CommScope Technologies LLC

TEST REPORT

SCOPE OF WORK
Emissions Testing – Added 80 MHz to n77 C Band with 5G W/ RP5200 Host

REPORT NUMBER
105852007BOX-001

ISSUE DATE
08/20/2024

[REVISED DATE]
Original issue

DOCUMENT CONTROL NUMBER
Generic EMC Report Shell Rev. June 2024

EMISSIONS TEST REPORT

(FULL COMPLIANCE FOR CLASS II PERMISSIVE CHANGE)

Report Number: 105852007BOX-001
Project Number: G105852007

Report Issue Date: 08/20/2024

Model(s) Tested:	n77 C Band with 5G W/ RP5200 Host, W/ 80 MHz Bandwidth
Model(s) Partially Tested:	None
Model(s) Not Tested but declared equivalent by the client:	None

Standards: FCC Title 47 CFR Part 27: 08/2024

Tested by:
Intertek
70 Codman Hill Road
Boxborough, MA 01719
USA

Client:
CommScope Technologies LLC
900 Chelmsford St.
Lowell, MA 01851
USA

Report prepared by:

Vathana Ven / Sr. EMC Staff Engineer

Report reviewed by:

Kouma Sinn / Sr. EMC Staff Engineer

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1 Introduction and Conclusion

The tests indicated in section 2.0 were performed on the product constructed as described in section 4.0. The remaining test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested **complies** with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

2 Test Summary

Section	Test full name	Result
3	Client Information	--
4	Description of Equipment Under Test and Variant Models	--
5	System Setup and Method	--
6	Output Power FCC Title 47 CFR Part 2.1046:04/23, Part 27.50(j)(2): 08/24	Pass
7	Peak-to-Average-Power Ratio (PAPR) FCC Title 47 CFR Part 27.50(j)(4): 08/24	Pass
8	Occupied Bandwidth and 26 dB Bandwidth FCC Title 47 CFR Part 2.1049: 08/24	Pass
9	Band Edge Emissions FCC Title 47 CFR Part 2.1051: 08/24, Part 2.1053: 08/24, Part 27.53(l)(1): 08/24	Pass
10	Antenna Port Conducted and Radiated Spurious Emissions FCC Title 47 CFR Part 2.1051: 08/23, Part 2.1053: 08/24, Part 27.53(l)(1): 08/24	Pass
11	Frequency Stability FCC Title 47 CFR Part 2.1055: 08/24, Part 27.54: 08/24	Pass
12	AC Mains Conducted Emissions FCC Title 47 CFR Part 15 Subpart B: 08/2024	Pass
13	Revision History	--

3 Client Information

This EUT was tested at the request of:

Client: CommScope Technologies LLC
900 Chelmsford St.
Lowell, MA 01851
USA

Contact: Julie Lee
Telephone: (978) 250-2678
Email: Julie.Lee@commscope.com

4 Description of Equipment Under Test and Variant Models

Manufacturer: CommScope Technologies LLC
900 Chelmsford St.
Lowell, MA 01851
USA

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
n77 C Band with 5G W/ RP5200 Host base station	CommScope Technologies LLC	n77 C Band	TJBSAC23440073

Receive Date:	07/25/2024
Received Condition:	Good
Type:	Production

Description of Equipment Under Test (provided by client)
n77 C Band with 5G W/ RP5200 Host base station with 80 MHz bandwidth added.

Intended Environment & Emissions Class	
Use Environment	Basic
Class	A

Equipment Under Test Power Configuration			
Rated Voltage	Rated Current	Rated Frequency	Number of Phases
POE	N/A	N/A	N/A

Operating modes of the EUT:

No.	Descriptions of EUT Exercising
1	The ONECELL was powered for the duration of the evaluation. Serial communications were established with the device, and a test script was sent to the device to enable and initiate transmissions on three specific frequencies: 3740 MHz, 3840 MHz, 3940 MHz. Each frequency was also evaluated for these modulations TM1.1, TM3.1, TM3.1a, and TM3.3.

Software used by the EUT:

No.	Descriptions of EUT Exercising
1	RP5200 Console script using PuTTY

Highest Clock frequency in EUT: 3940 MHz

Radio/Receiver Characteristics	
Frequency Band(s)	3740-3940 MHz
Modulation Type(s)	TM1.1, TM3.1, TM3.1a, TM3.3
Maximum Output Power	2.21 Watt (Worst-case EIRP)
Test Channels	Low – 3740 MHz, Mid – 3840 MHz, High – 3940 MHz
Occupied Bandwidth	77.921 MHz (Worst-case)
MIMO Information (# of Transmit and Receive antenna ports)	Four Antenna Ports
Equipment Type	Plug-in Radio Module
Antenna Type and Gain	Detachable Antenna: +4 dBi (as provided by the client. Intertek takes no responsibility for the accuracy of this information. Actual antenna gain will be determined at the time of licensing)

Variant Models:

The following variant models were not tested as part of this evaluation and are not eligible for certification; but have been identified by the manufacturer as being electrically identical models, depopulated models, or with reasonable similarity to the model(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

None

5 System Setup and Method

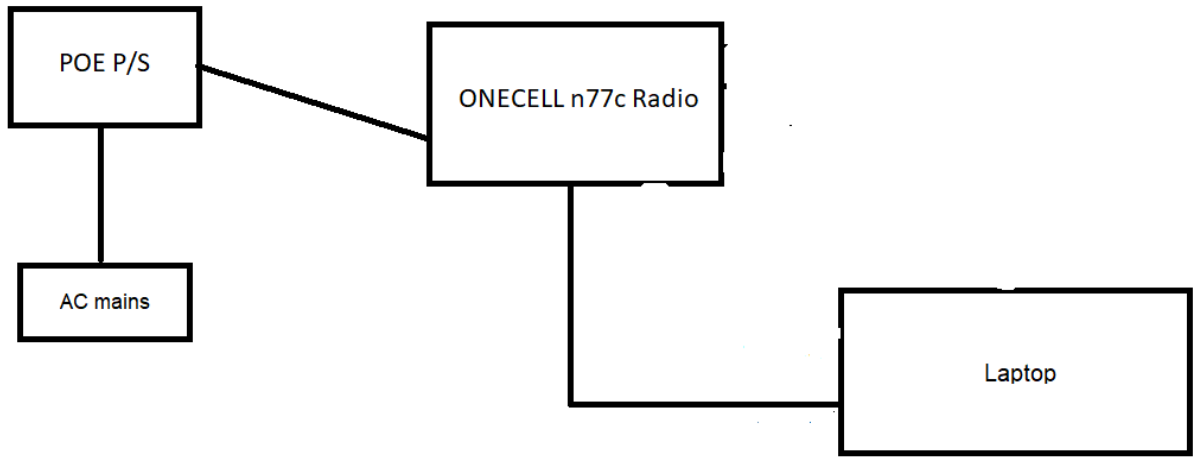
Cables					
ID	Description	Length (m)	Shielding	Ferrites	Termination
---	Ethernet Cable	1	None	None	POE PS
---	Serial cable	1	None	None	Laptop

Support Equipment			
Description	Manufacturer	Model Number	Serial Number
Laptop	Dell	Latitude 3520	LX-00090997
POE PS	PHIHONG	POE90U-1BT-X	P93400018A0
AC Adapter	Dell	LA65NM190 LPS	Not labeled

5.1 Method:

Configuration as required by FCC Title 47 CFR Part 27: 08/2024, ANSI C63.4:2014, and ANSI C63.26:2015.

5.2 EUT Block Diagram:



6 Conducted Output Power

6.1 Method

Tests are performed in accordance with ANSI C63.26:2015.

TEST SITE: EMC Lab (AMAP Lab)

The EMC Lab has one Semi-anechoic Chamber and one Shielded Chamber. AC Mains Power is available at 120, 230, and 277 Single Phase; 208, 400, and 480 3-Phase. Large reference ground-planes are installed in the general lab area to facilitate EMC work not requiring a shielded environment.

6.2 Limits:

FCC Title 47 CFR Part 27.50(j)(2)
The power of each fixed or base station transmitting in the 3700-3980 MHz band and situated in any geographic location other than that described in paragraph (j)(1) of this section is limited to an EIRP of 1640 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.

6.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV009'	weather station	Davis Instruments	6351 Vantage VUE	DAV009	04/05/2024	04/05/2025
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	11/22/2023	11/22/2024
CBLHF2012-5M-2'	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	02/27/2024	02/27/2025
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	02/28/2024	02/28/2025

Software Utilized:

Name	Manufacturer	Version
None	N/A	N/A

6.4 Results:

The sample tested was found to Comply.

6.5 Setup Photograph:

6.6 Plots/Data:

Modulations	Channels	Channel Power dBm, mW				Combined Power	Antenna Gain	EIRP	99% OBW	Combined EIRP
		Port 1	Port 2	Port 3	Port 4	dBm, mW	dBi	dBm, W	MHz	W/MHz
TM1.1	Low	22.79	24.06	23.39	23.35	29.44	4.00	33.44		
	3740 MHz	190.11	254.68	218.27	216.27	879.34		2.21	77.763	0.028
	Mid	23.11	23.06	23.17	23.31	29.18	4.00	33.18		
	3840 MHz	204.64	202.30	207.49	214.29	828.73		2.08	77.651	0.027
	High	22.77	22.62	22.83	22.63	28.73	4.00	32.73		
	3940 MHz	189.23	182.81	191.87	183.23	747.14		1.88	77.695	0.024
TM3.1	Low	22.53	23.86	23.86	23.27	29.43	4.00	33.43		
	3740 MHz	179.06	243.22	243.22	212.32	877.83		2.20	77.657	0.028
	Mid	22.95	22.79	22.88	23.25	28.99	4.00	32.99		
	3840 MHz	197.24	190.11	194.09	211.35	792.79		1.99	77.613	0.026
	High	22.76	22.52	22.75	22.67	28.70	4.00	32.70		
	3940 MHz	188.80	178.65	188.36	184.93	740.74		1.86	77.639	0.024
TM3.1a	Low	22.81	22.79	23.43	22.12	28.83	4.00	32.83		
	3740 MHz	190.99	190.11	220.29	162.93	764.32		1.92	77.608	0.025
	Mid	22.79	22.70	22.54	22.43	28.64	4.00	32.64		
	3840 MHz	190.11	186.21	179.47	174.98	730.77		1.84	77.625	0.024
	High	22.12	22.31	22.16	22.18	28.21	4.00	32.21		
	3940 MHz	162.93	170.22	164.44	165.20	662.78		1.66	77.601	0.021
TM3.3	Low	22.79	22.54	23.24	22.00	28.69	4.00	32.69		
	3740 MHz	190.11	179.47	210.86	158.49	738.93		1.86	77.933	0.024
	Mid	22.81	22.48	22.49	22.55	28.61	4.00	32.61		
	3840 MHz	190.99	177.01	177.42	179.89	725.30		1.82	77.916	0.023
	High	22.23	22.35	22.24	22.44	28.34	4.00	32.34		
	3940 MHz	167.11	171.79	167.49	175.39	681.78		1.71	77.921	0.022

Low Channel (3740 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 1

05:32:57 PM 07/25/2024

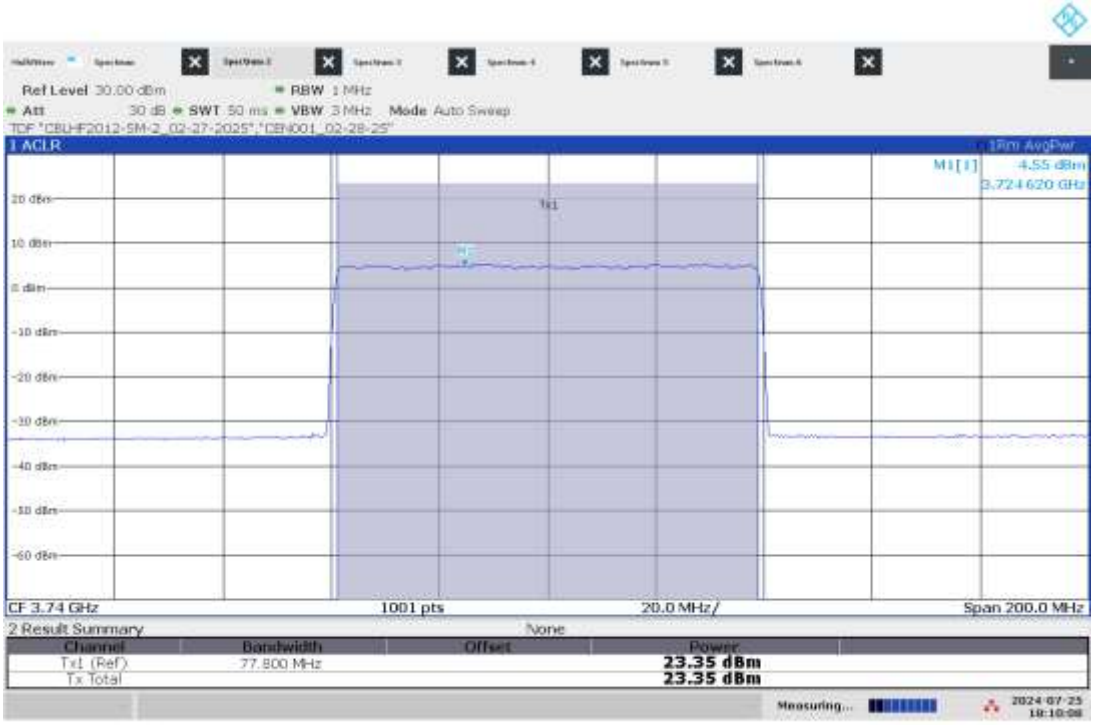
Low Channel (3740 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 2

06:05:26 PM 07/25/2024

Low Channel (3740 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 3

06:06:53 PM 07/25/2024

Low Channel (3740 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 4



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Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 1

06:29:43 PM 07/25/2024

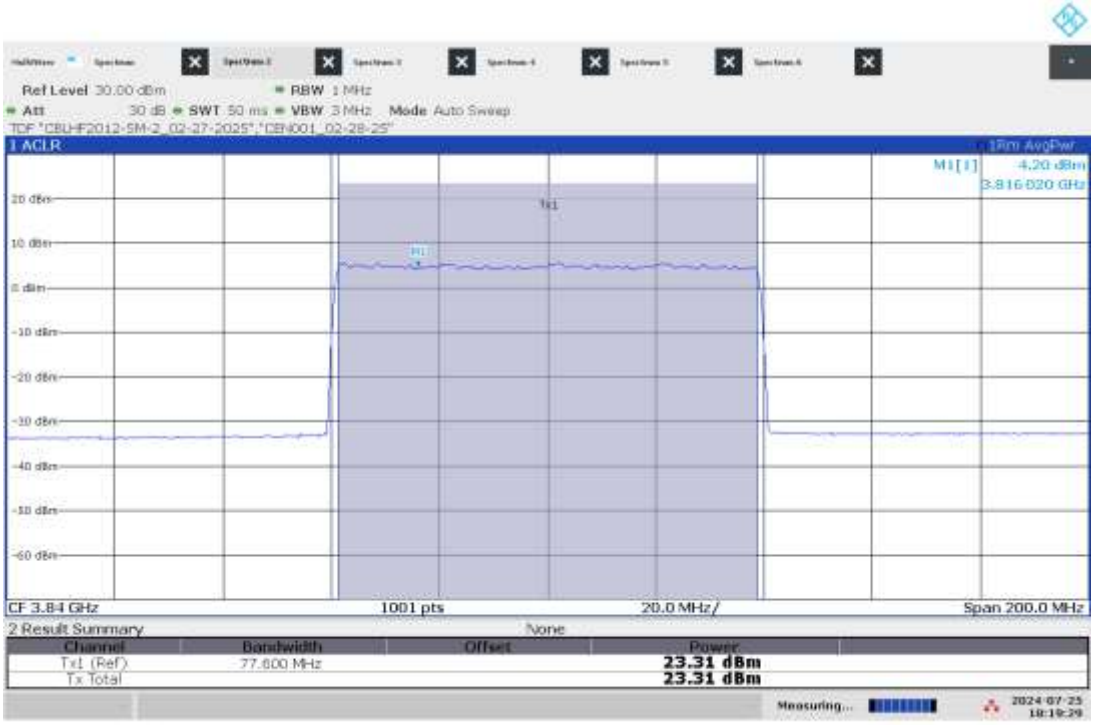
Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 2

06:26:35 PM 07/25/2024

Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 3

06:25:12 PM 07/25/2024

Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 4

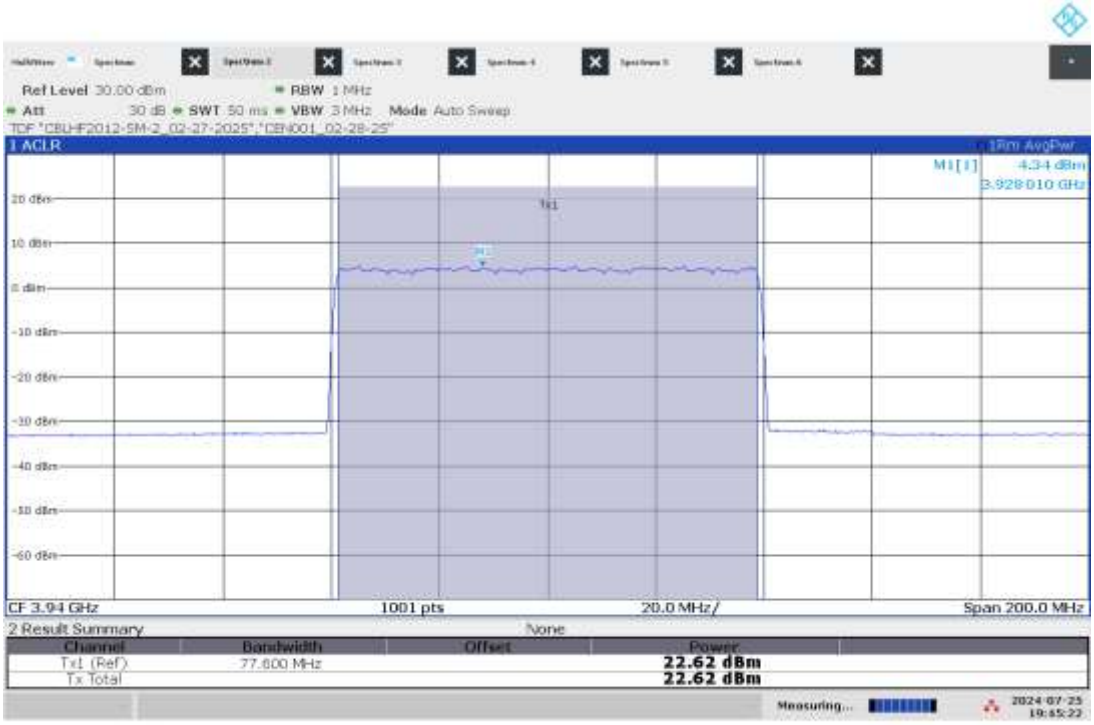


06:19:29 PM 07/25/2024

High Channel (3940 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 1

07:37:57 PM 07/25/2024

High Channel (3940 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 2



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High Channel (3940 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 3

07:46:50 PM 07/25/2024

High Channel (3940 MHz) Conducted Output Power, Modulation: TM1.1, Antenna Port 4

07:50:10 PM 07/25/2024

Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 1

08:48:30 PM 07/25/2024

Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 2

08:44:30 PM 07/25/2024

Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 3

08:44:30 PM 07/25/2024

Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 4

08:36:11 PM 07/25/2024

Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 1

08:14:21 PM 07/25/2024

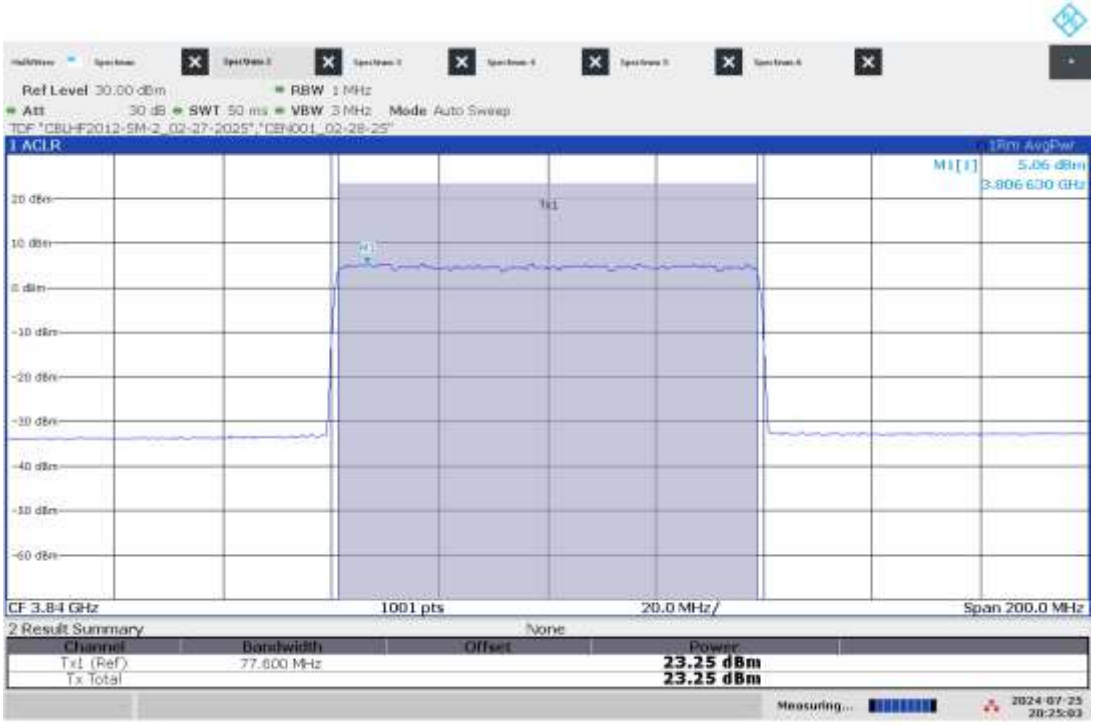
Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 2

08:18:35 PM 07/25/2024

Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 3

08:20:16 PM 07/25/2024

Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 4



08:25:03 PM 07/25/2024

High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 1

08:08:11 PM 07/25/2024

High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 2

08:05:07 PM 07/25/2024

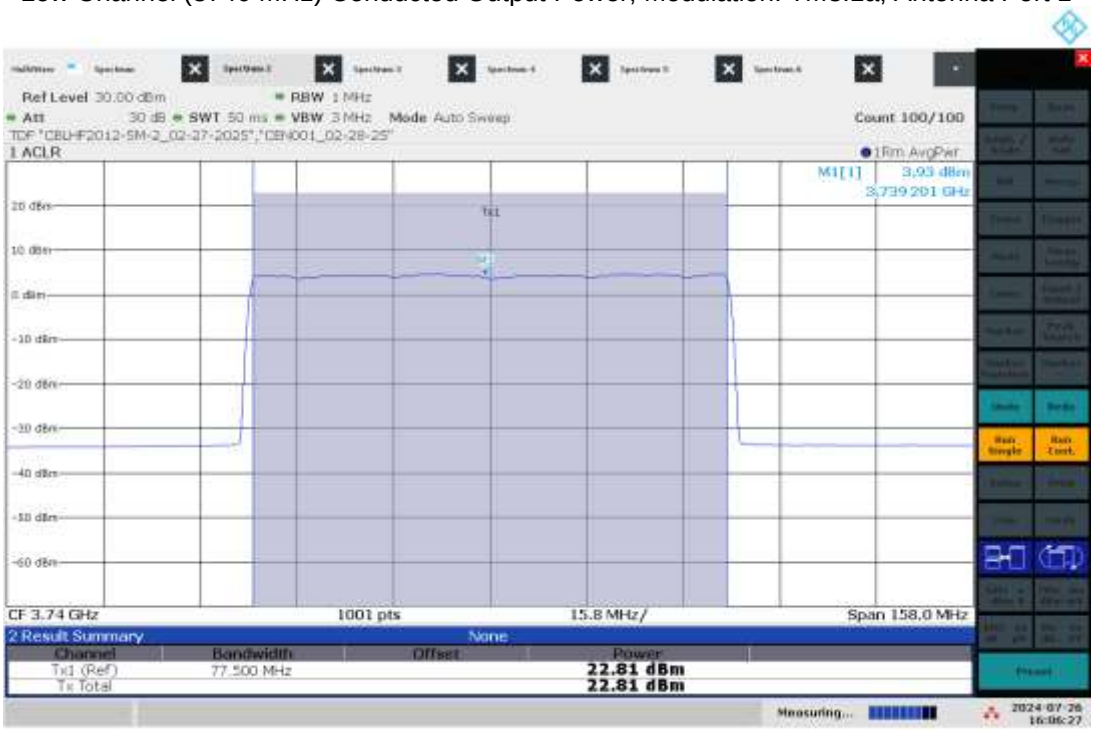
High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 3

08:03:54 PM 07/25/2024

High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.1, Antenna Port 4

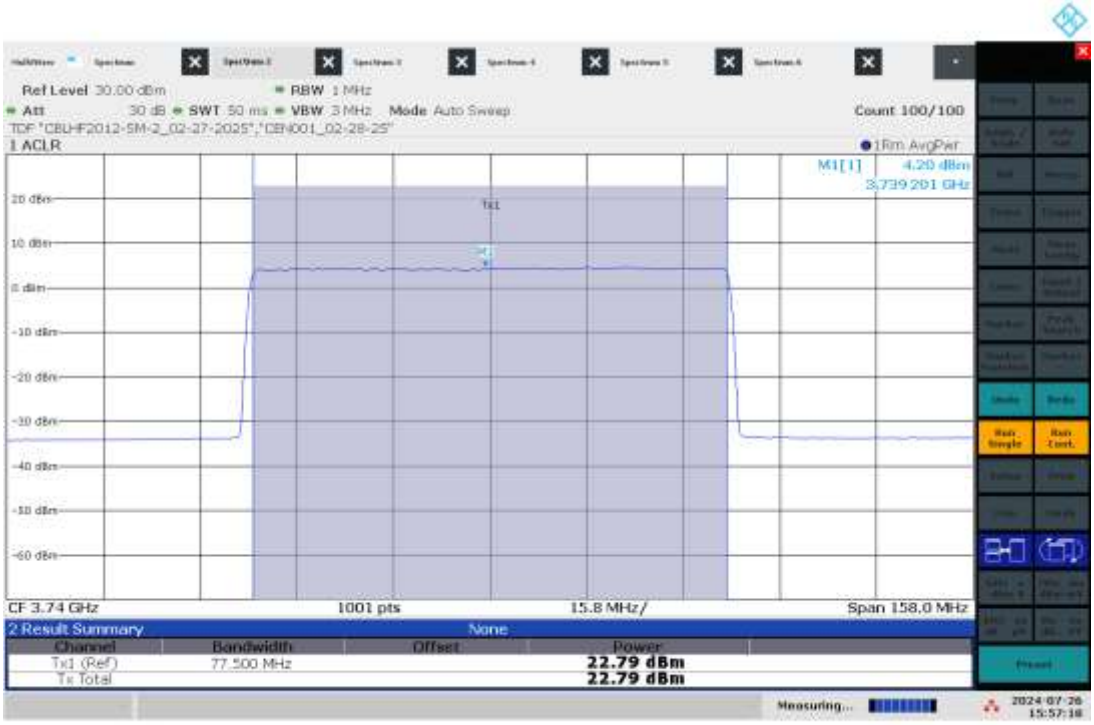
07:58:42 PM 07/25/2024

Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 1



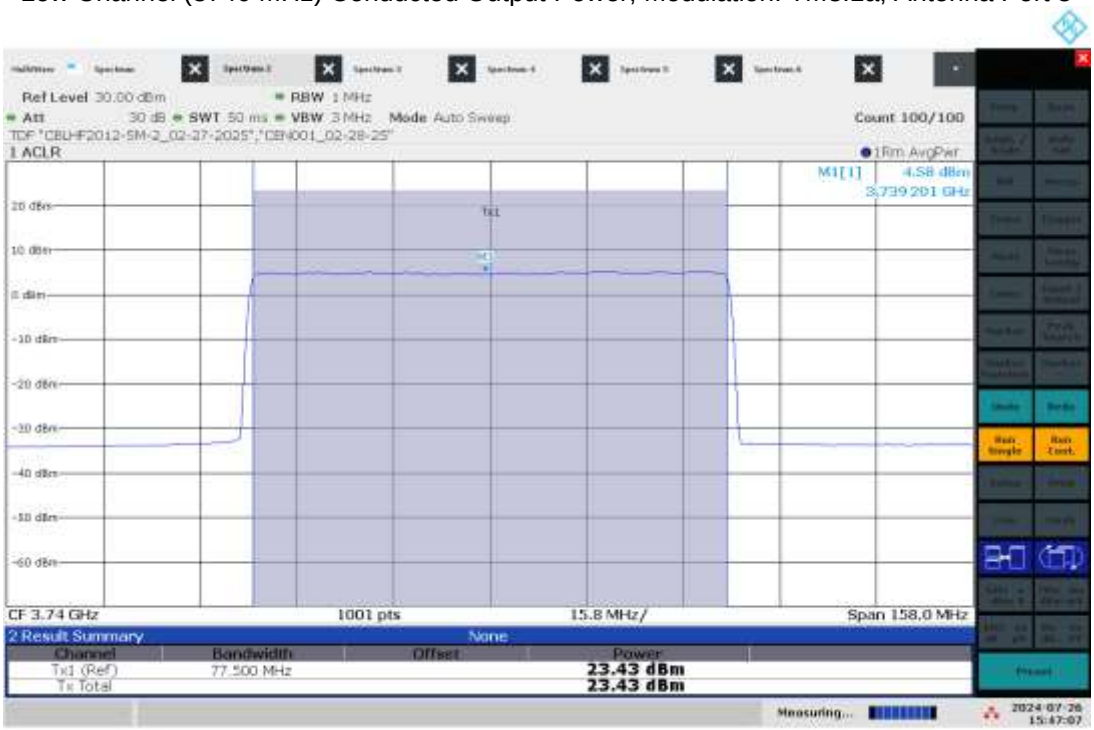
04:06:27 PM 07/26/2024

Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 2



03:57:19 PM 07/26/2024

Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 3



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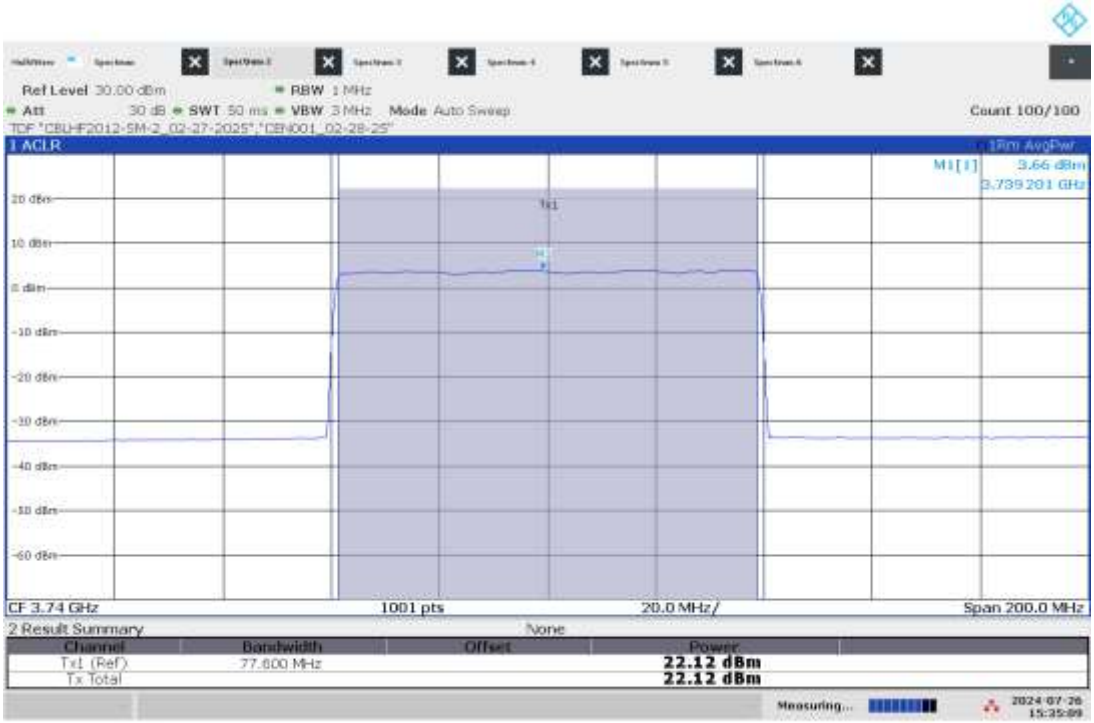
Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 4



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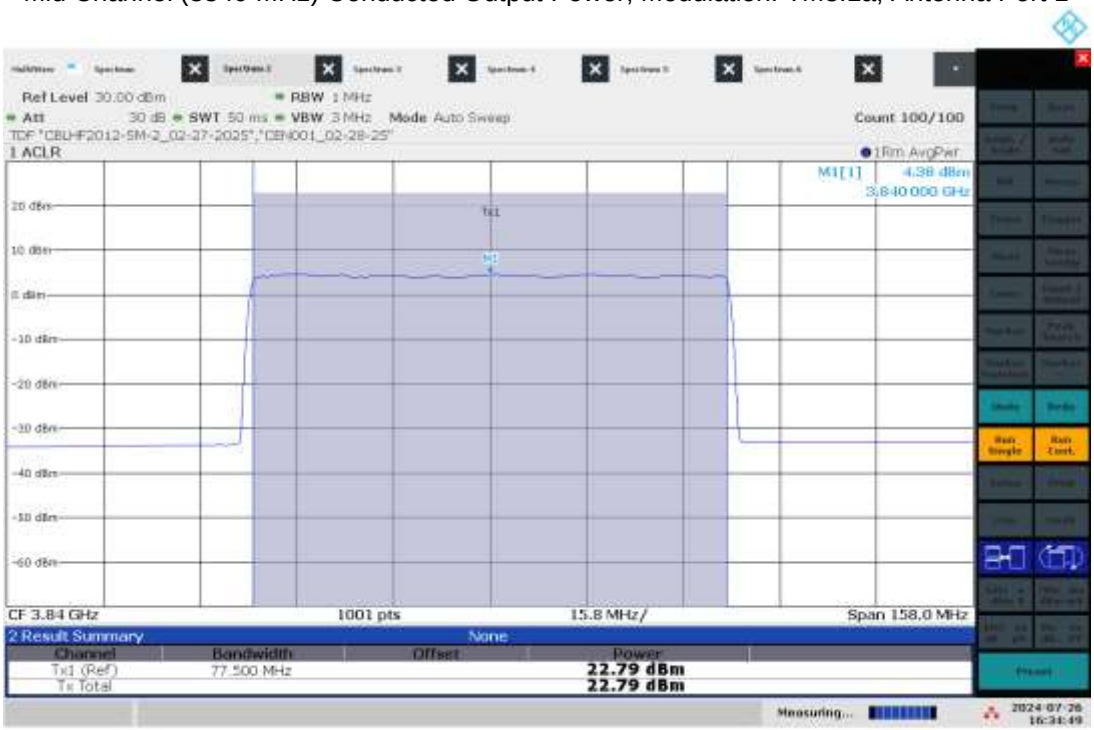
Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 1



