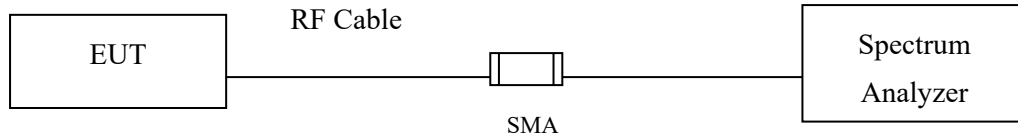


7. Occupied Bandwidth

7.1. Test Setup



7.2. Limits

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

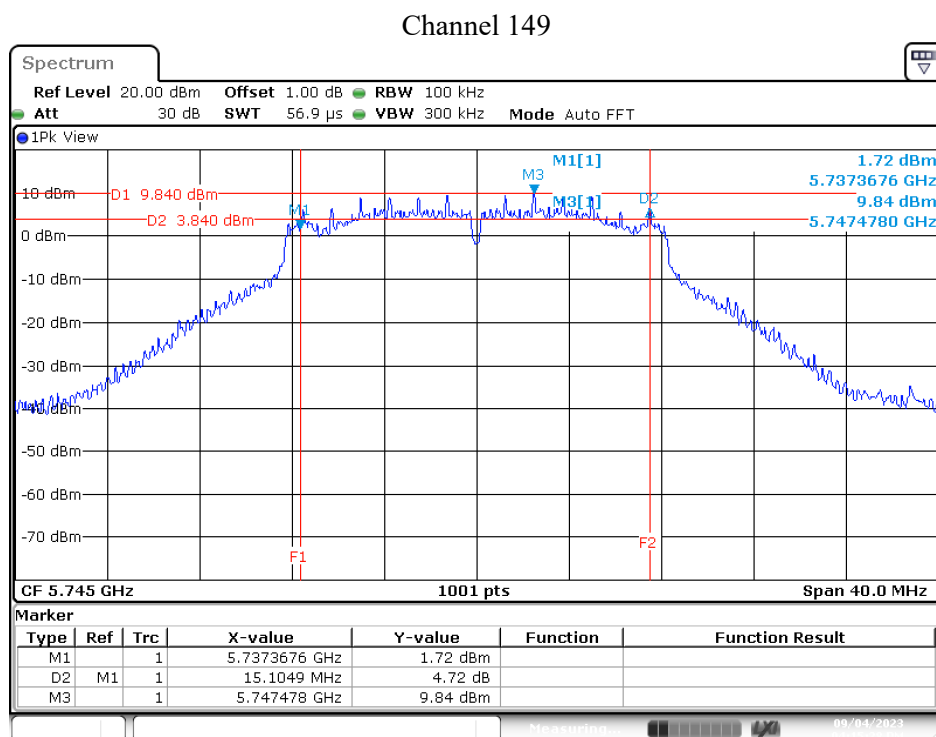
7.3. Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

7.4. Test Result of Occupied Bandwidth

Product : Notebook Computer
 Test Item : Occupied Bandwidth Data
 Test Mode : Transmit (802.11a)-SISO A
 Test Date : 2023/09/04

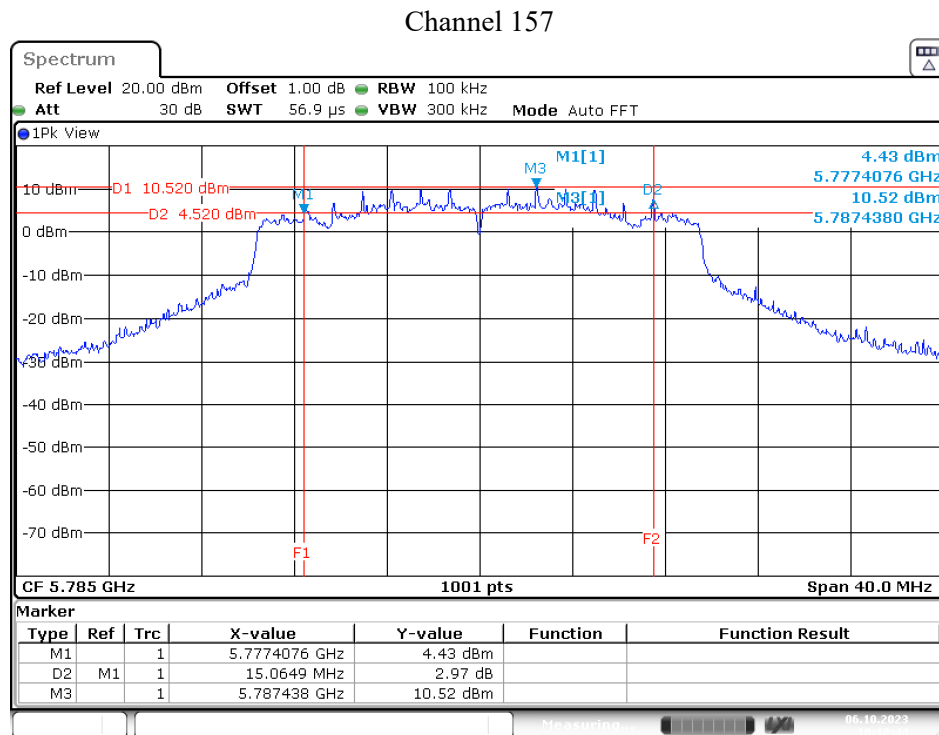
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	15105	>500	Pass
157	5785	15105	>500	Pass
165	5825	15105	>500	Pass



Date: 4.SEP.2023 16:15:28

Product : Notebook Computer
 Test Item : Occupied Bandwidth Data
 Test Mode : Transmit (802.11ax-20 MHz)-SISO A
 Test Date : 2023/10/06

