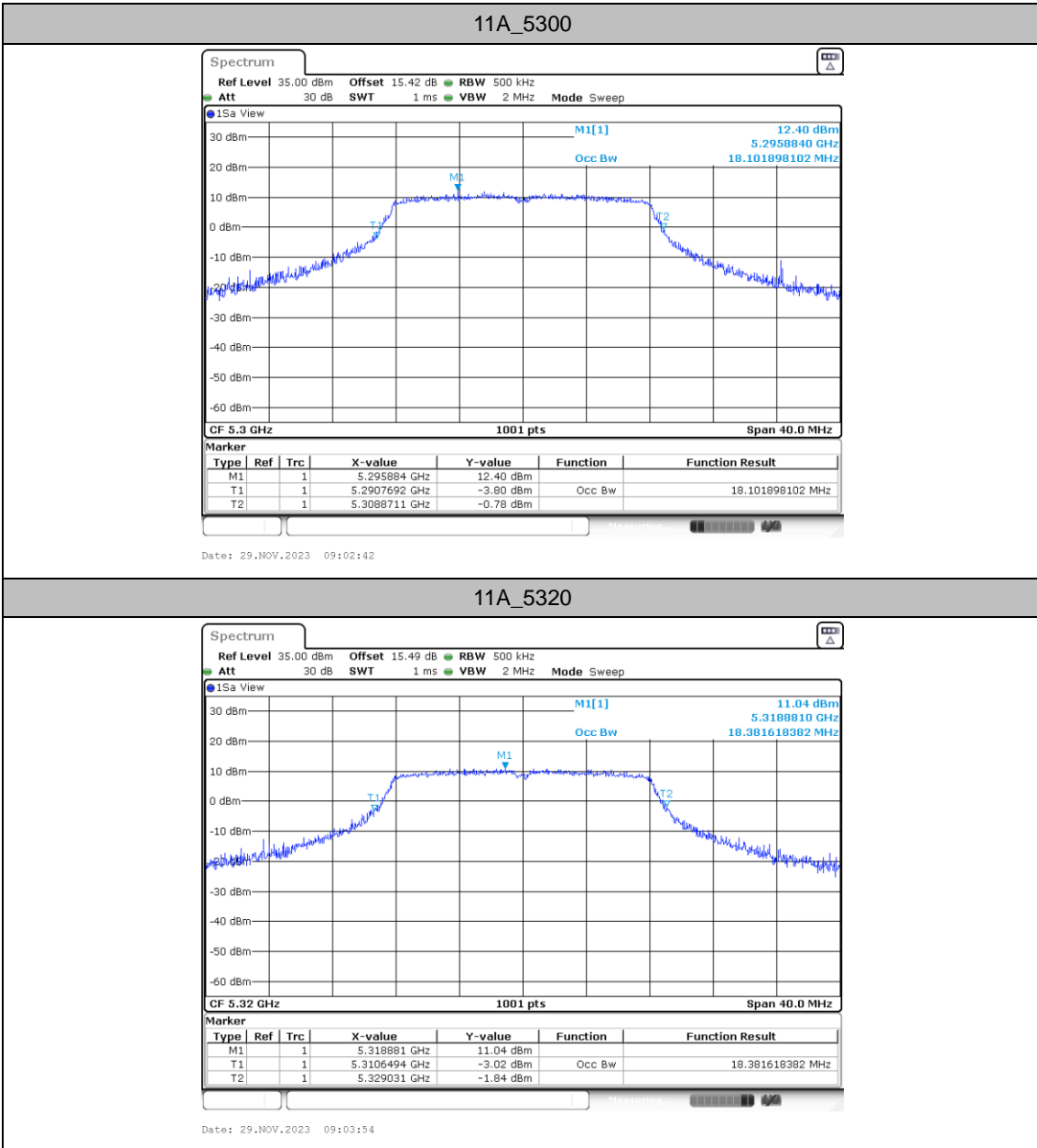
	5230	38.442	5210.7393	5249.1808
	5270	38.601	5250.6593	5289.2607
	5310	38.442	5290.6593	5329.1009
	5510	38.841	5490.5794	5529.4206
	5550	38.761	5530.5794	5569.3407
	5670	38.841	5650.4995	5689.3407
	5755	38.761	5735.4995	5774.2607
	5795	39.001	5775.3397	5814.3407

