

Radiated Emissions data(9 kHz ~ 25 GHz) : **TM 2**

Tested Frequency (MHz)	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	TF (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin(dB)
2 412	2 389.26	H	Z	PK	62.24	4.97	N/A	N/A	67.21	74.00	6.79
	2 389.59	H	Z	AV	45.68	4.97	0.70	N/A	51.35	54.00	2.65
	4 824.58	V	Z	PK	50.43	2.29	N/A	N/A	52.72	74.00	21.28
	4 824.87	V	Z	AV	39.91	2.29	0.70	N/A	42.90	54.00	11.10
2 437	4 872.71	V	Z	PK	49.49	2.31	N/A	N/A	51.80	74.00	22.20
	4 872.78	V	Z	AV	38.94	2.31	0.70	N/A	41.95	54.00	12.05
2 462	2 483.56	H	Z	PK	56.29	5.55	N/A	N/A	61.84	74.00	12.16
	2 484.00	H	Z	AV	44.88	5.56	0.70	N/A	51.14	54.00	2.86
	4 922.74	V	Z	PK	49.28	3.13	N/A	N/A	52.41	74.00	21.59
	4 922.88	V	Z	AV	38.87	3.13	0.70	N/A	42.70	54.00	11.30
2 467	2 483.64	H	Z	PK	56.06	5.55	N/A	N/A	61.61	74.00	12.39
	2 483.67	H	Z	AV	44.38	5.55	0.70	N/A	50.63	54.00	3.37
	4 933.21	V	Z	PK	49.12	3.20	N/A	N/A	52.32	74.00	21.68
	4 933.53	V	Z	AV	39.05	3.20	0.70	N/A	42.95	54.00	11.05
2 472	2 483.66	H	Z	PK	56.27	5.55	N/A	N/A	61.82	74.00	12.18
	2 483.54	H	Z	AV	44.20	5.55	0.70	N/A	50.45	54.00	3.55
	4 943.79	V	Z	PK	49.47	3.26	N/A	N/A	52.73	74.00	21.27
	4 943.02	V	Z	AV	39.07	3.26	0.70	N/A	43.03	54.00	10.97

Radiated Emissions data(9 kHz ~ 25 GHz) : **TM 3**

Tested Frequency (MHz)	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	TF (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin(dB)
2 412	2 389.89	H	Z	PK	60.15	4.97	N/A	N/A	65.12	74.00	8.88
	2 389.97	H	Z	AV	45.41	4.97	0.75	N/A	51.13	54.00	2.87
	4 824.73	V	Z	PK	51.30	2.29	N/A	N/A	53.59	74.00	20.41
	4 824.29	V	Z	AV	39.54	2.29	0.75	N/A	42.58	54.00	11.42
2 437	4 872.67	V	Z	PK	49.85	2.31	N/A	N/A	52.16	74.00	21.84
	4 872.61	V	Z	AV	39.23	2.31	0.75	N/A	42.29	54.00	11.71
2 462	2 483.93	H	Z	PK	55.67	5.56	N/A	N/A	61.23	74.00	12.77
	2 483.96	H	Z	AV	44.38	5.56	0.75	N/A	50.69	54.00	3.31
	4 923.81	V	Z	PK	49.20	3.14	N/A	N/A	52.34	74.00	21.66
	4 923.39	V	Z	AV	39.03	3.13	0.75	N/A	42.91	54.00	11.09
2 467	2 484.96	H	Z	PK	55.19	5.58	N/A	N/A	60.77	74.00	13.23
	2 484.47	H	Z	AV	44.54	5.57	0.75	N/A	50.86	54.00	3.14
	4 933.21	V	Z	PK	51.35	3.20	N/A	N/A	54.55	74.00	19.45
	4 932.99	V	Z	AV	39.10	3.19	0.75	N/A	43.04	54.00	10.96
2 472	2 484.78	H	Z	PK	55.67	5.57	N/A	N/A	61.24	74.00	12.76
	2 484.42	H	Z	AV	45.00	5.57	0.75	N/A	51.32	54.00	2.68
	4 942.94	V	Z	PK	49.00	3.26	N/A	N/A	52.26	74.00	21.74
	4 942.49	V	Z	AV	38.95	3.26	0.75	N/A	42.96	54.00	11.04

Radiated Emissions data(9 kHz ~ 25 GHz) : **TM 4**

Tested Frequency (MHz)	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	TF (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin(dB)
2 422	2 388.00	H	Z	PK	56.17	4.96	N/A	N/A	61.13	74.00	12.87
	2 388.35	H	Z	AV	44.63	4.96	1.40	N/A	50.99	54.00	3.01
	4 842.42	V	Z	PK	49.30	2.29	N/A	N/A	51.59	74.00	22.41
	4 843.21	V	Z	AV	39.03	2.29	1.40	N/A	42.72	54.00	11.28
2 437	4 872.40	V	Z	PK	50.09	2.31	N/A	N/A	52.40	74.00	21.60
	4 872.67	V	Z	AV	40.13	2.31	1.40	N/A	43.84	54.00	10.16
2 452	2 485.07	H	Z	PK	56.29	5.58	N/A	N/A	61.87	74.00	12.13
	2 485.49	H	Z	AV	44.30	5.59	1.40	N/A	51.29	54.00	2.71
	4 903.75	V	Z	PK	50.04	3.01	N/A	N/A	53.05	74.00	20.95
	4 903.90	V	Z	AV	40.05	3.01	1.40	N/A	44.46	54.00	9.54
2 457	2 483.51	H	Z	PK	54.85	5.55	N/A	N/A	60.40	74.00	13.60
	2 483.61	H	Z	AV	44.38	5.55	1.40	N/A	51.33	54.00	2.67
	4 912.71	V	Z	PK	50.42	3.06	N/A	N/A	53.48	74.00	20.52
	4 912.70	V	Z	AV	40.12	3.06	1.40	N/A	44.58	54.00	9.42
2 462	2 483.79	H	Z	PK	56.33	5.56	N/A	N/A	61.89	74.00	12.11
	2 484.76	H	Z	AV	44.37	5.57	1.40	N/A	51.34	54.00	2.66
	4 923.61	V	Z	PK	50.24	3.13	N/A	N/A	53.37	74.00	20.63
	4 923.30	V	Z	AV	39.59	3.13	1.40	N/A	44.12	54.00	9.88

5.6. AC Power-Line Conducted Emissions

■ Test Requirements and limit, Part 15.207 & RSS-Gen [8.8]

An intentional radiator 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, as measured using a 50 μ H/50 ohm line impedance stabilization network (LISN).

Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5.0	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency

5.6.1. Test Setup

See test photographs for the actual connections between EUT and support equipment.

5.6.2. Test Procedures

Conducted emissions from the EUT were measured according to the ANSI C63.10-2020.

1. The test procedure is performed in a 6.5 m $\times$ 3.5 m $\times$ 3.5 m (L $\times$ W $\times$ H) shielded room. The EUT along with its peripherals were placed on a 1.0 m (W) $\times$ 1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.
2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.
3. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.
4. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

5.6.3. Test Results

Refer to the next page. (The worst case data was reported. The worst data is TM 1 & Lowest)

AC Power-Line Conducted Emissions (Graph) Results of Conducted Emission

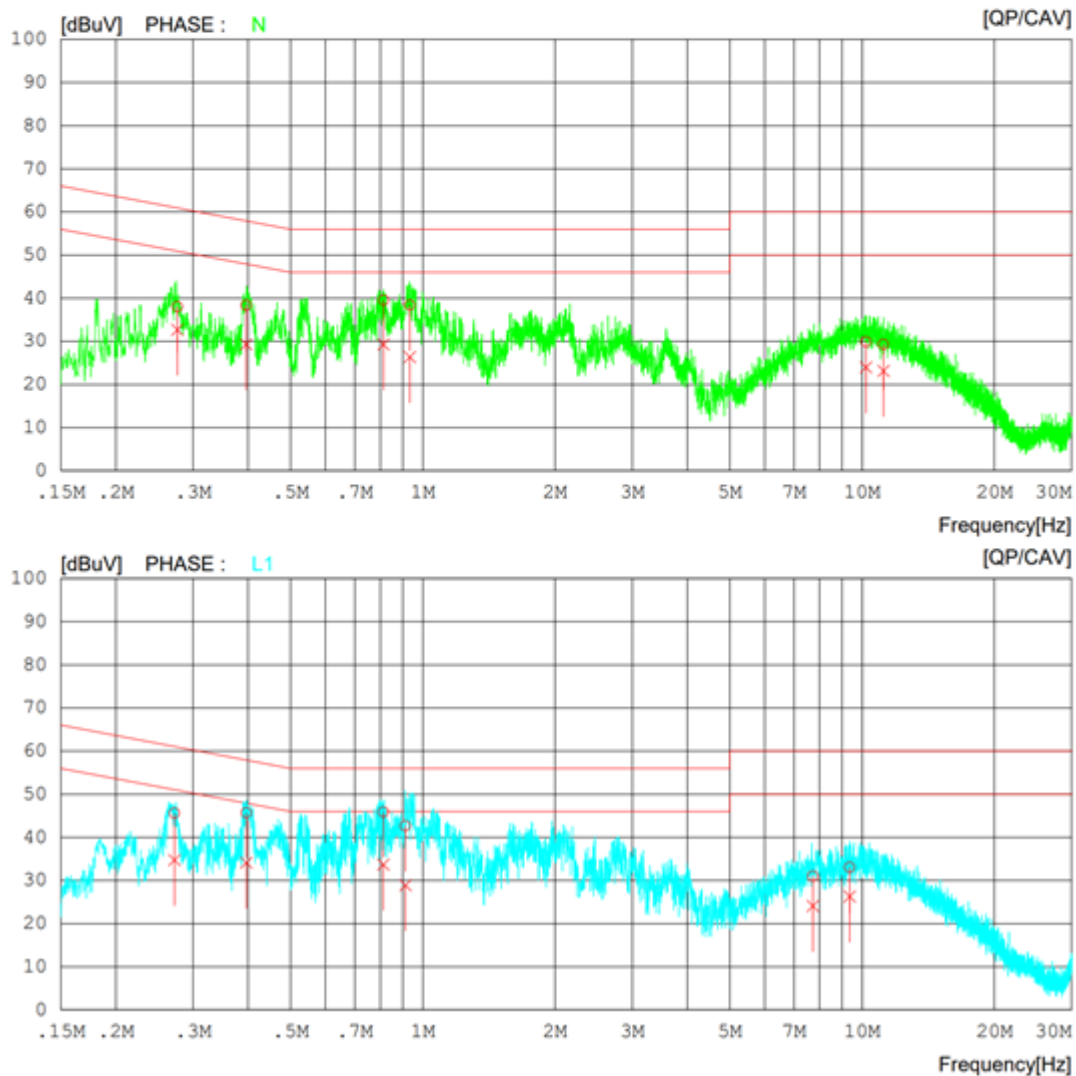
Date 2025-06-13

Order No.
Model No. WC1NH25
Serial No.
Test Condition WLAN 2.4G
Memo 802.11b_2412

Reference No.
Power Supply 120 V, 60 Hz
Temp/Humi. 23 °C / 41 %
Operator S.M.GIL

LIMIT : FCC P15.207 AV
FCC P15.207 QP

Lisn Factor
1. NSLK 8128 RC-387_N_24.10.21
2. NSLK 8128 RC-387_L1_24.10.21
Cable Loss
1. C1_LISN TO RECEIVER_2024-12-11
Pulse Limiter
1. PULSE LIMITER_ESH3-Z2_101333_2024.08.21



AC Power-Line Conducted Emissions (List)

Results of Conducted Emission

Date 2025-06-13

Order No.		Reference No.	
Model No.	WC1NH25	Power Supply	120 V, 60 Hz
Serial No.		Temp/Humid.	23 'C / 41 %
Test Condition	WLAN 2.4G	Operator	S.M.GIL

Memo 802.11b_2412

LIMIT : FCC P15.207 AV
FCC P15.207 QP

Lisn Factor

1. NSLK 8128 RC-387_N_24.10.21

2. NSLK 8128 RC-387_LT_24.10.21

Cable Loss

1. C1_LISN TO RECEIVER_2024-12-11

Pulse Limiter

1. PULSE LIMITER_ESH3-Z2_101333_2024.08.21

NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	CAV [dBuV]		QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]	QP [dBuV]	CAV [dBuV]	
1	0.27621	28.02	22.67	10.01	38.03	32.68	60.93	50.93	22.90	18.25	N
2	0.39607	28.34	19.25	10.03	38.37	29.28	57.94	47.94	19.57	18.66	N
3	0.81418	29.52	19.22	10.05	39.57	29.27	56.00	46.00	16.43	16.73	N
4	0.93386	28.35	16.27	10.06	38.41	26.33	56.00	46.00	17.59	19.67	N
5	10.20640	19.53	13.60	10.36	29.89	23.96	60.00	50.00	30.11	26.04	N
6	11.19440	18.91	12.72	10.42	29.33	23.14	60.00	50.00	30.67	26.86	N
7	0.27203	35.58	24.72	10.01	45.59	34.73	61.06	51.06	15.47	16.33	L1
8	0.39648	35.69	24.09	10.03	45.72	34.12	57.93	47.93	12.21	13.81	L1
9	0.81371	35.85	23.63	10.05	45.90	33.68	56.00	46.00	10.10	12.32	L1
10	0.91350	32.62	18.83	10.06	42.68	28.89	56.00	46.00	13.32	17.11	L1
11	7.72480	20.69	13.75	10.32	31.01	24.07	60.00	50.00	28.99	25.93	L1
12	9.36840	22.64	15.88	10.42	33.06	26.30	60.00	50.00	26.94	23.70	L1

5.7. Occupied Bandwidth

■ Test Requirements, RSS-Gen[6.7]

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99 % emission bandwidth, as calculated or measured.

5.7.1. Test Setup

Refer to the APPENDIX I.

5.7.2. Test Procedures

The 99 % power bandwidth was measured with a calibrated spectrum analyzer.

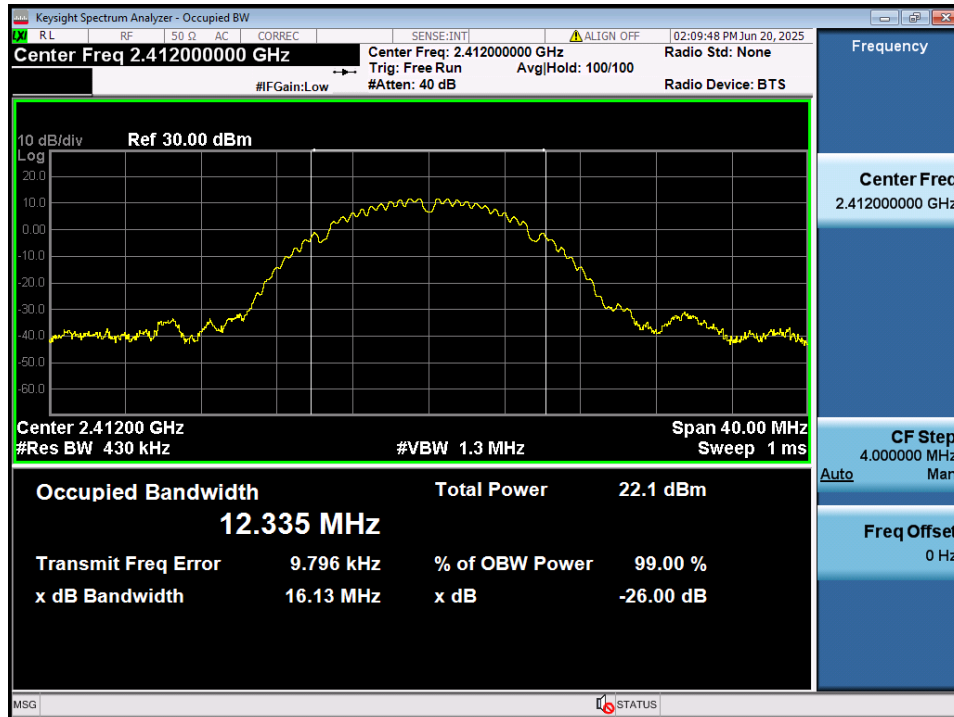
The resolution bandwidth (RBW) shall be in the range of 1 % to 5 % of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately $3 \times \text{RBW}$.

5.7.3. Test Results

Test Mode	Frequency	Test Results (MHz)	
		ANT 1	ANT 2
TM 1	2 412	12.34	12.59
	2 437	12.51	12.63
	2 472	12.45	12.59
TM 2	2 412	16.69	16.57
	2 437	17.60	17.16
	2 472	16.59	16.53
TM 3	2 412	17.67	17.63
	2 437	18.47	18.20
	2 472	17.67	17.65
TM 4	2 422	36.04	36.00
	2 437	36.11	36.00
	2 462	36.07	36.03

