



FCC RF Test Report

APPLICANT : OnePlus Technology (Shenzhen) Co., Ltd.
EQUIPMENT : Mobile Phone
BRAND NAME : ONEPLUS, [1]⁺
MODEL NAME : CPH2655
FCC ID : 2ABZ2-OP23895
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : 15E 6 GHz Low Power Dual Client (6CD)
(Standard Power UNII 5/7)
TEST DATE(S) : Aug. 13, 2024 ~ Sep. 26, 2024

We, Sporton International Inc. (ShenZhen), 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. (ShenZhen), the test report shall not be reproduced except in full.

Jason Jia



Approved by: Jason Jia

Sporton International Inc. (ShenZhen)

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People's Republic of China



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History of this test report

Report No.	Version	Description	Issued Date
FR461101H	01	Initial issue of report	Sep. 27, 2024



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407(a)(11)	26dB Emission Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Pass	-
3.2	15.407(a)(7)	Maximum Conducted Output Power	Reporting only	-
3.2	15.407(a)(7)	Fundamental Maximum EIRP	Pass	-
3.3	15.407(a)(7)	Fundamental Power Spectral Density	Pass	-
3.4	15.407(b)(7)	In-Band Emissions (Channel Mask)	Pass	-
3.5	15.407(d)(6)	Contention Based Protocol	Pass	1
3.5	15.407(b)	Unwanted Emissions	Pass	Under limit 16.70 dB at 5924.96 MHz
3.6	15.207	AC Conducted Emission	Pass	Under limit 16.70 dB at 0.180 MHz
3.7	15.203 15.407(a)	Antenna Requirement	Pass	-

Remark 1: The device is dual client, the standard power client and low power client share the same RF Path, the Contention Based Protocol have been demonstrated compliance in the Indoor low power test report which is issued separately (Report No. FR461101G).

Conformity Assessment Condition:
1. 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.
2. 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

OnePlus Technology (Shenzhen) Co., Ltd.


18C02, 18C03, 18C04, and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, Guangdong, P.R. China.

1.2 Manufacturer

OnePlus Technology (Shenzhen) Co., Ltd.

18C02, 18C03, 18C04, and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, Guangdong, P.R. China.

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	ONEPLUS, 
Model Name	CPH2655
FCC ID	2ABZ2-OP23895
IMEI Code	Conducted: 866493070031950/866493070031943 Conduction: 866493070032859/866493070032842 Radiation: 866493070032636
HW Version	11
SW Version	OxygenOS V15.0
EUT Stage	Production Unit

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	U-NII-5: 5925 MHz ~ 6425 MHz U-NII-7: 6525 MHz ~ 6875 MHz
Maximum EIRP	<p><MIMO Ant.14+15> <U-NII-5></p> <p>802.11a : 3.34 dBm / 0.0022 W 802.11ax HE20 : 4.32 dBm / 0.0027 W 802.11ax HE40 : 3.06 dBm / 0.0020 W 802.11ax HE80 : 9.08 dBm / 0.0081 W 802.11ax HE160 : 11.32 dBm / 0.0136 W 802.11be EHT20: 4.32 dBm / 0.0027 W 802.11be EHT40: 3.16 dBm / 0.0021 W 802.11be EHT80: 9.18 dBm / 0.0083 W 802.11be EHT160: 11.42 dBm / 0.0139 W 802.11be EHT320: 16.08 dBm / 0.0406 W</p>



	<p><U-NII-7> 802.11a : 4.72 dBm / 0.0030 W 802.11ax HE20 : 4.70 dBm / 0.0030 W 802.11ax HE40 : 4.94 dBm / 0.0031 W 802.11ax HE80 : 10.47 dBm / 0.0111 W 802.11ax HE160 : 12.61 dBm / 0.0182 W 802.11be EHT20: 4.80 dBm / 0.0030 W 802.11be EHT40: 5.04 dBm / 0.0032 W 802.11be EHT80: 10.57 dBm / 0.0114 W 802.11be EHT160: 12.71 dBm / 0.0187 W</p>
99% Occupied Bandwidth	<p><U-NII-5> 802.11a : 17.366 MHz 802.11ax HE20 : 19.510 MHz 802.11ax HE40 : 38.860 MHz 802.11ax HE80 : 78.696 MHz 802.11ax HE160 : 158.000 MHz 802.11be EHT20 : 19.542 MHz 802.11be EHT40 : 38.580 MHz 802.11be EHT80 : 79.000 MHz 802.11be EHT160 : 159.504 MHz 802.11be EHT320 : 317.536 MHz</p> <p><U-NII-7> 802.11a : 17.410 MHz 802.11ax HE20 : 19.418 MHz 802.11ax HE40 : 38.972 MHz 802.11ax HE80 : 79.288 MHz 802.11ax HE160 : 157.520 MHz 802.11be EHT20 : 19.494 MHz 802.11be EHT40 : 38.500 MHz 802.11be EHT80 : 78.760 MHz 802.11be EHT160 : 157.712 MHz</p>
Antenna Type / Gain	<p><5925 MHz ~ 6425 MHz > <Ant. 14> : IFA Antenna with gain -1.5 dBi <Ant. 15> : IFA Antenna with gain 0.5 dBi</p> <p><6525 MHz ~ 6875 MHz > <Ant. 14> : IFA Antenna with gain -4.0 dBi <Ant. 15> : IFA Antenna with gain -1.0 dBi</p>
Type of Modulation	<p>802.11a: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ax : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM) 802.11be : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM / 4096QAM)</p>

Remark:

1. The device support WIFI MIMO CDD mode.
2. 802.11ax/be support full RU tone and partial RU tone.
3. The device does not support UNII-5 CH2 5935MHz.
4. 802.11be support small size RU, Large size RU and Puncturing modes as below:



<Small size RU 52+26 Tone>:

Bandwidth	Tones		Index		For test modes configure
20MHz	26	52	1	38	1
20MHz	52	26	38	4	2
20MHz	52	26	39	7	3

<Small size RU 106+26 Tone>:

Bandwidth	Tones		Index		For test modes configure
20MHz	106	26	53	4	1
20MHz	26	106	4	54	2

<Large size RU 484+242 tone> & <80M BW Puncturing 20MHz>:

Bandwidth	Tones		Index		For test modes configure
80MHz	242	484	62	66	1
80MHz	242	484	61	66	2
80MHz	484	242	65	64	3
80MHz	484	242	65	63	4

<Large size RU 996+484 tone> & <160M BW Puncturing 40MHz>:

Bandwidth	Tones		Index		For test modes configure
160MHz	484-Left	996-Right	66-Left	67-Right	1
160MHz	484-Left	996-Right	65-Left	67-Right	2
160MHz	996-Left	484-Right	67-Left	66-Right	3
160MHz	996-Left	484-Right	67-Left	65-Right	4

<Large size RU 996+484+242 tone> & <160M BW Puncturing 20MHz>:

Bandwidth	Tones			Index			For test modes configure
160MHz	242-Left	484-Left	996-Right	62-Left	66-Left	67-Right	1
160MHz	242-Left	484-Left	996-Right	61-Left	66-Left	67-Right	2
160MHz	484-Left	242-Left	996-Right	65-Left	64-Left	67-Right	3
160MHz	484-Left	242-Left	996-Right	65-Left	63-Left	67-Right	4
160MHz	996-Left	242-Right	484-Right	67-Left	62-Right	66-Right	5
160MHz	996-Left	242-Right	484-Right	67-Left	61-Right	66-Right	6
160MHz	996-Left	484-Right	242-Right	67-Left	65-Right	64-Right	7
160MHz	996-Left	484-Right	242-Right	67-Left	65-Right	63-Right	8



<Large size RU 3*996 tone> & <320M BW Puncturing 80MHz>:

Bandwidth	Tones	Index	For test modes configure
320MHz			1
			2
			3
			4

<Large size RU 3*996+484 tone> & <320M BW Puncturing 40MHz>:

Bandwidth	Tones	Index	For test modes configure
320MHz			1
			2
			3
			4
			5
			6
			7
			8

<Large size RU 2*996+484 tone> & <320M BW Puncturing 80+40MHz>:

Bandwidth	Tones	Index	For test modes configure
320MHz			1
			2
			3
			4
			5
			6
			7
			8
			9
			10
			11
			12

Only the worse cases are shown in this report.



5. The worse cases of RSE for partial RU, Large size RU and small size RU are shown in this report.

1.5 Modification of EUT

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

1.6 Testing Location

Sporton International Inc. (ShenZhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO01-SZ TH01-SZ	CN1256	421272

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH03-SZ	CN1256	421272

1.7 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH03-SZ	AUDIX	E3	6.2009-8-24
2.	CO01-SZ	AUDIX	E3	6.120613b



1.8 Applicable Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 987594 D02 U-NII 6 GHz EMC Measurement v02r01
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output 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

<U-NII-5>

BW 20M	Channel	1	5	9	13	17	21	25	29
	Freq. (MHz)	5955	5975	5995	6015	6035	6055	6075	6095
BW 40M	Channel	3		11		19		27	
	Freq. (MHz)	5965		6005		6045		6085	
BW 80M	Channel	7				23			
	Freq. (MHz)	5985				6065			
BW 160M	Channel	15							
	Freq. (MHz)	6025							
BW 20M	Channel	33	37	41	45	49	53	57	61
	Freq. (MHz)	6115	6135	6155	6175	6195	6215	6235	6255
BW 40M	Channel	35		43		51		59	
	Freq. (MHz)	6125		6165		6205		6245	
BW 80M	Channel	39				55			
	Freq. (MHz)	6145				6225			
BW 160M	Channel	47							
	Freq. (MHz)	6185							
BW 320M	Channel	31				63			
	Freq. (MHz)	6105				6265			



BW 20M	Channel	65	69	73	77	81	85	89	93
	Freq. (MHz)	6275	6295	6315	6335	6355	6375	6395	6415
BW 40M	Channel	67		75		83		91	
	Freq. (MHz)	6285		6325		6365		6405	
BW 80M	Channel	71				87			
	Freq. (MHz)	6305				6385			
BW 160M	Channel	79							
	Freq. (MHz)	6345							

<UNII-7>

BW 20M	Channel	-	-	-	-	-	117	121	125
	Freq. (MHz)	-	-	-	-	-	6535	6555	6575
BW 40M	Channel	-		-		-		123	
	Freq. (MHz)	-		-		-		6565	

BW 20M	Channel	129	133	137	141	145	149	153	157
	Freq. (MHz)	6595	6615	6635	6655	6675	6695	6715	6735
BW 40M	Channel	131		139		147		155	
	Freq. (MHz)	6605		6645		6685		6725	
BW 80M	Channel	135				151			
	Freq. (MHz)	6625				6705			
BW 160M	Channel	143							
	Freq. (MHz)	6665							

BW 20M	Channel	161	165	169	173	177	181	-	-
	Freq. (MHz)	6755	6775	6795	6815	6835	6855	-	-
BW 40M	Channel	163		171		179		-	
	Freq. (MHz)	6765		6805		6845		-	
BW 80M	Channel	167				-			
	Freq. (MHz)	6785				-			



2.2 Test Mode

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

Modulation	Data Rate
802.11a	6 Mbps
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0
802.11ax HE160	MCS0
802.11be EHT20	MCS0
802.11be EHT40	MCS0
802.11be EHT80	MCS0
802.11be EHT160	MCS0
802.11be EHT320	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : GSM850 Idle + BT Link + WLAN Link(6G) + USB Cable 1(Charging From Adapter 1) + Battery 1
Remark: For Radiated Test Cases, the tests were performed with Adapter 1, Battery 1 and USB Cable 1.	

Ch. #		5925-6425 MHz	6525-6875 MHz	5925-6425 MHz	6525-6875 MHz
		UNII-5	UNII-7	UNII-5	UNII-7
		20 BW	20 BW	40 BW	40 BW
L	Low	001	117	003	123
M	Middle	049	149	051	147
H	High	093	181	091	179

Ch. #		5925-6425 MHz	6525-6875 MHz	5925-6425 MHz	6525-6875 MHz
		UNII-5	UNII-7	UNII-5	UNII-7
		80 BW	80 BW	160 BW	160 BW
L	Low	007	135	015	143
M	Middle	055	151	047	
H	High	087	167	079	

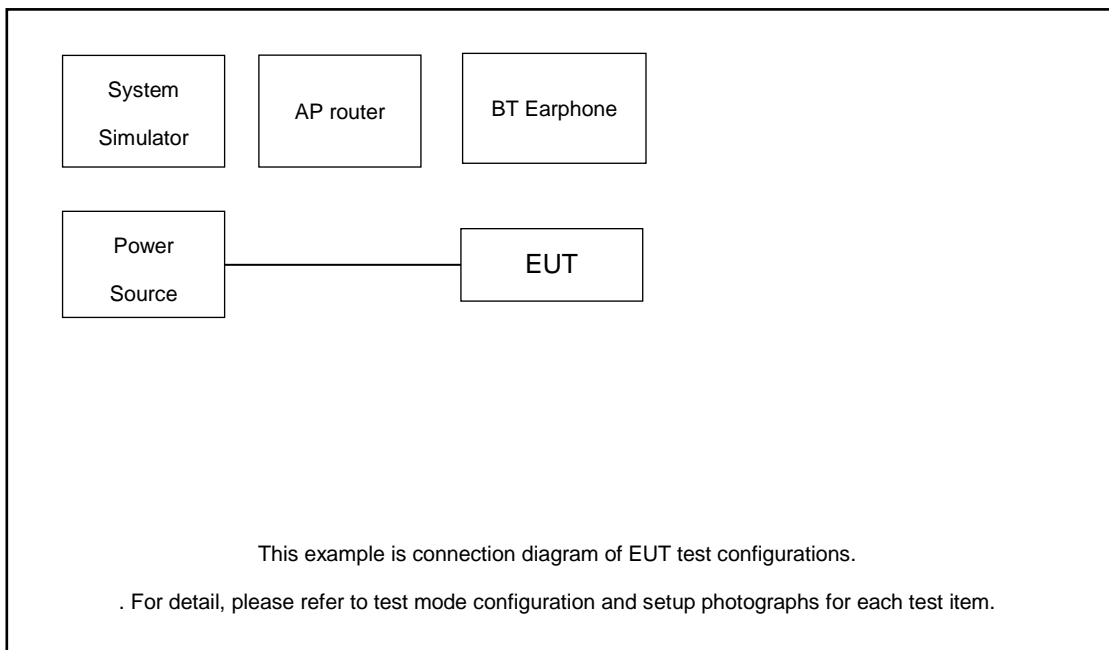


Ch. #		UNII-5
		320M BW
L	Low	-
M	Middle	031
H	High	063

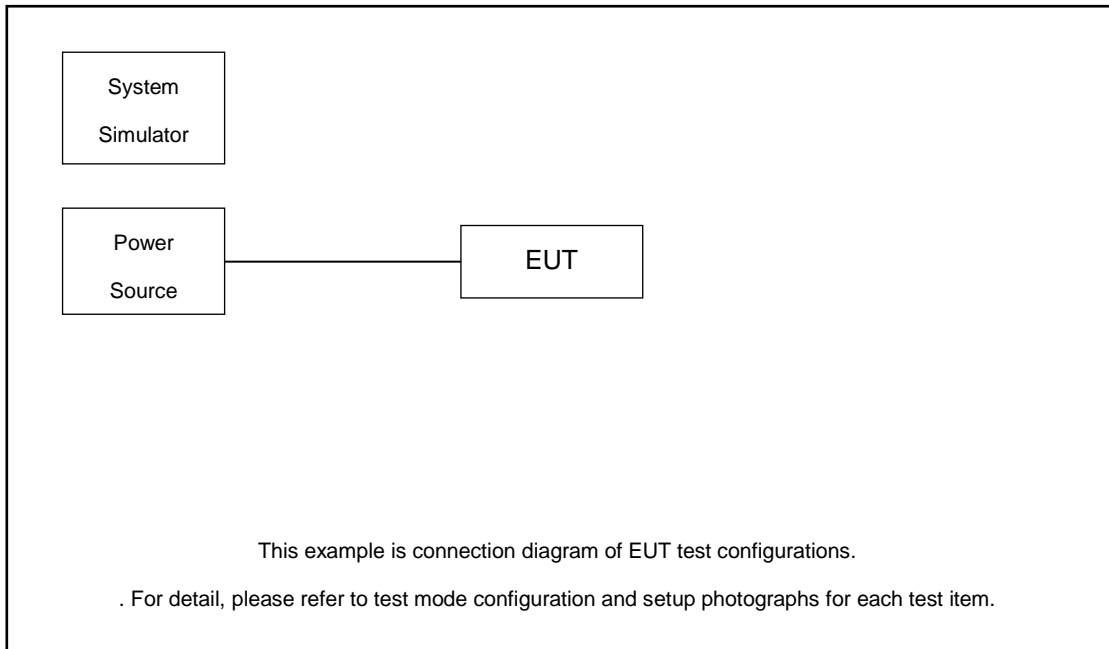
Remark: For radiation spurious emission, the final modulation and the worst data rate was reference the max RF conducted power.

2.3 Connection Diagram of Test System

For Conduction emission



For Radiated emission



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Base station (LTE)	Anritsu	MT8820C	N/A	N/A	Unshielded,1.8m
2.	Bluetooth Earphone	Samsung	EO-MG900	PYAHS-107W	N/A	N/A
3.	WLAN AP	Dlink	DIR-820L	KA2IR820LA1	N/A	Unshielded,1.8m

2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program (QRCT TX Tool) 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 5.56 dB and 10dB attenuator.

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\ &= 5.56 + 10 = 15.56 \text{ (dB)} \end{aligned}$$

3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 CFR 15.407 (a)(11)

The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 megahertz.

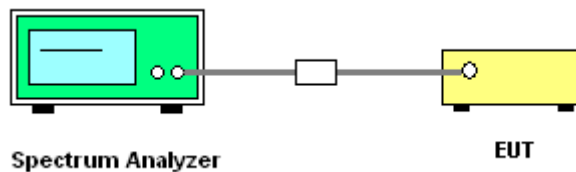
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. 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%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW) $\geq 3 * RBW$.
8. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 26dB & 99% Occupied Bandwidth

Please refer to Appendix A.

3.2 Maximum conducted Output Power and Fundamental Maximum EIRP Measurement

3.2.1 Limit of Fundamental Maximum EIRP

<FCC 14-30 CFR 15.407>

(a)(7) For client devices, except for fixed client devices as defined in this subpart, operating under the control of a standard power access point in 5.925-6.425 GHz and 6.525-6.875 GHz bands, the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm and the device must limit its power to no more than 6 dB below its associated standard power access point's authorized transmit power.

3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

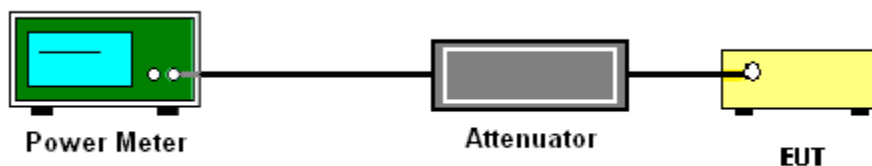
3.2.3 Test Procedures

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.
4. For MIMO mode, the measure-and-sum technique should be used for measuring the in-band transmit power of a device.

3.2.4 Test Setup



3.2.5 Test Result of Fundamental Maximum EIRP

Please refer to Appendix A.



3.3 Fundamental Power Spectral Density Measurement

3.3.1 Limit of Fundamental Power Spectral Density

<FCC 14-30 CFR 15.407>

(a)(7) For client devices, except for fixed client devices as defined in this subpart, operating under the control of a standard power access point in 5.925-6.425 GHz and 6.525-6.875 GHz bands, the maximum power spectral density must not exceed 17 dBm e.i.r.p. in any 1-megahertz band.

3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section F) Maximum power spectral density.

Method SA-2

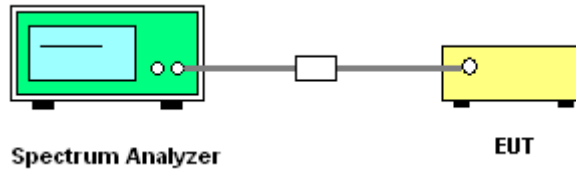
(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW ≥ 3 MHz.
 - Number of points in sweep ≥ 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.
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, attenuator loss and duty factor. Measure the PPSD and record it.
 3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (b): Measure and sum spectral maxima across the outputs.

The measurement on each individual output were performed with the same span and number on each individual output. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 In-Band Emissions (Channel Mask)

3.4.1 Limit of Unwanted Emissions

<FCC 14-30 CFR 15.407>

(b)(7) For transmitters operating within the 5.925-7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

3.4.3 Test Procedures

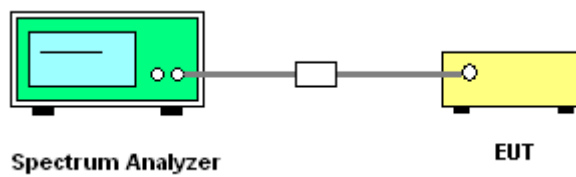
The testing follows FCC KDB 987594 D02 U-NII 6GHz EMC Measurement.

Section J) In-Band Emissions.

1. Take nominal bandwidth as reference channel bandwidth provided that 26 dB emission bandwidth is always larger than nominal bandwidth
2. Measure the power spectral density (which will be used for emissions mask reference) using the following procedure:
 - a) Set the span to encompass the entire 26 dB EBW of the signal.
 - b) Set RBW = same RBW used for 26 dB EBW measurement.
 - c) Set VBW $\geq 3 \times$ RBW
 - d) Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$.
 - e) Sweep time = auto.
 - f) Detector = RMS (i.e., power averaging)
 - g) Trace average at least 100 traces in power averaging (rms) mode.
 - h) Use the peak search function on the instrument to find the peak of the spectrum.
3. Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:
 - a. Suppressed by 20 dB at 1 MHz outside of the channel edge.
 - b. Suppressed by 28 dB at one channel bandwidth from the channel center.

- c. Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
4. Adjust the span to encompass the entire mask as necessary.
5. Clear trace.
6. Trace average at least 100 traces in power averaging (rms) mode.
7. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.

3.4.4 Test Setup



3.4.5 Test Result

Please refer to Appendix A.



3.5 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.5.1 Limit of Unwanted Emissions

- (1) For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of -27 dBm/MHz.

EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27 (RMS)	68.3
- 7 (Peak)	88.3

Unwanted emissions outside of restricted bands are measured with a RMS detector.

In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit

- (2) 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

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

$$E = \frac{1000000\sqrt{30P}}{3} \mu V/m, \text{ where } P \text{ is the eirp (Watts)}$$

3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

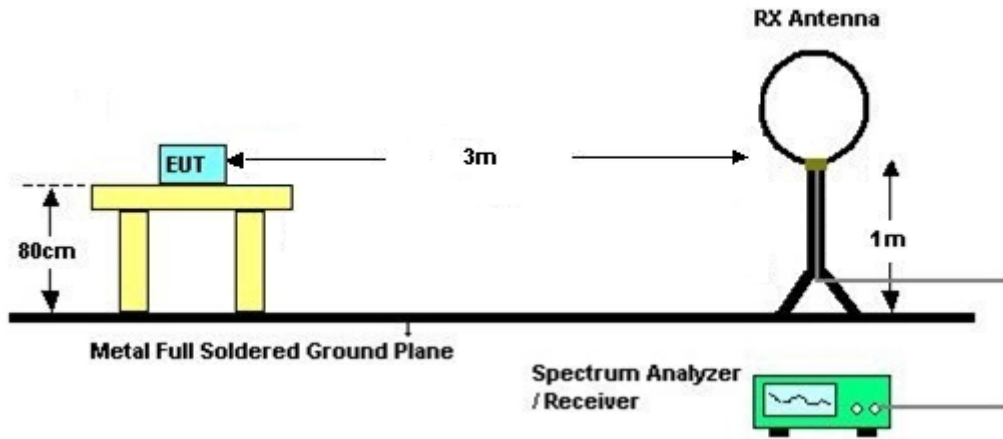


3.5.3 Test Procedures

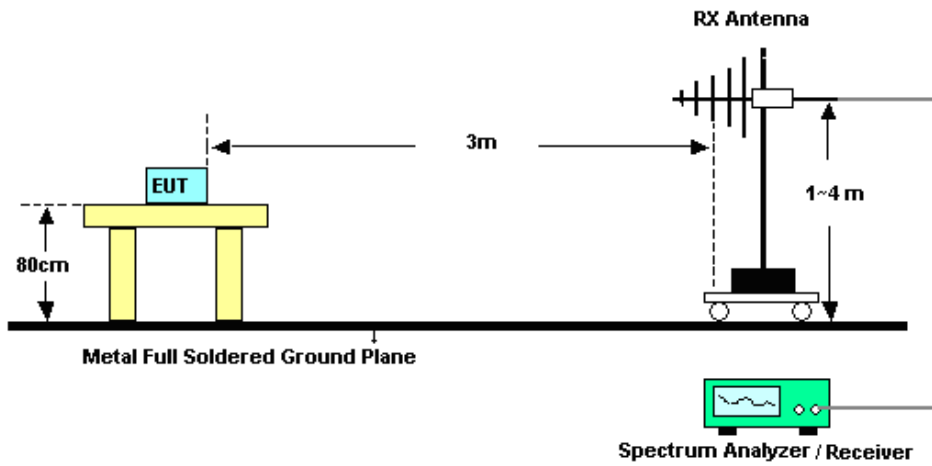
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak 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 and is transmitting at its maximum power control level for the tested mode of operation.
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.

3.5.4 Test Setup

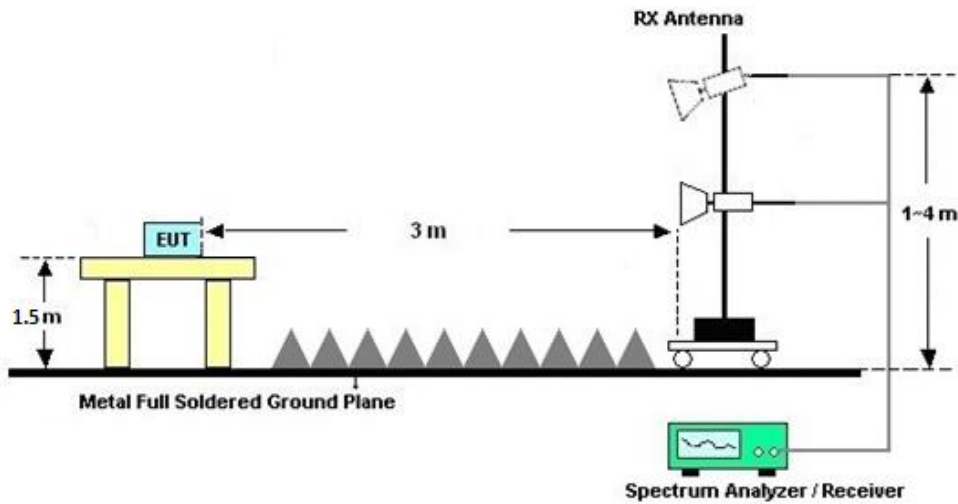
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.5.5 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 adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C

3.5.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix C.

The emission level above 18GHz is checked that the emission level is noise floor only, so it is not reflected in the report.



3.6 AC Conducted Emission Measurement

3.6.1 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.

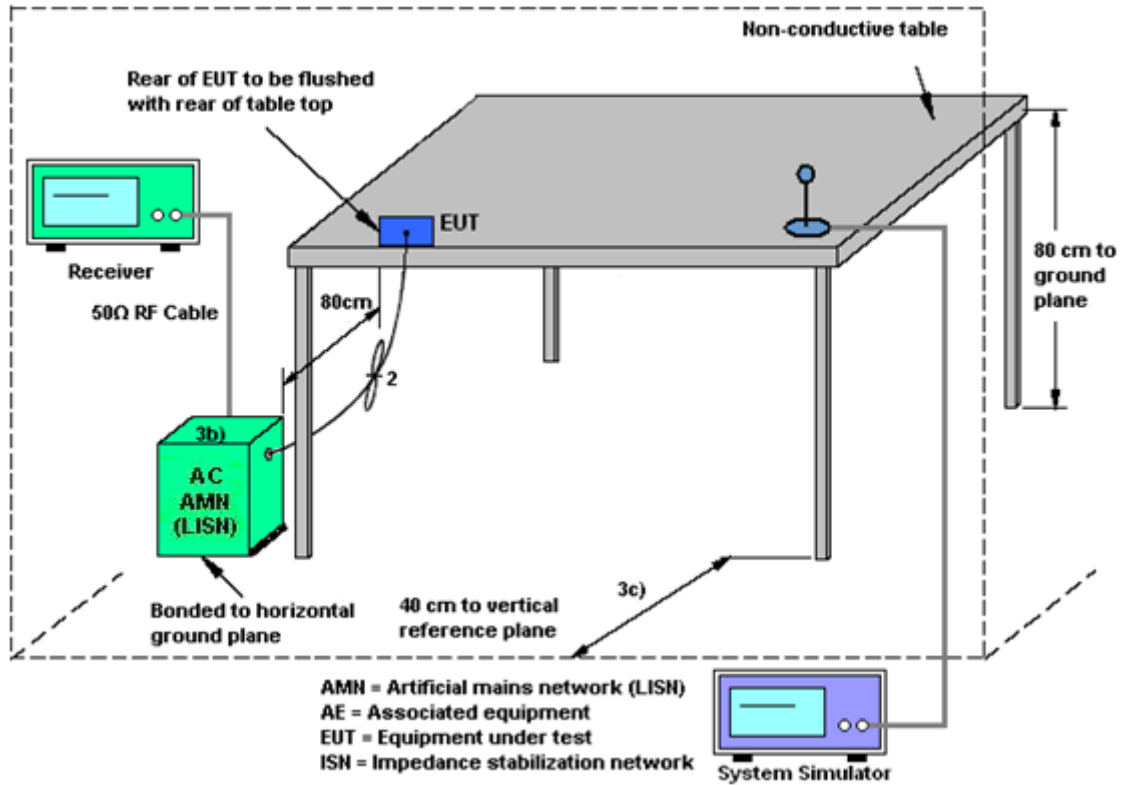
3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

3.6.3 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.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.7 Antenna Requirements

3.7.1 Standard Applicable

§15.203: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used. The EUT complies with the requirement of 15.203.

3.7.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e.,

Directional gain = G_{ANT MAX}(Ant.1 Gain, Ant.2 Gain,...) + Array Gain, as following table for Power, where Array Gain = 0 dB (i.e., no array gain) for N_{ANT} ≤ 4;

For PSD, the directional gain calculation is following,

Directional gain = 10 log[(10^{G₁/20} + 10^{G₂/20} + ... + 10^{G_n/20})² / N_{ANT}] dBi, as following table for PSD.

N_{ANT} = number of transmit antennas

N_{SS} = number of spatial streams. (The worst case directional gain will occur when NSS = 1)

<CDD Modes>				
			DG	DG
			for	for
	Ant. 14	Ant. 15	Power	PSD
	(dBi)	(dBi)	(dBi)	(dBi)
U-NII-5	-1.50	0.50	0.50	2.57
U-NII-7	-4.00	-1.00	-1.00	0.64



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 09, 2024	Aug. 24, 2024~ Sep. 26, 2024	Apr. 08, 2025	Conducted (TH01-SZ)
Pulse Power Sensor	Anritsu	MA2411B	1339473	30MHz~40GHz	Dec. 29, 2023	Aug. 24, 2024~ Sep. 26, 2024	Dec. 28, 2024	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	50MHz Bandwidth	Aug. 20, 2024	Aug. 24, 2024~ Sep. 26, 2024	Aug. 19, 2025	Conducted (TH01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	Apr. 09, 2024	Sep. 03, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	Apr. 09, 2024	Sep. 03, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2E	101141	9kHz~30MHz	Dec. 29, 2023	Sep. 03, 2024	Dec. 28, 2024	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz~2GHz	Aug. 20, 2023	Sep. 03, 2024	Aug. 19, 2025	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	Apr. 09, 2024	Sep. 03, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 03, 2024	Sep. 03, 2024	Jul.02, 2025	Radiation (03CH03-SZ)
SHF-EHF Horn Amplifier	com-power	AH-840	101071	18Ghz~40GHz	Apr. 09, 2024	Sep. 03, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz ~3000MHz	Oct. 18, 2023	Sep. 03, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 18, 2023	Sep. 03, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Dec. 27, 2023	Sep. 03, 2024	Dec. 26, 2024	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010002729	N/A	Oct. 18, 2023	Sep. 03, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Sep. 03, 2024	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Sep. 03, 2024	NCR	Radiation (03CH03-SZ)
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Jul. 04, 2024	Aug. 13, 2024	Jul. 03, 2025	Conduction (CO01-SZ)
AC LISN	R&S	ENV216	100063	9kHz~30MHz	Jul. 04, 2024	Aug. 13, 2024	Jul. 03, 2025	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Oct. 16, 2023	Aug. 13, 2024	Oct. 15, 2024	Conduction (CO01-SZ)
AC Power Source	CHROMA	61601	616010002470	100Vac~250Vac	Dec.25, 2022	Aug. 13, 2024	Dec. 24, 2024	Conduction (CO01-SZ)

NCR: No Calibration Required



5 Measurement Uncertainty

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Spurious Emission & Bandedge	±1.34 dB
Occupied Channel Bandwidth	±0.012 MHz
Conducted Power	±1.34 dB
Conducted Power Spectral Density	±1.32 dB
Frequency	±1.3 Hz
Conducted Generated signal Levels	±0.62 dB
Conducted Time	0.38%

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.5 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0 dB
---	--------

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.9 dB
---	--------

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0 dB
---	--------

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



Appendix A. Conducted Test Results

A1. Conducted Test Results

Test Engineer:	Chen ZhiQiang	Temperature:	21~25	°C
Test Date:	2024/8/24--2024/9/26	Relative Humidity:	51~54	%

TEST RESULTS DATA
EIRP Power Table

Band V MIMO															
Mod.	Data Rate	NTX	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
				Ant 14	Ant 15	Ant 14	Ant 15	SUM	Ant 14	Ant 15				SUM	Ant 14
11a	6Mbps	2	5955	0.06	0.06	-1.67	0.54	2.58	0.50	0.50	3.08	30.00	Pass	-2.5	
11a	6Mbps	2	6175	0.06	0.06	-2.75	0.76	2.36	0.50	0.50	2.86	30.00	Pass	-3.5	
11a	6Mbps	2	6415	0.06	0.06	0.08	-0.43	2.84	0.50	0.50	3.34	30.00	Pass	-2.5	

TEST RESULTS DATA
EIRP Power Table

Band VII MIMO													
Mod.	Data Rate	NTX	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
				Ant 14	Ant 15	Ant 14	Ant 15	SUM	Ant 14	Ant 15			
11a	6Mbps	2	6535	0.06	0.06	2.58	2.31	5.46	-1.00	-1.00	4.46	30.00	Pass
11a	6Mbps	2	6695	0.06	0.06	2.01	3.32	5.72	-1.00	-1.00	4.72	30.00	Pass
11a	6Mbps	2	6855	0.06	0.06	1.39	3.23	5.42	-1.00	-1.00	4.42	30.00	Pass

Power Setting	
Ant 14	Ant 15
0	0
-1	-1
0	0

TEST RESULTS DATA
EIRP Power Table

Band V MIMO														
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
					Ant 14	Ant 15	Ant 14	Ant 15	SUM	Ant 14	Ant 15			
AX20	MCS0	2	5955	Full	0.00	0.00	-1.79	0.41	2.46	0.50	2.96	30.00	Pass	
AX20	MCS0	2	6175	Full	0.00	0.00	-2.70	0.76	2.38	0.50	2.88	30.00	Pass	
AX20	MCS0	2	6415	Full	0.00	0.00	-0.48	-0.95	2.30	0.50	2.80	30.00	Pass	
AX40	MCS0	2	5965	Full	0.00	0.00	-2.07	0.41	2.35	0.50	2.85	30.00	Pass	
AX40	MCS0	2	6165	Full	0.00	0.00	-2.61	0.74	2.39	0.50	2.89	30.00	Pass	
AX40	MCS0	2	6405	Full	0.00	0.00	-0.37	-0.54	2.56	0.50	3.06	30.00	Pass	
AX80	MCS0	2	5985	Full	0.00	0.00	3.98	6.26	8.28	0.50	8.78	30.00	Pass	
AX80	MCS0	2	6145	Full	0.00	0.00	2.94	6.95	8.40	0.50	8.90	30.00	Pass	
AX80	MCS0	2	6385	Full	0.00	0.00	6.32	4.67	8.58	0.50	9.08	30.00	Pass	
AX160	MCS0	2	6025	Full	0.00	0.00	7.49	7.78	10.65	0.50	11.15	30.00	Pass	
AX160	MCS0	2	6185	Full	0.00	0.00	7.45	8.09	10.79	0.50	11.29	30.00	Pass	
AX160	MCS0	2	6345	Full	0.00	0.00	8.19	7.39	10.82	0.50	11.32	30.00	Pass	

Power Setting	
Ant 14	Ant 15
-2	
-3	
-2.5	
-1.5	
-2.5	
-1.5	
3	
2.5	
3	
9	
7.5	
7.5	

TEST RESULTS DATA
EIRP Power Table

Band VII MIMO															
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
					Ant 14	Ant 15	Ant 14	Ant 15	SUM	Ant 14	Ant 15				SUM
AX20	MCS0	2	6535	Full	0.00	0.00	2.55	2.25	5.41	-1.00		4.41	30.00	Pass	0.5
AX20	MCS0	2	6695	Full	0.00	0.00	1.99	3.29	5.70	-1.00		4.70	30.00	Pass	-0.5
AX20	MCS0	2	6855	Full	0.00	0.00	1.33	3.19	5.37	-1.00		4.37	30.00	Pass	0.5
AX40	MCS0	2	6565	Full	0.00	0.00	3.28	2.35	5.85	-1.00		4.85	30.00	Pass	1.5
AX40	MCS0	2	6685	Full	0.00	0.00	2.42	3.38	5.94	-1.00		4.94	30.00	Pass	1.5
AX40	MCS0	2	6845	Full	0.00	0.00	1.47	3.72	5.75	-1.00		4.75	30.00	Pass	1
AX80	MCS0	2	6625	Full	0.00	0.00	8.70	7.82	11.29	-1.00		10.29	30.00	Pass	7.5
AX80	MCS0	2	6705	Full	0.00	0.00	8.76	8.03	11.42	-1.00		10.42	30.00	Pass	7.5
AX80	MCS0	2	6785	Full	0.00	0.00	8.83	8.05	11.47	-1.00		10.47	30.00	Pass	7.5
AX160	MCS0	2	6665	Full	0.00	0.00	10.78	10.41	13.61	-1.00		12.61	30.00	Pass	10

TEST RESULTS DATA
EIRP Power Table

Band V MIMO														
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
					Ant 14	Ant 15	Ant 14	Ant 15	SUM	Ant 14	Ant 15			
BE20	MCS0	2	5955	Full	0.00	0.00	-1.69	0.51	2.56	0.50	3.06	30.00	Pass	
BE20	MCS0	2	6175	Full	0.00	0.00	-2.60	0.86	2.48	0.50	2.98	30.00	Pass	
BE20	MCS0	2	6415	Full	0.00	0.00	-0.38	-0.85	2.40	0.50	2.90	30.00	Pass	
BE40	MCS0	2	5965	Full	0.00	0.00	-1.97	0.51	2.45	0.50	2.95	30.00	Pass	
BE40	MCS0	2	6165	Full	0.00	0.00	-2.51	0.84	2.49	0.50	2.99	30.00	Pass	
BE40	MCS0	2	6405	Full	0.00	0.00	-0.27	-0.44	2.66	0.50	3.16	30.00	Pass	
BE80	MCS0	2	5985	Full	0.00	0.00	4.08	6.36	8.38	0.50	8.88	30.00	Pass	
BE80	MCS0	2	6145	Full	0.00	0.00	3.04	7.05	8.50	0.50	9.00	30.00	Pass	
BE80	MCS0	2	6385	Full	0.00	0.00	6.42	4.77	8.68	0.50	9.18	30.00	Pass	
BE160	MCS0	2	6025	Full	0.00	0.00	7.59	7.88	10.75	0.50	11.25	30.00	Pass	
BE160	MCS0	2	6185	Full	0.00	0.00	7.55	8.19	10.89	0.50	11.39	30.00	Pass	
BE160	MCS0	2	6345	Full	0.00	0.00	8.29	7.49	10.92	0.50	11.42	30.00	Pass	
BE320	MCS0	2	6105	Full	0.00	0.00	12.52	12.61	15.58	0.50	16.08	30.00	Pass	
BE320	MCS0	2	6265	Full	0.00	0.00	12.78	12.18	15.50	0.50	16.00	30.00	Pass	

Power Setting	
Ant 14	Ant 15
-2	
-3	
-2.5	
-1.5	
-2.5	
-1.5	
3	
2.5	
3	
9	
7.5	
7.5	
11	
11	

TEST RESULTS DATA
EIRP Power Table

Band VII MIMO															
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
					Ant 14	Ant 15	Ant 14	Ant 15	SUM	Ant 14	Ant 15				SUM
BE20	MCS0	2	6535	Full	0.00	0.00	2.65	2.35	5.51	-1.00		4.51	30.00	Pass	0.5
BE20	MCS0	2	6695	Full	0.00	0.00	2.09	3.39	5.80	-1.00		4.80	30.00	Pass	-0.5
BE20	MCS0	2	6855	Full	0.00	0.00	1.43	3.29	5.47	-1.00		4.47	30.00	Pass	0.5
BE40	MCS0	2	6565	Full	0.00	0.00	3.38	2.45	5.95	-1.00		4.95	30.00	Pass	1.5
BE40	MCS0	2	6685	Full	0.00	0.00	2.52	3.48	6.04	-1.00		5.04	30.00	Pass	1.5
BE40	MCS0	2	6845	Full	0.00	0.00	1.57	3.82	5.85	-1.00		4.85	30.00	Pass	1
BE80	MCS0	2	6625	Full	0.00	0.00	8.80	7.92	11.39	-1.00		10.39	30.00	Pass	7.5
BE80	MCS0	2	6705	Full	0.00	0.00	8.86	8.13	11.52	-1.00		10.52	30.00	Pass	7.5
BE80	MCS0	2	6785	Full	0.00	0.00	8.93	8.15	11.57	-1.00		10.57	30.00	Pass	7.5
BE160	MCS0	2	6665	Full	0.00	0.00	10.88	10.51	13.71	-1.00		12.71	30.00	Pass	10