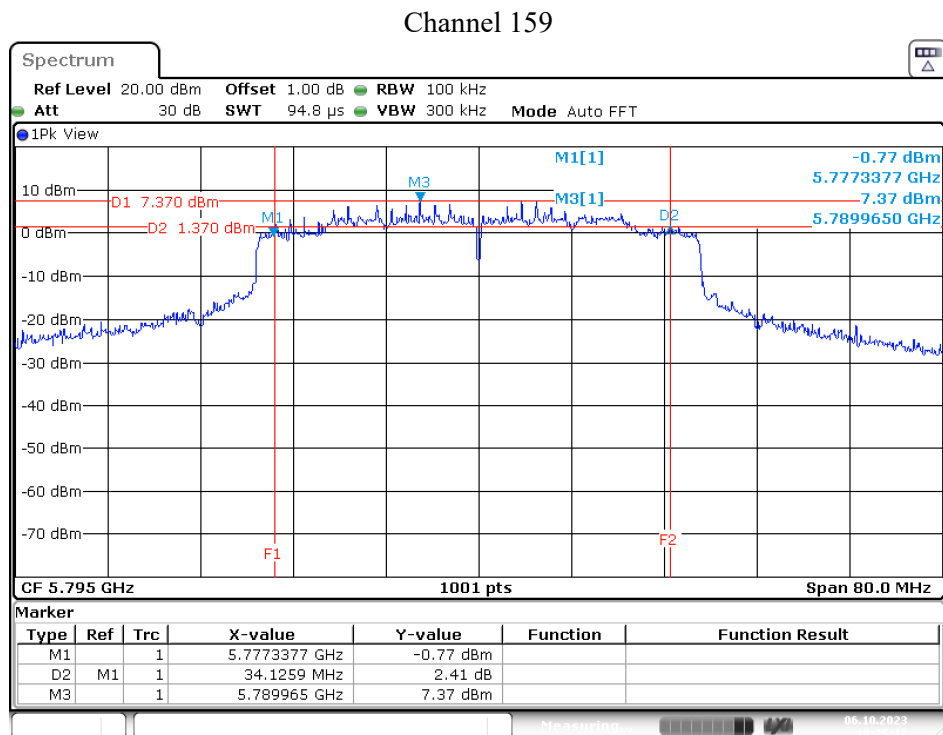
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	15105	>500	Pass
157	5785	15065	>500	Pass
165	5825	18342	>500	Pass



Date: 6.OCT.2023 10:12:44

Product : Notebook Computer
 Test Item : Occupied Bandwidth Data
 Test Mode : Transmit (802.11ax-40 MHz)-SISO A
 Test Date : 2023/10/06

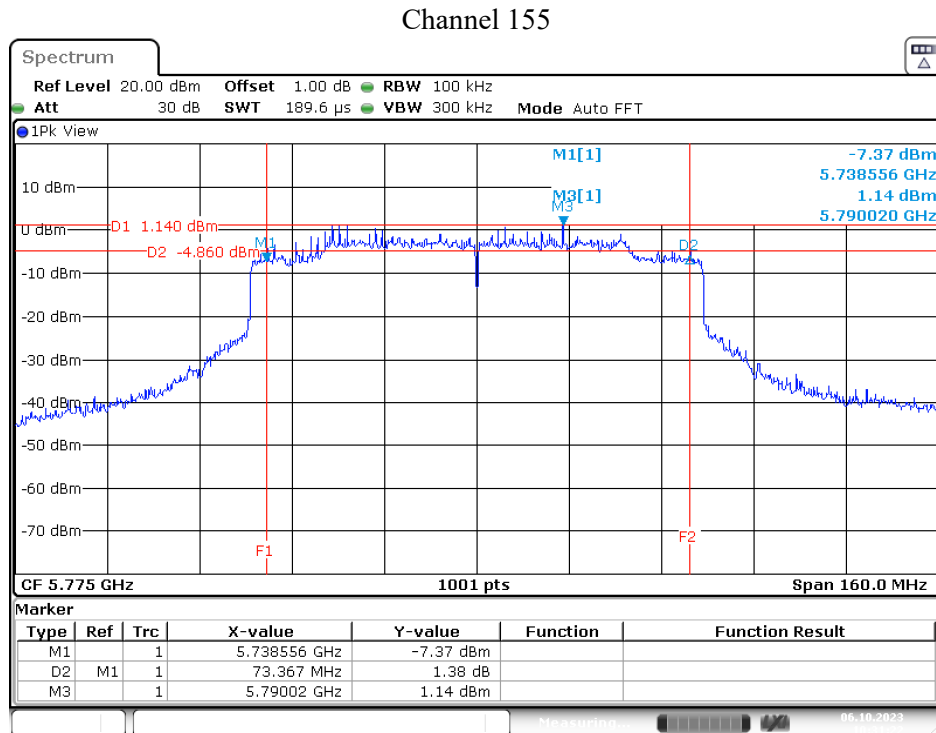
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755	35325	>500	Pass
159	5795	34126	>500	Pass



Date: 6.OCT.2023 10:25:13

Product : Notebook Computer
 Test Item : Occupied Bandwidth Data
 Test Mode : Transmit (802.11ax-80 MHz)-SISO B
 Test Date : 2023/10/06