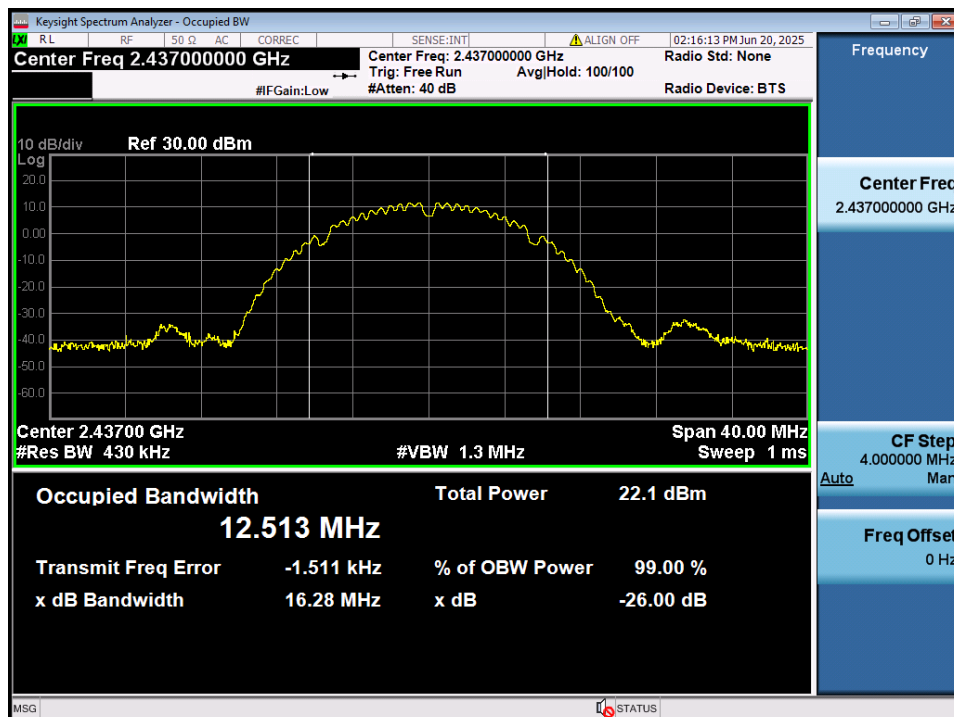
Occupied Bandwidth

TM 1 & ANT 1 & 2 412 MHz



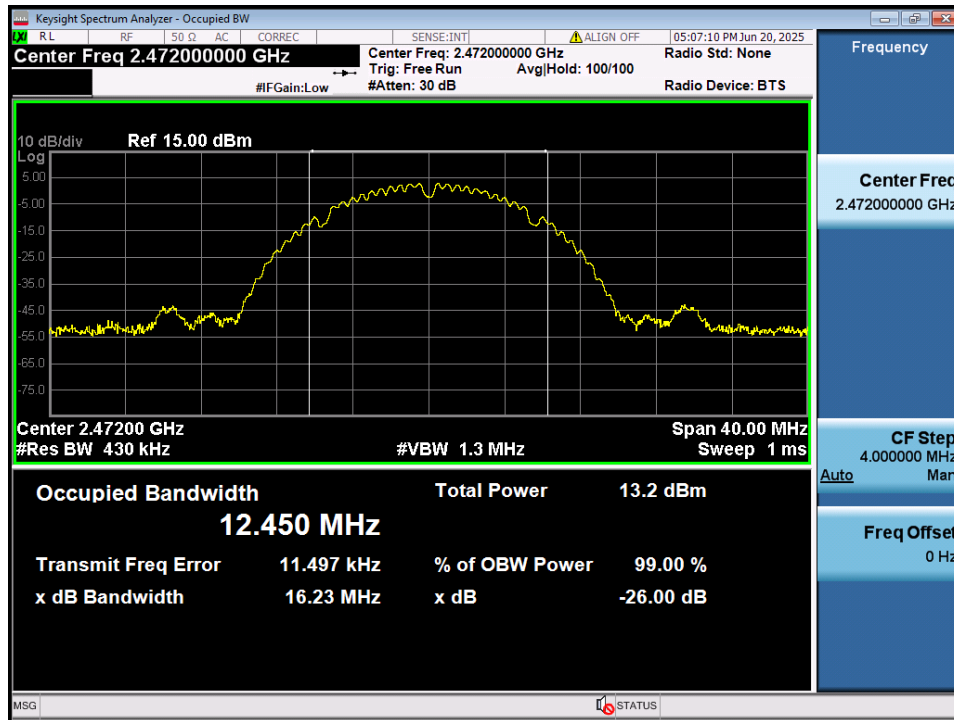
Occupied Bandwidth

TM 1 & ANT 1 & 2 437 MHz



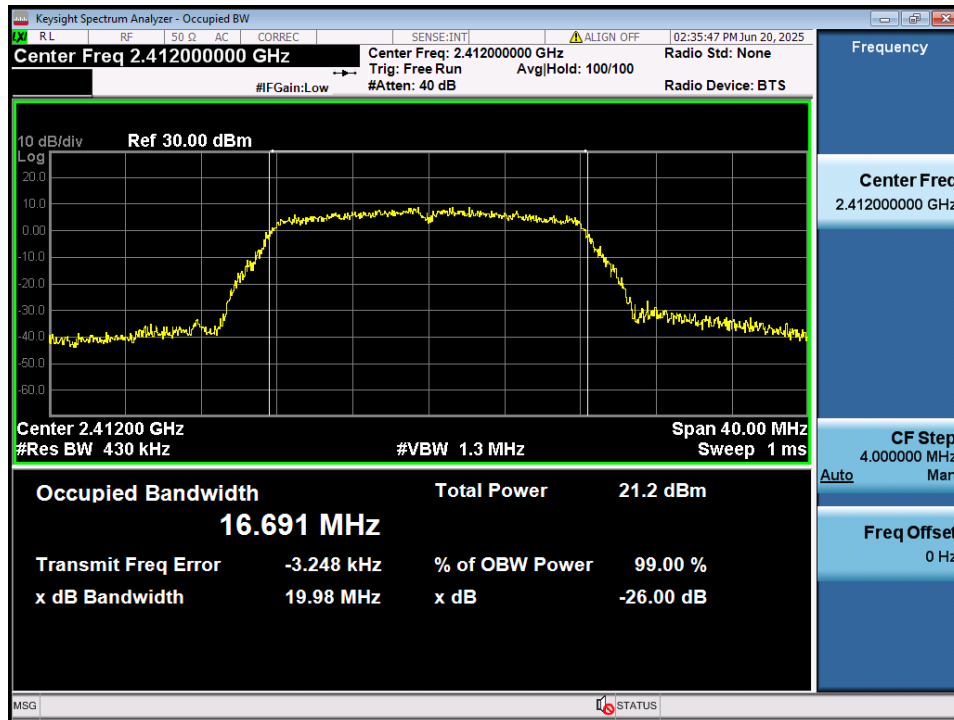
Occupied Bandwidth

TM 1 & ANT 1 & 2 472 MHz



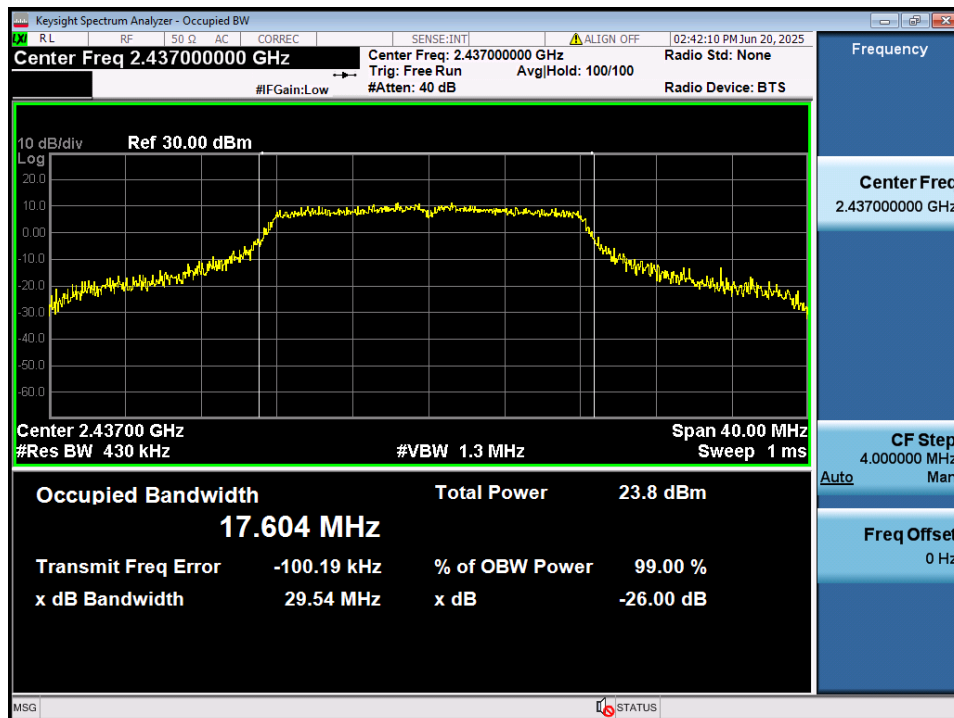
Occupied Bandwidth

TM 2 & ANT 1 & 2 412 MHz



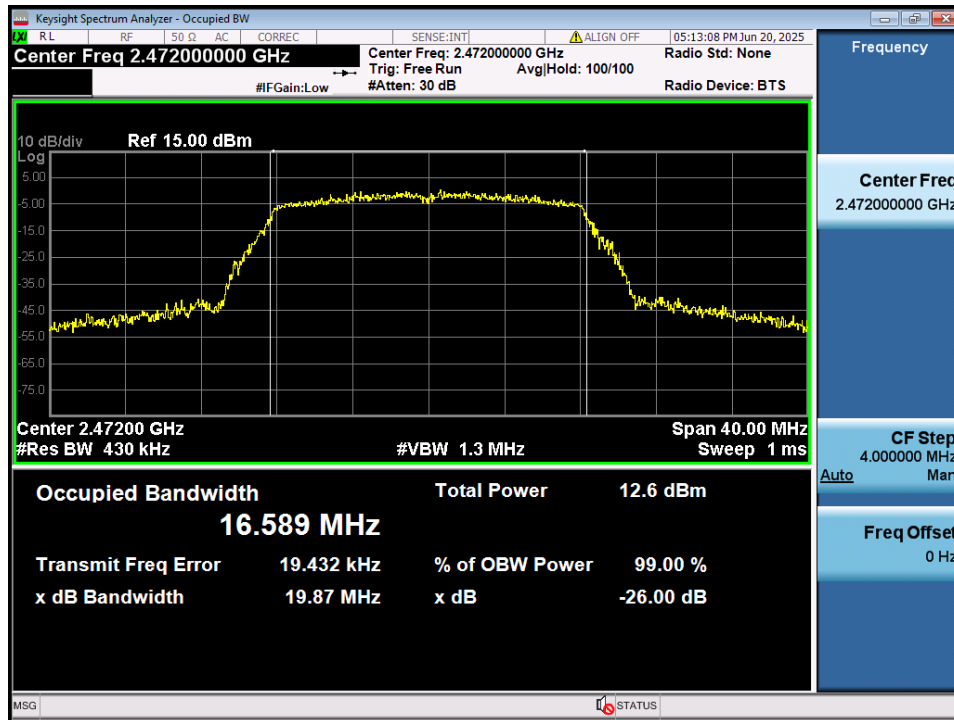
Occupied Bandwidth

TM 2 & ANT 1 & 2 437 MHz



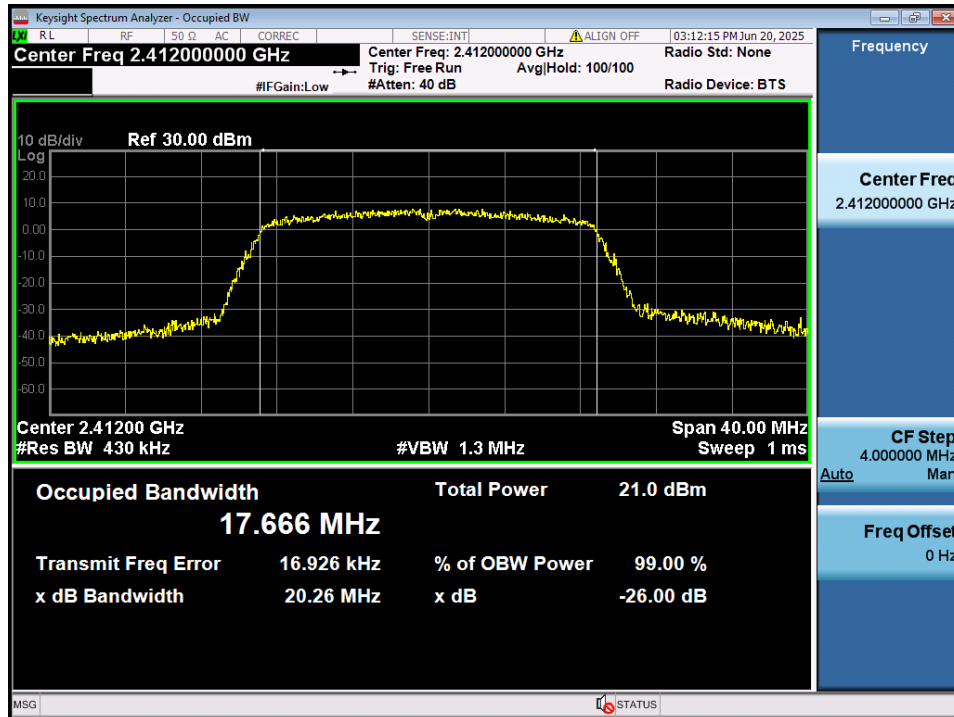
Occupied Bandwidth

TM 2 & ANT 1 & 2 472 MHz



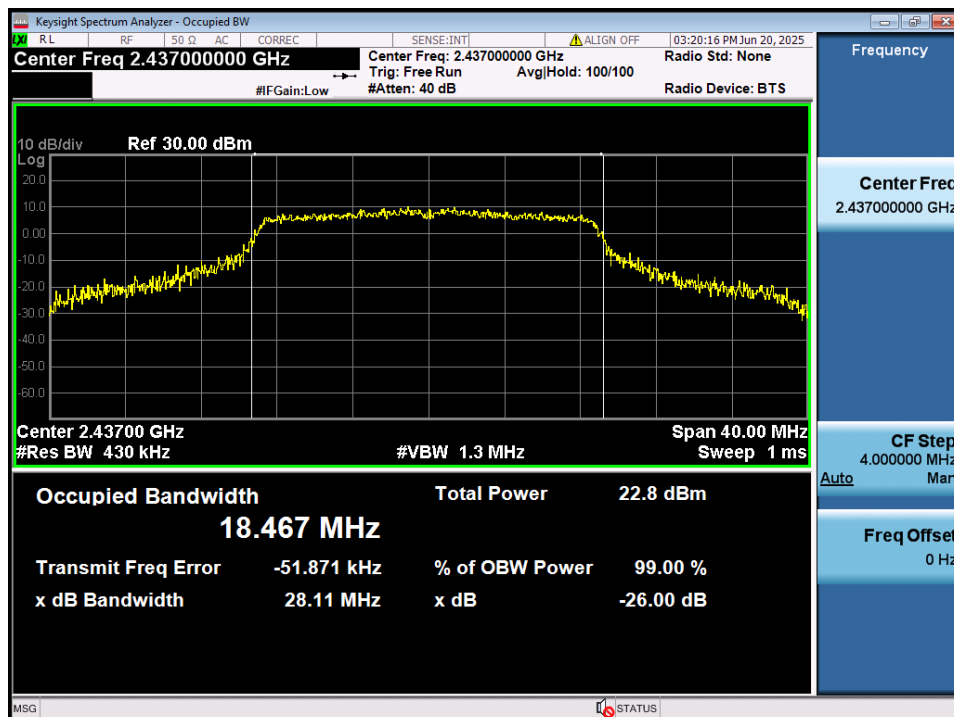
Occupied Bandwidth

TM 3 & ANT 1 & 2 412 MHz



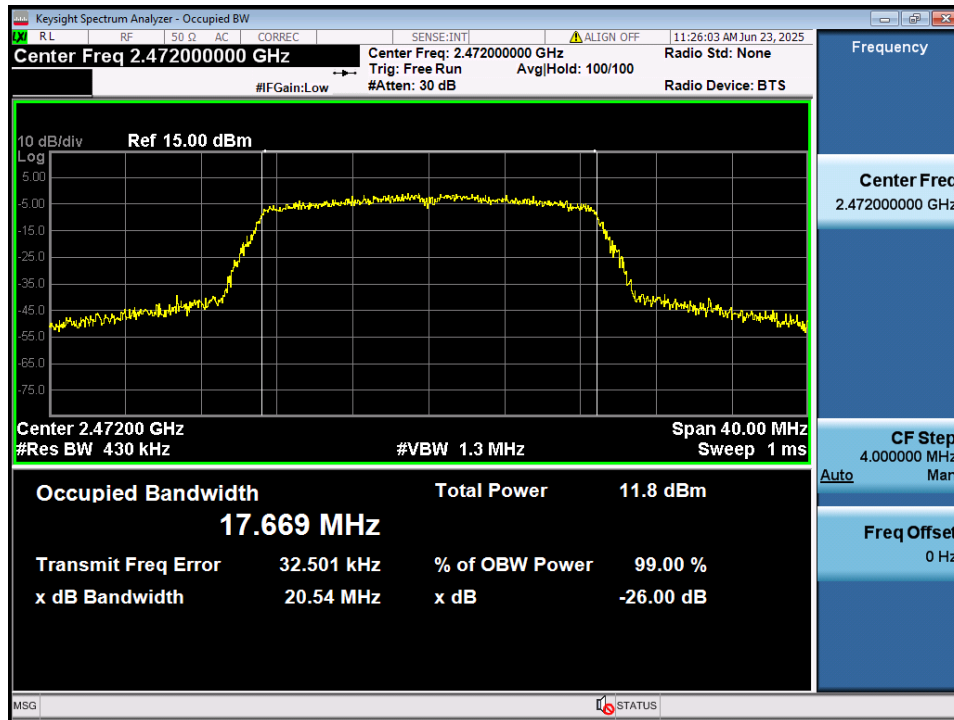
Occupied Bandwidth

TM 3 & ANT 1 & 2 437 MHz



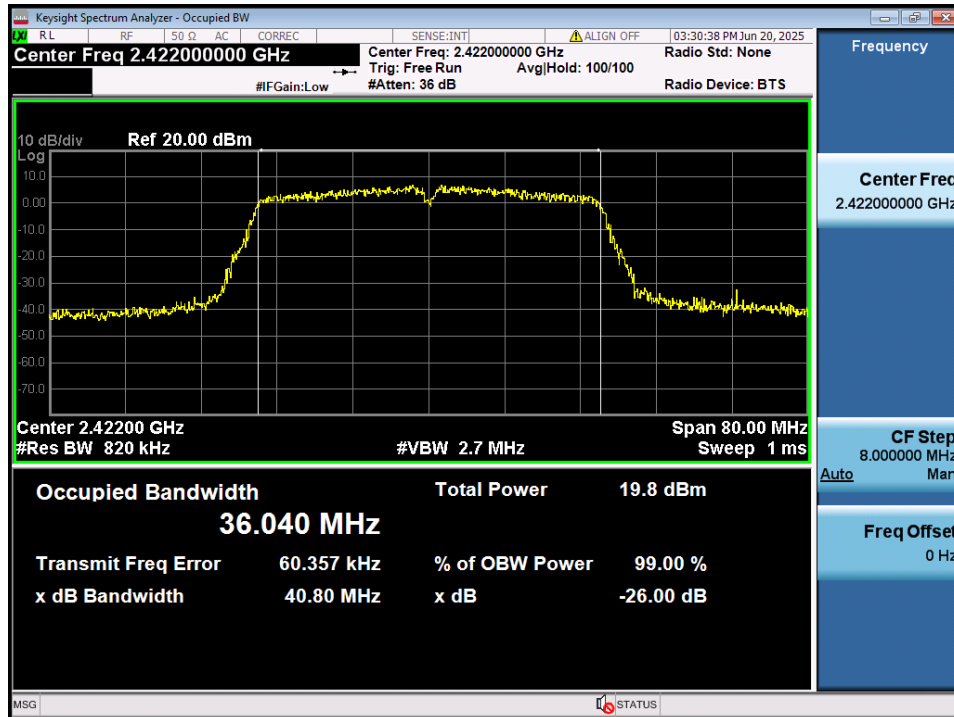
Occupied Bandwidth

TM 3 & ANT 1 & 2 472 MHz



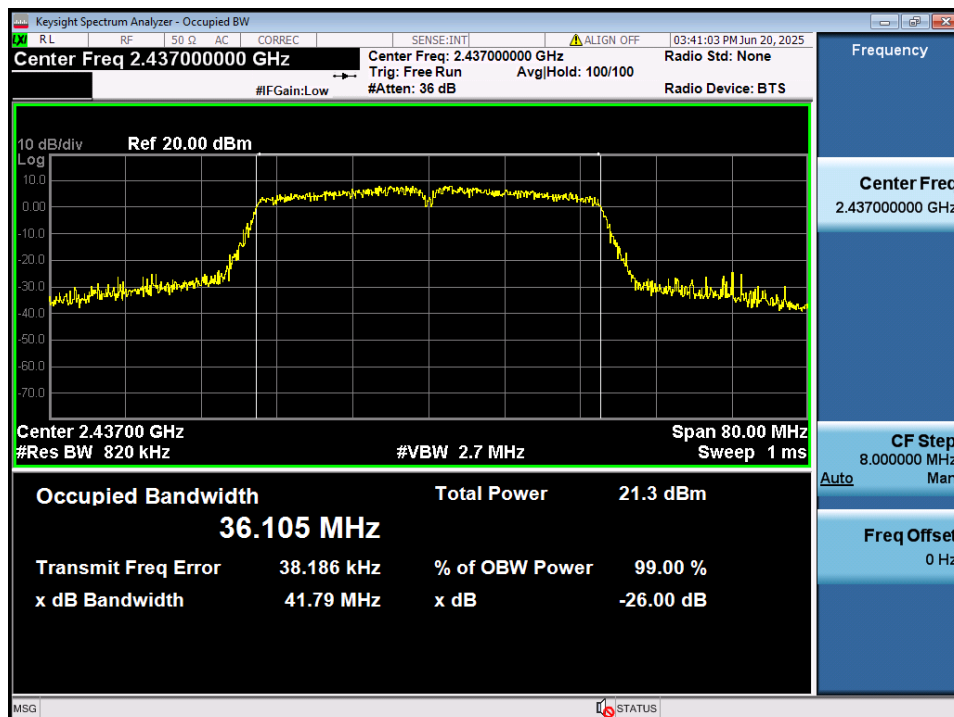
Occupied Bandwidth

TM 4 & ANT 1 & 2422 MHz



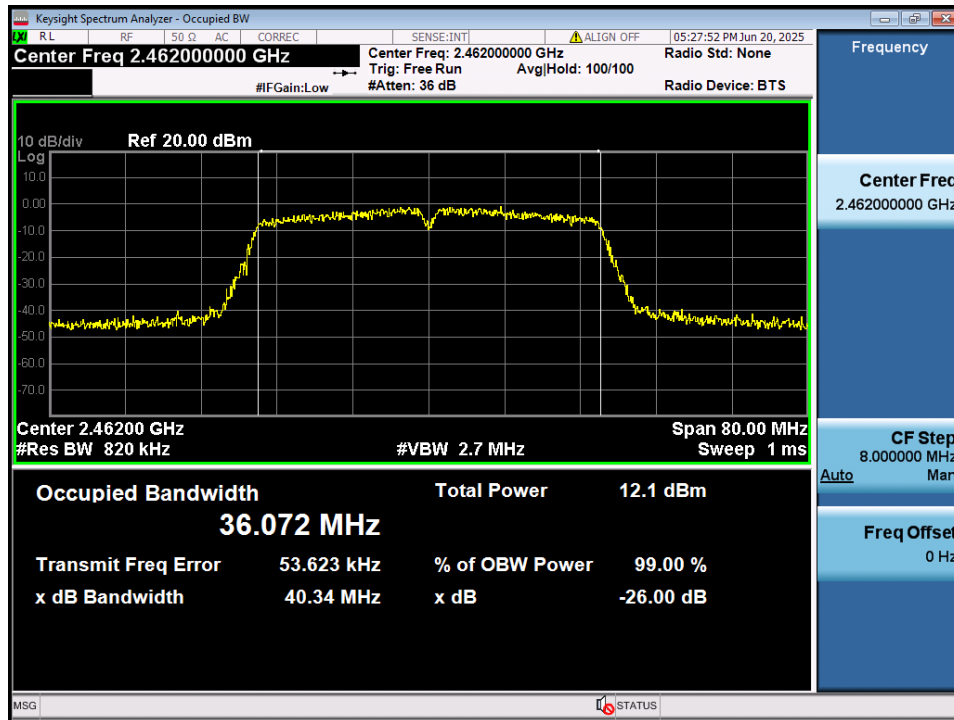