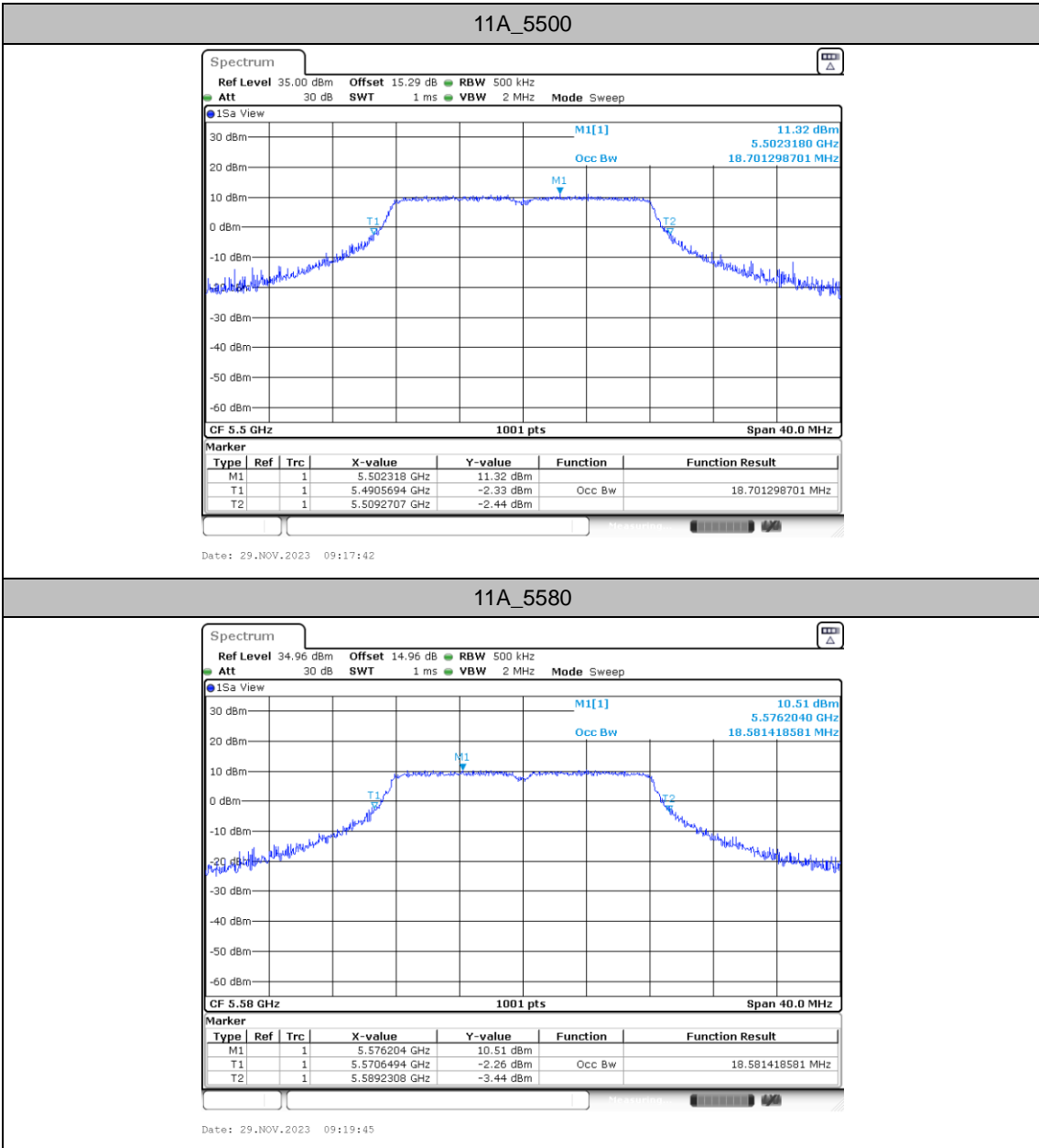


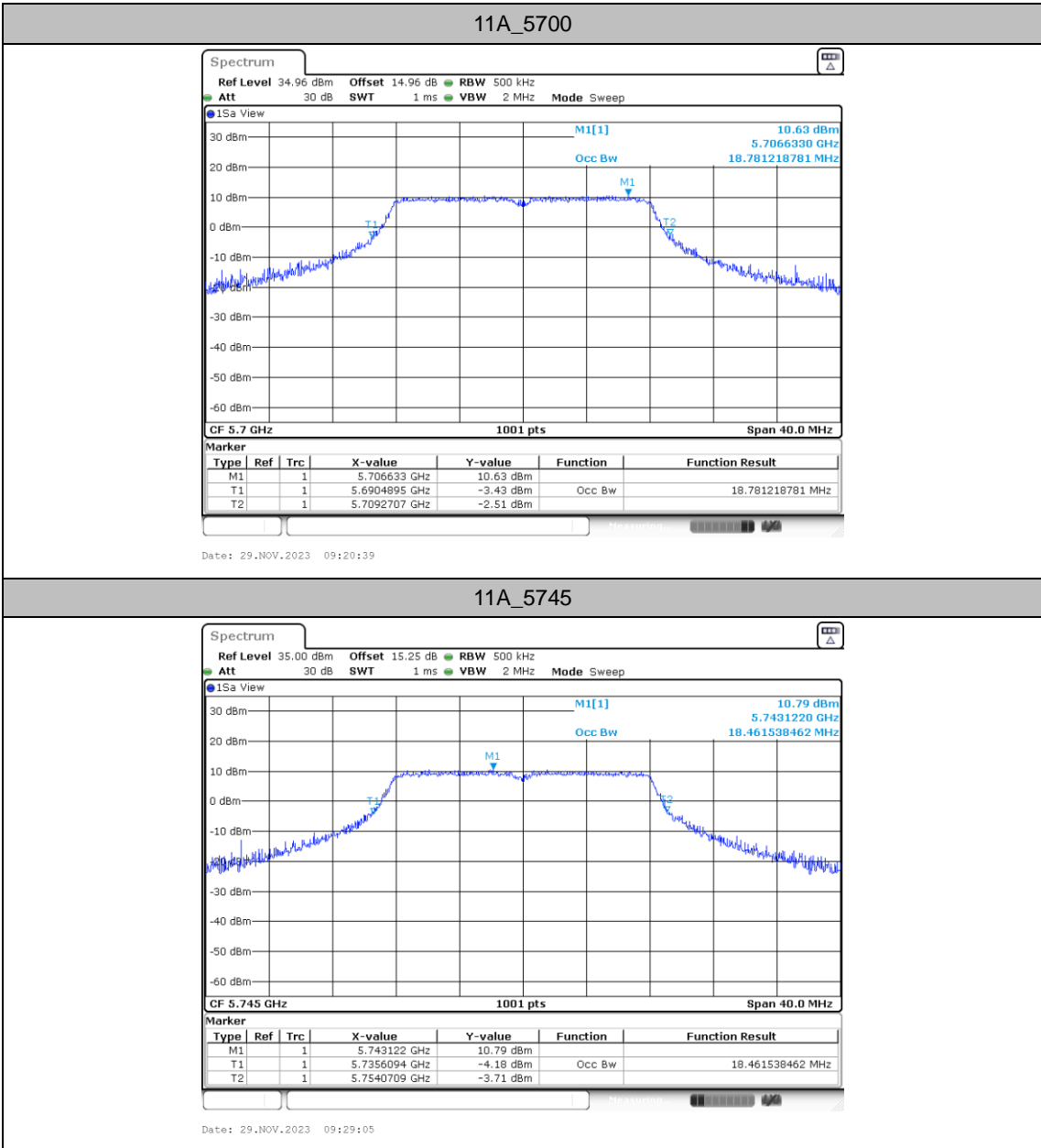
Test Graphs

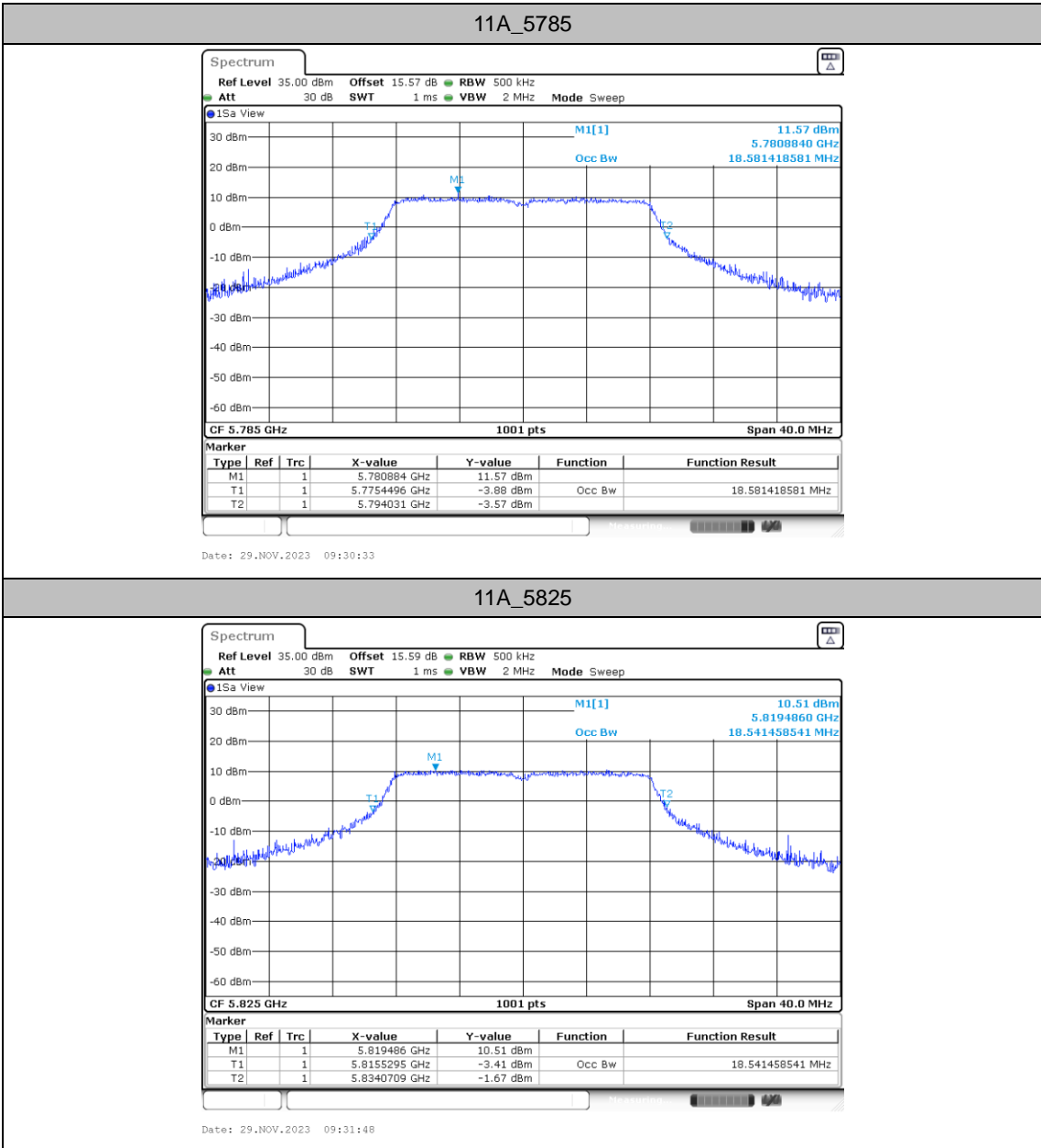