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
155	5775	73367	>500	Pass

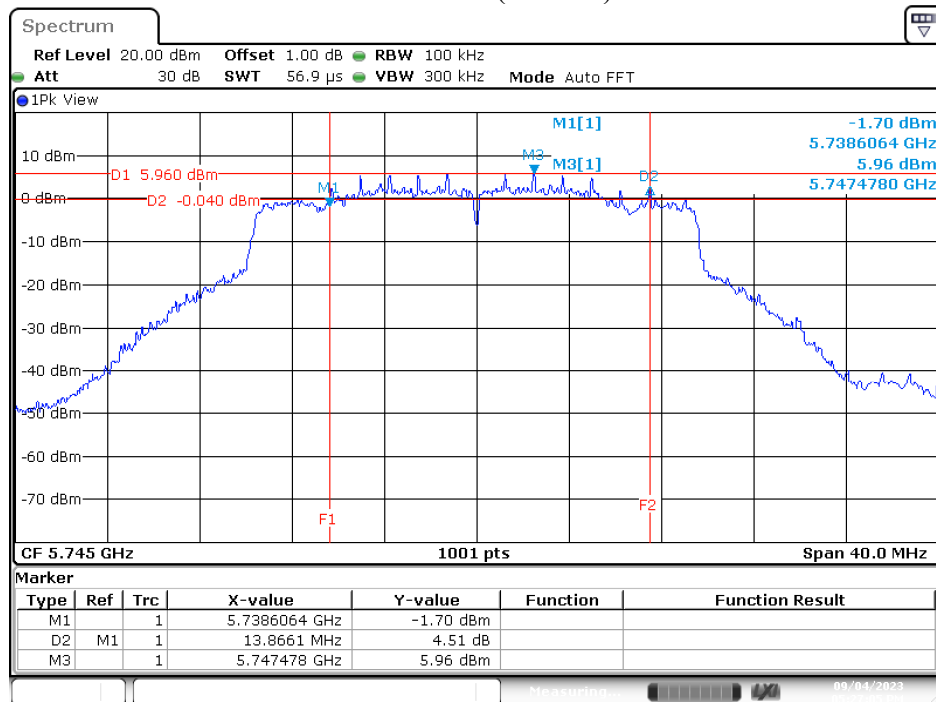


Date: 6.OCT.2023 10:31:23

Product : Notebook Computer
 Test Item : Occupied Bandwidth Data
 Test Mode : Transmit (802.11 ax-20 MHz)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	Chain	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	A	13866	>500	Pass
157	5785	A	17183	>500	Pass
165	5825	A	15984	>500	Pass
149	5745	B	15065	>500	Pass
157	5785	B	15864	>500	Pass
165	5825	B	16783	>500	Pass

Channel 149 (Chain A)

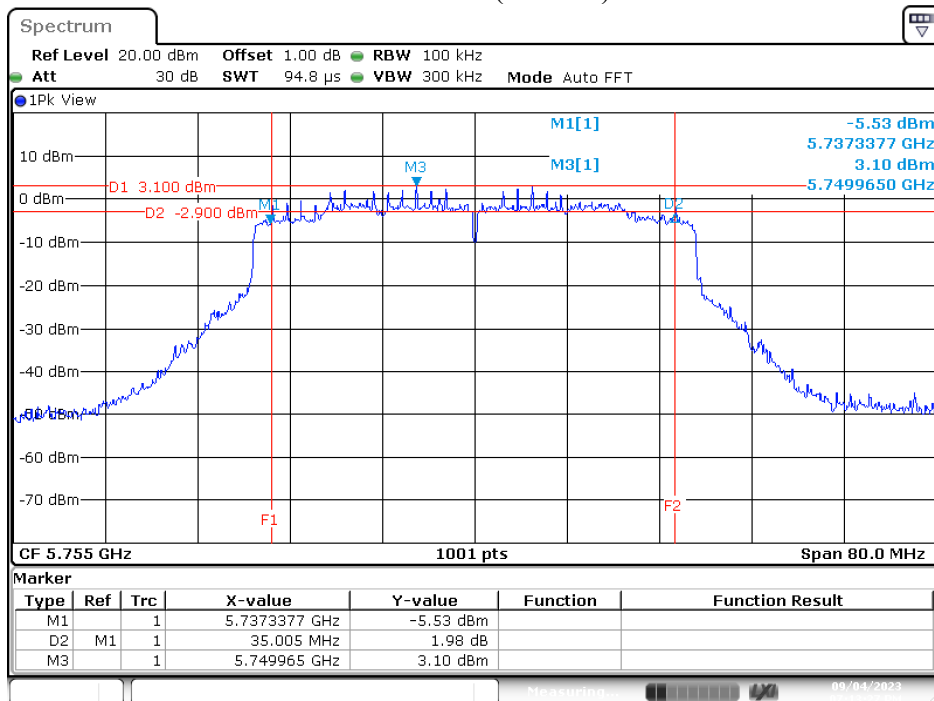


Date: 4.SEP.2023 17:27:06

Product : Notebook Computer
 Test Item : Occupied Bandwidth Data
 Test Mode : Transmit (802.11 ax-40 MHz)-MIMO
 Test Date : 2023/09/04

Channel No.	Frequency (MHz)	Chain	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755	A	35485	>500	Pass
159	5795	A	36364	>500	Pass
151	5755	B	35005	>500	Pass
159	5795	B	35085	>500	Pass

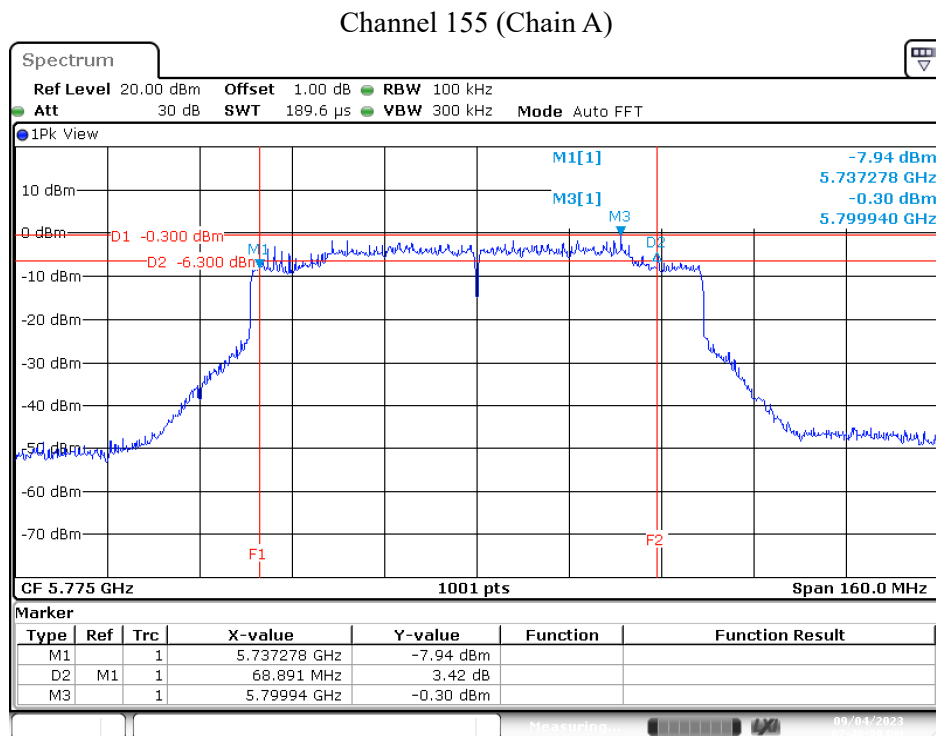
Channel 151 (Chain B)



Date: 4.SEP.2023 19:13:27

Product : Notebook Computer
 Test Item : Occupied Bandwidth Data
 Test Mode : Transmit (802.11ax-80 MHz)-MIMO
 Test Date : 2023/09/04