Occupied Bandwidth

TM 4 & ANT 1 & 2 437 MHz



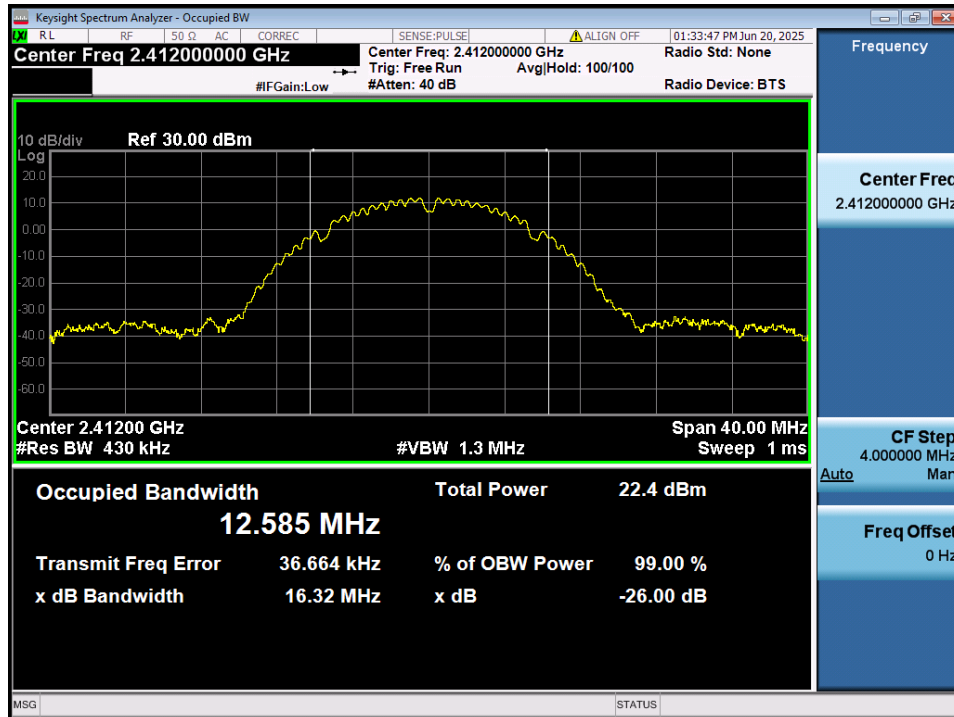
Occupied Bandwidth

TM 4 & ANT 1 & 2 462 MHz



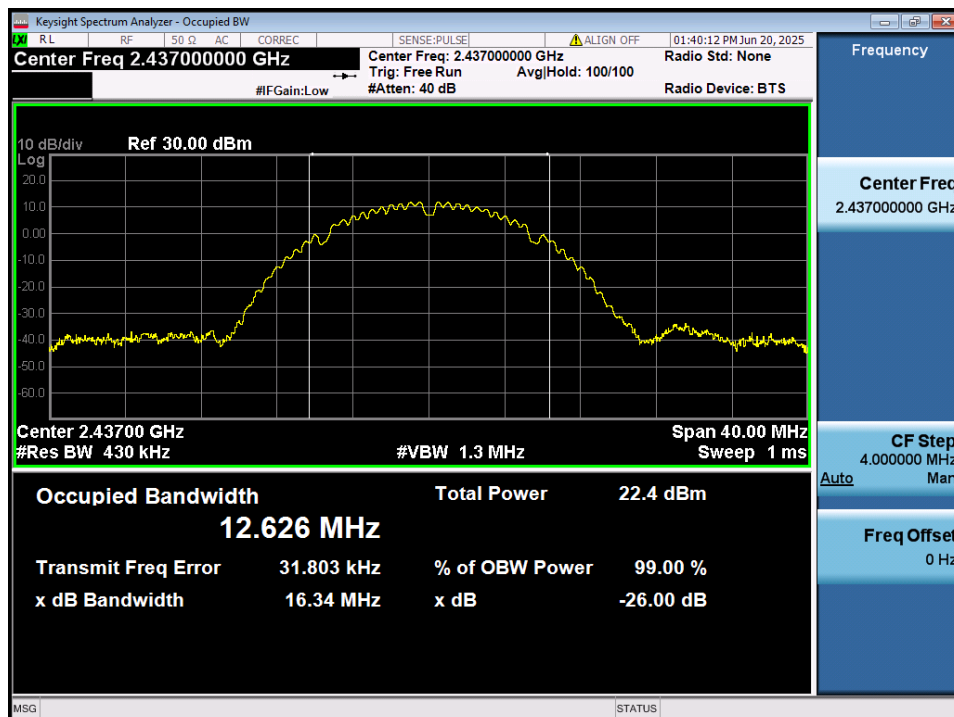
Occupied Bandwidth

TM 1 & ANT 2 & 2 412 MHz



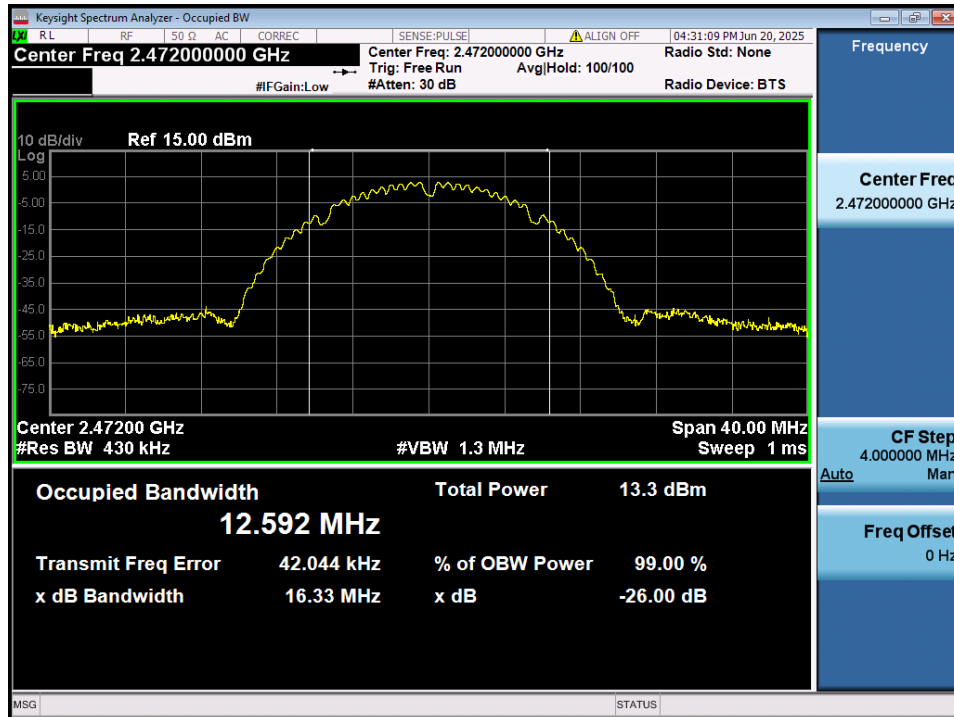
Occupied Bandwidth

TM 1 & ANT 2 & 2 437 MHz



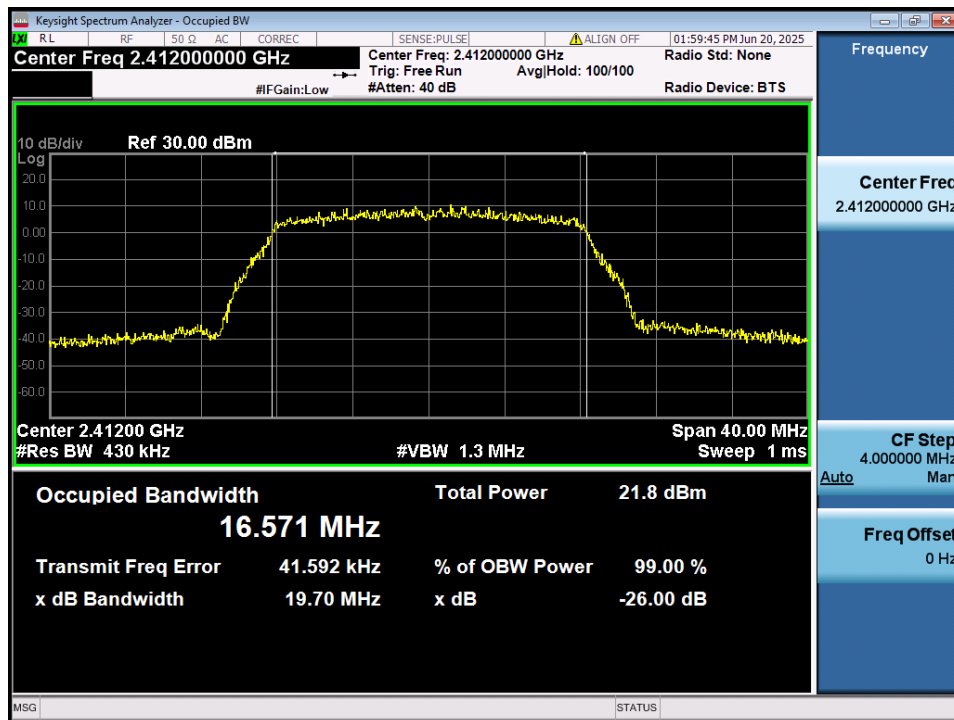
Occupied Bandwidth

TM 1 & ANT 2 & 2 472 MHz



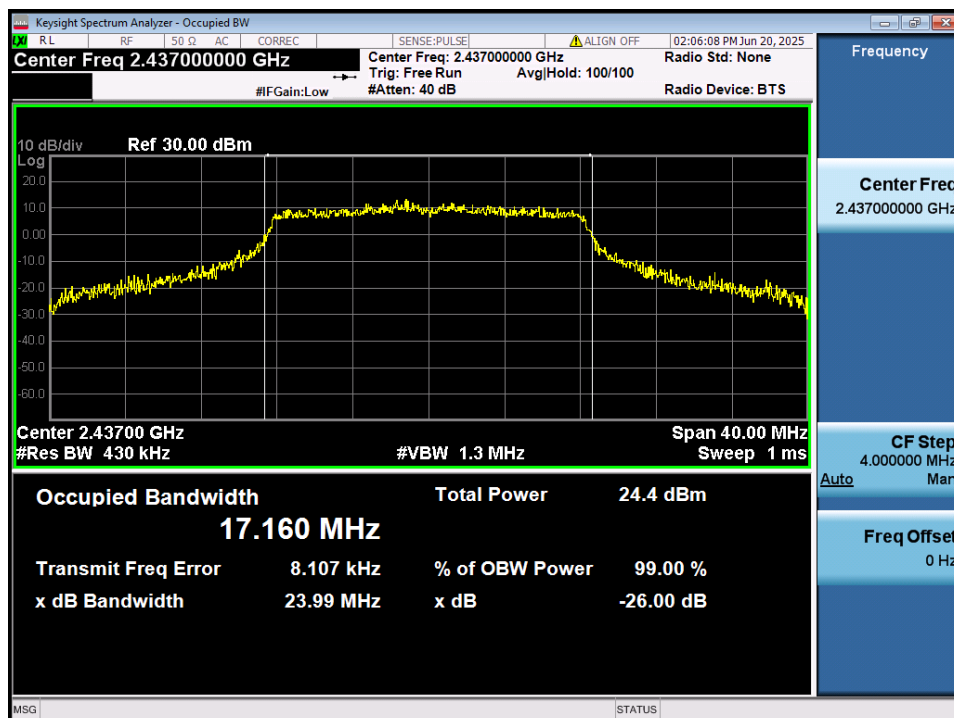
Occupied Bandwidth

TM 2 & ANT 2 & 2 412 MHz



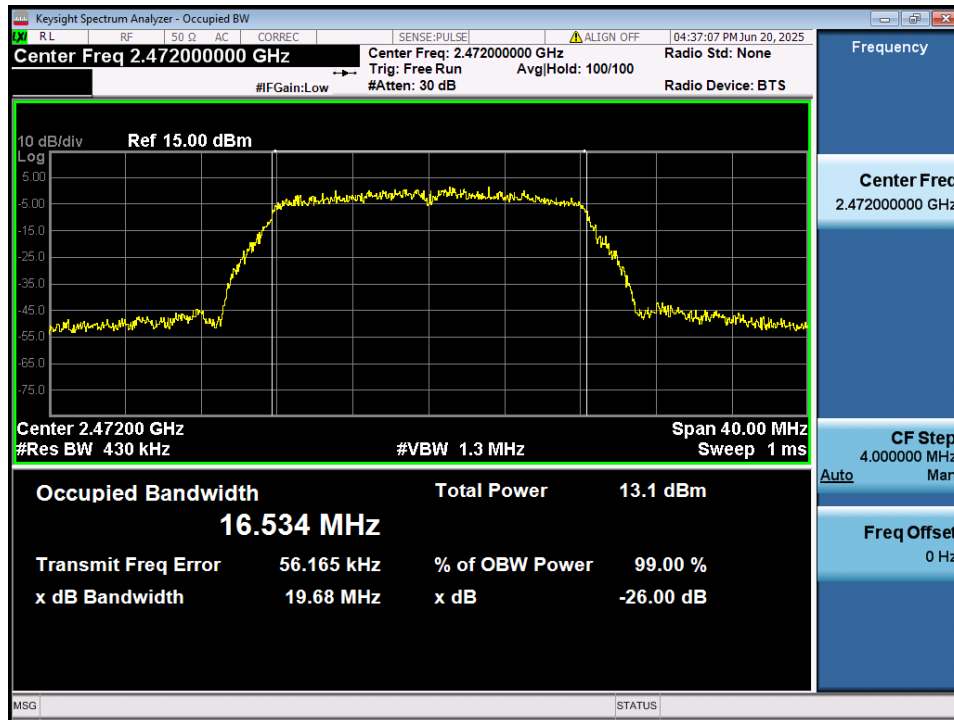
Occupied Bandwidth

TM 2 & ANT 2 & 2 437 MHz



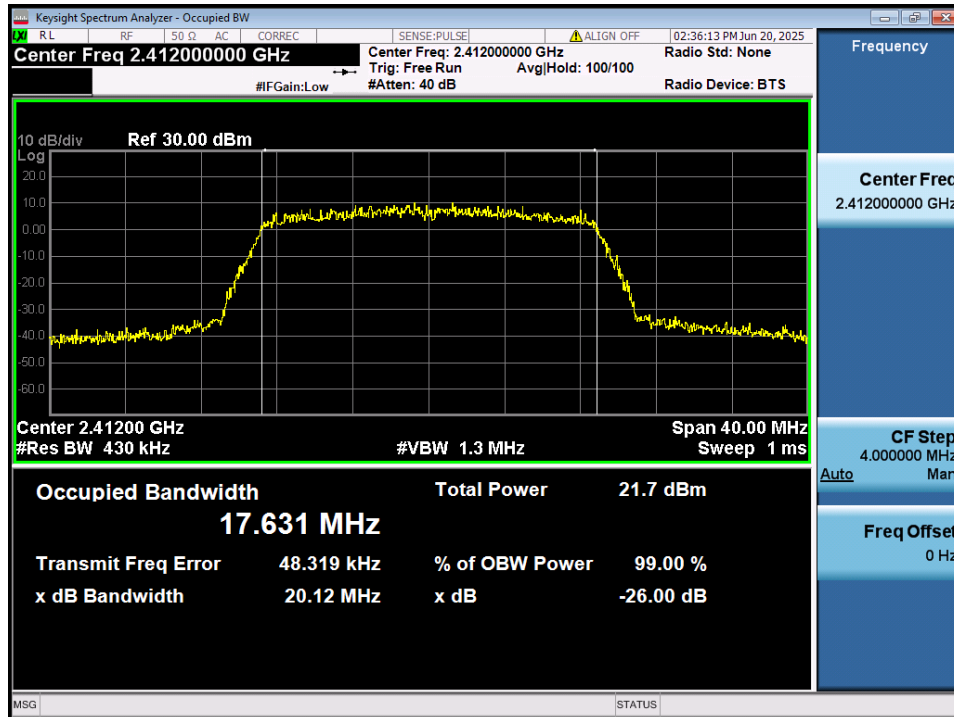
Occupied Bandwidth

TM 2 & ANT 2 & 2 472 MHz



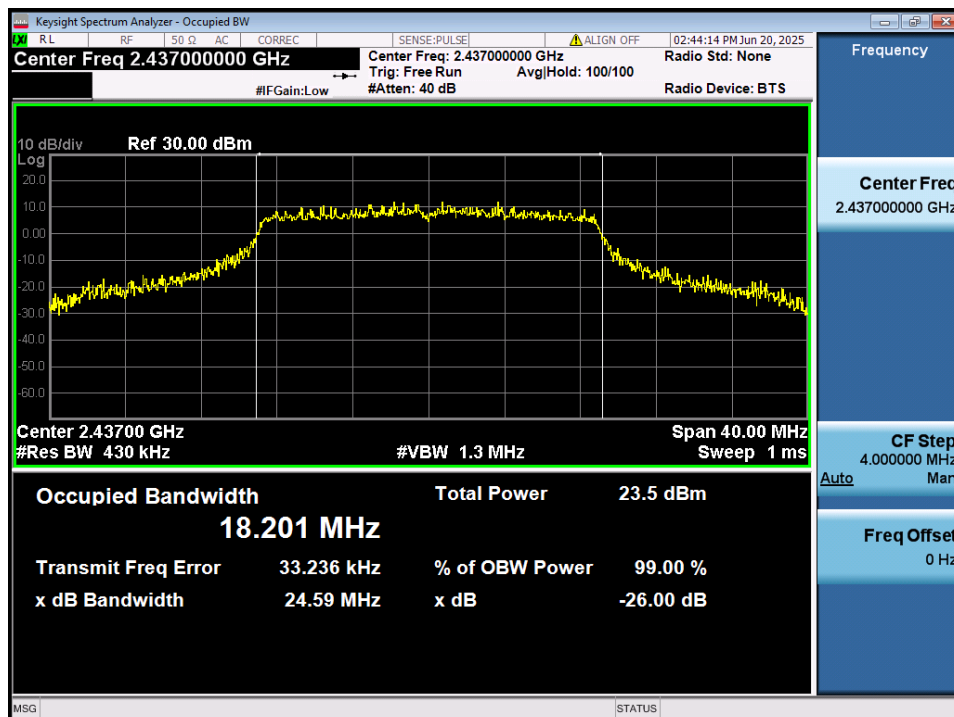
Occupied Bandwidth

TM 3 & ANT 2 & 2 412 MHz



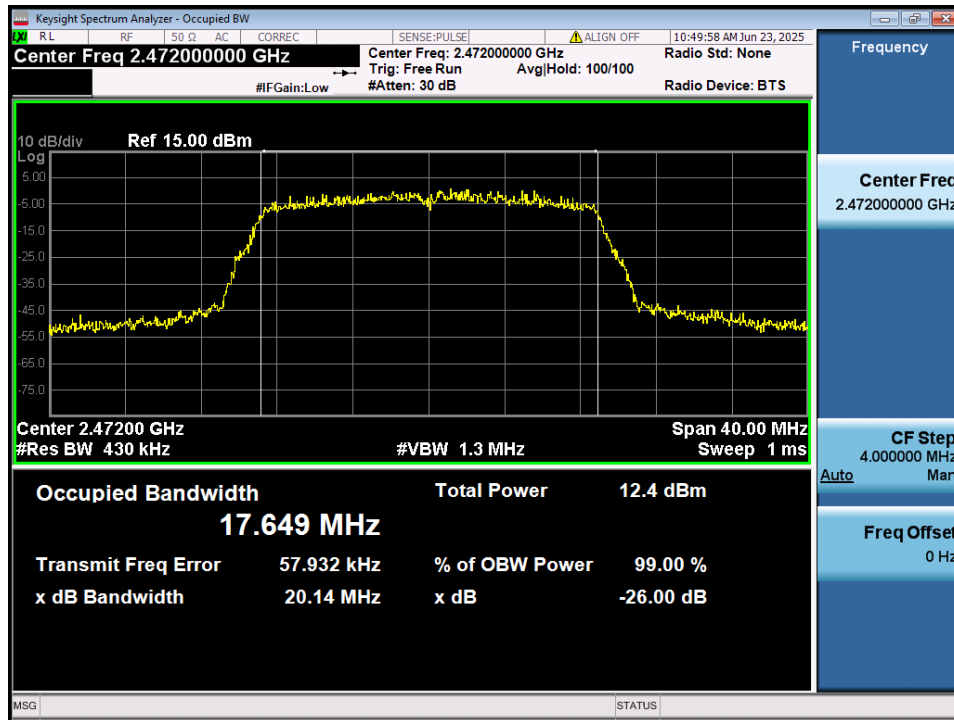
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TM 3 & ANT 2 & 2 437 MHz



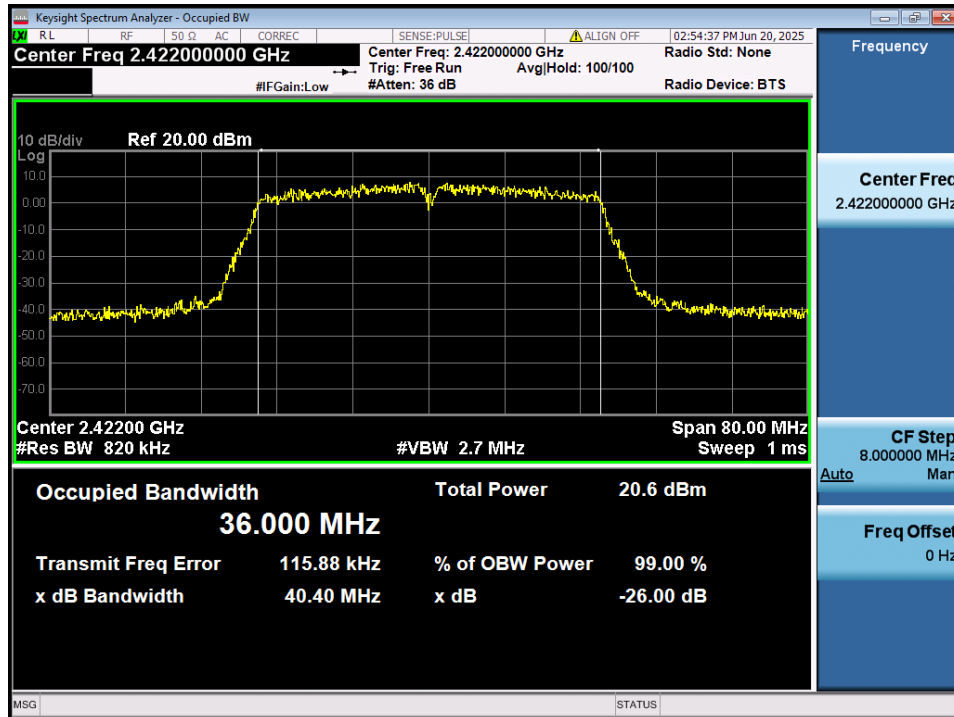