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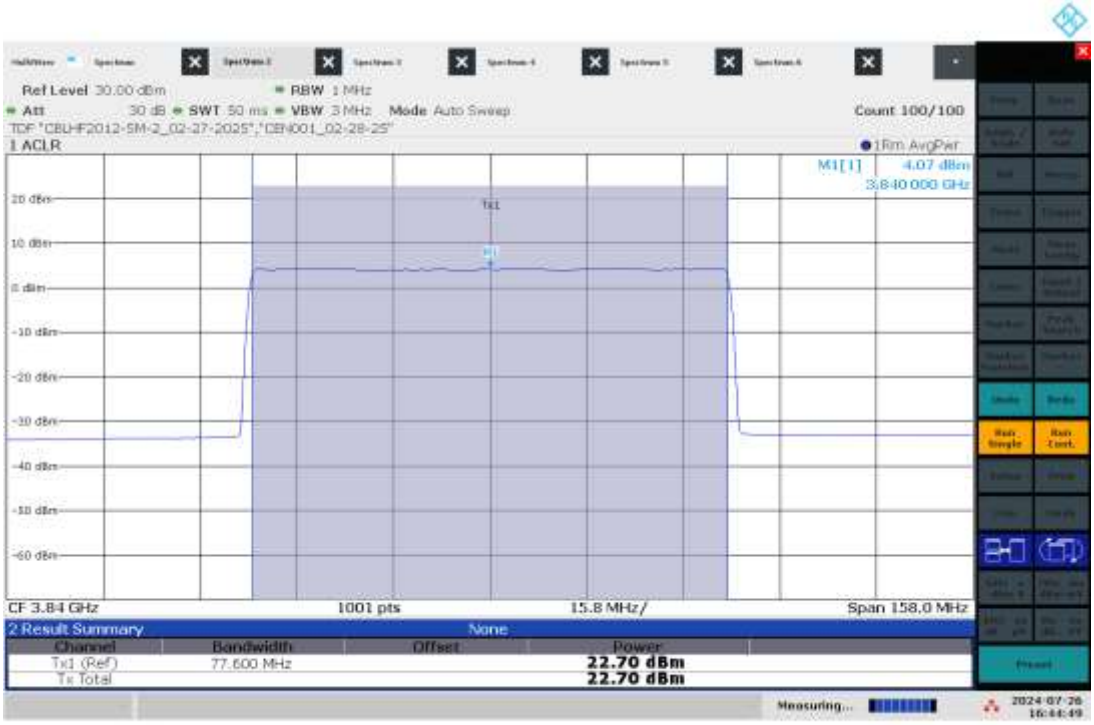
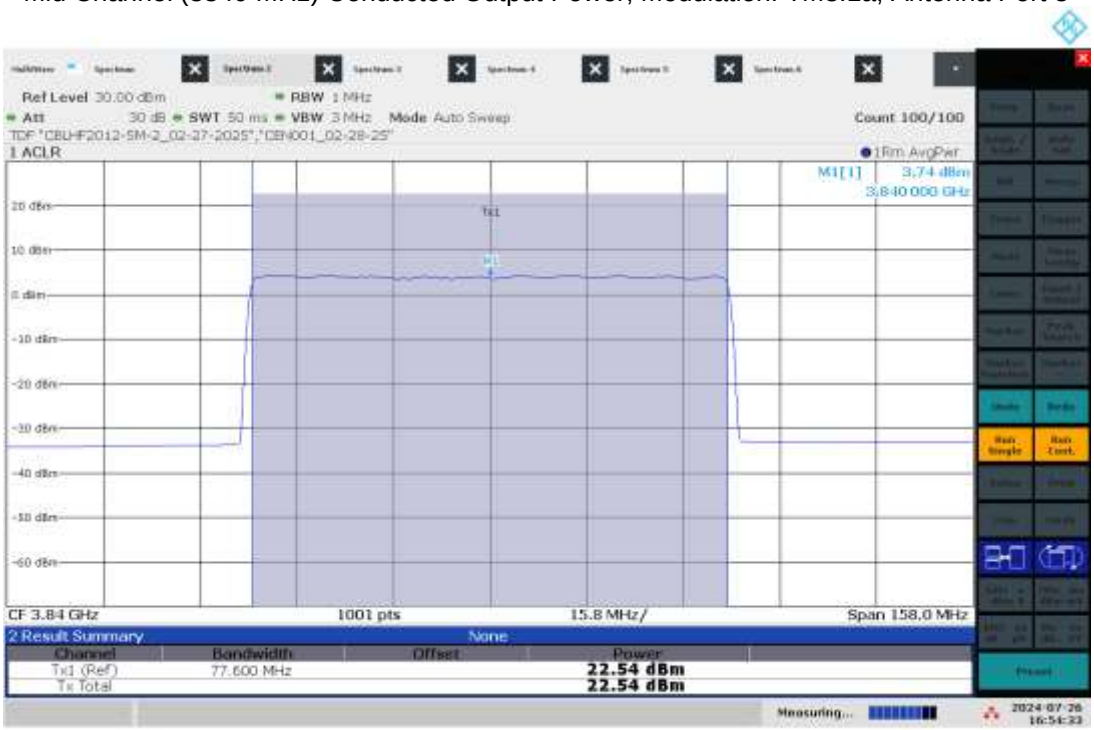
Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 2



04:44:50 PM 07/26/2024

Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 3



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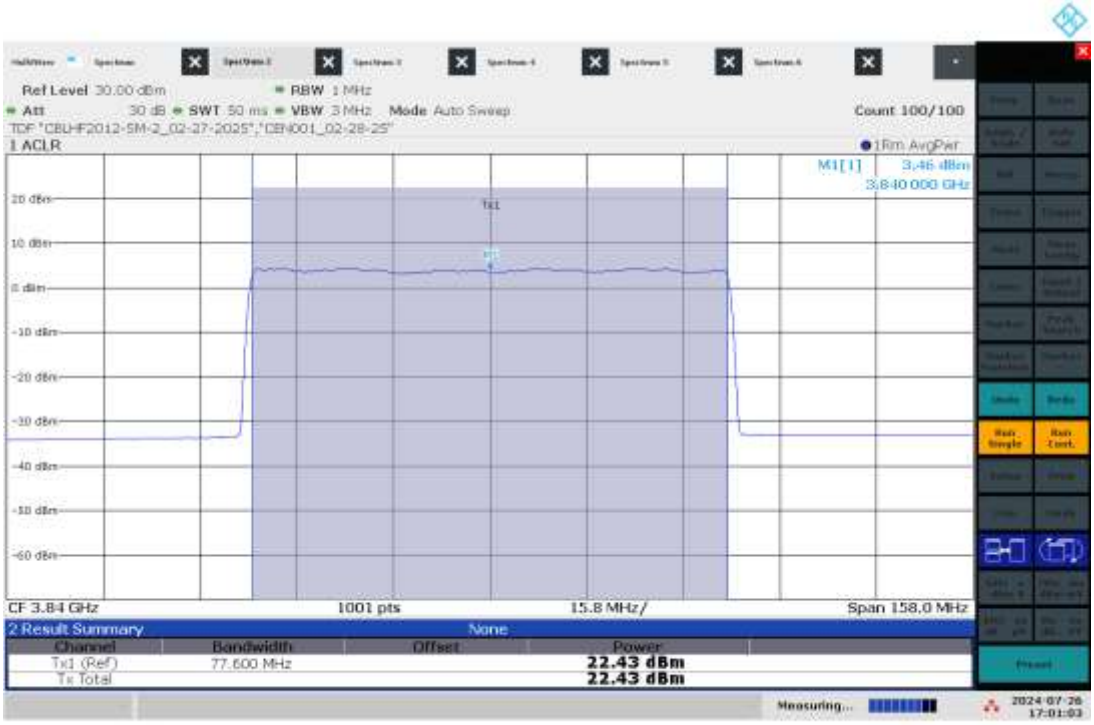
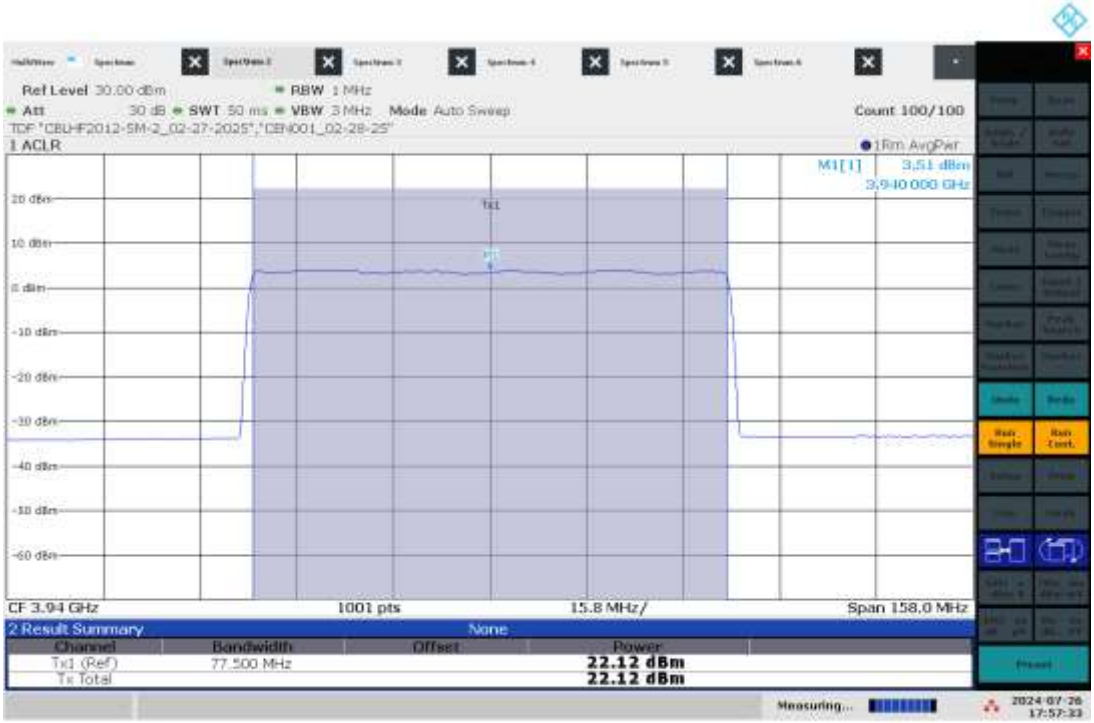
Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 4



05:01:03 PM 07/26/2024

High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 1



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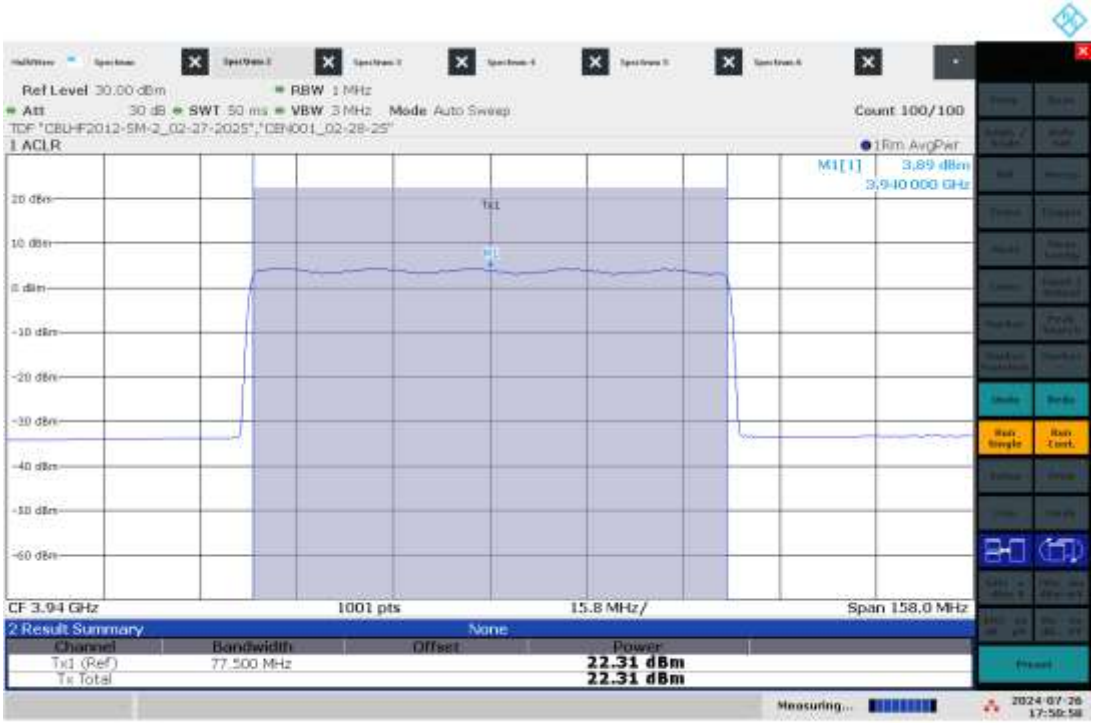
High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 2



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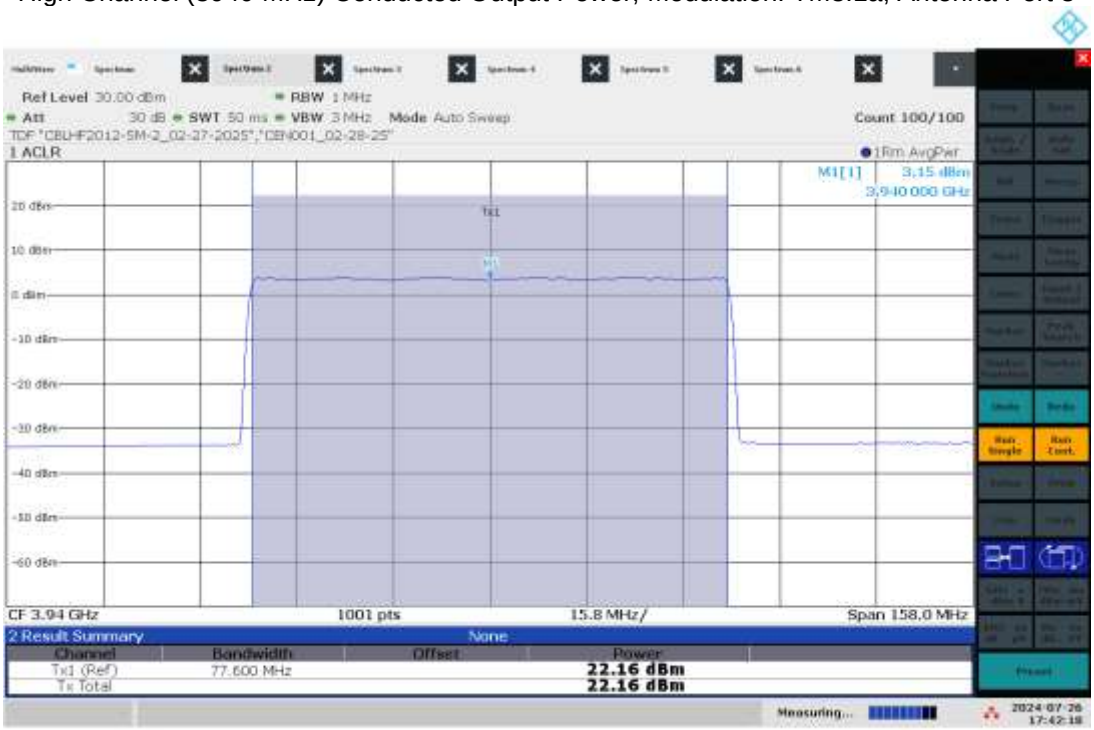
High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 3



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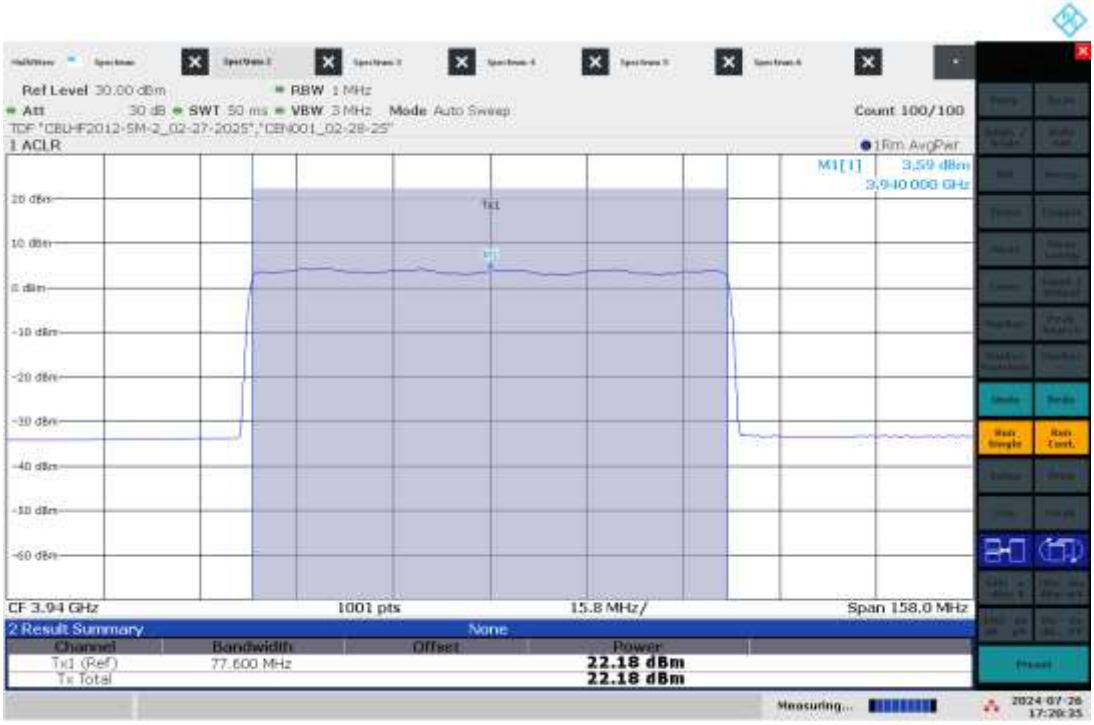
High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.1a, Antenna Port 4



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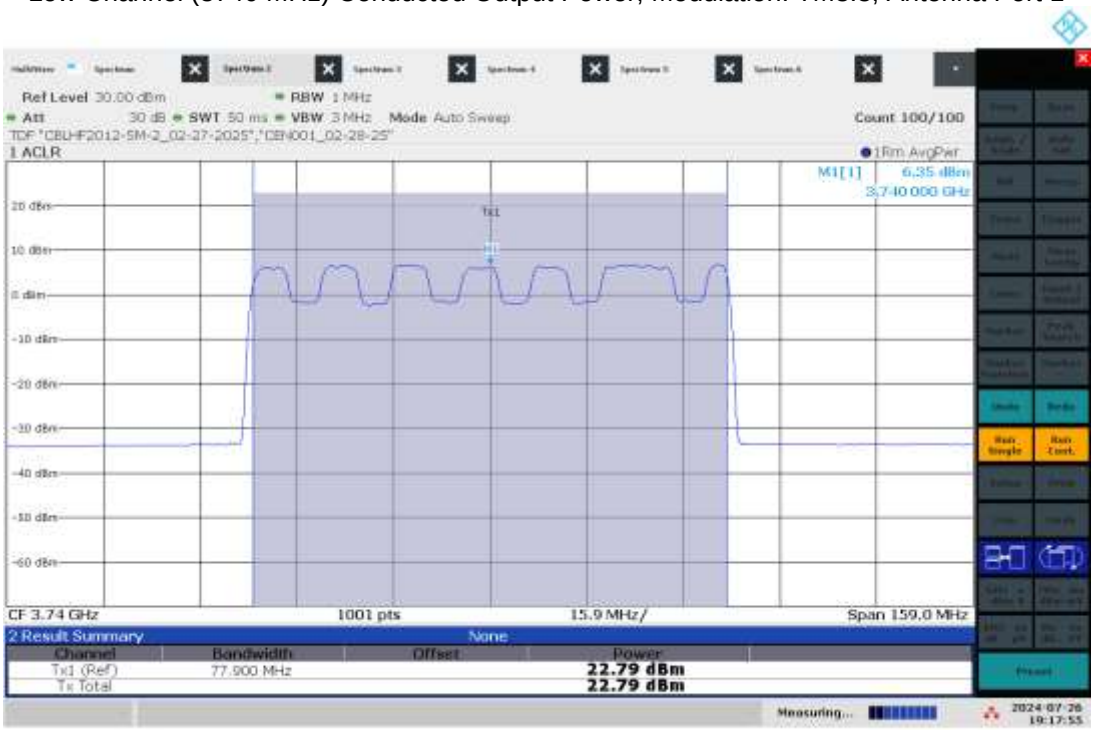
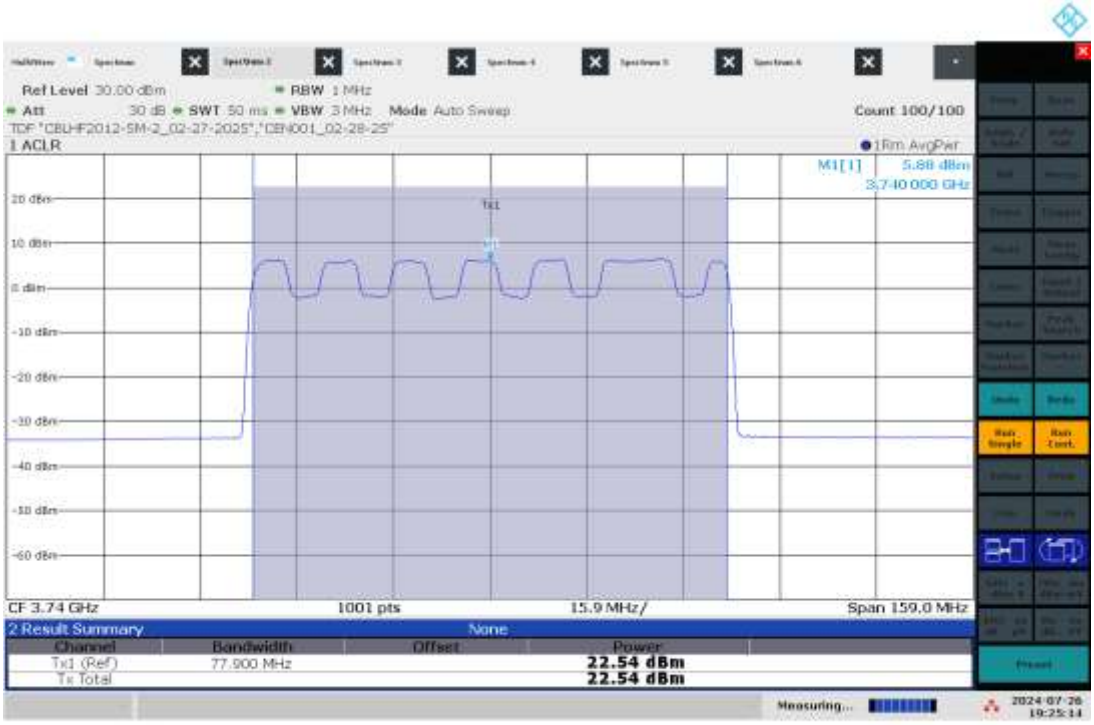
Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 1



07:17:55 PM 07/26/2024

Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 2



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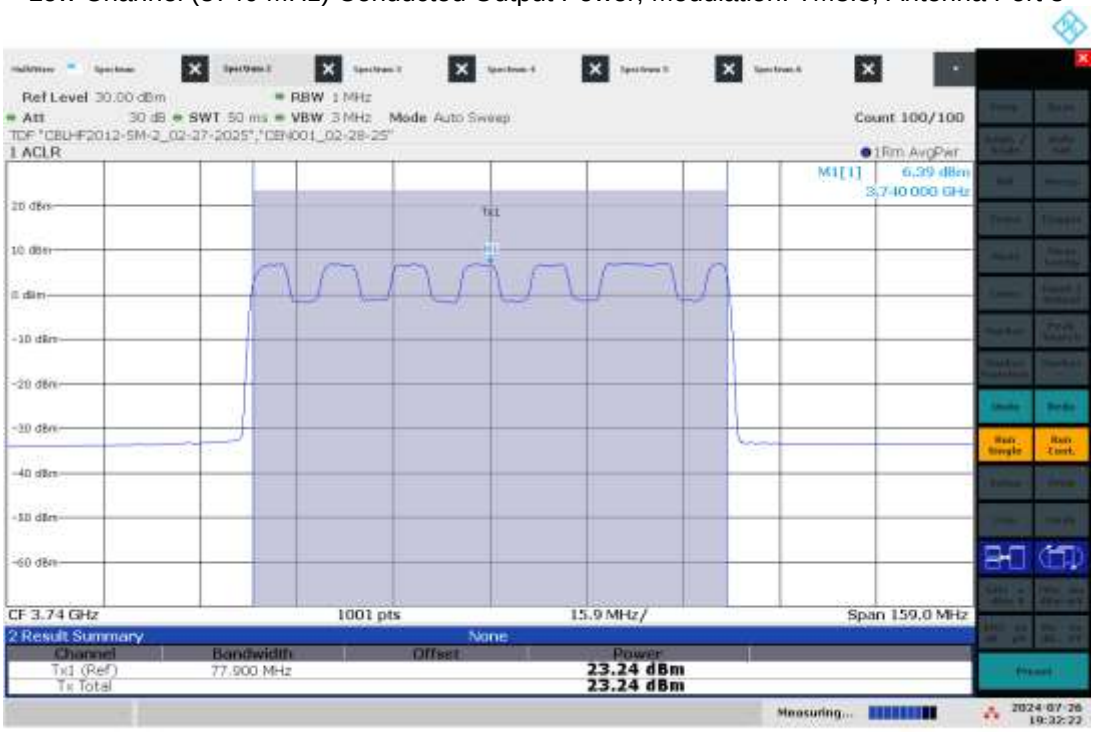
Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 3



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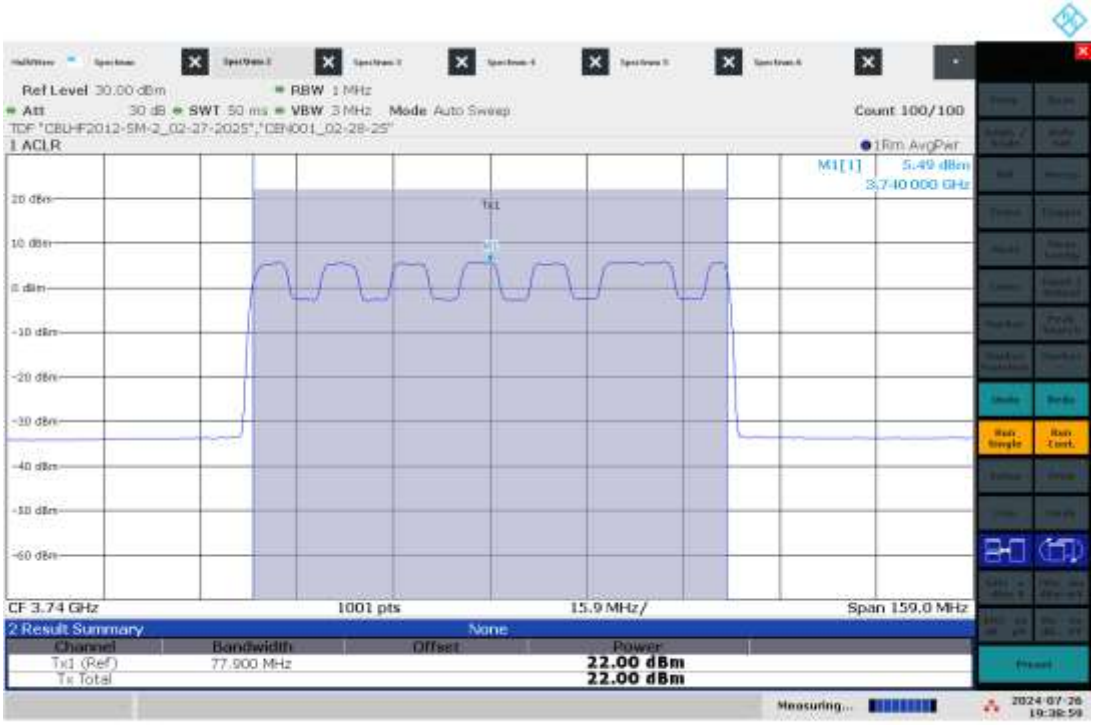
Low Channel (3740 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 4



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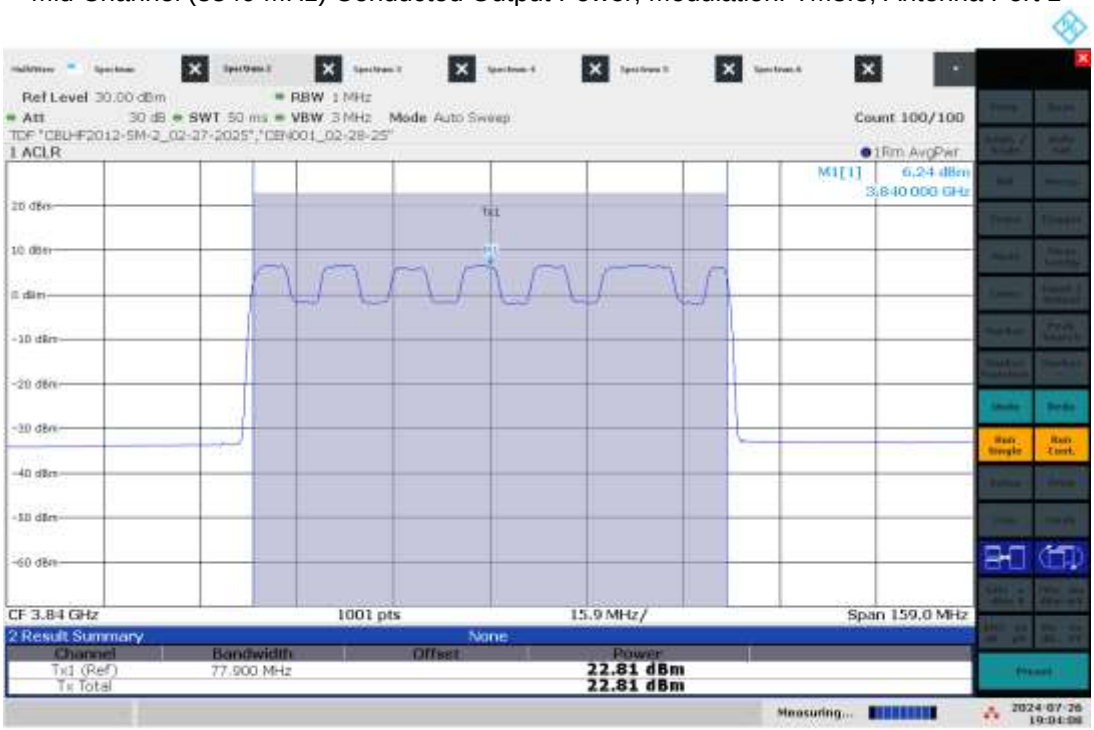
Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 1



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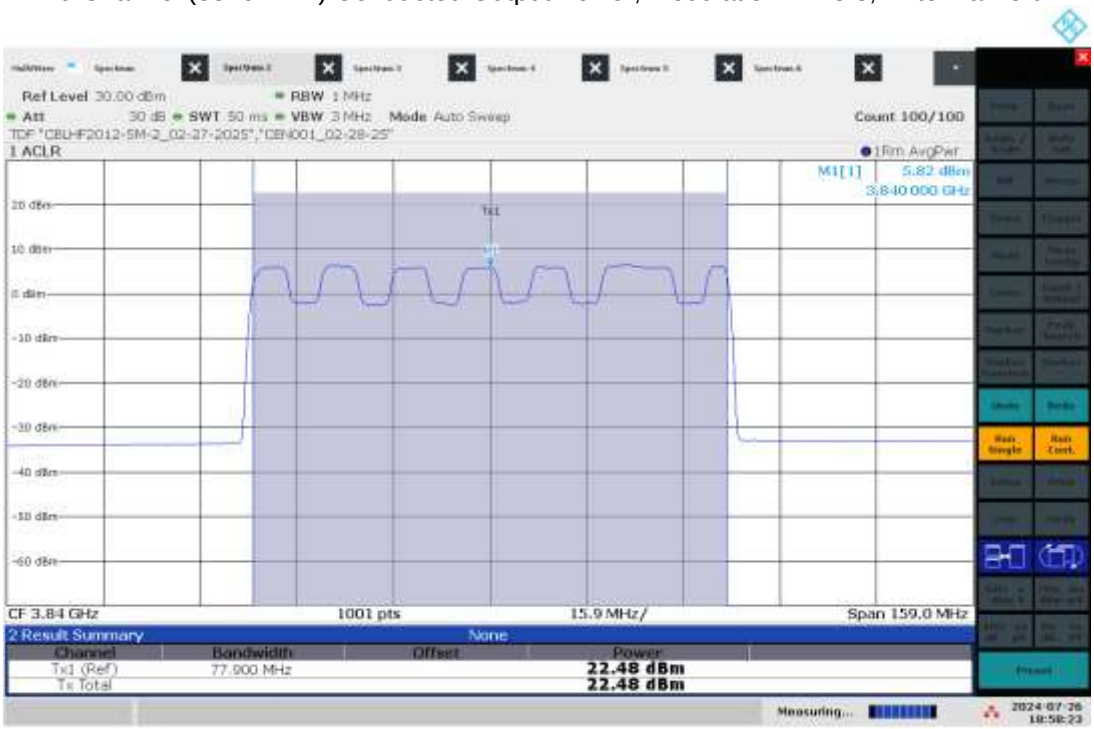
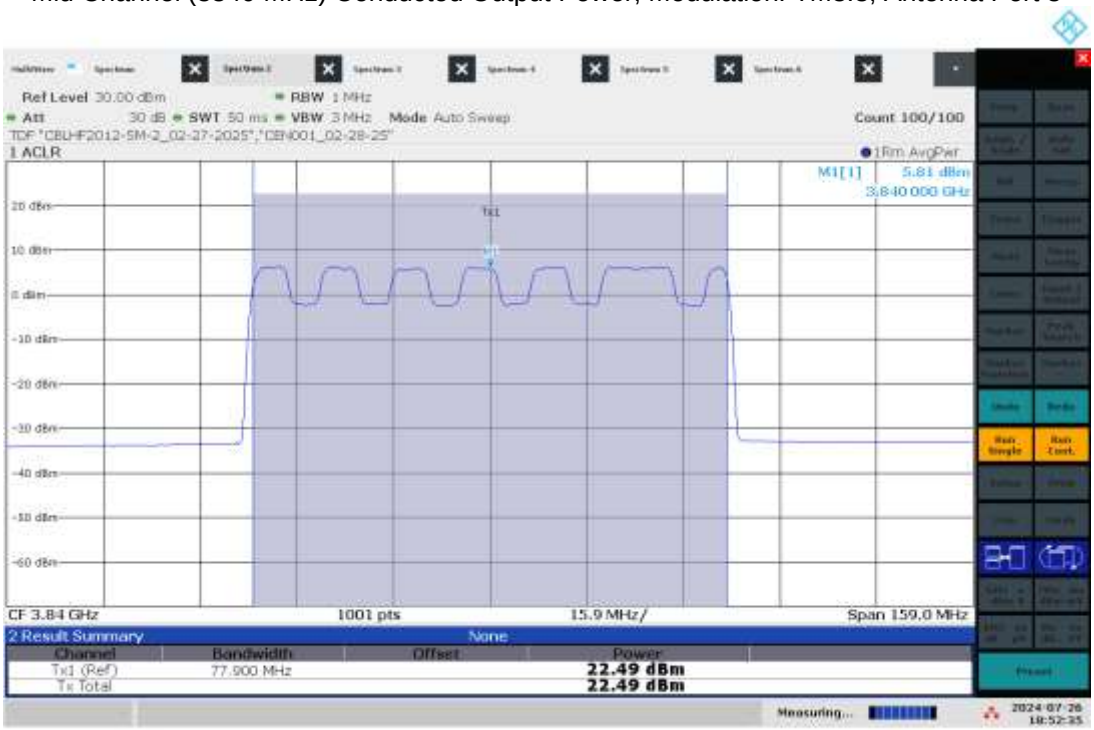
Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 2