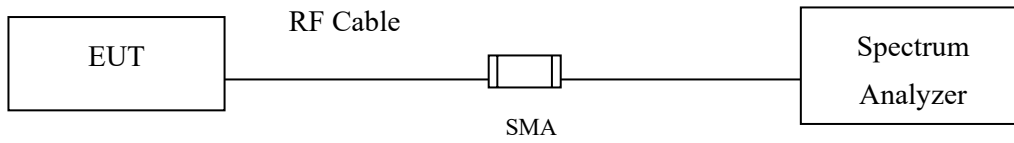
Channel No.	Frequency (MHz)	Chain	Measurement Level (kHz)	Required Limit (kHz)	Result
155	5775	A	68891	>500	Pass
155	5775	B	72408	>500	Pass



Date: 4.SEP.2023 19:48:39

8. Duty Cycle

8.1. Test Setup



8.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to U-NII test procedure of KDB789033 for compliance to FCC 47CFR 15.407 requirements.

8.3. Test Result of Duty Cycle

Product : Notebook Computer
 Test Item : Duty Cycle
 Test Mode : Transmit

Duty Cycle Formula:

Duty Cycle = $T_{on} / (T_{on} + T_{off})$

Duty Factor = $10 \text{ Log } (1/\text{Duty Cycle})$

Results:

SISO A

5 GHz band	Time On (ms)	Time On + Time Off (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11a	2.0800	2.1360	97.38	0.12
802.11ax-20 MHz	3.9780	4.0460	98.32	0.07
802.11ax-40 MHz	3.9610	4.0290	98.31	0.07
802.11ax-80 MHz	3.9610	4.0290	98.31	0.07
802.11ax-160 MHz	3.9780	4.0460	98.32	0.07
802.11ax-20 MHz (Partial RU)	2.5900	2.6400	98.11	0.08
802.11ax-40 MHz (Partial RU)	2.5800	2.6400	97.73	0.10
802.11ax-80 MHz (Partial RU)	2.5900	2.6400	98.11	0.08
802.11ax-160 MHz (Partial RU)	2.5800	2.6400	97.73	0.10

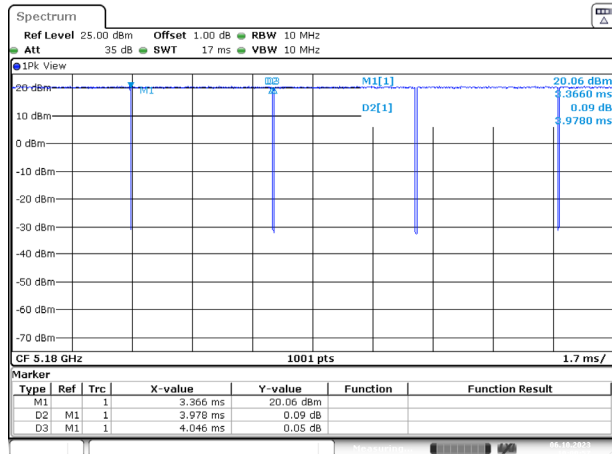
SISO B

5 GHz band	Time On (ms)	Time On + Time Off (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11a	2.0800	2.1400	97.20	0.12
802.11ax-20 MHz	3.9600	4.0350	98.14	0.08
802.11ax-40 MHz	3.9750	4.0350	98.51	0.07
802.11ax-80 MHz	3.9750	4.0350	98.51	0.07
802.11ax-160 MHz	3.9750	4.0350	98.51	0.07
802.11ax-20 MHz (Partial RU)	2.5800	2.6300	98.10	0.08
802.11ax-40 MHz (Partial RU)	2.5800	2.6400	97.73	0.10
802.11ax-80 MHz (Partial RU)	2.5800	2.6300	98.10	0.08
802.11ax-160 MHz (Partial RU)	2.5900	2.6400	98.11	0.08

MIMO

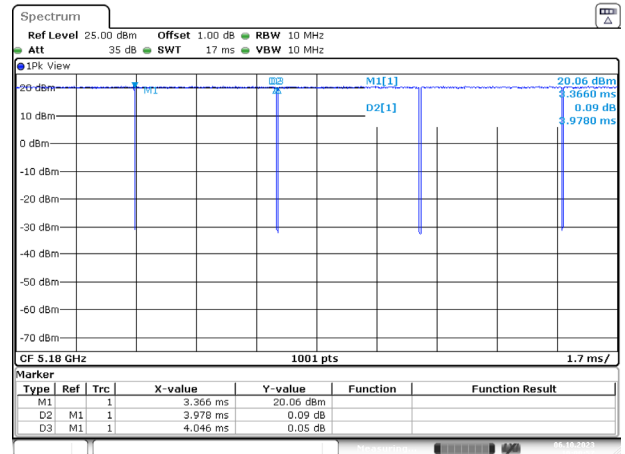
5 GHz band	Time On (ms)	Time On + Time Off (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11ax-20 MHz	3.9600	4.0200	98.51	0.07
802.11ax-40 MHz	3.9750	4.0350	98.51	0.07
802.11ax-80 MHz	3.9750	4.0350	98.51	0.07
802.11ax-160 MHz	2.2900	2.3500	97.45	0.11
802.11ax-20 MHz (Partial RU)	2.5942	2.6377	98.35	0.07
802.11ax-40 MHz (Partial RU)	2.5942	2.6522	97.81	0.10
802.11ax-80 MHz (Partial RU)	2.5942	2.6376	98.35	0.07
802.11ax-160 MHz (Partial RU)	2.5942	2.6522	97.81	0.10