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TM 3 & ANT 2 & 2 472 MHz



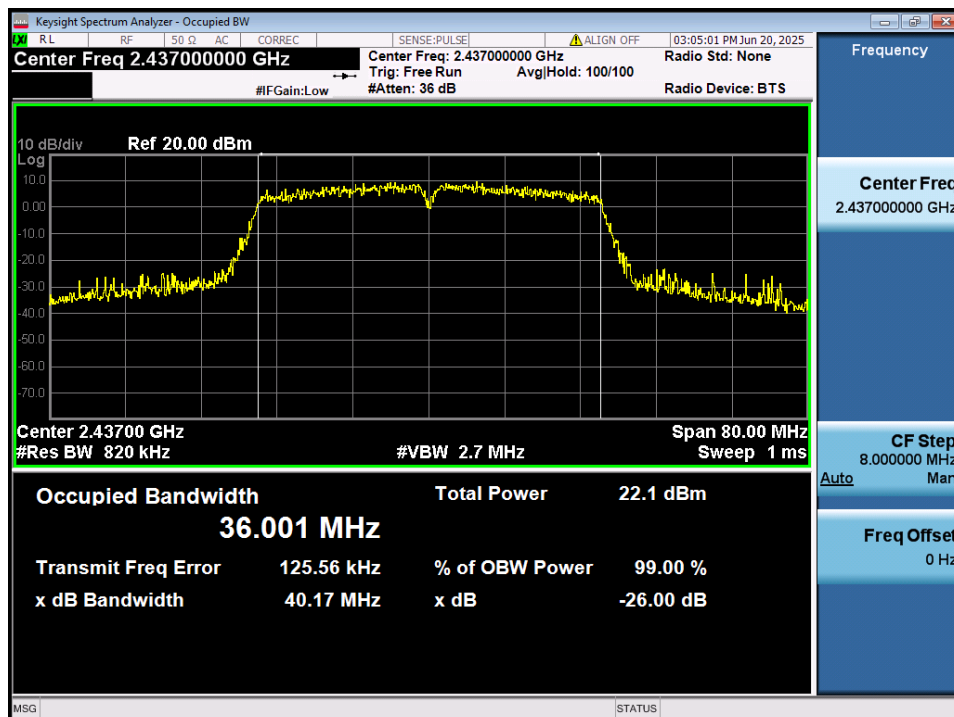
Occupied Bandwidth

TM 4 & ANT 2 & 2422 MHz



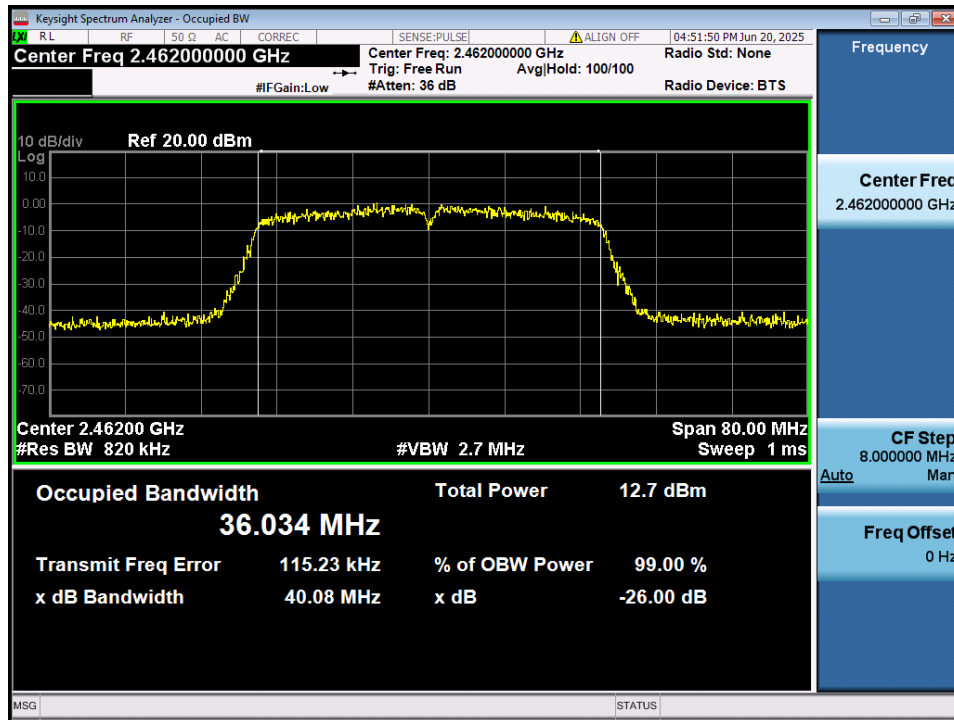
Occupied Bandwidth

TM 4 & ANT 2 & 2437 MHz



Occupied Bandwidth

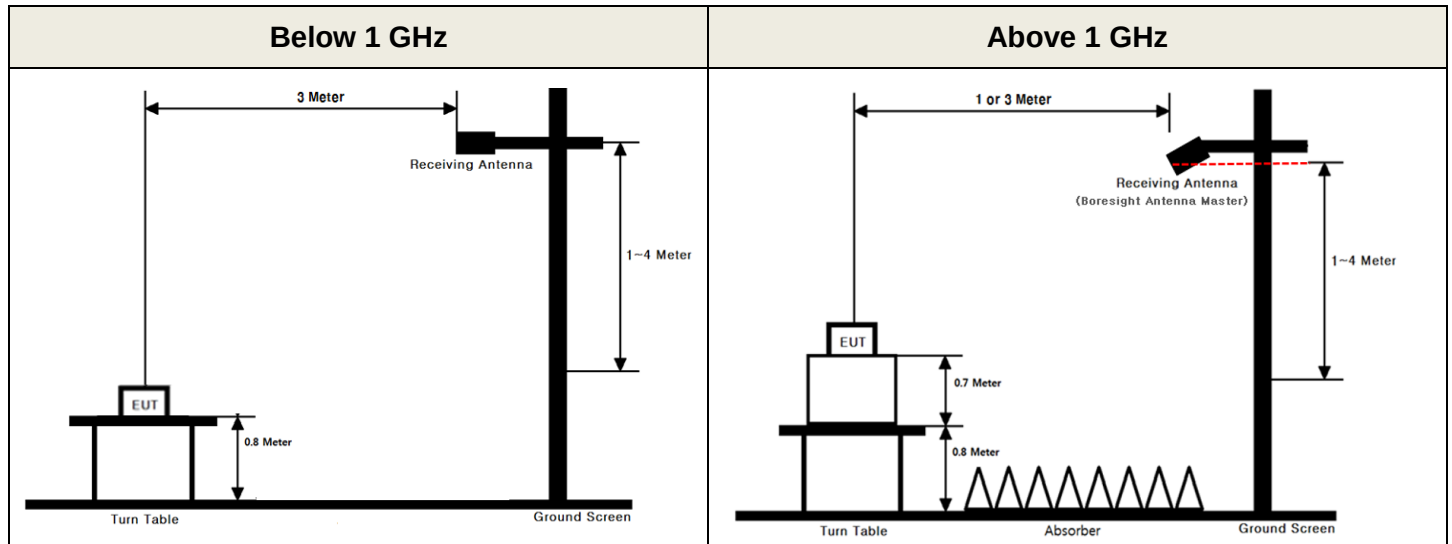
TM 4 & ANT 2 & 2 462 MHz



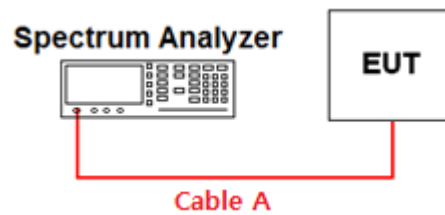
APPENDIX I

Test set up diagrams

▪ Radiated Measurement



▪ Conducted Measurement



APPENDIX II

Duty cycle plots

▪ Test Procedures

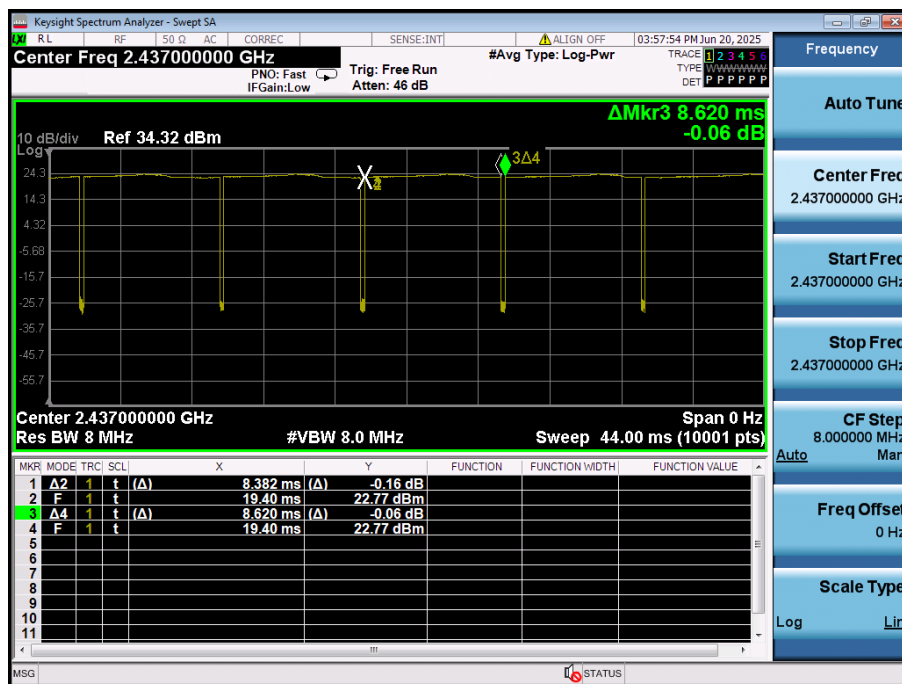
- KDB558074 D01v05r02 – Section 6

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set $RBW \geq OBW$ if possible; otherwise, set RBW to the largest available value. Set $VBW \geq RBW$. Set detector = peak or average.

The zero-span measurement method shall not be used unless both RBW and VBW are $> 50 / T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if $T \leq 16.7$ microseconds.)