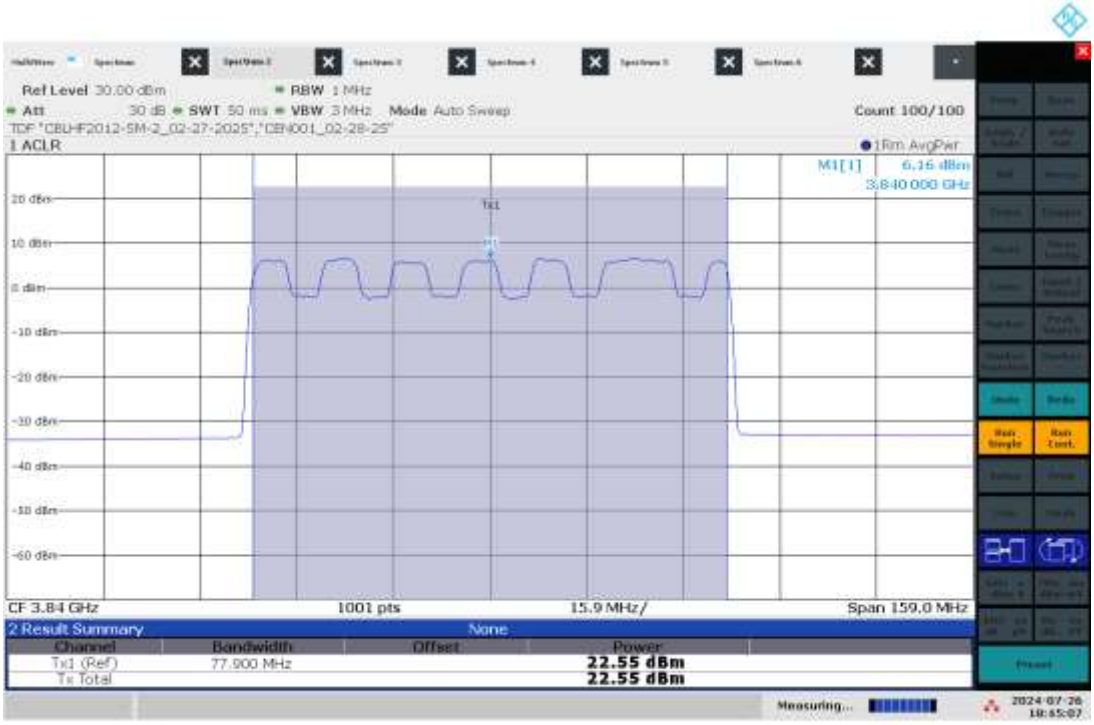


06:58:24 PM 07/26/2024

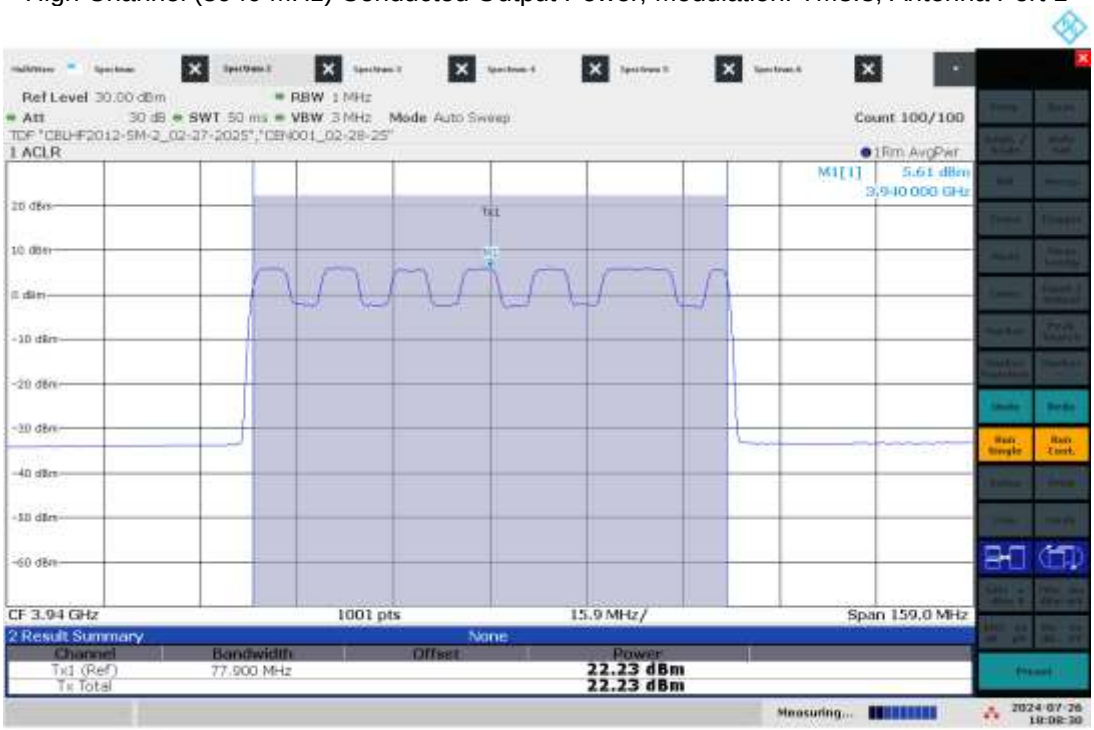
Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 3



Mid Channel (3840 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 4

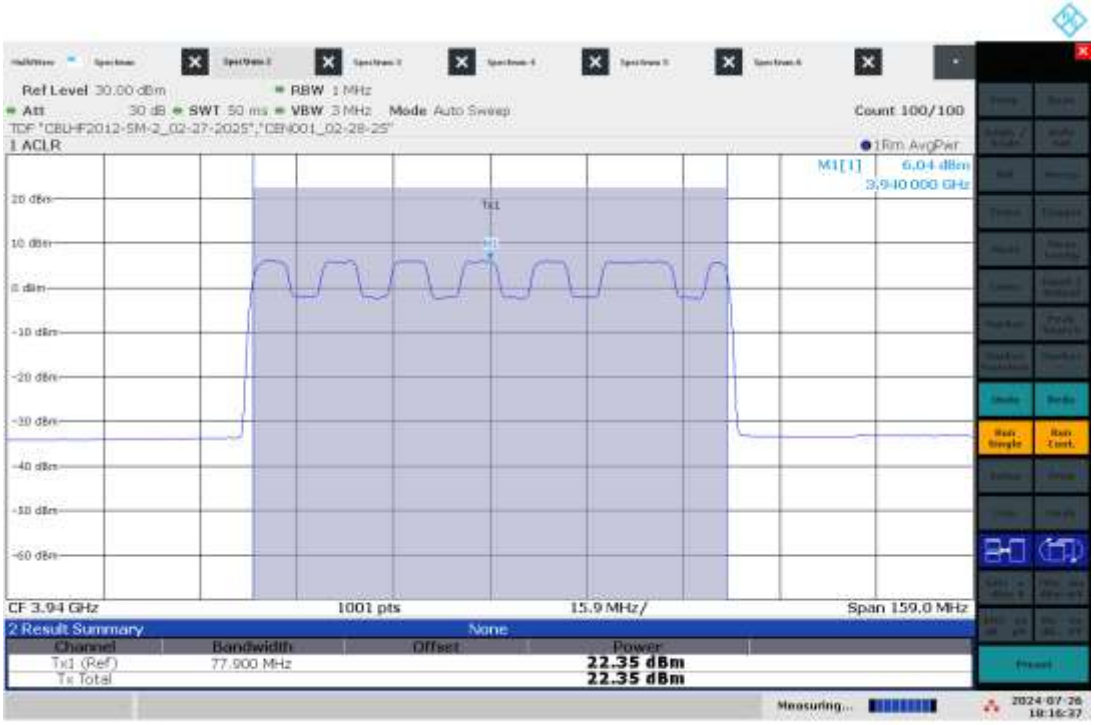


High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 1



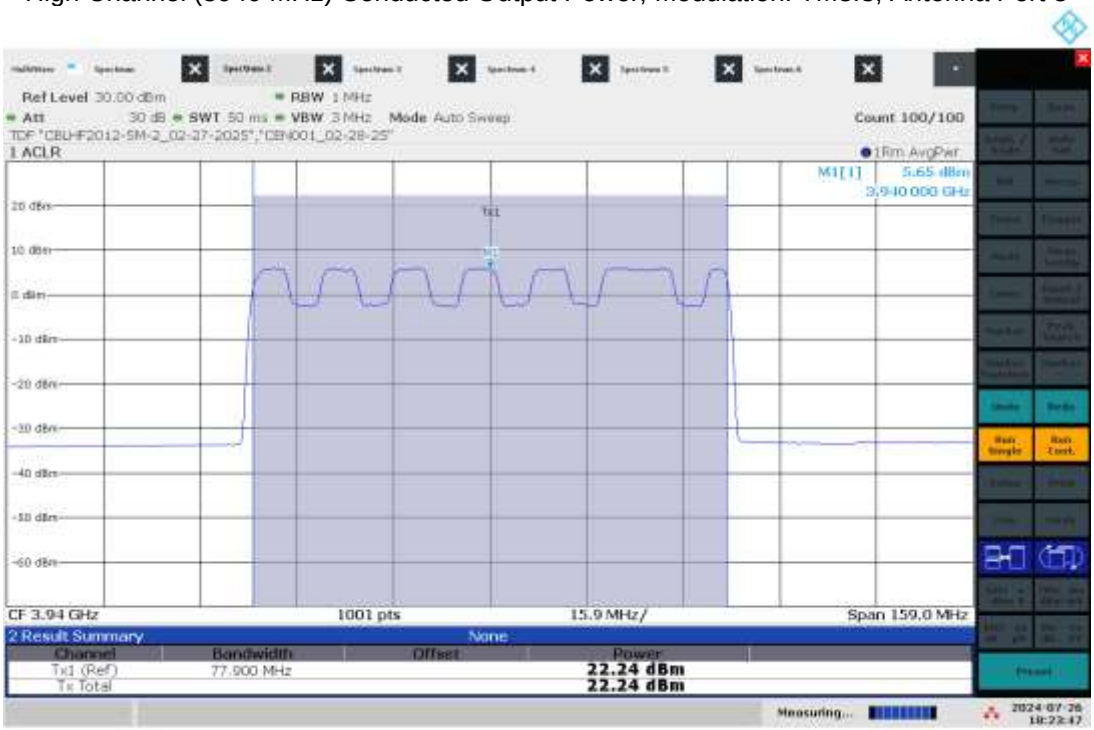
06:08:31 PM 07/26/2024

High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 2



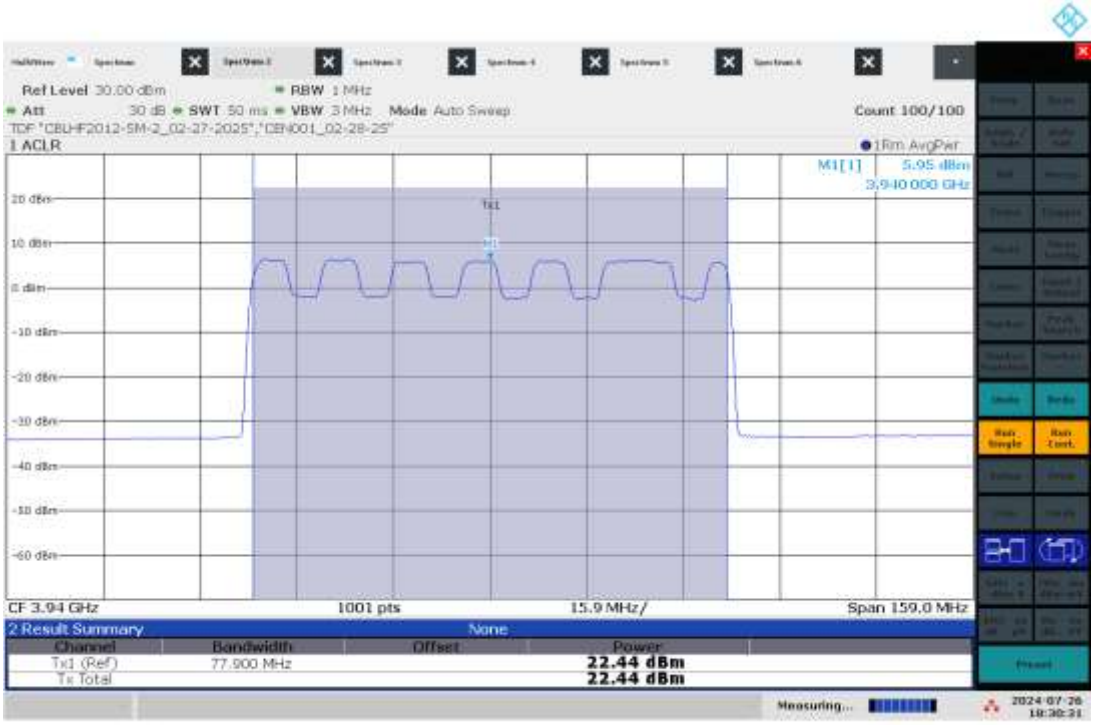
06:16:38 PM 07/26/2024

High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 3



06:23:48 PM 07/26/2024

High Channel (3940 MHz) Conducted Output Power, Modulation: TM3.3, Antenna Port 4



06:30:32 PM 07/26/2024

Product Standard: FCC Title 47 CFR Part 27				Limit applied: See Report Section 6.2 Pretest Verification w/ signal generator: Yes			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
07/25/2024	Vathana F. Ven VFV	N/A	POE	Continuous Transmitting	21	49	1005
07/26/2024	Kouma Sinn KS	N//A	POE	Continuous Transmitting	23	46	1005

Deviations, Additions, or Exclusions: None

7 Peak-to-Average-Power Ratio (PAPR)

7.1 Method

Tests are performed in accordance with ANSI C63.26:2015.

TEST SITE: EMC Lab (AMAP Lab)

The EMC Lab has one Semi-anechoic Chamber and one Shielded Chamber. AC Mains Power is available at 120, 230, and 277 Single Phase; 208, 400, and 480 3-Phase. Large reference ground-planes are installed in the general lab area to facilitate EMC work not requiring a shielded environment.

7.2 Limits

FCC Title 47 CFR Part 27.50(j)(4)
Equipment employed must be authorized in accordance with the provisions of § 27.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (j)(5) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

7.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV009'	weather station	Davis Instruments	6351 Vantage VUE	DAV009	04/05/2024	04/05/2025
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	11/22/2023	11/22/2024
CBLHF2012-5M-2'	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	02/27/2024	02/27/2025
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	02/28/2024	02/28/2025

Software Utilized:

Name	Manufacturer	Version
None	N/A	N/A

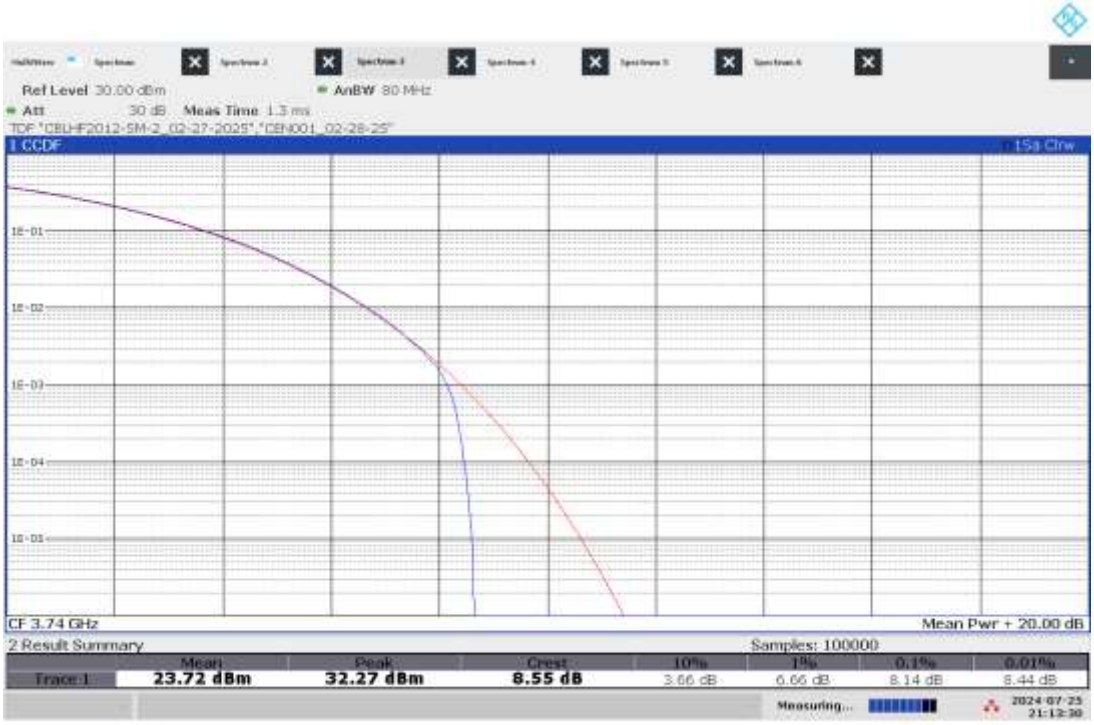
7.4 Results:

The sample tested was found to Comply.

7.5 Setup Photograph:

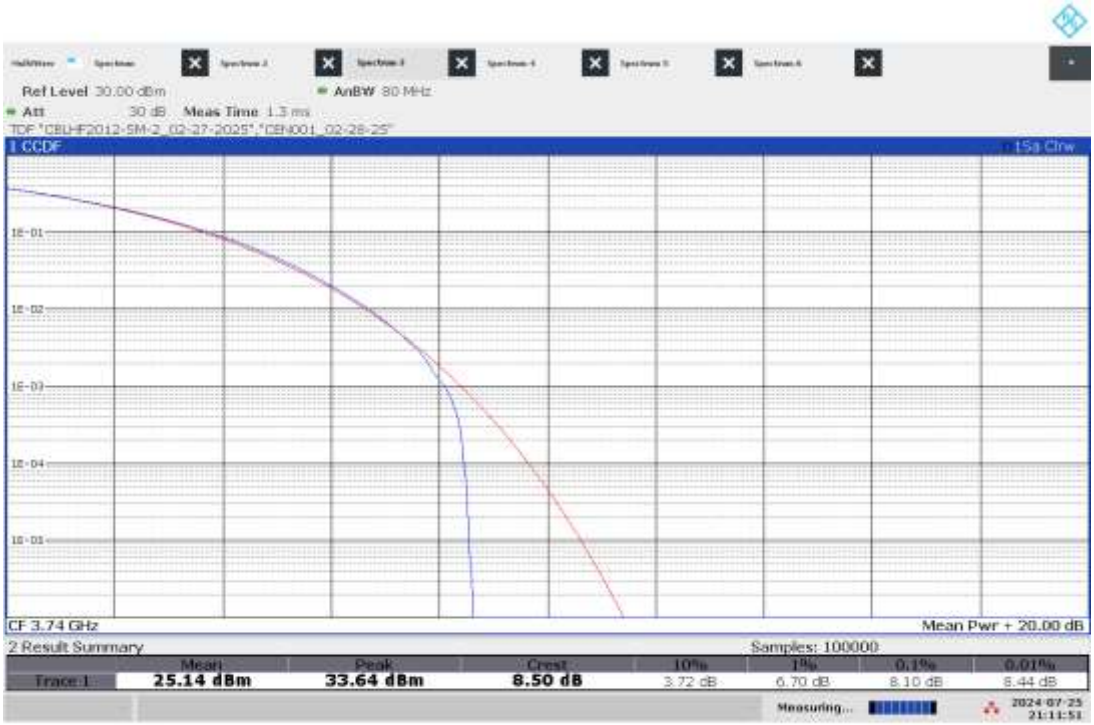
7.6 Plots/Data:

Low Channel (3740 MHz) PAPR, Modulation: TM1.1, Antenna Port 1



09:13:30 PM 07/25/2024

Low Channel (3740 MHz) PAPR, Modulation: TM1.1, Antenna Port 2

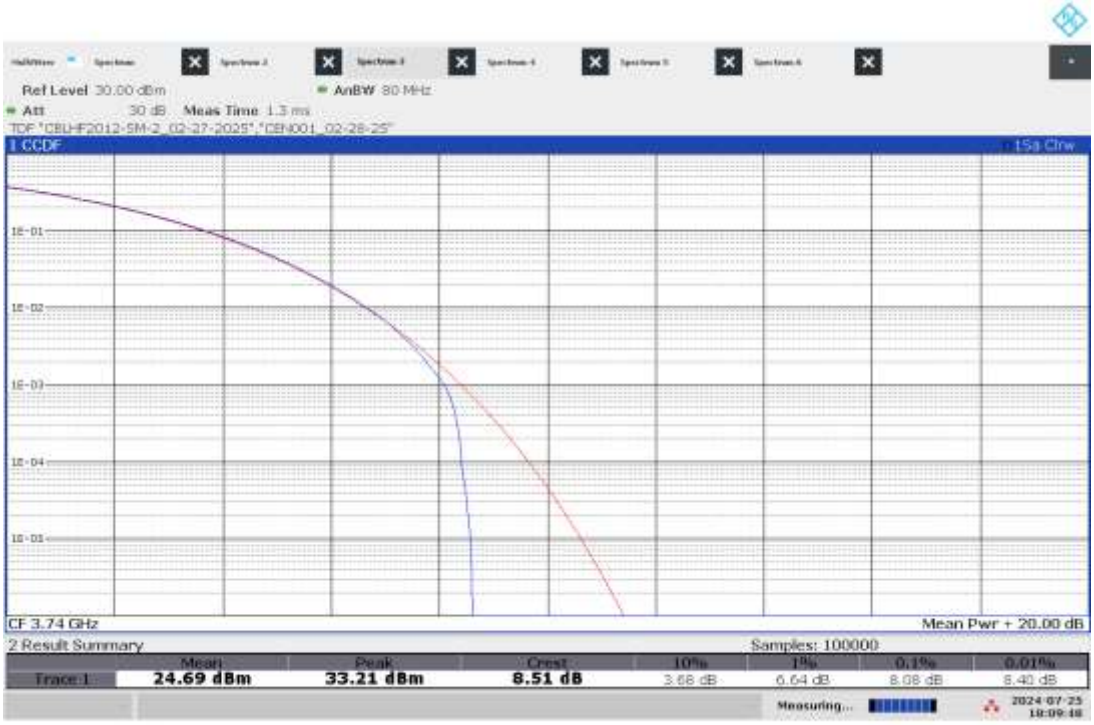


09:11:51 PM 07/25/2024

Low Channel (3740 MHz) PAPR, Modulation: TM1.1, Antenna Port 3

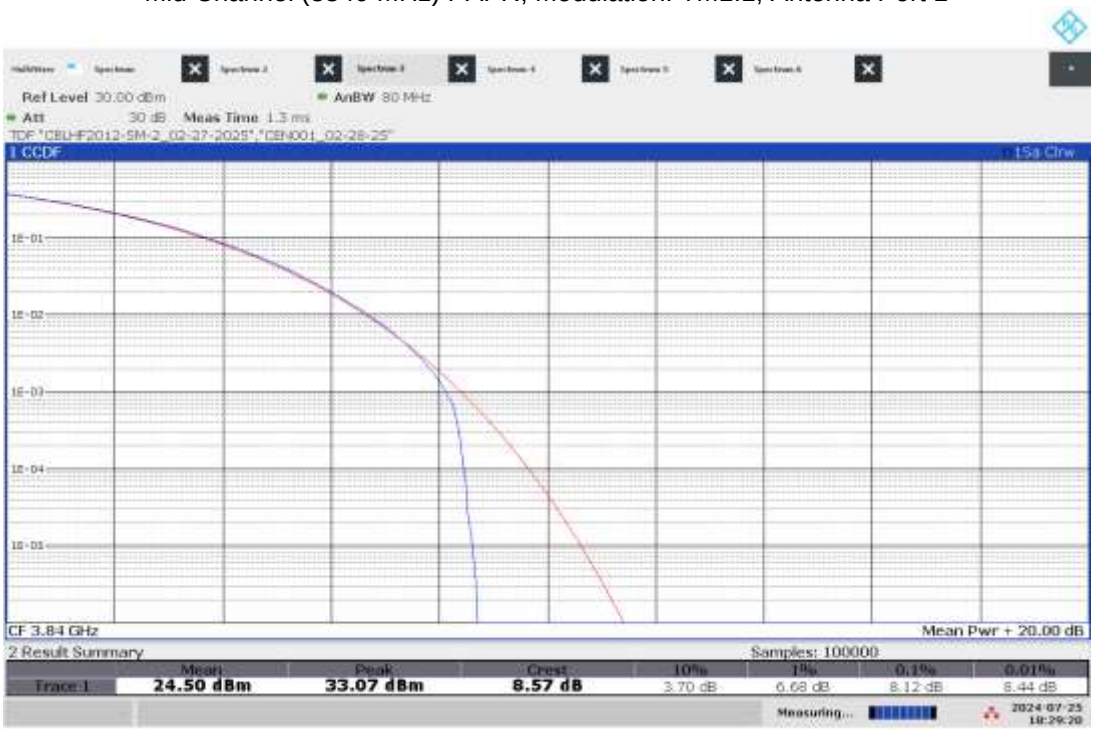
09:09:17 PM 07/25/2024

Low Channel (3740 MHz) PAPR, Modulation: TM1.1, Antenna Port 4



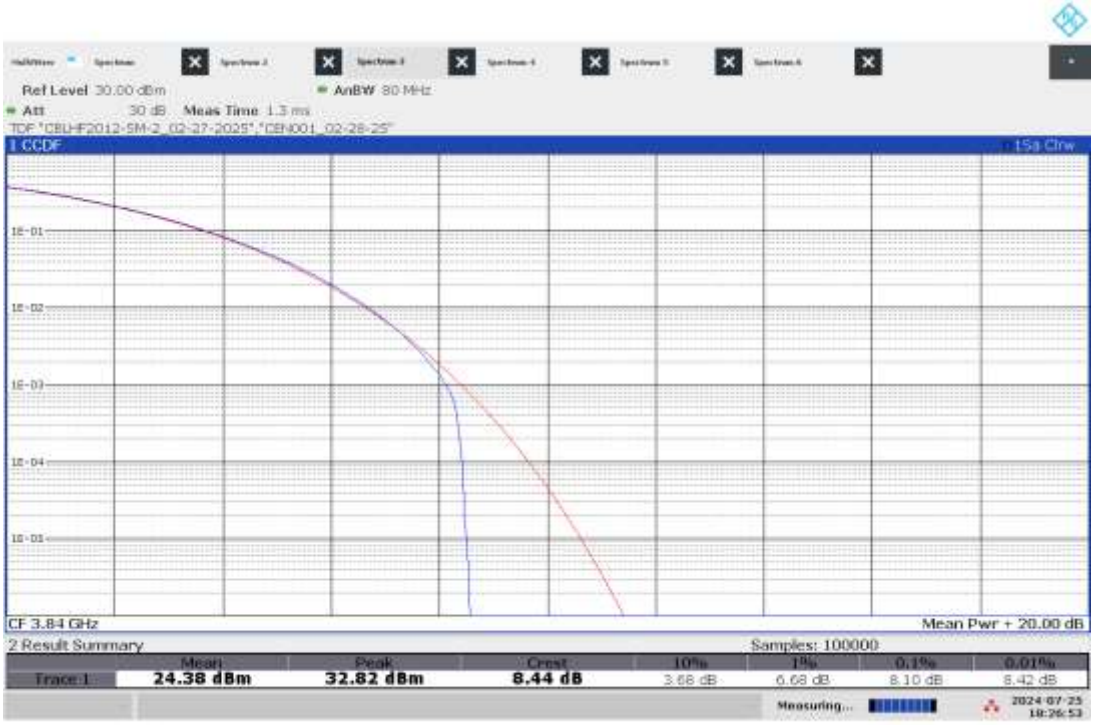
06:09:48 PM 07/25/2024

Mid Channel (3840 MHz) PAPR, Modulation: TM1.1, Antenna Port 1



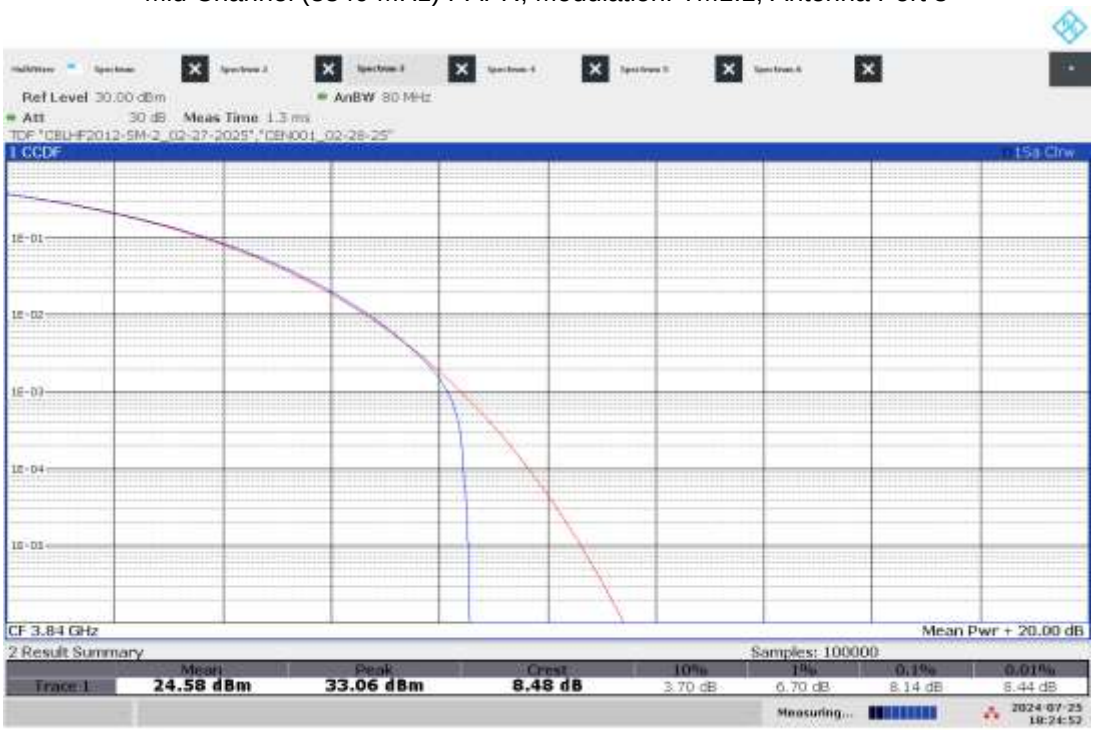
06:29:21 PM 07/25/2024

Mid Channel (3840 MHz) PAPR, Modulation: TM1.1, Antenna Port 2



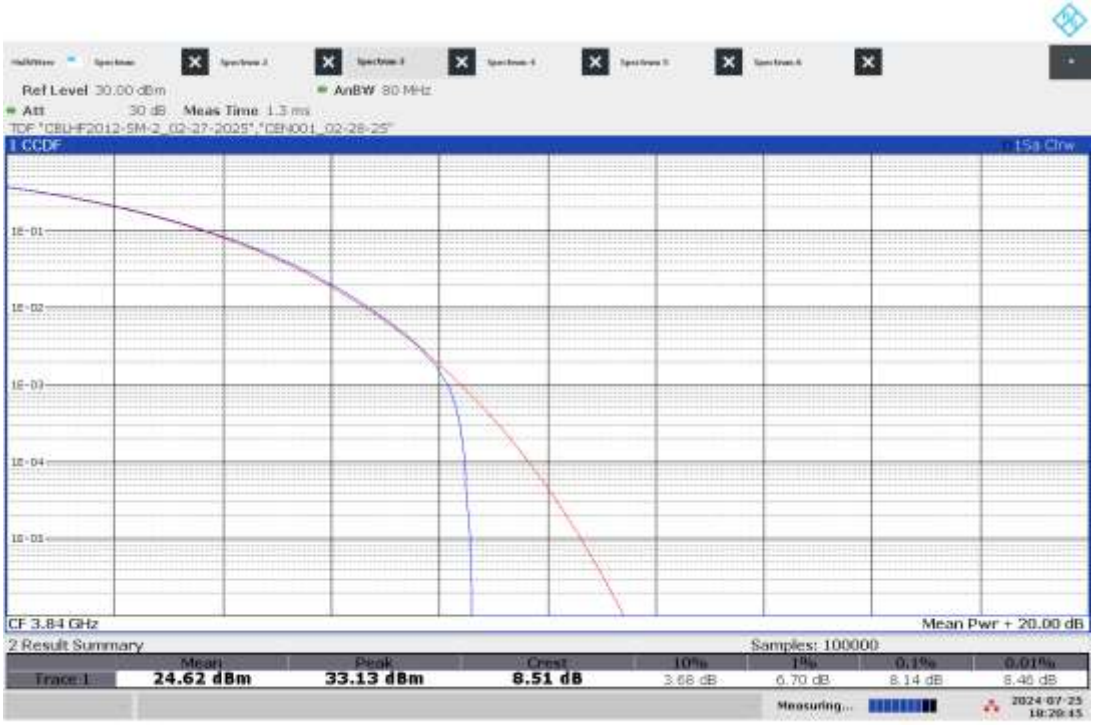
06:26:53 PM 07/25/2024

Mid Channel (3840 MHz) PAPR, Modulation: TM1.1, Antenna Port 3



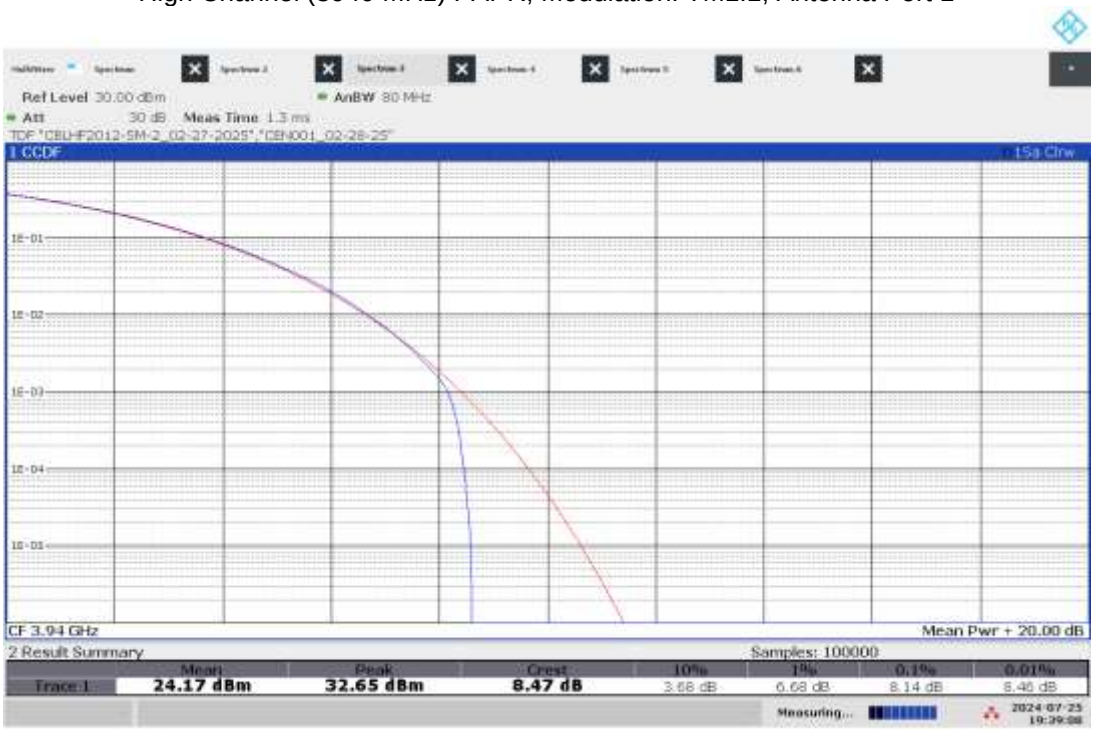
06:24:52 PM 07/25/2024

Mid Channel (3840 MHz)) PAPR, Modulation: TM1.1, Antenna Port 4



06:20:45 PM 07/25/2024

High Channel (3940 MHz) PAPR, Modulation: TM1.1, Antenna Port 1

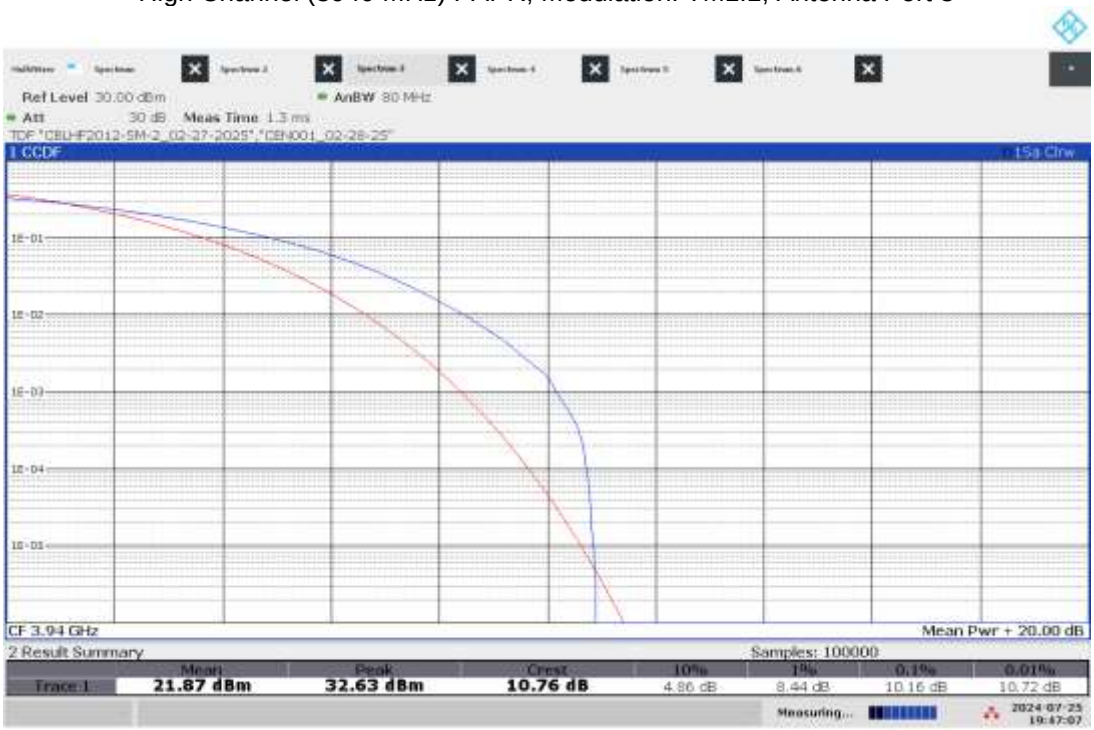


07:39:09 PM 07/25/2024

High Channel (3940 MHz) PAPR, Modulation: TM1.1, Antenna Port 2

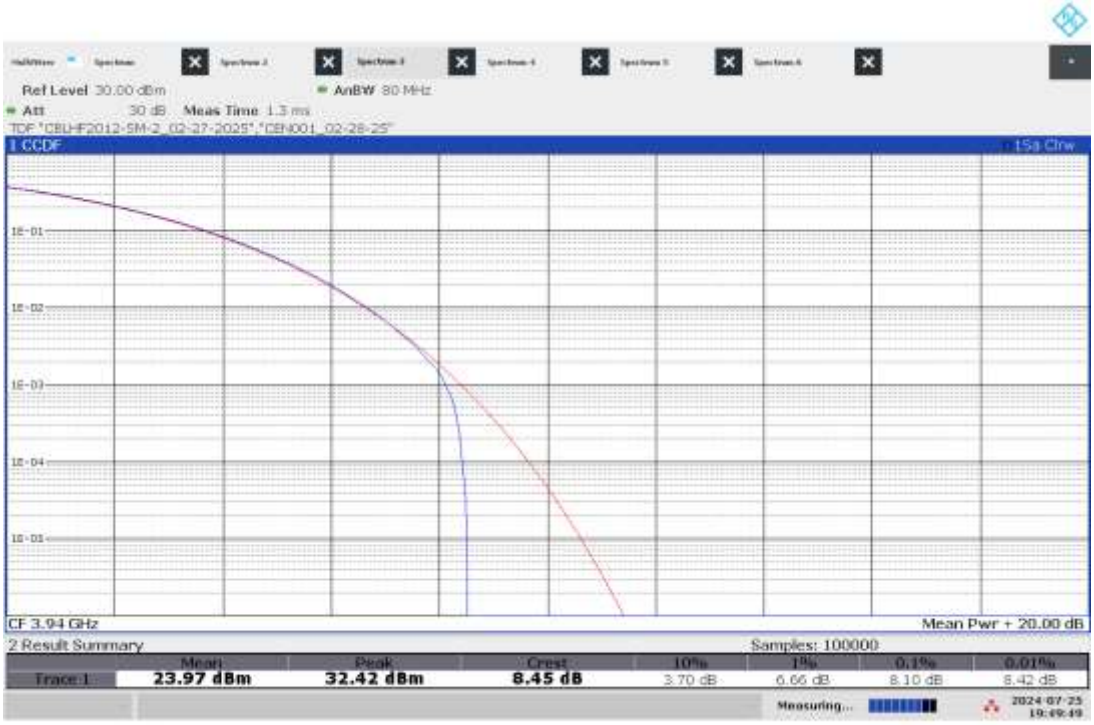
07:44:56 PM 07/25/2024

High Channel (3940 MHz) PAPR, Modulation: TM1.1, Antenna Port 3



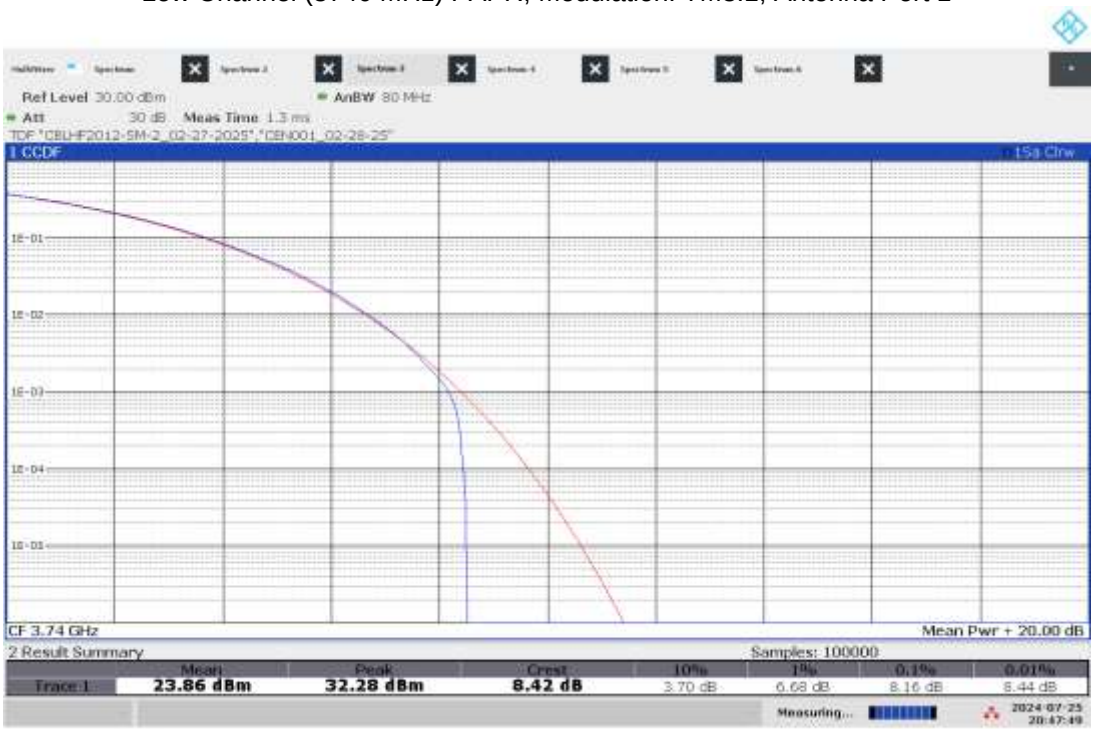
07:47:07 PM 07/25/2024

High Channel (3940 MHz) PAPR, Modulation: TM1.1, Antenna Port 4



07:40:40 PM 07/25/2024

Low Channel (3740 MHz) PAPR, Modulation: TM3.1, Antenna Port 1



08:47:49 PM 07/25/2024

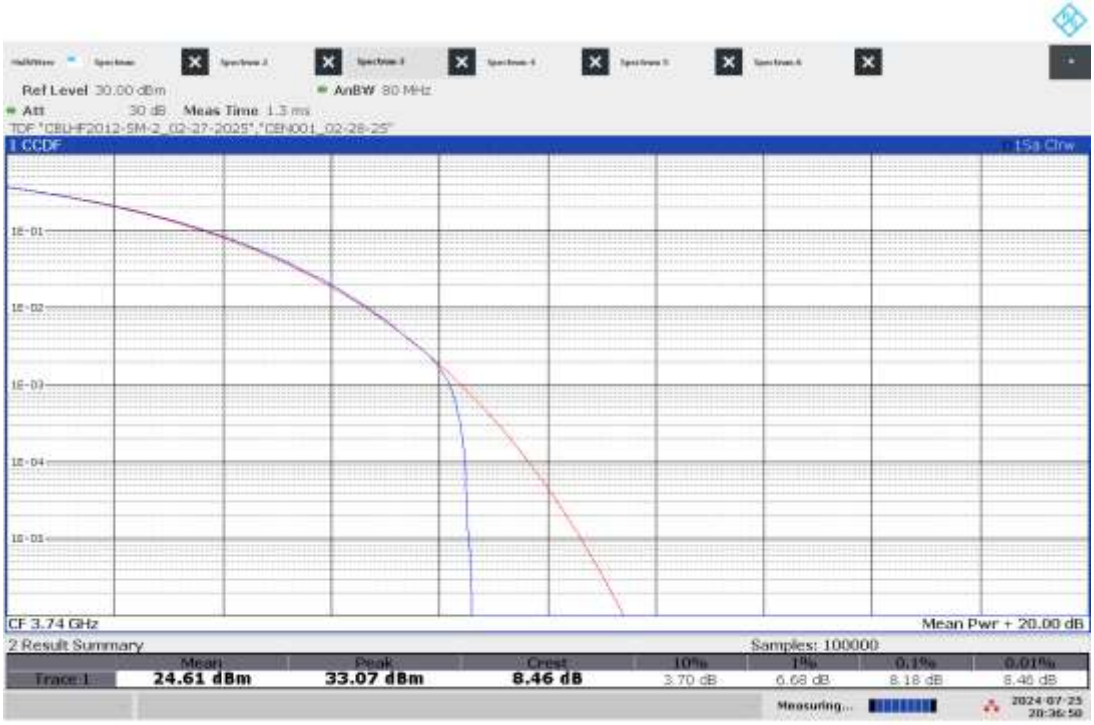
Low Channel (3740 MHz) PAPR, Modulation: TM3.1, Antenna Port 2

08:44:56 PM 07/25/2024

Low Channel (3740 MHz) PAPR, Modulation: TM3.1, Antenna Port 3

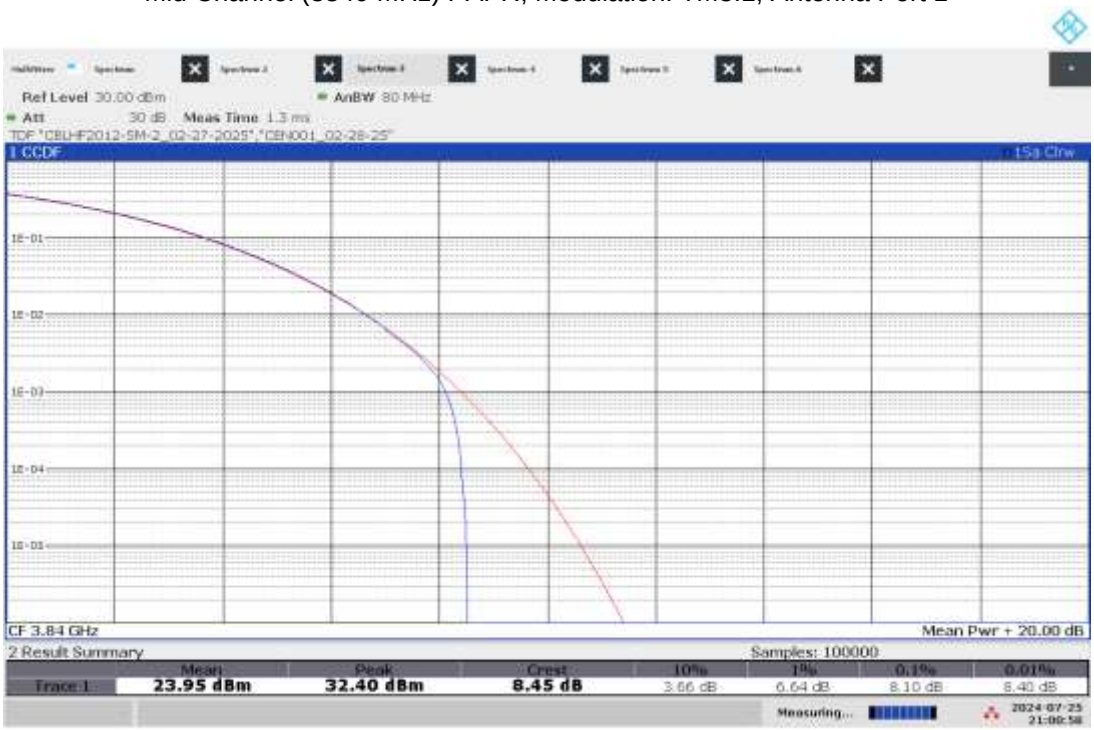
08:41:40 PM 07/25/2024

Low Channel (3740 MHz) PAPR, Modulation: TM3.1, Antenna Port 4

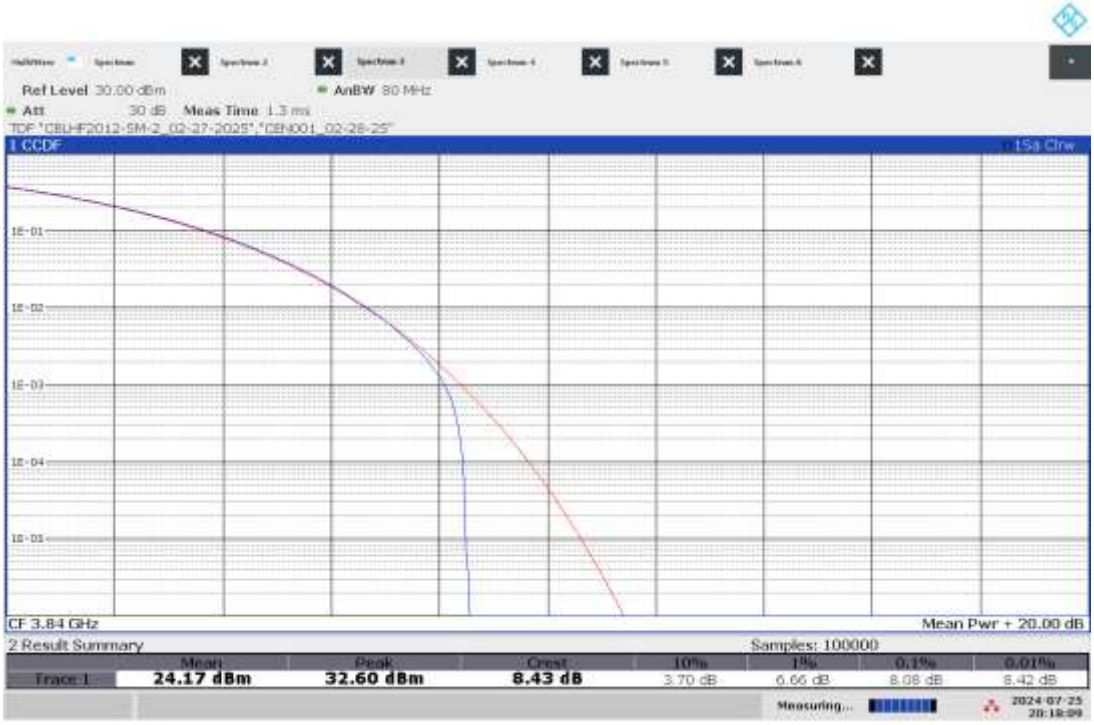


08:36:51 PM 07/25/2024

Mid Channel (3840 MHz) PAPR, Modulation: TM3.1, Antenna Port 1



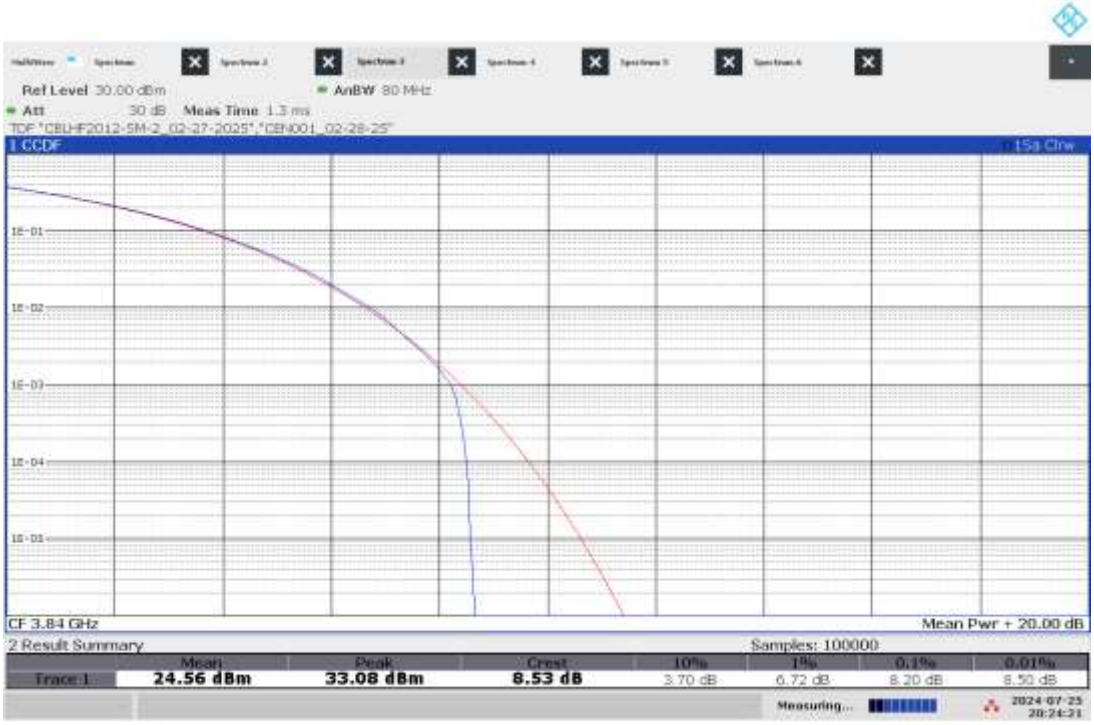
Mid Channel (3840 MHz) PAPR, Modulation: TM3.1, Antenna Port 2