802.11a-SISO A



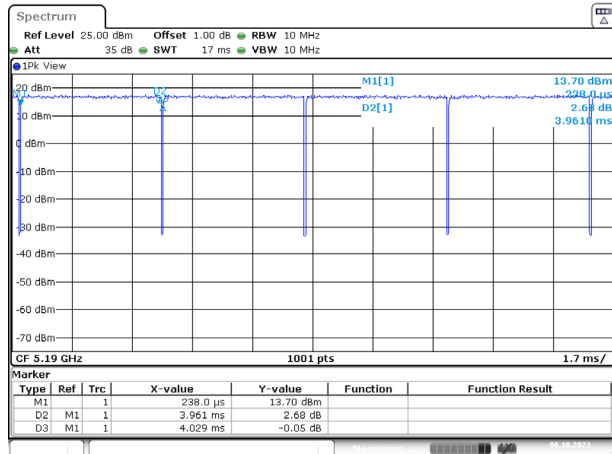
Date: 6 OCT. 2023 10:00:58

802.11ax-20 MHz-SISO A



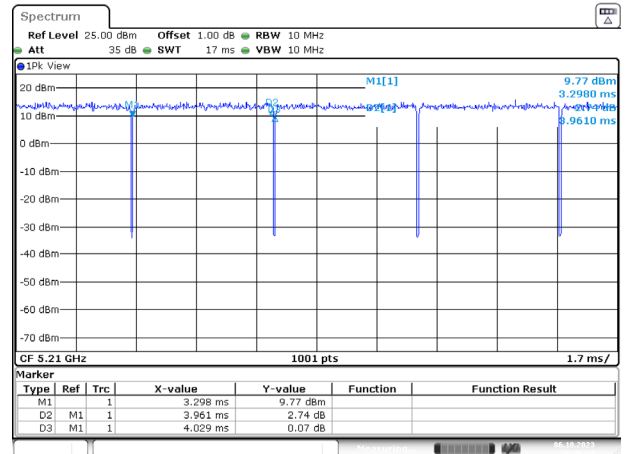
Date: 6 OCT. 2023 10:00:58

802.11ax-40 MHz-SISO A



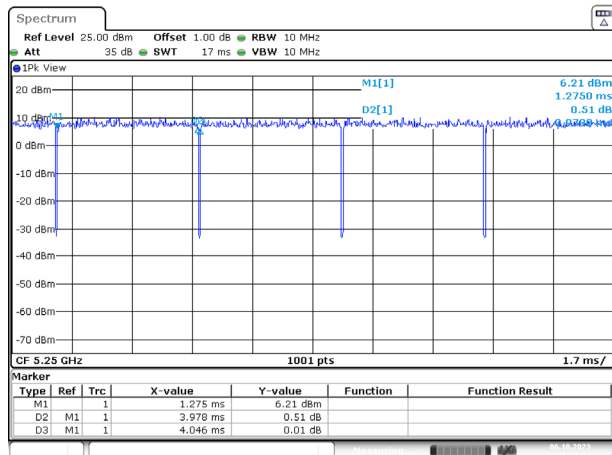
Date: 6 OCT. 2023 10:15:00

802.11ax-80 MHz-SISO A



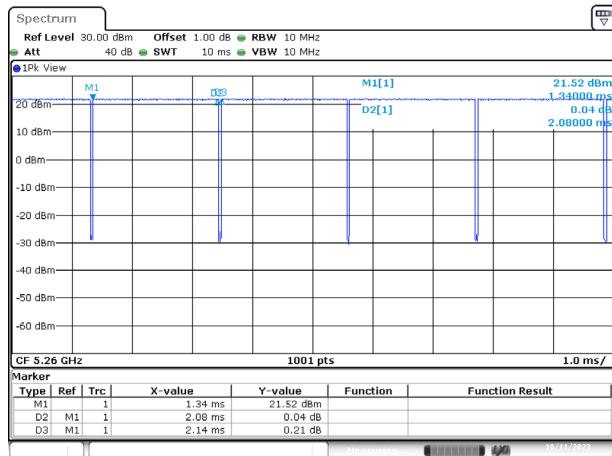
Date: 6 OCT. 2023 10:26:27

802.11ax-160 MHz-SISO A



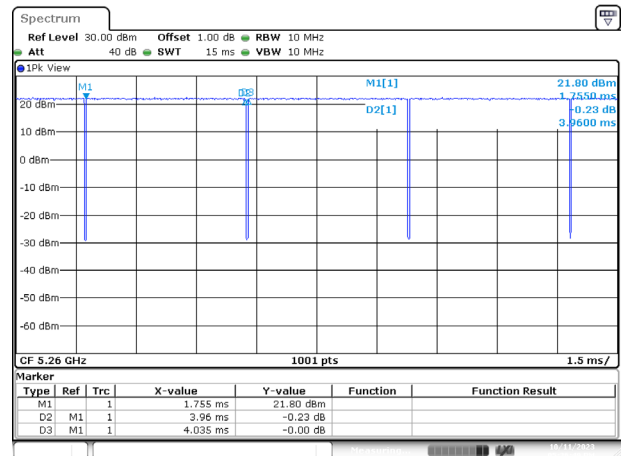
Date: 6 OCT. 2023 10:34:24

802.11a-SISO B



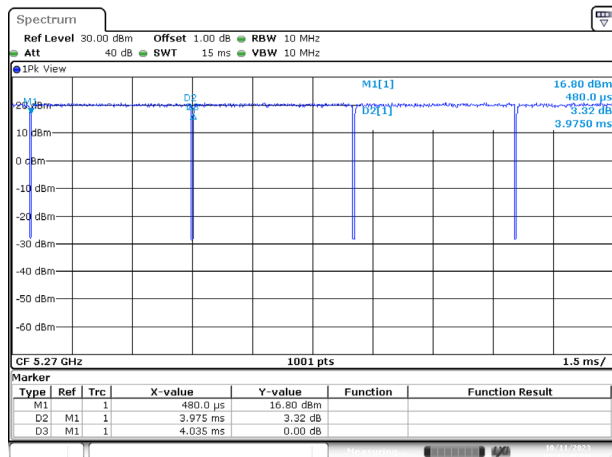
Date: 11.OCT.2023 17:30:22

802.11ax-20 MHz-SISO B