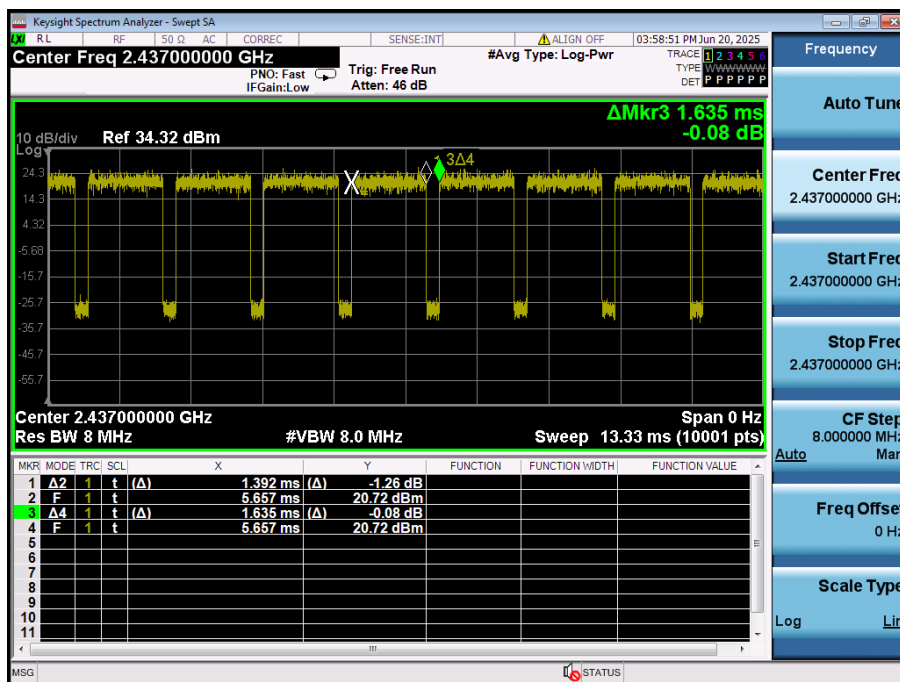
Duty Cycle

TM 1 & 2 437 MHz



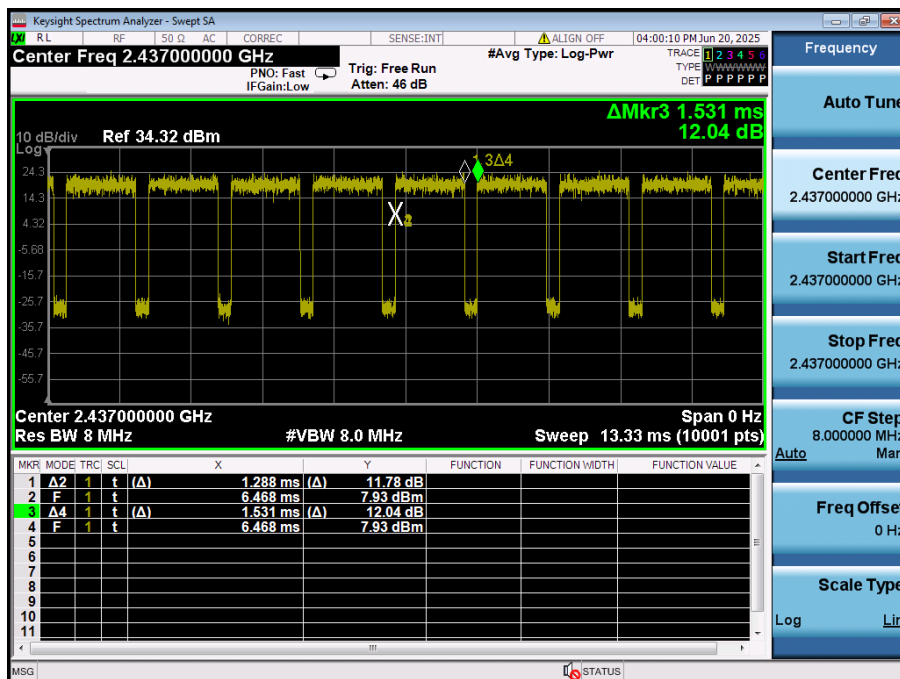
Duty Cycle

TM 2 & 2 437 MHz



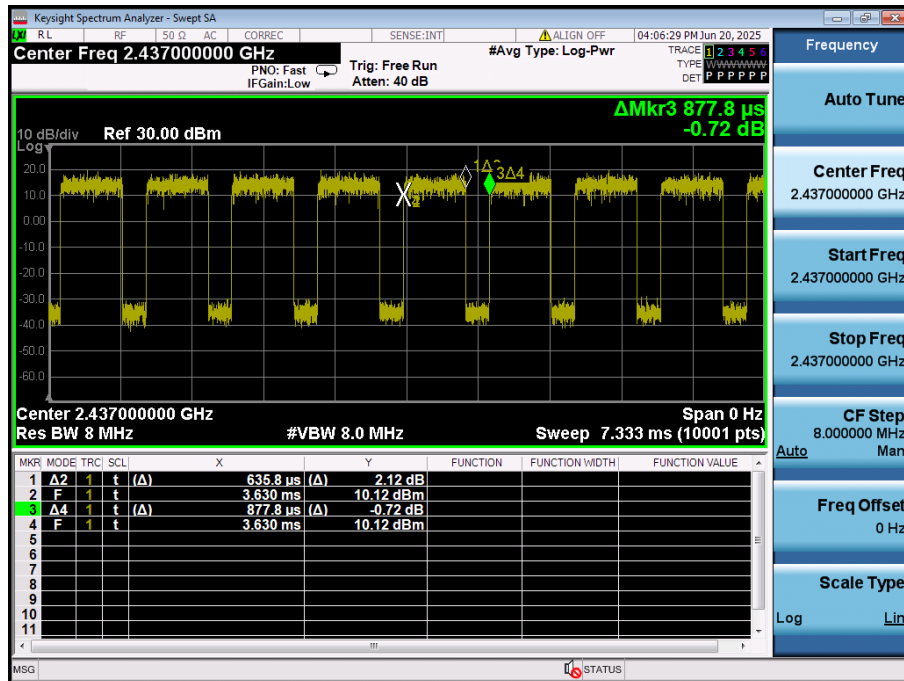
Duty Cycle

TM 3 & 2 437 MHz



Duty Cycle

TM 4 & 2 437 MHz

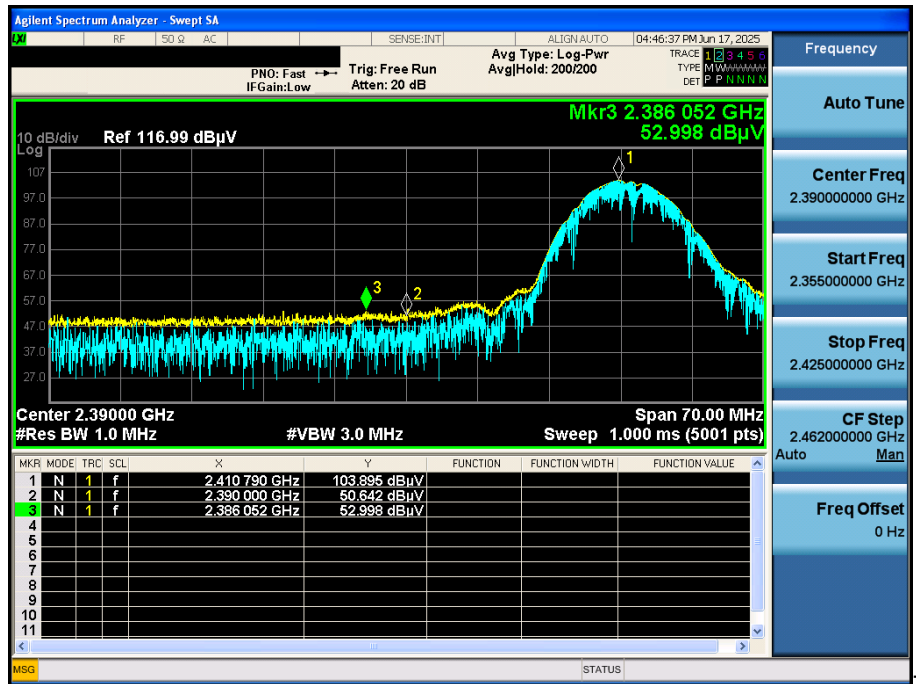


APPENDIX III

Unwanted Emissions (Radiated) Test Plot

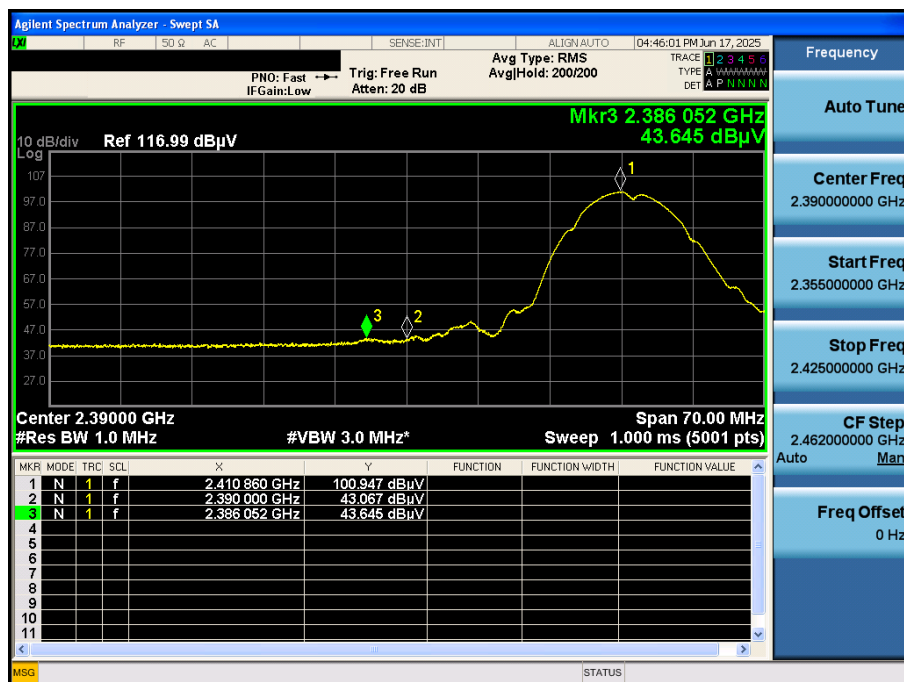
TM 1 & 2 412 MHz & Z axis & Hor

Detector Mode : PK



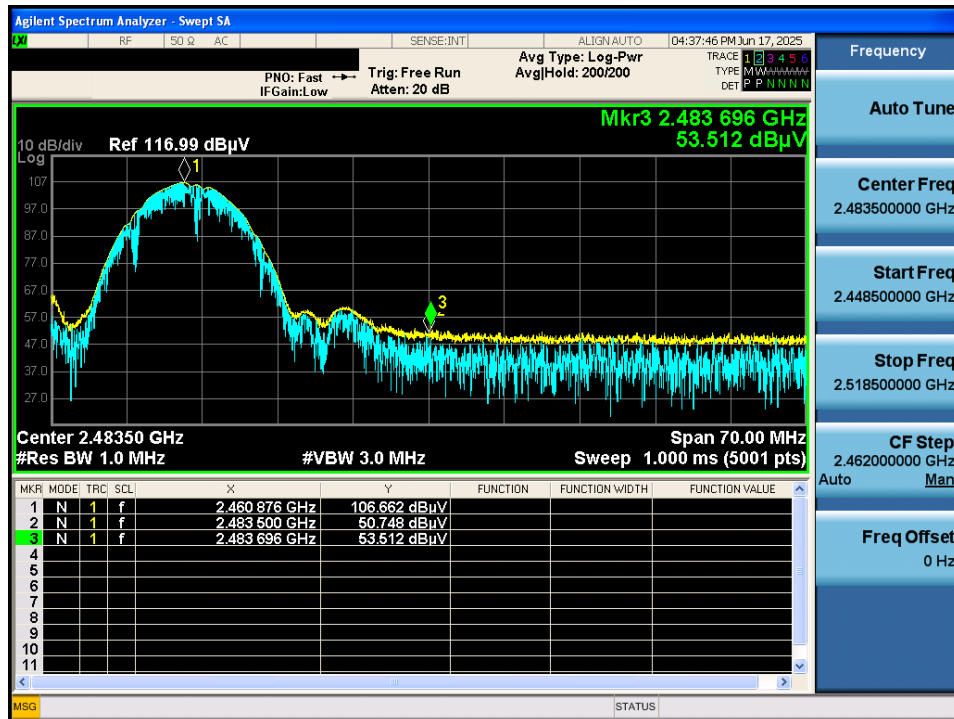
TM 1 & 2 412 MHz & Z axis & Hor

Detector Mode : AV



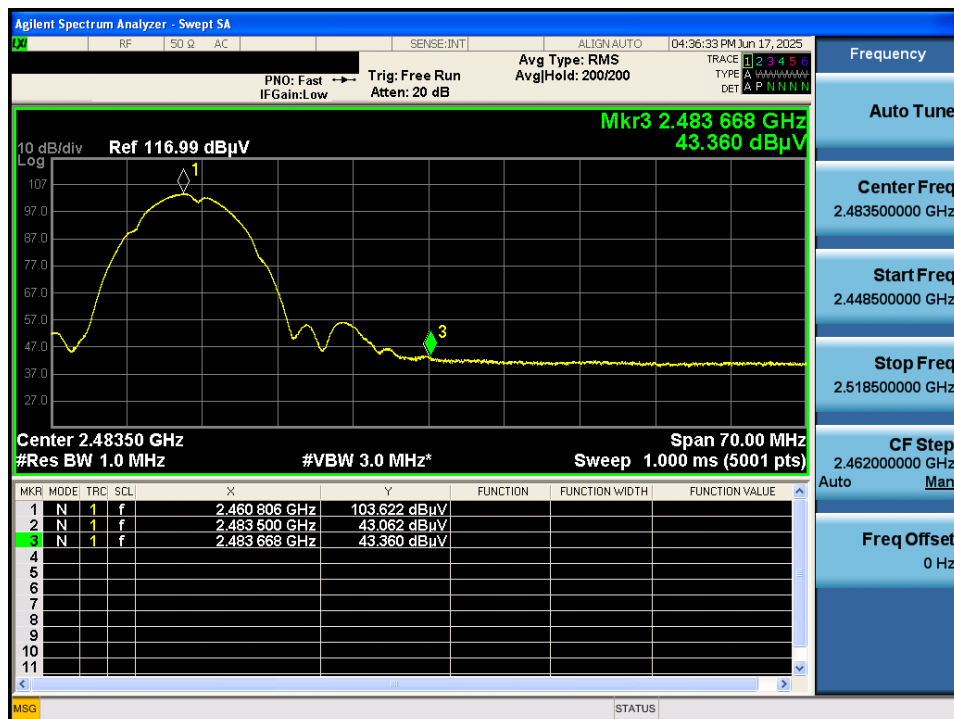
TM 1 & 2 462 MHz & Z axis & Hor

Detector Mode : PK



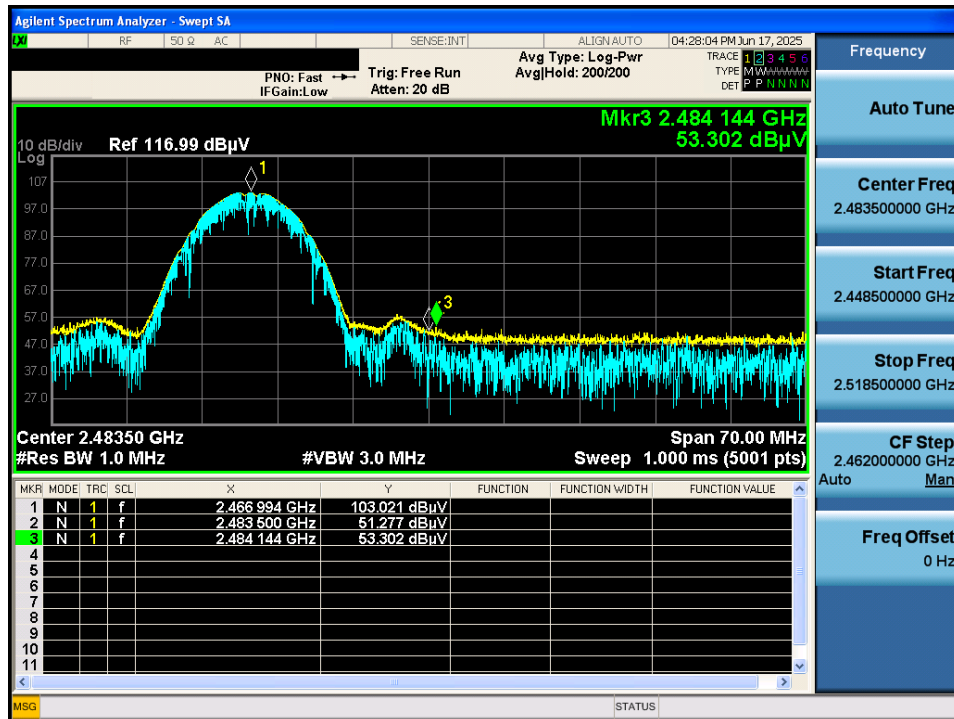
TM 1 & 2 462 MHz & Z axis & Hor

Detector Mode : AV



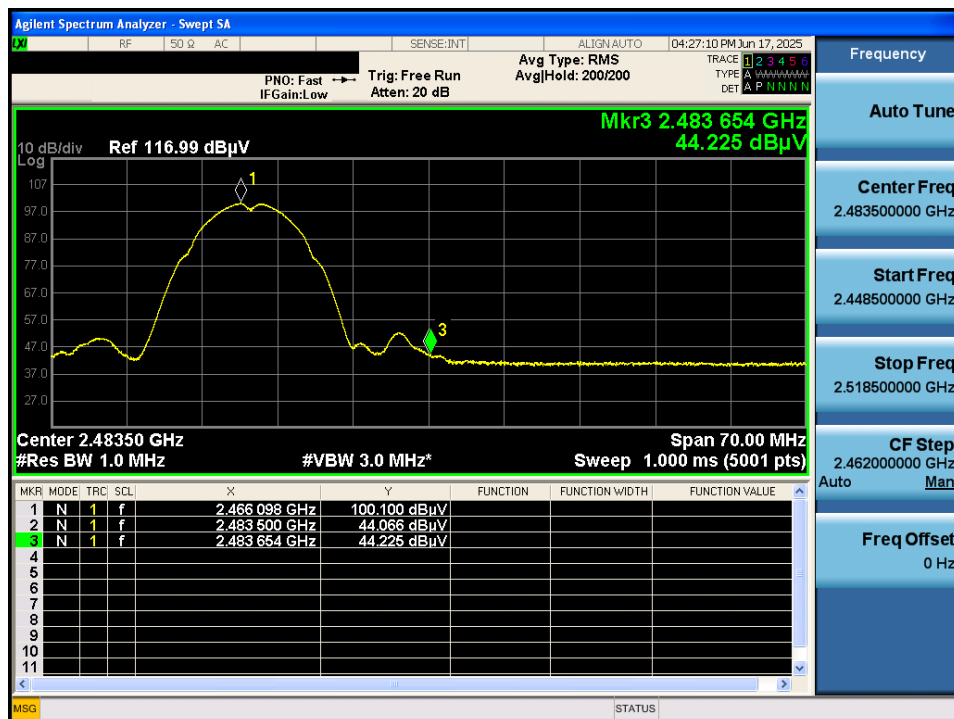
TM 1 & 2 467 MHz & Z axis & Hor

Detector Mode : PK



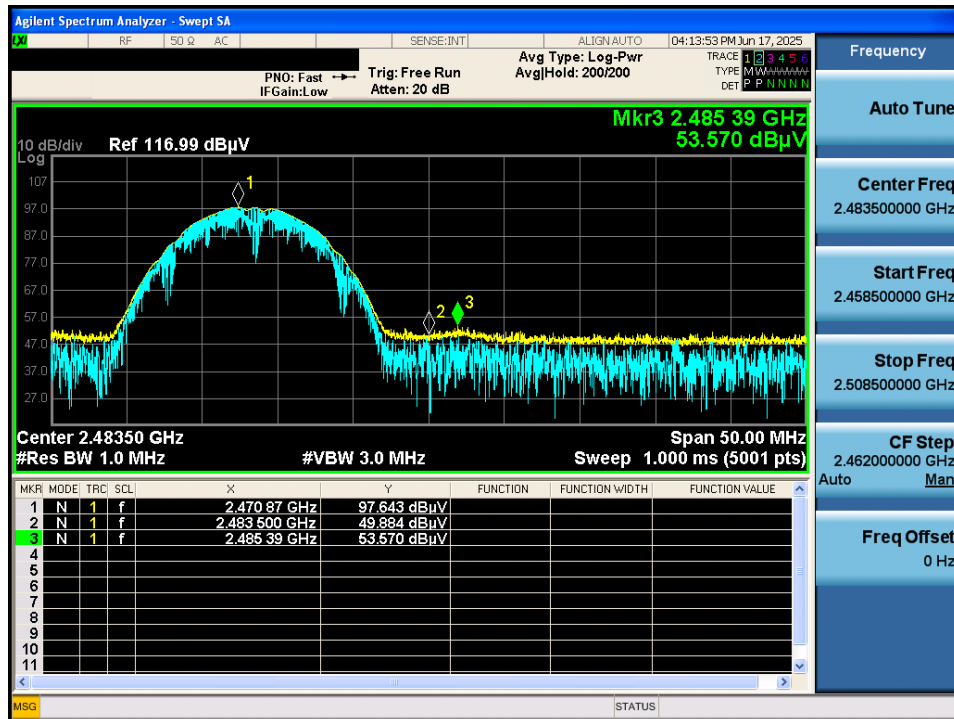
TM 1 & 2 467 MHz & Z axis & Hor