Mid Channel (3840 MHz) PAPR, Modulation: TM3.1, Antenna Port 3

08:20:55 PM 07/25/2024

Mid Channel (3840 MHz)) PAPR, Modulation: TM3.1, Antenna Port 4

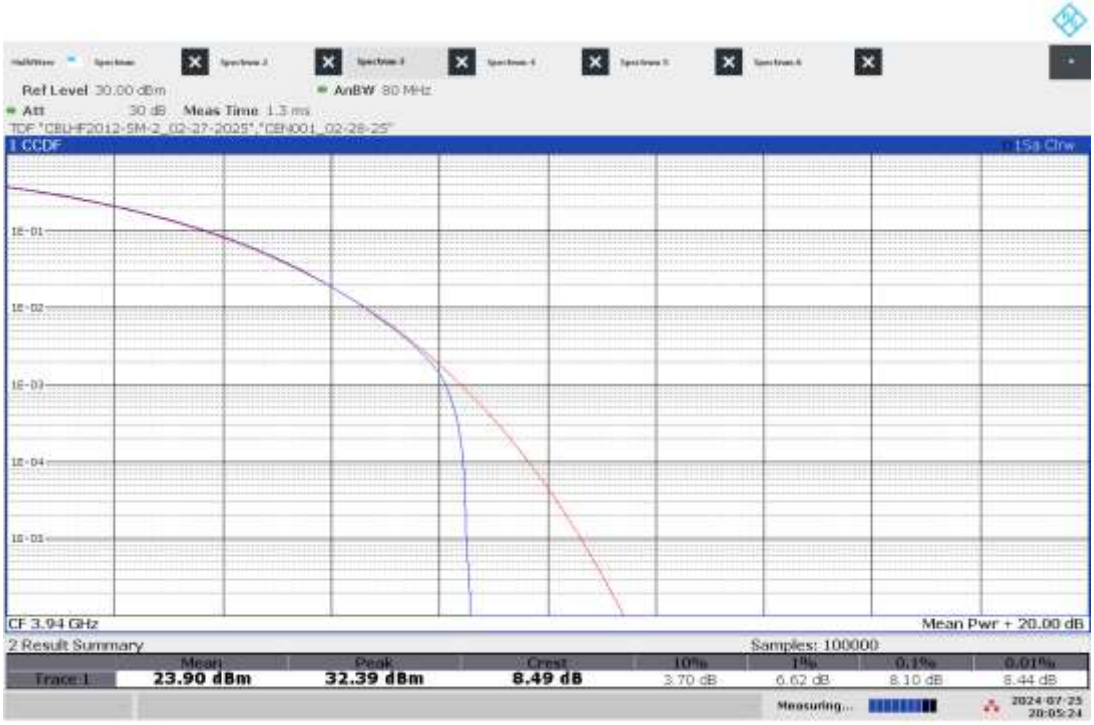


08:24:22 PM 07/25/2024

High Channel (3940 MHz) PAPR, Modulation: TM3.1, Antenna Port 1

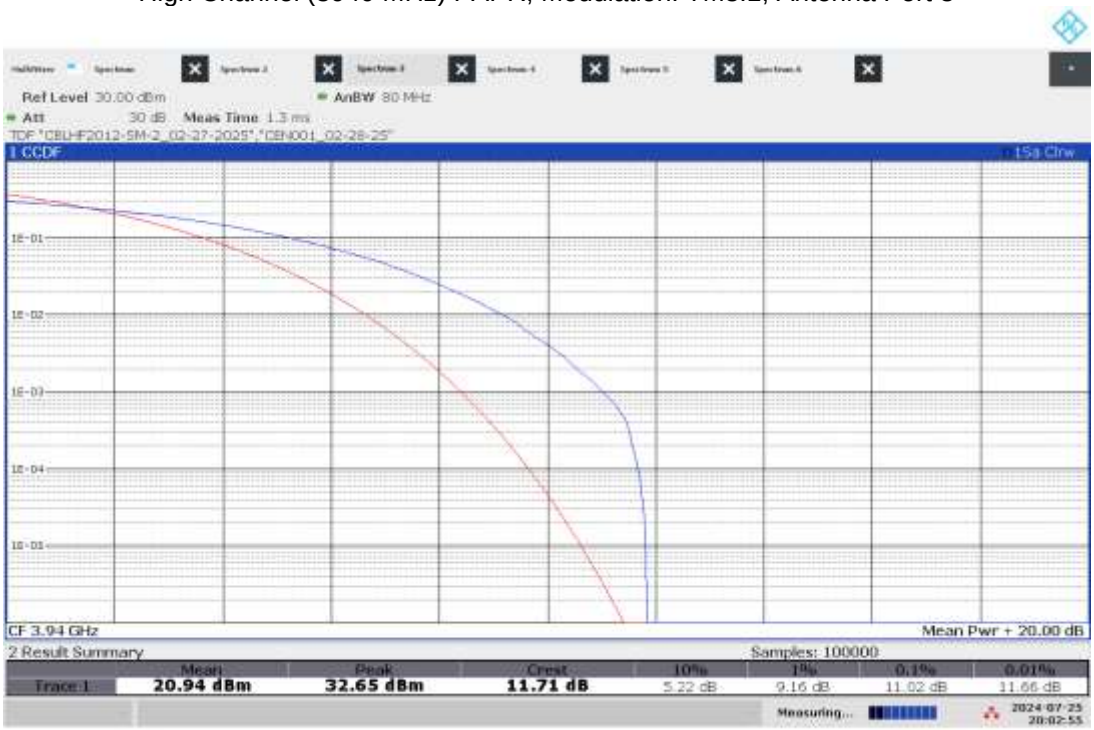
09:21:20 PM 07/25/2024

High Channel (3940 MHz) PAPR, Modulation: TM3.1, Antenna Port 2



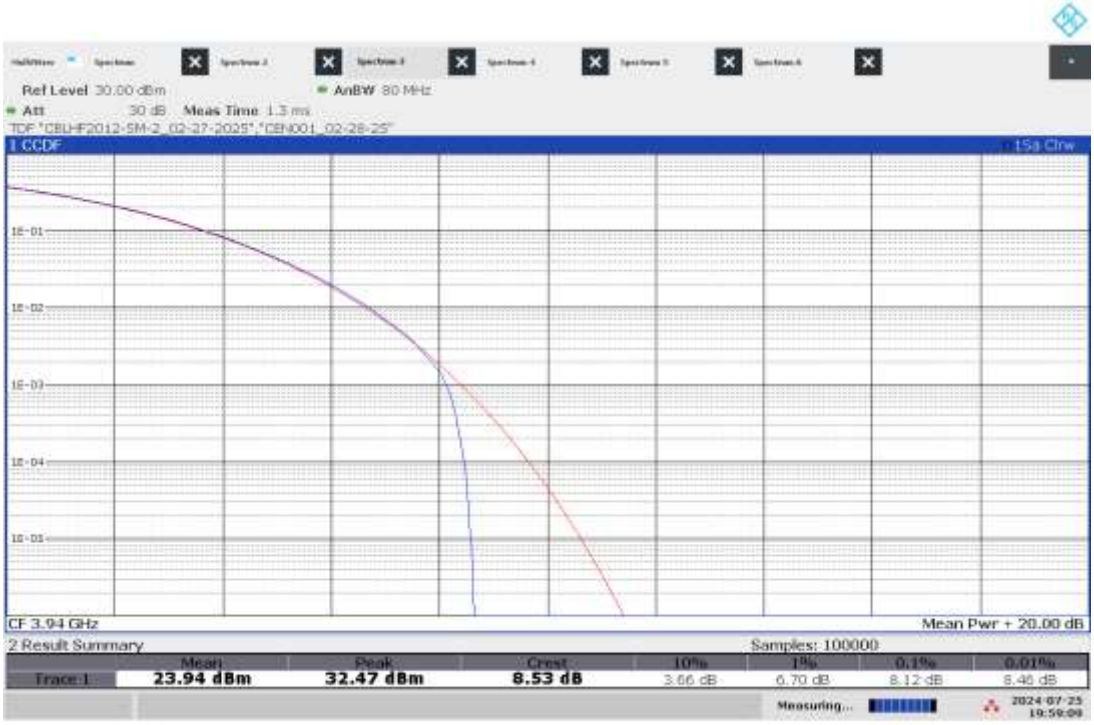
08:05:24 PM 07/25/2024

High Channel (3940 MHz) PAPR, Modulation: TM3.1, Antenna Port 3



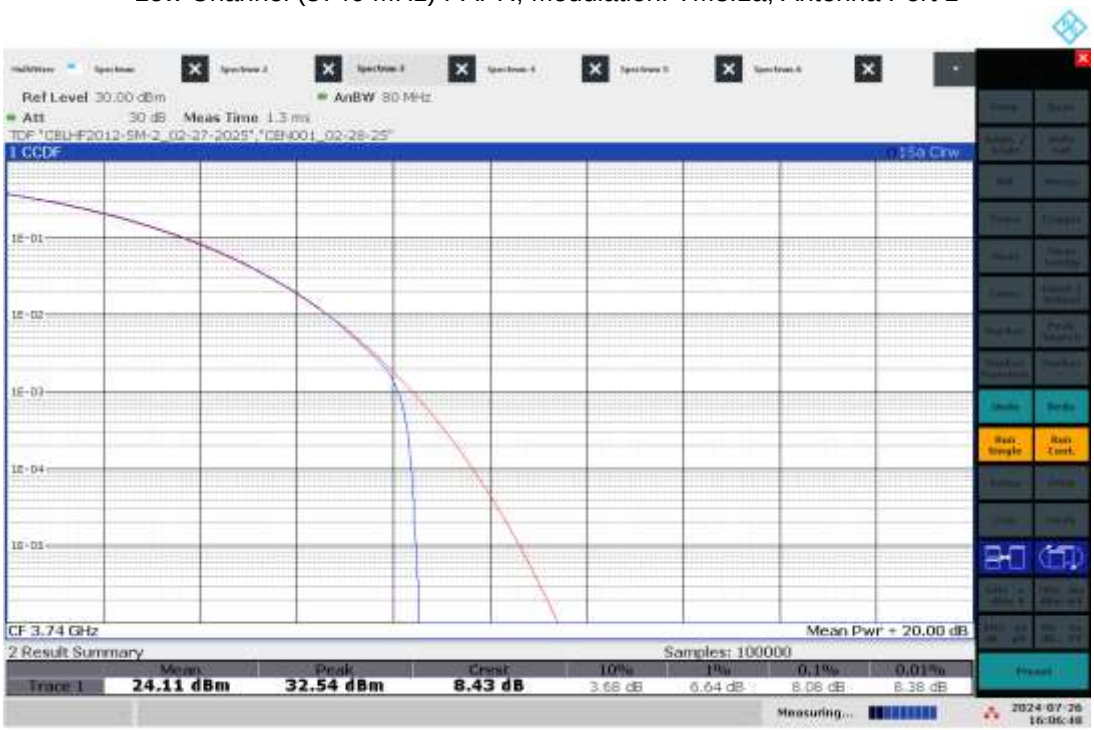
08:02:56 PM 07/25/2024

High Channel (3940 MHz) PAPR, Modulation: TM3.1, Antenna Port 4



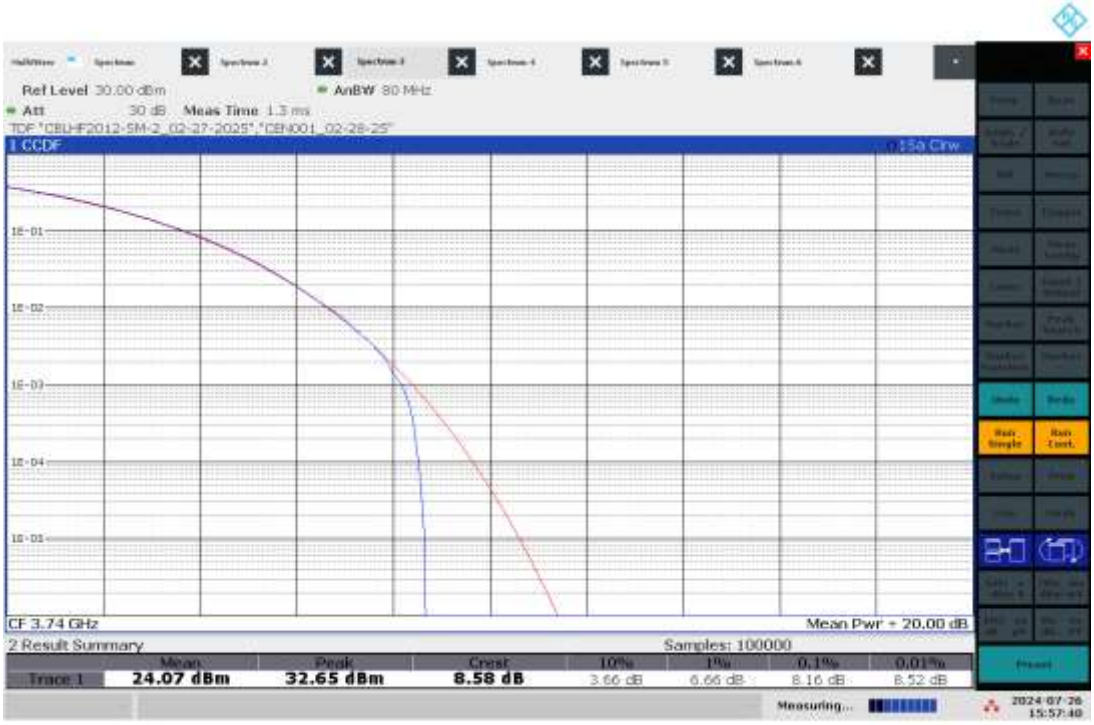
07:59:09 PM 07/25/2024

Low Channel (3740 MHz) PAPR, Modulation: TM3.1a, Antenna Port 1



04:06:49 PM 07/26/2024

Low Channel (3740 MHz) PAPR, Modulation: TM3.1a, Antenna Port 2

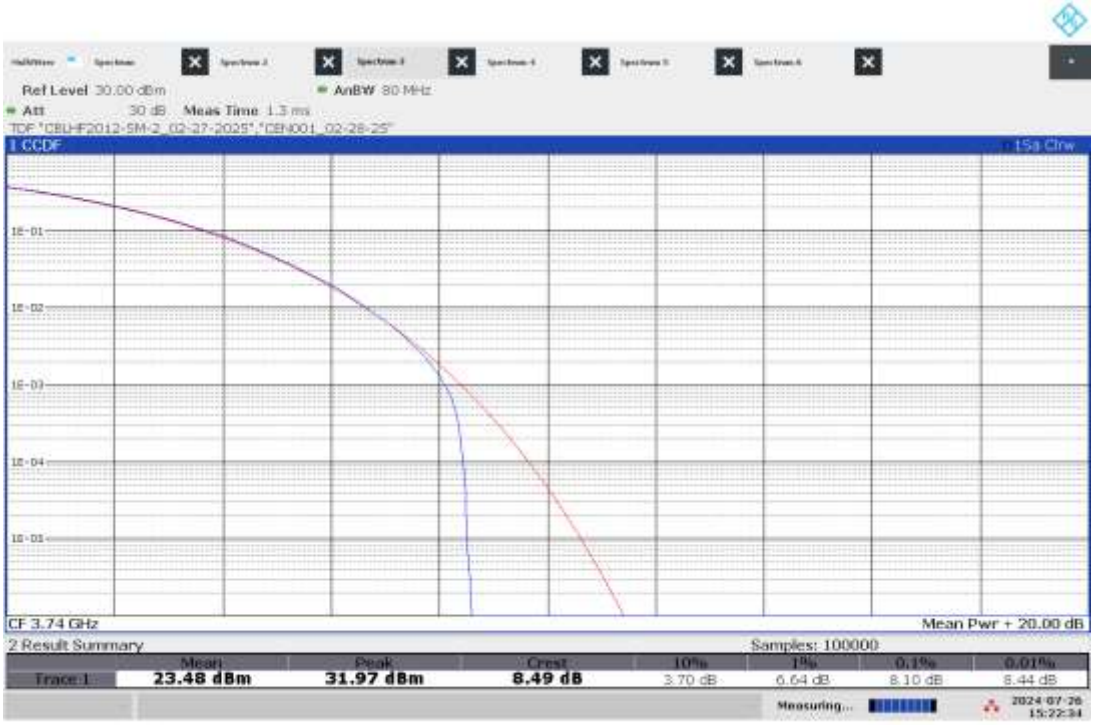


03:57:40 PM 07/26/2024

Low Channel (3740 MHz) PAPR, Modulation: TM3.1a, Antenna Port 3

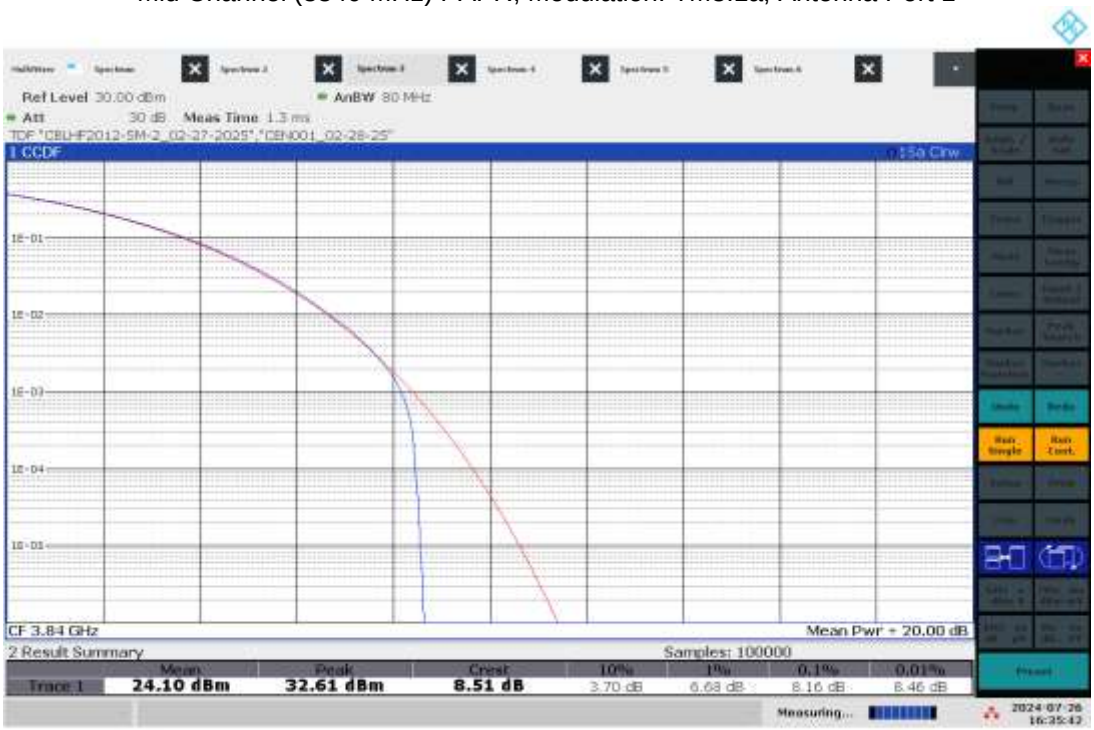
04:15:36 PM 07/26/2024

Low Channel (3740 MHz) PAPR, Modulation: TM3.1a, Antenna Port 4



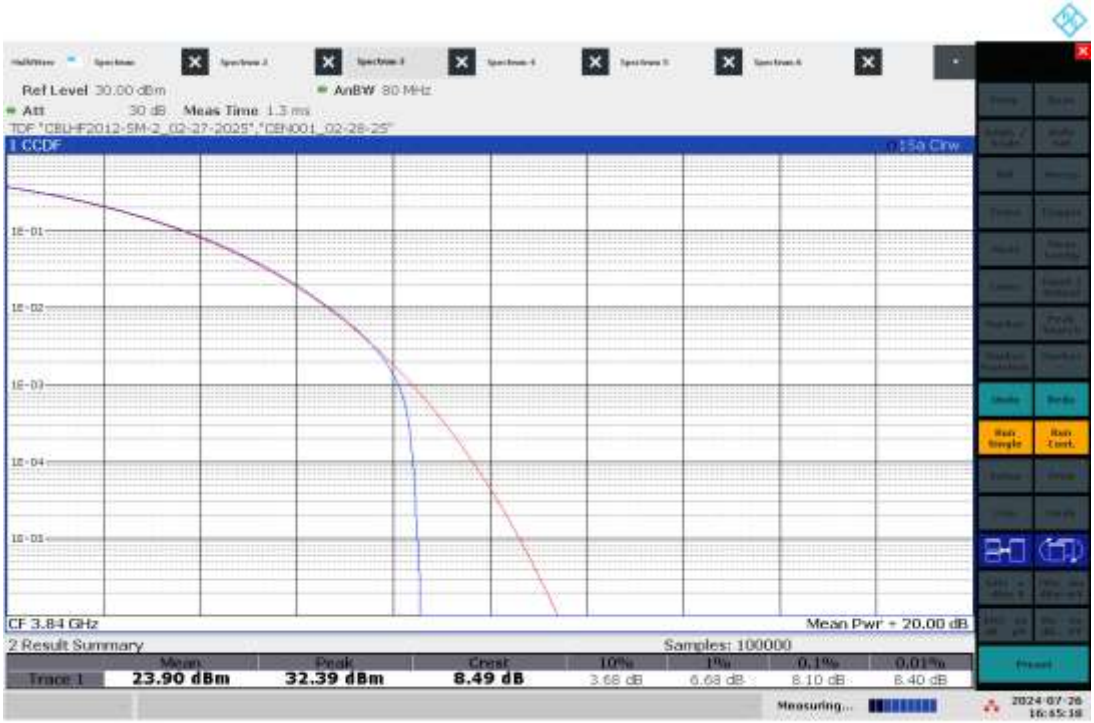
03:22:35 PM 07/26/2024

Mid Channel (3840 MHz) PAPR, Modulation: TM3.1a, Antenna Port 1



04:35:43 PM 07/26/2024

Mid Channel (3840 MHz) PAPR, Modulation: TM3.1a, Antenna Port 2

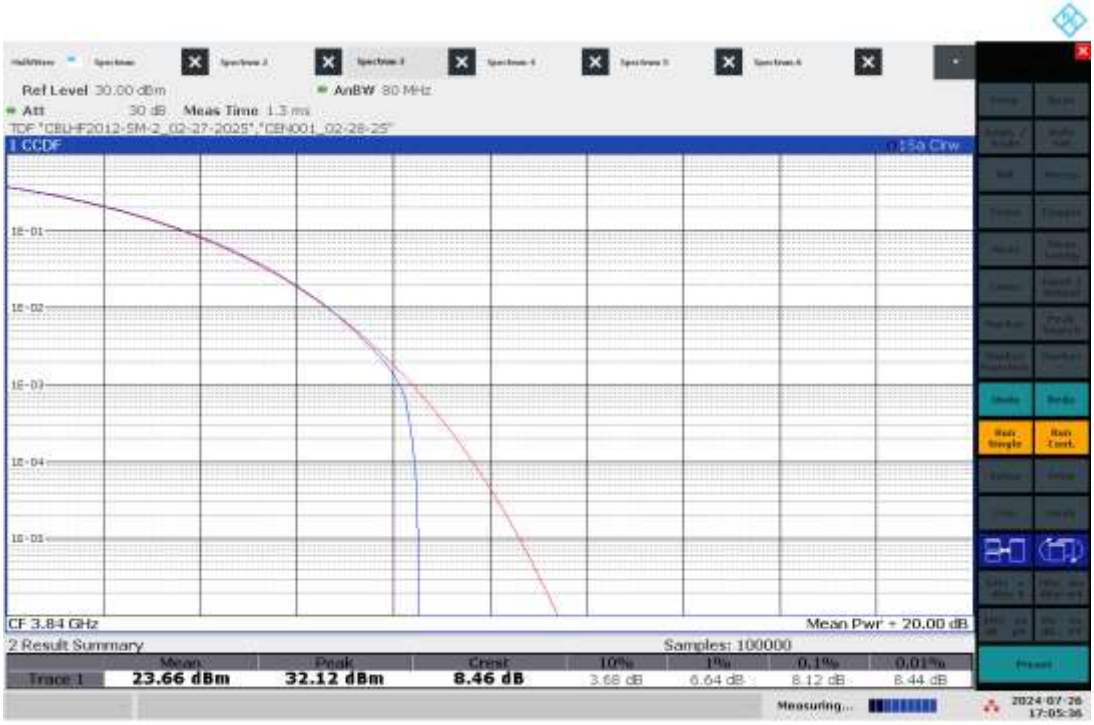


04:45:18 PM 07/26/2024

Mid Channel (3840 MHz) PAPR, Modulation: TM3.1a, Antenna Port 3

04:54:58 PM 07/26/2024

Mid Channel (3840 MHz)) PAPR, Modulation: TM3.1a, Antenna Port 4

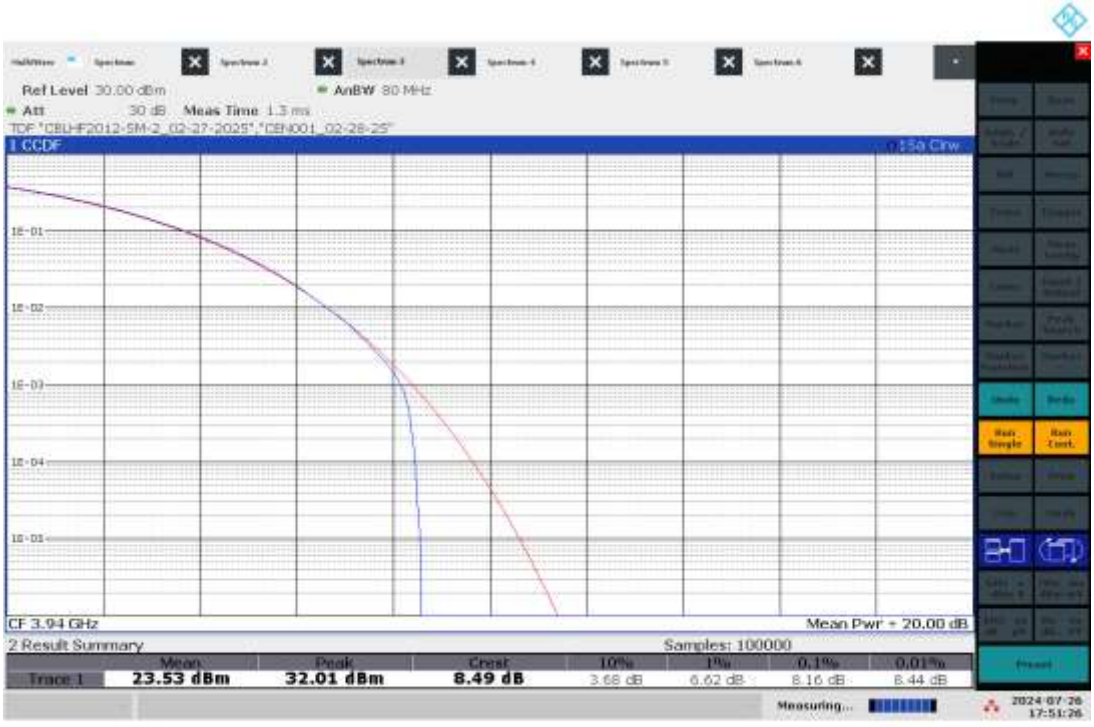


05:05:36 PM 07/26/2024

High Channel (3940 MHz) PAPR, Modulation: TM3.1a, Antenna Port 1

05:57:54 PM 07/26/2024

High Channel (3940 MHz) PAPR, Modulation: TM3.1a, Antenna Port 2

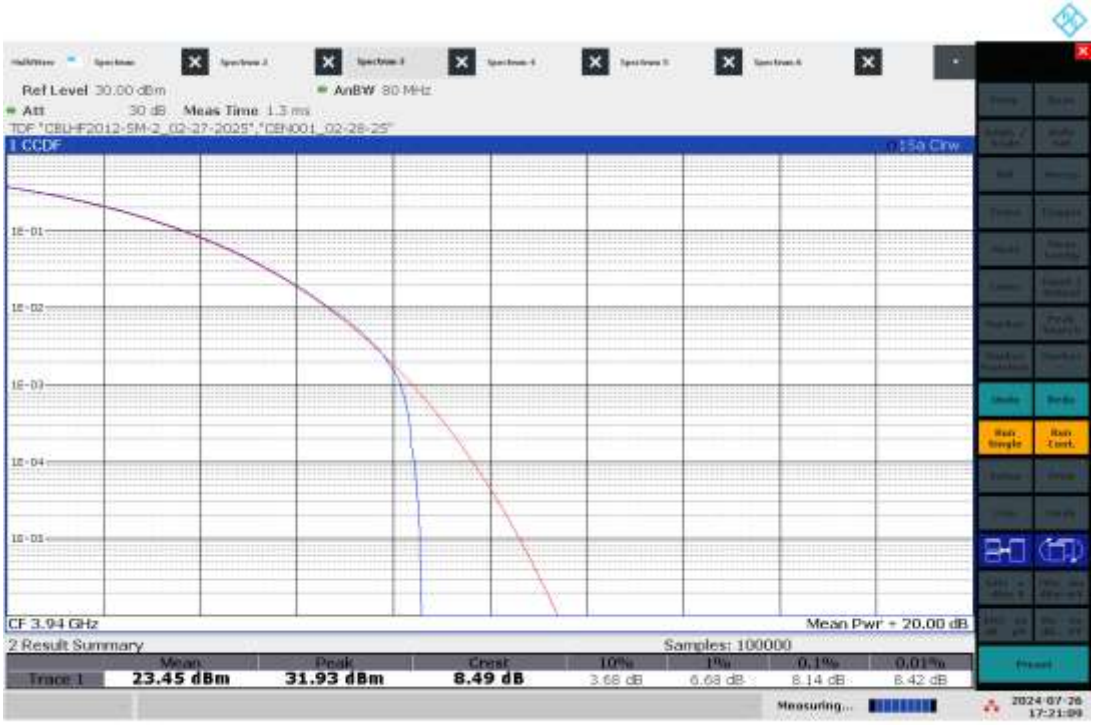


05:51:26 PM 07/26/2024

High Channel (3940 MHz) PAPR, Modulation: TM3.1a, Antenna Port 3

05:42:40 PM 07/26/2024

High Channel (3940 MHz) PAPR, Modulation: TM3.1a, Antenna Port 4

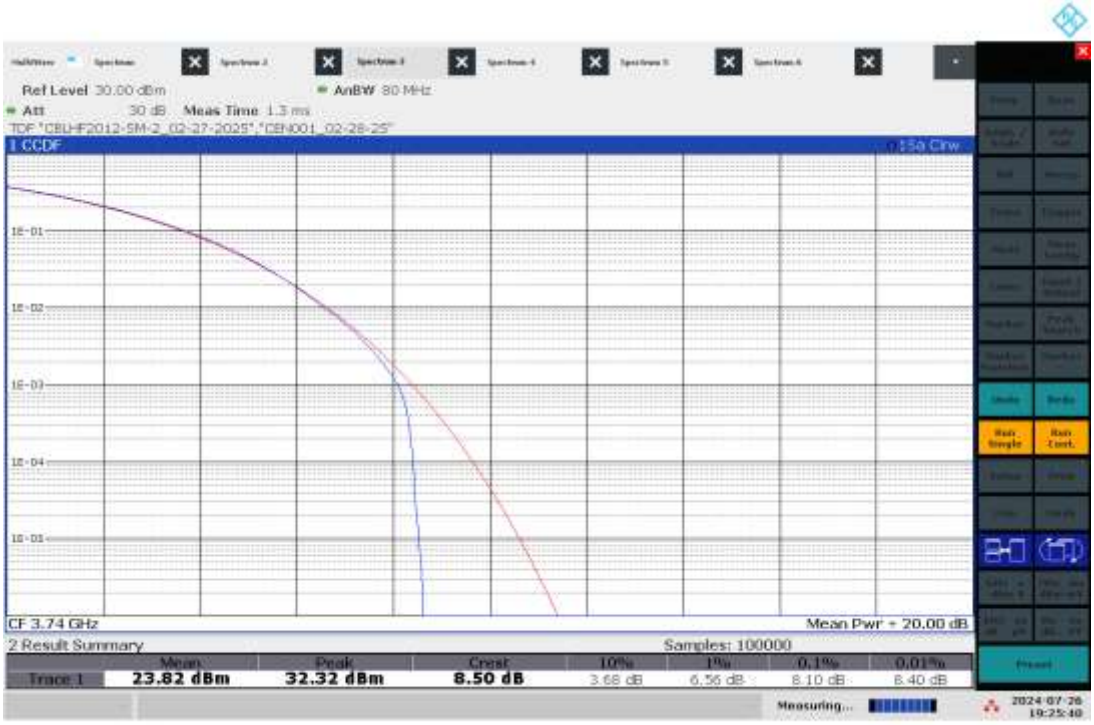


05:21:10 PM 07/26/2024

Low Channel (3740 MHz) PAPR, Modulation: TM3.3, Antenna Port 1

07:20:09 PM 07/26/2024

Low Channel (3740 MHz) PAPR, Modulation: TM3.3, Antenna Port 2



07:25:41 PM 07/26/2024

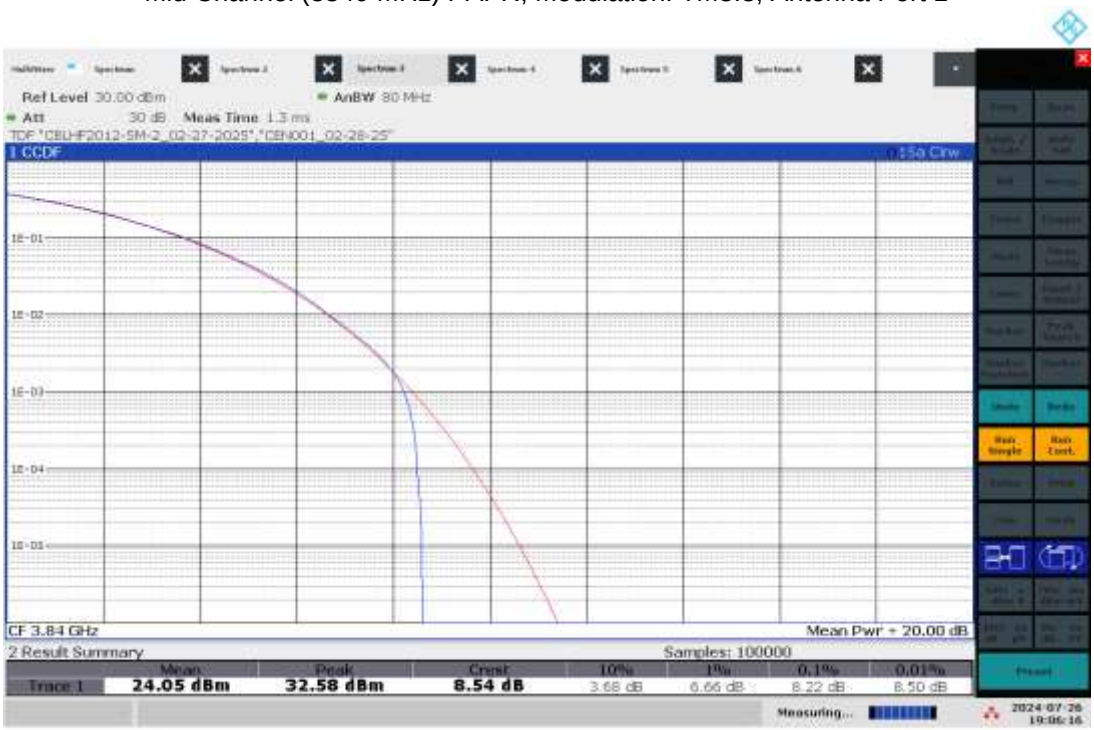
Low Channel (3740 MHz) PAPR, Modulation: TM3.3, Antenna Port 3

07:32:40 PM 07/26/2024

Low Channel (3740 MHz) PAPR, Modulation: TM3.3, Antenna Port 4

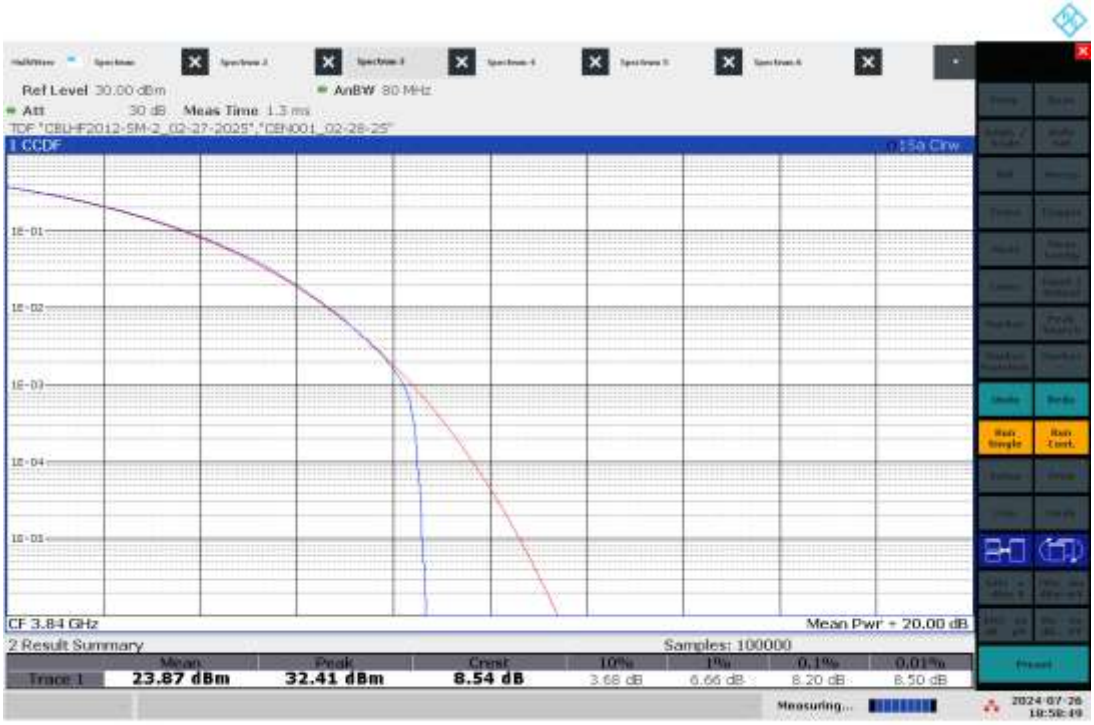
07:39:41 PM 07/26/2024

Mid Channel (3840 MHz) PAPR, Modulation: TM3.3, Antenna Port 1



07:06:16 PM 07/26/2024

Mid Channel (3840 MHz) PAPR, Modulation: TM3.3, Antenna Port 2

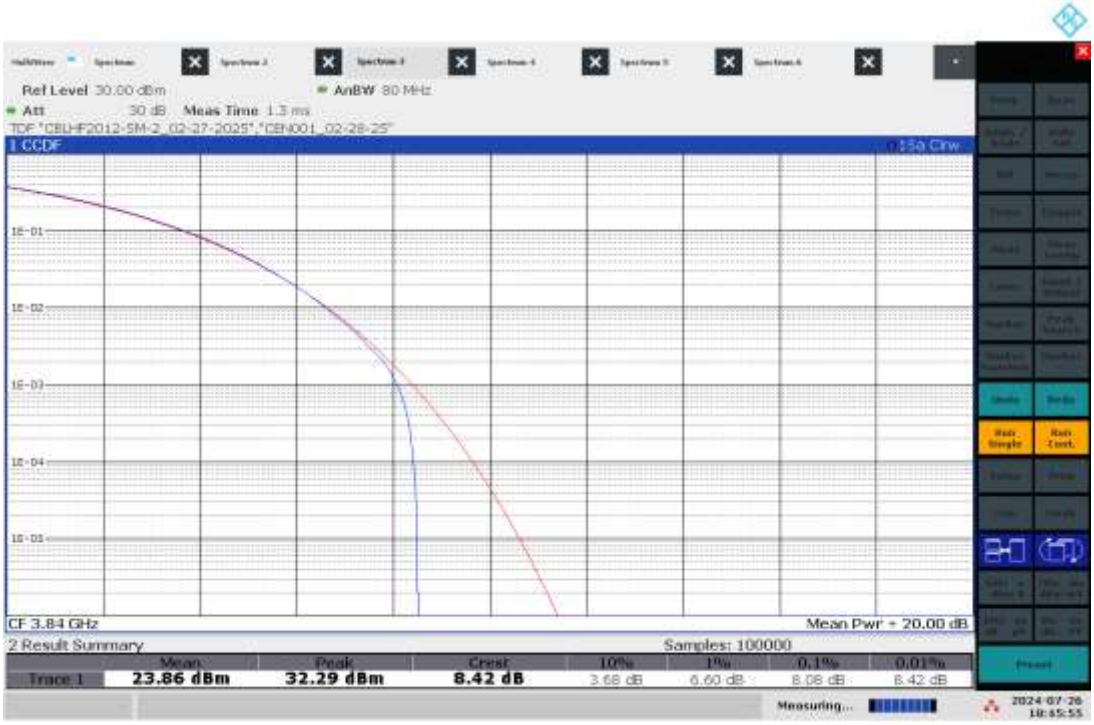


06:58:50 PM 07/26/2024

Mid Channel (3840 MHz) PAPR, Modulation: TM3.3, Antenna Port 3

06:52:57 PM 07/26/2024

Mid Channel (3840 MHz)) PAPR, Modulation: TM3.3, Antenna Port 4



06:45:56 PM 07/26/2024

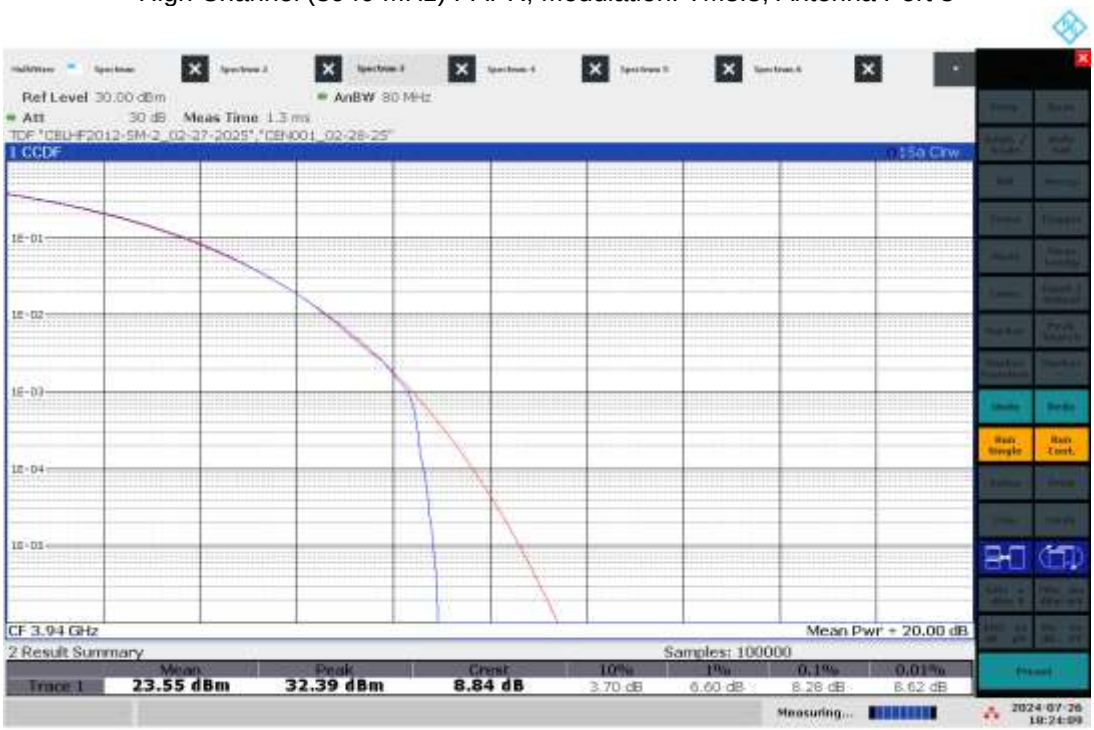
High Channel (3940 MHz) PAPR, Modulation: TM3.3, Antenna Port 1

06:09:17 PM 07/26/2024

High Channel (3940 MHz) PAPR, Modulation: TM3.3, Antenna Port 2

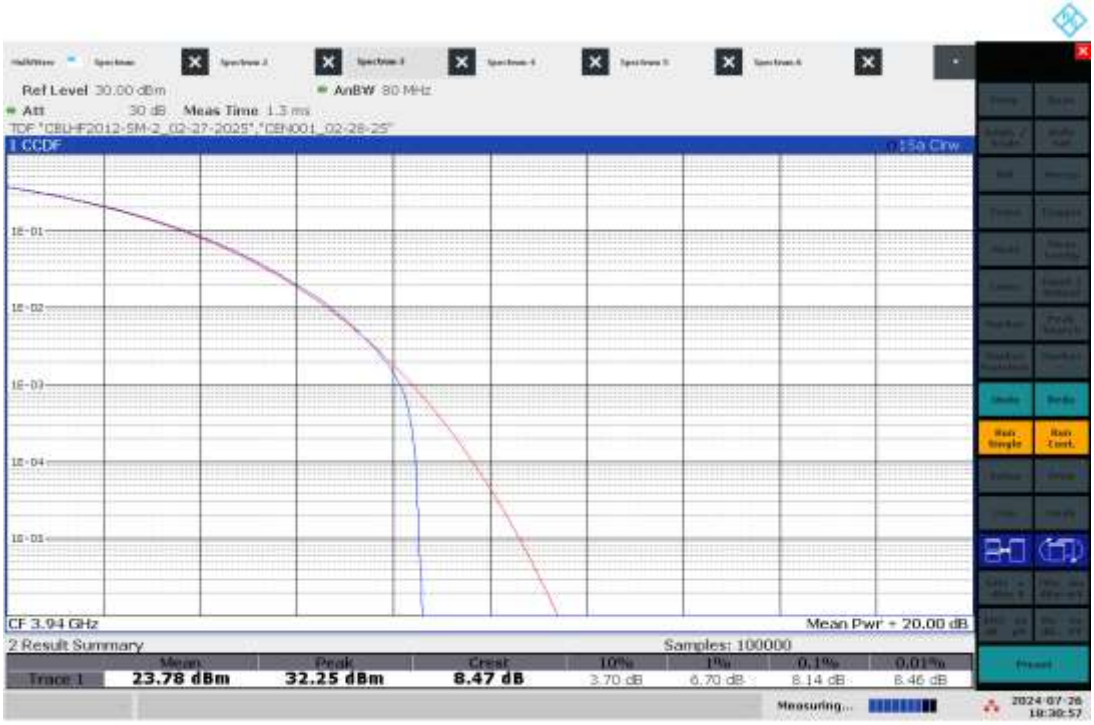
06:16:55 PM 07/26/2024

High Channel (3940 MHz) PAPR, Modulation: TM3.3, Antenna Port 3



06:24:09 PM 07/26/2024

High Channel (3940 MHz) PAPR, Modulation: TM3.3, Antenna Port 4



06:30:58 PM 07/26/2024

Product Standard: FCC Title 47 CFR Part 27				Limit applied: See Report Section 6.2 Pretest Verification w/ signal generator: Yes			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
07/25/2024	Vathana F. Ven	N/A	POE	Continuous Transmitting	21	49	1005
07/26/2024	Kouma Sinn	N//A	POE	Continuous Transmitting	23	46	1005

Deviations, Additions, or Exclusions: None

8 Occupied Bandwidth and 26 dB Bandwidth

8.1 Method

Tests are performed in accordance with ANSI C63.26:2015.

TEST SITE: EMC Lab (AMAP Lab)

The EMC Lab has one Semi-anechoic Chamber and one Shielded Chamber. AC Mains Power is available at 120, 230, and 277 Single Phase; 208, 400, and 480 3-Phase. Large reference ground-planes are installed in the general lab area to facilitate EMC work not requiring a shielded environment.

8.2 Limits

The upper and lower edges of the bandwidth stay within the assigned band.

