

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : **TM 6** Normal

Tested Frequency (MHz)	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2412	2389.01	H	X	PK	51.23	4.77	N/A	N/A	56.00	74.00	18.00
	2389.90	H	X	AV	41.62	4.78	N/A	N/A	46.40	54.00	7.60
	4824.21	H	X	PK	49.55	0.79	N/A	N/A	50.34	74.00	23.66
	4824.11	H	X	AV	38.77	0.78	N/A	N/A	39.55	54.00	14.45
2437	4873.76	H	X	PK	49.03	1.07	N/A	N/A	50.10	74.00	23.90
	4873.65	H	X	AV	38.92	1.07	N/A	N/A	39.99	54.00	14.01
2462	2483.79	H	X	PK	55.91	5.14	N/A	N/A	61.05	74.00	12.95
	2483.65	H	X	AV	43.98	5.13	N/A	N/A	49.11	54.00	4.89
	4924.12	H	X	PK	49.77	1.40	N/A	N/A	51.17	74.00	22.83
	4923.69	H	X	AV	39.28	1.40	N/A	N/A	40.68	54.00	13.32
2472	2483.64	H	X	PK	52.40	5.13	N/A	N/A	57.53	74.00	16.47
	2483.59	H	X	AV	41.57	5.13	N/A	N/A	46.70	54.00	7.30
	4943.98	H	X	PK	49.39	1.45	N/A	N/A	50.84	74.00	23.16
	4943.52	H	X	AV	39.01	1.45	N/A	N/A	40.46	54.00	13.54

Note.

- The radiated emissions were investigated 9kHz to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$
Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Information of Distance Factor
For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
- Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
When distance factor is "N/A", the distance is 3 m and distance factor is not applied.

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 1 Wireless Charging _ ANT 1

Tested Frequency (MHz)	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2462	2488.13	H	X	PK	51.66	5.18	N/A	N/A	56.84	74.00	17.16
	2487.81	H	X	AV	43.48	5.17	N/A	N/A	48.65	54.00	5.35
	4924.16	H	X	PK	49.41	1.40	N/A	N/A	50.81	74.00	23.19
	4924.27	H	X	AV	38.86	1.40	N/A	N/A	40.26	54.00	13.74
	7385.94	H	X	PK	46.63	9.42	N/A	N/A	56.05	74.00	17.95
	7386.32	H	X	AV	36.09	9.42	N/A	N/A	45.51	54.00	8.49

Note.

- The radiated emissions were investigated 9kHz to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Information of Distance Factor
For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
- Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
When distance factor is "N/A", the distance is 3 m and distance factor is not applied.
- This device was tested under Single transmitting (Ant 1, 2) and the worst case data(Ant 1) are reported in the table above.

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 1 Wireless Charging _ ANT 2

Tested Frequency (MHz)	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2412	2486.57	H	X	PK	50.94	5.16	N/A	N/A	56.10	74.00	17.90
	2486.50	H	X	AV	41.29	5.16	N/A	N/A	46.45	54.00	7.55
	4923.97	H	X	PK	48.97	1.40	N/A	N/A	50.37	74.00	23.63
	4923.70	H	X	AV	38.96	1.40	N/A	N/A	40.36	54.00	13.64
	7385.83	H	X	PK	47.70	9.42	N/A	N/A	57.12	74.00	16.88
	7385.72	H	X	AV	35.98	9.42	N/A	N/A	45.40	54.00	8.60

Note.

- The radiated emissions were investigated 9kHz to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Information of Distance Factor
For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
- Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
When distance factor is "N/A", the distance is 3 m and distance factor is not applied.
- This device was tested under Single transmitting (Ant 1, 2) and the worst case data(Ant 1) are reported in the table above.