Emission Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	26dB EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A-CDD	Ant14	5955	21.80	5944.00	5965.80	≤320	PASS
	Ant15	5955	21.40	5944.40	5965.80	≤320	PASS
	Ant14	6175	21.30	6164.30	6185.60	≤320	PASS
	Ant15	6175	21.60	6164.10	6185.70	≤320	PASS
	Ant14	6415	21.70	6404.10	6425.80	≤320	PASS
	Ant15	6415	21.50	6404.30	6425.80	≤320	PASS
	Ant14	6535	21.60	6524.00	6545.60	≤320	PASS
	Ant15	6535	21.30	6524.20	6545.50	≤320	PASS
	Ant14	6695	21.60	6684.00	6705.60	≤320	PASS
	Ant15	6695	21.80	6684.00	6705.80	≤320	PASS
	Ant14	6855	21.30	6844.50	6865.80	≤320	PASS
	Ant15	6855	21.40	6844.20	6865.60	≤320	PASS
11AX20MIMO	Ant14	5955	22.00	5944.10	5966.10	≤320	PASS
	Ant15	5955	22.10	5943.80	5965.90	≤320	PASS
	Ant14	6175	22.30	6163.80	6186.10	≤320	PASS
	Ant15	6175	22.40	6163.70	6186.10	≤320	PASS
	Ant14	6415	22.50	6403.80	6426.30	≤320	PASS
	Ant15	6415	22.10	6403.80	6425.90	≤320	PASS
	Ant14	6535	23.10	6523.10	6546.20	≤320	PASS
	Ant15	6535	22.20	6523.90	6546.10	≤320	PASS
	Ant14	6695	22.30	6683.80	6706.10	≤320	PASS
	Ant15	6695	22.60	6683.70	6706.30	≤320	PASS
	Ant14	6855	22.70	6843.80	6866.50	≤320	PASS
	Ant15	6855	22.50	6843.80	6866.30	≤320	PASS
11AX40MIMO	Ant14	5965	43.00	5943.80	5986.80	≤320	PASS
	Ant15	5965	43.00	5943.20	5986.20	≤320	PASS
	Ant14	6165	44.00	6143.00	6187.00	≤320	PASS
	Ant15	6165	43.20	6143.60	6186.80	≤320	PASS
	Ant14	6405	42.20	6384.00	6426.20	≤320	PASS
	Ant15	6405	42.60	6383.60	6426.20	≤320	PASS
	Ant14	6565	43.20	6543.60	6586.80	≤320	PASS
	Ant15	6565	44.40	6542.80	6587.20	≤320	PASS
	Ant14	6685	42.60	6663.60	6706.20	≤320	PASS
	Ant15	6685	43.20	6663.40	6706.60	≤320	PASS
	Ant14	6845	43.00	6823.80	6866.80	≤320	PASS
	Ant15	6845	43.80	6823.60	6867.40	≤320	PASS
11AX80MIMO	Ant14	5985	89.20	5941.40	6030.60	≤320	PASS



	Ant15	5985	85.20	5942.20	6027.40	≤320	PASS
	Ant14	6145	86.80	6101.00	6187.80	≤320	PASS
	Ant15	6145	88.00	6101.00	6189.00	≤320	PASS
	Ant14	6385	85.60	6342.20	6427.80	≤320	PASS
	Ant15	6385	88.40	6341.40	6429.80	≤320	PASS
	Ant14	6625	83.60	6583.00	6666.60	≤320	PASS
	Ant15	6625	84.40	6582.20	6666.60	≤320	PASS
	Ant14	6705	86.00	6661.80	6747.80	≤320	PASS
	Ant15	6705	84.80	6662.20	6747.00	≤320	PASS
	Ant14	6785	86.80	6741.00	6827.80	≤320	PASS
	Ant15	6785	84.00	6741.80	6825.80	≤320	PASS
11AX160MIMO	Ant14	6025	180.00	5935.40	6115.40	≤320	PASS
	Ant15	6025	177.60	5935.40	6113.00	≤320	PASS
	Ant14	6185	177.60	6096.20	6273.80	≤320	PASS
	Ant15	6185	176.80	6097.00	6273.80	≤320	PASS
	Ant14	6345	176.80	6257.00	6433.80	≤320	PASS
	Ant15	6345	176.80	6255.40	6432.20	≤320	PASS
	Ant14	6665	176.80	6576.20	6753.00	≤320	PASS
	Ant15	6665	177.60	6575.40	6753.00	≤320	PASS
11BE20MIMO	Ant14	5955	22.20	5944.00	5966.20	≤320	PASS
	Ant15	5955	22.80	5943.50	5966.30	≤320	PASS
	Ant14	6175	22.20	6164.00	6186.20	≤320	PASS
	Ant15	6175	22.20	6163.80	6186.00	≤320	PASS
	Ant14	6415	22.20	6403.80	6426.00	≤320	PASS
	Ant15	6415	22.20	6404.00	6426.20	≤320	PASS
	Ant14	6535	22.60	6523.50	6546.10	≤320	PASS
	Ant15	6535	22.40	6524.00	6546.40	≤320	PASS
	Ant14	6695	22.50	6683.80	6706.30	≤320	PASS
	Ant15	6695	22.70	6683.50	6706.20	≤320	PASS
	Ant14	6855	22.30	6843.90	6866.20	≤320	PASS
	Ant15	6855	22.70	6843.60	6866.30	≤320	PASS
11BE40MIMO	Ant14	5965	42.60	5943.80	5986.40	≤320	PASS
	Ant15	5965	43.60	5943.40	5987.00	≤320	PASS
	Ant14	6165	43.60	6143.20	6186.80	≤320	PASS
	Ant15	6165	43.80	6143.00	6186.80	≤320	PASS
	Ant14	6405	43.60	6383.20	6426.80	≤320	PASS
	Ant15	6405	42.80	6383.60	6426.40	≤320	PASS
	Ant14	6565	42.40	6543.80	6586.20	≤320	PASS
	Ant15	6565	43.20	6543.20	6586.40	≤320	PASS
	Ant14	6685	44.60	6662.80	6707.40	≤320	PASS
	Ant15	6685	42.20	6664.20	6706.40	≤320	PASS
	Ant14	6845	43.60	6822.80	6866.40	≤320	PASS



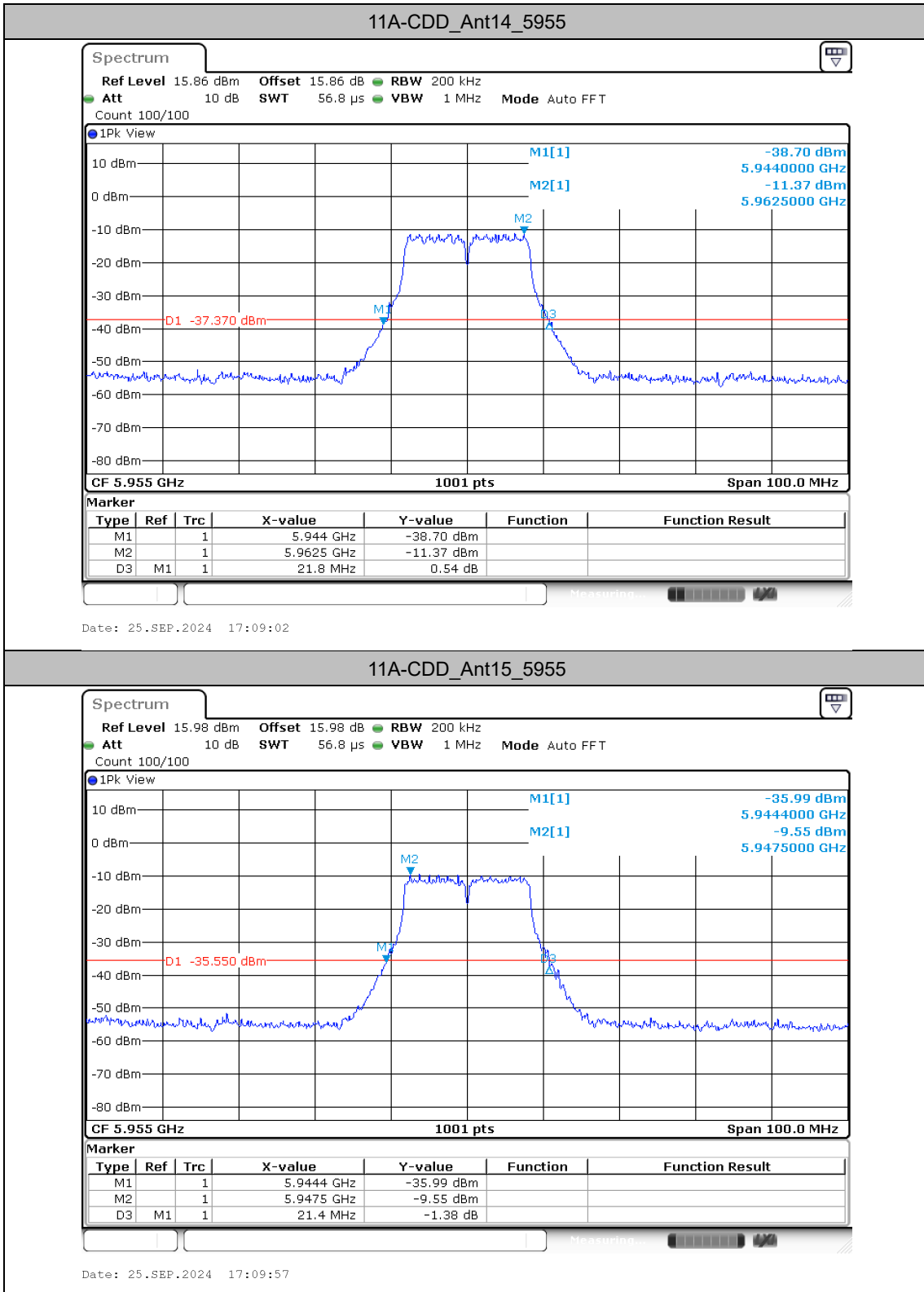
	Ant15	6845	43.20	6823.00	6866.20	≤320	PASS
11BE80MIMO	Ant14	5985	86.40	5941.00	6027.40	≤320	PASS
	Ant15	5985	87.20	5940.60	6027.80	≤320	PASS
	Ant14	6145	86.80	6101.40	6188.20	≤320	PASS
	Ant15	6145	90.40	6100.20	6190.60	≤320	PASS
	Ant14	6385	87.20	6340.60	6427.80	≤320	PASS
	Ant15	6385	88.80	6340.60	6429.40	≤320	PASS
	Ant14	6625	86.00	6583.00	6669.00	≤320	PASS
	Ant15	6625	84.00	6583.40	6667.40	≤320	PASS
	Ant14	6705	86.40	6661.40	6747.80	≤320	PASS
	Ant15	6705	86.00	6661.80	6747.80	≤320	PASS
	Ant14	6785	84.00	6741.80	6825.80	≤320	PASS
	Ant15	6785	86.00	6742.20	6828.20	≤320	PASS
11BE160MIMO	Ant14	6025	180.80	5935.40	6116.20	≤320	PASS
	Ant15	6025	176.00	5937.00	6113.00	≤320	PASS
	Ant14	6185	179.20	6095.40	6274.60	≤320	PASS
	Ant15	6185	178.40	6096.20	6274.60	≤320	PASS
	Ant14	6345	179.20	6257.00	6436.20	≤320	PASS
	Ant15	6345	176.00	6257.00	6433.00	≤320	PASS
	Ant14	6665	176.80	6576.20	6753.00	≤320	PASS
Ant15	6665	176.00	6576.20	6752.20	≤320	PASS	
11BE320MIMO	Ant14	6105	352.00	5929.00	6281.00	-	-
	Ant15	6105	353.60	5929.00	6282.60	-	-
	Ant14	6265	348.80	6090.60	6439.40	-	-
	Ant15	6265	348.80	6090.60	6439.40	-	-

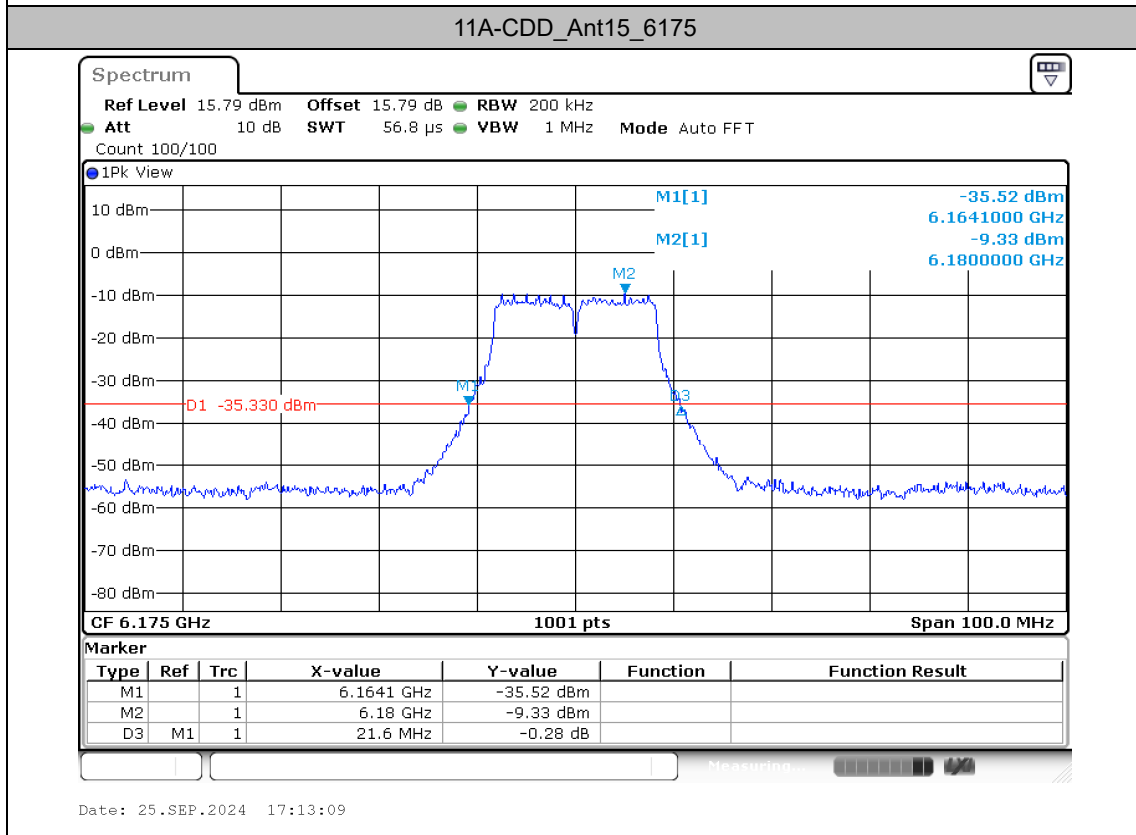
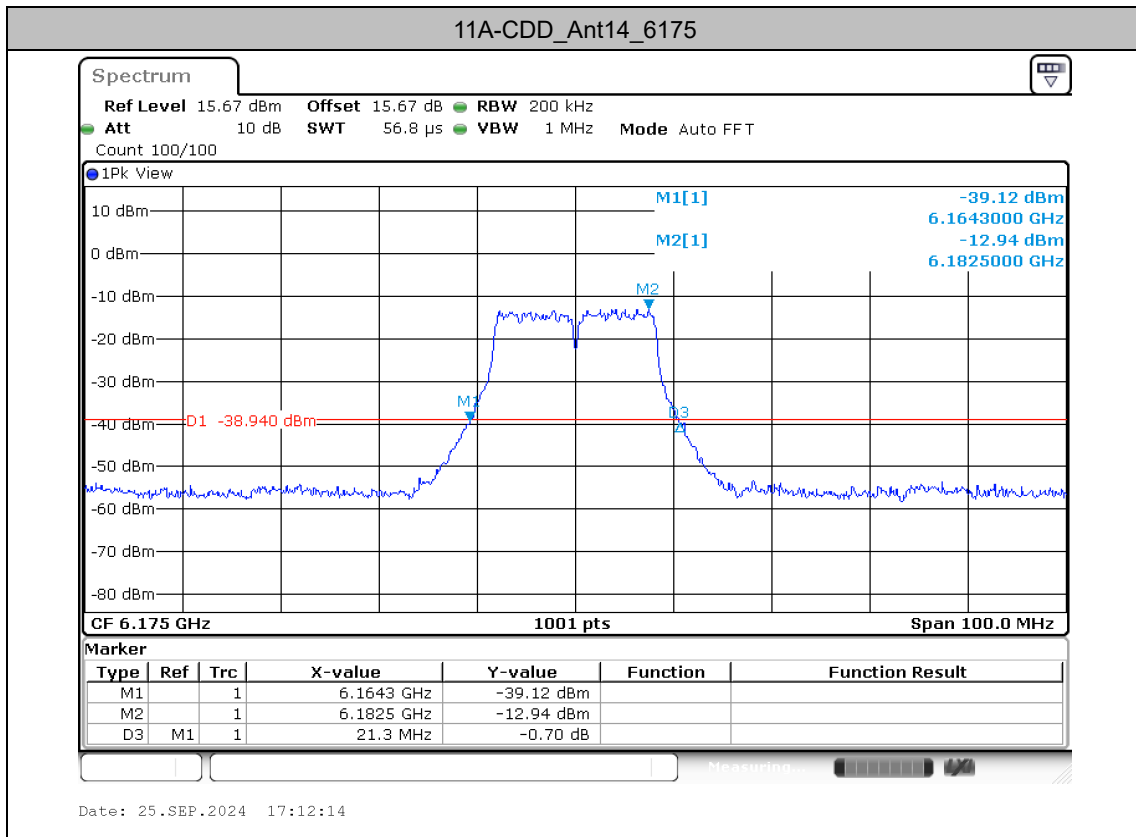
Note1: For channels with a nominal bandwidth of 320MHz, compliance is demonstrated by way of the 99%BW.

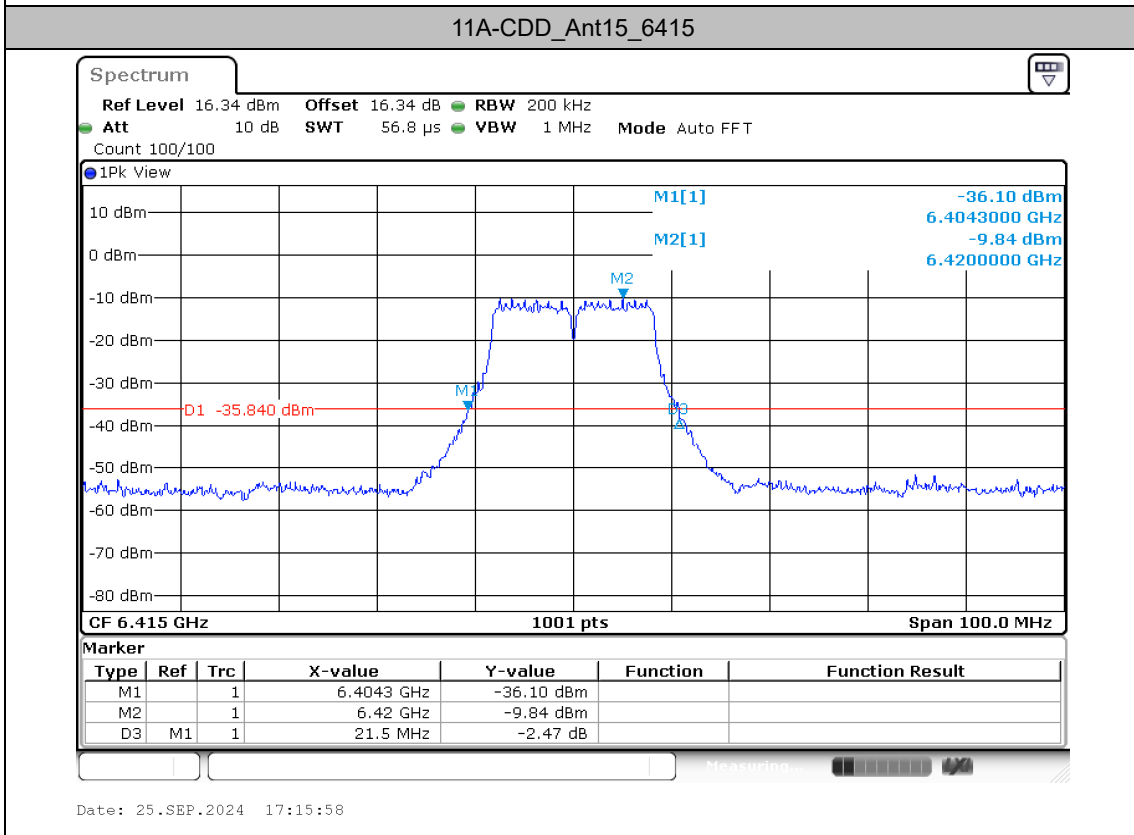
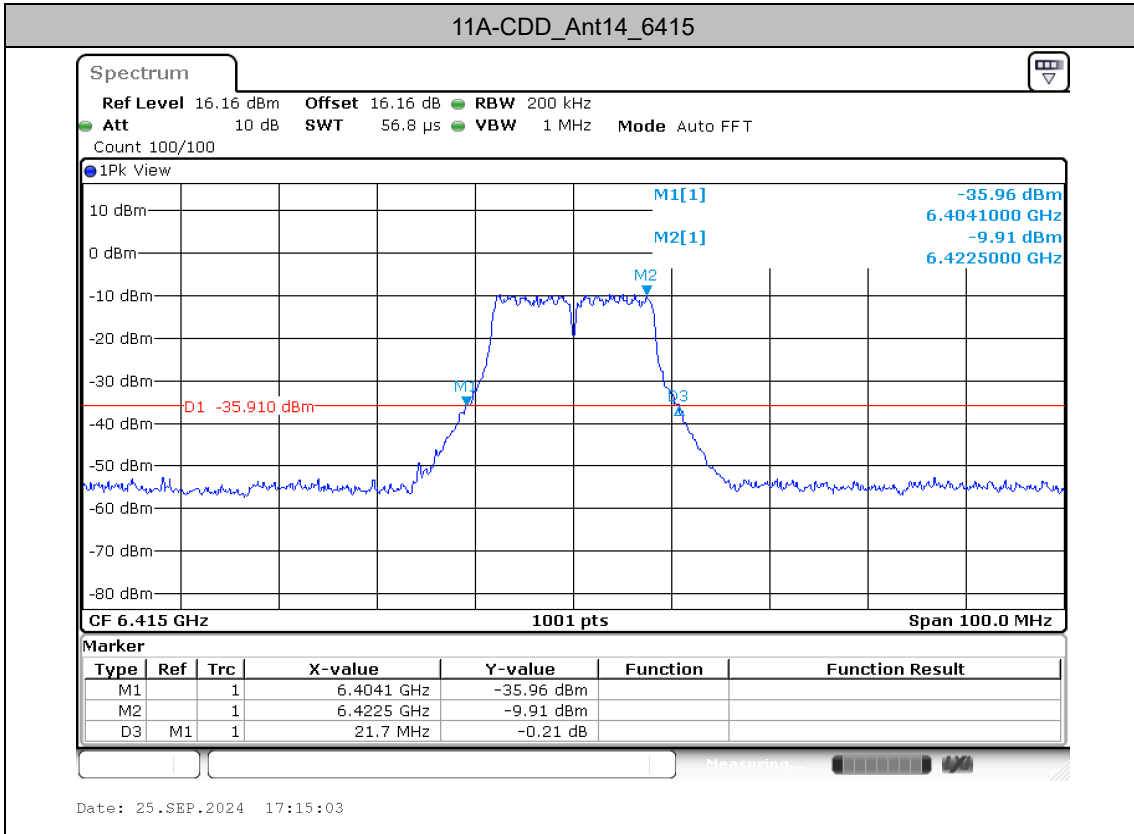
Note2: For channels with a nominal bandwidth less than 320MHz(e.g 20,40,80,160MHz), compliance is demonstrated by way of the 26dB EBW.

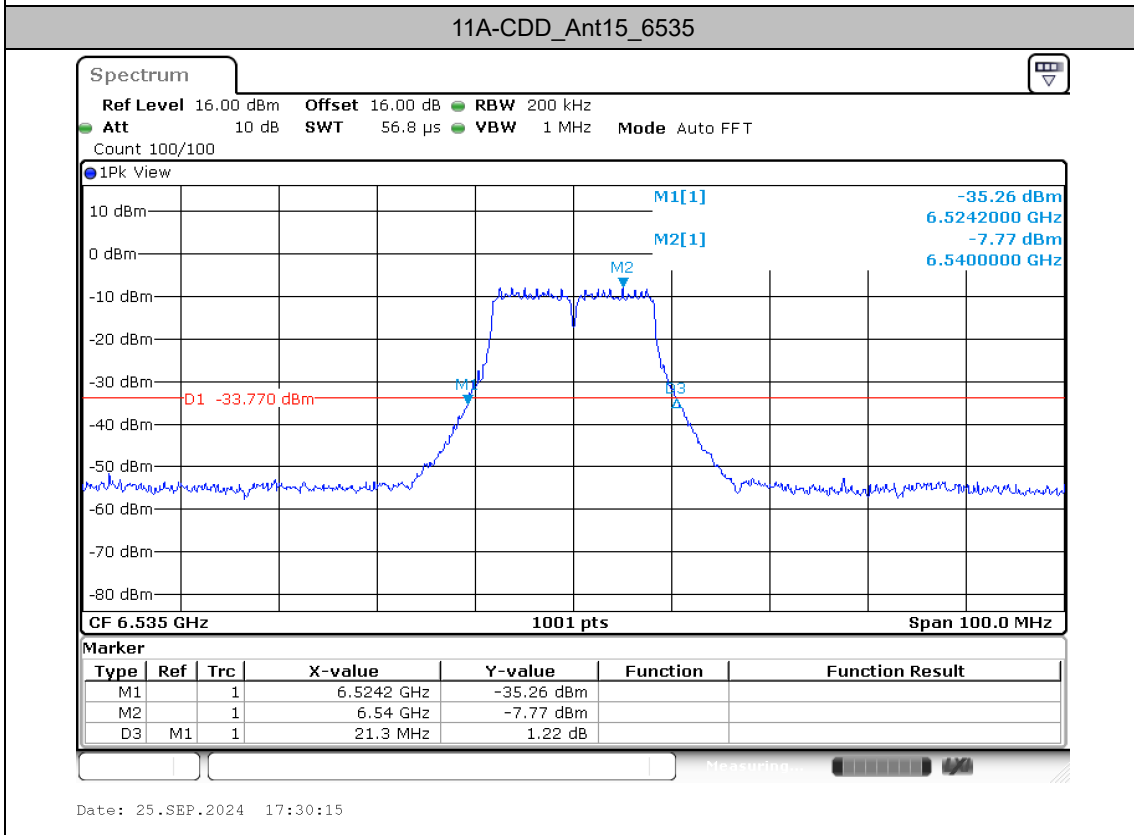
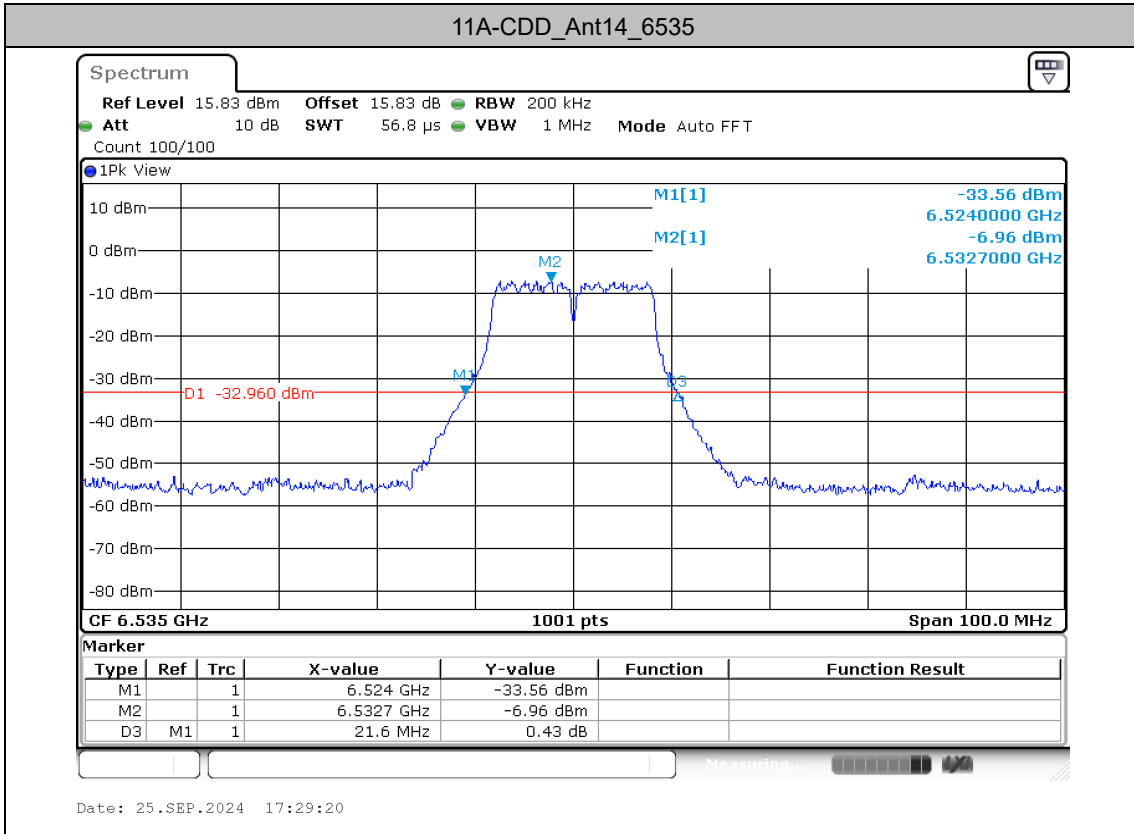


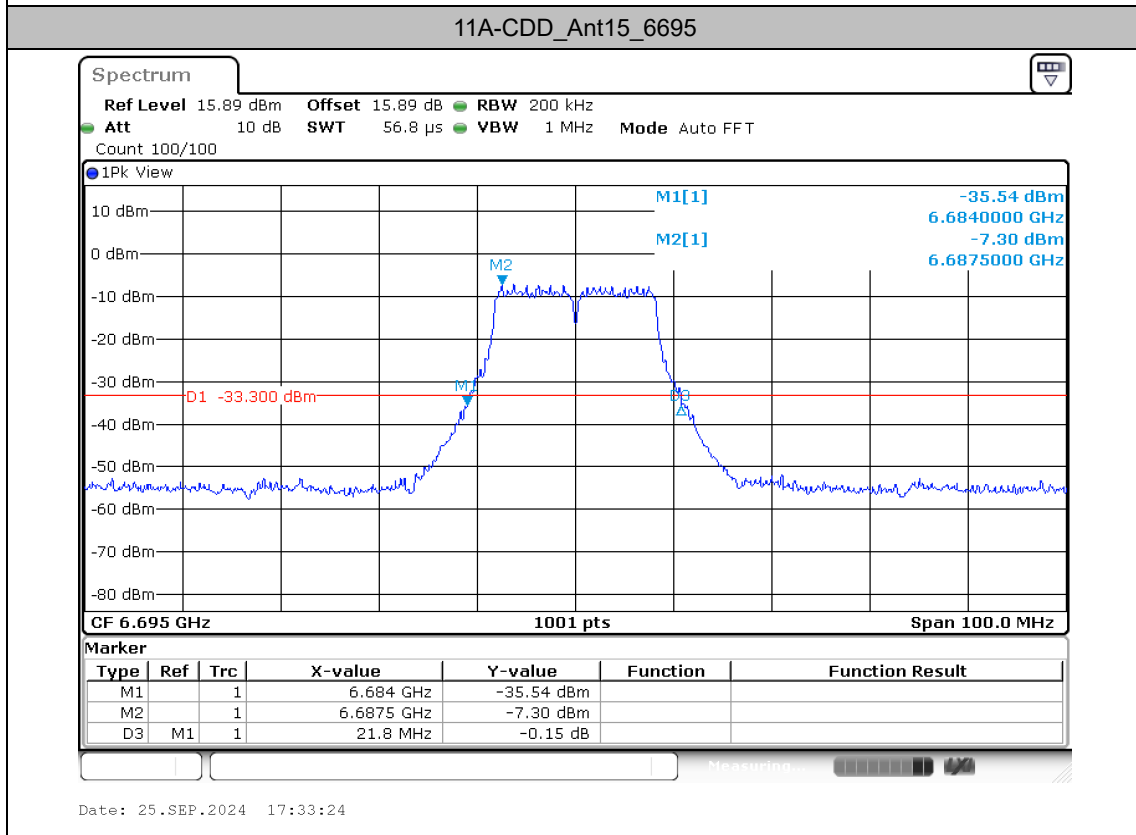
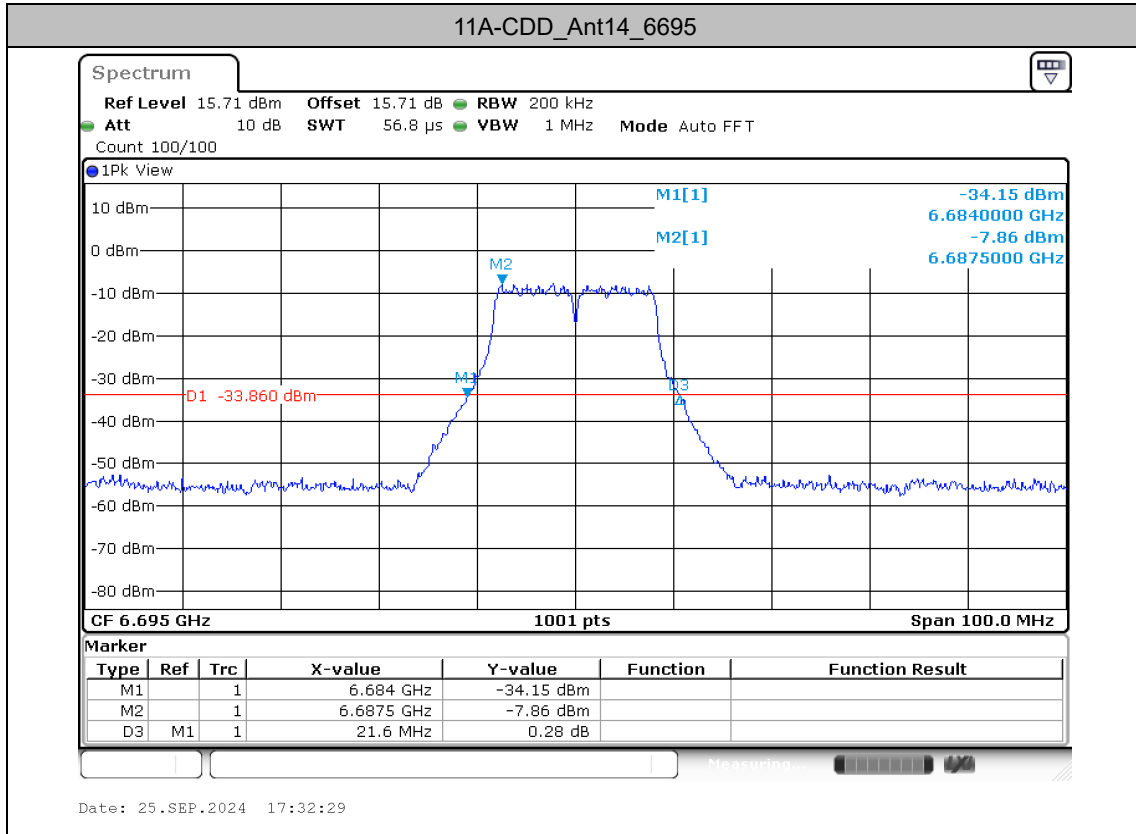
Test Graphs

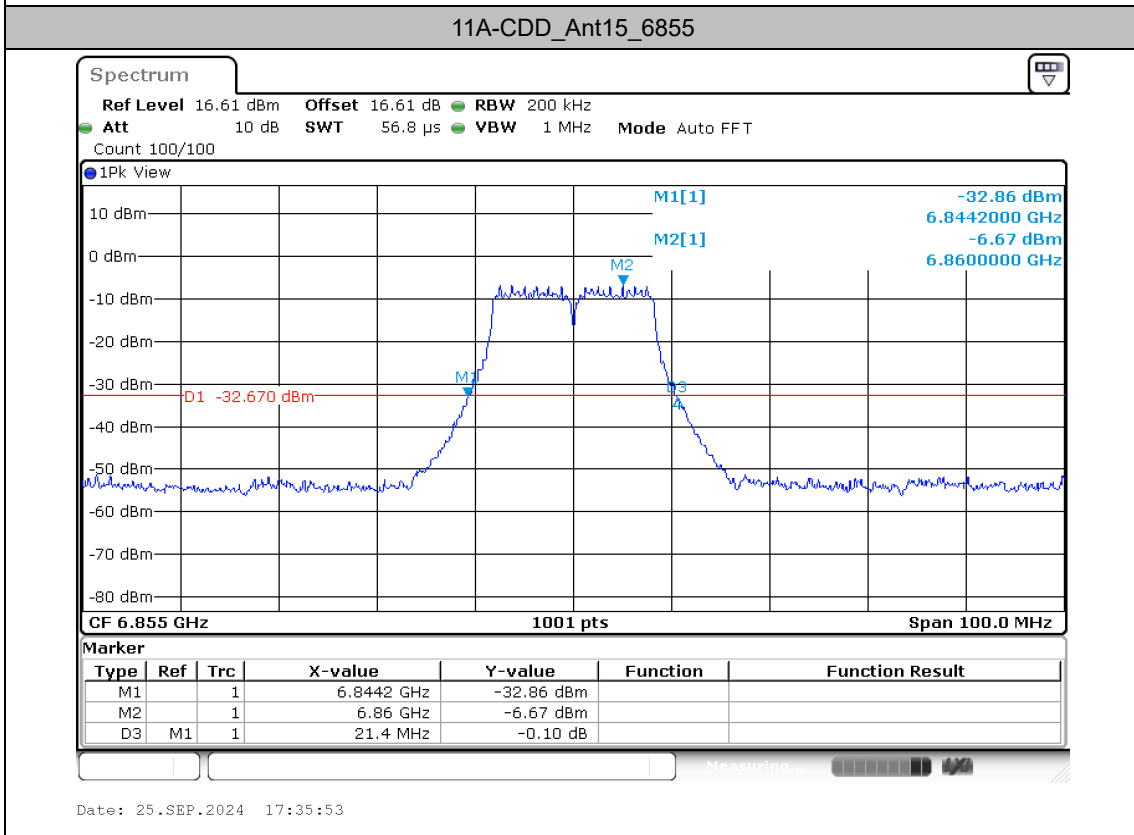
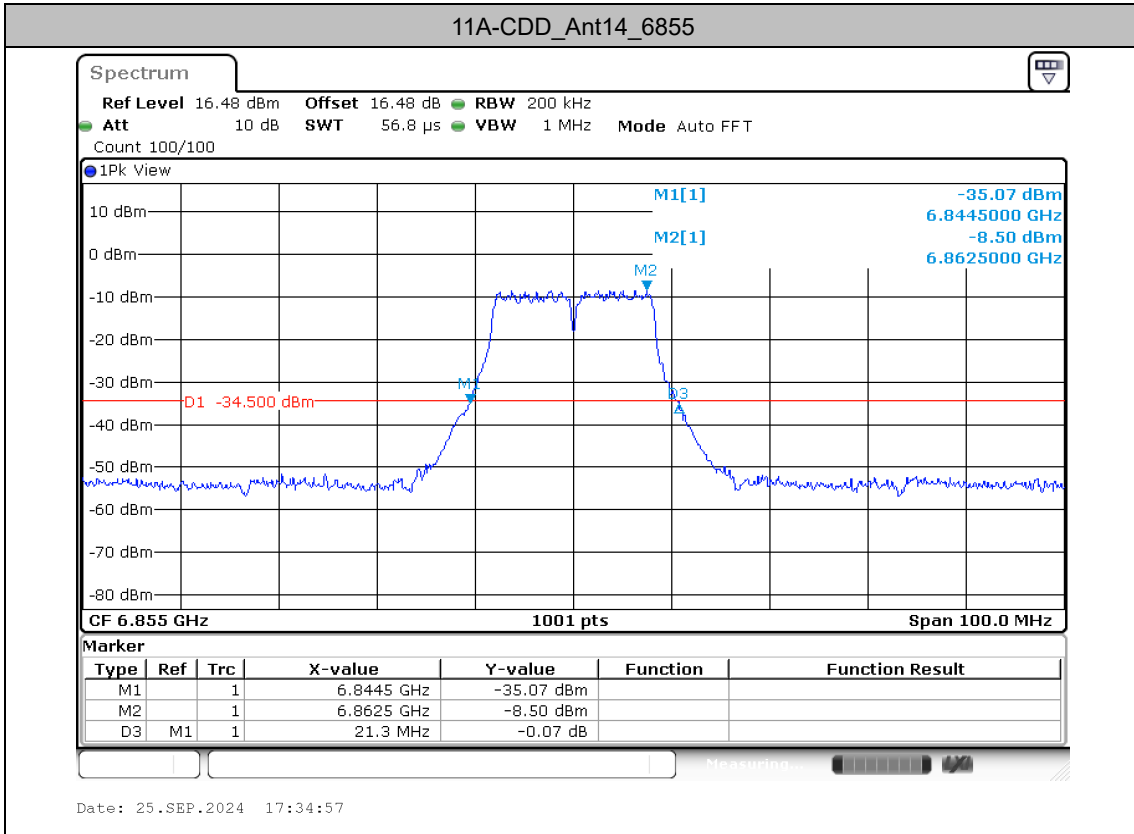