8.3 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV009'	weather station	Davis Instruments	6351 Vantage VUE	DAV009	04/05/2024	04/05/2025
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Shwartz	FSW43	100646	11/22/2023	11/22/2024
CBLHF2012-5M-2'	5m 9kHz-40GHz Coaxial Cable - SET2	Huber & Suhner	SF102	252676002	02/27/2024	02/27/2025
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	02/28/2024	02/28/2025

Software Utilized:

Name	Manufacturer	Version
None	N/A	N/A

8.4 Results:

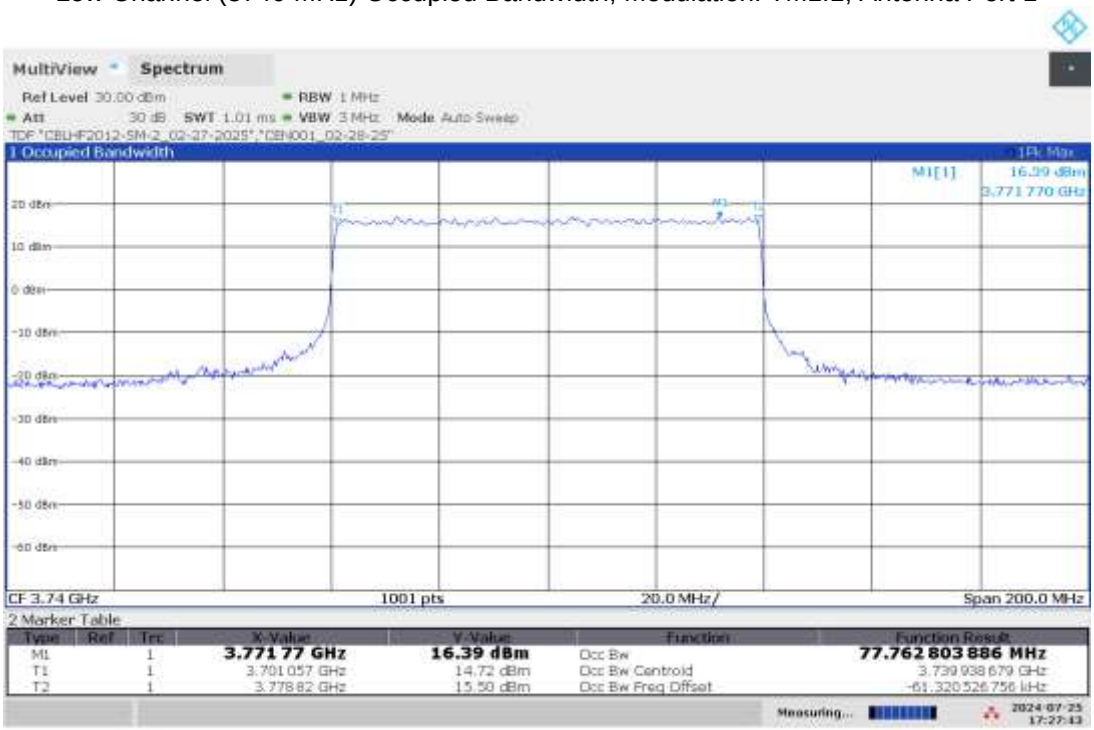
The sample tested was found to Comply.

8.5 Setup Photograph:

8.6 Plots/Data:

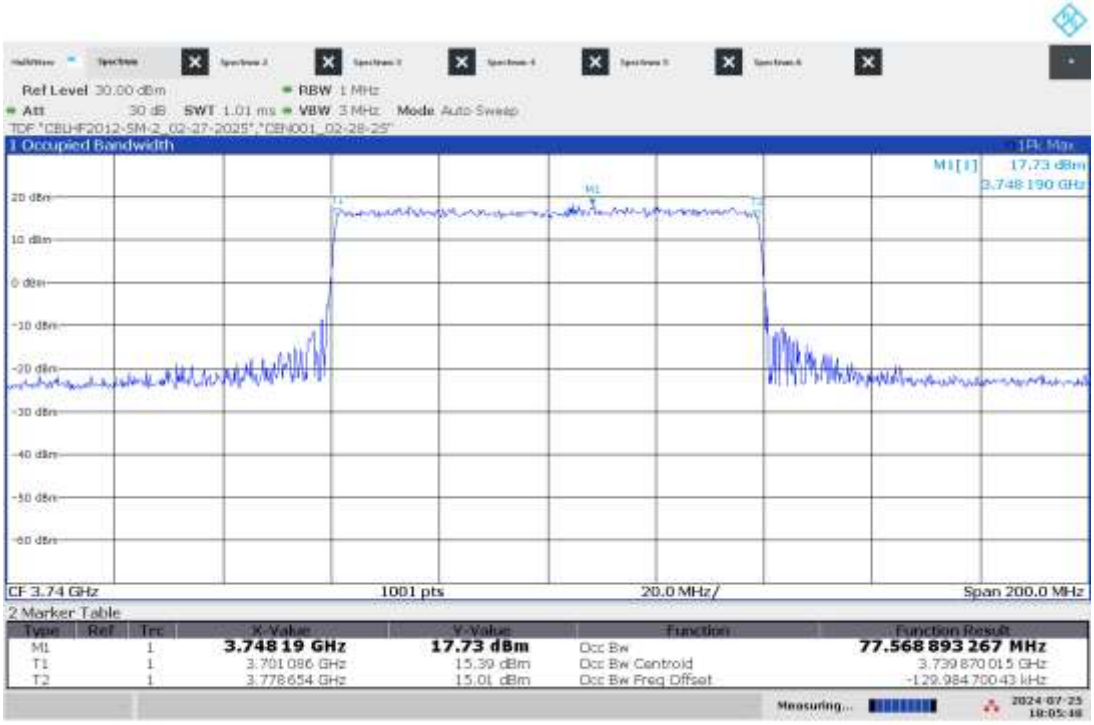
Modulations	Channels	Occupied Bandwidth (MHz)				26 dB Bandwidth (MHz)			
		Port 1	Port 2	Port 3	Port 4	Port 1	Port 2	Port 3	Port 4
TM1.1	Low (3740 MHz)	77.763	77.569	77.604	77.509	81.12	81.92	80.92	80.92
	Mid (3840 MHz)	77.574	77.651	77.519	77.640	80.92	80.92	80.92	81.72
	High (3940 MHz)	77.529	77.507	77.564	77.695	80.52	80.72	81.12	80.72
TM3.1	Low (3740 MHz)	77.611	77.657	77.546	77.581	80.72	80.72	80.92	80.92
	Mid (3840 MHz)	77.613	77.561	77.591	77.464	80.72	81.12	81.92	81.12
	High (3940 MHz)	77.565	77.624	77.593	77.639	80.52	80.72	80.72	80.92
TM3.1a	Low (3740 MHz)	77.543	77.505	77.533	77.608	82.32	82.32	83.72	84.32
	Mid (3840 MHz)	77.507	77.572	77.564	77.625	82.52	83.32	82.92	86.51
	High (3940 MHz)	77.507	77.528	77.557	77.601	82.32	82.12	82.32	81.72
TM3.3	Low (3740 MHz)	77.914	77.933	77.858	77.909	81.72	83.32	85.52	82.92
	Mid (3840 MHz)	77.878	77.874	77.892	77.916	82.52	82.92	83.32	83.12
	High (3940 MHz)	77.892	77.826	77.854	77.921	81.92	83.52	81.72	82.72

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 1



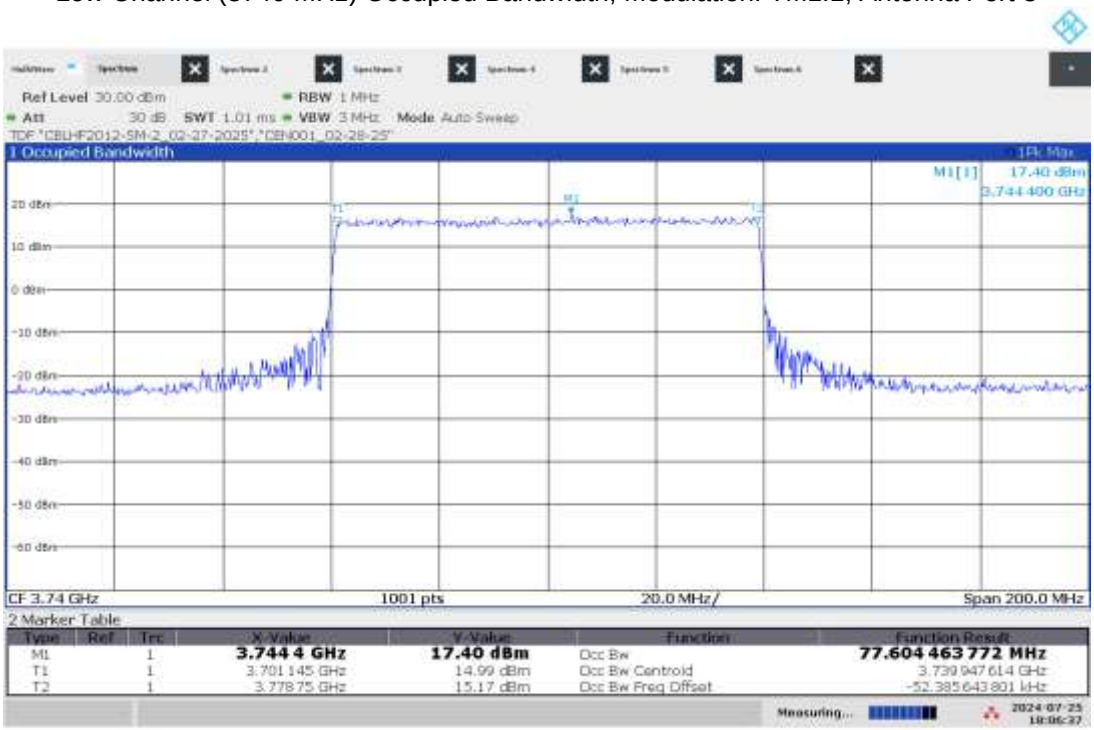
05:27:43 PM 07/25/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 2



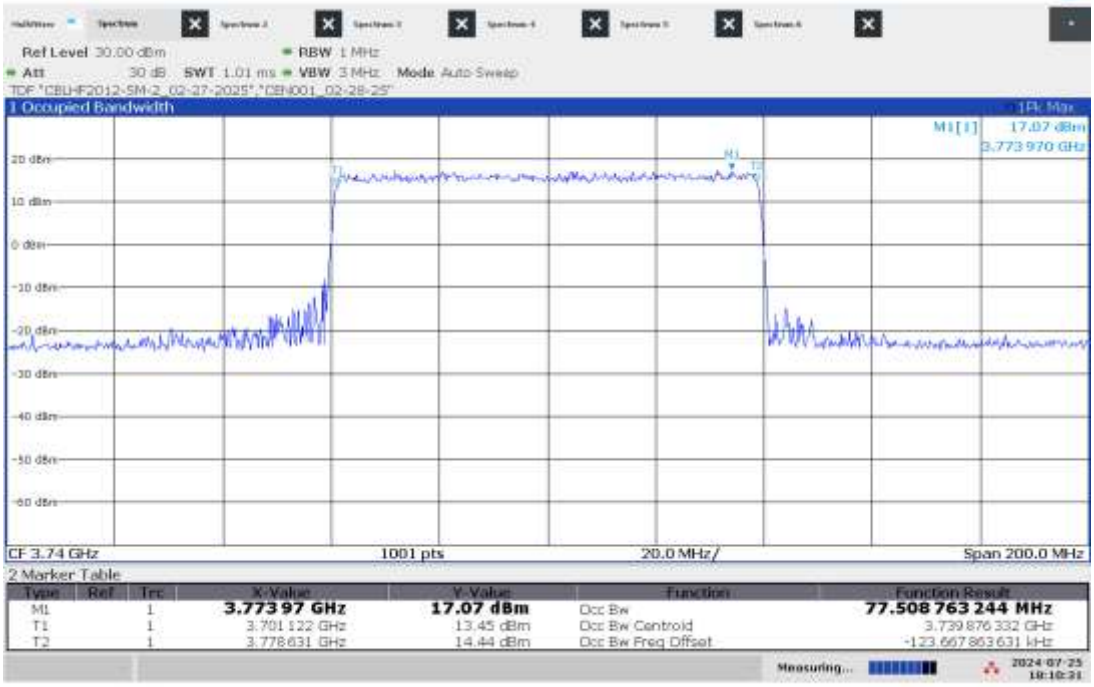
06:05:48 PM 07/25/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 3



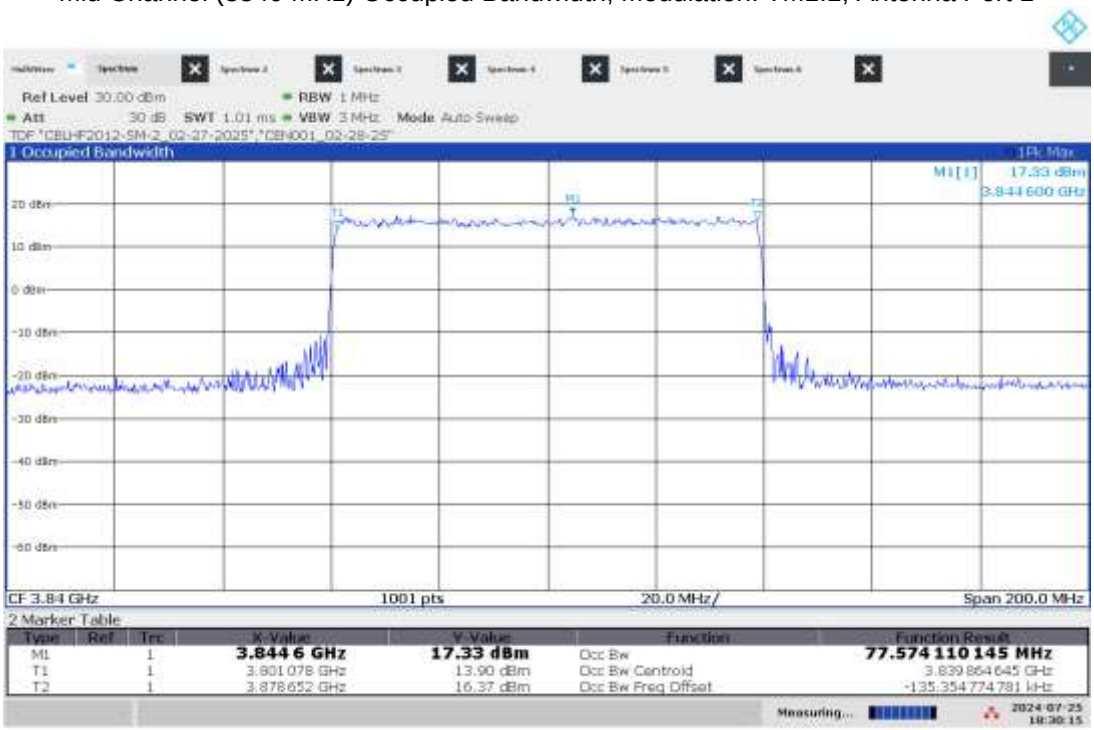
06:06:37 PM 07/25/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 4



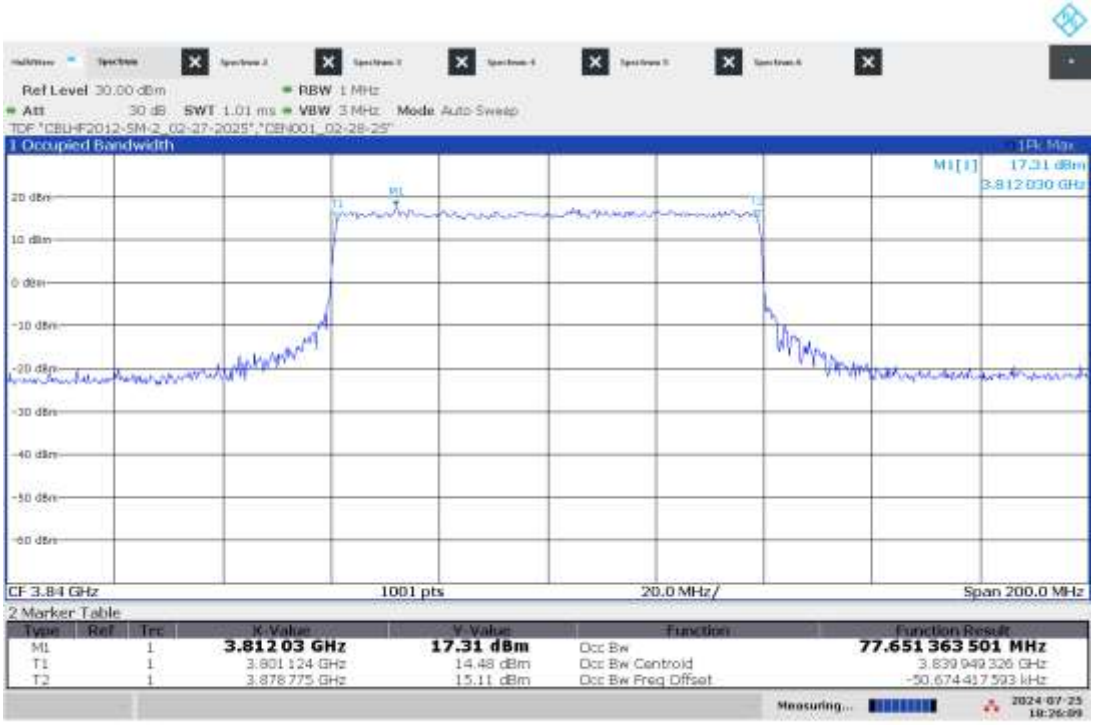
06:10:31 PM 07/25/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 1



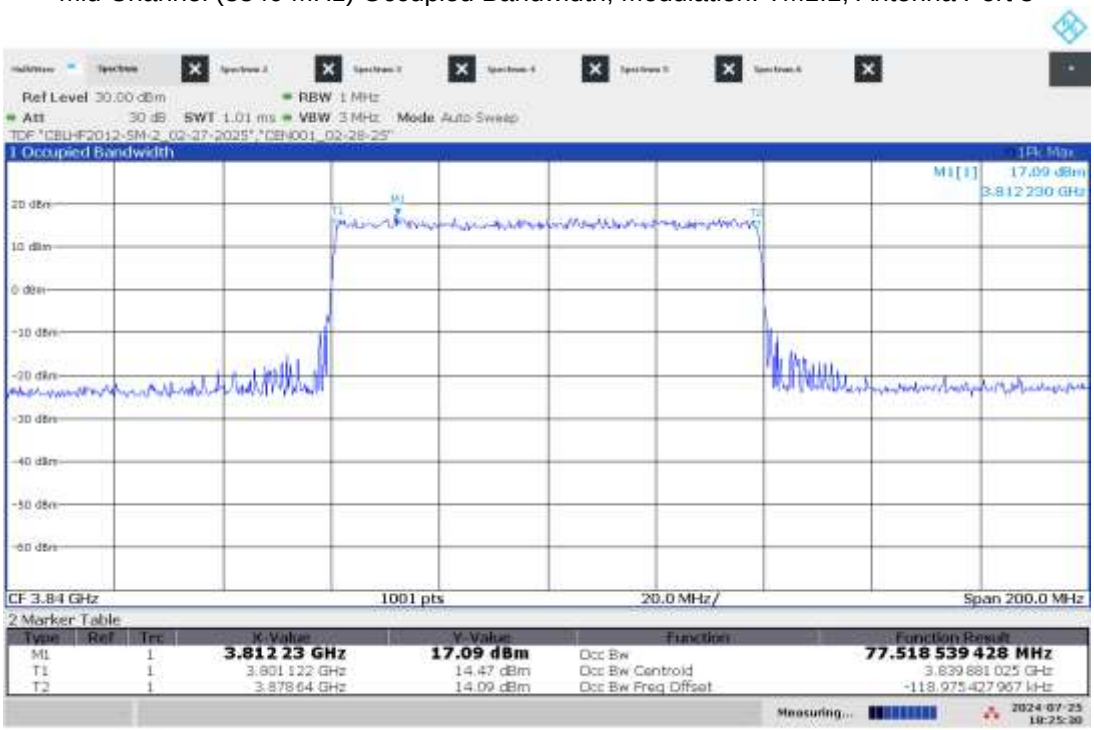
06:30:15 PM 07/25/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 2



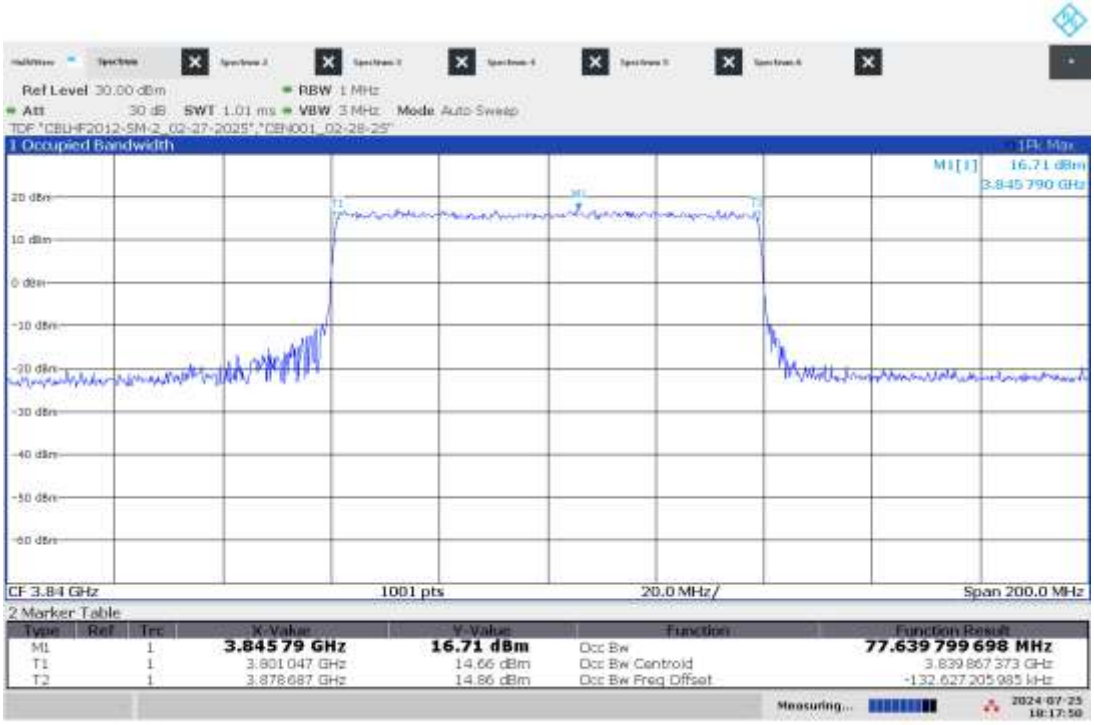
06:26:10 PM 07/25/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 3



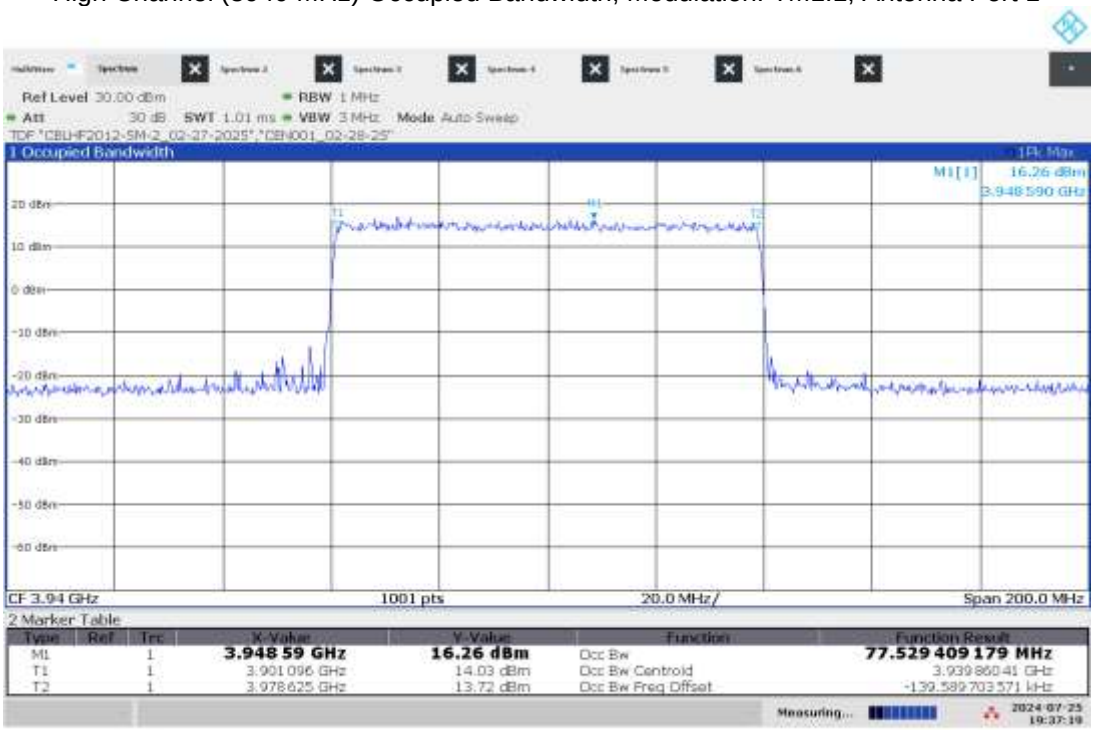
06:25:31 PM 07/25/2024

Mid Channel (3840 MHz)) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 4



06:17:50 PM 07/25/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 1

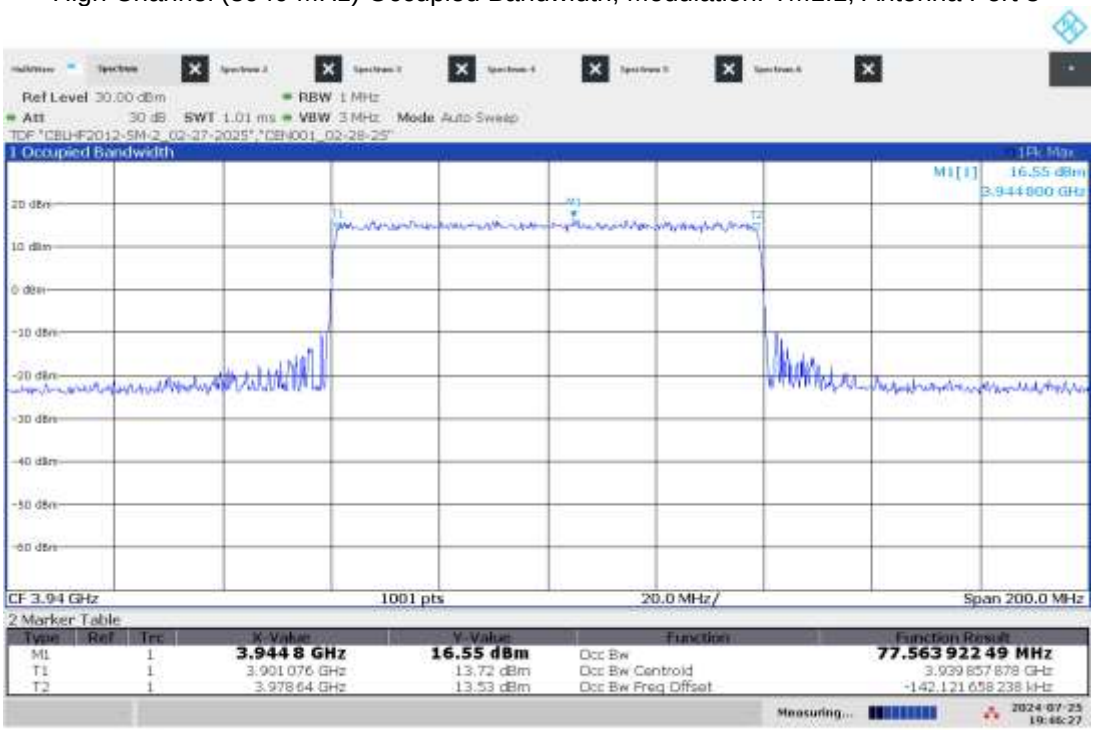


07:37:19 PM 07/25/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 2

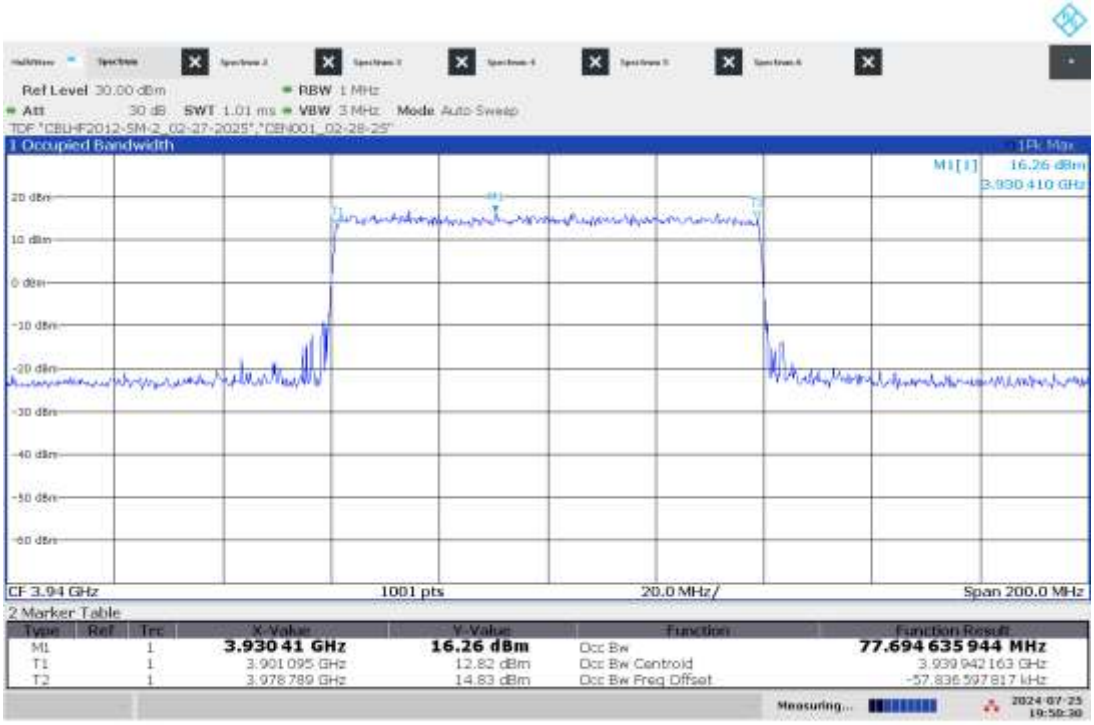
07:45:43 PM 07/25/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 3



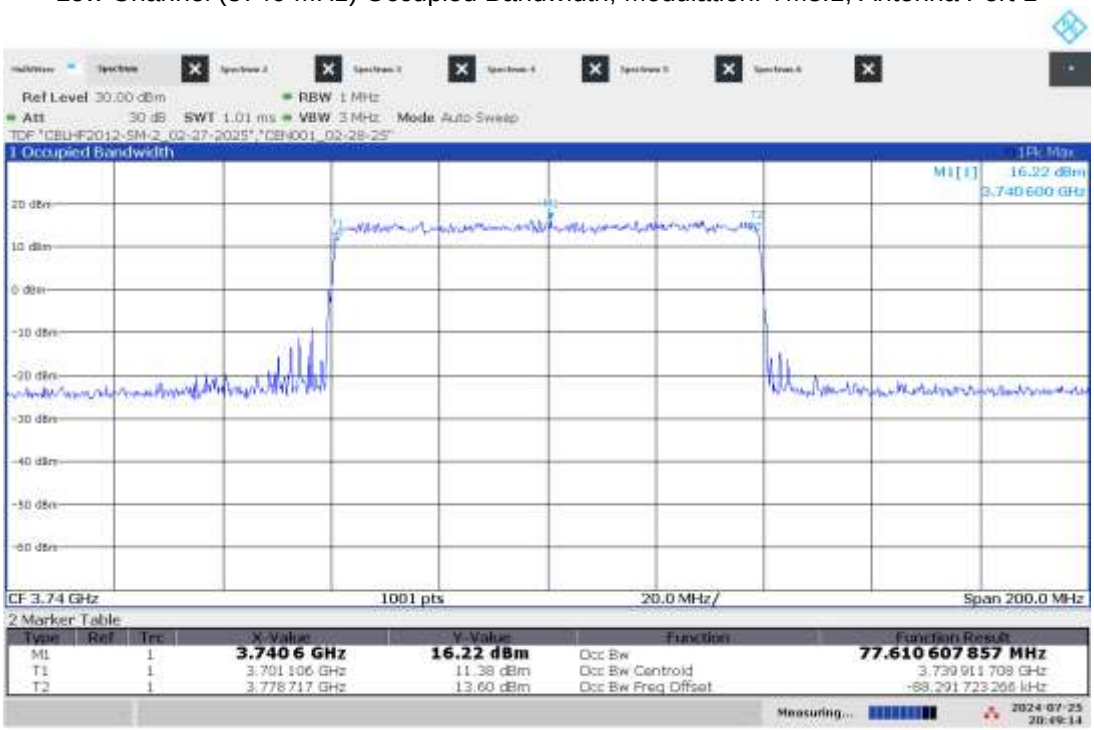
07:46:28 PM 07/25/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM1.1, Antenna Port 4



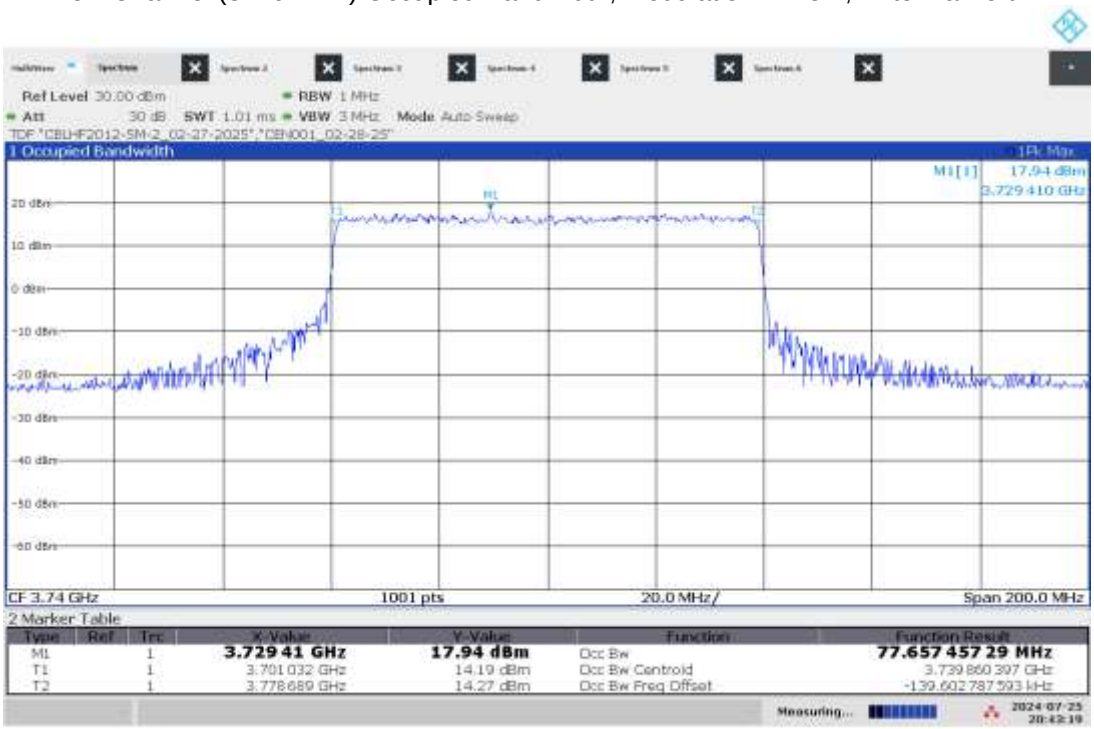
07:50:30 PM 07/25/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 1