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 2 Wireless Charging

Tested Frequency (MHz)	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2462	2483.89	H	X	PK	53.44	5.14	N/A	N/A	58.58	74.00	15.42
	2483.71	H	X	AV	43.28	5.14	N/A	N/A	48.42	54.00	5.58
	4923.83	H	X	PK	49.12	1.40	N/A	N/A	50.52	74.00	23.48
	4924.05	H	X	AV	38.87	1.40	N/A	N/A	40.27	54.00	13.73
	7386.13	H	X	PK	46.19	9.42	N/A	N/A	55.61	74.00	18.39
	7386.11	H	X	AV	36.00	9.42	N/A	N/A	45.42	54.00	8.58

Note.

- The radiated emissions were investigated 9kHz to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Information of Distance Factor
For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
- Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
When distance factor is "N/A", the distance is 3 m and distance factor is not applied.

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

Tested Frequency (MHz)	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2462	2483.75	H	X	PK	56.91	5.14	N/A	N/A	62.05	74.00	11.95
	2483.82	H	X	AV	44.84	5.14	N/A	N/A	49.98	54.00	4.02
	4924.05	H	X	PK	49.26	1.40	N/A	N/A	50.66	74.00	23.34
	4923.70	H	X	AV	38.87	1.40	N/A	N/A	40.27	54.00	13.73
	7386.09	H	X	PK	46.01	9.42	N/A	N/A	55.43	74.00	18.57
	7385.55	H	X	AV	35.92	9.42	N/A	N/A	45.34	54.00	8.66

Note.

- The radiated emissions were investigated 9kHz to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Information of Distance Factor
For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
- Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
When distance factor is "N/A", the distance is 3 m and distance factor is not applied.

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

Tested Frequency (MHz)	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2462	2483.58	H	X	PK	54.75	5.13	N/A	N/A	59.88	74.00	14.12
	2483.75	H	X	AV	43.35	5.14	N/A	N/A	48.49	54.00	5.51
	4923.94	H	X	PK	48.94	1.40	N/A	N/A	50.34	74.00	23.66
	4923.16	H	X	AV	38.75	1.40	N/A	N/A	40.15	54.00	13.85
	7386.35	H	X	PK	46.84	9.42	N/A	N/A	56.26	74.00	17.74
	7385.52	H	X	AV	35.84	9.42	N/A	N/A	45.26	54.00	8.74

Note.

- The radiated emissions were investigated 9kHz to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Information of Distance Factor
For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
- Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
When distance factor is "N/A", the distance is 3 m and distance factor is not applied.

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : **TM 5** Wireless Charging

Tested Frequency (MHz)	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2462	2483.67	H	X	PK	53.81	5.14	N/A	N/A	58.95	74.00	15.05
	2483.63	H	X	AV	43.76	5.13	N/A	N/A	48.89	54.00	5.11
	4924.29	H	X	PK	48.71	1.40	N/A	N/A	50.11	74.00	23.89
	4923.44	H	X	AV	38.78	1.40	N/A	N/A	40.18	54.00	13.82
	7385.68	H	X	PK	46.25	9.42	N/A	N/A	55.67	74.00	18.33
	7385.66	H	X	AV	36.11	9.42	N/A	N/A	45.53	54.00	8.47

Note.

- The radiated emissions were investigated 9kHz to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Information of Distance Factor
For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
- Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
When distance factor is "N/A", the distance is 3 m and distance factor is not applied.

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : **TM 6** Wireless Charging

Tested Frequency (MHz)	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2462	2483.70	H	X	PK	53.02	5.14	N/A	N/A	58.16	74.00	15.84
	2483.74	H	X	AV	42.98	5.14	N/A	N/A	48.12	54.00	5.88
	4924.45	H	X	PK	49.56	1.40	N/A	N/A	50.96	74.00	23.04
	4924.18	H	X	AV	38.95	1.40	N/A	N/A	40.35	54.00	13.65
	7386.04	H	X	PK	46.31	9.42	N/A	N/A	55.73	74.00	18.27
	7385.80	H	X	AV	35.81	9.42	N/A	N/A	45.23	54.00	8.77

Note.