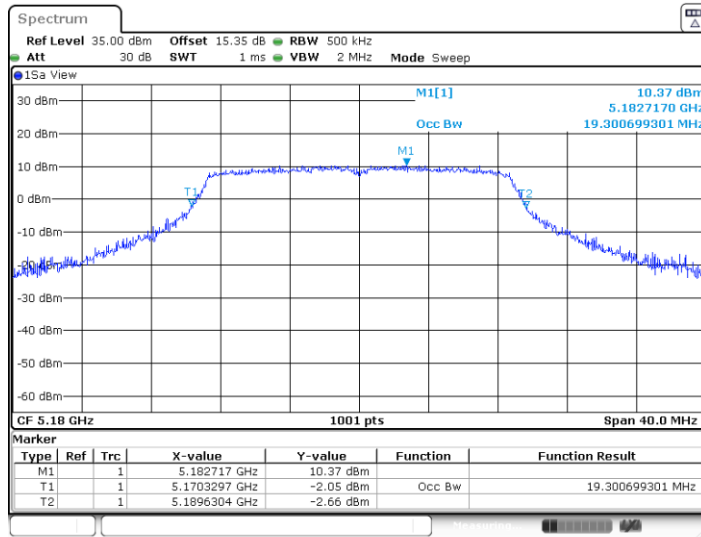






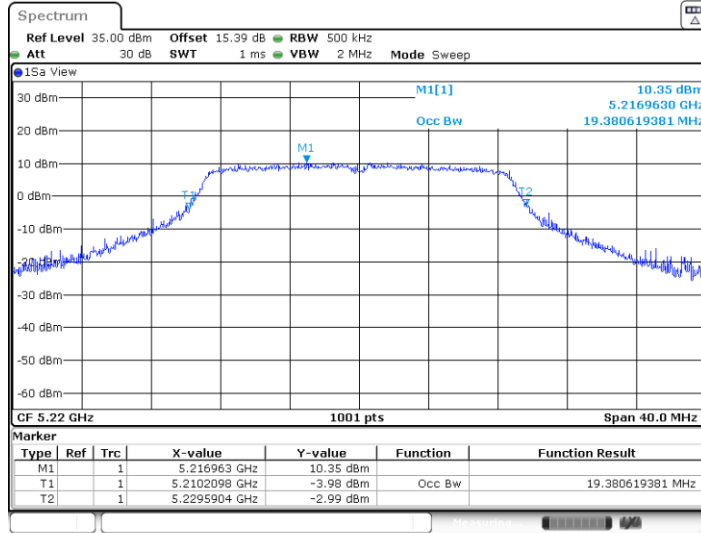


11N20SISO_5180



Date: 13.DEC.2023 18:28:02

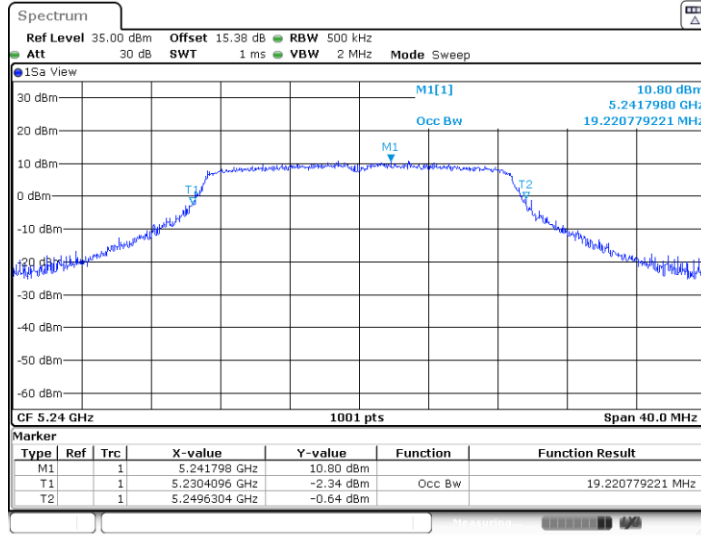