Detector Mode : AV



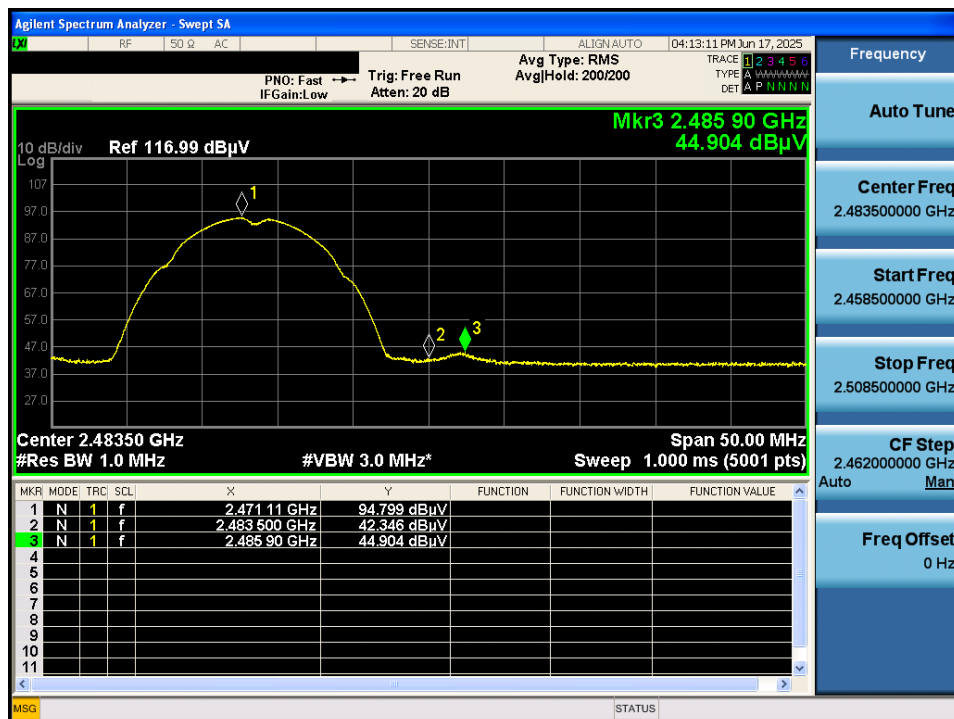
TM 1 & 2 472 MHz & Z axis & Hor

Detector Mode : PK



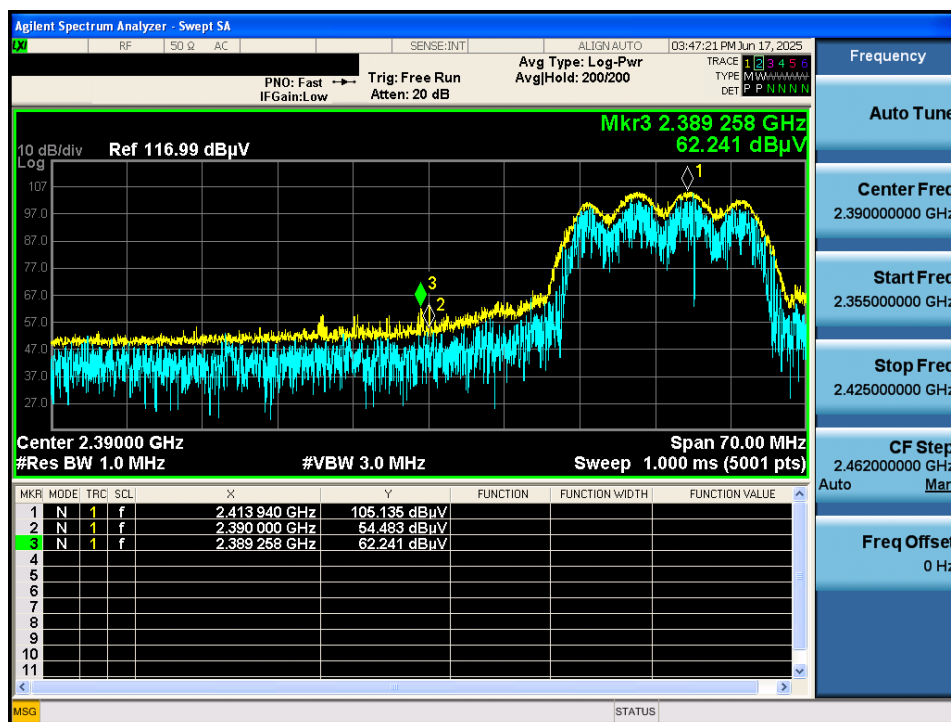
TM 1 & 2 472 MHz & Z axis & Hor

Detector Mode : AV



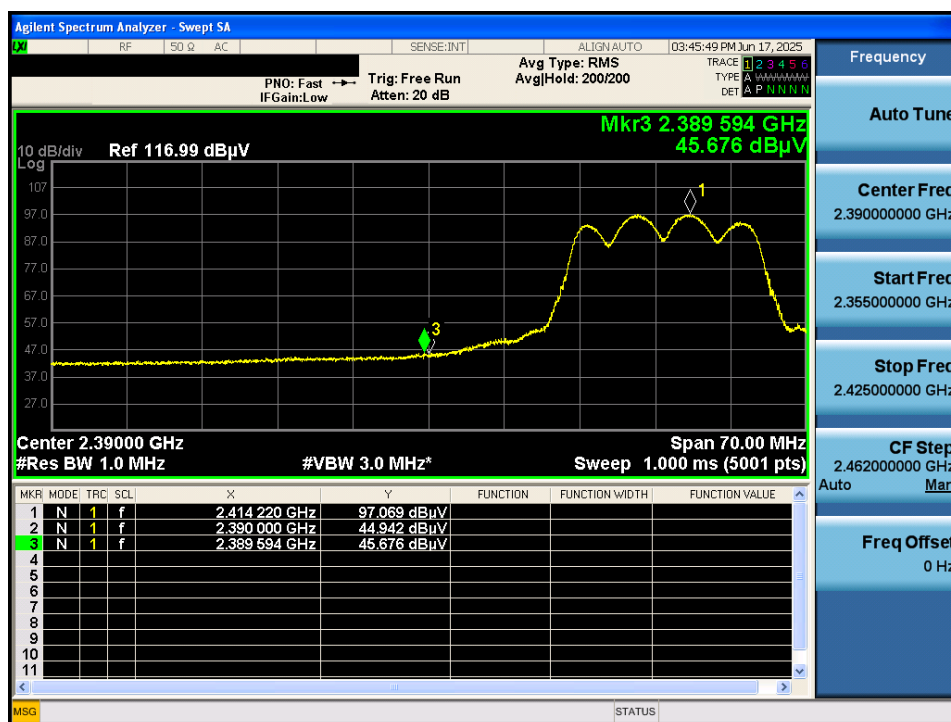
TM 2 & 2 412 MHz & Z axis & Hor

Detector Mode : PK



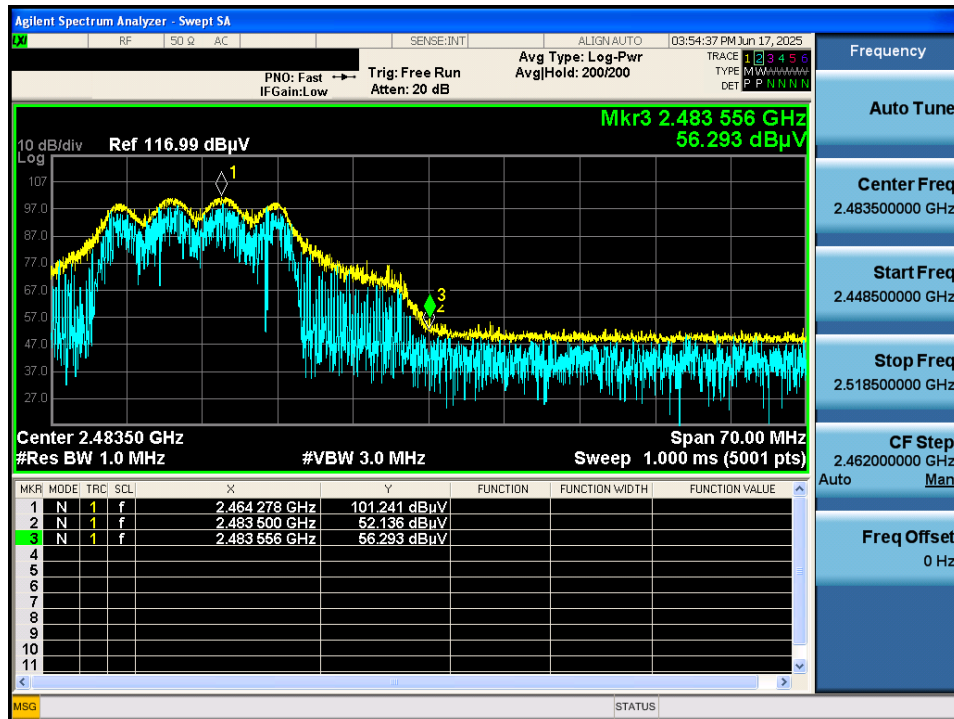
TM 2 & 2 412 MHz & Z axis & Hor

Detector Mode : AV



TM 2 & 2 462 MHz & Z axis & Hor

Detector Mode : PK



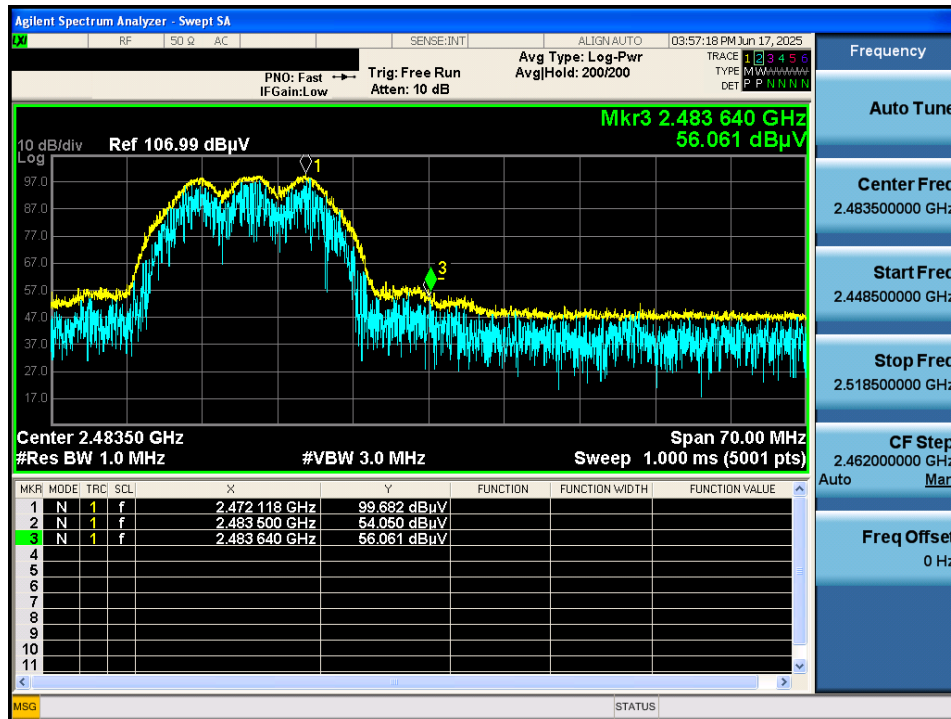
TM 2 & 2 462 MHz & X axis & Hor

Detector Mode : AV



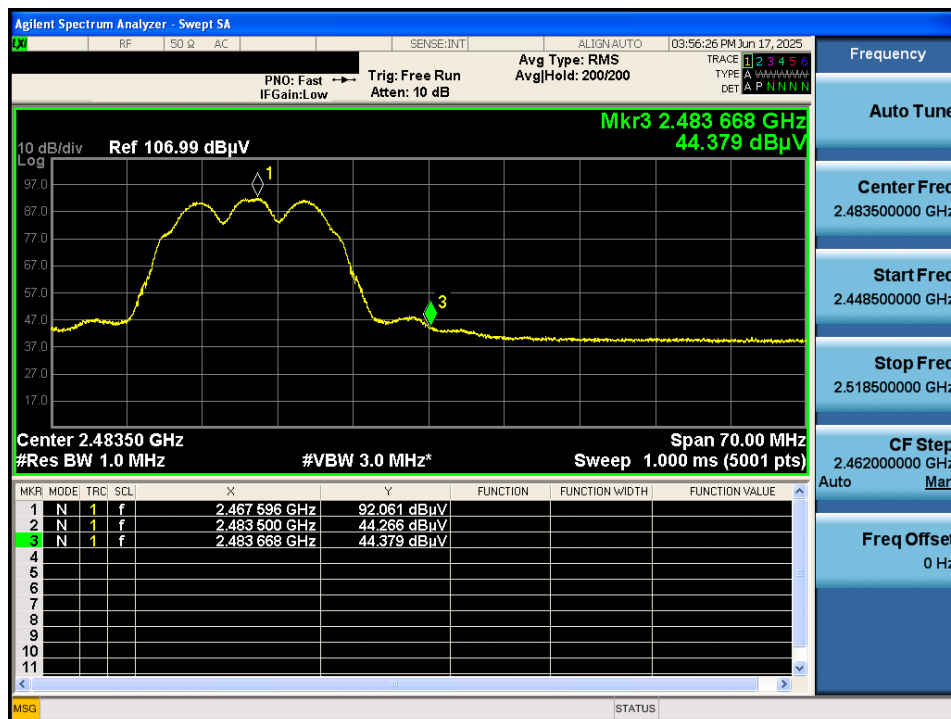
TM 2 & 2 467 MHz & Z axis & Hor

Detector Mode : PK



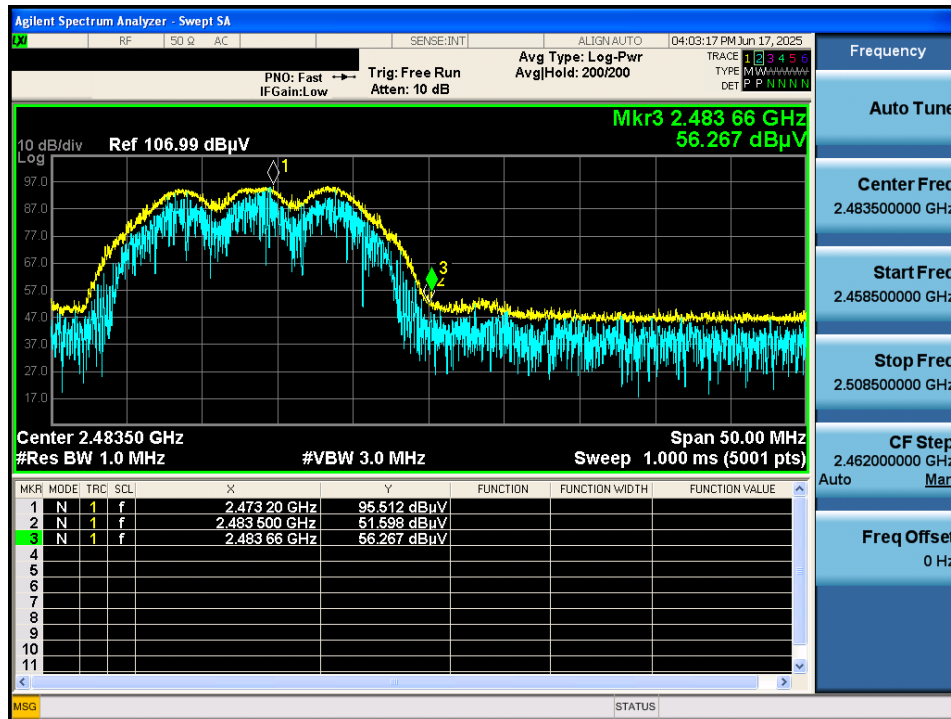
TM 2 & 2 467 MHz & Z axis & Hor

Detector Mode : AV



TM 2 & 2 472 MHz & Z axis & Hor

Detector Mode : PK



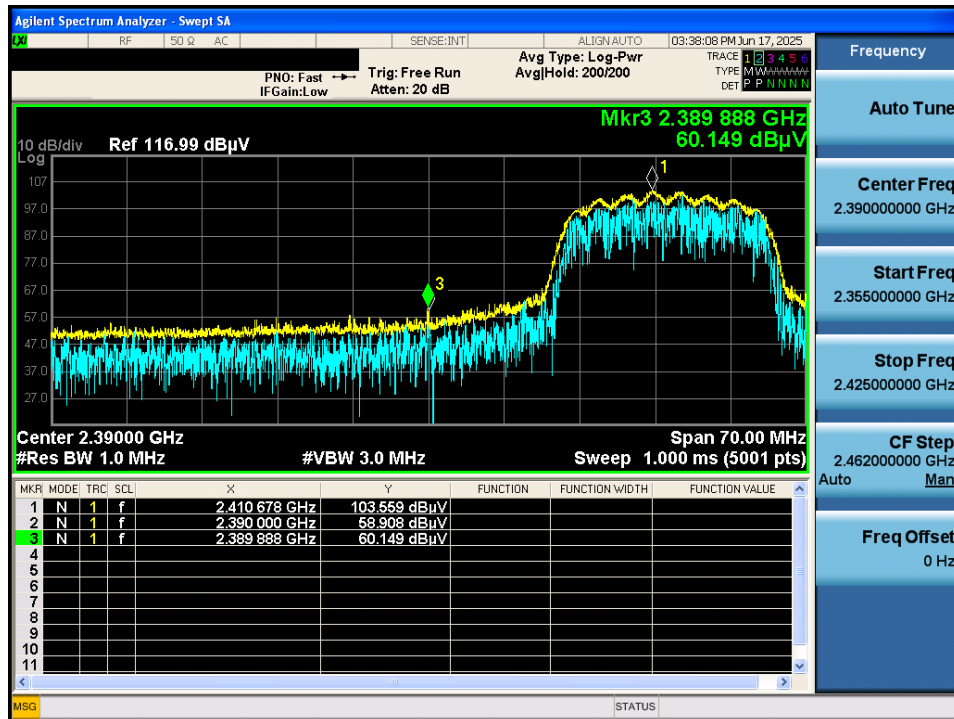
TM 2 & 2 472 MHz & Z axis & Hor

Detector Mode : AV



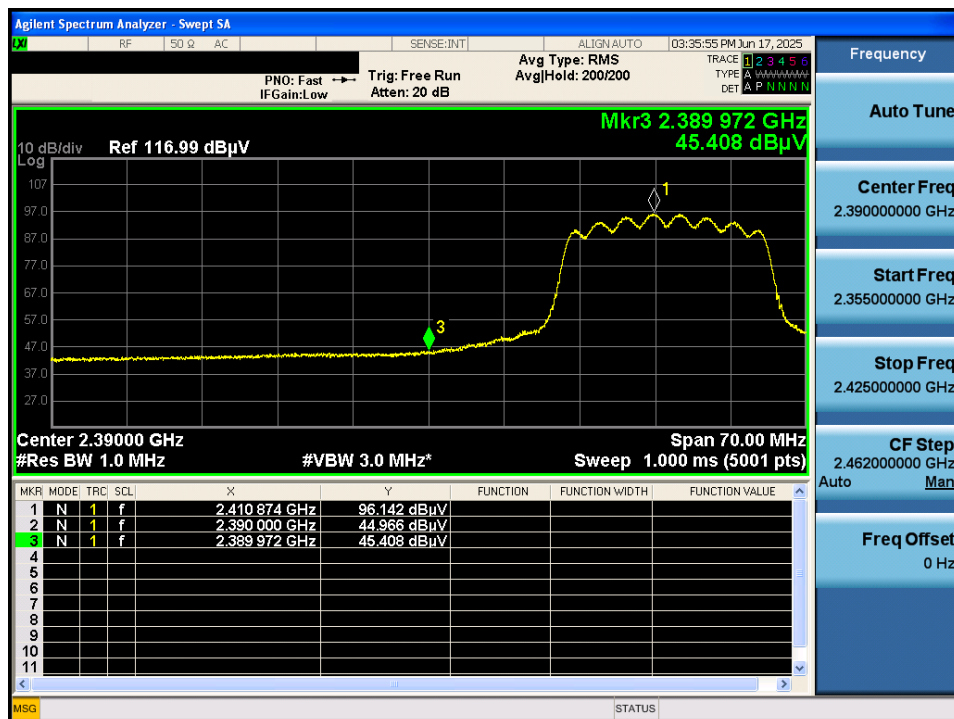