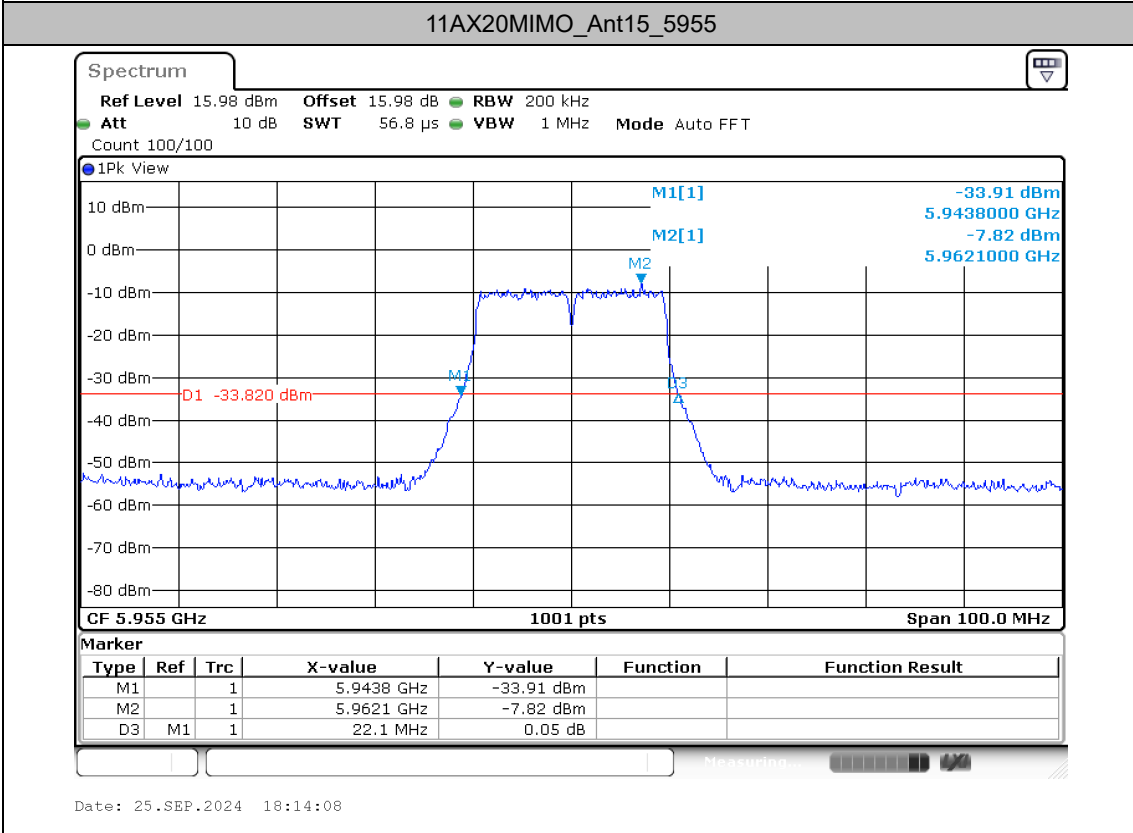
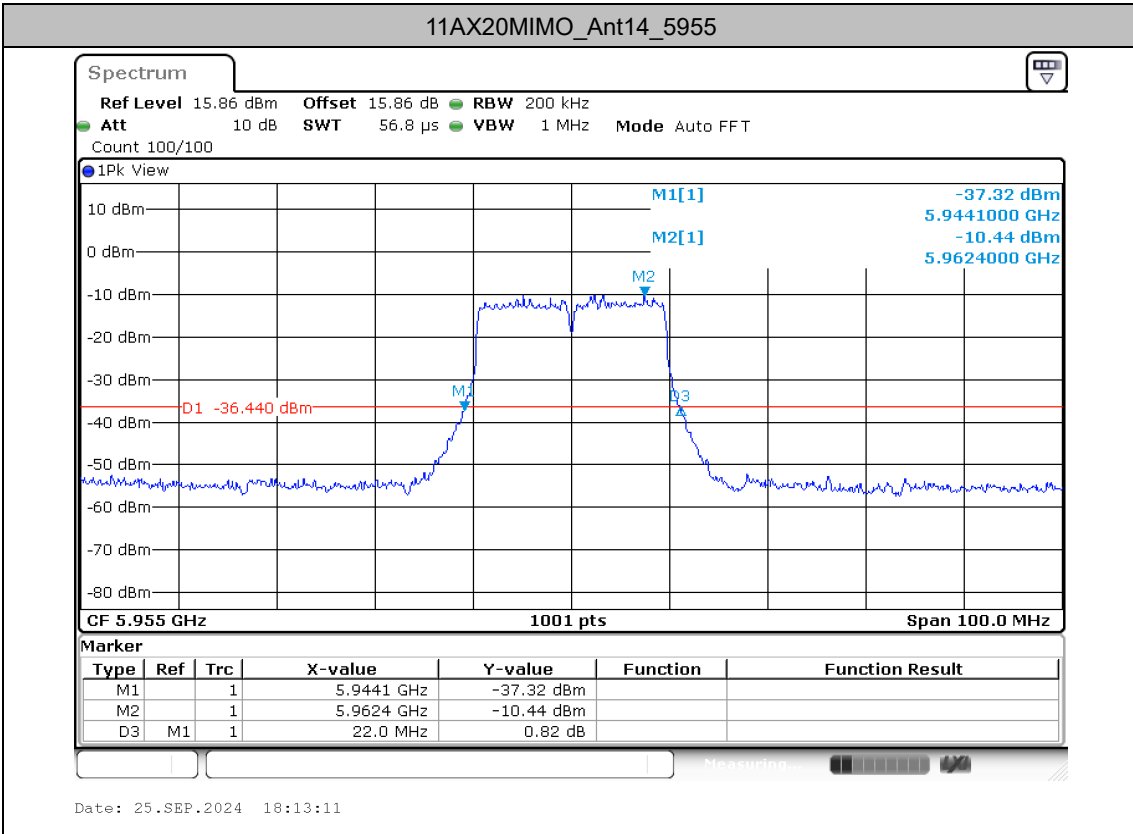


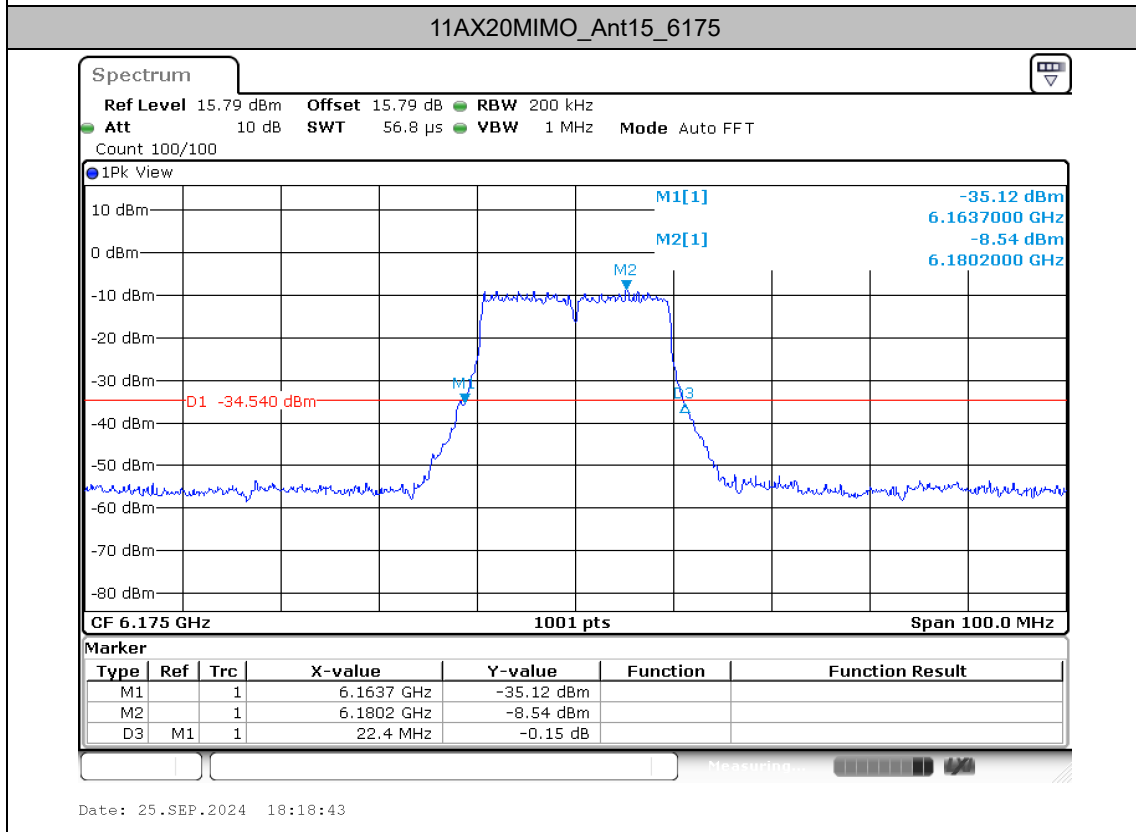
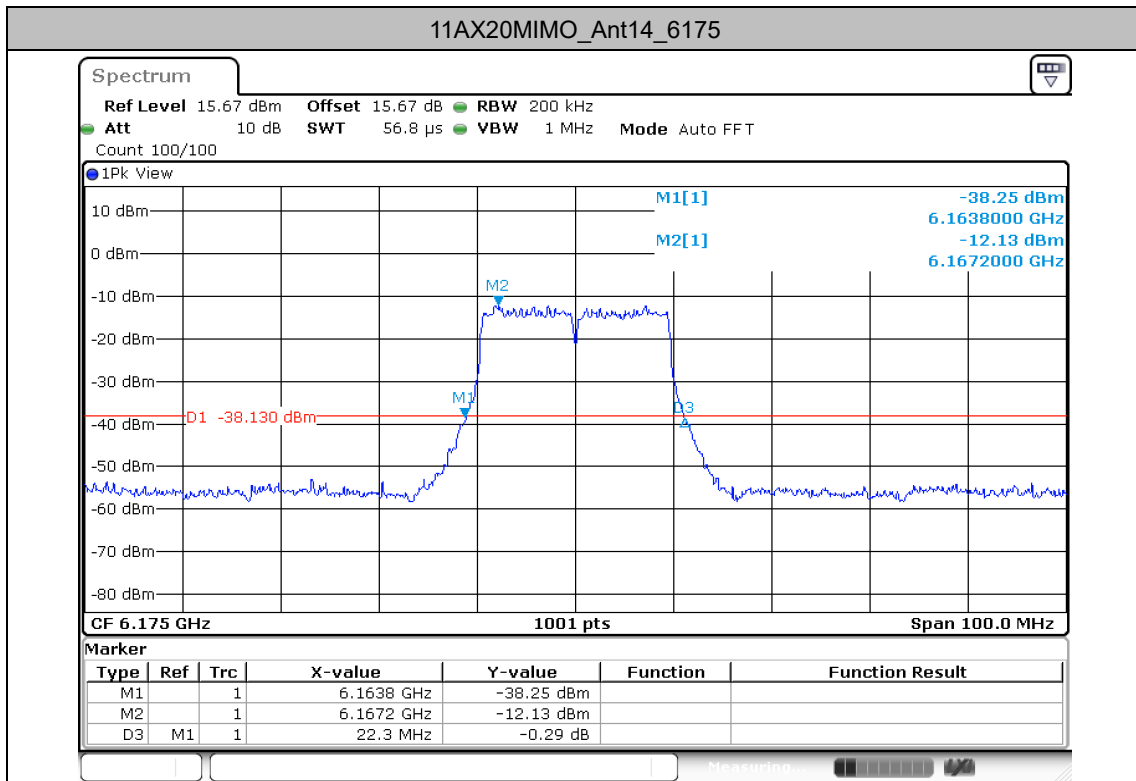


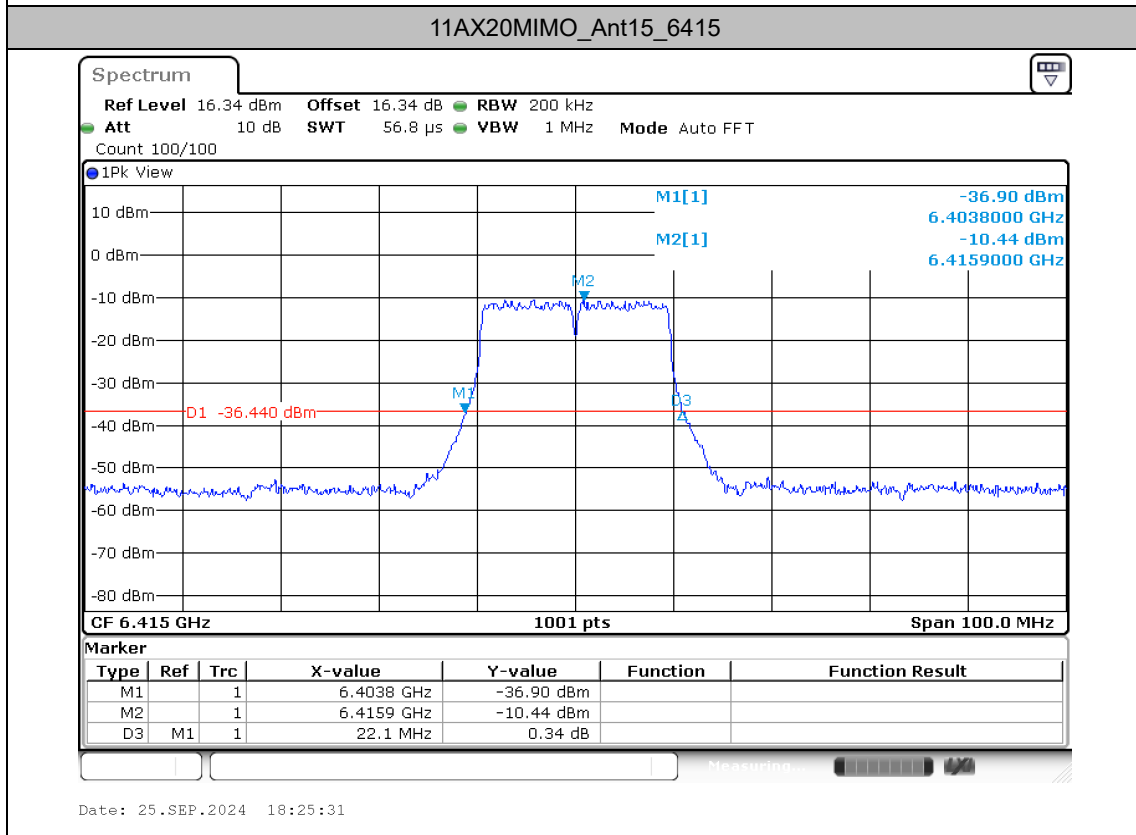
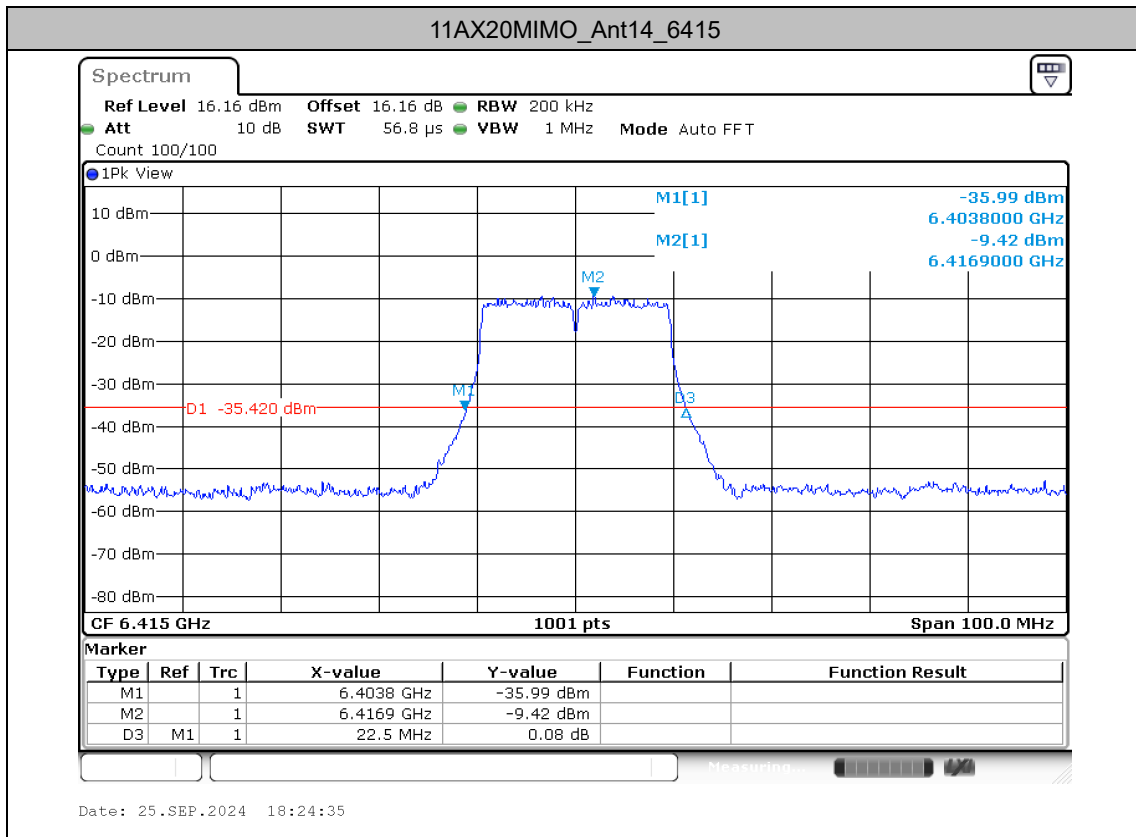


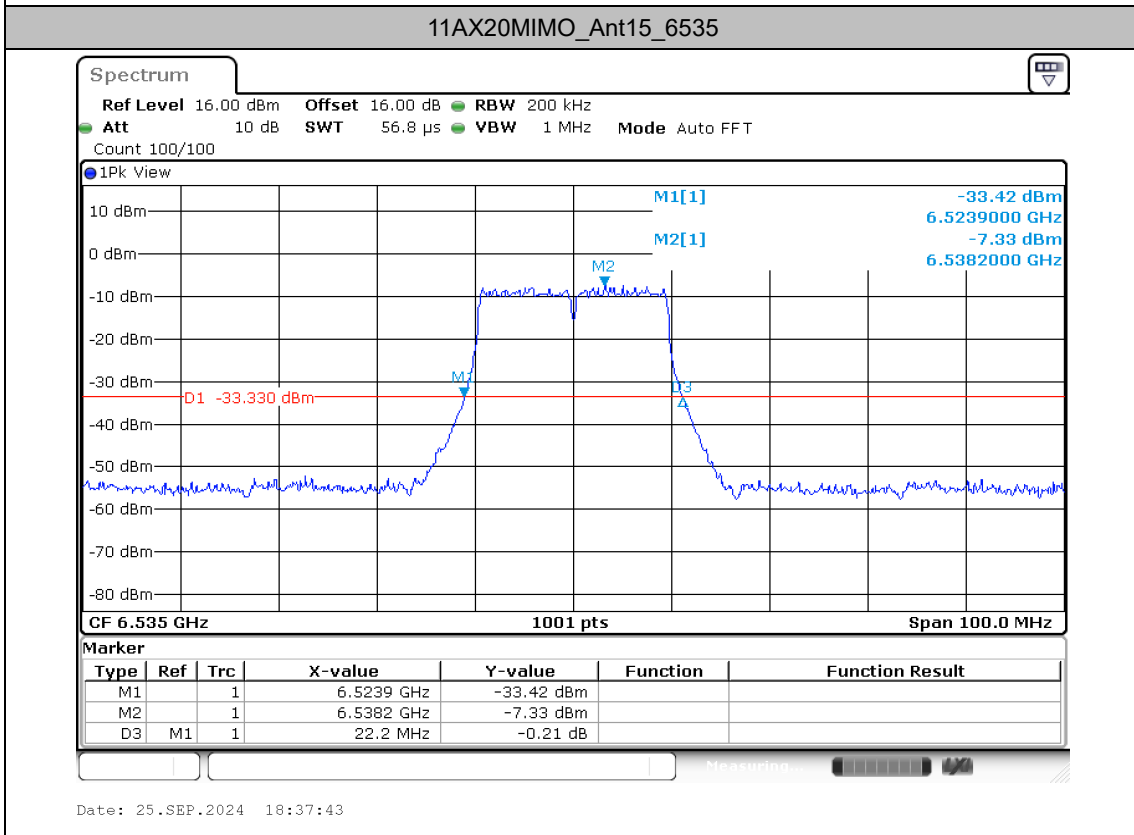
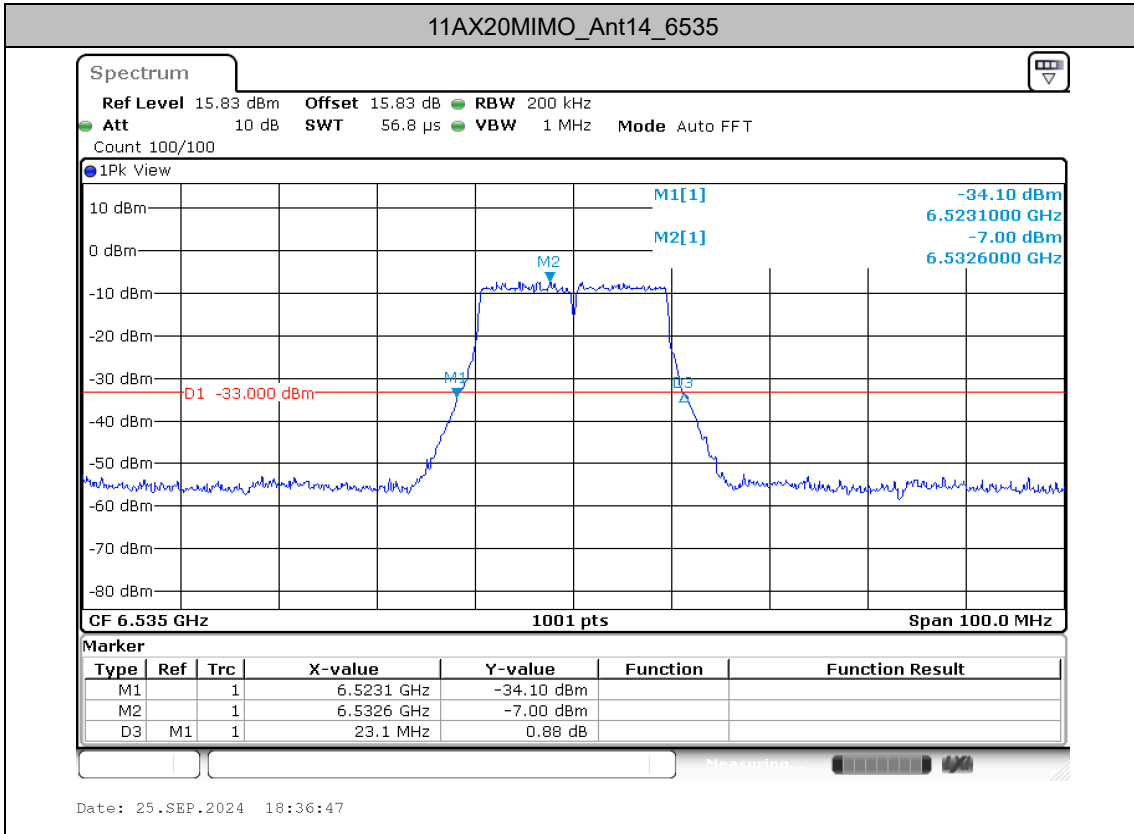


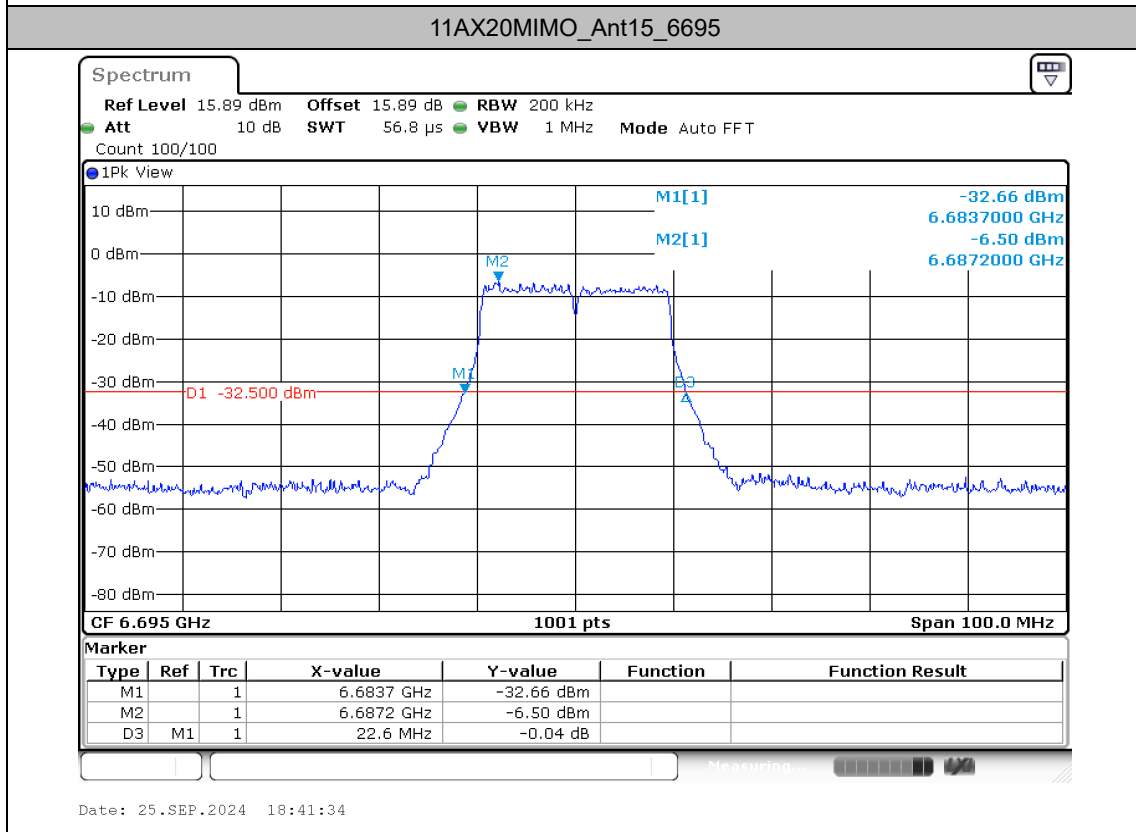
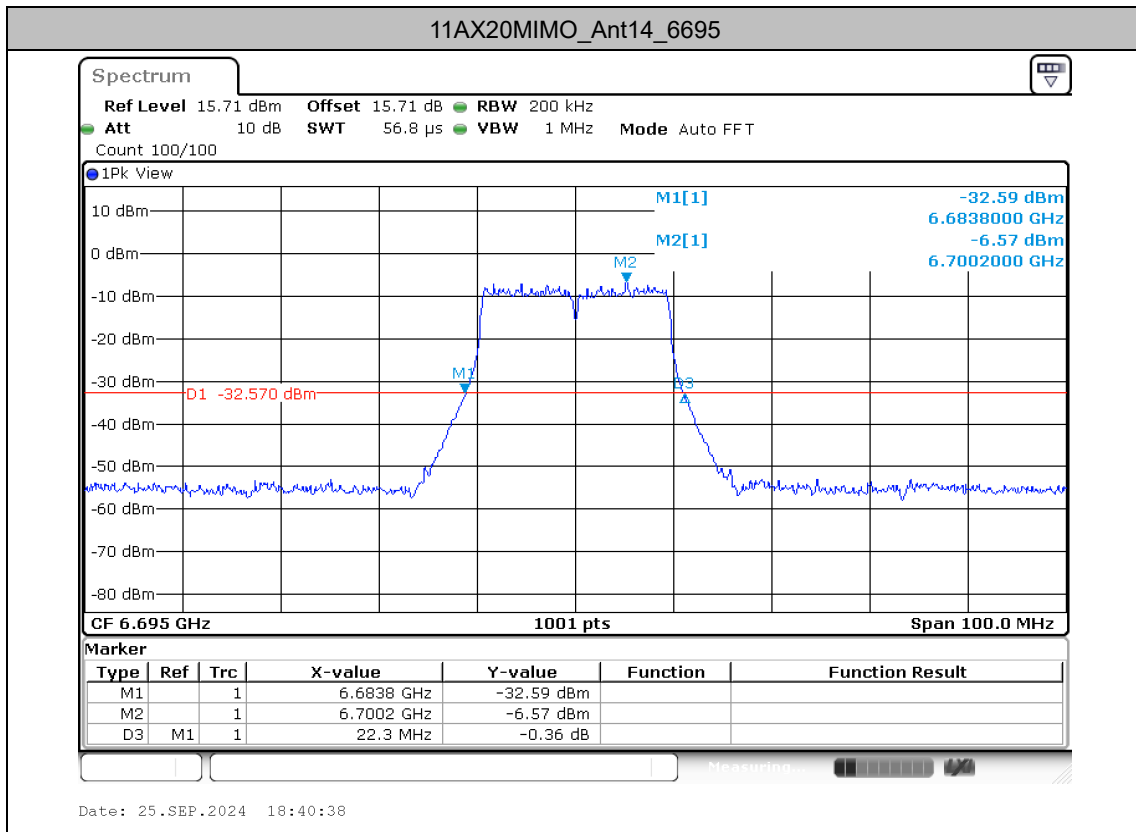


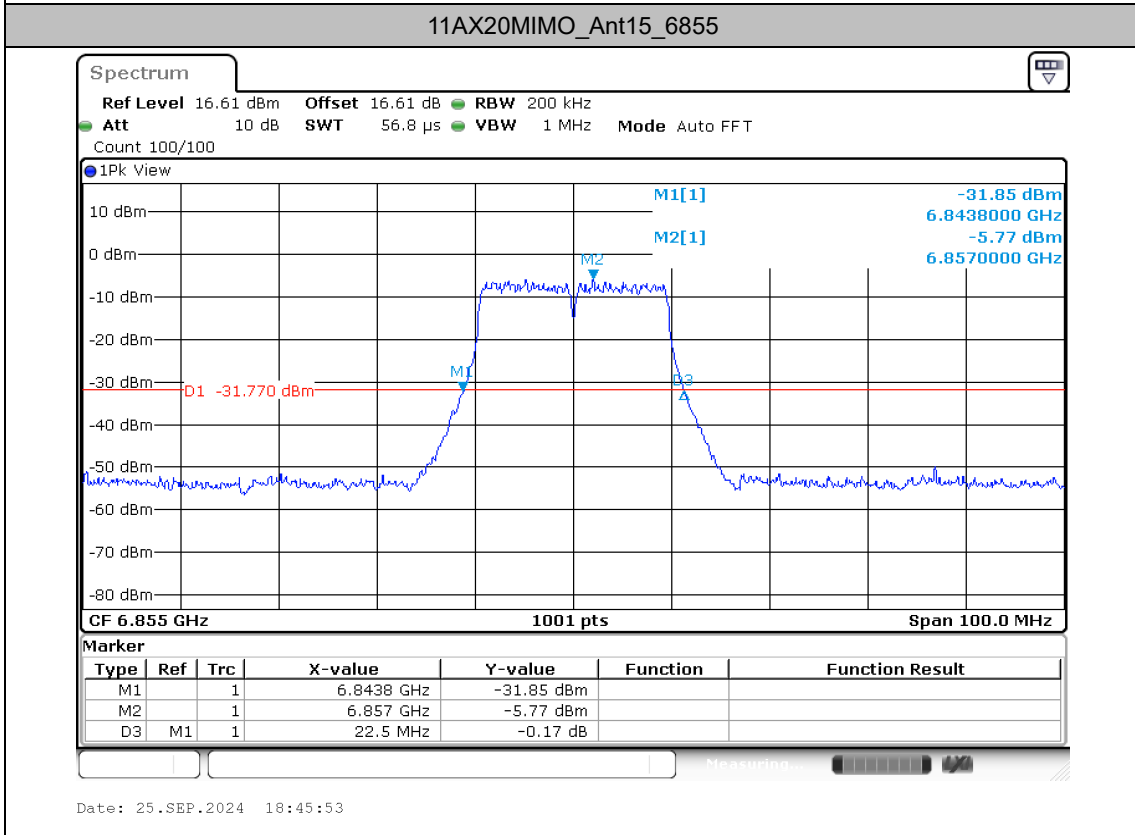
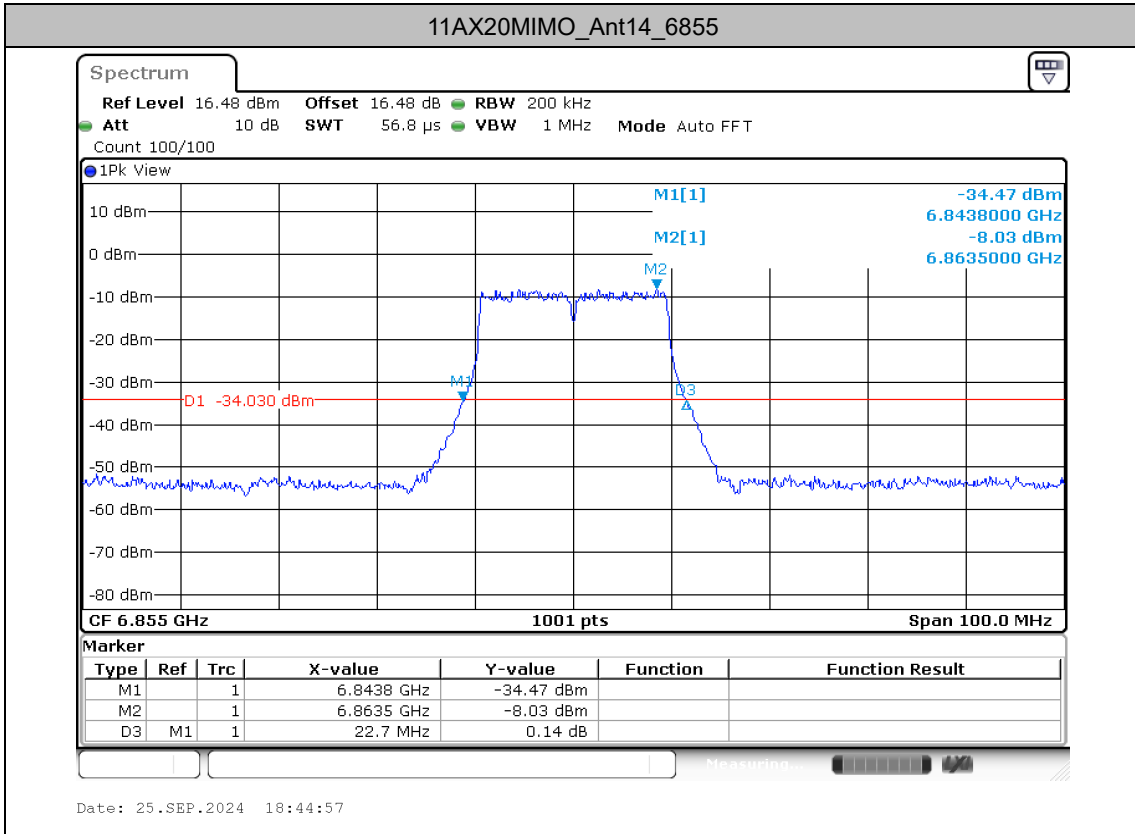


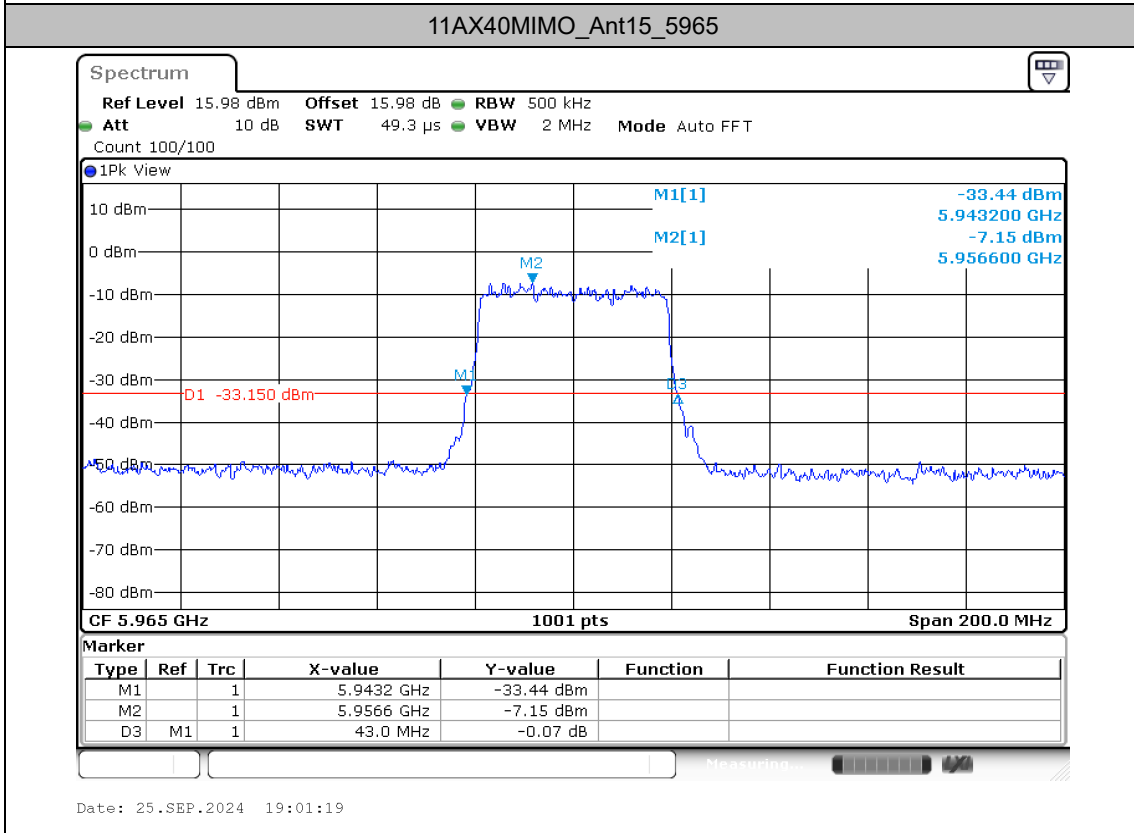
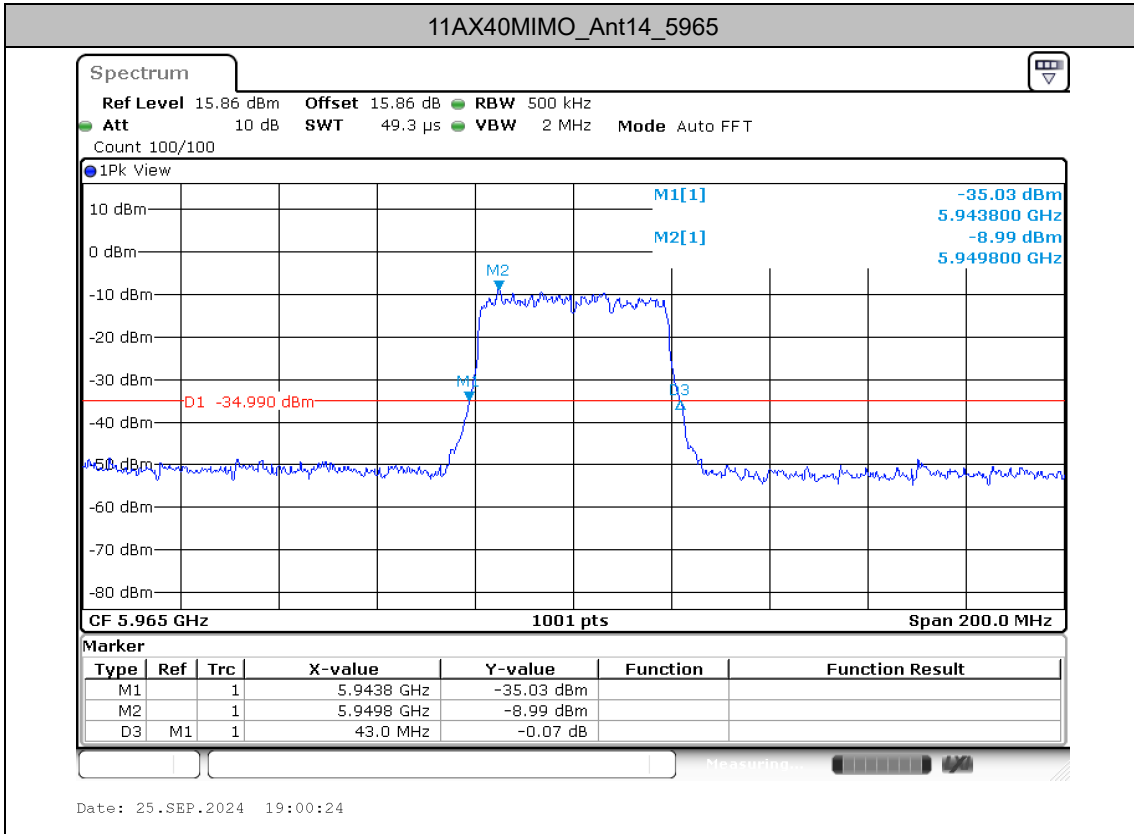


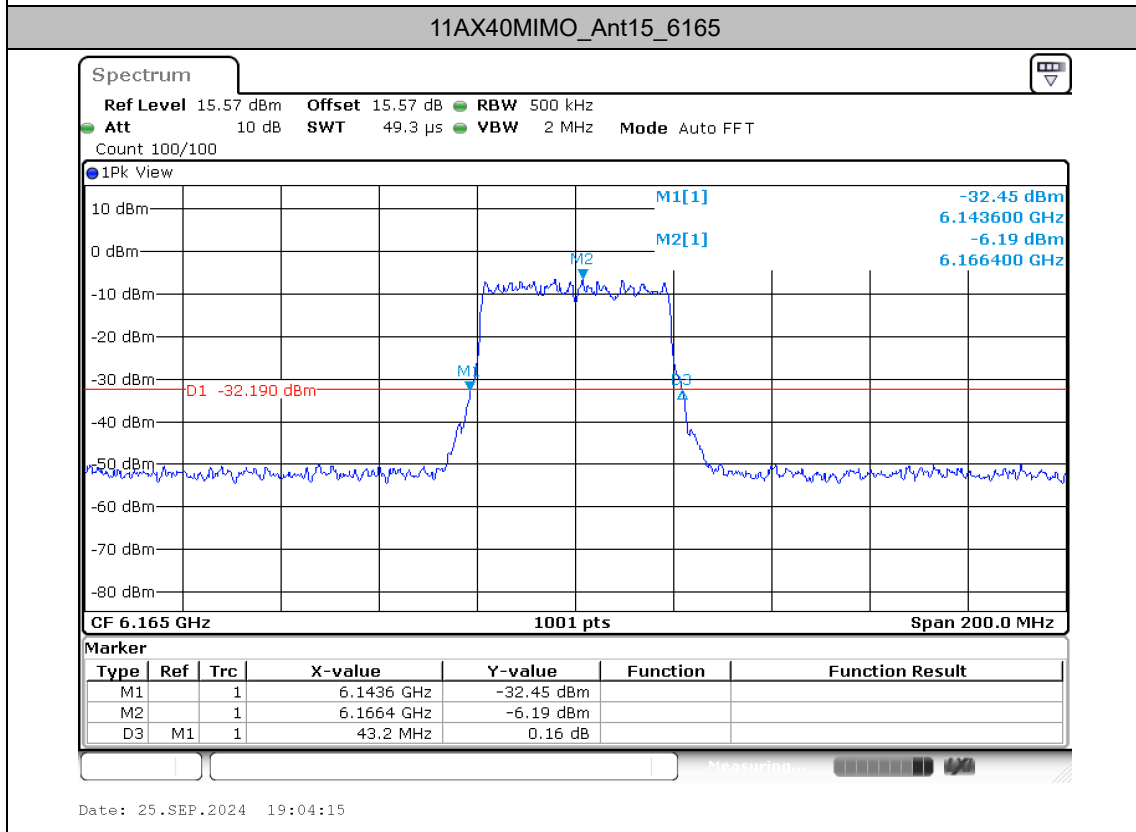
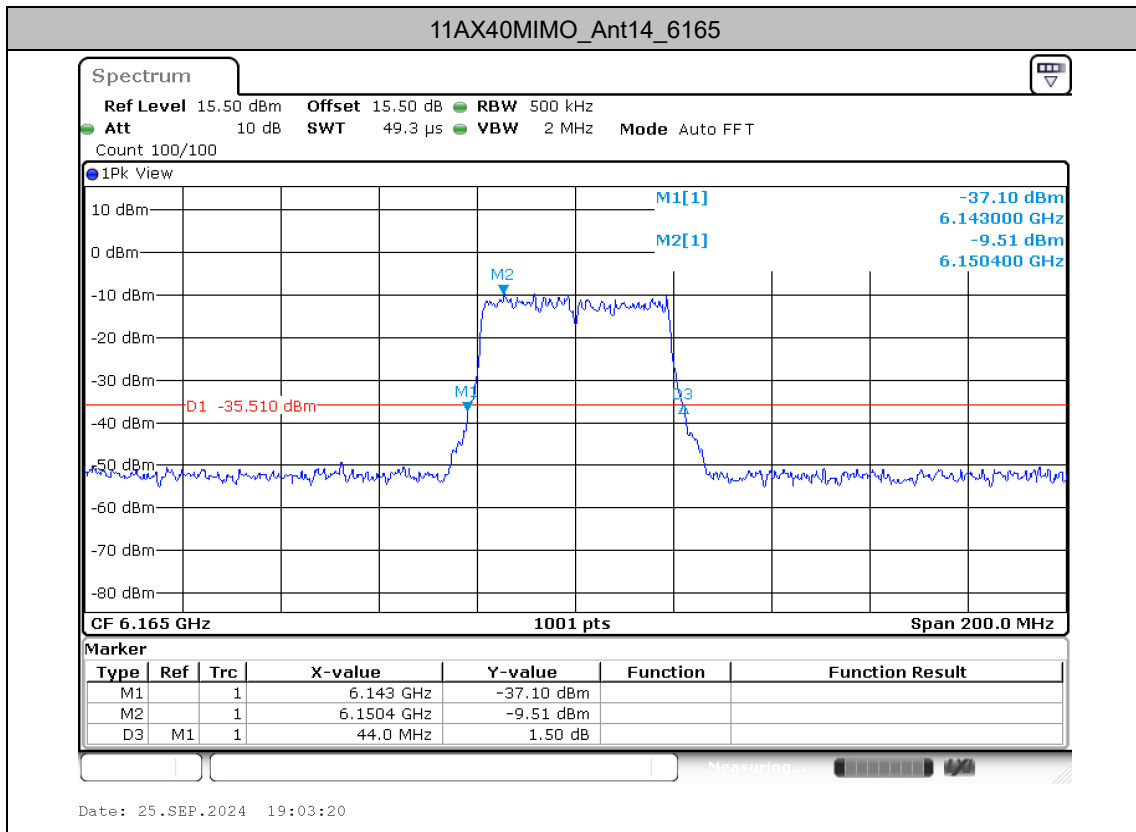