11N20SISO_5220



Date: 13.DEC.2023 18:29:00

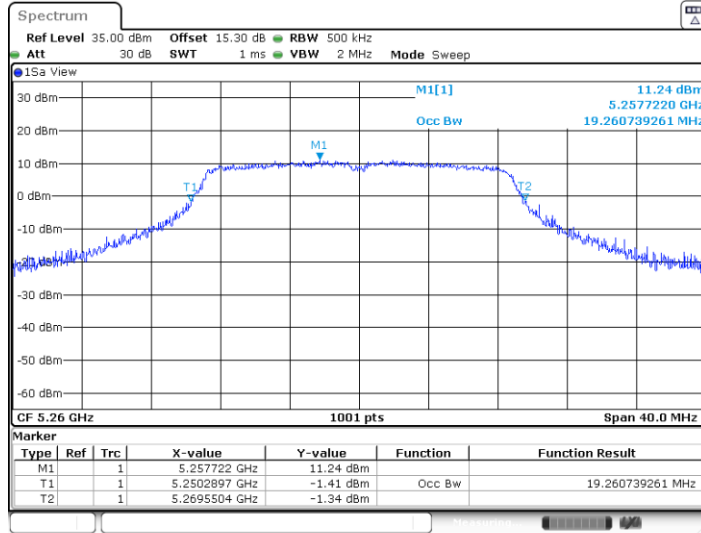


11N20SISO_5240



Date: 13.DEC.2023 18:29:43

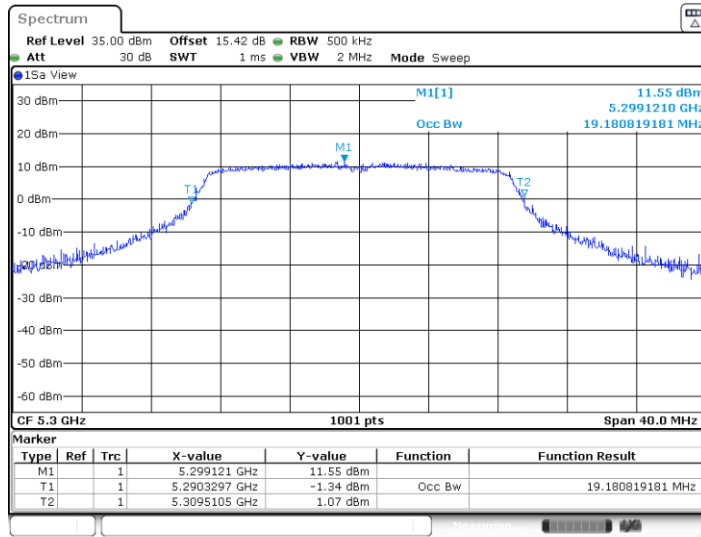