TM 3 & 2 412 MHz & Z axis & Hor

Detector Mode : PK



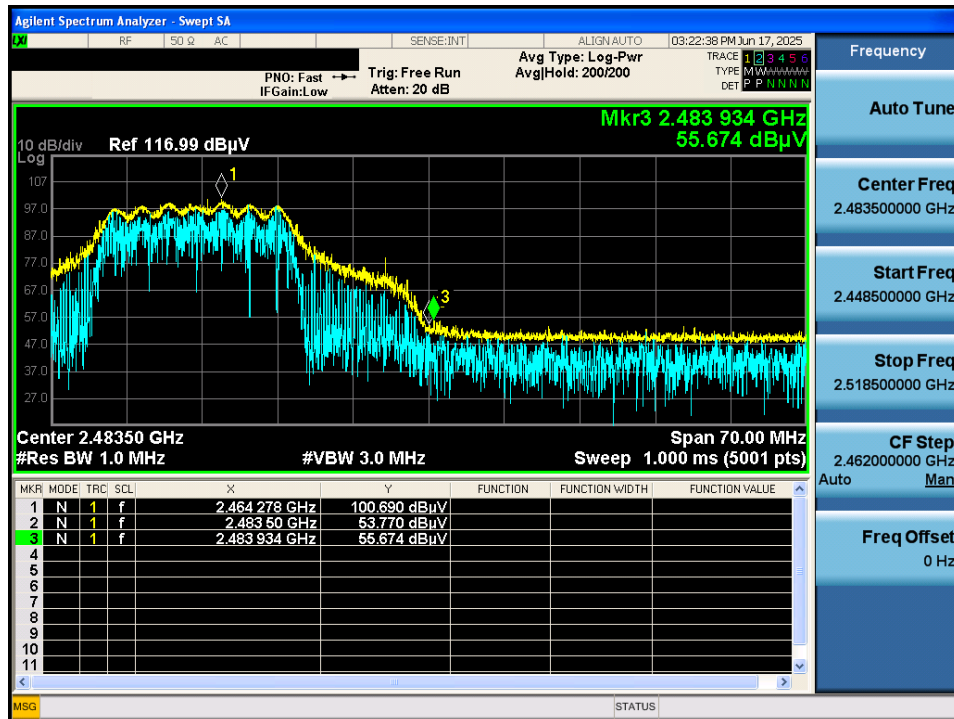
TM 3 & 2 412 MHz & Z axis & Hor

Detector Mode : AV



TM 3 & 2 462 MHz & Z axis & Hor

Detector Mode : PK



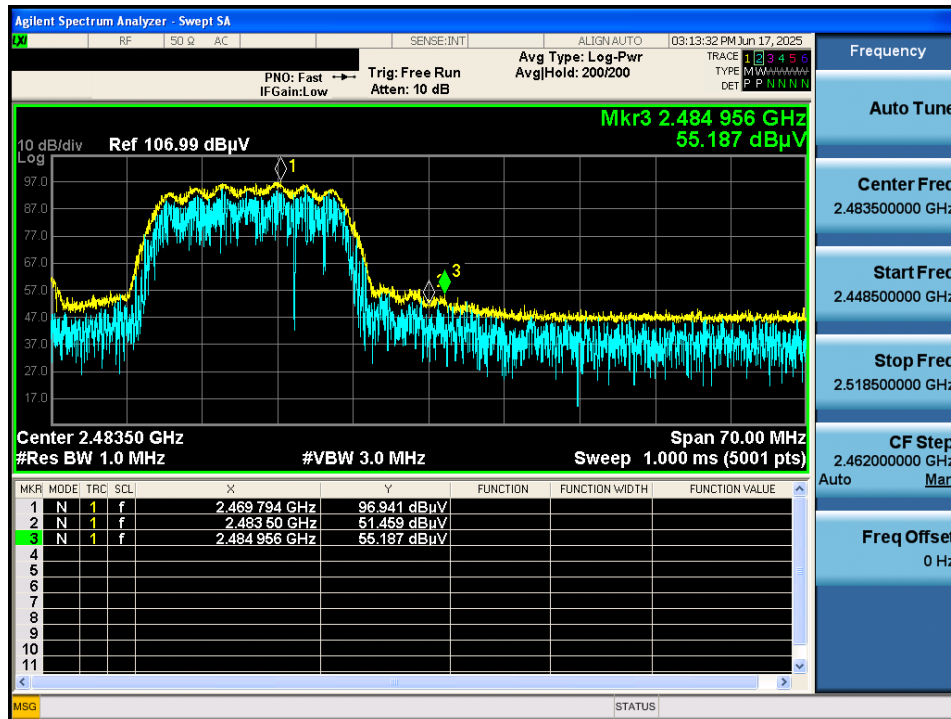
TM 3 & 2 462 MHz & Z axis & Hor

Detector Mode : AV



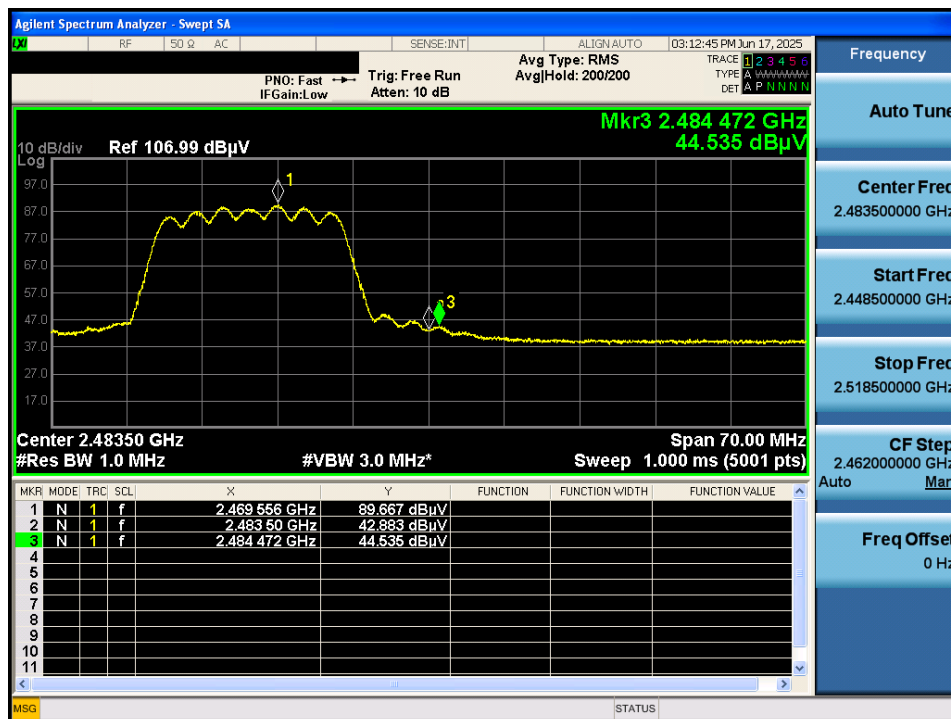
TM 3 & 2 467 MHz & Z axis & Hor

Detector Mode : PK



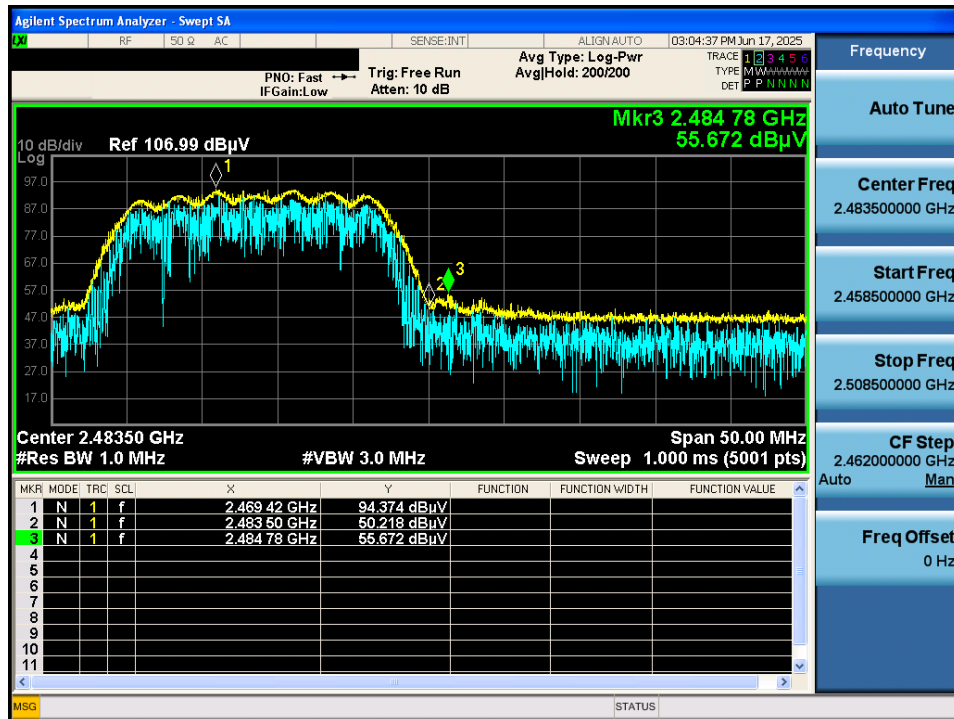
TM 3 & 2 467 MHz & Z axis & Hor

Detector Mode : AV



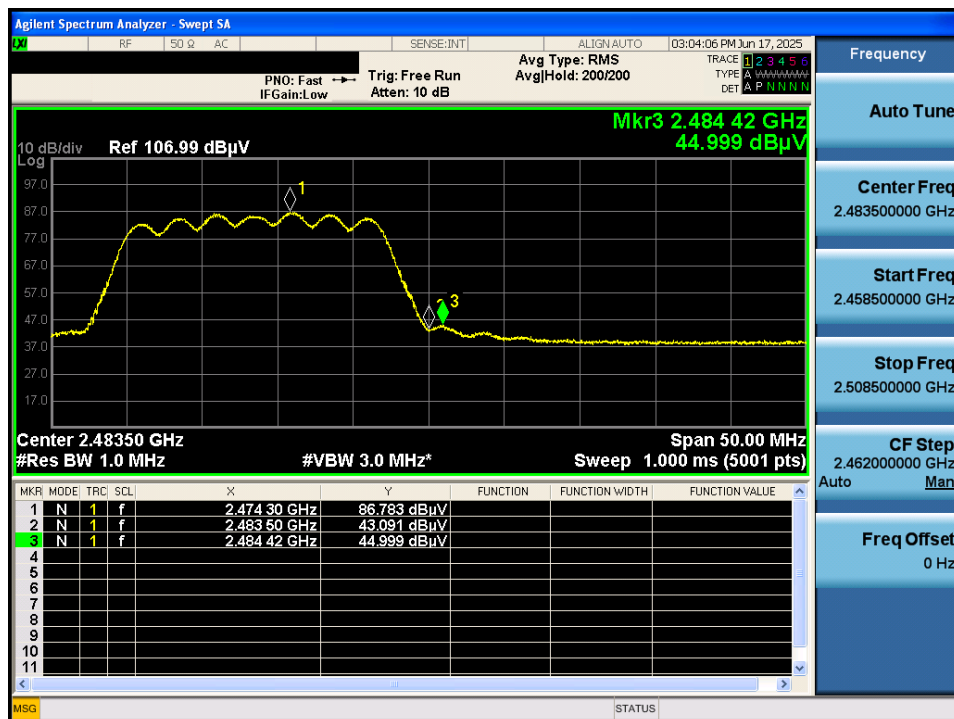
TM 3 & 2 472 MHz & Z axis & Hor

Detector Mode : PK



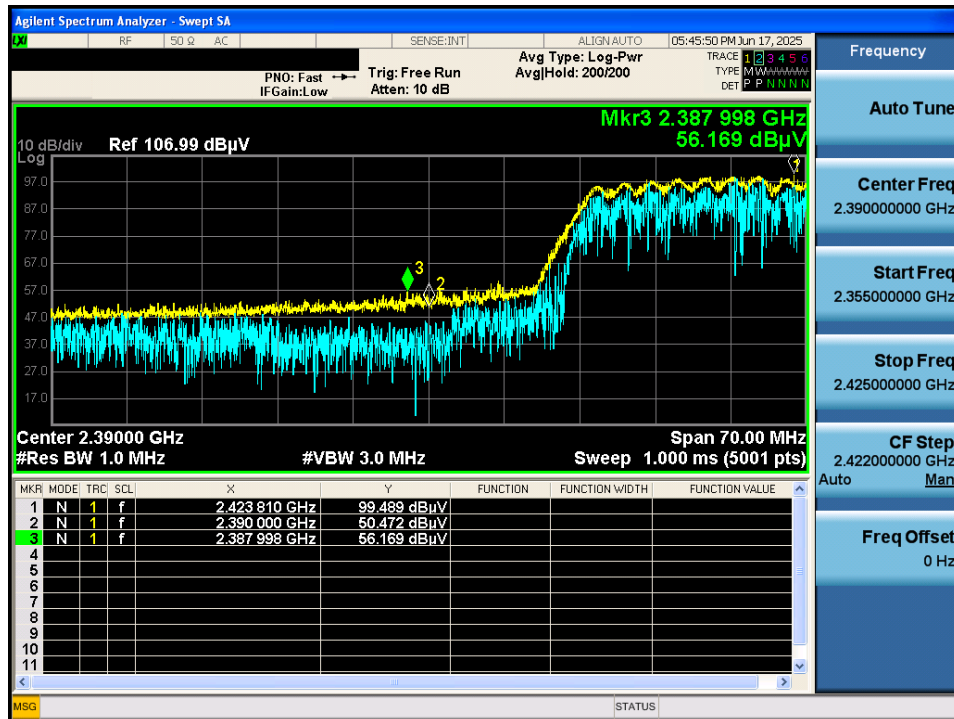
TM 3 & 2 472 MHz & Z axis & Hor

Detector Mode : AV



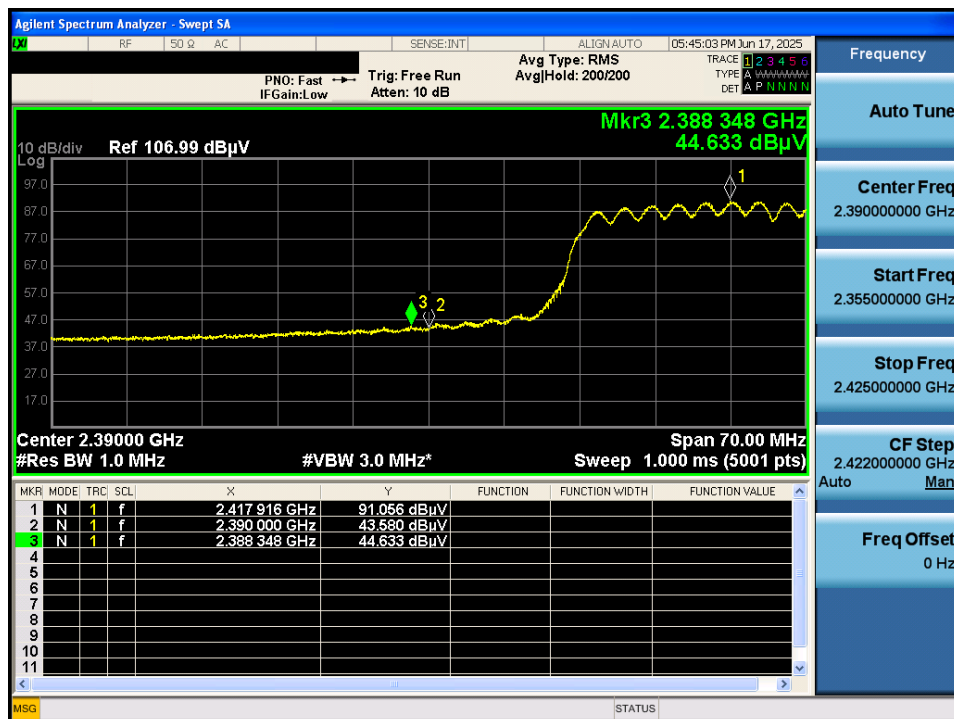
TM 4 & 2 422 MHz & Z axis & Hor

Detector Mode : PK



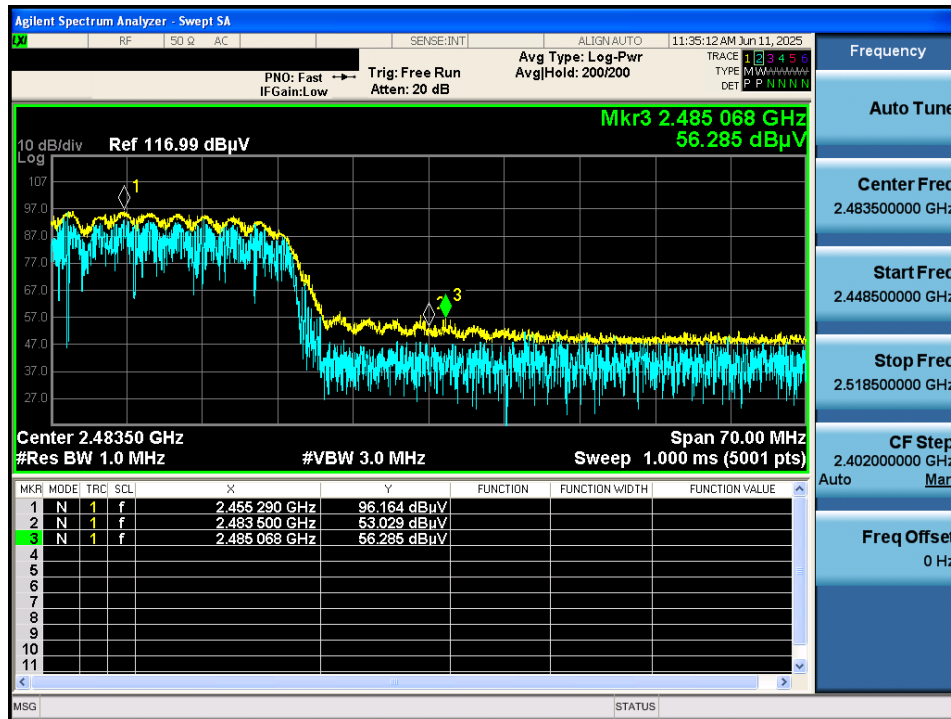
TM 4 & 2 422 MHz & Z axis & Hor

Detector Mode : AV