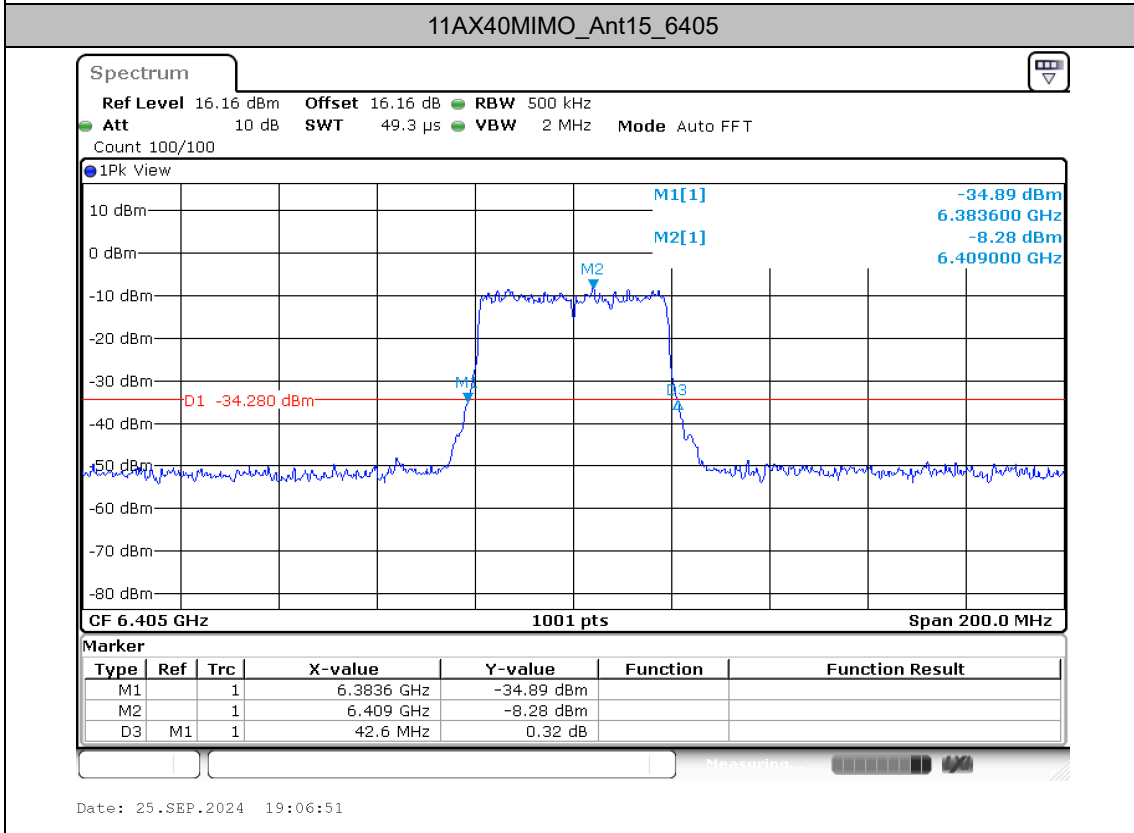
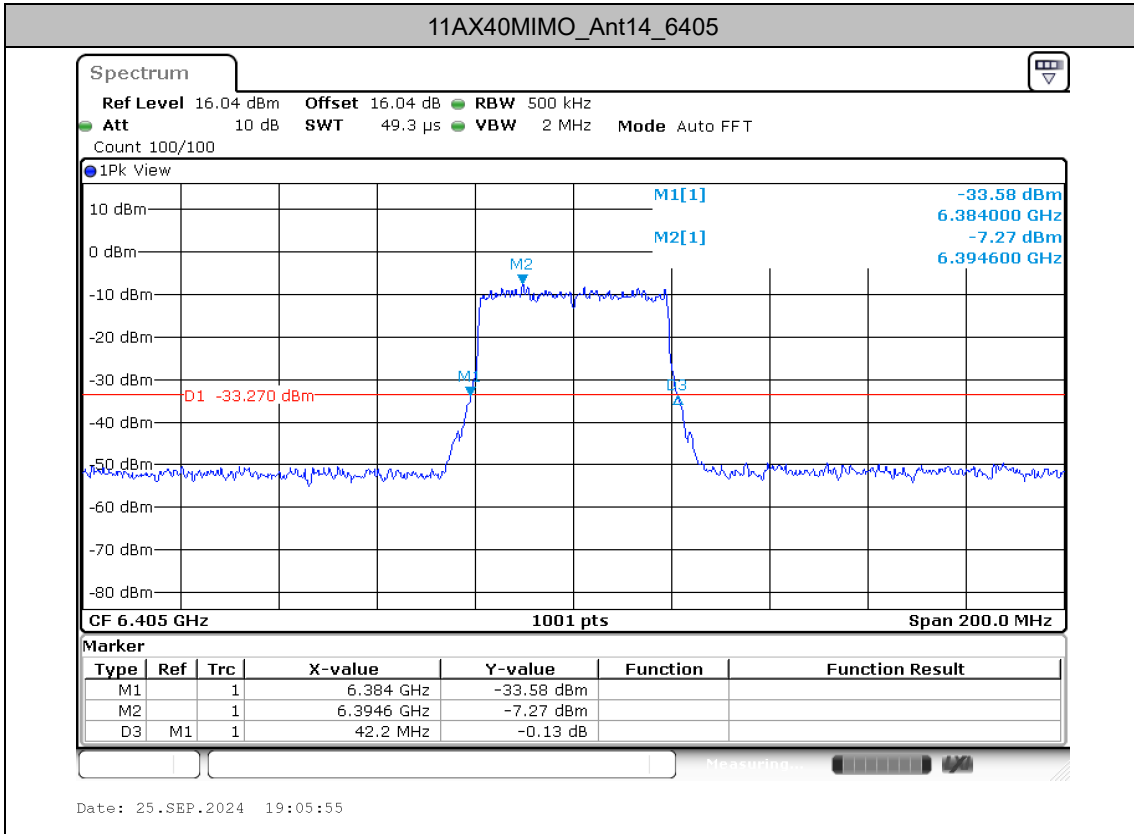


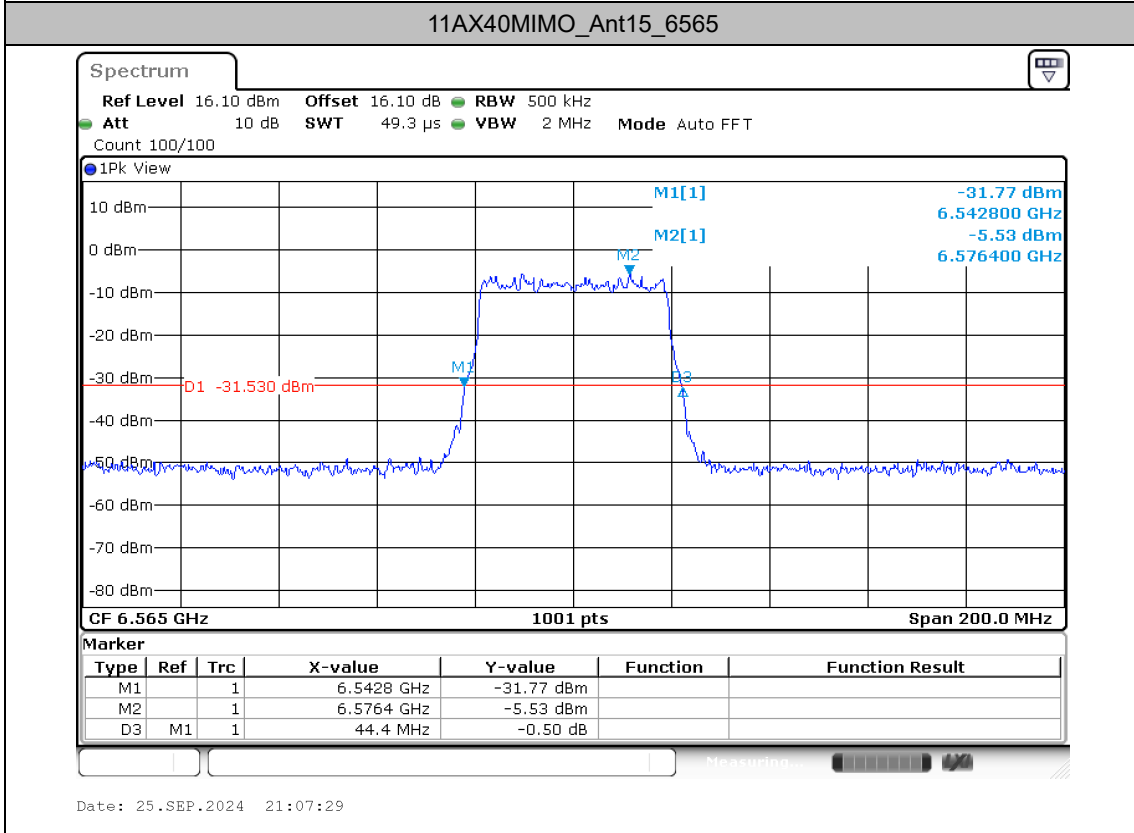
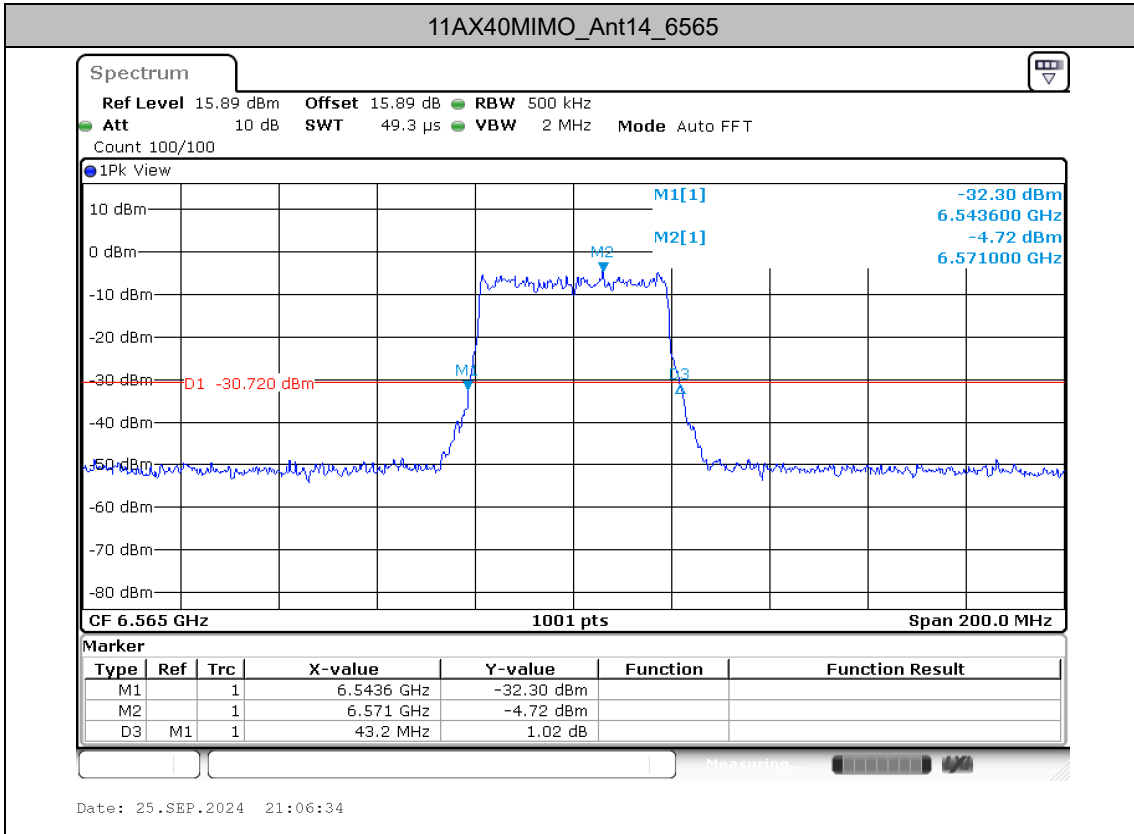


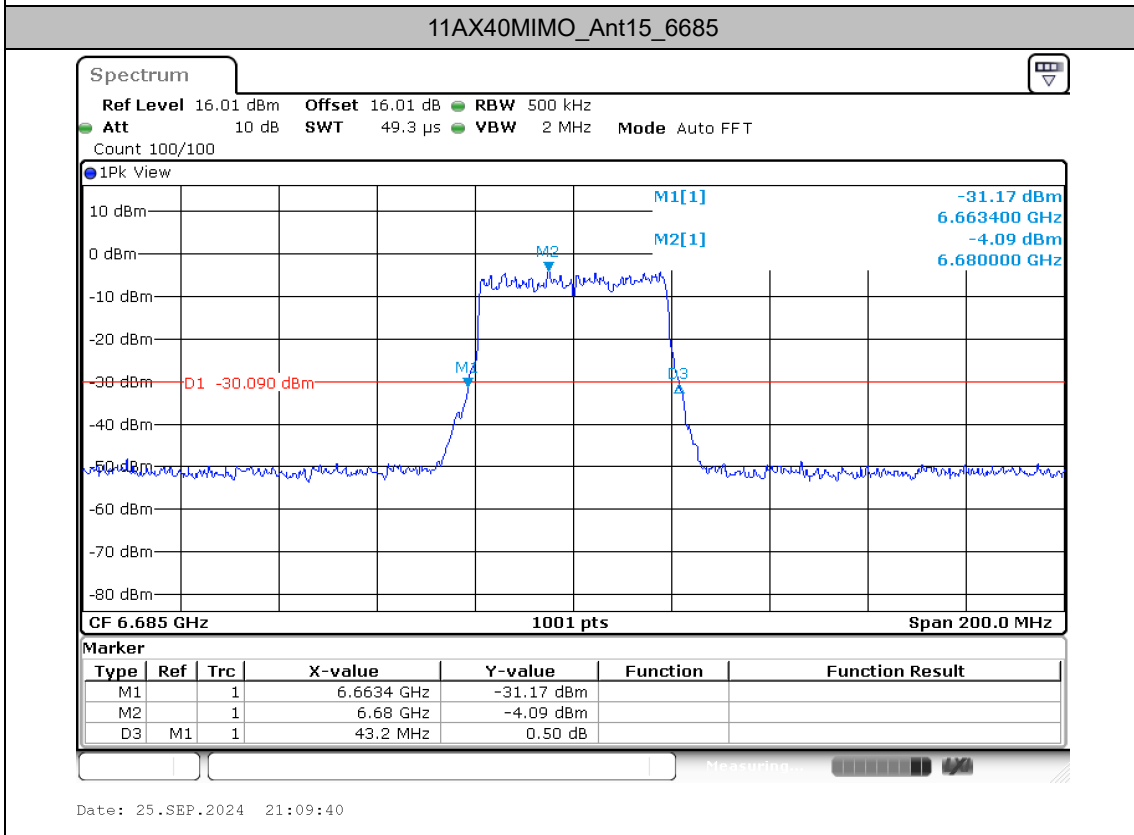
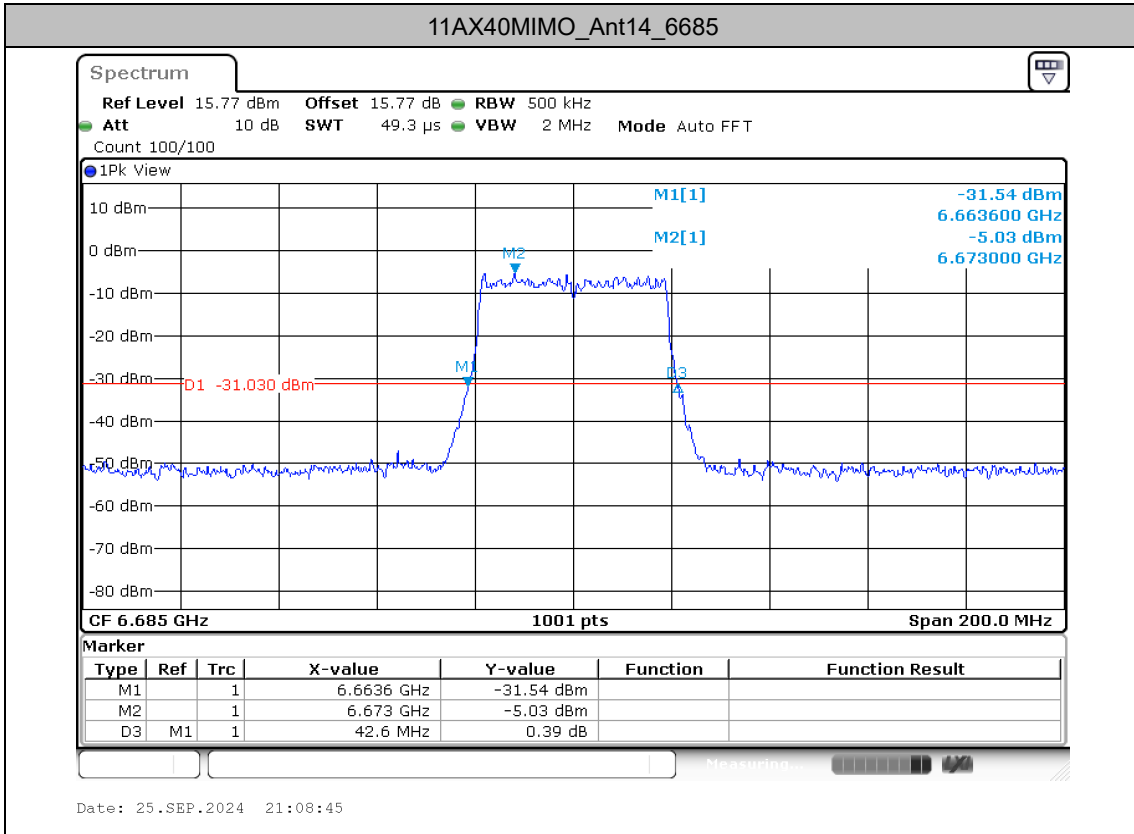


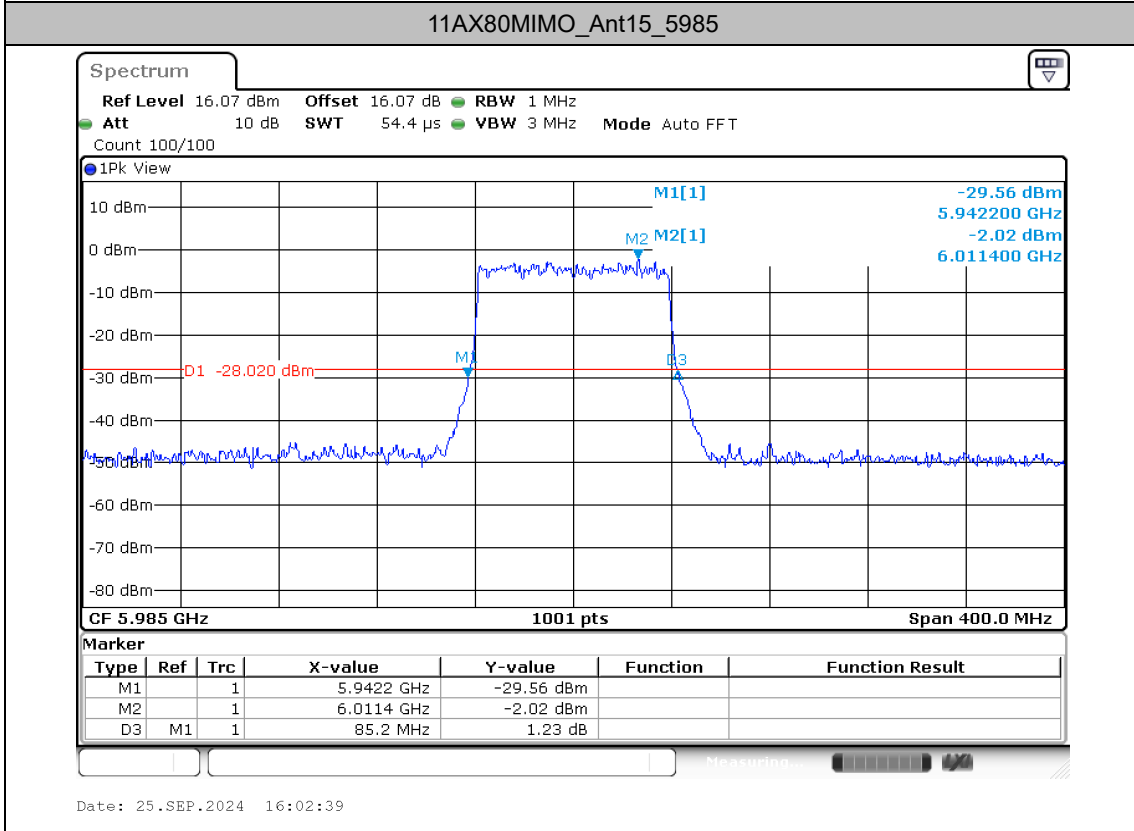
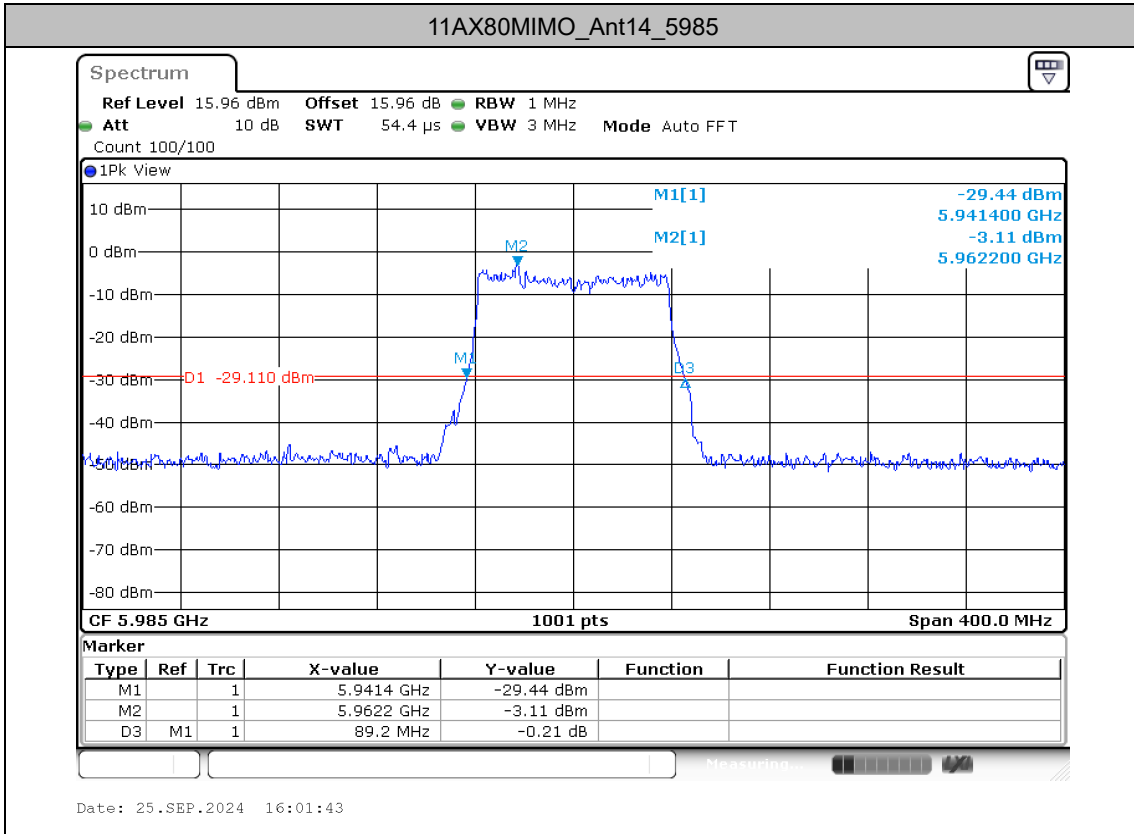


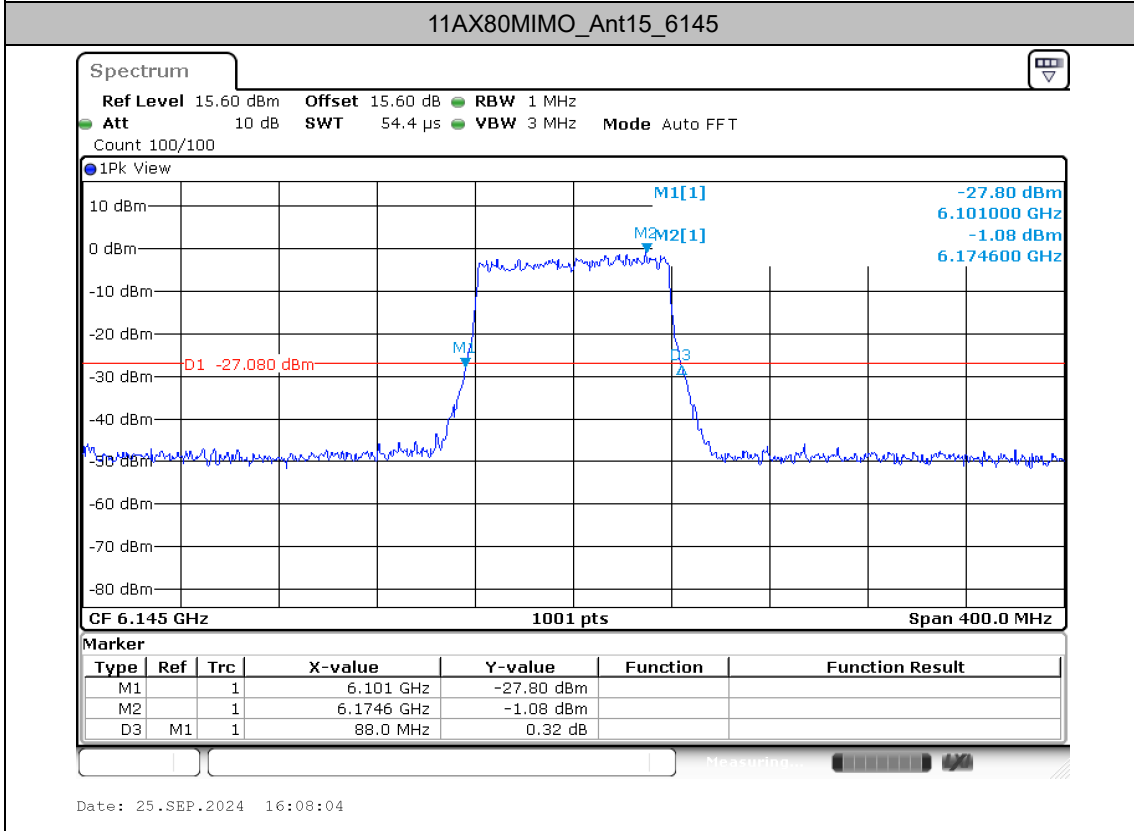
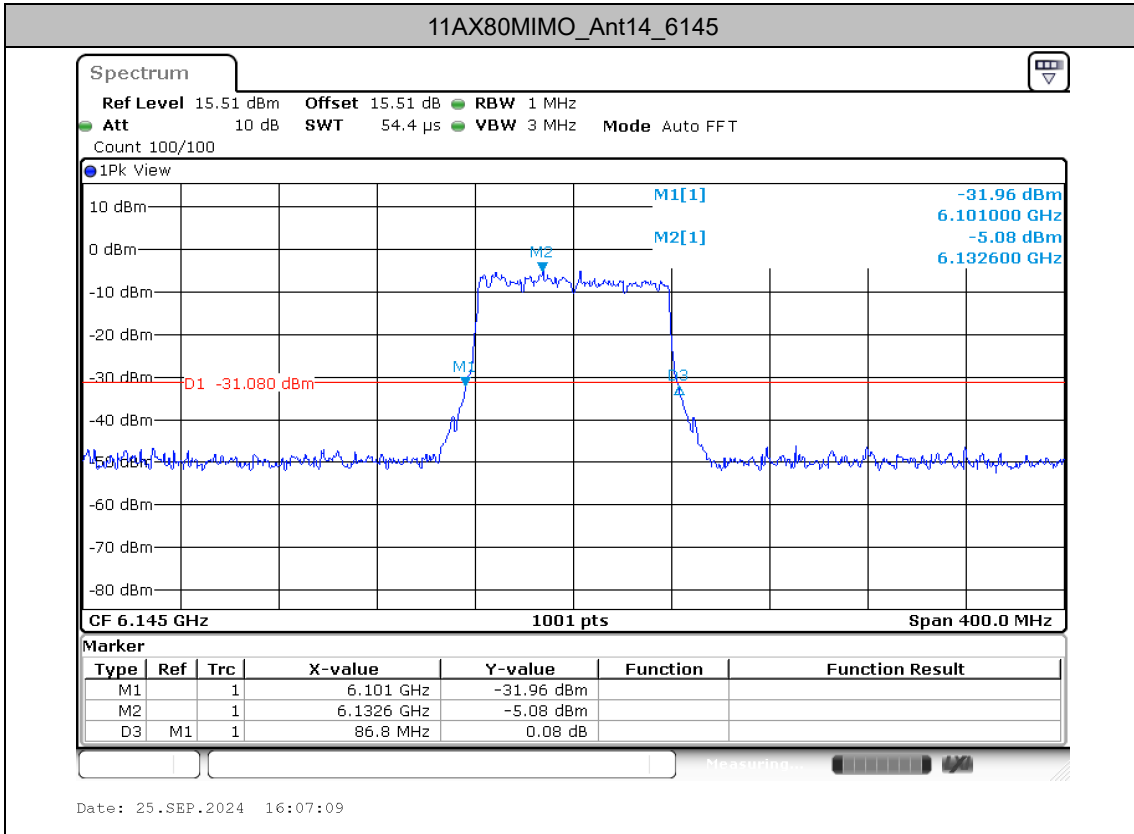


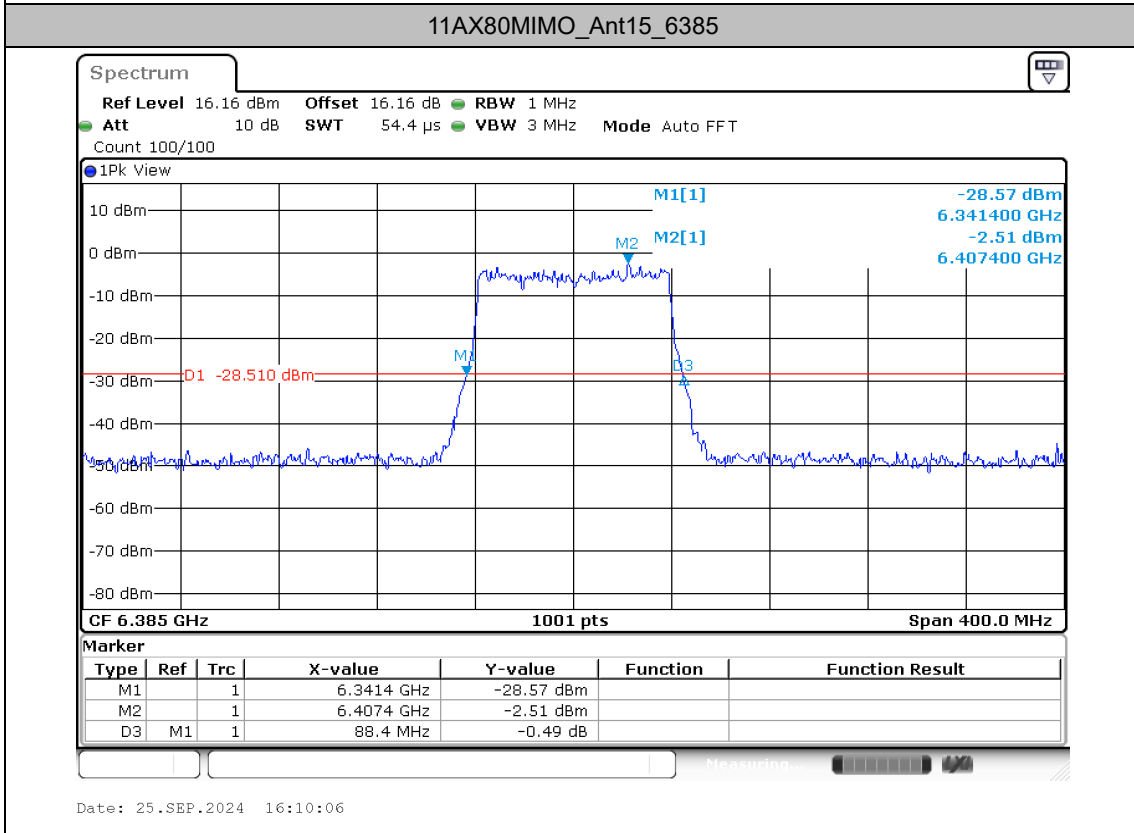
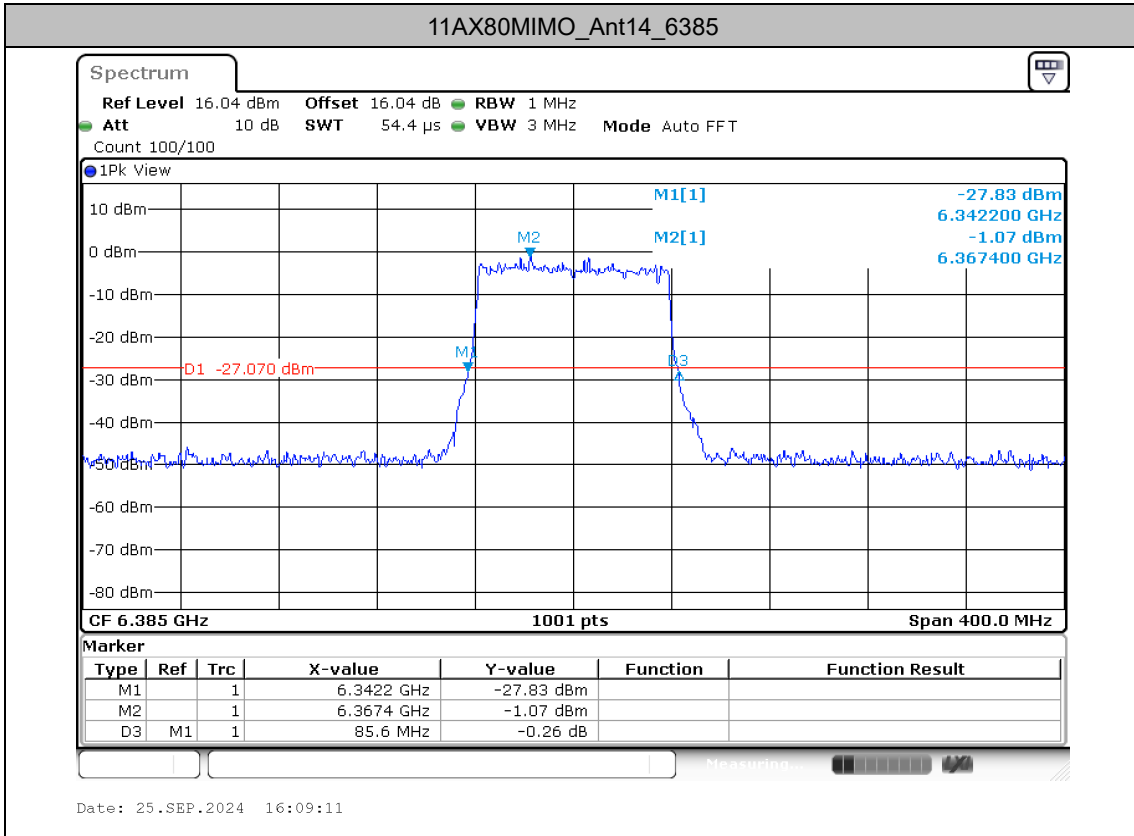


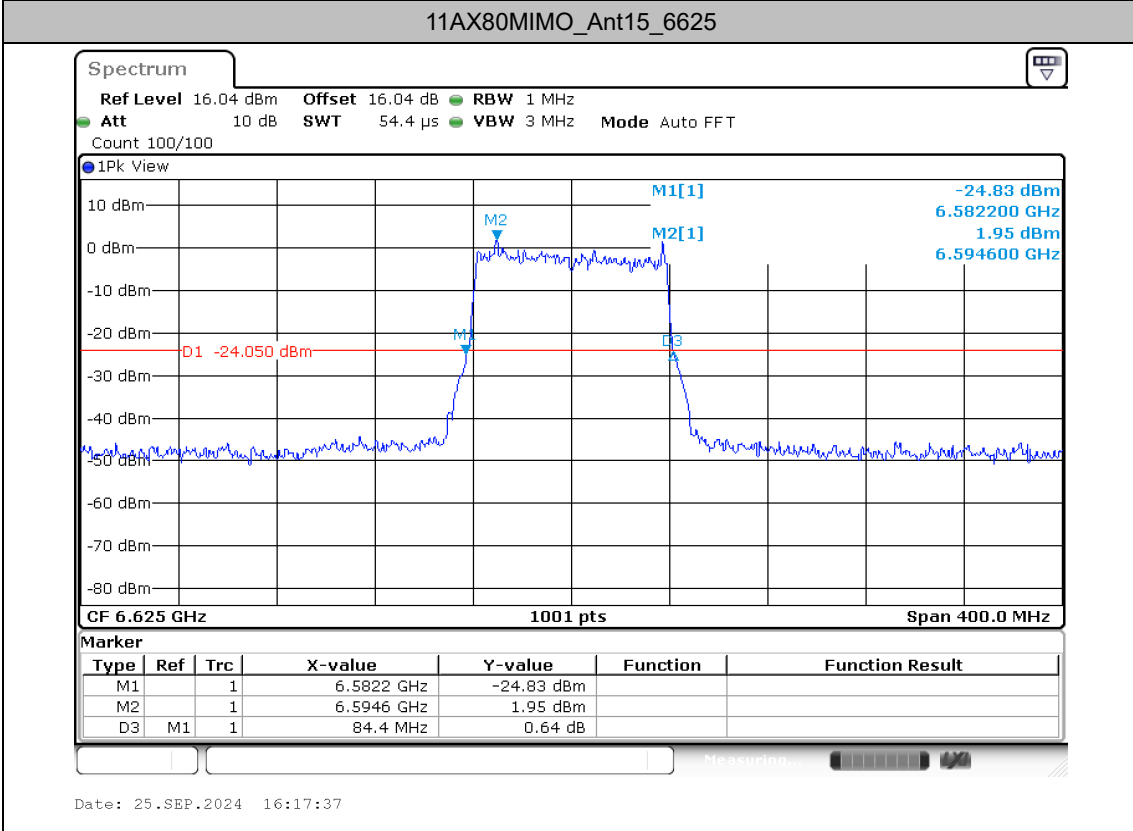
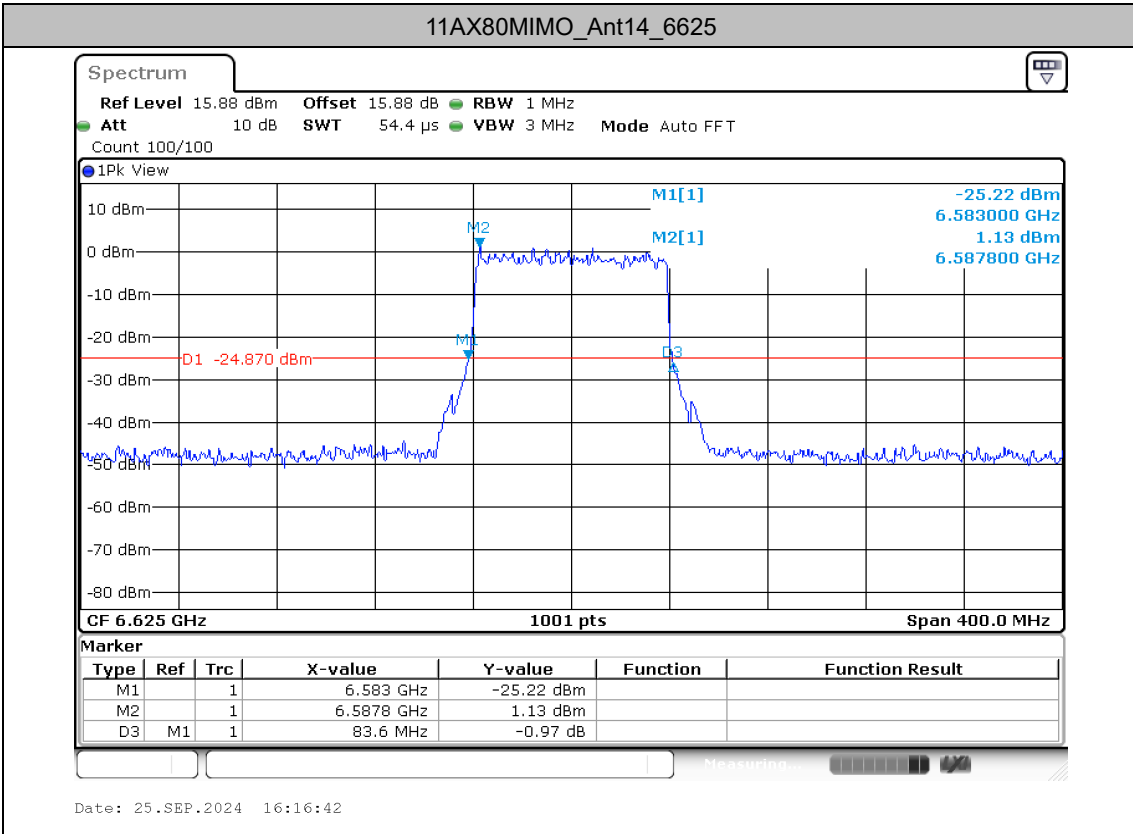