11N20SISO_5260



Date: 13.DEC.2023 18:30:23

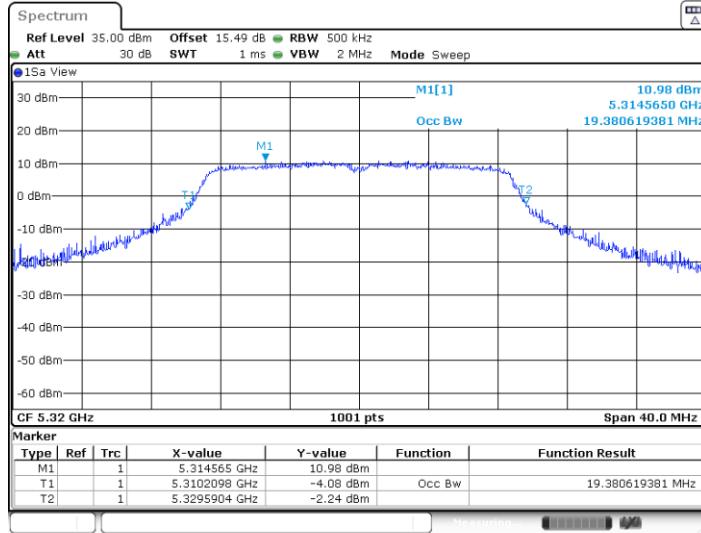


11N20SISO_5300

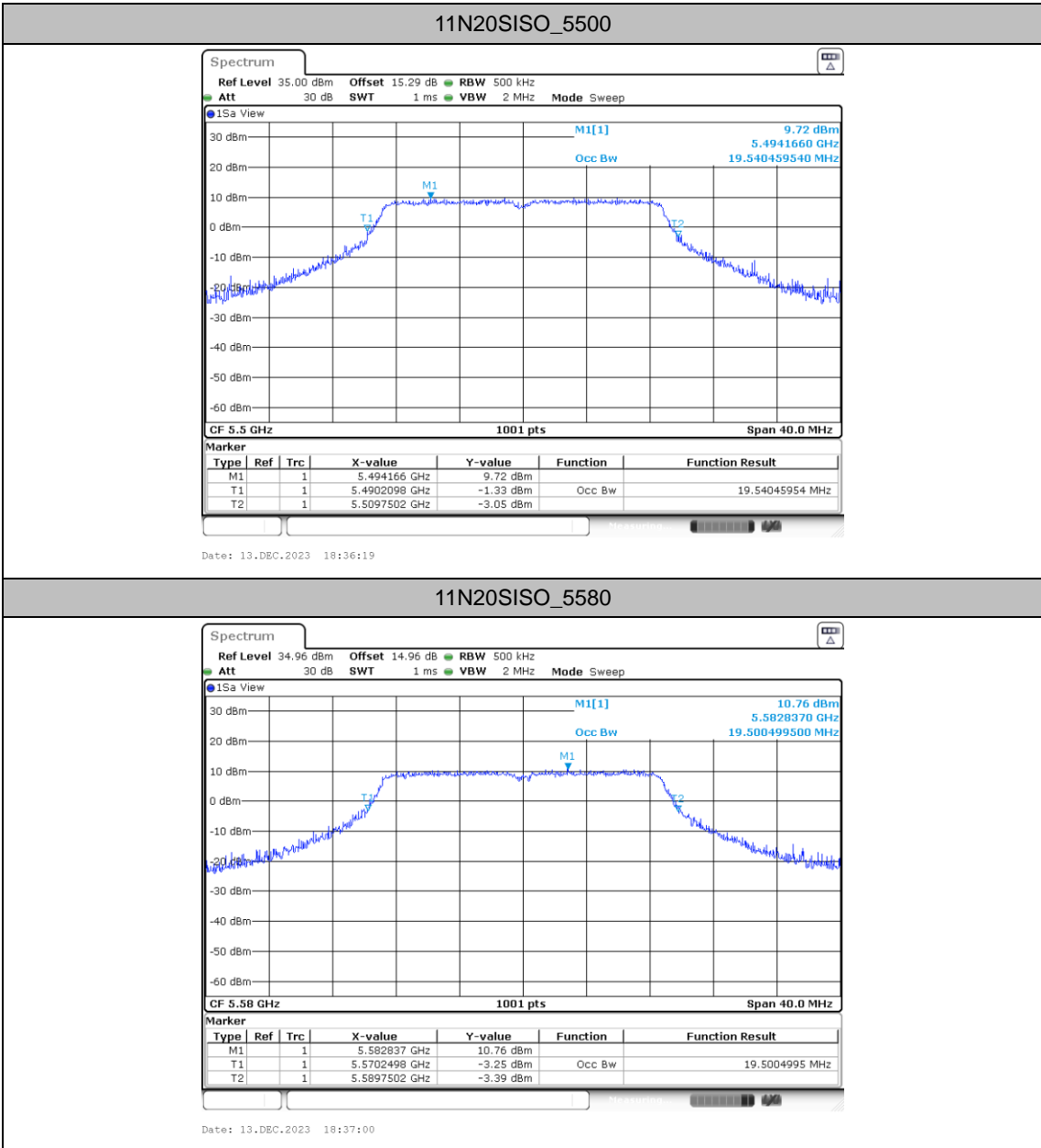