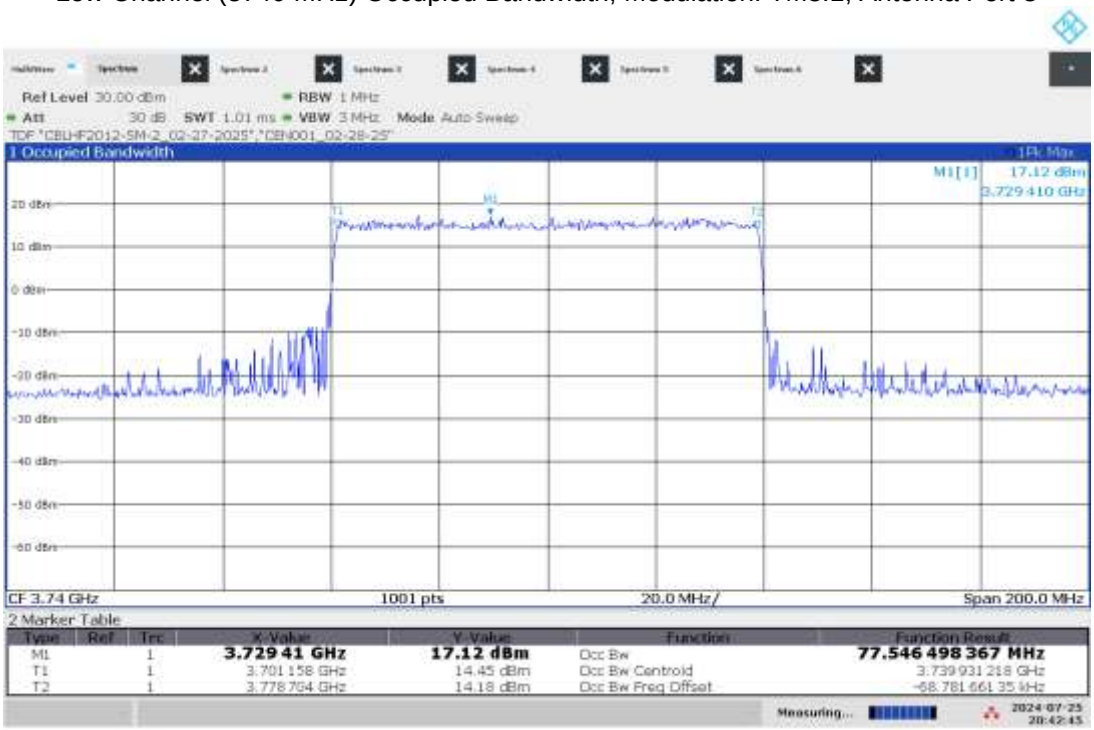
08:49:14 PM 07/25/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 2



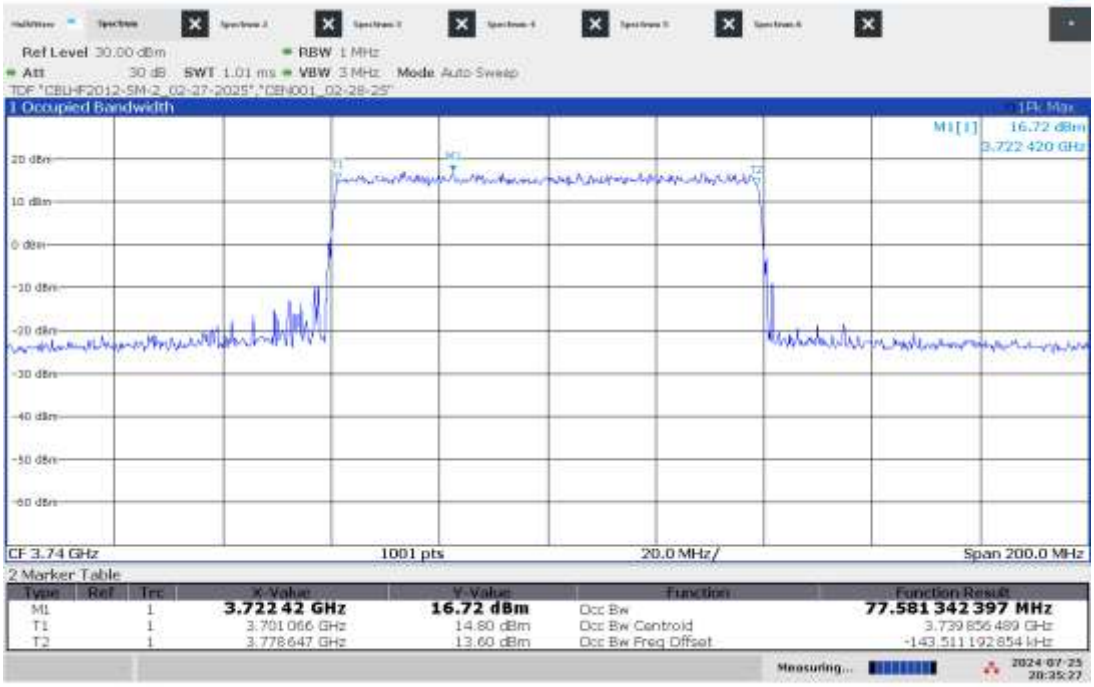
08:43:19 PM 07/25/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 3



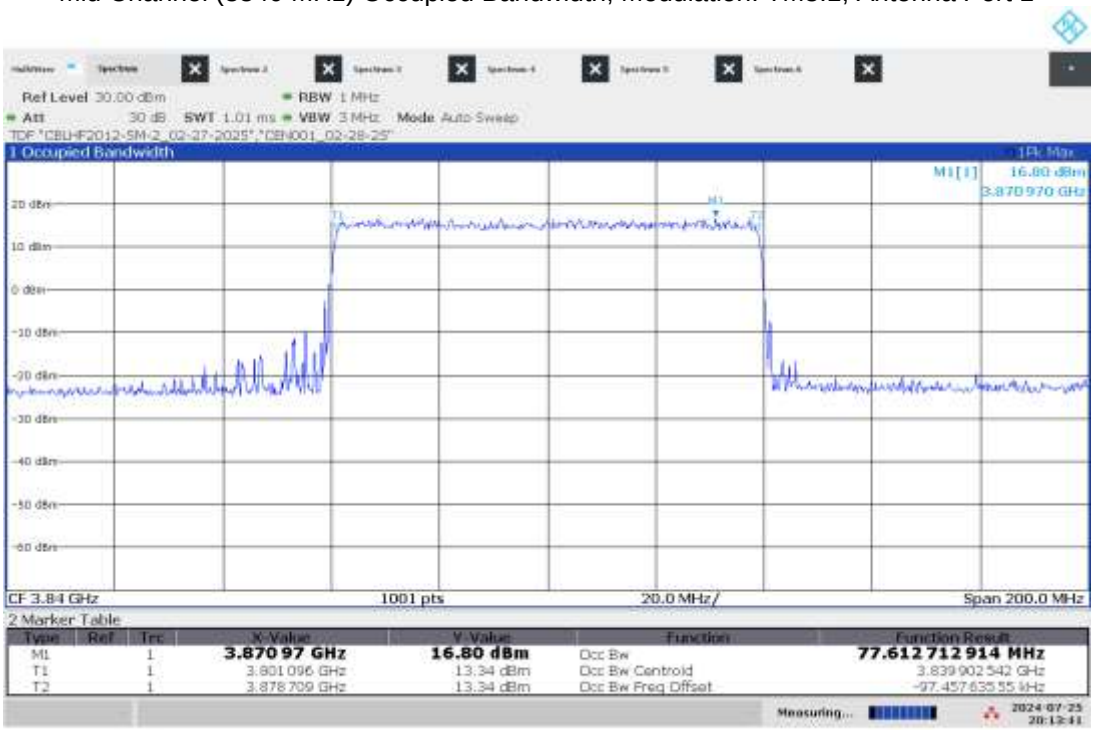
08:42:45 PM 07/25/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 4



08:35:28 PM 07/25/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 1

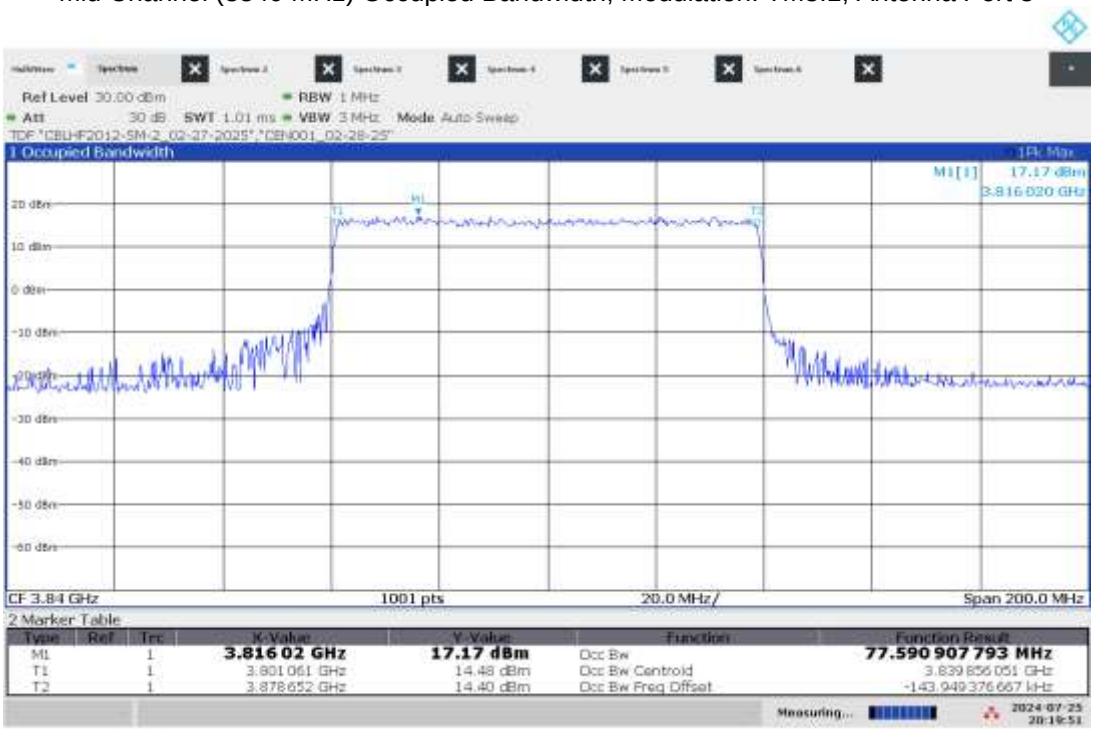


08:13:41 PM 07/25/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 2

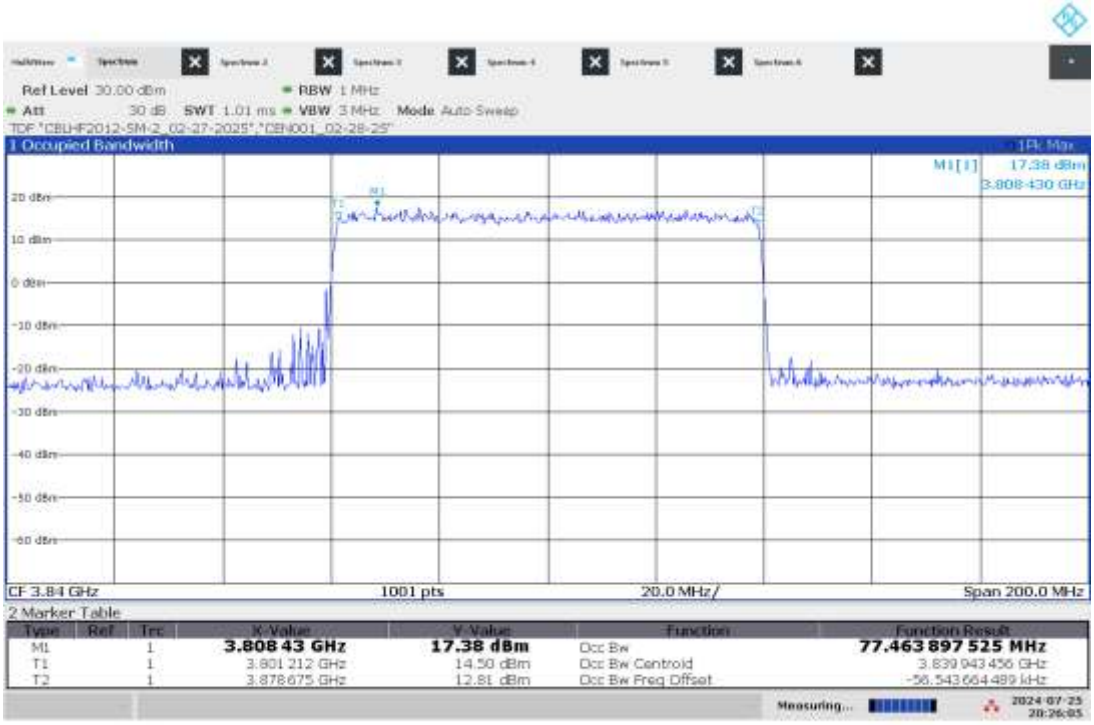
08:19:14 PM 07/25/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 3



08:19:52 PM 07/25/2024

Mid Channel (3840 MHz)) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 4

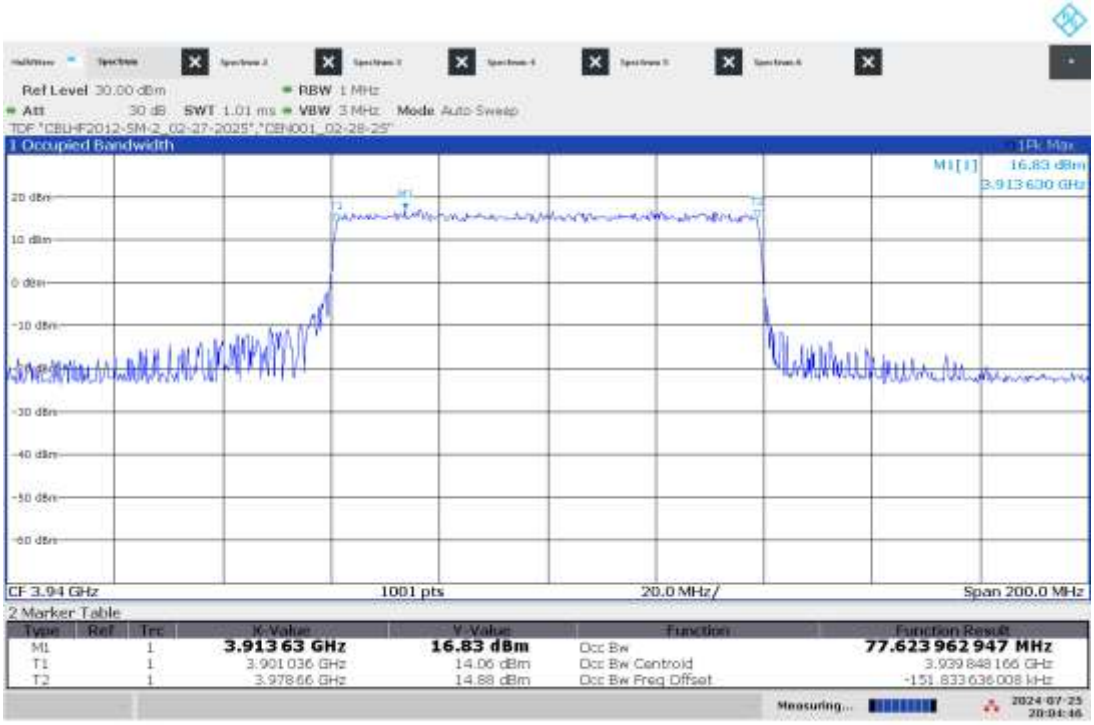


08:26:05 PM 07/25/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 1

08:08:43 PM 07/25/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 2

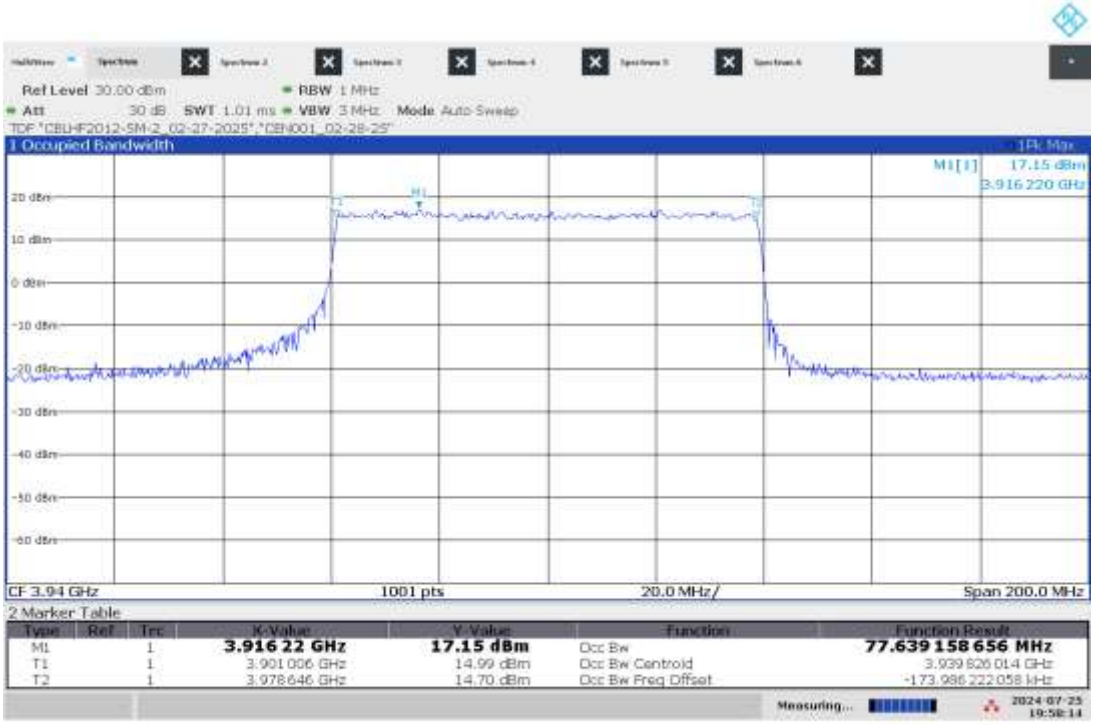


08:04:46 PM 07/25/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 3

08:04:14 PM 07/25/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.1, Antenna Port 4



07:58:14 PM 07/25/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 1

04:06:03 PM 07/26/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 2

03:56:48 PM 07/26/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 3

03:46:02 PM 07/26/2024

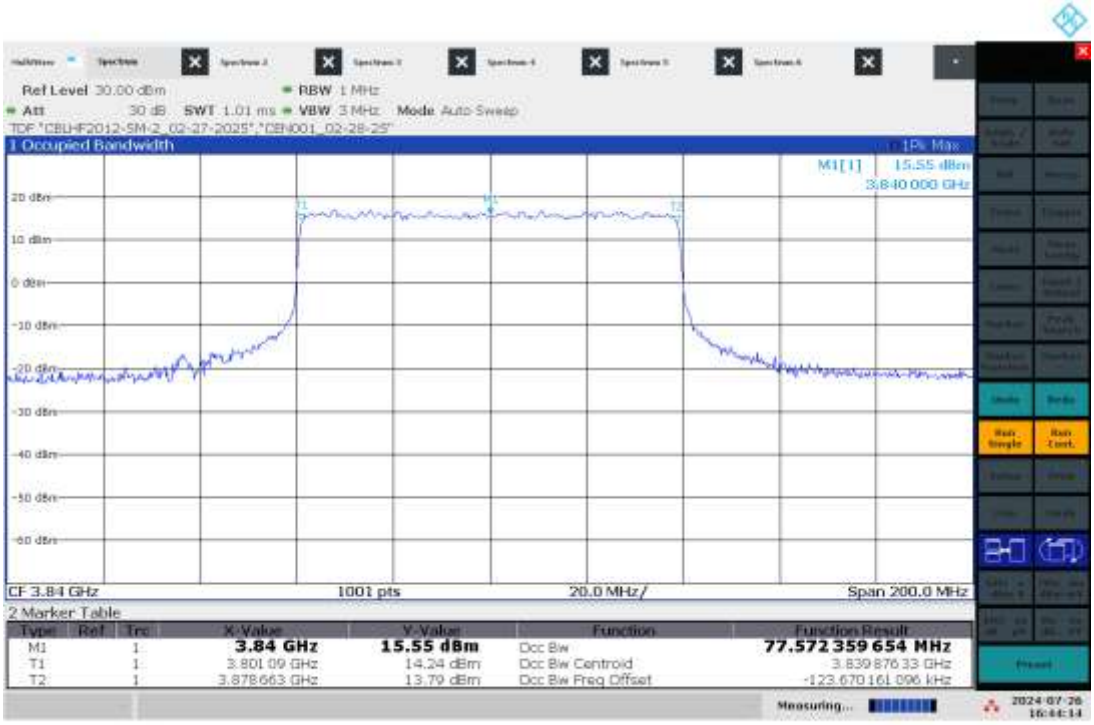
Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 4

03:34:43 PM 07/26/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 1

04:33:30 PM 07/26/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 2

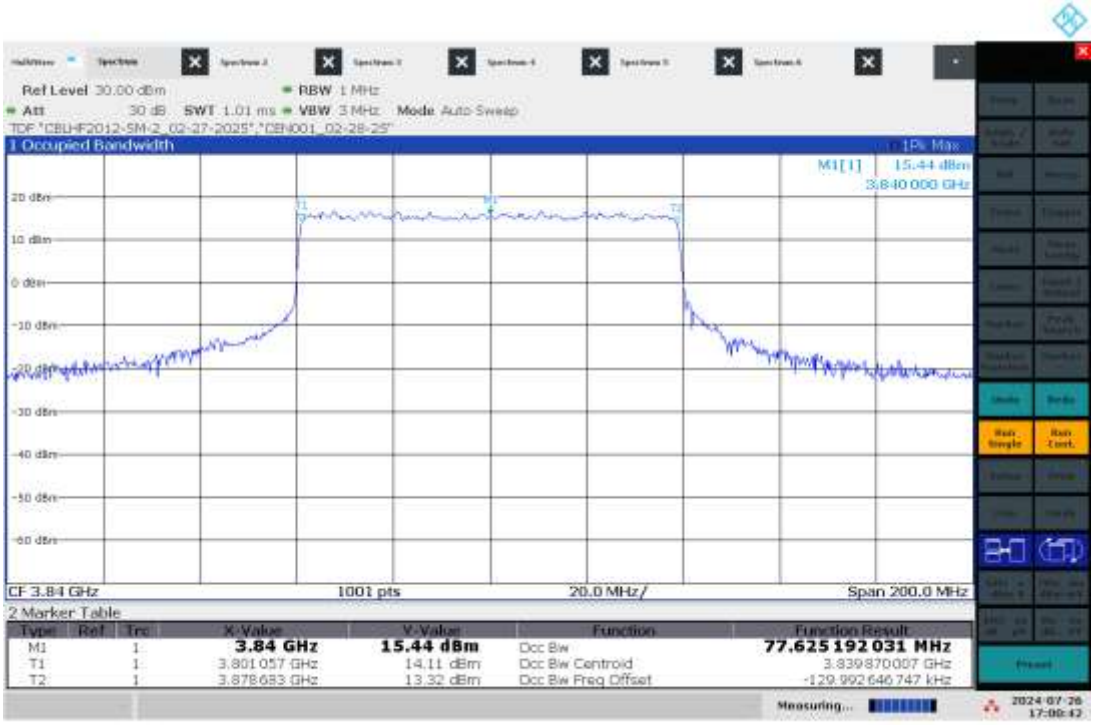


04:44:15 PM 07/26/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 3

04:54:10 PM 07/26/2024

Mid Channel (3840 MHz)) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 4

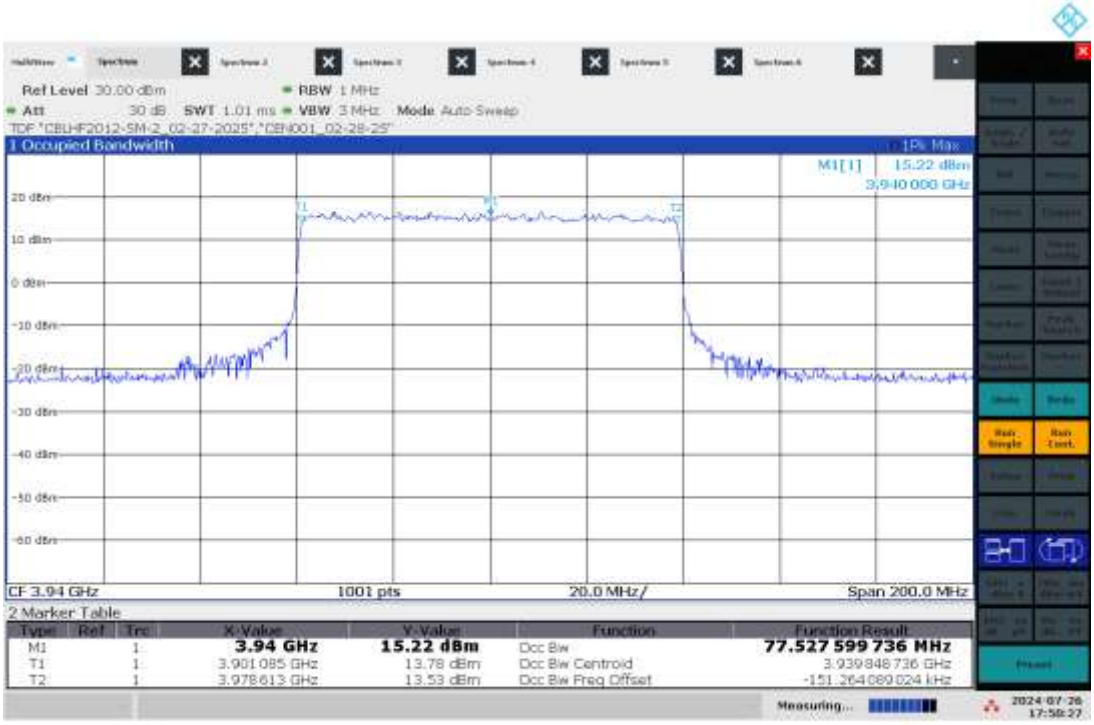


05:00:43 PM 07/26/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 1

05:57:15 PM 07/26/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 2



05:50:28 PM 07/26/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 3

05:42:00 PM 07/26/2024

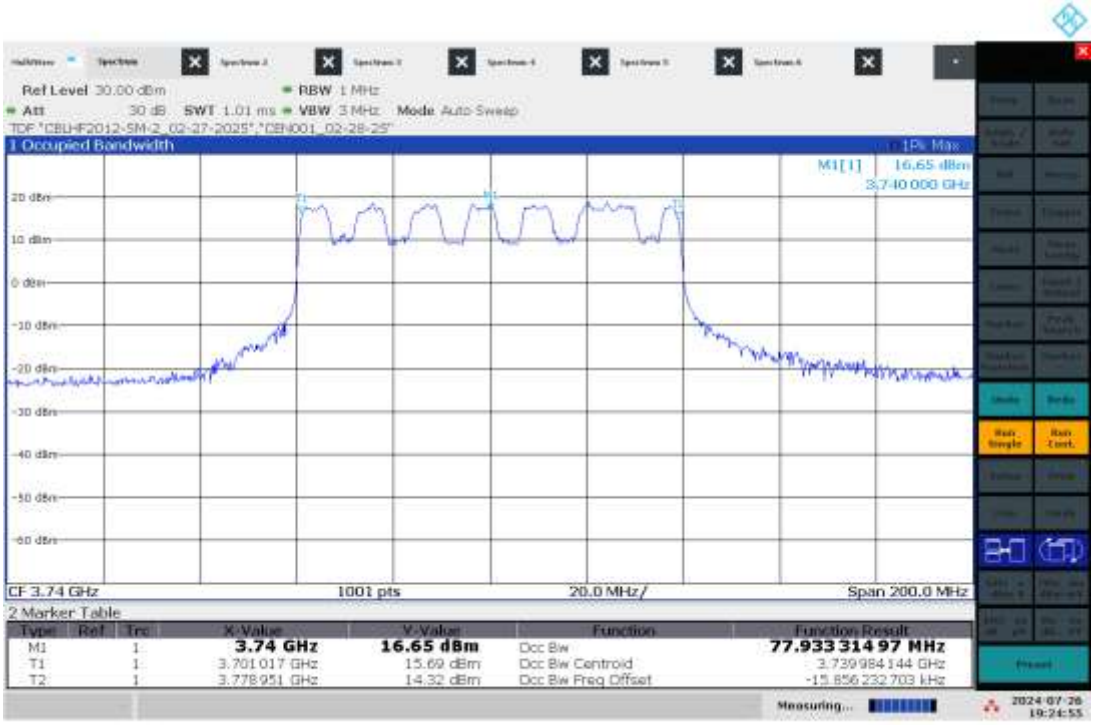
High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.1a, Antenna Port 4