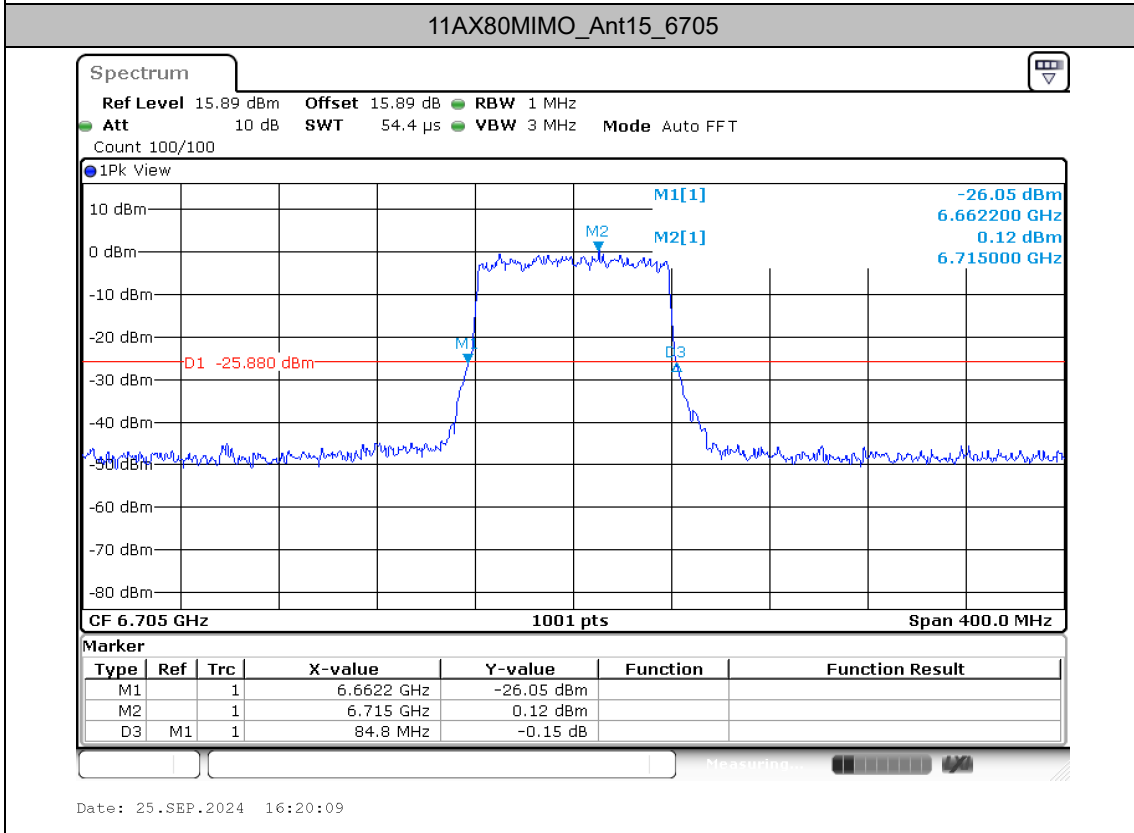
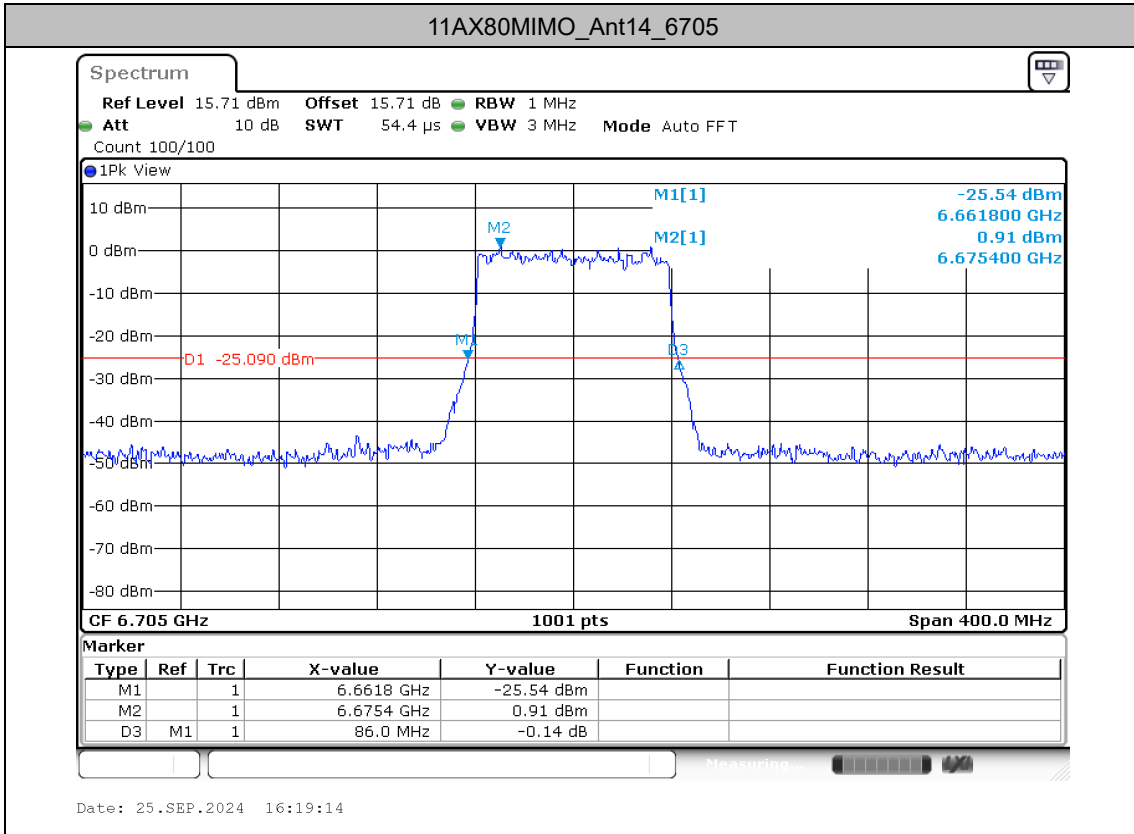


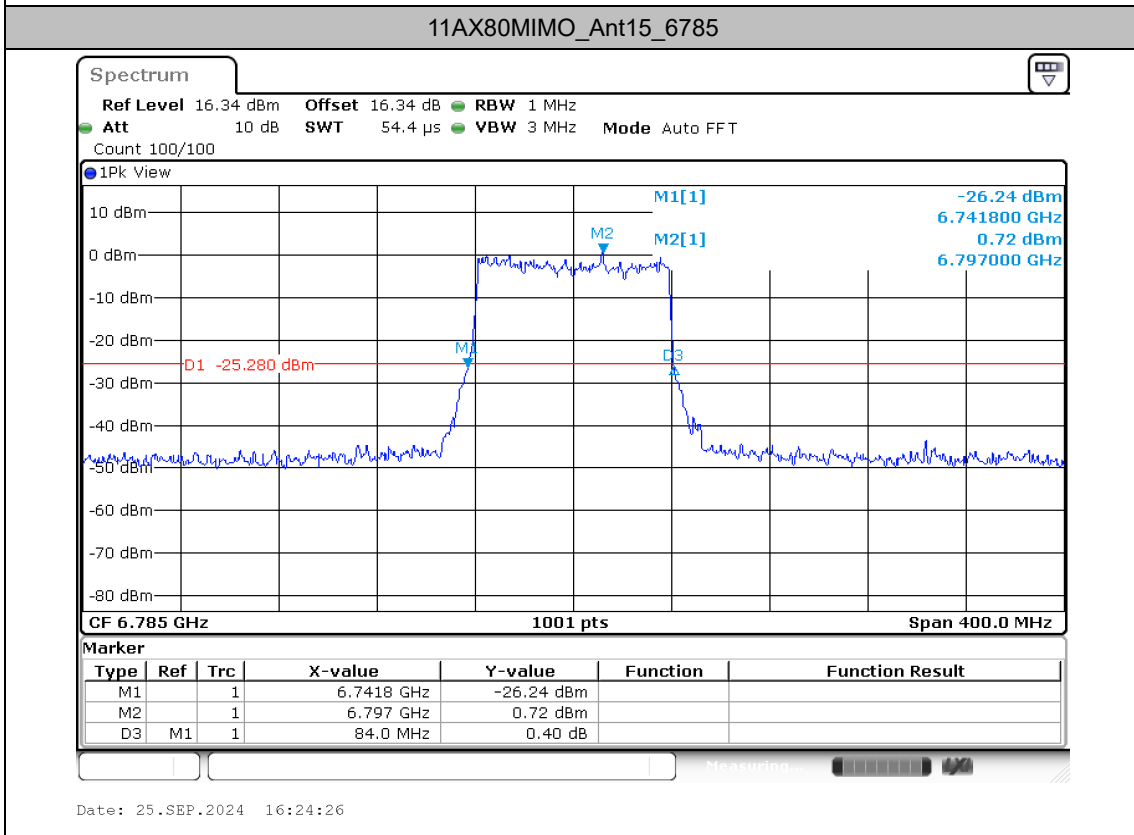
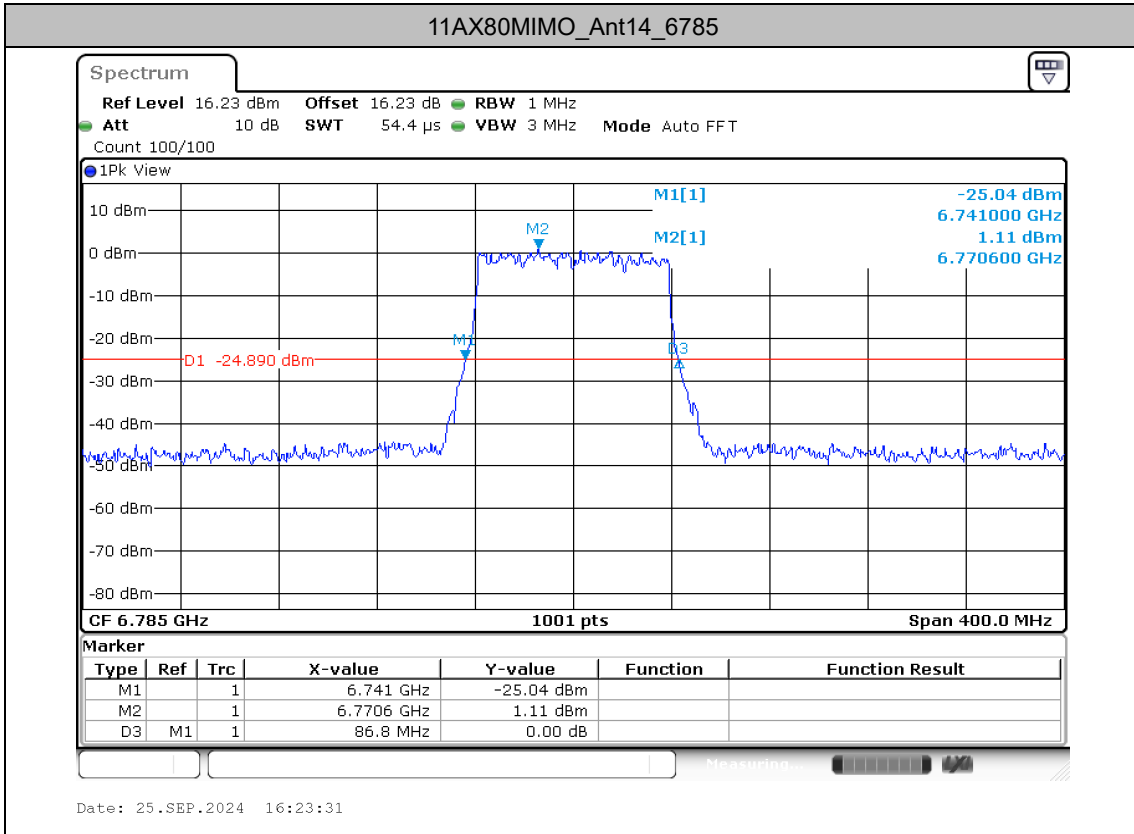


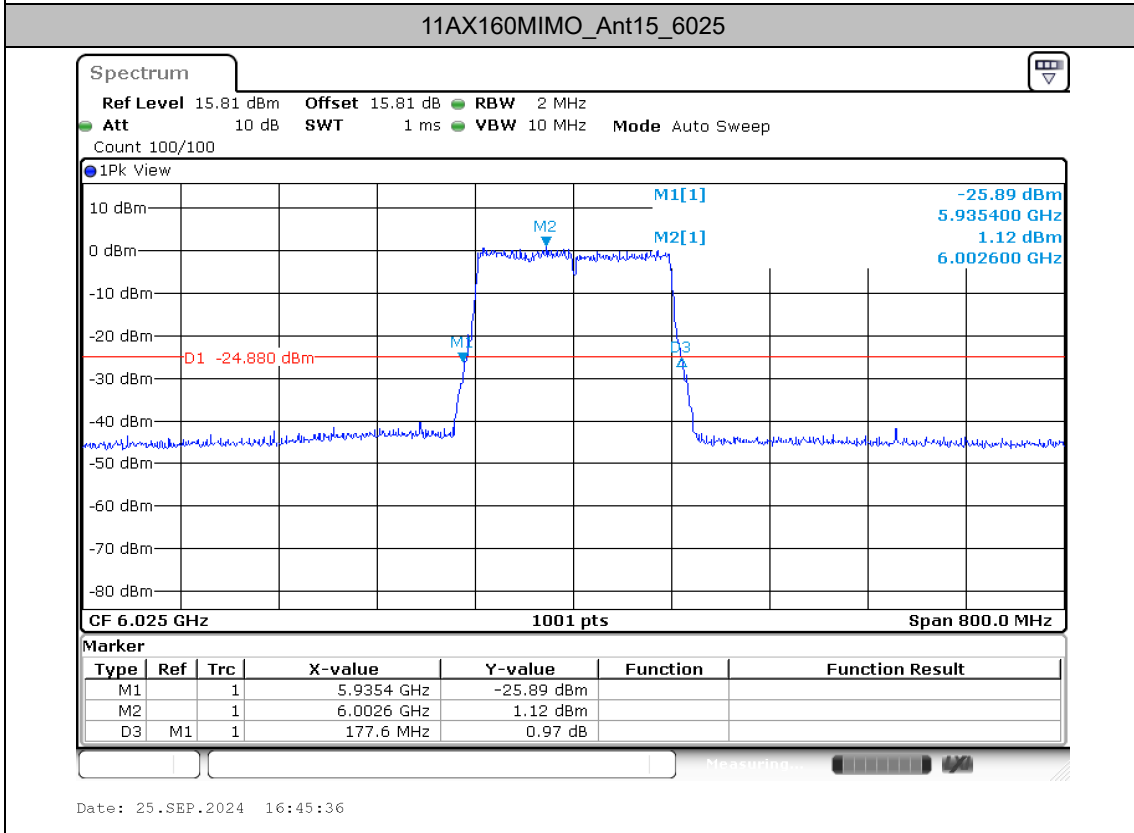
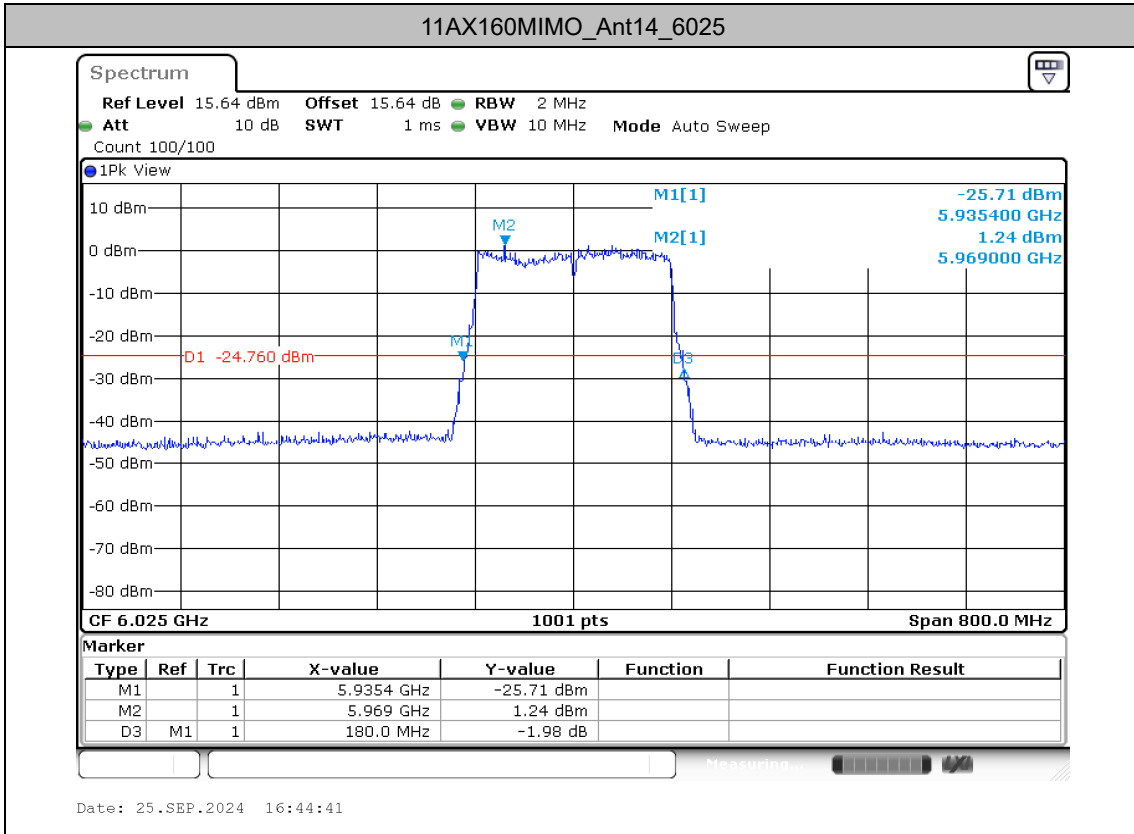


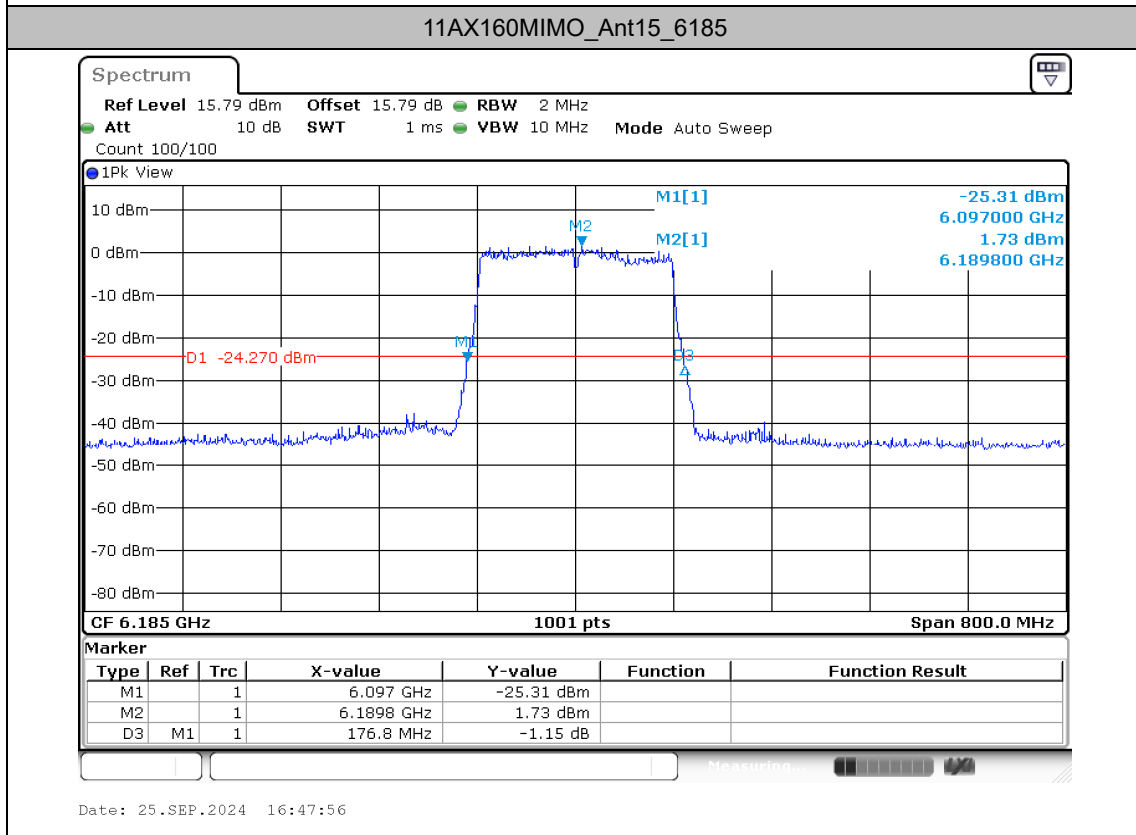
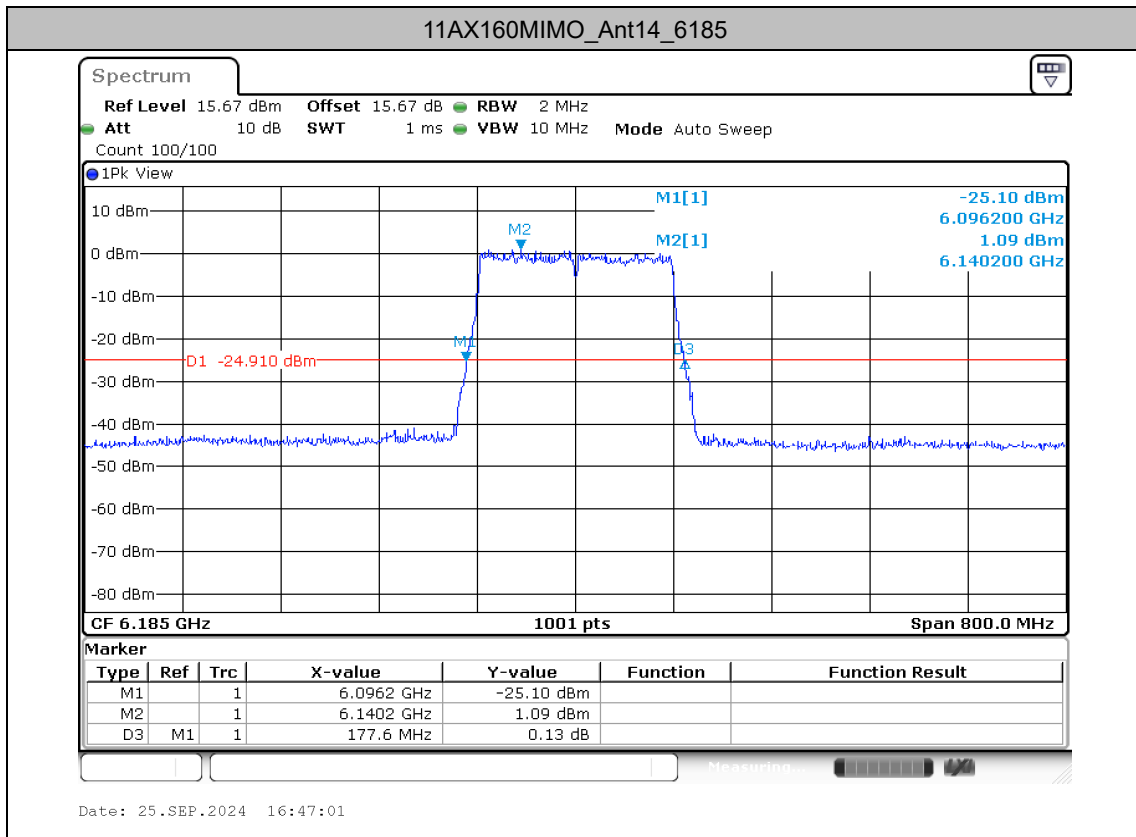


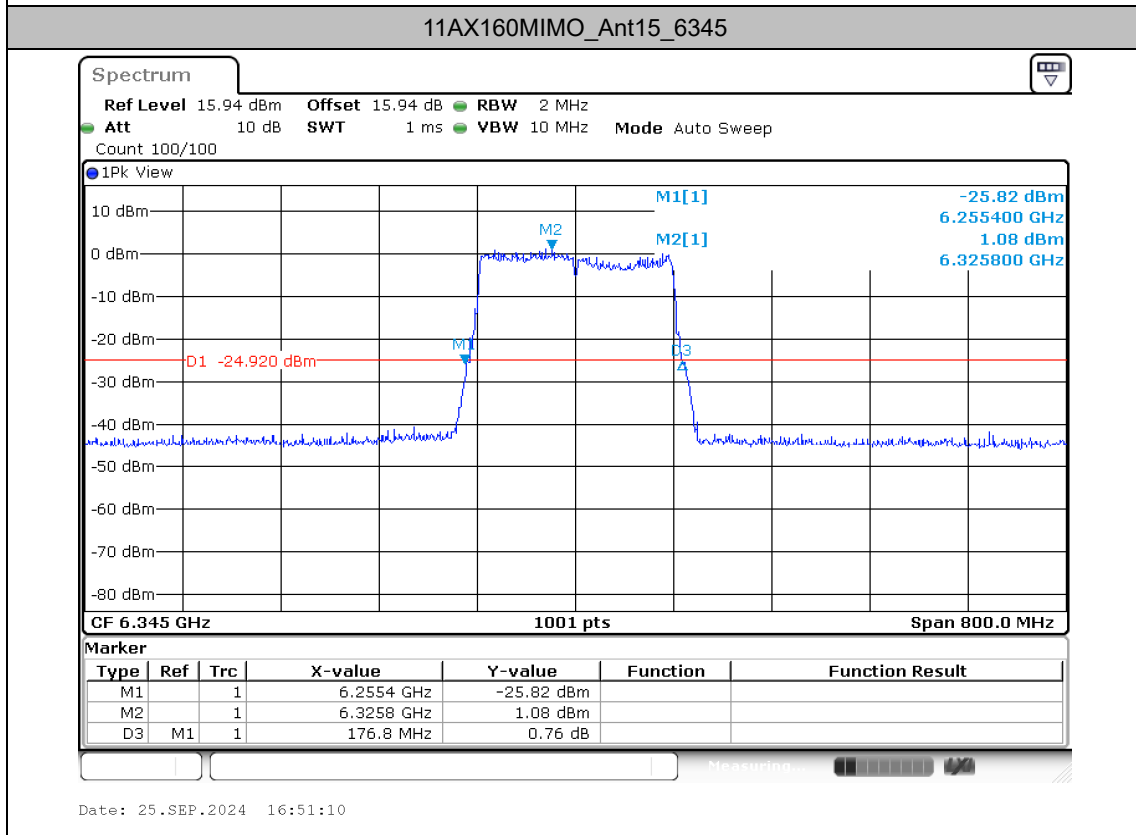
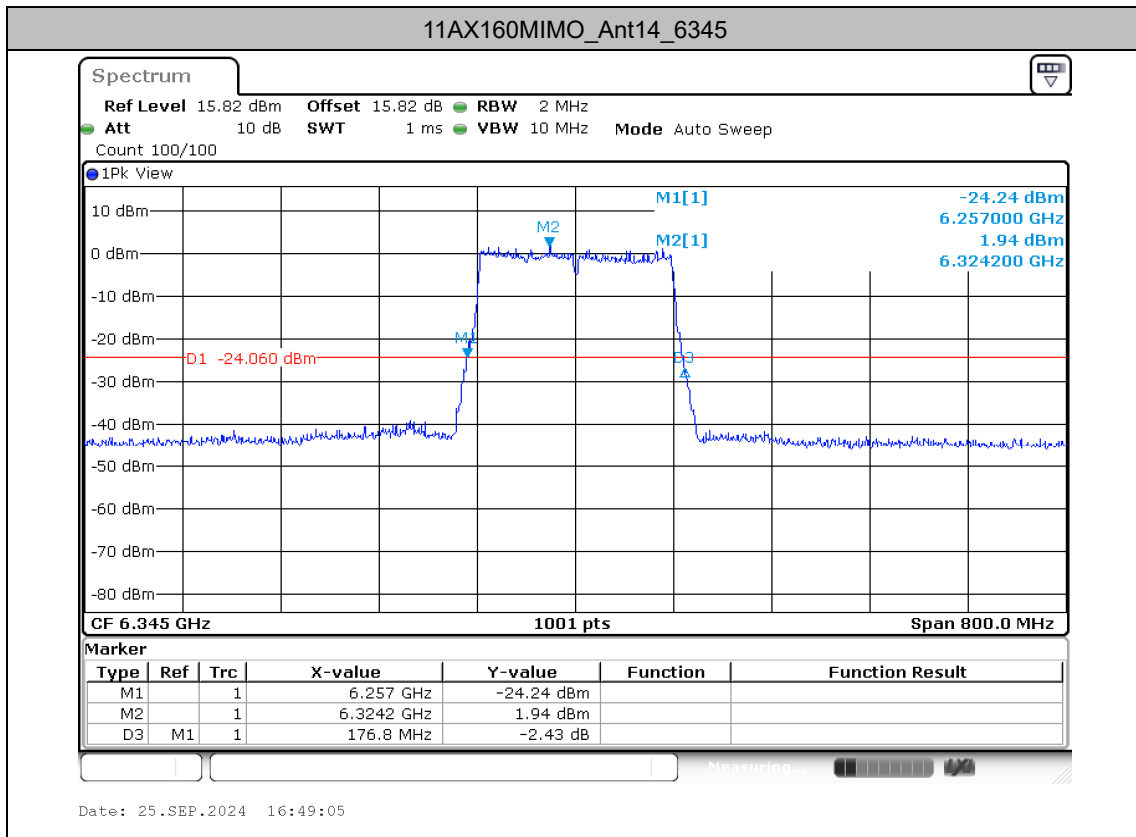


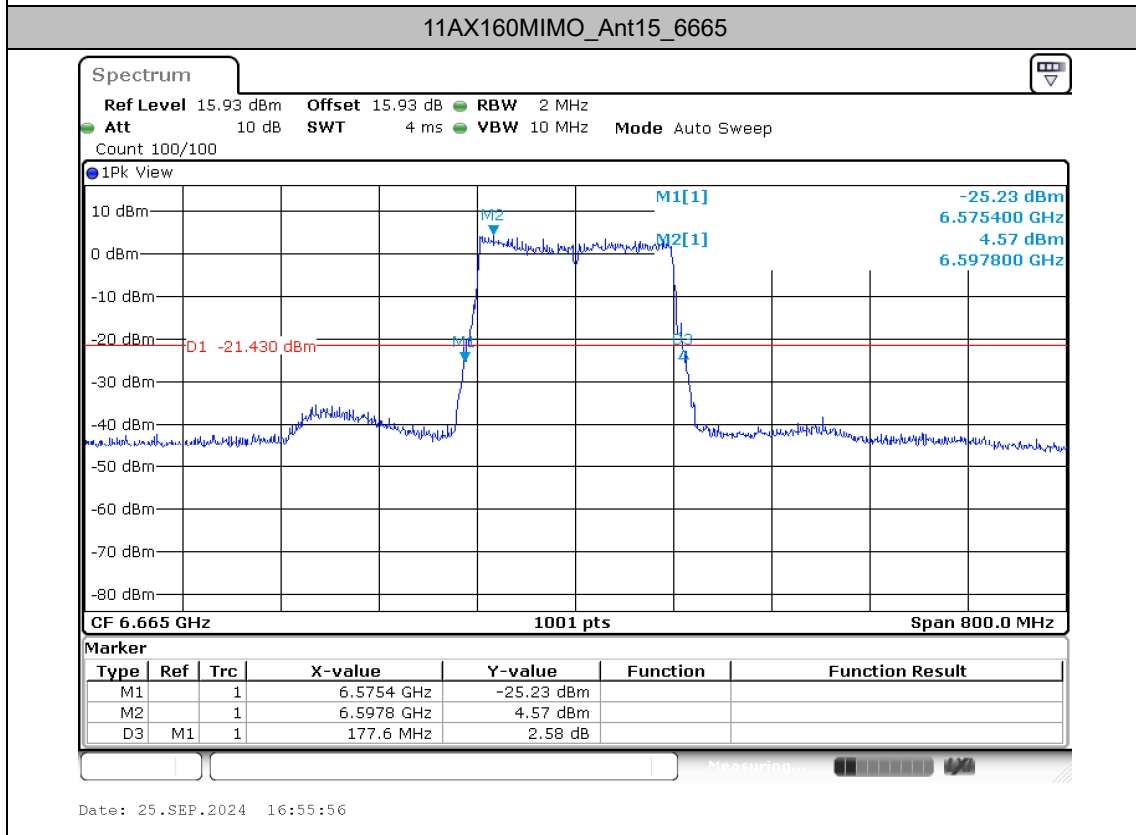
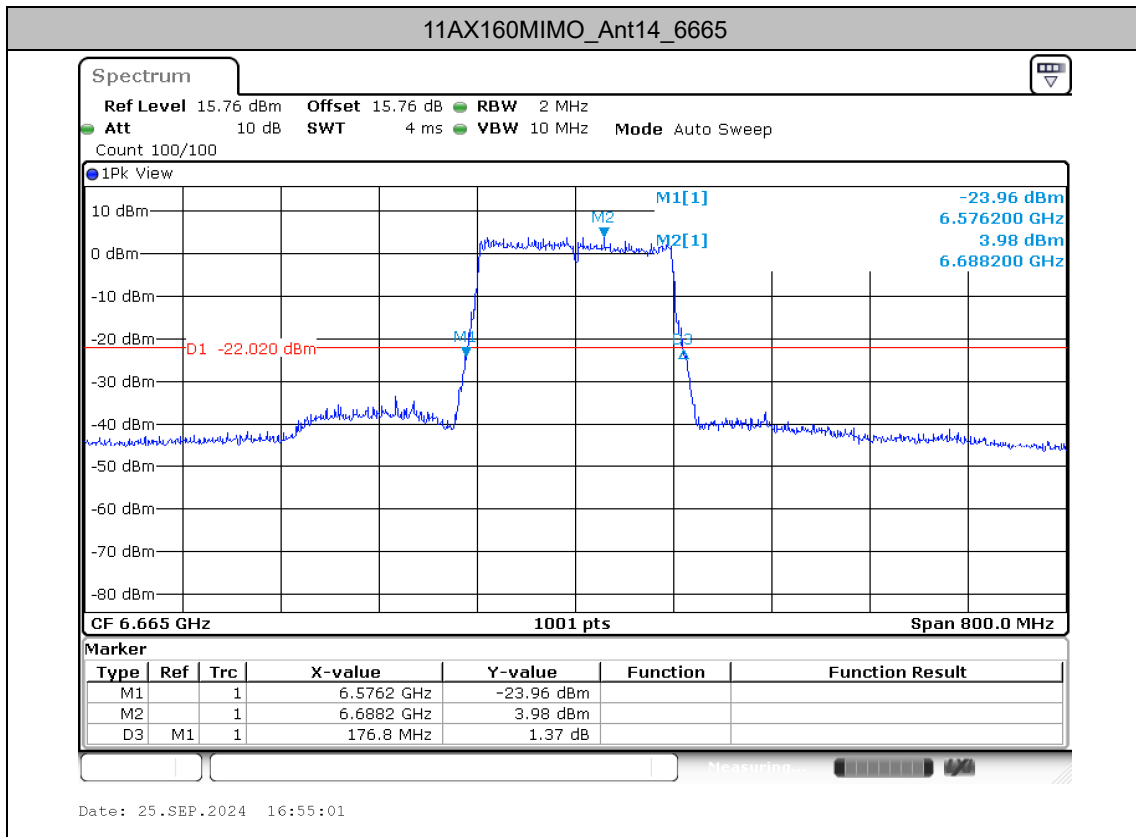


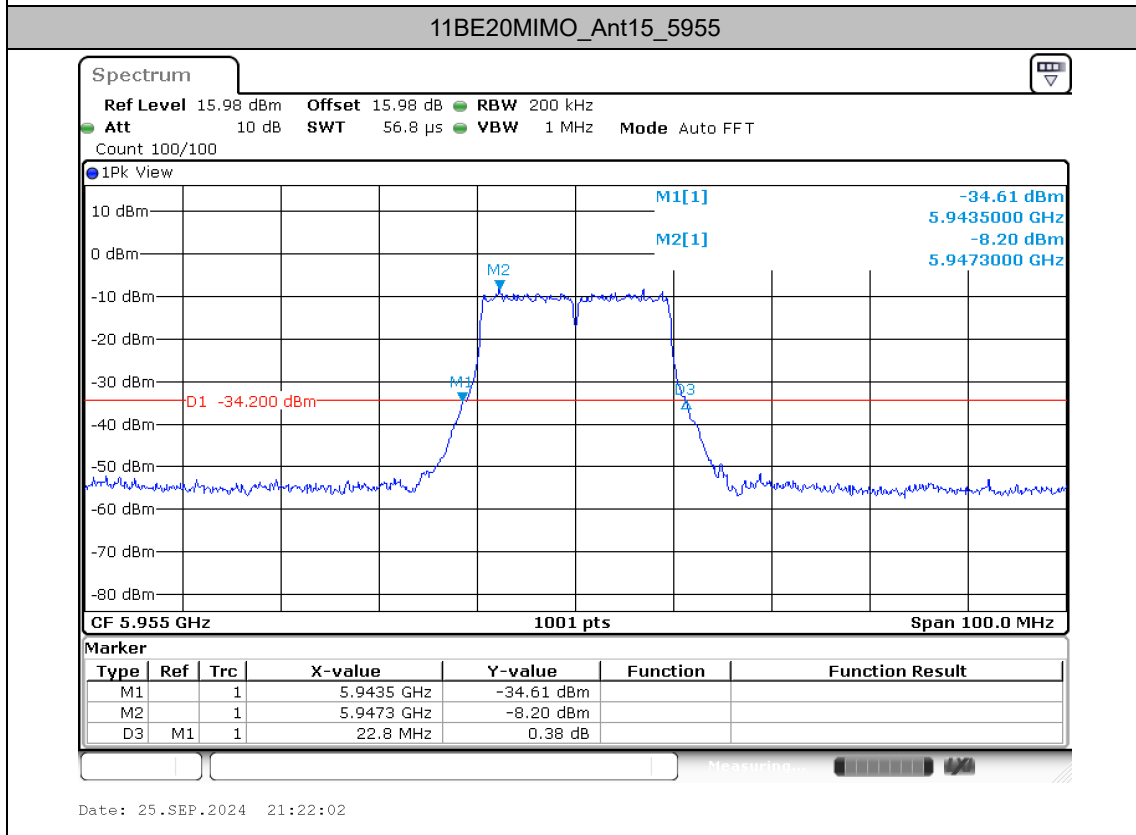
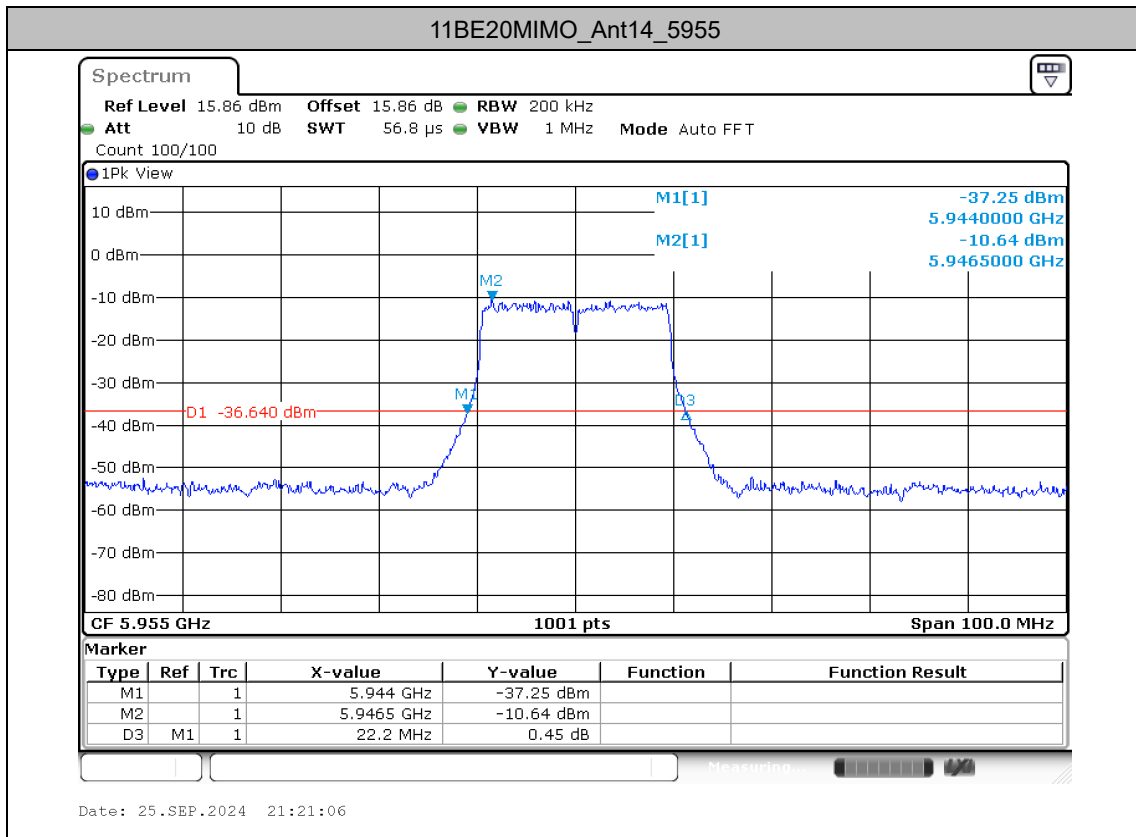