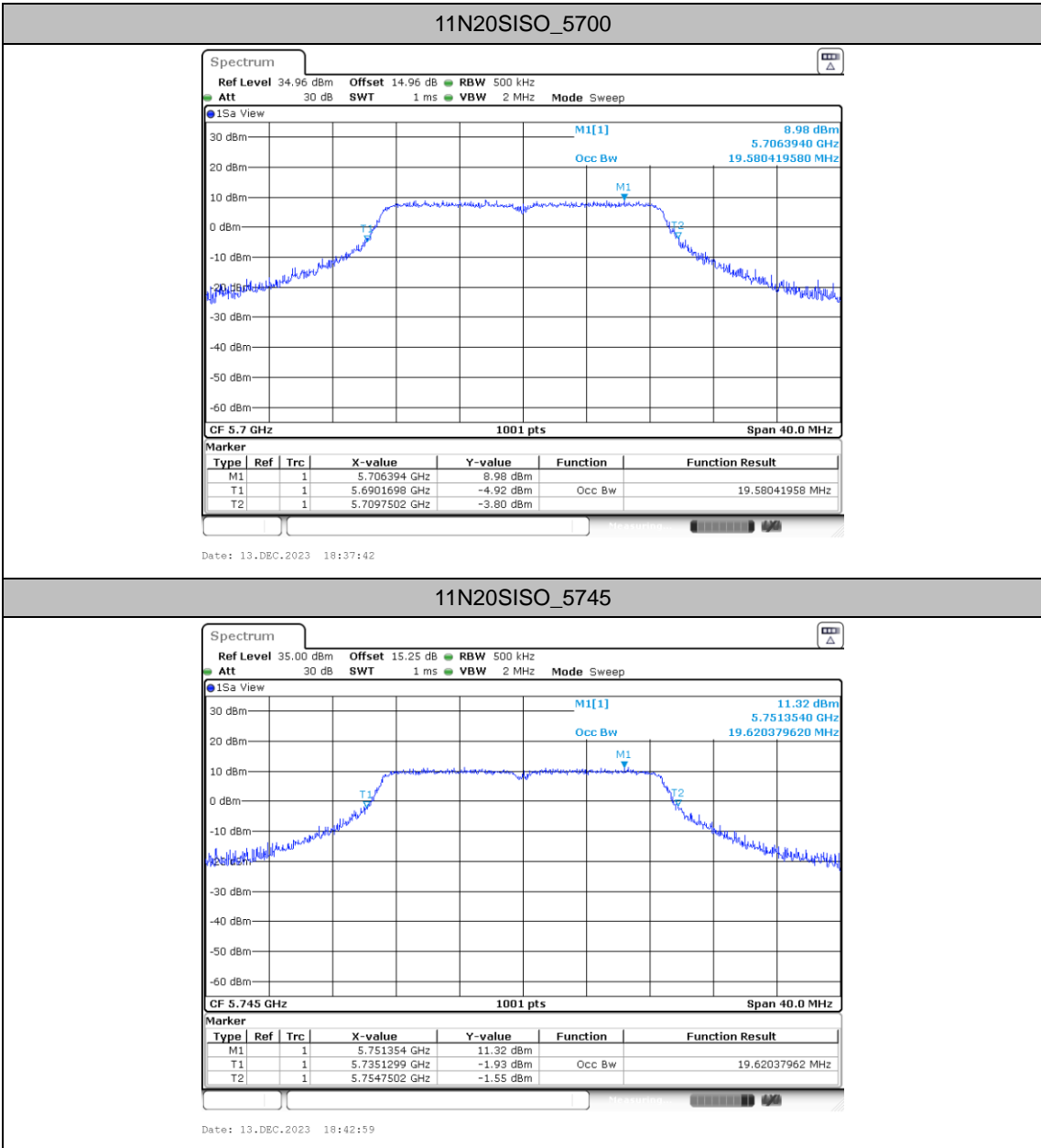
Date: 13.DEC.2023 18:31:02

11N20SISO_5320



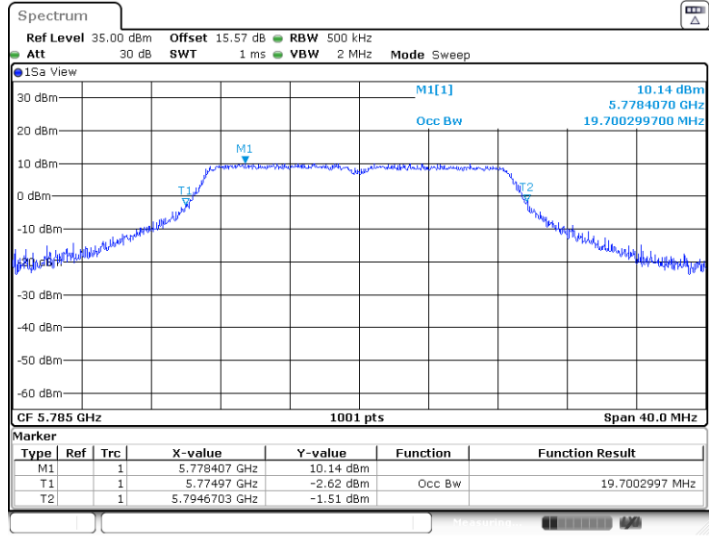
Date: 13.DEC.2023 18:31:54