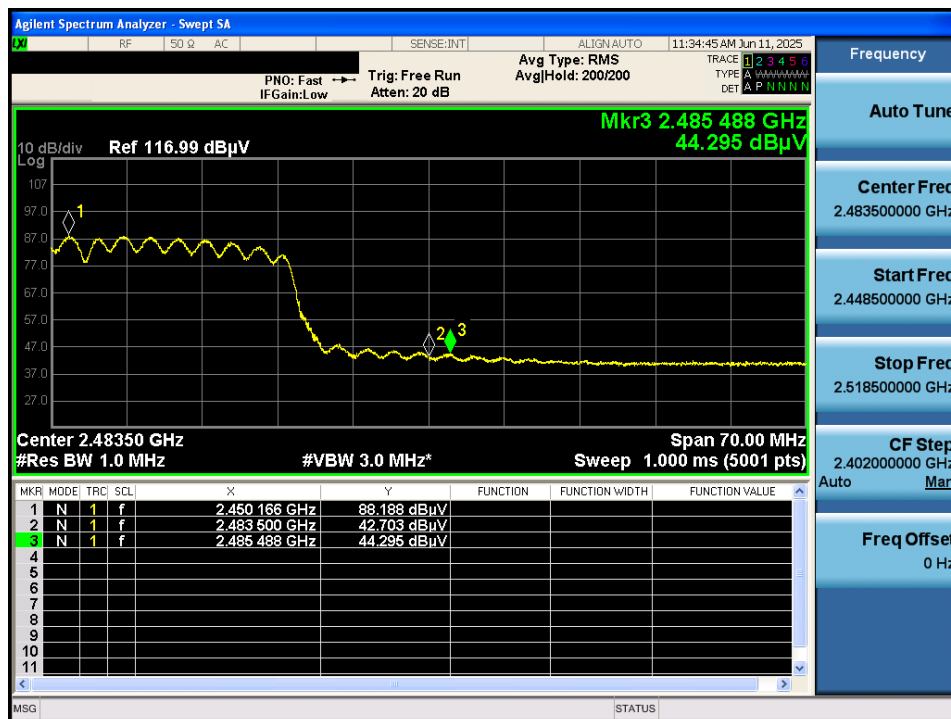
TM 4 & 2 452 MHz & Z axis & Hor

Detector Mode : PK



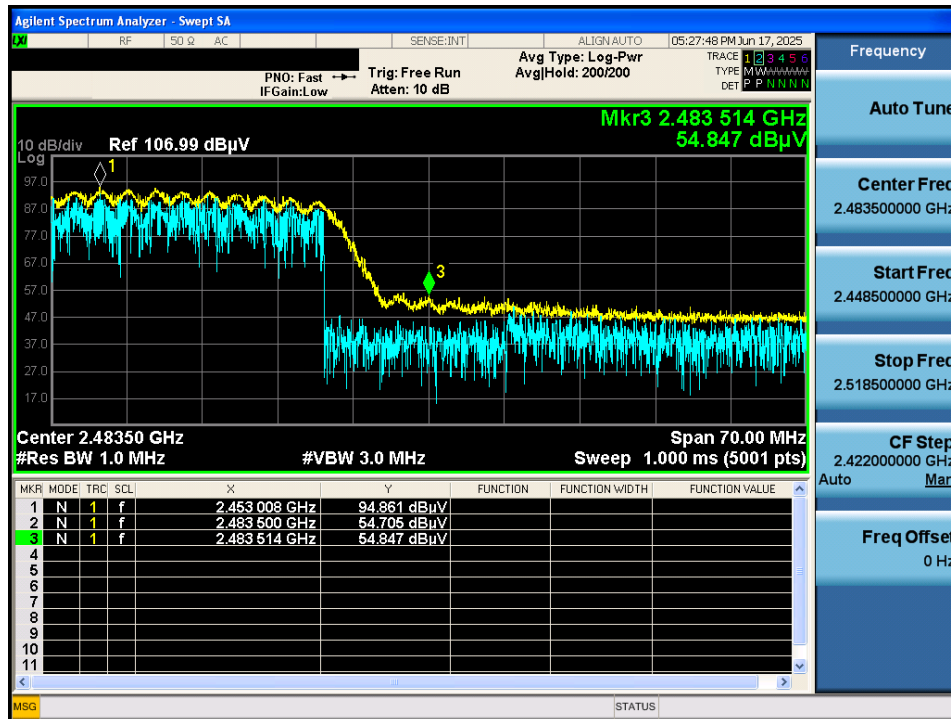
TM 4 & 2 452 MHz & Z axis & Hor

Detector Mode : AV



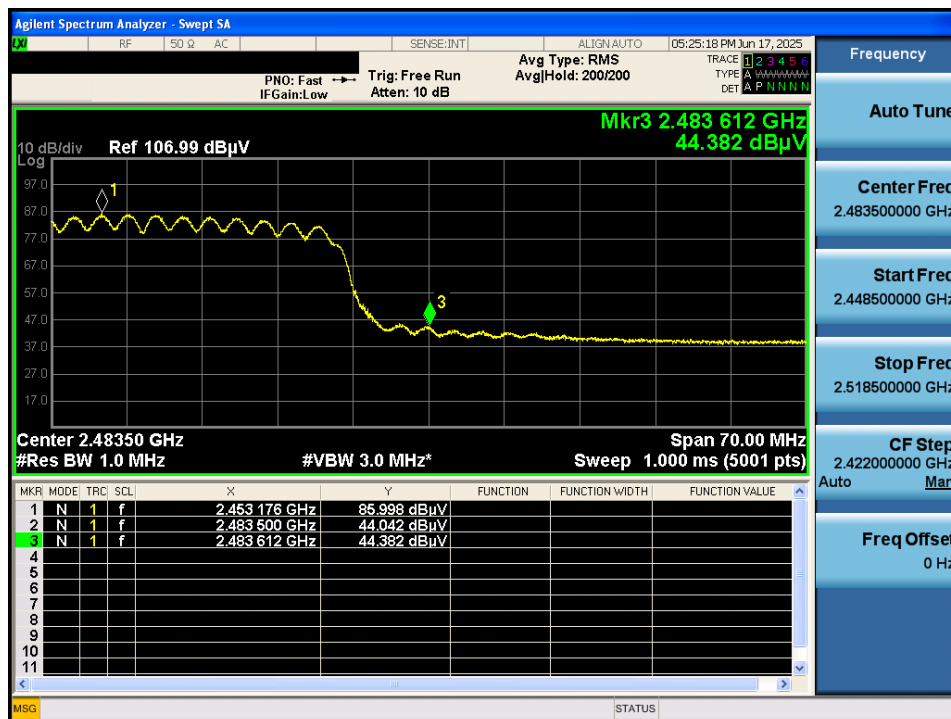
TM 4 & 2 457 MHz & Z axis & Hor

Detector Mode : PK



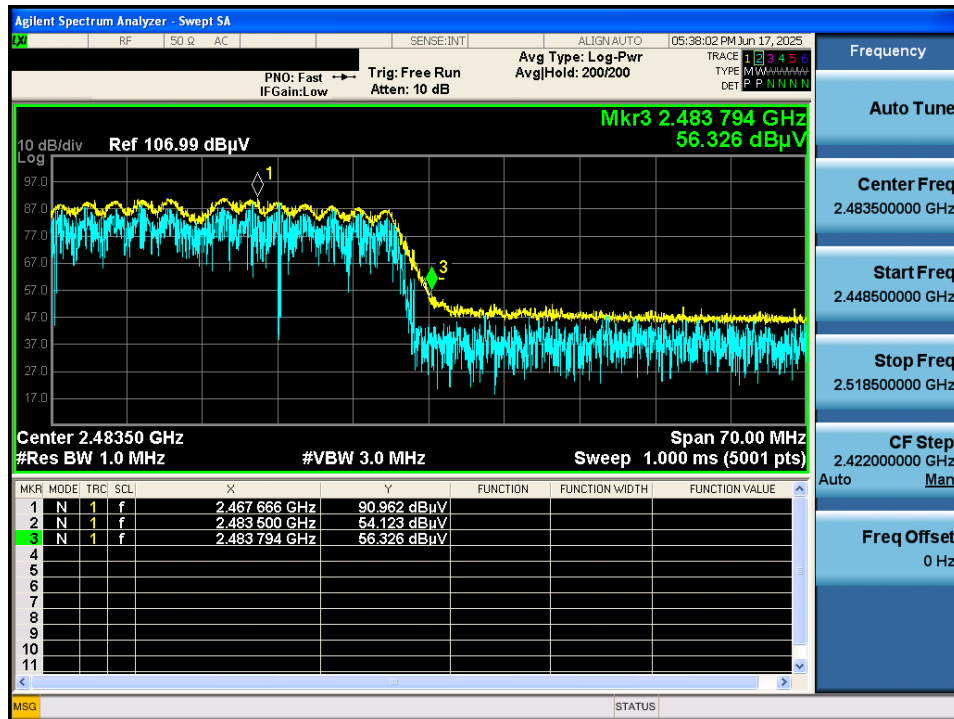
TM 4 & 2 457 MHz & Z axis & Hor

Detector Mode : AV



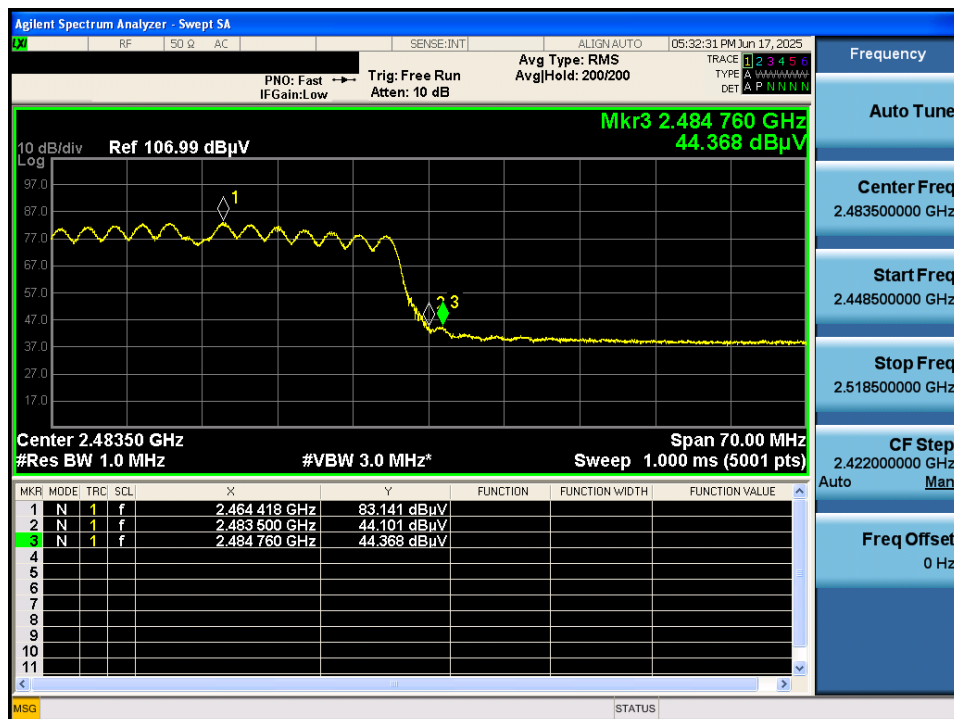
TM 4 & 2 462 MHz & Z axis & Hor

Detector Mode : PK



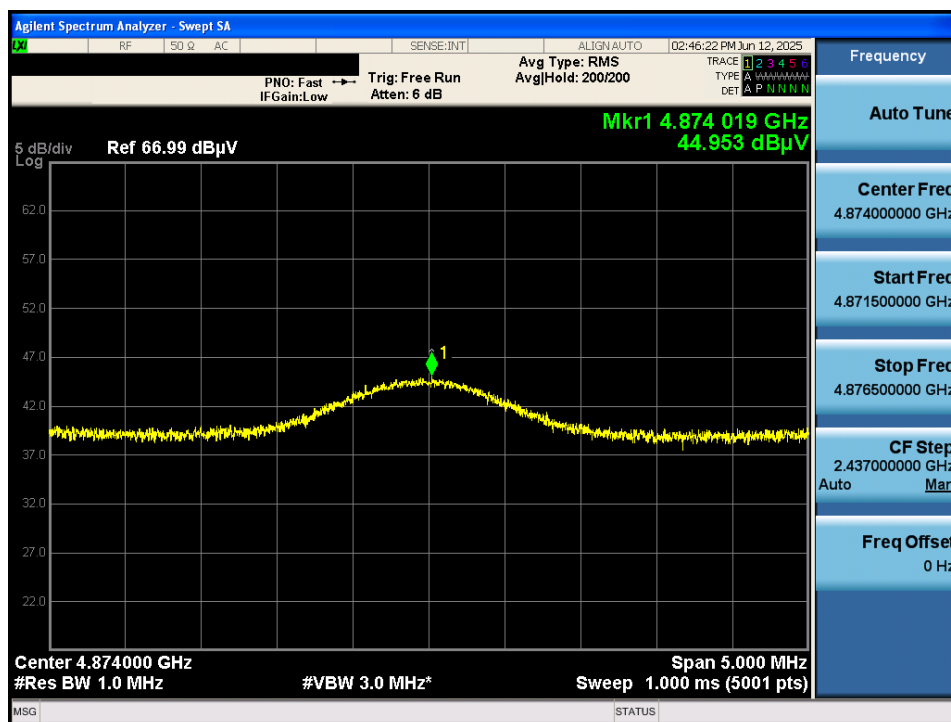
TM 4 & 2 462 MHz & Z axis & Hor

Detector Mode : AV



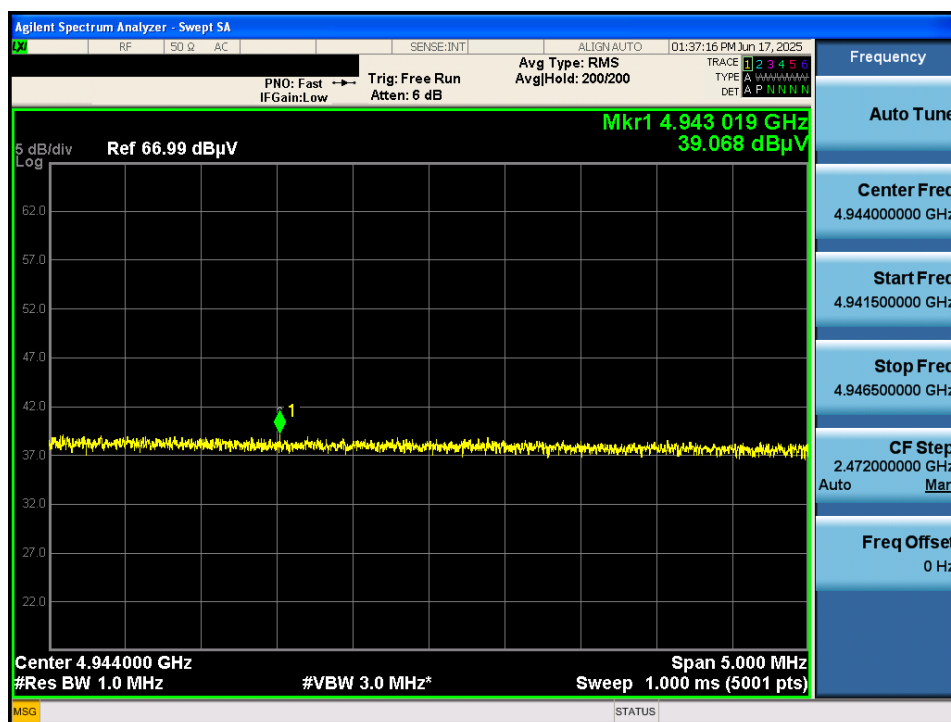
TM 1 & 2 437 MHz & Z axis & Ver

Detector Mode : AV



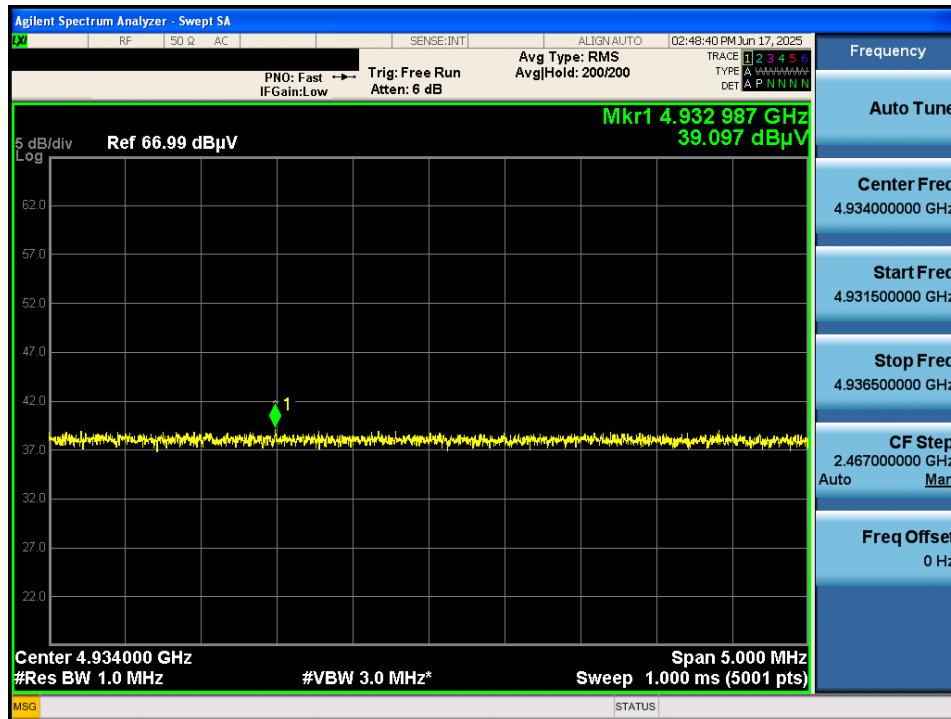
TM 2 & 2 472 MHz & Z axis & Ver

Detector Mode : AV



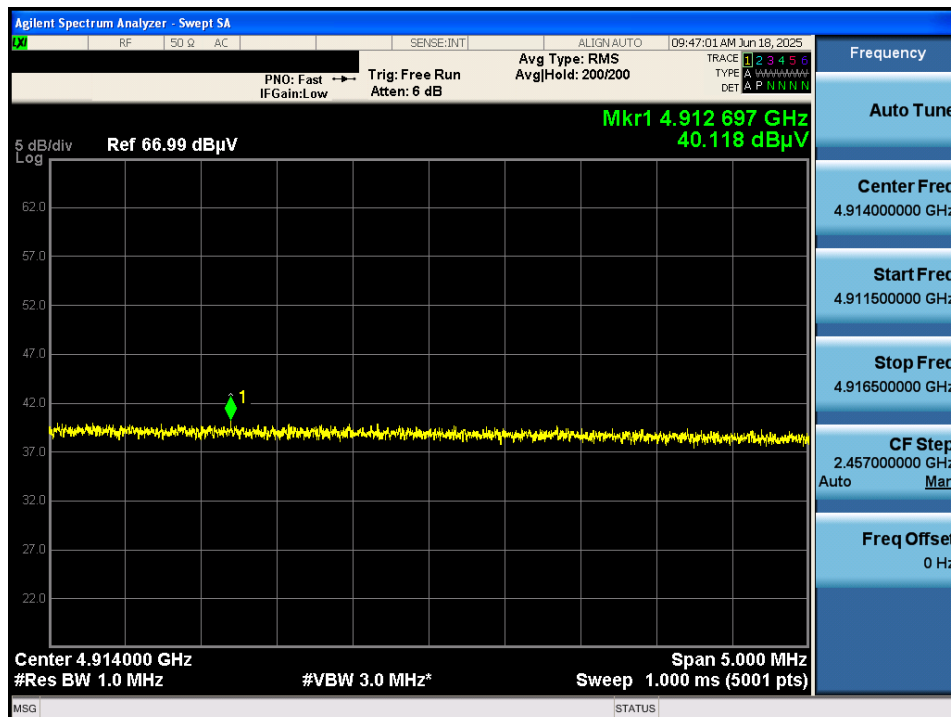
TM 3 & 2 467 MHz & Z axis & Ver

Detector Mode : AV



TM 4 & 2 457 MHz & Z axis & Ver

Detector Mode : AV



- END -