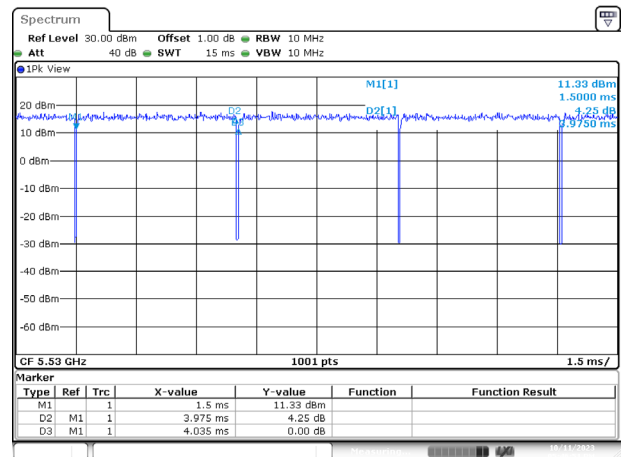
Date: 11.OCT.2023 17:36:49

802.11ax-40 MHz-SISO B



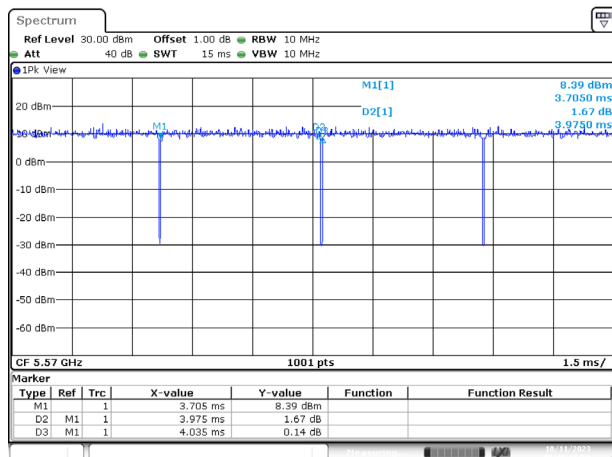
Date: 11.OCT.2023 17:41:48

802.11ax-80 MHz-SISO B



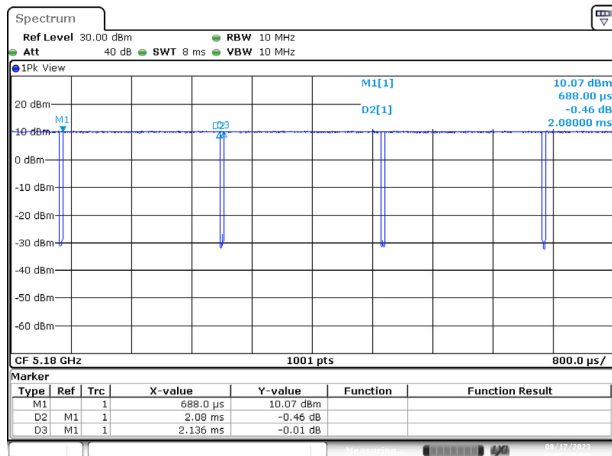
Date: 11.OCT.2023 17:46:52

802.11ax-160 MHz-SISO B



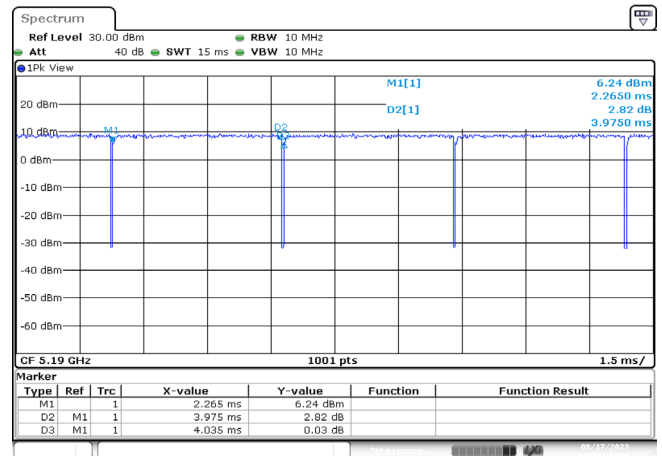
Date: 11.OCT.2023 17:49:35

802.11ax-20 MHz-MIMO



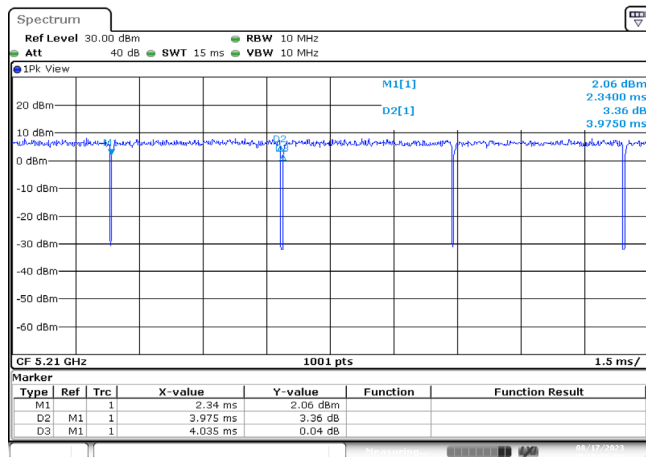
Date: 17 AUG 2023 10:05:11

802.11ax-40 MHz-MIMO



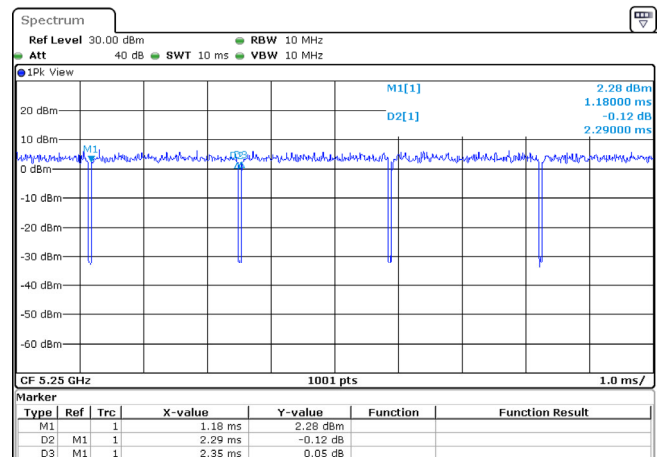
Date: 17 AUG 2023 10:09:36

802.11ax-80 MHz-MIMO



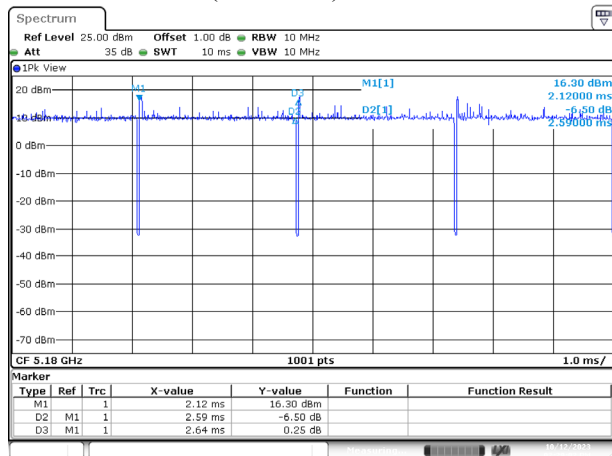
Date: 17 AUG 2023 10:10:38