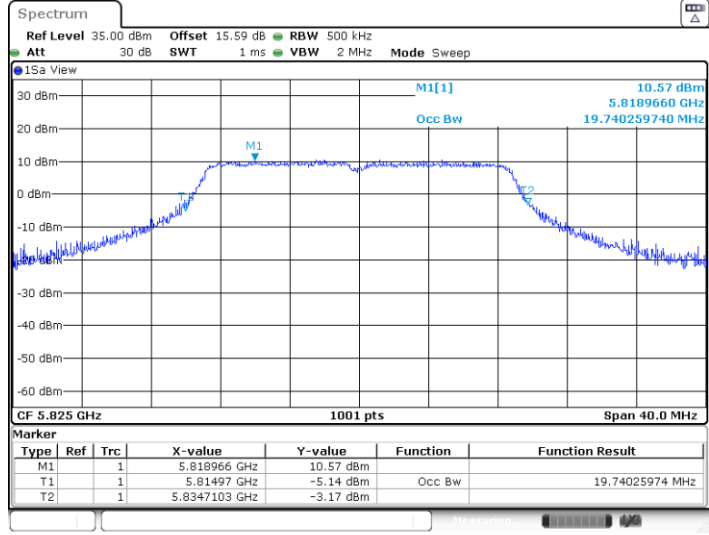


11N20SISO_5785



Date: 13.DEC.2023 18:43:53

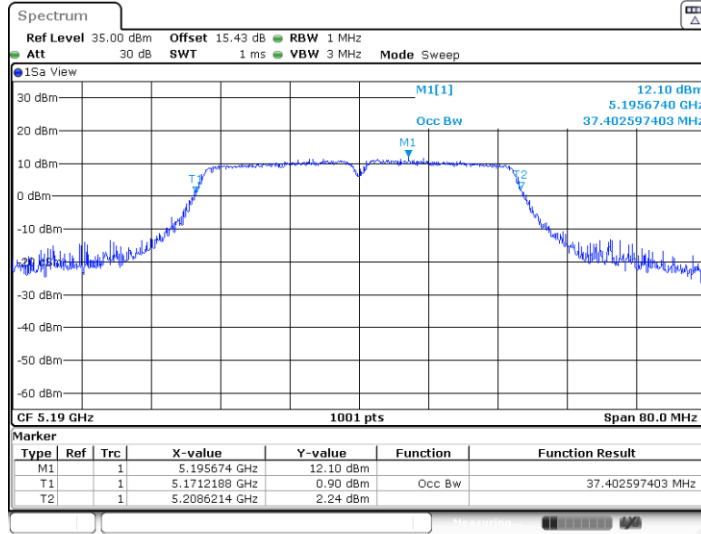
11N20SISO_5825