- The radiated emissions were investigated 9kHz to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Information of Distance Factor
For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.
- Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
When distance factor is "N/A", the distance is 3 m and distance factor is not applied.

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 3 With Dual Display

Tested Frequency	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2412	2483.53	H	X	PK	58.75	5.13	N/A	N/A	63.88	74.00	10.12
	2483.56	H	X	AV	45.25	5.13	N/A	N/A	50.38	54.00	3.62
	4922.60	H	X	PK	50.67	1.39	N/A	N/A	52.06	74.00	21.94
	4922.88	H	X	AV	39.13	1.39	N/A	N/A	40.52	54.00	13.48
	7385.30	H	X	PK	45.51	9.43	N/A	N/A	54.94	74.00	19.06
	7384.83	H	X	AV	34.88	9.43	N/A	N/A	44.31	54.00	9.69

Note.

- The radiated emissions were investigated up to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- Sample Calculation.
 $\text{Margin} = \text{Limit} - \text{Result}$ / $\text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF}$ / $\text{T.F} = \text{AF} + \text{CL} - \text{AG}$
Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Information of Distance Factor
For finding emissions, the test distance might be reduced from 3 m to 1 m.
In this case, the distance factor (-9.54 dB) is applied to the result.
- Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
When distance factor is "N/A", the distance is 3 m and distance factor is not applied.

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : **TM 3** With Dual Display+WPC

Tested Frequency	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2462	2483.67	H	X	PK	57.18	5.14	N/A	N/A	62.32	74.00	11.68
	2483.57	H	X	AV	45.64	5.13	N/A	N/A	50.77	54.00	3.23
	4925.56	H	X	PK	49.30	1.40	N/A	N/A	50.70	74.00	23.30
	4925.35	H	X	AV	38.80	1.40	N/A	N/A	40.20	54.00	13.80
	7385.51	H	X	PK	45.19	9.42	N/A	N/A	54.61	74.00	19.39
	7385.74	H	X	AV	35.15	9.42	N/A	N/A	44.57	54.00	9.43

Note.

- The radiated emissions were investigated up to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- Sample Calculation.

Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,

DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor

- Information of Distance Factor

For finding emissions, the test distance might be reduced from 3 m to 1 m.

In this case, the distance factor (-9.54 dB) is applied to the result.

- Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$

When distance factor is "N/A", the distance is 3 m and distance factor is not applied.

8.6 Power-line conducted emissions

■ Test Requirements and limit, §15.207

For an intentional radiator which 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	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

■ Test Procedure

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to the test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.

■ Test Results: **Comply**(Refer to next page.)

The worst data was reported.

■ RESULT PLOTS

AC Line Conducted Emissions (Graph)