802.11ax-160 MHz-MIMO



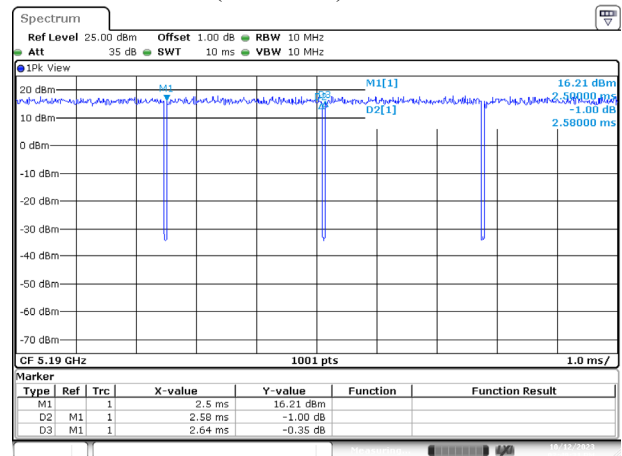
Date: 17 AUG 2023 10:11:33

802.11ax-20 MHz (Partial RU)-SISO A



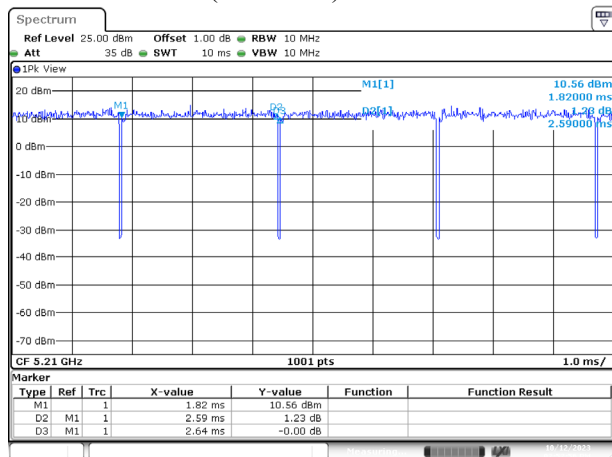
Date: 12.OCT.2023 14:29:02

802.11ax-40 MHz (Partial RU)-SISO A



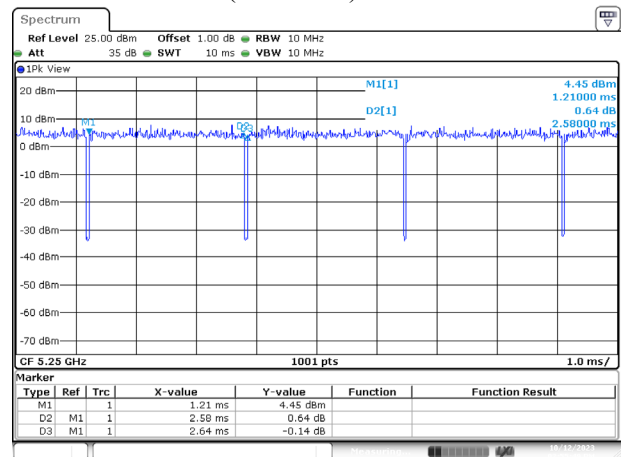
Date: 12.OCT.2023 14:49:32

802.11ax-80 MHz (Partial RU)-SISO A



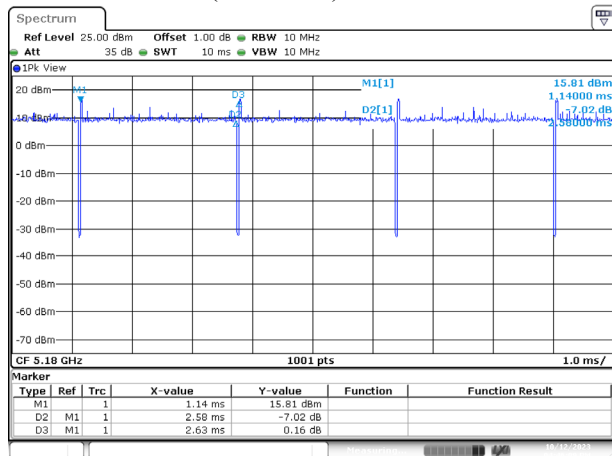
Date: 12.OCT.2023 14:52:56

802.11ax-160 MHz (Partial RU)-SISO A

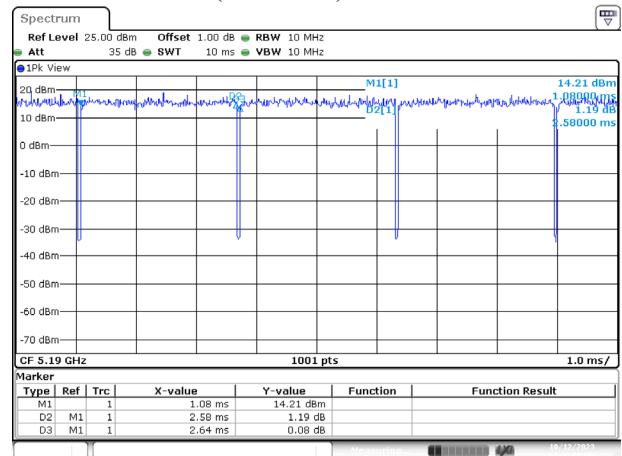


Date: 12.OCT.2023 14:55:49

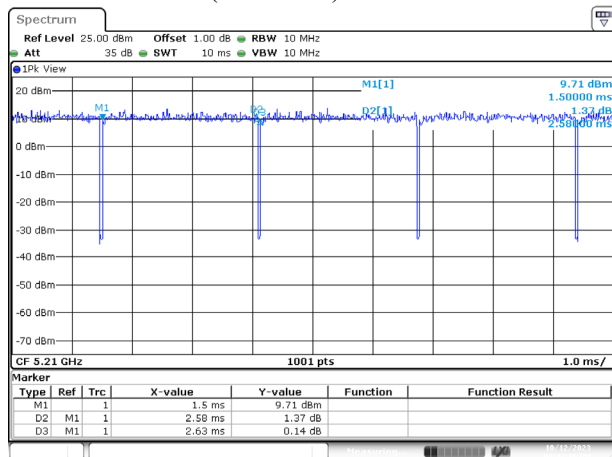
802.11ax-20 MHz (Partial RU)-SISO B