Date: 13.DEC.2023 18:44:53

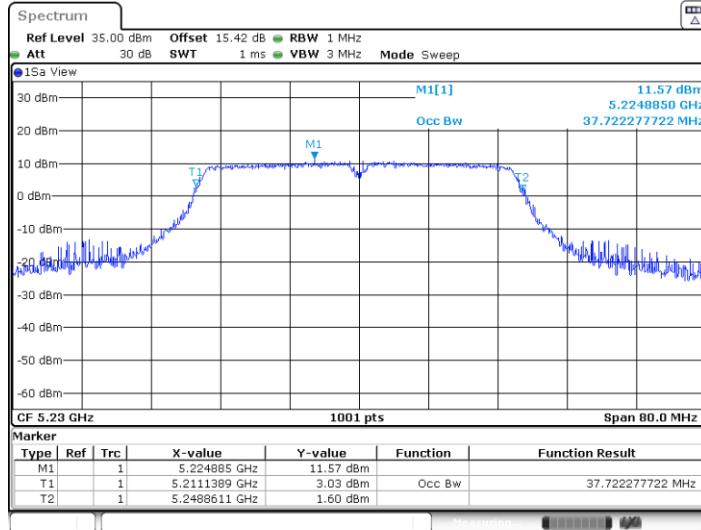


11N40SISO_5190



Date: 13.DEC.2023 18:32:34

11N40SISO_5230



Date: 13.DEC.2023 18:33:29