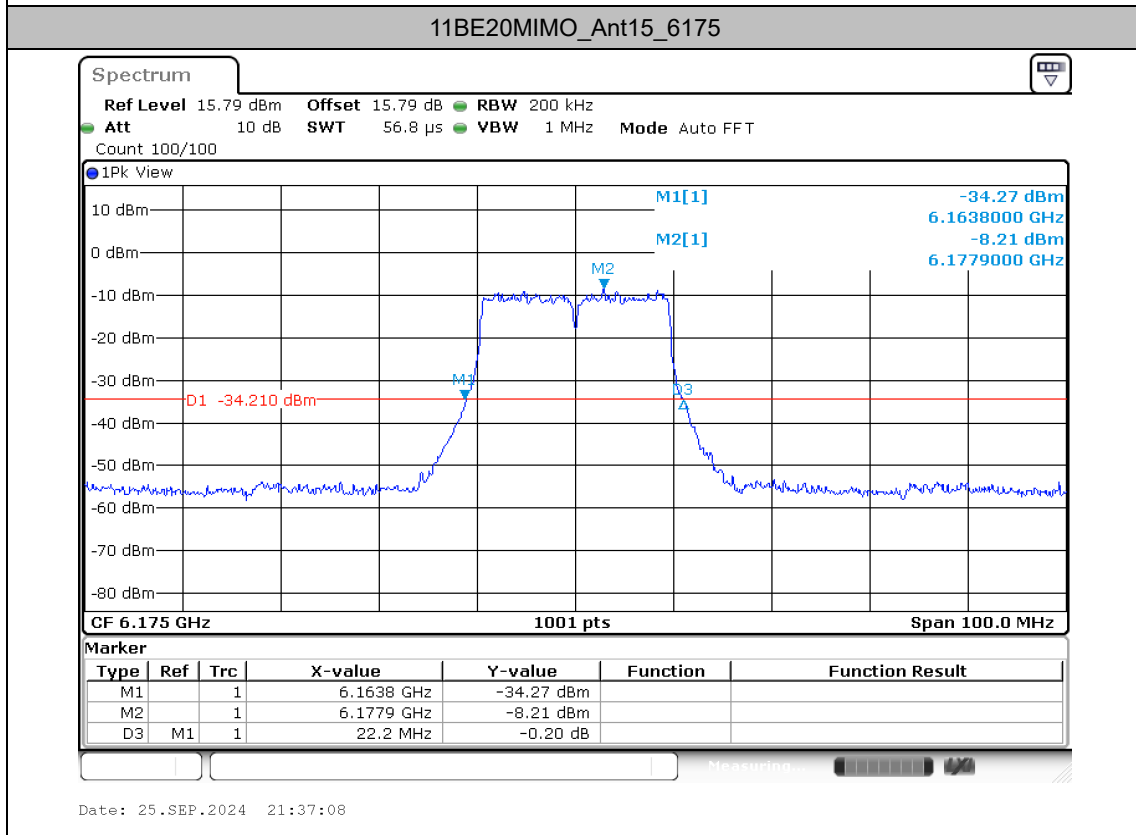
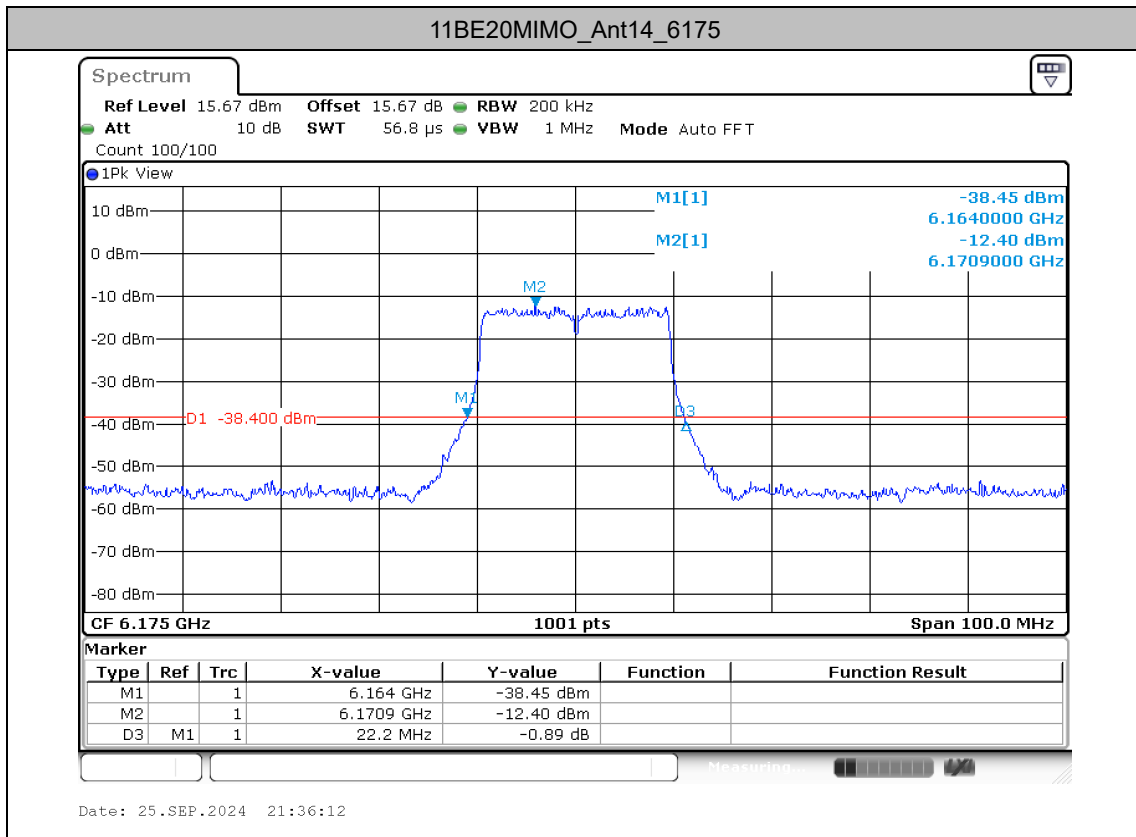


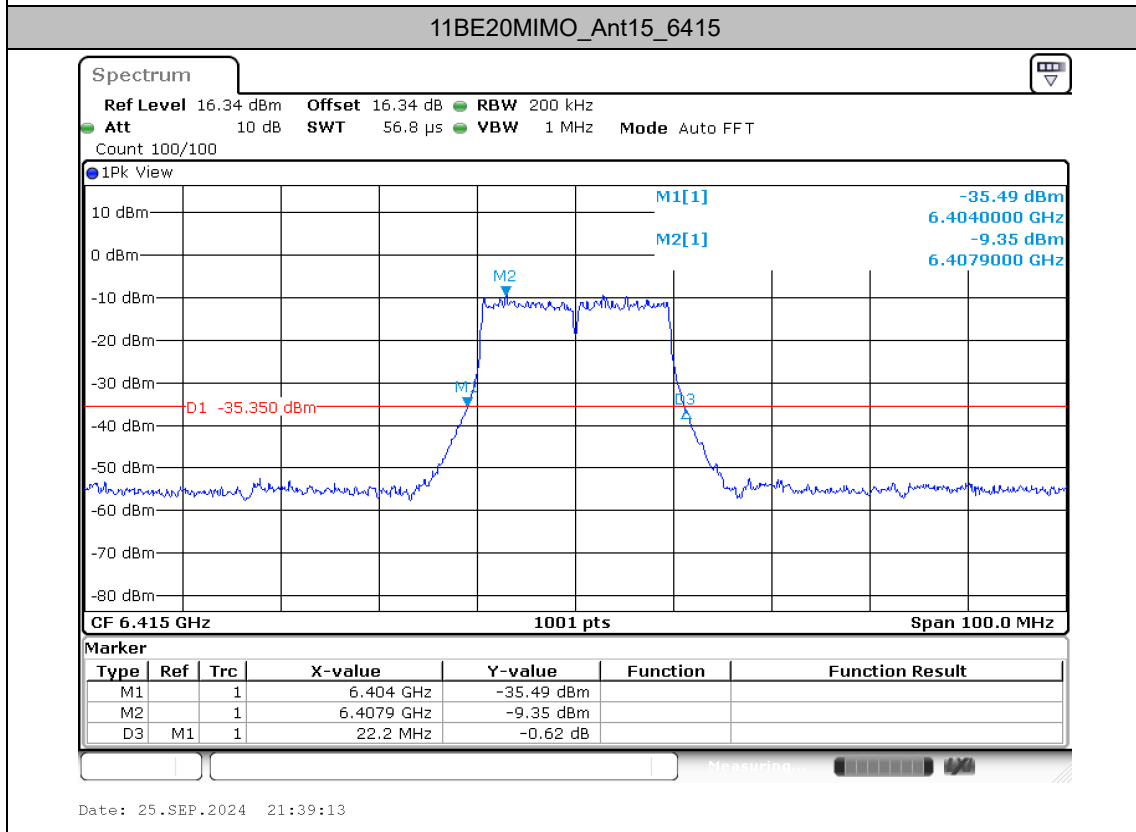
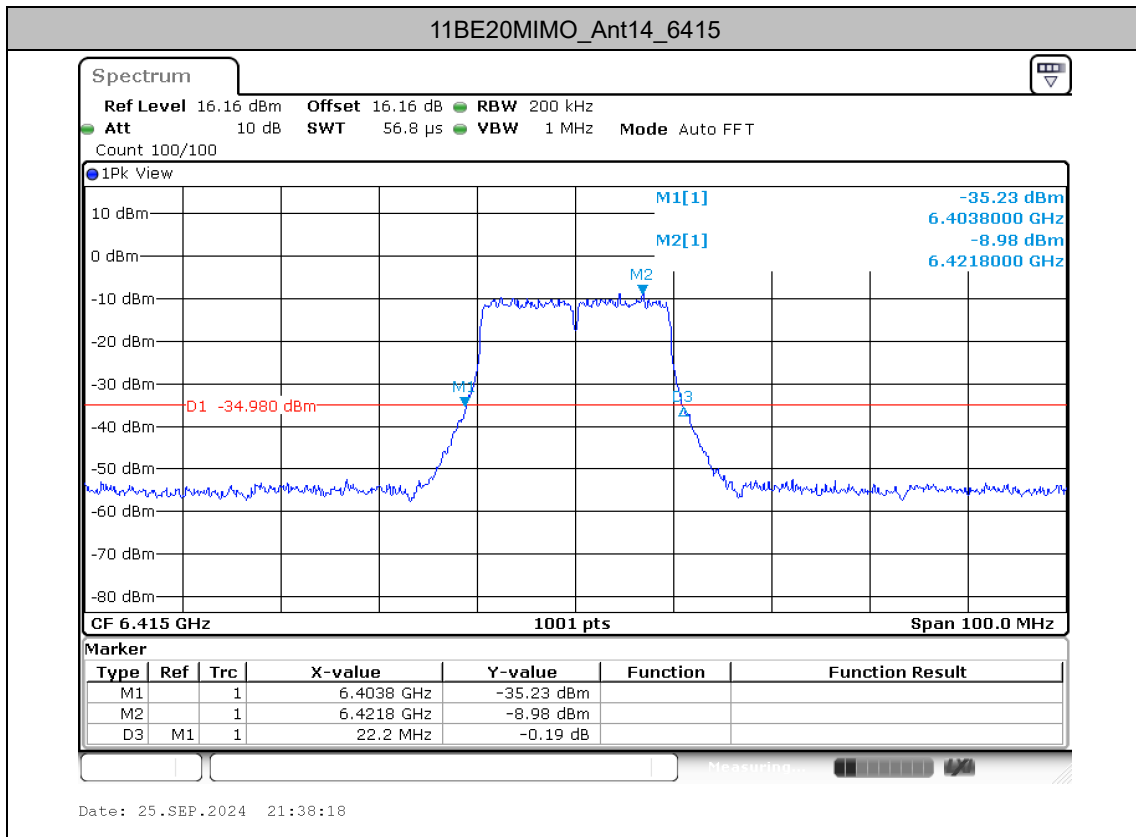


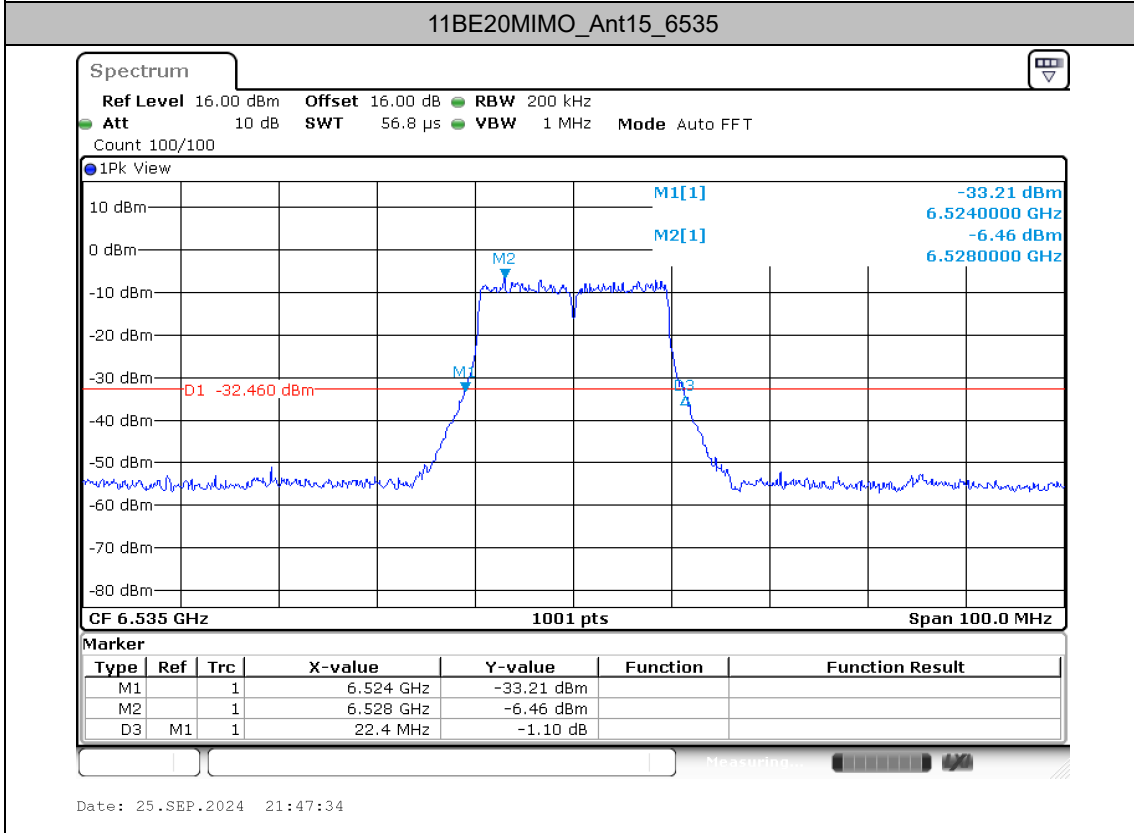
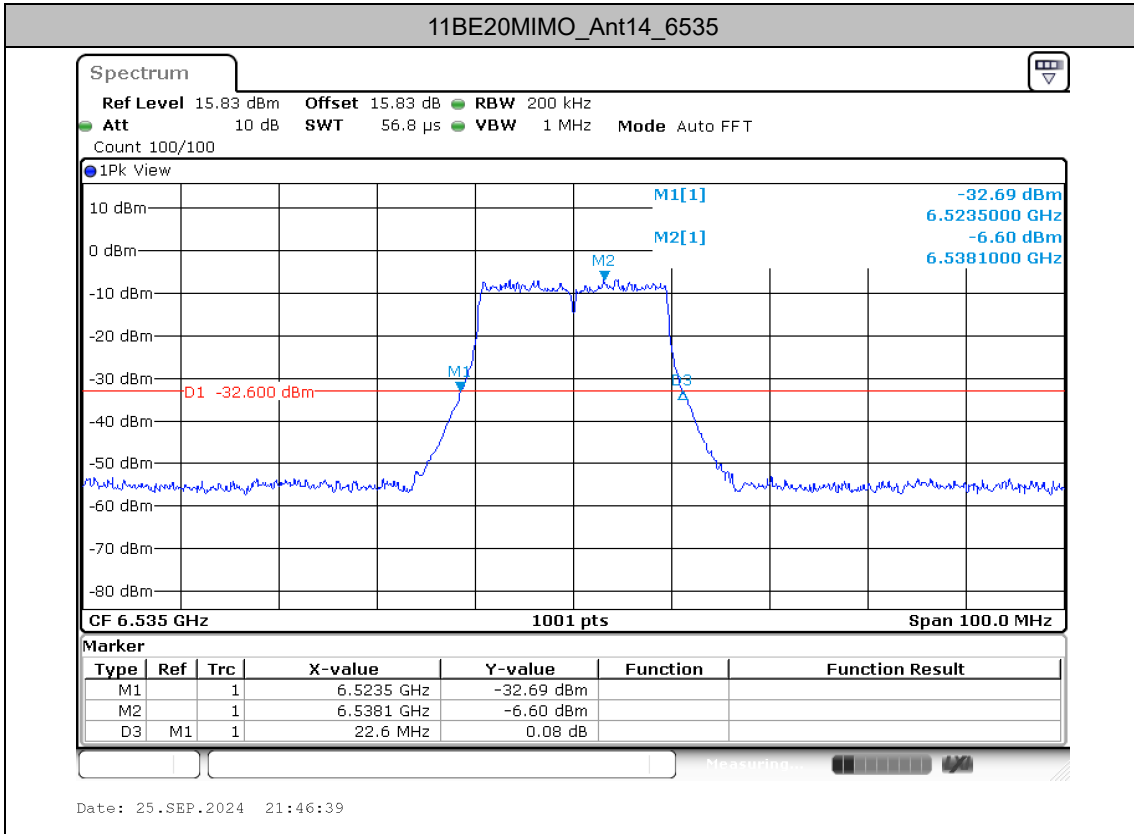


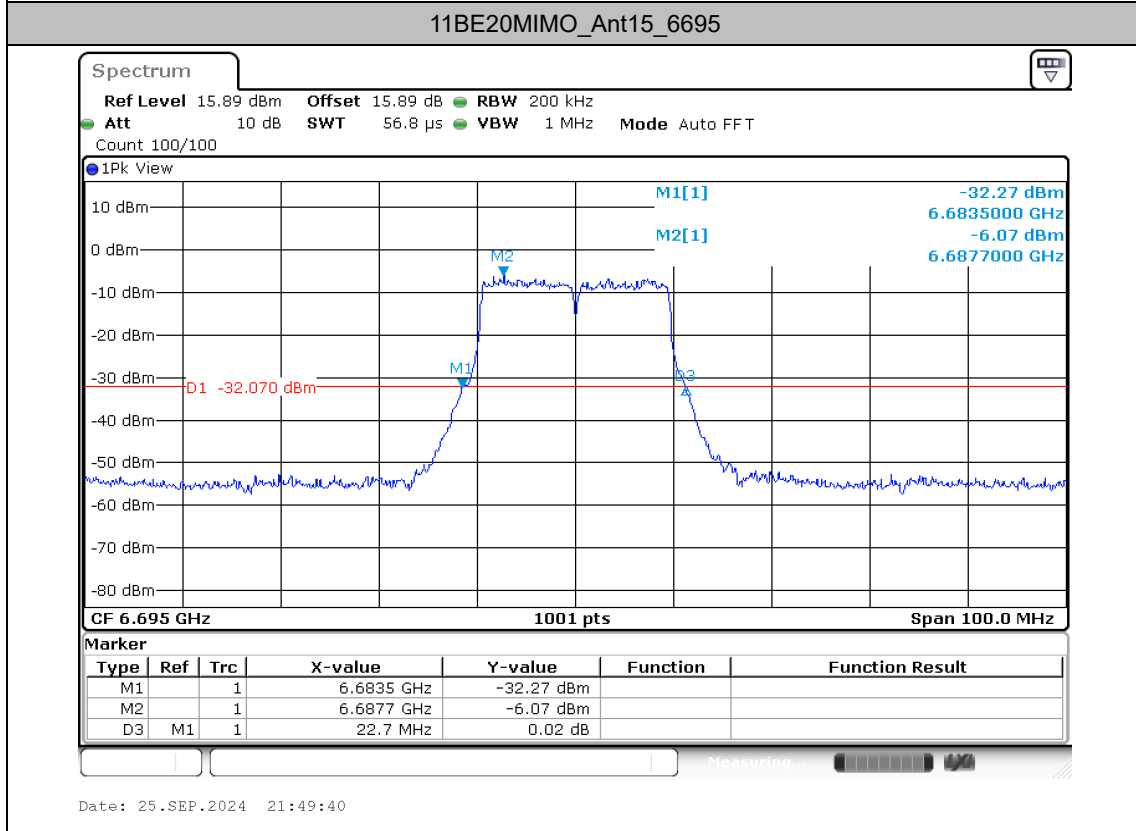
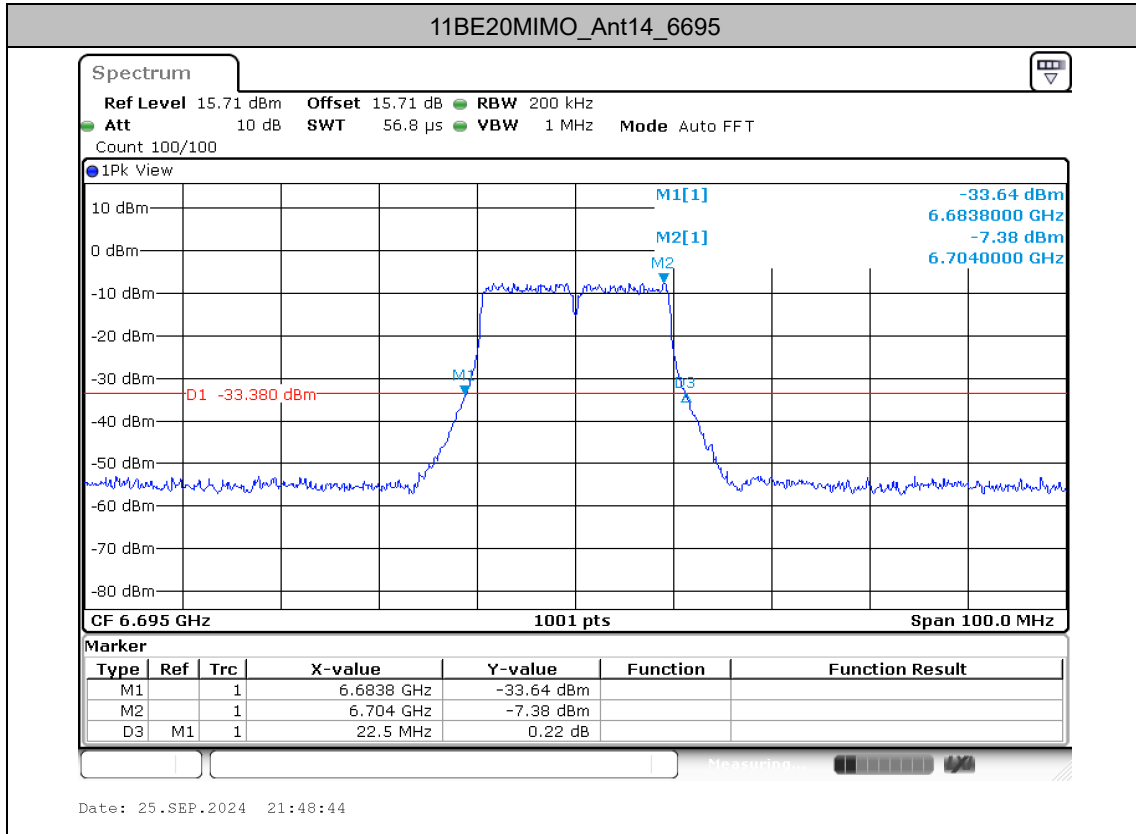


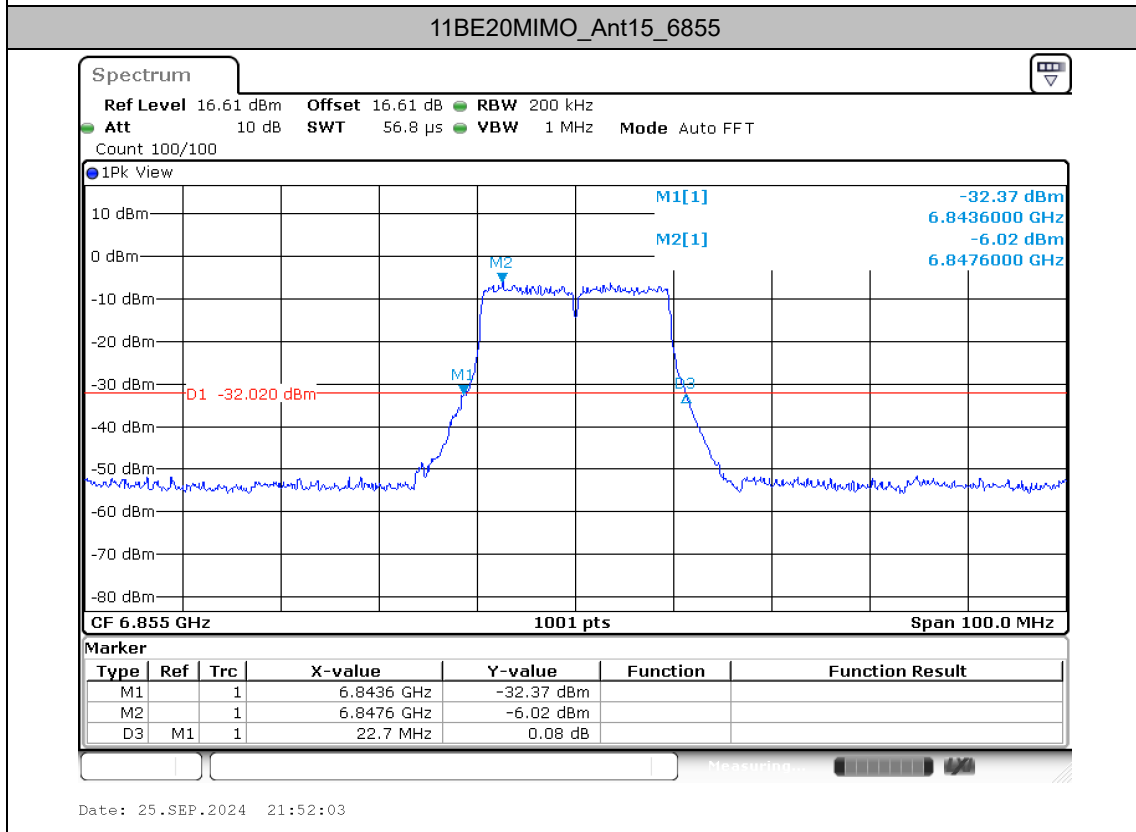
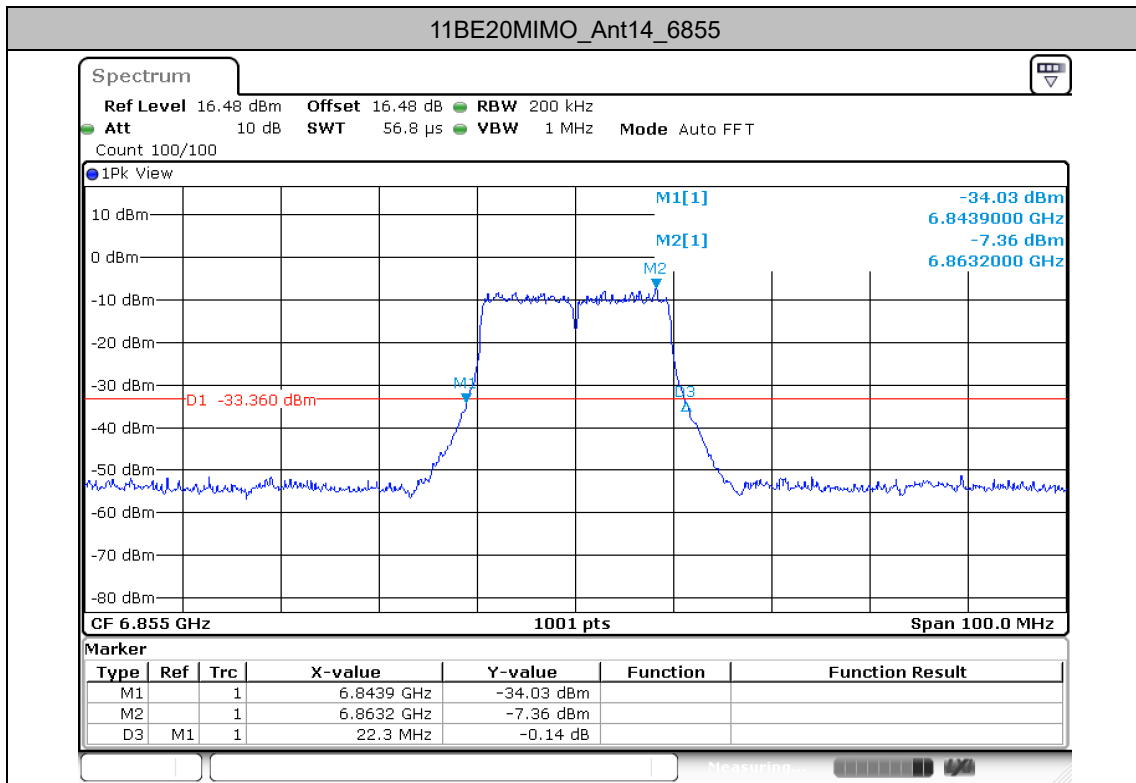


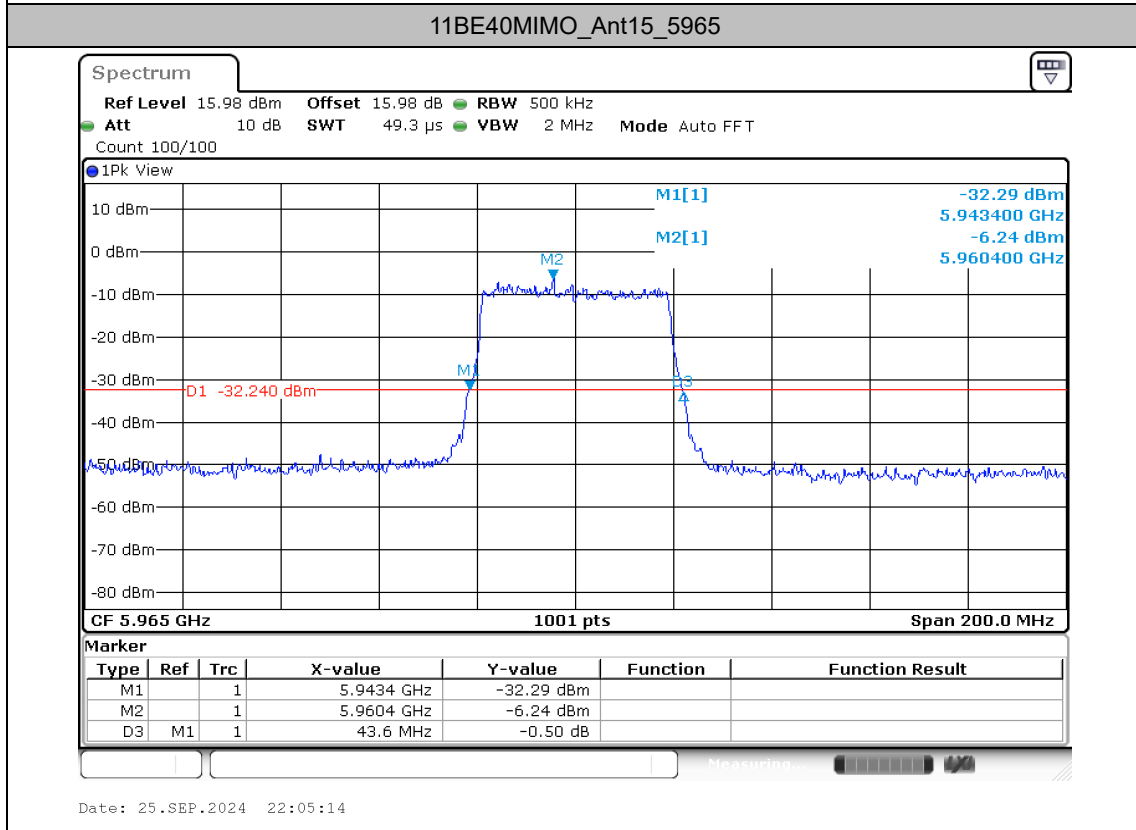
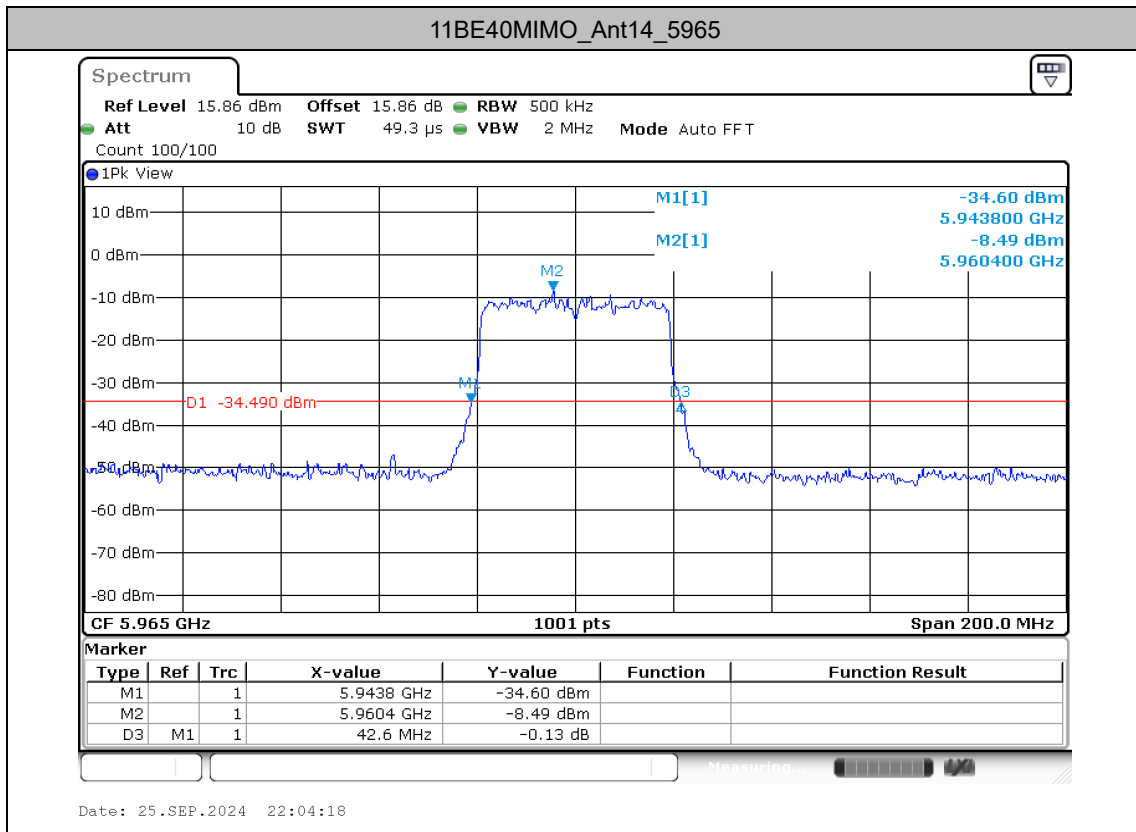


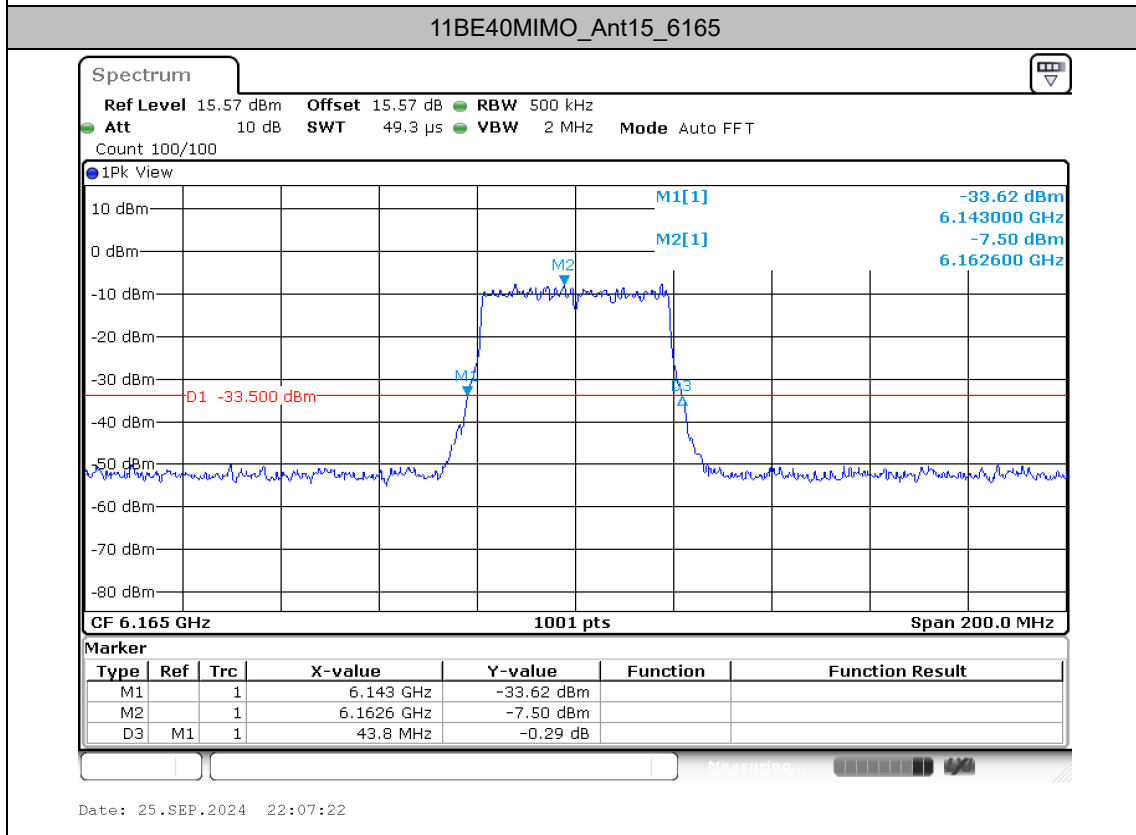
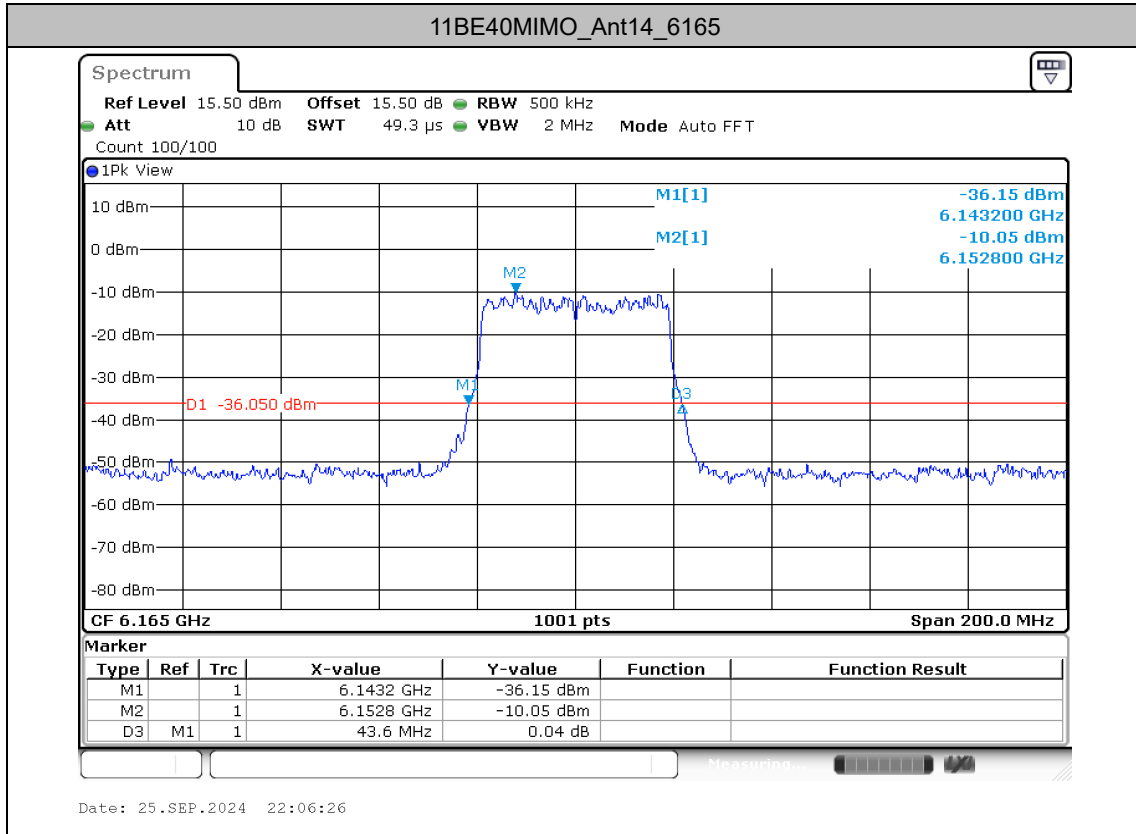


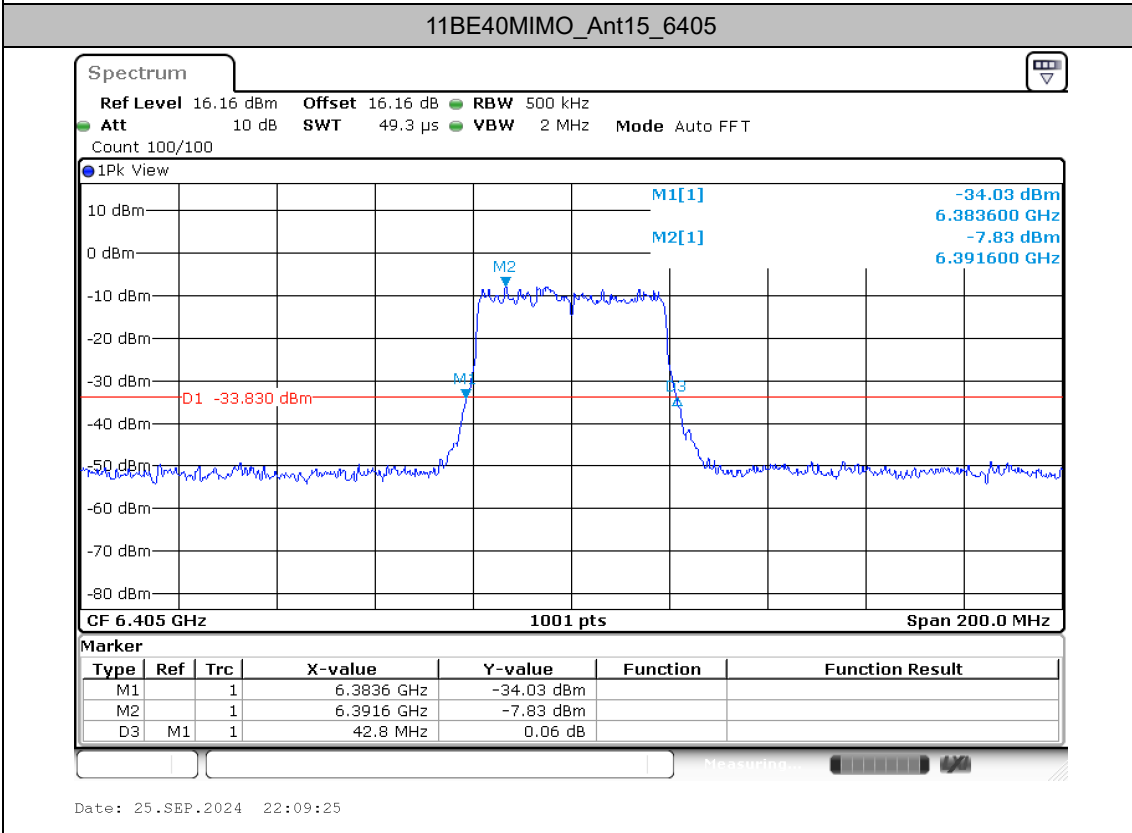
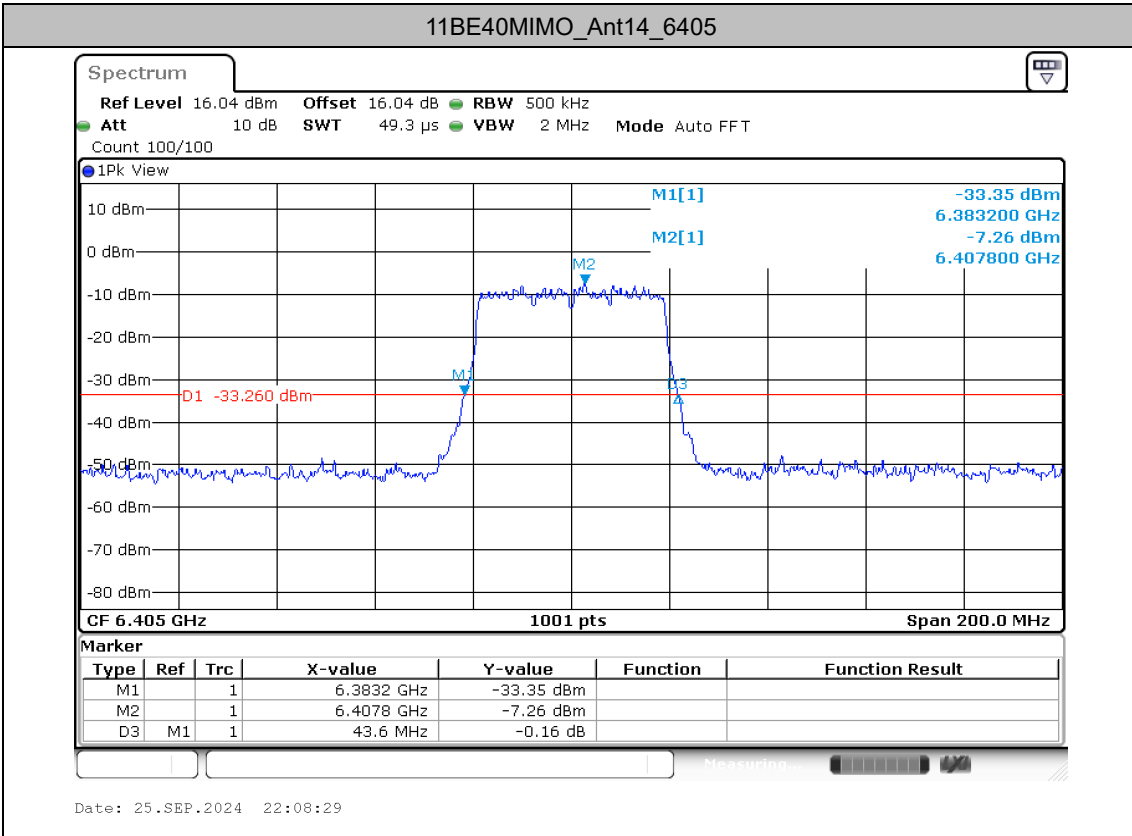