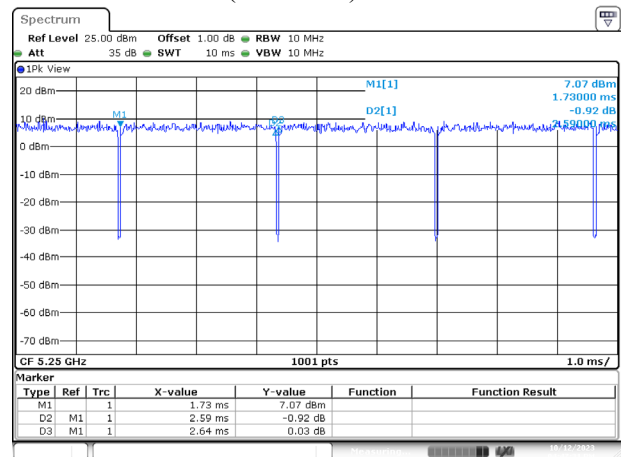
802.11ax-40 MHz (Partial RU)-SISO B



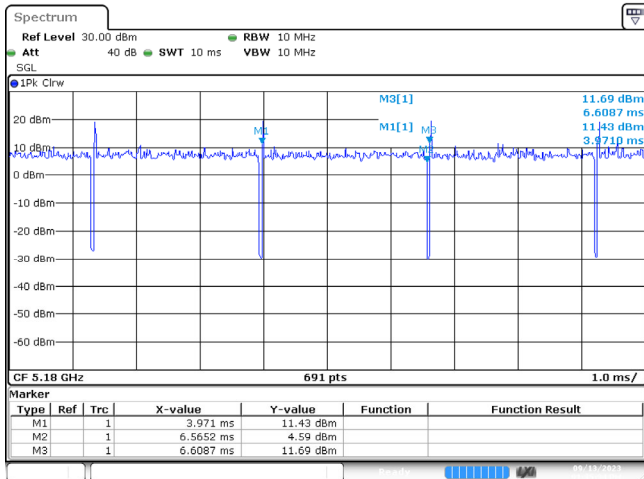
802.11ax-80 MHz (Partial RU)-SISO B



802.11ax-160 MHz (Partial RU)-SISO B

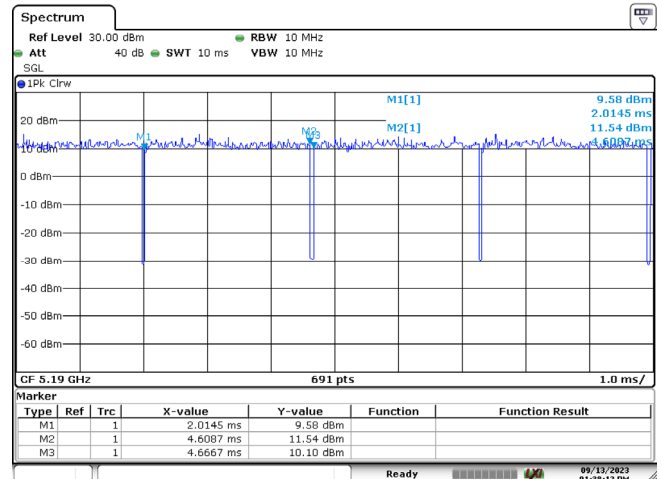


802.11ax-20 MHz (Partial RU)-MIMO



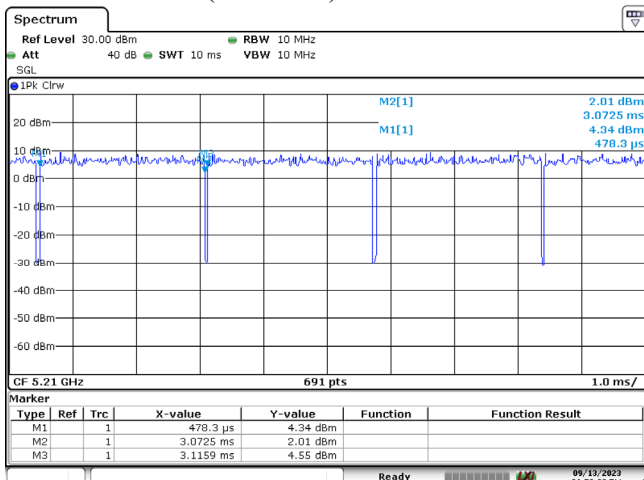
Date: 13.SEP.2023 13:35:34

802.11ax-40 MHz (Partial RU)-MIMO



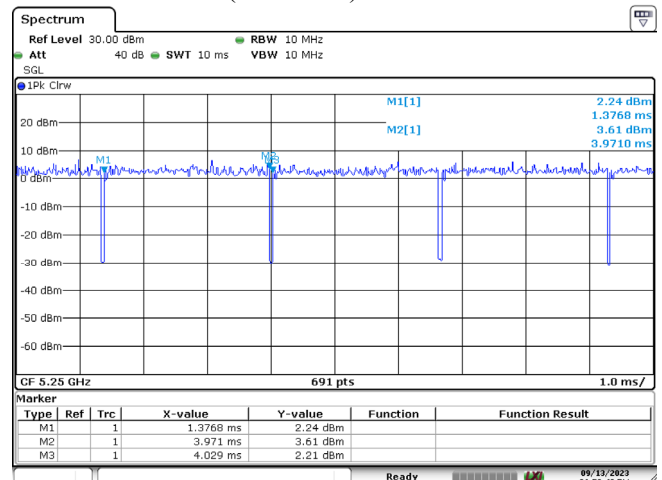
Date: 13.SEP.2023 13:38:13

802.11ax-80 MHz (Partial RU)-MIMO



Date: 13.SEP.2023 13:52:03

802.11ax-160 MHz (Partial RU)-MIMO



Date: 13.SEP.2023 13:53:40