05:17:45 PM 07/26/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 1

07:16:42 PM 07/26/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 2

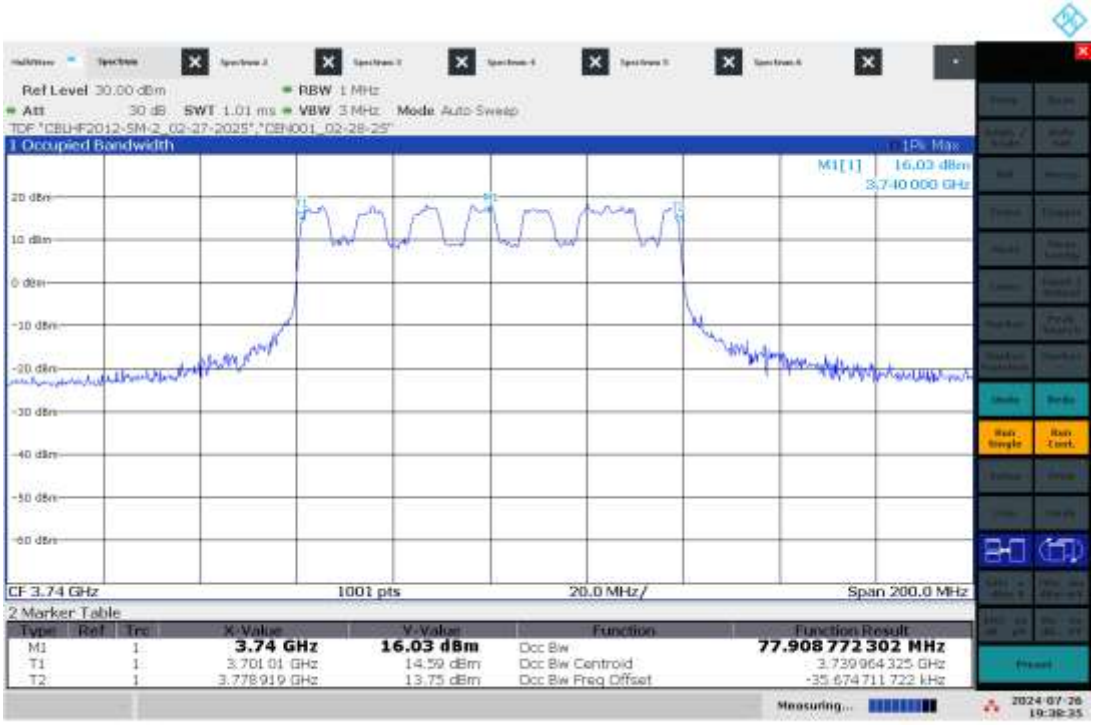


07:24:56 PM 07/26/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 3

07:32:02 PM 07/26/2024

Low Channel (3740 MHz) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 4

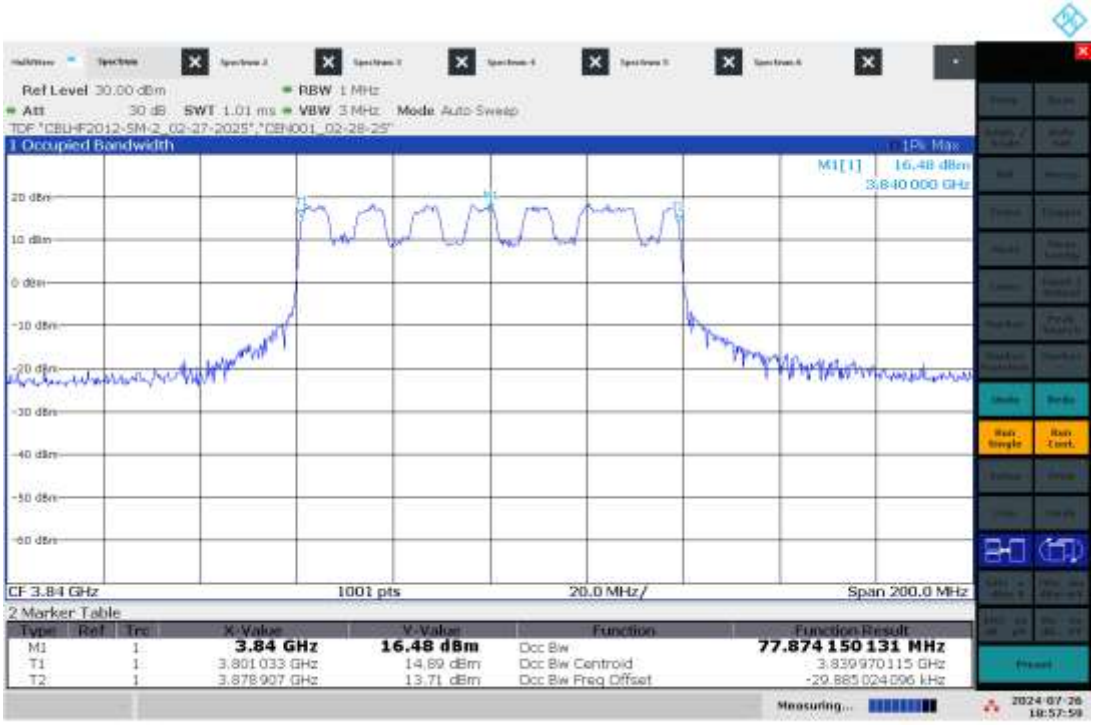


07:38:36 PM 07/26/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 1

07:03:50 PM 07/26/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 2

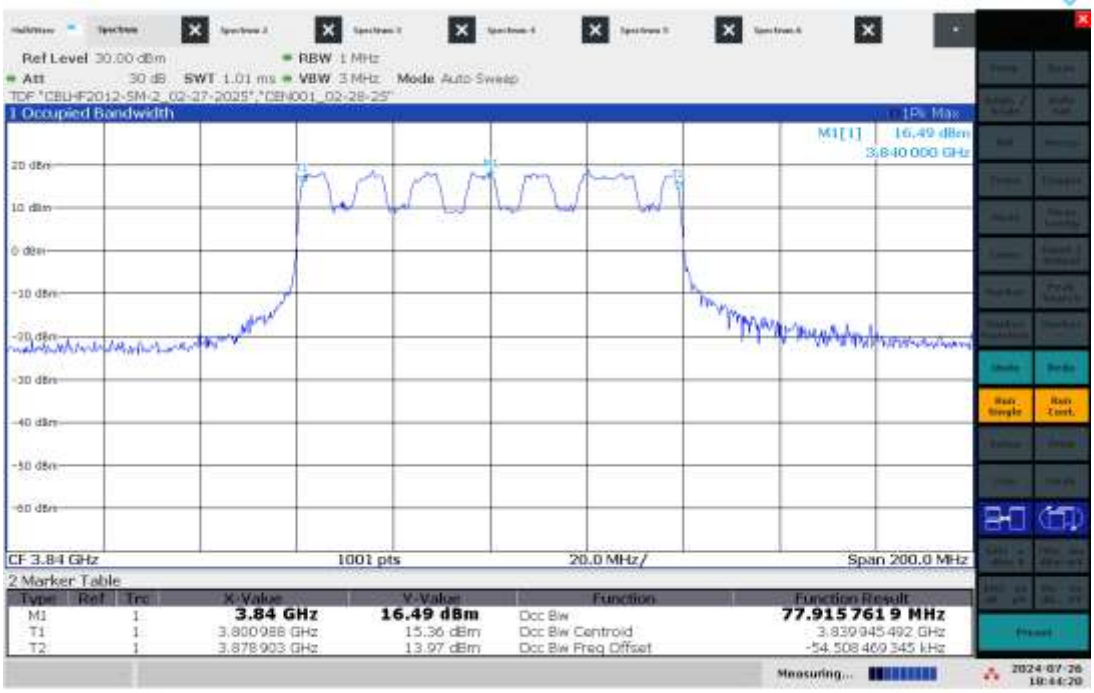


06:58:00 PM 07/26/2024

Mid Channel (3840 MHz) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 3

06:52:15 PM 07/26/2024

Mid Channel (3840 MHz)) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 4

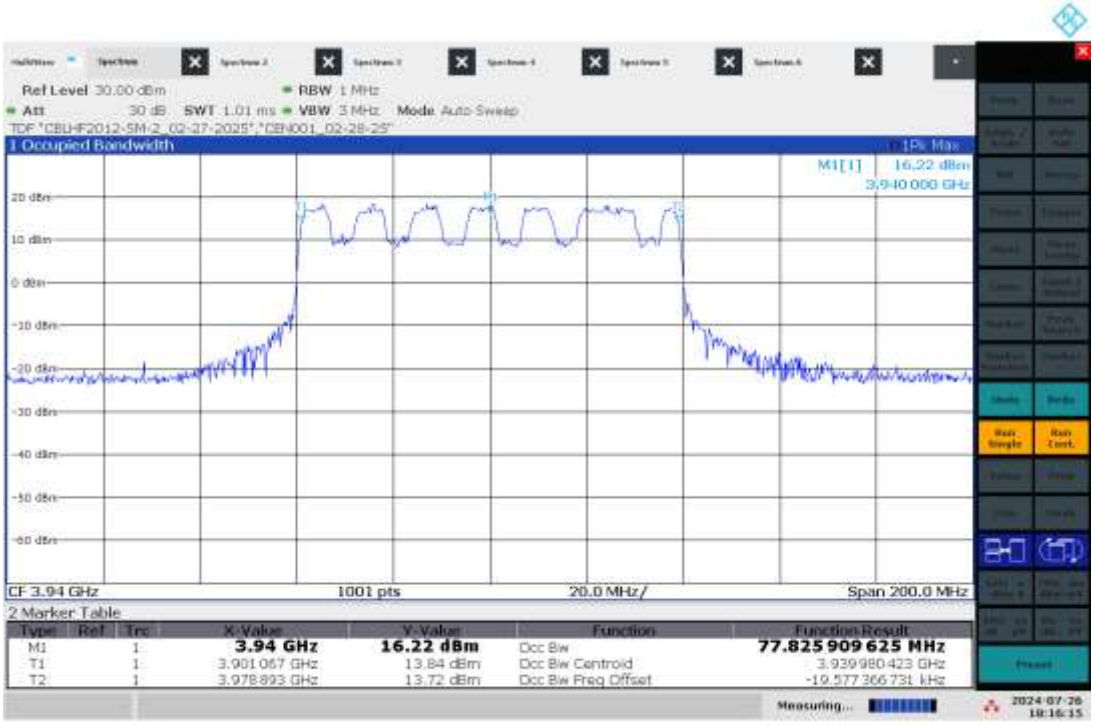


06:44:20 PM 07/26/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 1

06:07:36 PM 07/26/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 2

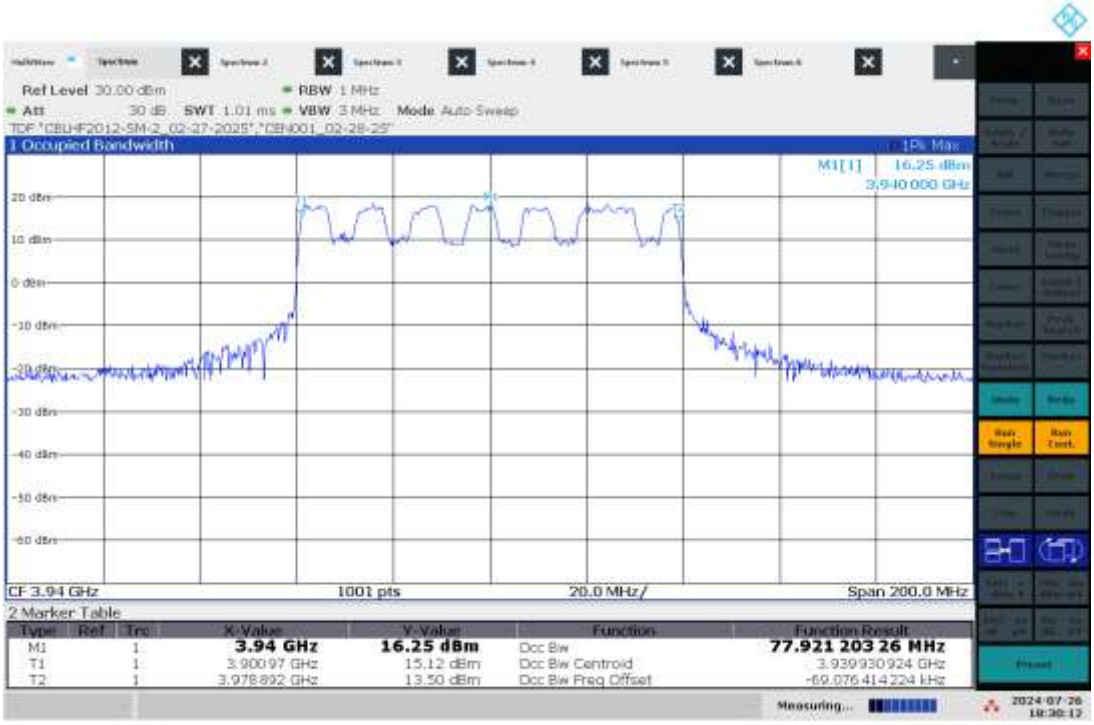


06:16:16 PM 07/26/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 3

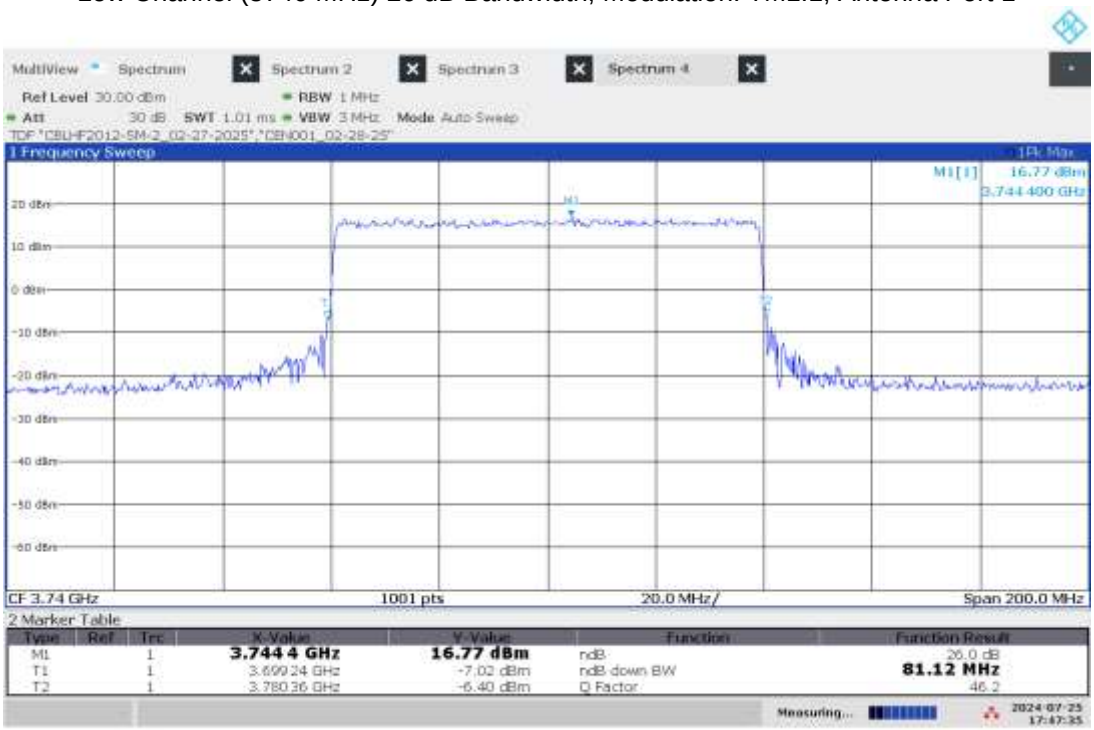
06:23:22 PM 07/26/2024

High Channel (3940 MHz) Occupied Bandwidth, Modulation: TM3.3, Antenna Port 4



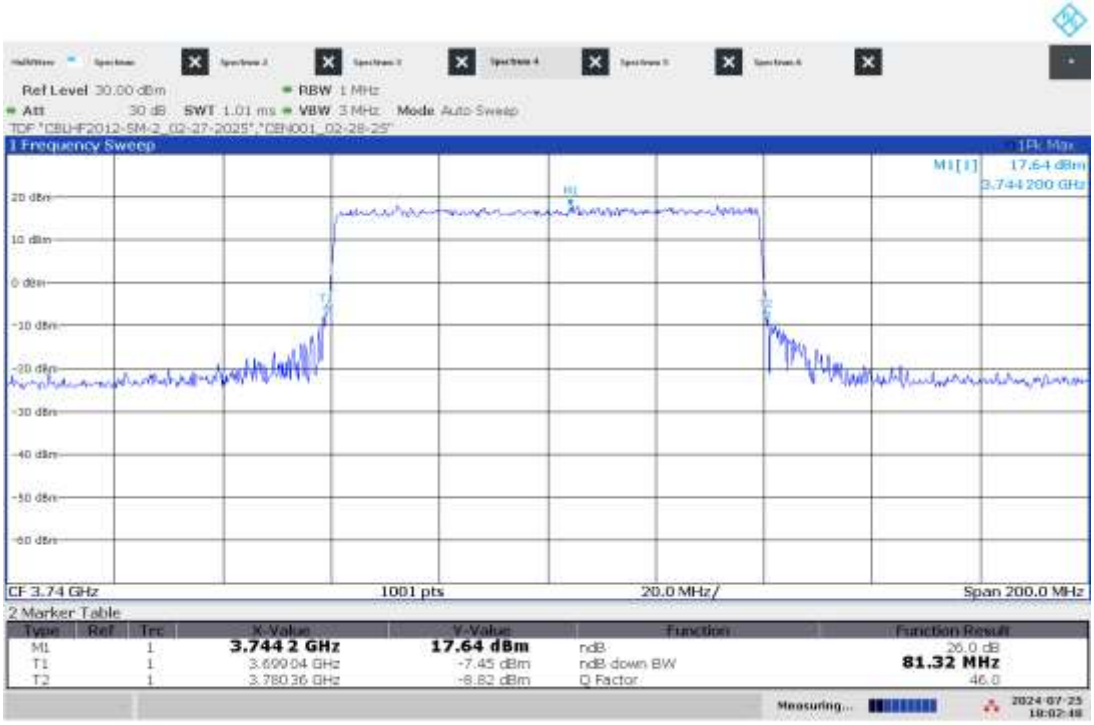
06:30:13 PM 07/26/2024

Low Channel (3740 MHz) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 1



05:47:35 PM 07/25/2024

Low Channel (3740 MHz) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 2



06:02:48 PM 07/25/2024

Low Channel (3740 MHz) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 3

06:07:35 PM 07/25/2024

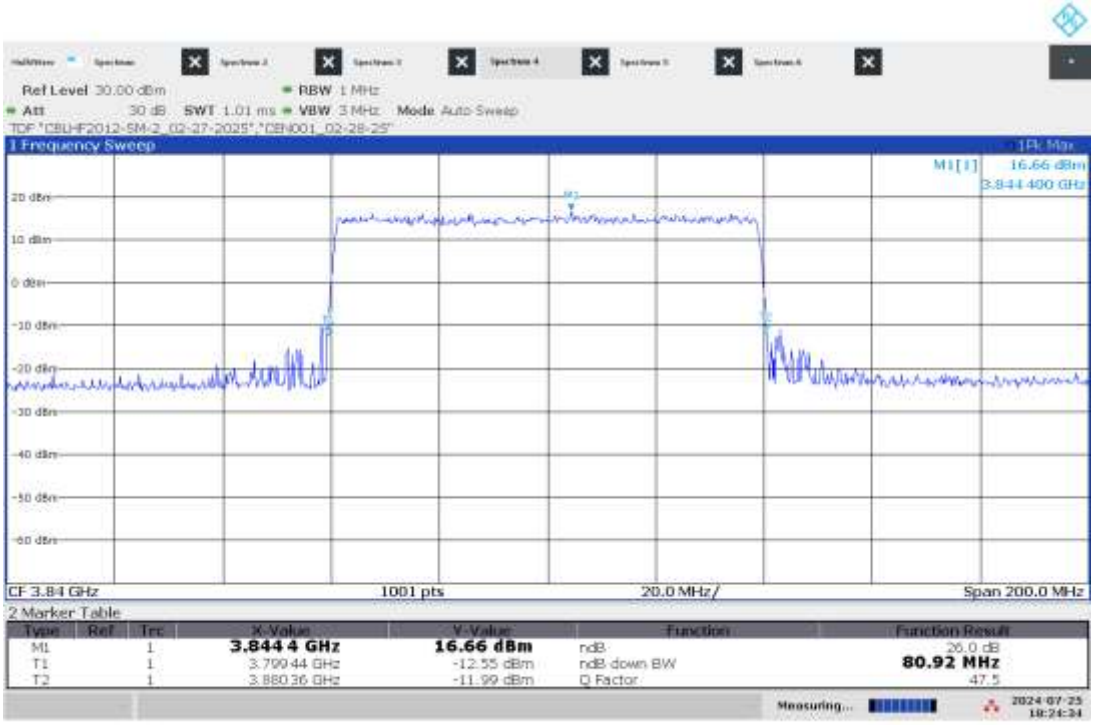
Low Channel (3740 MHz) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 4

06:09:34 PM 07/25/2024

Mid Channel (3840 MHz) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 1

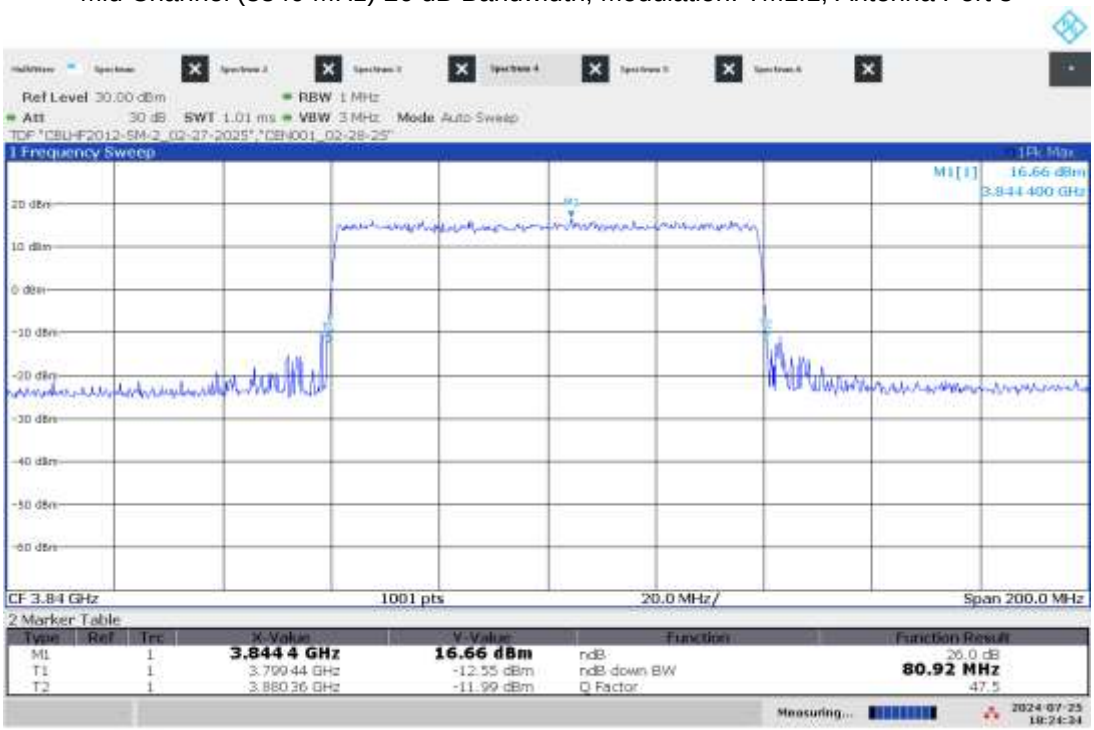
06:27:27 PM 07/25/2024

Mid Channel (3840 MHz) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 2



06:24:34 PM 07/25/2024

Mid Channel (3840 MHz) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 3

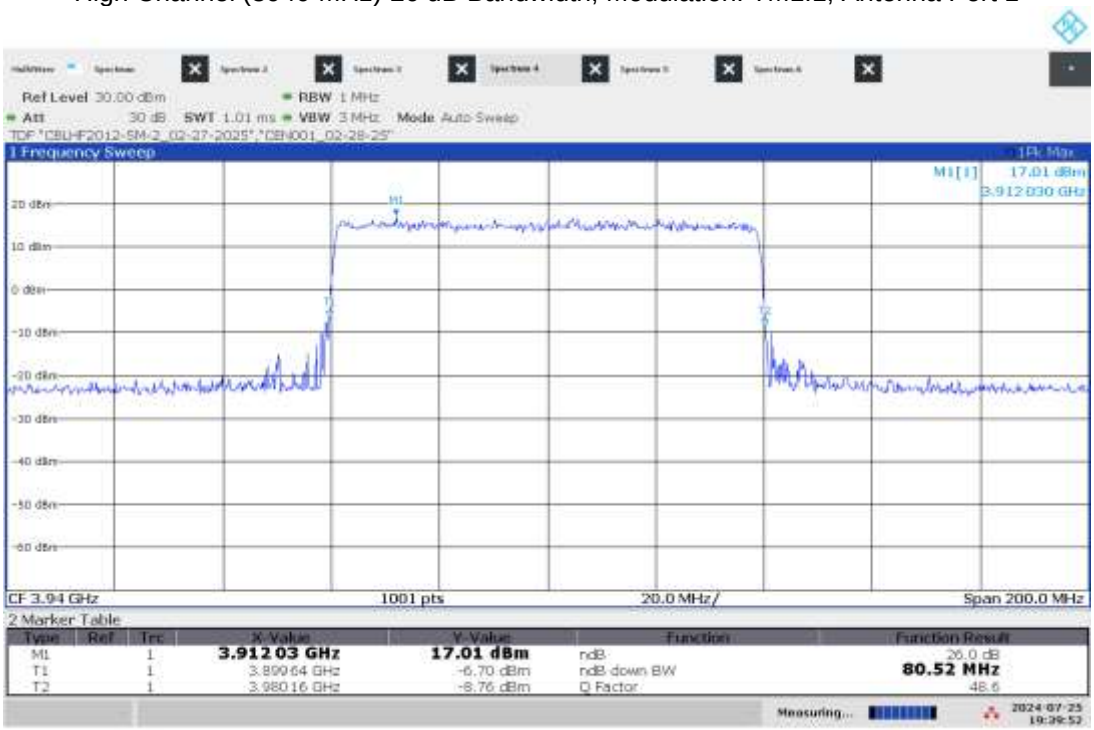


06:24:34 PM 07/25/2024

Mid Channel (3840 MHz)) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 4

06:21:45 PM 07/25/2024

High Channel (3940 MHz) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 1



07:39:52 PM 07/25/2024

High Channel (3940 MHz) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 2

07:44:38 PM 07/25/2024

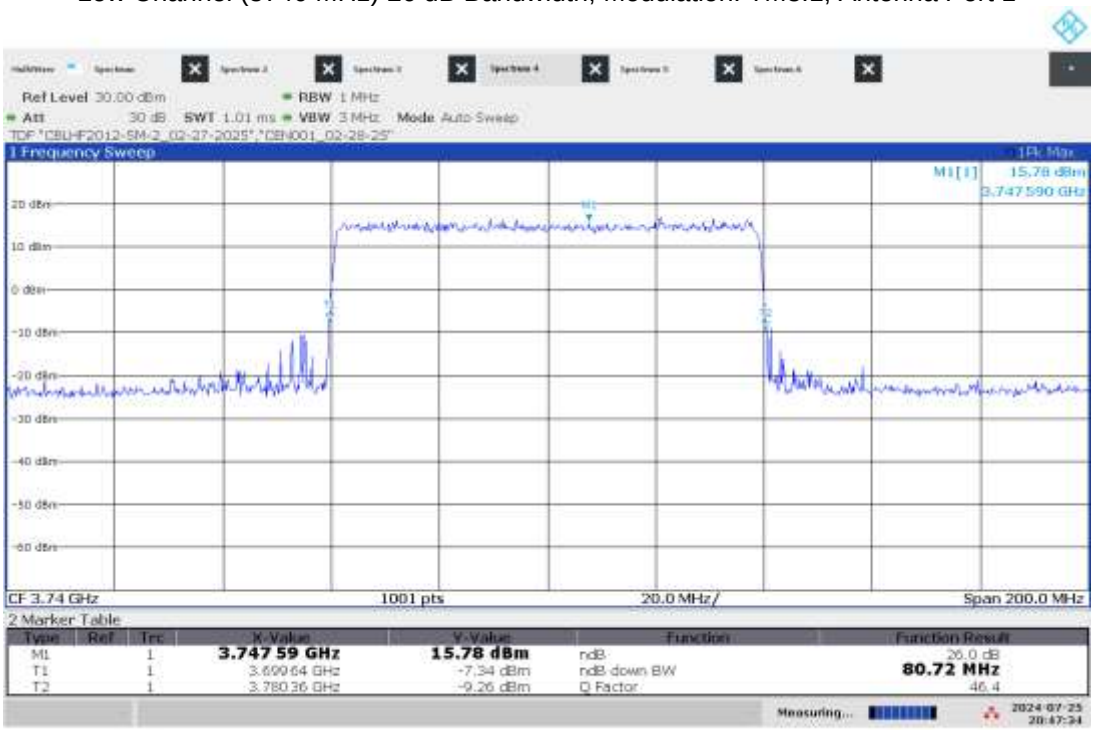
High Channel (3940 MHz) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 3

07:47:34 PM 07/25/2024

High Channel (3940 MHz) 26 dB Bandwidth, Modulation: TM1.1, Antenna Port 4

07:49:35 PM 07/25/2024

Low Channel (3740 MHz) 26 dB Bandwidth, Modulation: TM3.1, Antenna Port 1



08:47:34 PM 07/25/2024

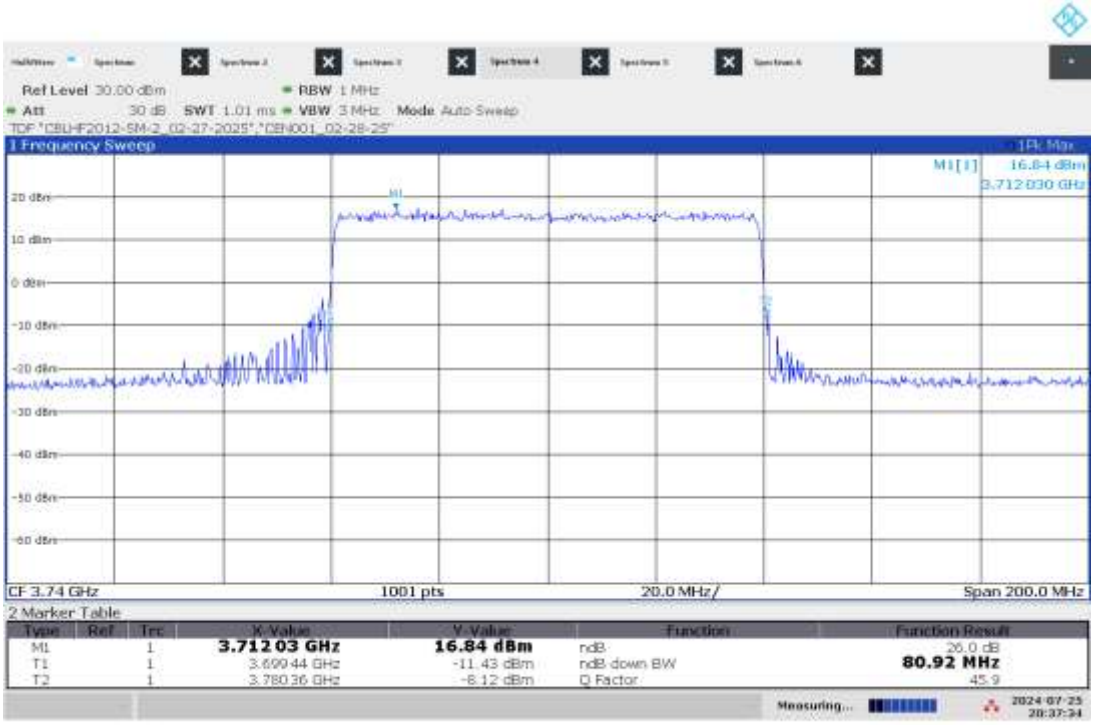
Low Channel (3740 MHz) 26 dB Bandwidth, Modulation: TM3.1, Antenna Port 2

08:45:38 PM 07/25/2024

Low Channel (3740 MHz) 26 dB Bandwidth, Modulation: TM3.1, Antenna Port 3

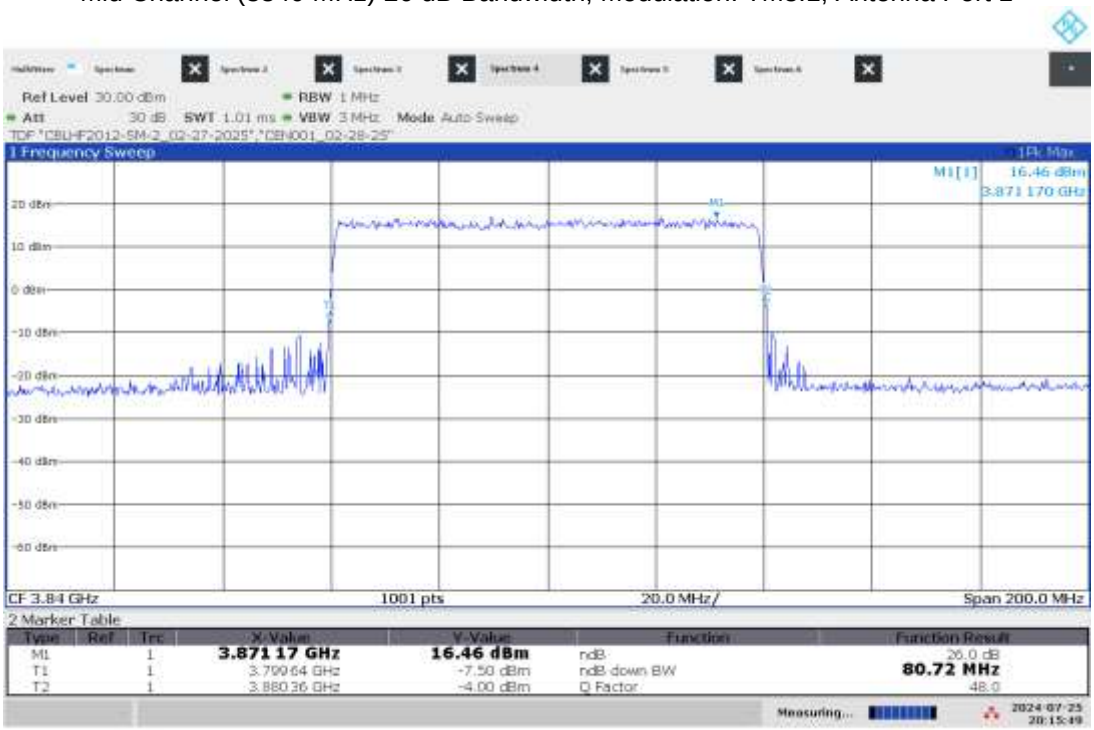
08:41:19 PM 07/25/2024

Low Channel (3740 MHz) 26 dB Bandwidth, Modulation: TM3.1, Antenna Port 4



08:37:34 PM 07/25/2024

Mid Channel (3840 MHz) 26 dB Bandwidth, Modulation: TM3.1, Antenna Port 1

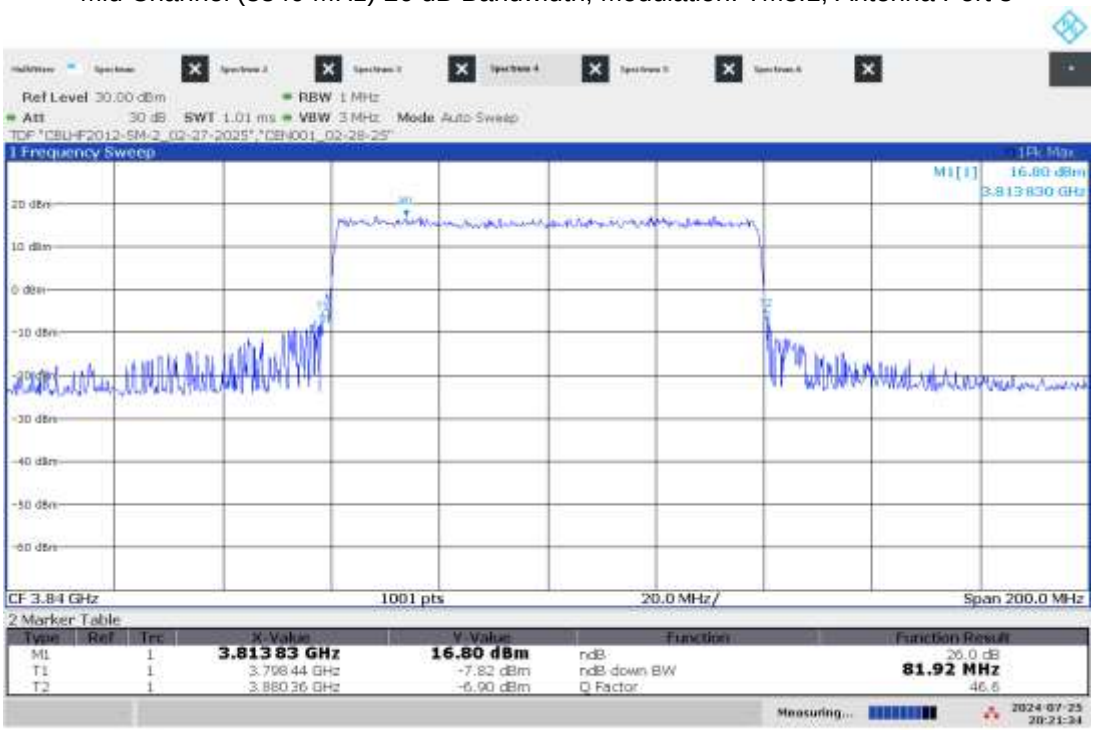


08:15:49 PM 07/25/2024

Mid Channel (3840 MHz) 26 dB Bandwidth, Modulation: TM3.1, Antenna Port 2

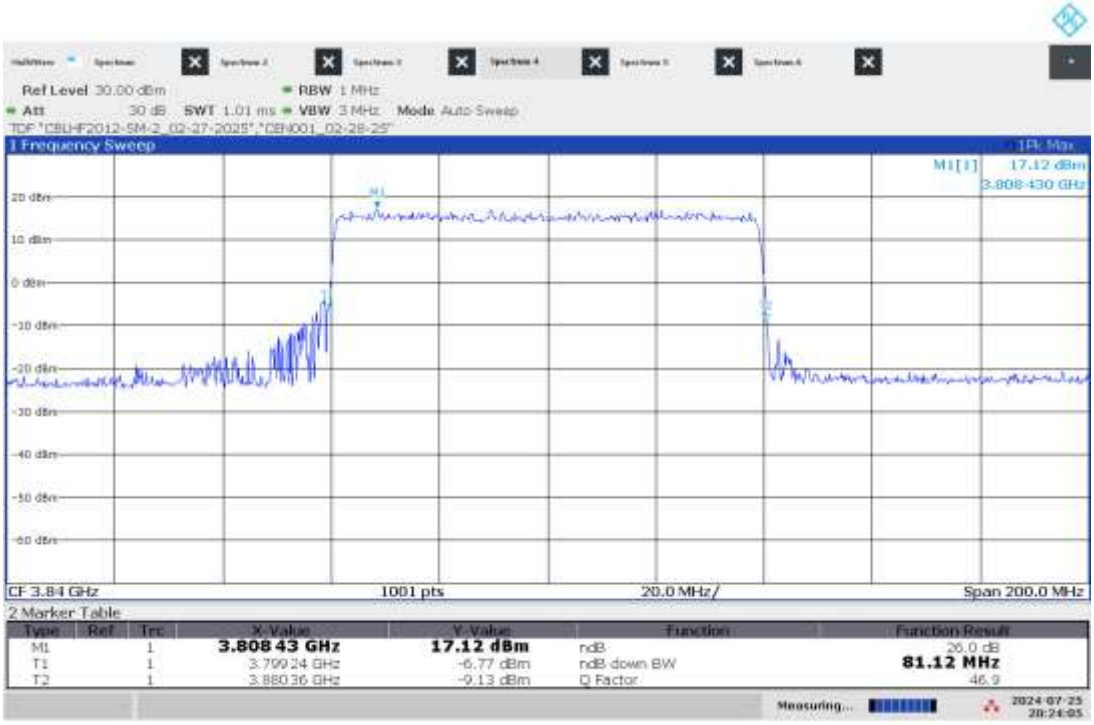
08:17:46 PM 07/25/2024

Mid Channel (3840 MHz) 26 dB Bandwidth, Modulation: TM3.1, Antenna Port 3



08:21:34 PM 07/25/2024

Mid Channel (3840 MHz)) 26 dB Bandwidth, Modulation: TM3.1, Antenna Port 4



08:24:05 PM 07/25/2024

High Channel (3940 MHz) 26 dB Bandwidth, Modulation: TM3.1, Antenna Port 1

08:07:27 PM 07/25/2024

High Channel (3940 MHz) 26 dB Bandwidth, Modulation: TM3.1, Antenna Port 2

08:05:43 PM 07/25/2024