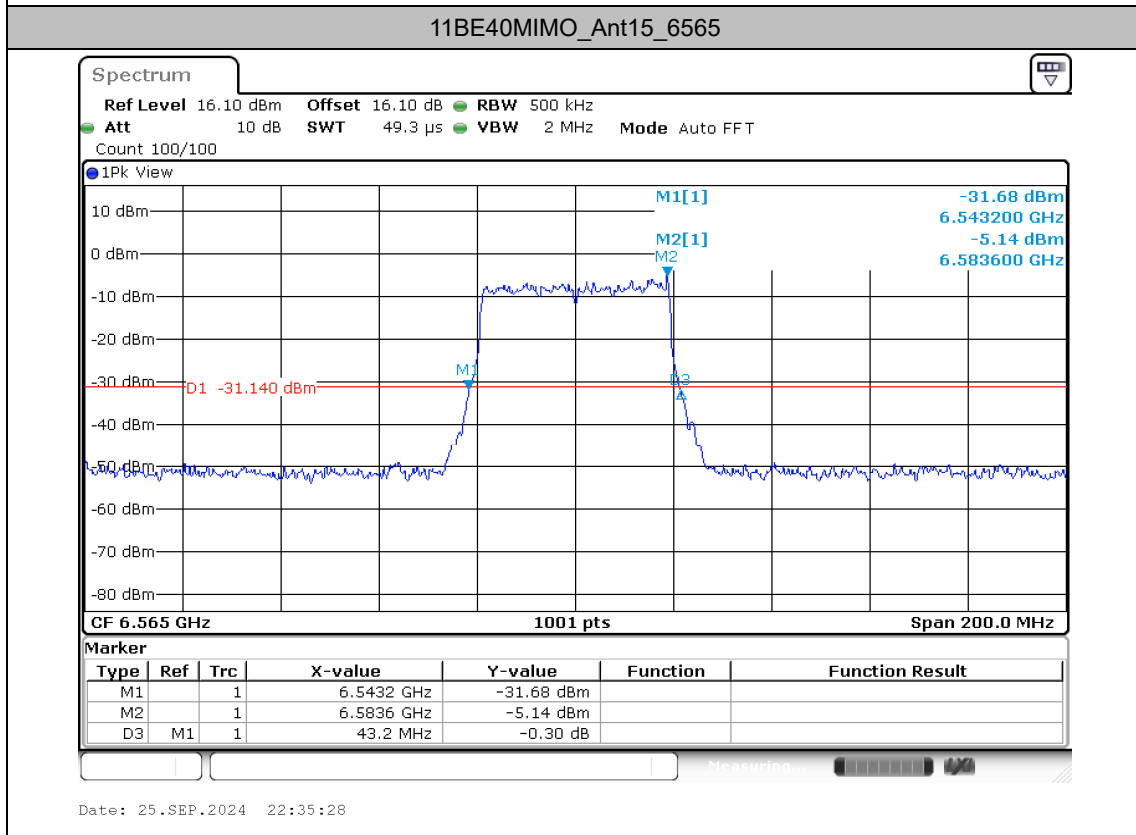
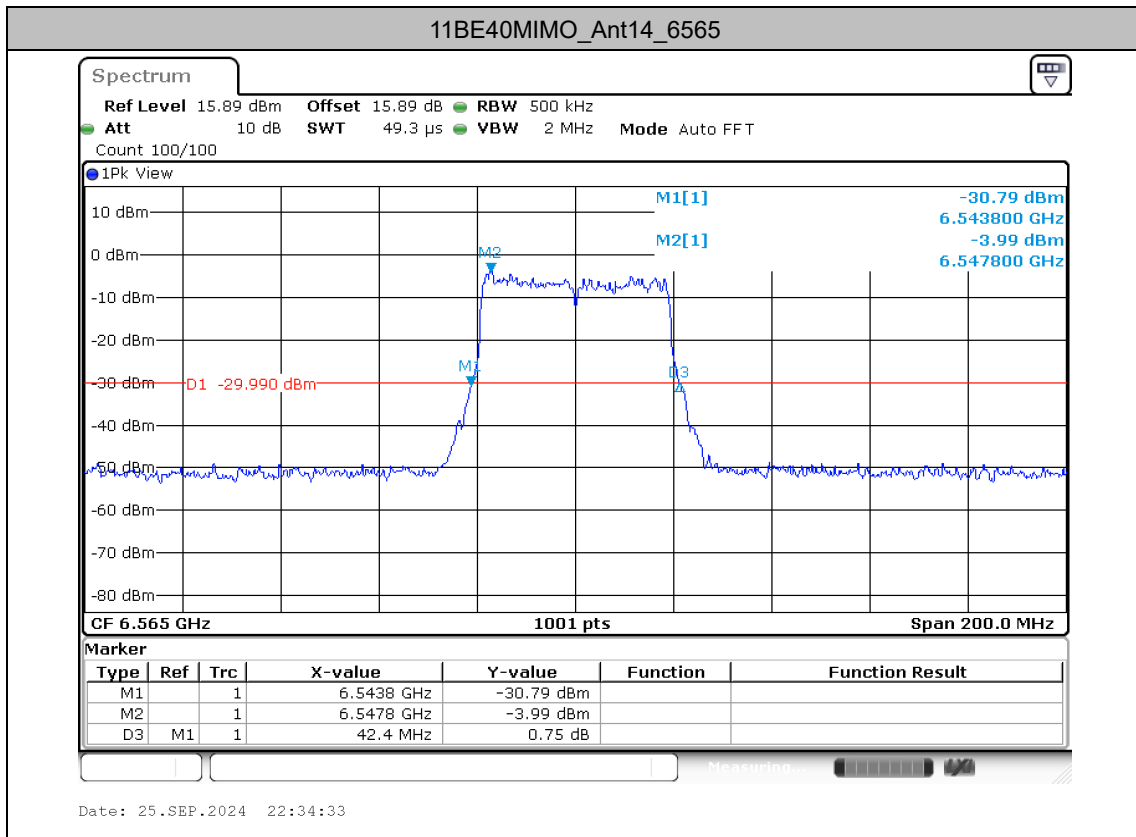


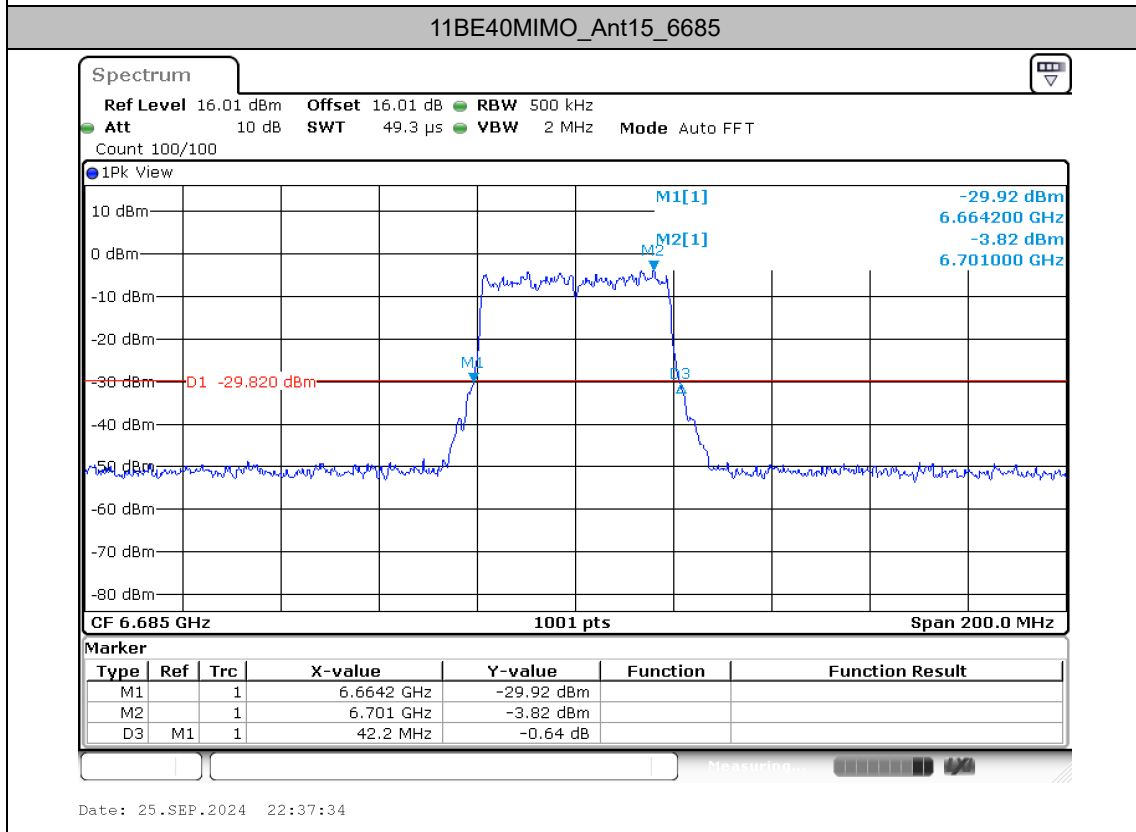
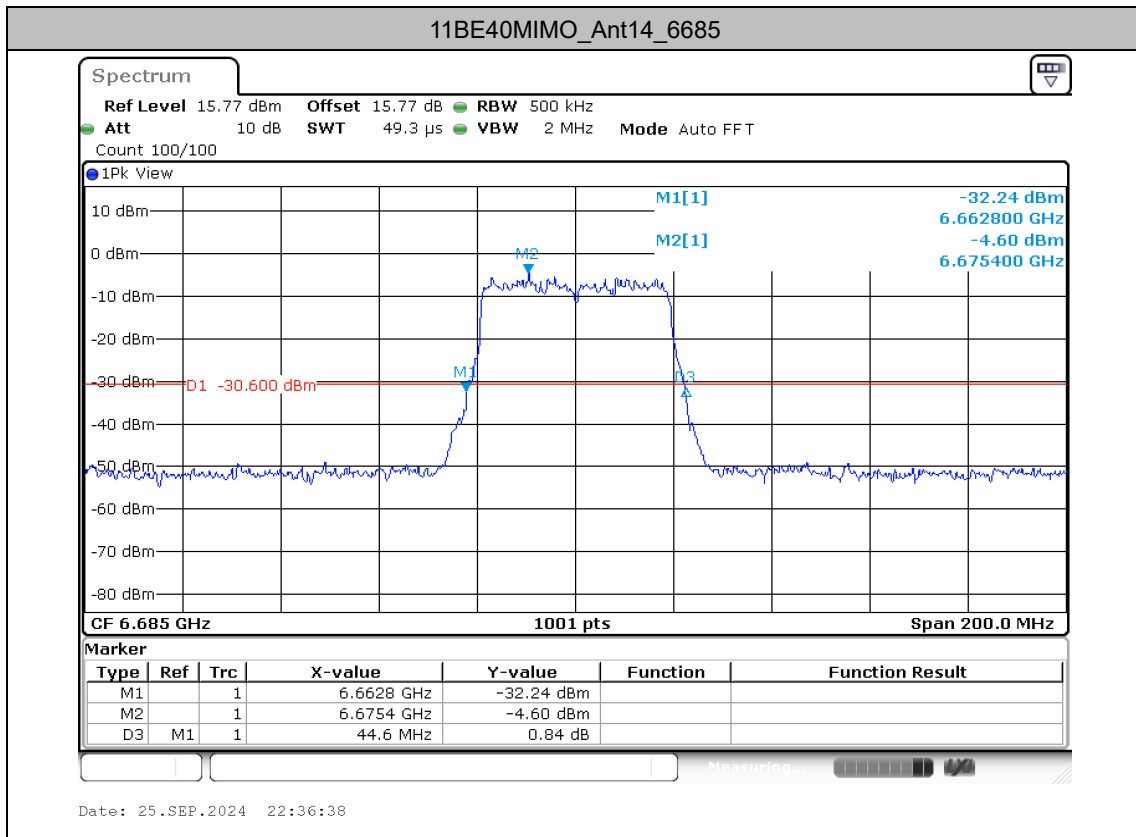


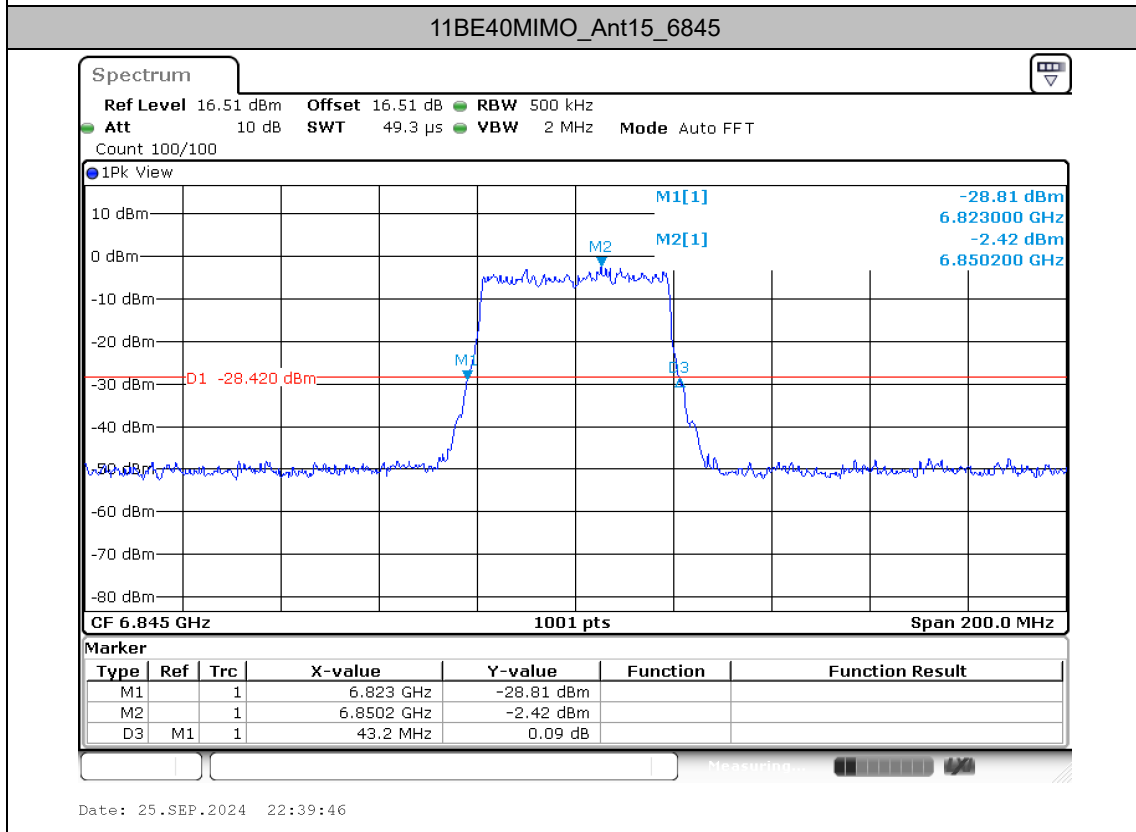
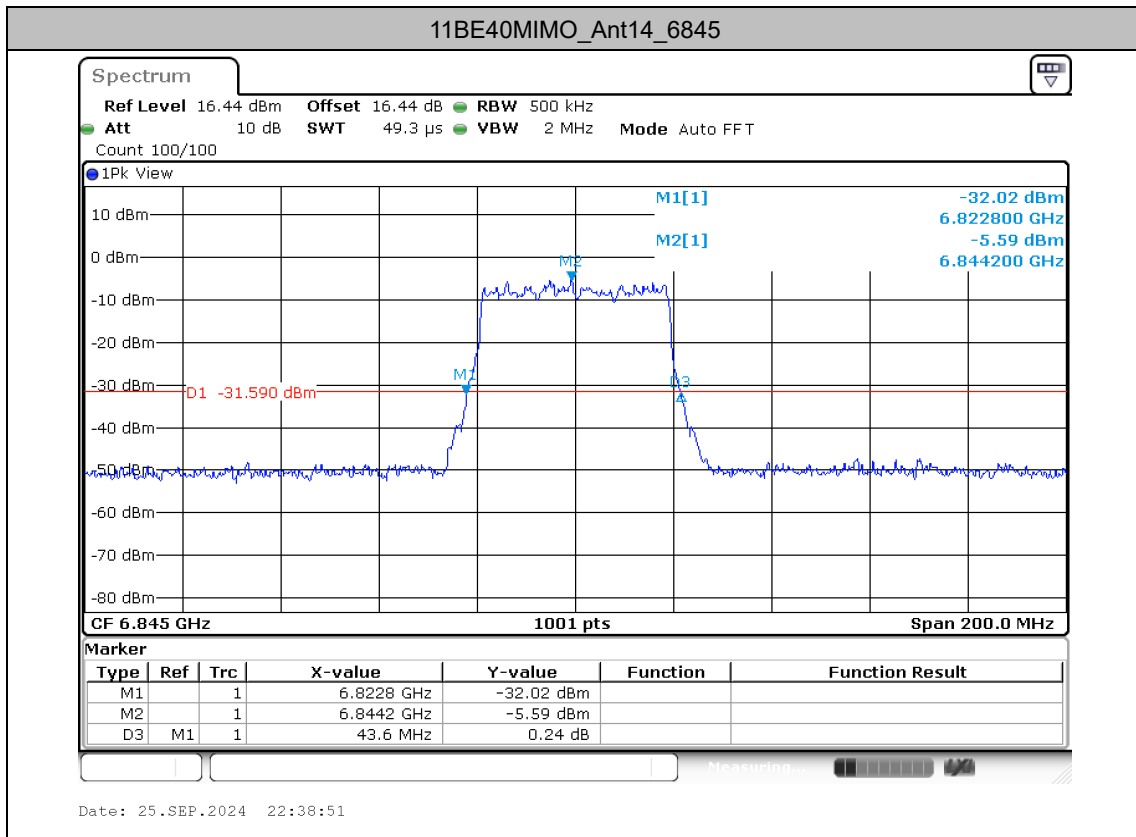


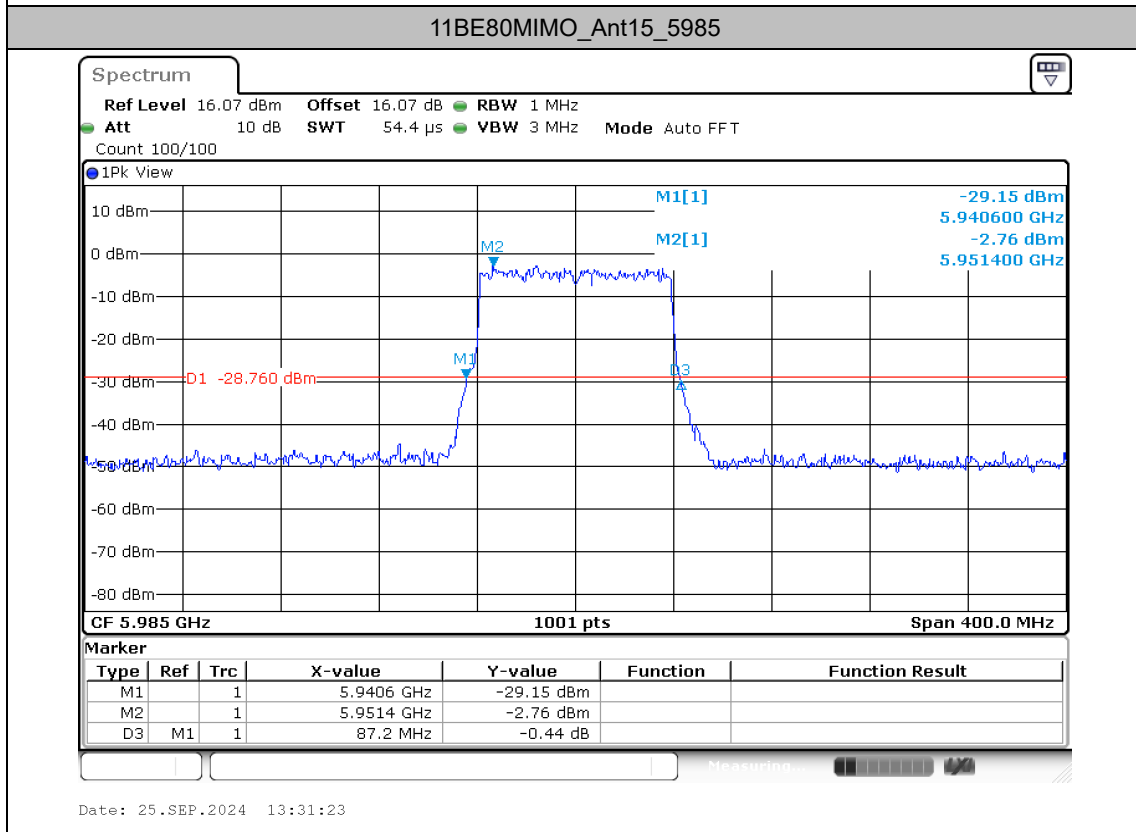
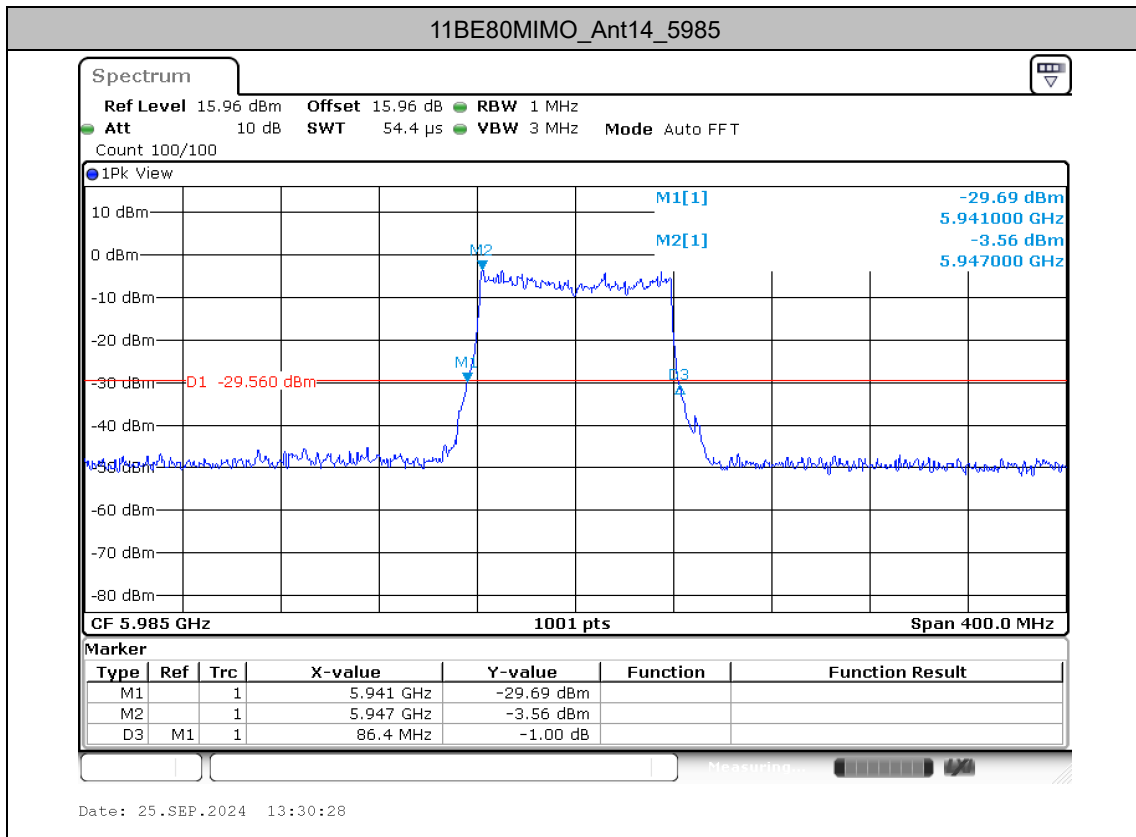


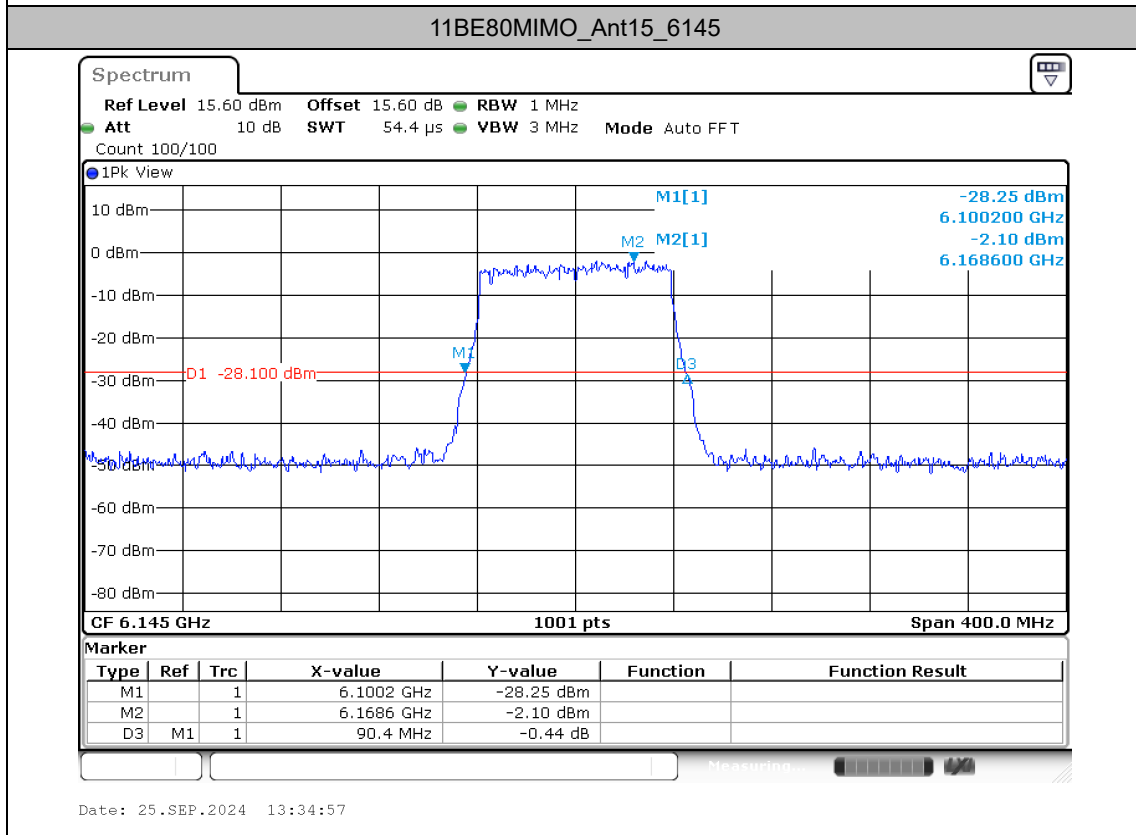
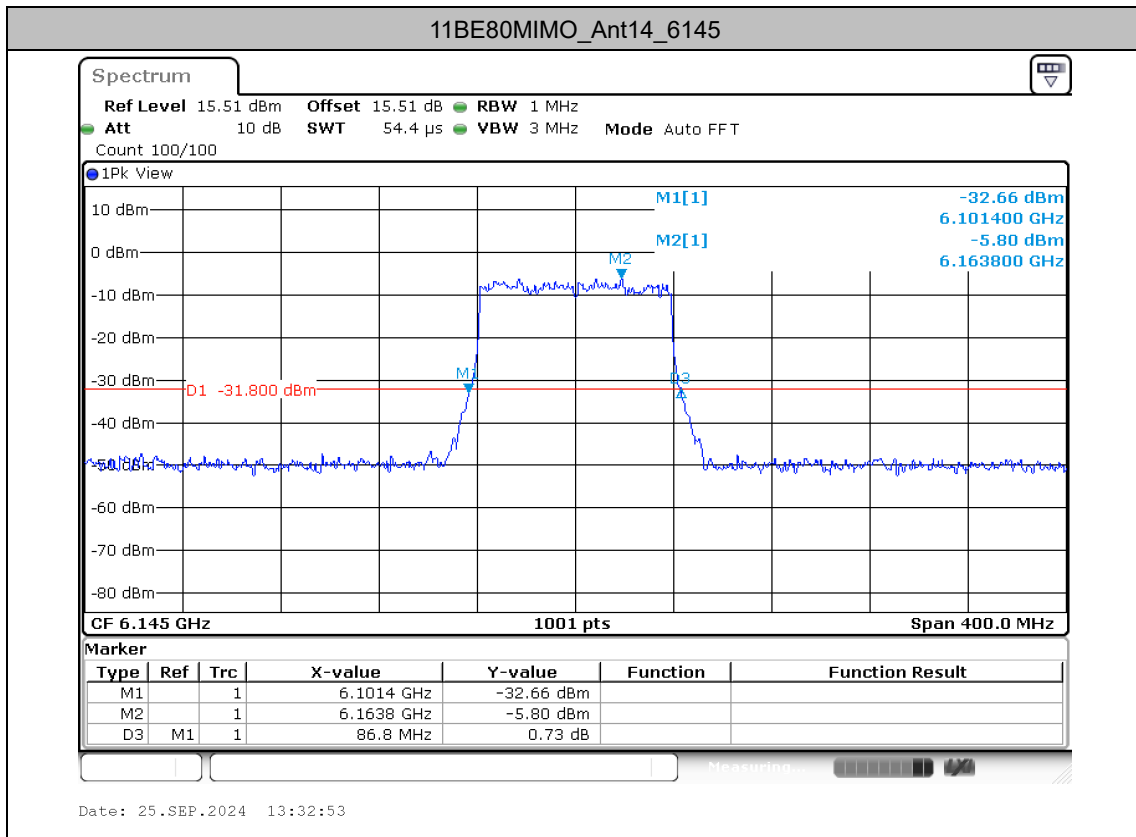


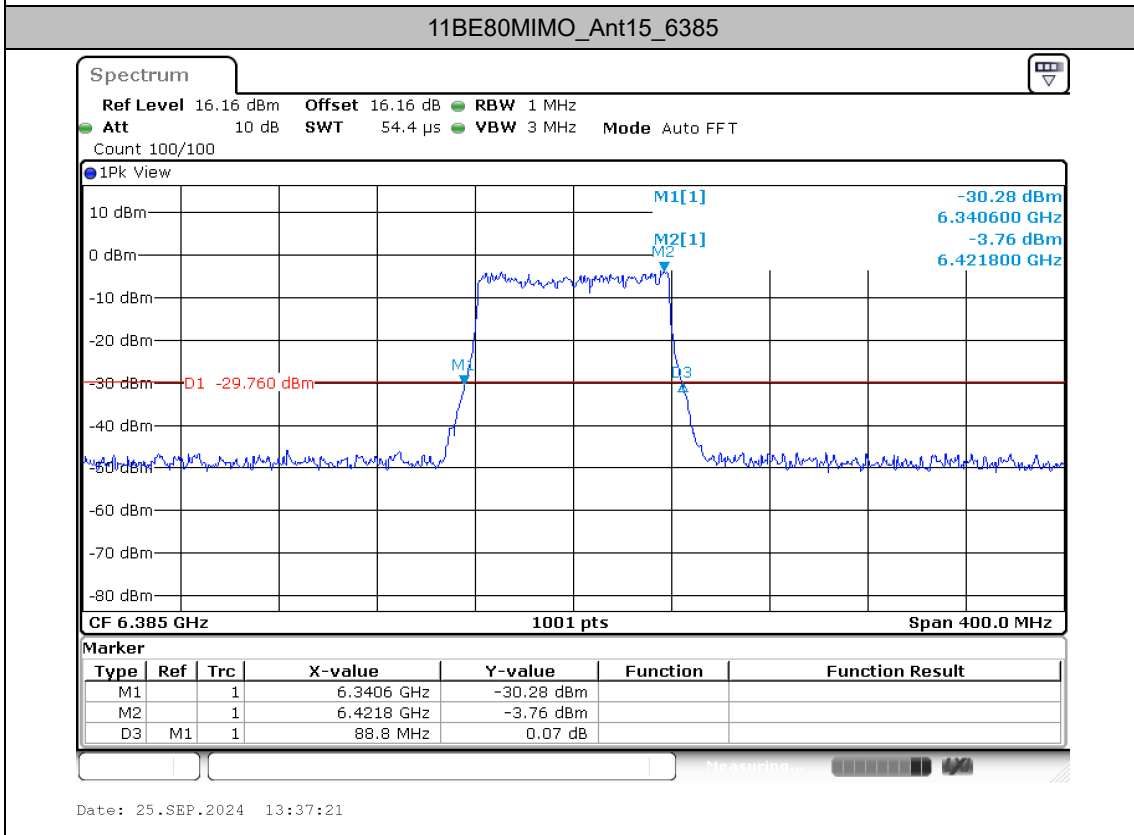
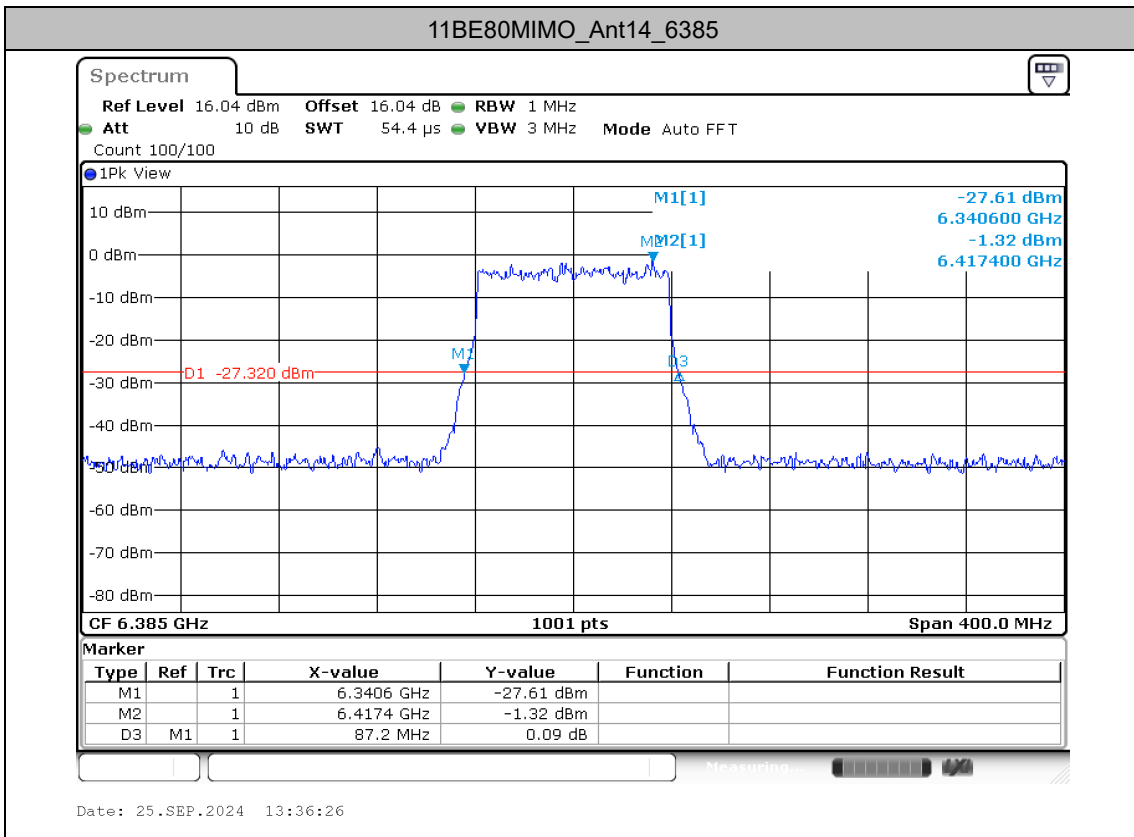


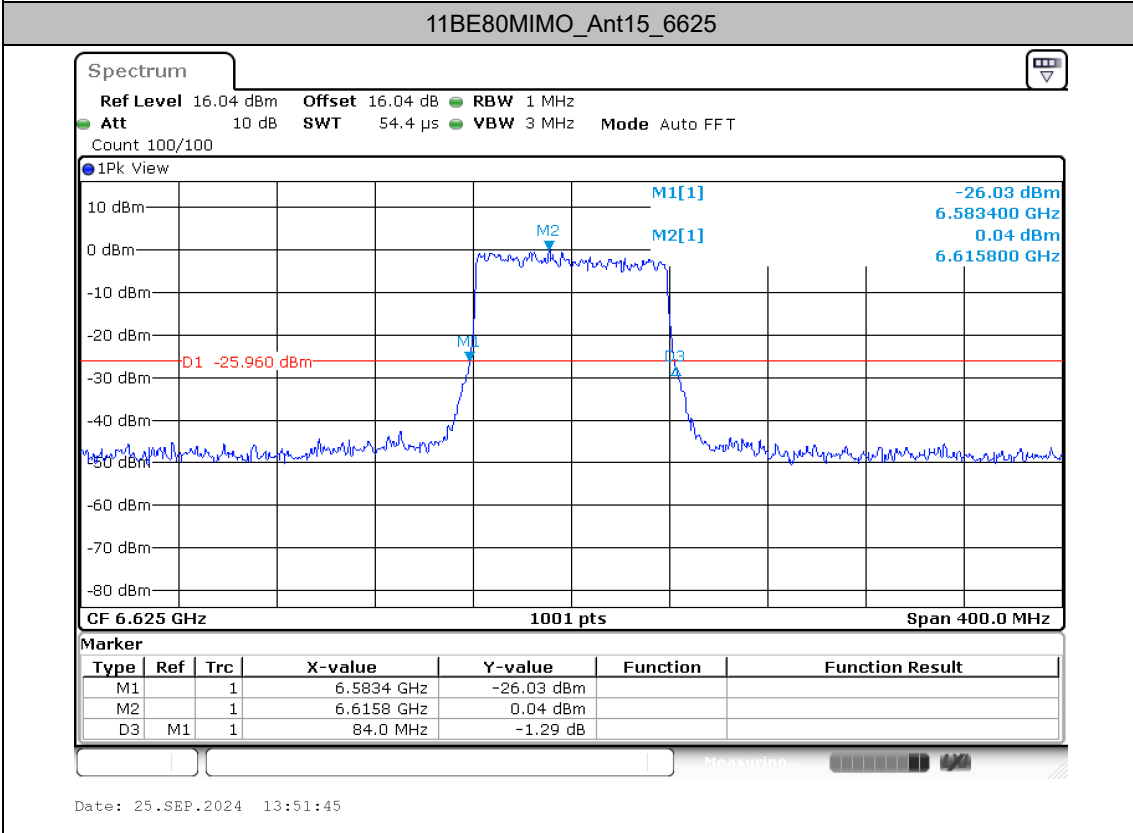
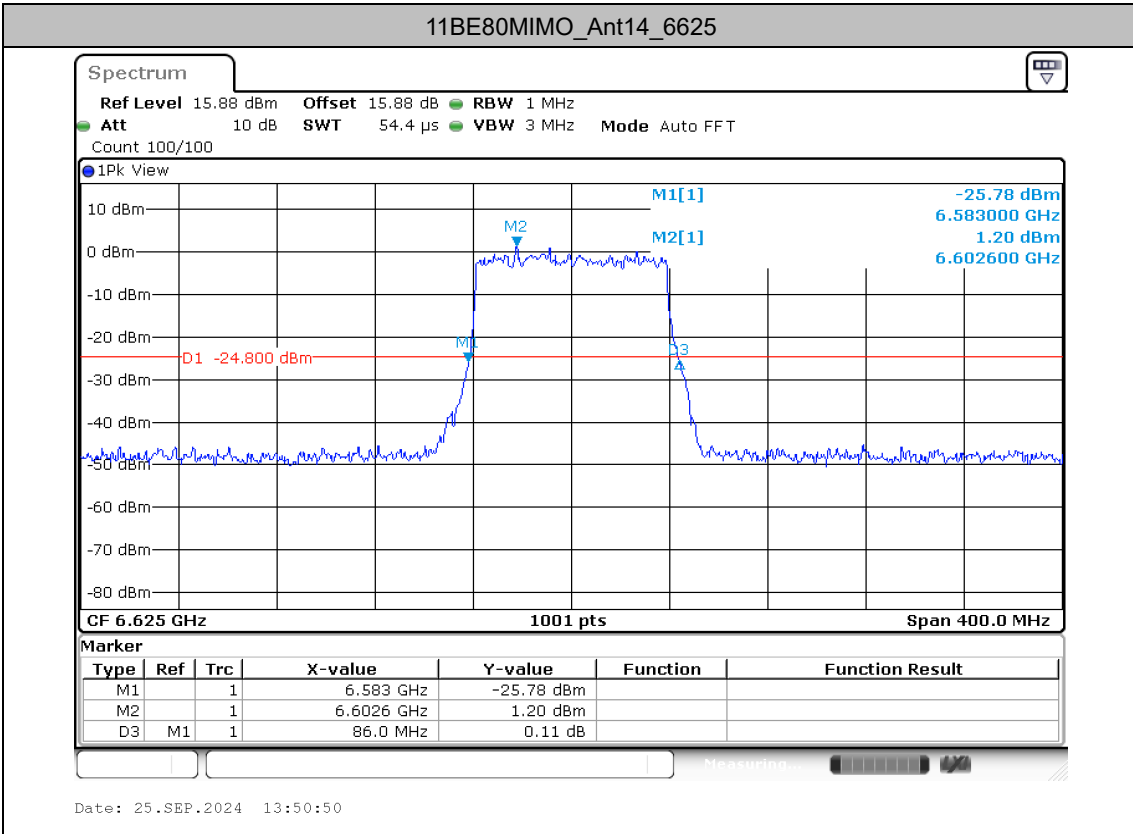


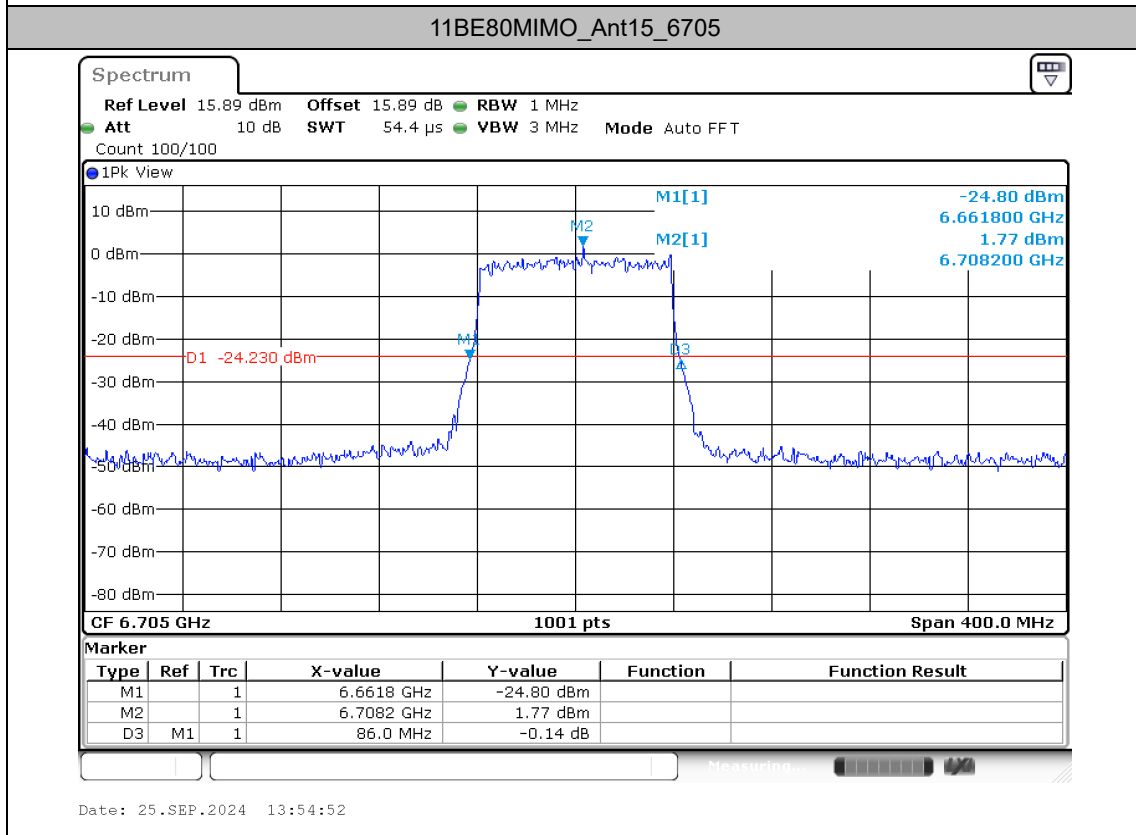
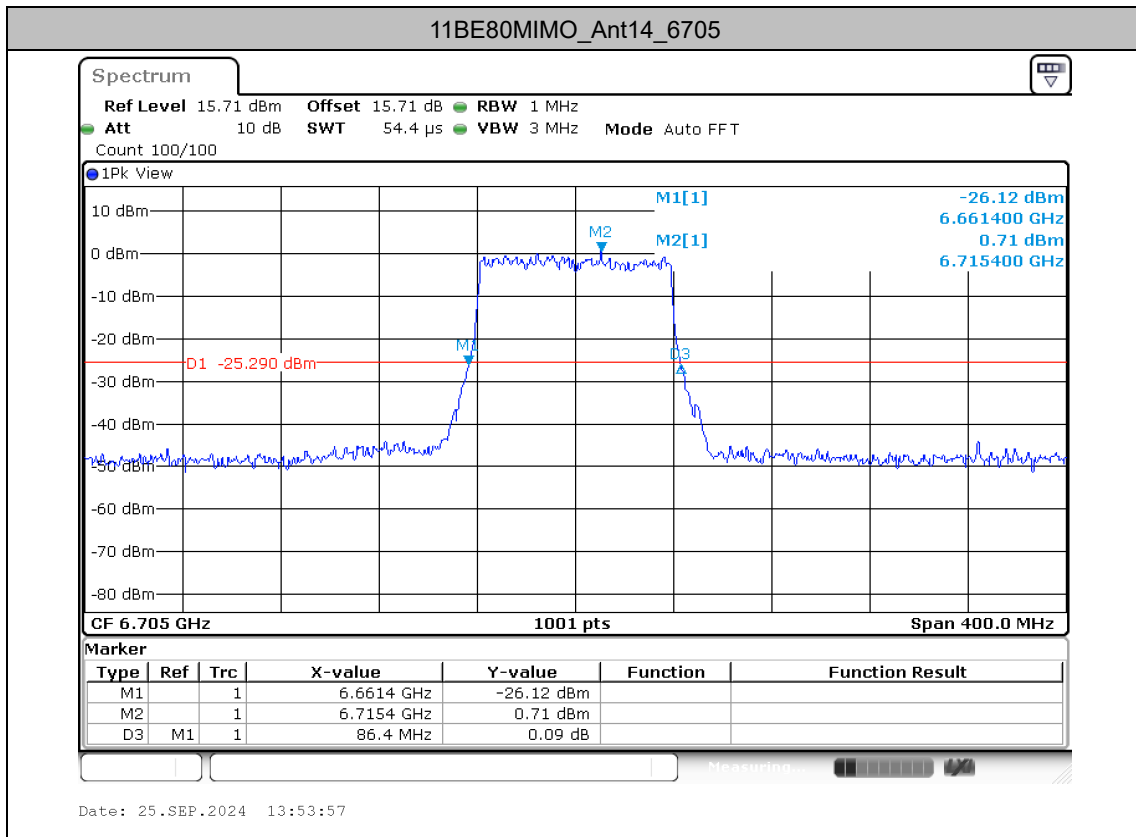


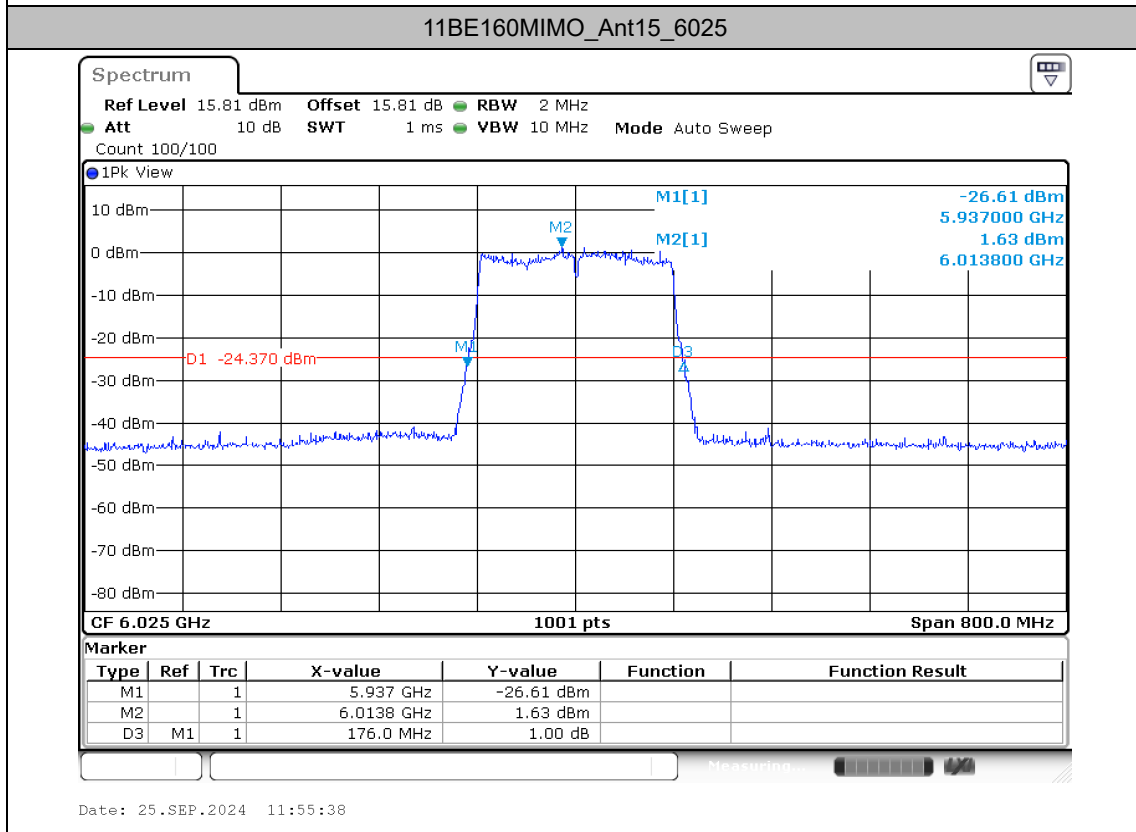
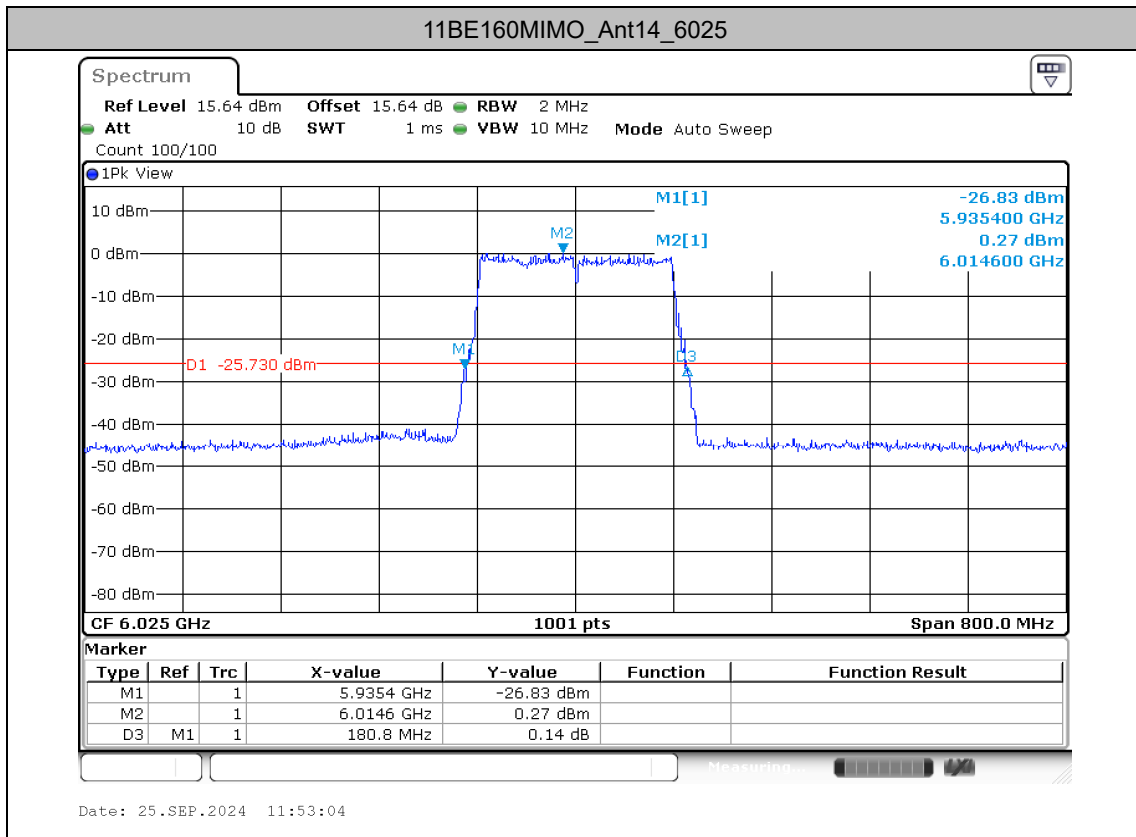


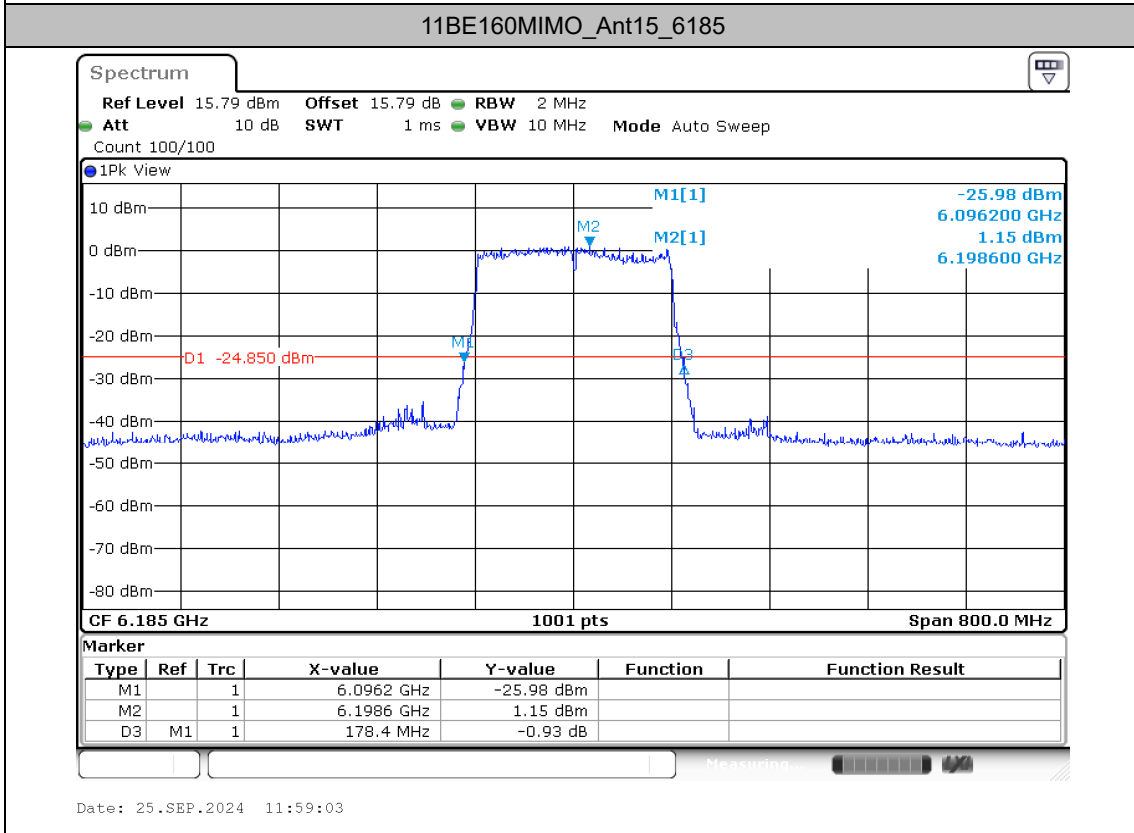
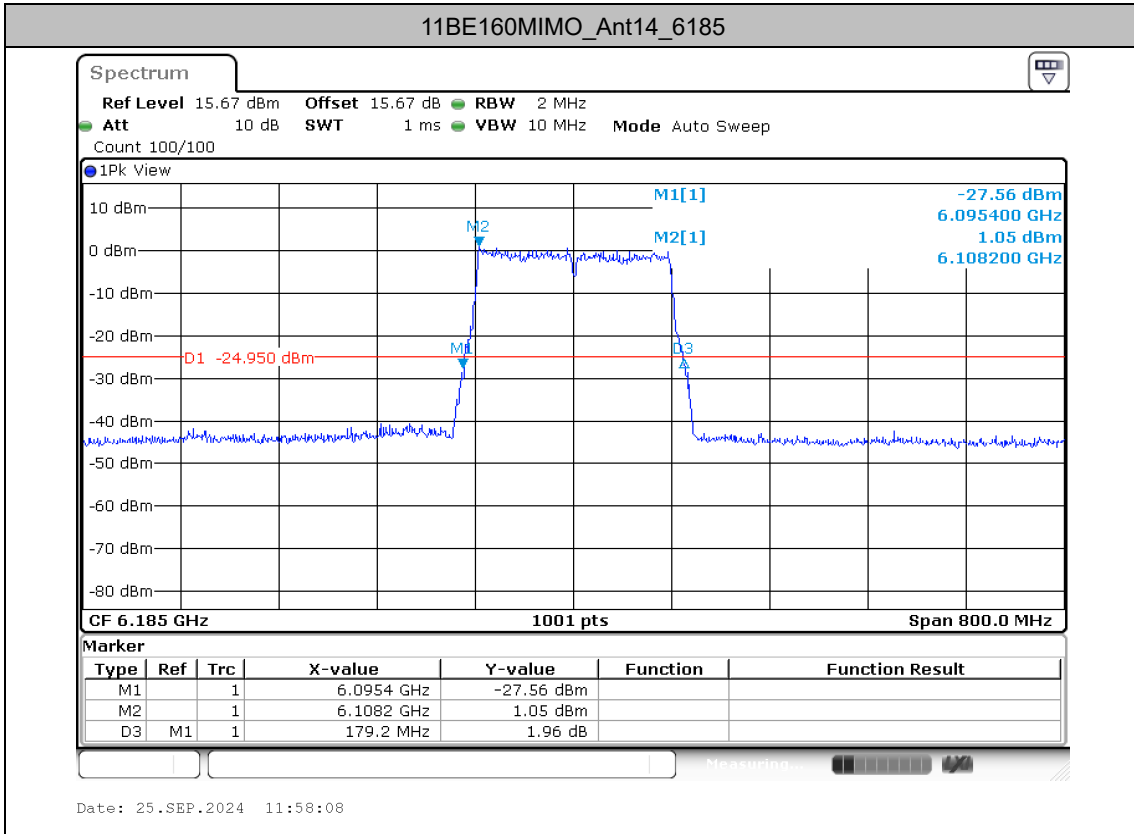


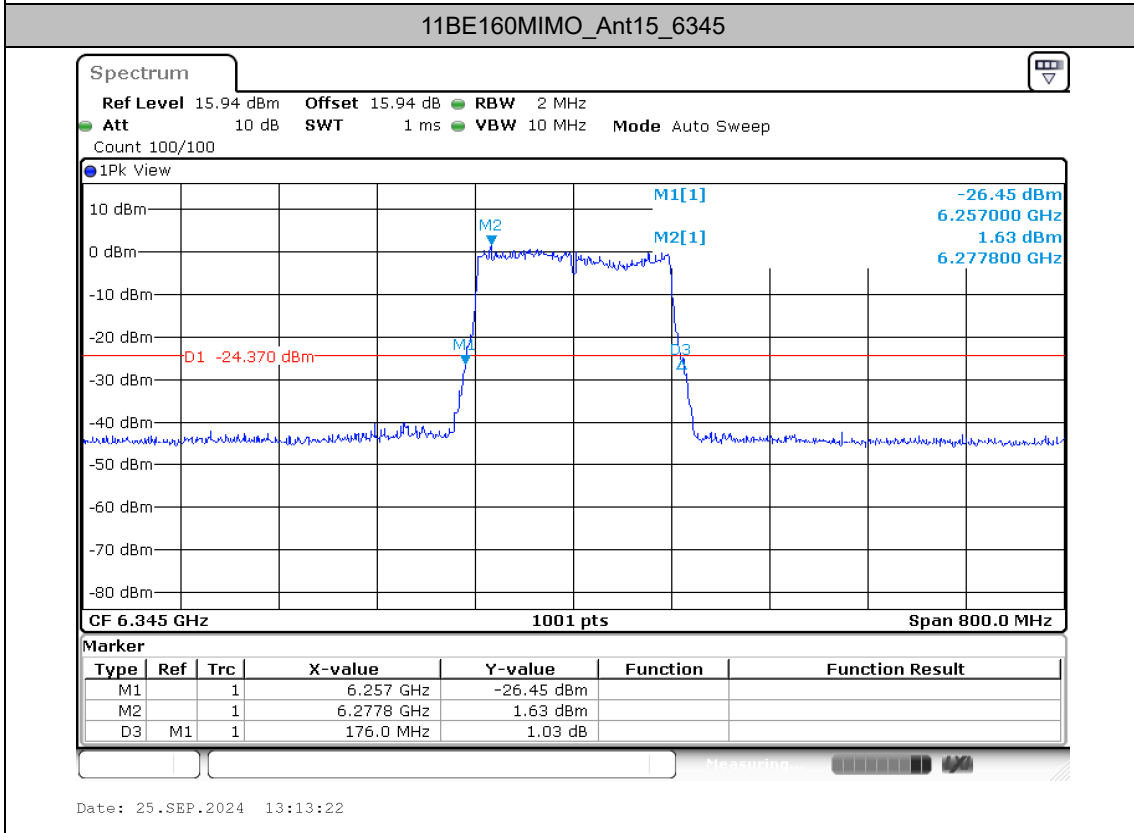
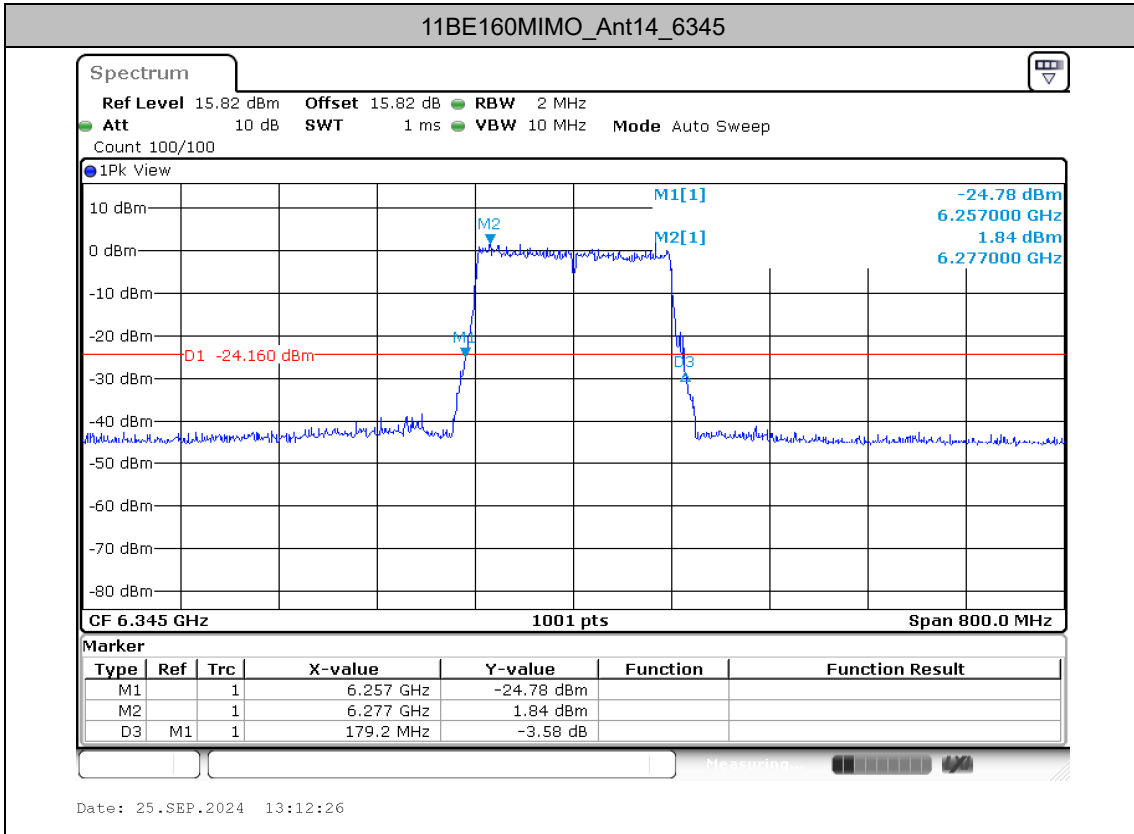


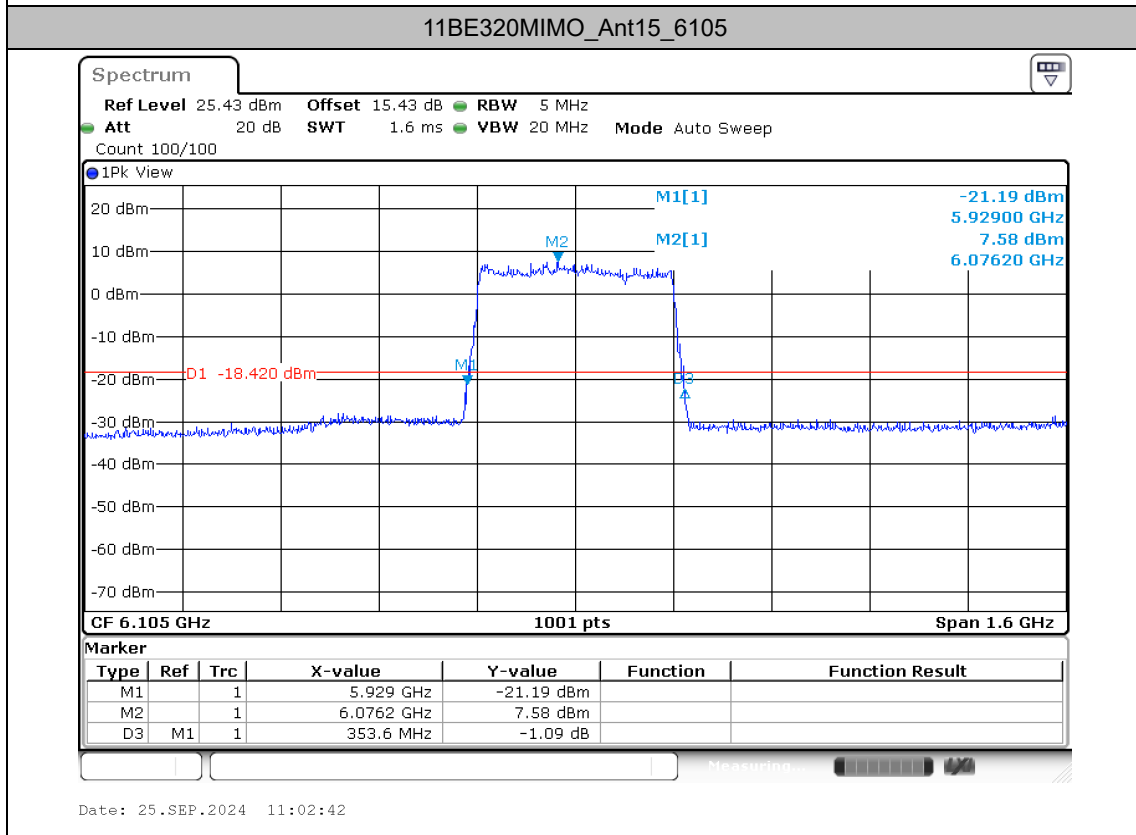
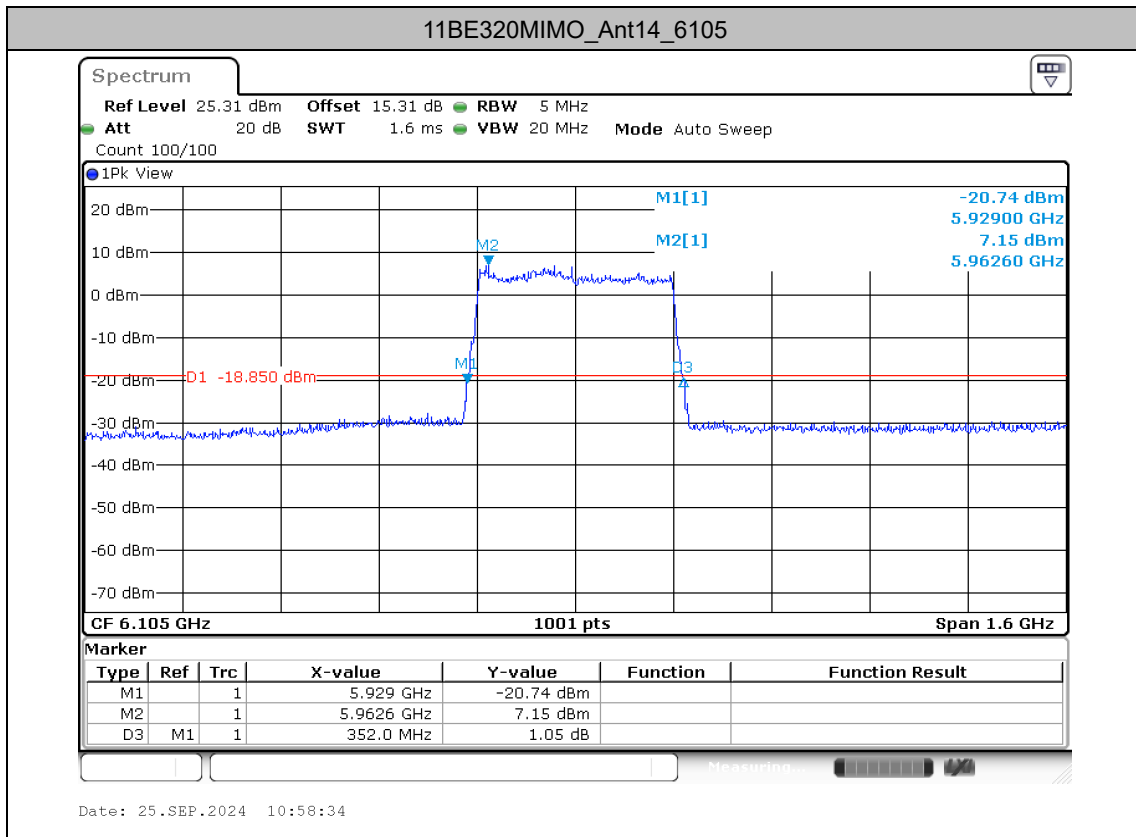


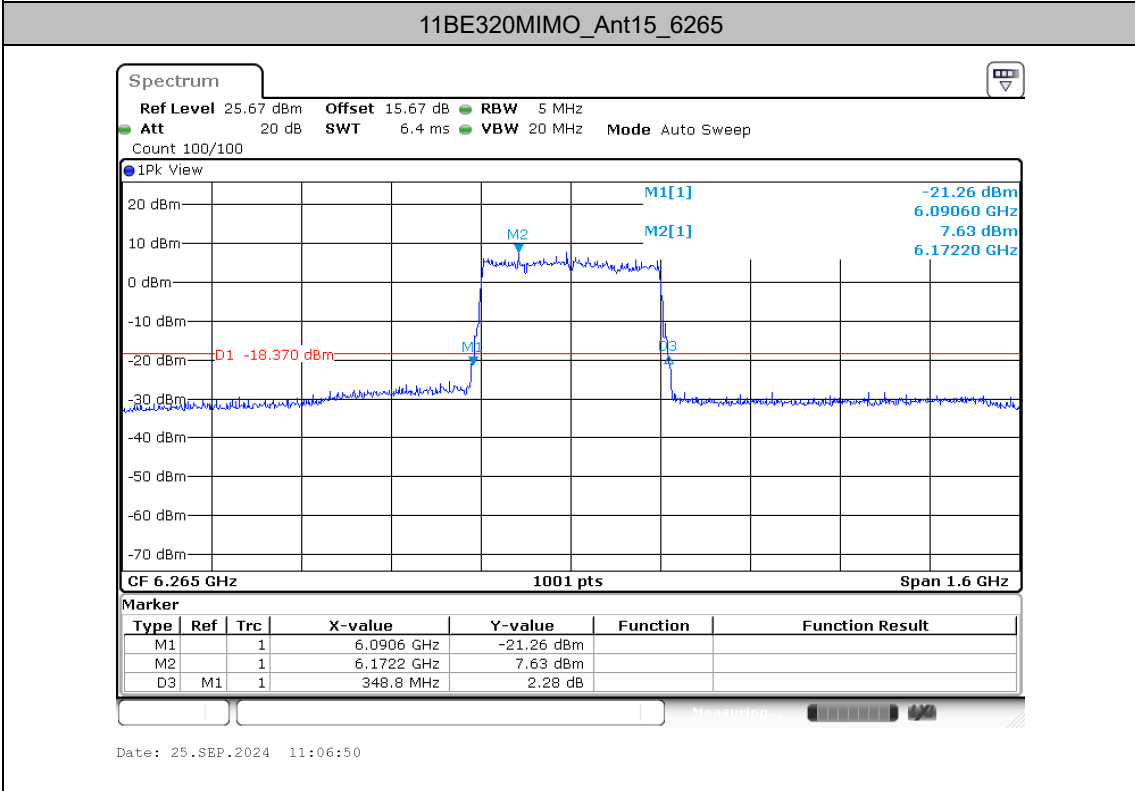
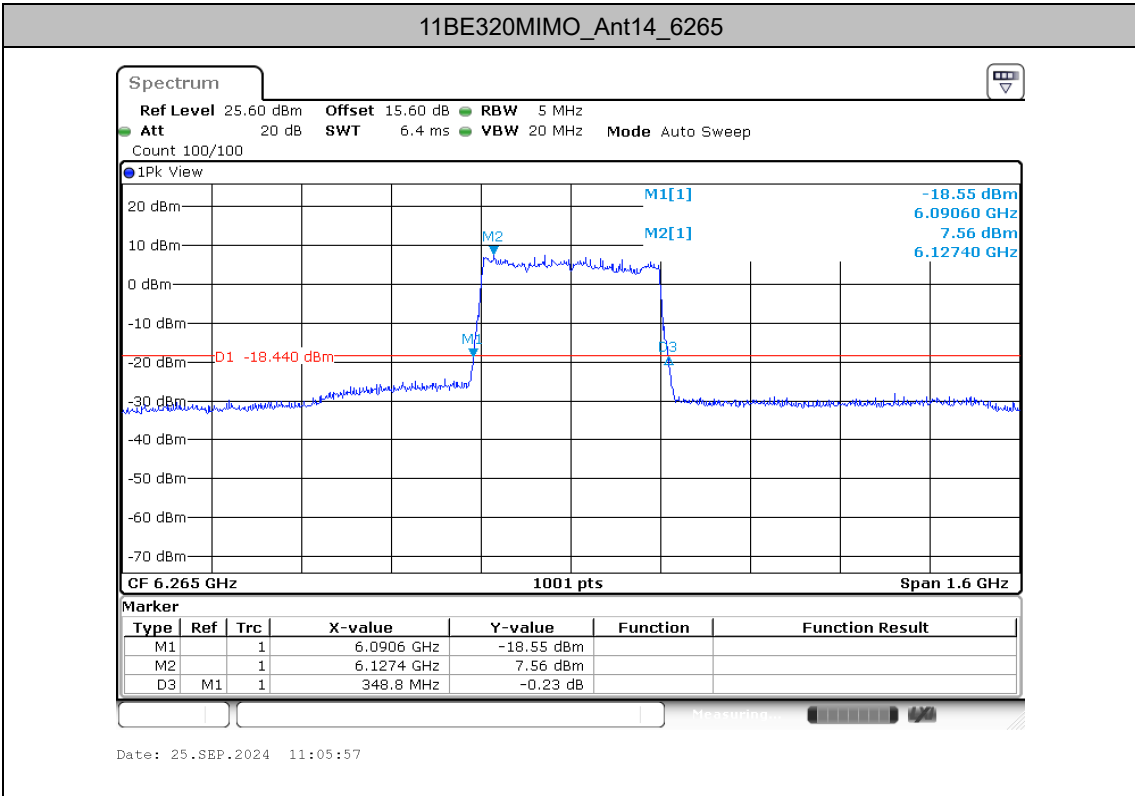














Occupied channel bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A-CDD	Ant14	5955	17.366	5946.2169	5963.5831	-	-
	Ant15	5955	17.158	5946.3369	5963.4952	-	-
	Ant14	6175	17.53	6166.0609	6183.5911	-	-
	Ant15	6175	17.174	6166.4329	6183.6071	-	-
	Ant14	6415	17.266	6406.2489	6423.5151	-	-
	Ant15	6415	17.206	6406.3889	6423.5951	-	-
	Ant14	6535	17.33	6526.1889	6543.5191	-	-
	Ant15	6535	17.146	6526.3529	6543.4992	-	-
	Ant14	6695	17.41	6686.0969	6703.5071	-	-
	Ant15	6695	17.134	6686.3409	6703.4752	-	-
	Ant14	6855	17.354	6846.1689	6863.5231	-	-
	Ant15	6855	17.194	6846.2969	6863.4912	-	-
11AX20MIMO	Ant14	5955	19.19	5945.3890	5964.5790	-	-
	Ant15	5955	19.238	5945.3690	5964.6070	-	-
	Ant14	6175	19.45	6165.3210	6184.7710	-	-
	Ant15	6175	19.51	6165.1610	6184.6710	-	-
	Ant14	6415	19.322	6405.3650	6424.6870	-	-
	Ant15	6415	19.482	6405.3090	6424.7910	-	-
	Ant14	6535	19.394	6525.2410	6544.6350	-	-
	Ant15	6535	19.21	6525.4010	6544.6110	-	-
	Ant14	6695	19.334	6685.3130	6704.6470	-	-
	Ant15	6695	19.23	6685.3970	6704.6270	-	-
	Ant14	6855	19.418	6845.3410	6864.7590	-	-
	Ant15	6855	19.306	6845.2610	6864.5670	-	-
11AX40MIMO	Ant14	5965	38.86	5945.1940	5984.0541	-	-
	Ant15	5965	38.372	5945.7699	5984.1421	-	-
	Ant14	6165	38.556	6145.7059	6184.2621	-	-
	Ant15	6165	38.444	6145.6899	6184.1341	-	-
	Ant14	6405	38.452	6385.8099	6424.2621	-	-
	Ant15	6405	38.324	6385.7459	6424.0701	-	-
	Ant14	6565	38.276	6545.9219	6584.1981	-	-
	Ant15	6565	38.972	6545.4980	6584.4701	-	-
	Ant14	6685	38.372	6665.7379	6704.1101	-	-
	Ant15	6685	38.332	6665.8899	6704.2221	-	-
	Ant14	6845	38.46	6825.8019	6864.2621	-	-
	Ant15	6845	38.492	6825.6979	6864.1901	-	-
11AX80MIMO	Ant14	5985	78.312	5945.6119	6023.9241	-	-



	Ant15	5985	78.024	5946.0119	6024.0361	-	-
	Ant14	6145	78.408	6105.7559	6184.1641	-	-
	Ant15	6145	78.36	6105.9159	6184.2761	-	-
	Ant14	6385	78.28	6345.7079	6423.9881	-	-
	Ant15	6385	78.696	6345.6919	6424.3881	-	-
	Ant14	6625	78.248	6585.9319	6664.1801	-	-
	Ant15	6625	78.008	6585.8679	6663.8761	-	-
	Ant14	6705	78.12	6665.8679	6743.9881	-	-
	Ant15	6705	79.288	6665.5639	6744.8520	-	-
	Ant14	6785	78.984	6745.8839	6824.8680	-	-
	Ant15	6785	78.52	6745.5319	6824.0521	-	-
11AX160MIMO	Ant14	6025	156.816	5946.4479	6103.2642	-	-
	Ant15	6025	157.168	5946.1919	6103.3602	-	-
	Ant14	6185	157.616	6106.3199	6263.9361	-	-
	Ant15	6185	157.2	6106.2559	6263.4562	-	-
	Ant14	6345	158	6266.0319	6424.0321	-	-
	Ant15	6345	157.424	6266.1599	6423.5841	-	-
	Ant14	6665	157.52	6585.9359	6743.4562	-	-
	Ant15	6665	157.296	6585.9999	6743.2962	-	-
11BE20MIMO	Ant14	5955	19.35	5945.3530	5964.7030	-	-
	Ant15	5955	19.386	5945.3170	5964.7030	-	-
	Ant14	6175	19.406	6165.2930	6184.6990	-	-
	Ant15	6175	19.542	6165.1810	6184.7230	-	-
	Ant14	6415	19.21	6405.3690	6424.5790	-	-
	Ant15	6415	19.31	6405.3370	6424.6470	-	-
	Ant14	6535	19.342	6525.2930	6544.6350	-	-
	Ant15	6535	19.262	6525.3730	6544.6350	-	-
	Ant14	6695	19.454	6685.2170	6704.6710	-	-
	Ant15	6695	19.39	6685.3250	6704.7150	-	-
	Ant14	6855	19.494	6845.2450	6864.7390	-	-
	Ant15	6855	19.338	6845.3050	6864.6430	-	-
11BE40MIMO	Ant14	5965	38.316	5945.7539	5984.0701	-	-
	Ant15	5965	38.348	5945.7859	5984.1341	-	-
	Ant14	6165	38.58	6145.6099	6184.1901	-	-
	Ant15	6165	38.204	6145.8659	6184.0701	-	-
	Ant14	6405	38.484	6385.7699	6424.2541	-	-
	Ant15	6405	38.516	6385.7459	6424.2621	-	-
	Ant14	6565	38.46	6545.7219	6584.1821	-	-
	Ant15	6565	38.5	6545.8339	6584.3341	-	-
	Ant14	6685	38.364	6665.8499	6704.2141	-	-
	Ant15	6685	38.396	6665.8419	6704.2381	-	-
	Ant14	6845	38.452	6825.7459	6864.1981	-	-



	Ant15	6845	38.452	6825.6899	6864.1421	-	-
11BE80MIMO	Ant14	5985	78.408	5945.6759	6024.0841	-	-
	Ant15	5985	78.264	5945.7399	6024.0041	-	-
	Ant14	6145	78.744	6105.2760	6184.0201	-	-
	Ant15	6145	78.168	6106.0439	6184.2121	-	-
	Ant14	6385	78.12	6345.8679	6423.9881	-	-
	Ant15	6385	79	6345.6599	6424.6600	-	-
	Ant14	6625	78.488	6585.8039	6664.2921	-	-
	Ant15	6625	78.488	6585.5319	6664.0201	-	-
	Ant14	6705	78.136	6665.8199	6743.9561	-	-
	Ant15	6705	78.232	6666.0119	6744.2441	-	-
	Ant14	6785	78.584	6745.6599	6824.2441	-	-
	Ant15	6785	78.76	6745.4680	6824.2281	-	-
11BE160MIMO	Ant14	6025	158.128	5945.7759	6103.9041	-	-
	Ant15	6025	158.032	5945.4240	6103.4562	-	-
	Ant14	6185	159.504	6105.6799	6265.1840	-	-
	Ant15	6185	158.48	6105.9999	6264.4801	-	-
	Ant14	6345	157.648	6265.8079	6423.4562	-	-
	Ant15	6345	158.16	6265.9359	6424.0961	-	-
	Ant14	6665	157.392	6585.8079	6743.2002	-	-
Ant15	6665	157.712	6585.6799	6743.3922	-	-	
11BE320MIMO	Ant14	6105	317.536	5945.6559	6263.1922	≤320	PASS
	Ant15	6105	317.024	5946.1039	6263.1282	≤320	PASS
	Ant14	6265	317.152	6105.7199	6422.8722	≤320	PASS
	Ant15	6265	317.28	6105.9759	6423.2562	≤320	PASS

Note1: For channels with a nominal bandwidth of 320MHz, compliance is demonstrated by way of the 99%BW.

Note2: For channels with a nominal bandwidth less than 320MHz(e.g 20,40,80,160MHz), compliance is demonstrated by way of the 26dB EBW.



Test Graphs