TM 2 & Middle

Results of Conducted Emission

DTNC

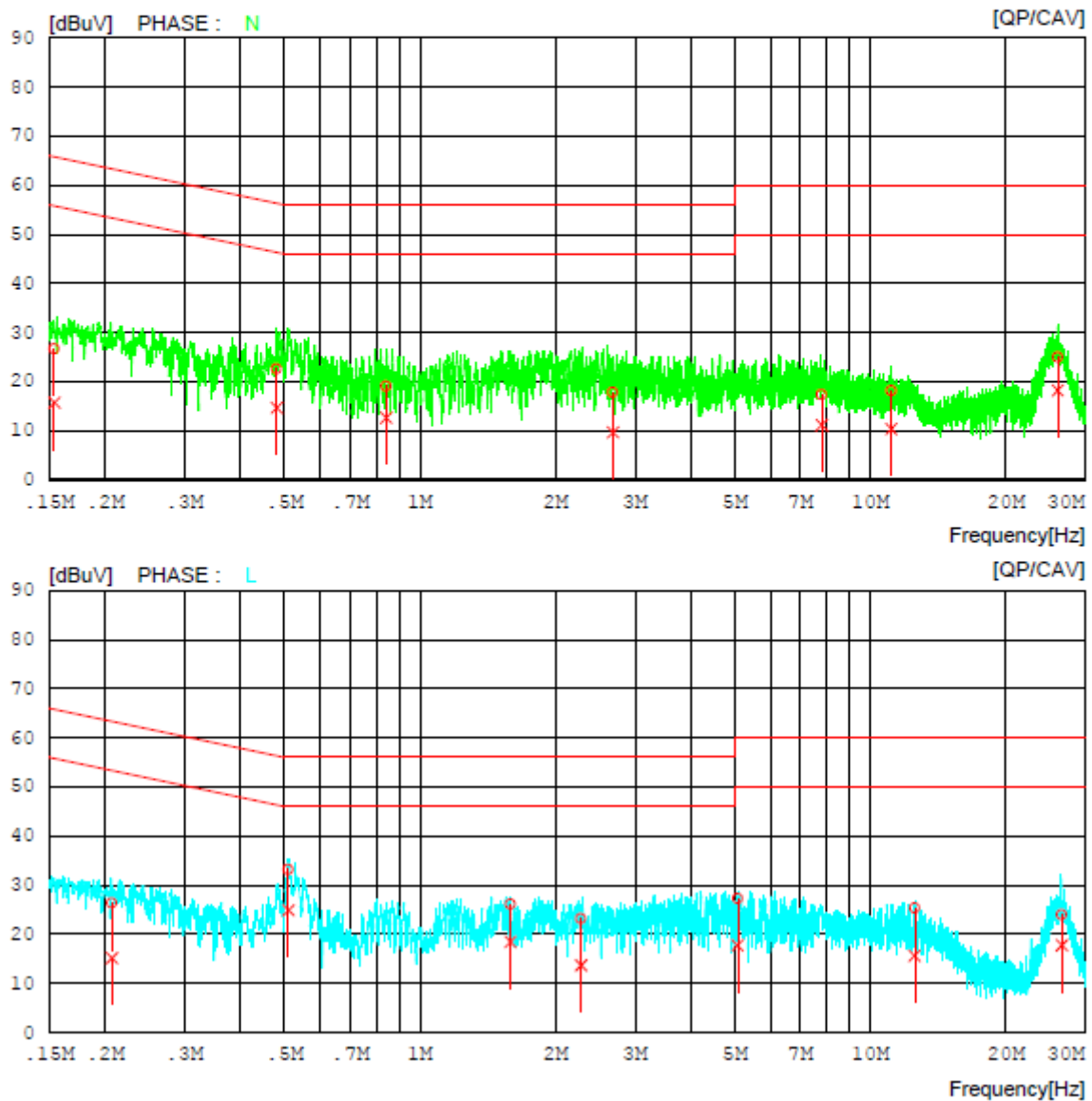
Date 2019-12-27

Order No.
Model No. OA2001
Serial No.
Test Condition 2.4G

Reference No.
Power Supply 120 V, 60 Hz
Temp/Humi. 23 °C / 35 %
Operator Kim Jung woo

Memo

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



AC Line Conducted Emissions (List)

TM 2 & Middle

Results of Conducted Emission

DTNC

Date 2019-12-27

Order No.
Model No. OA2001
Serial No.
Test Condition 2.4G

Reference No.
Power Supply 120 V, 60 Hz
Temp/Humi. 23 °C / 35 %
Operator Kim Jung woo

Memo

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

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	0.15401	16.76	5.83	9.94	26.70	15.77	65.78	55.78	39.08	40.01	N
2	0.48020	12.63	4.79	9.95	22.58	14.74	56.34	46.34	33.76	31.60	N
3	0.84063	9.14	2.67	9.97	19.11	12.64	56.00	46.00	36.89	33.36	N
4	2.67890	7.74	-0.35	10.05	17.79	9.70	56.00	46.00	38.21	36.30	N
5	7.79423	7.16	0.90	10.25	17.41	11.15	60.00	50.00	42.59	38.85	N
6	11.13086	7.81	-0.02	10.37	18.18	10.35	60.00	50.00	41.82	39.65	N
7	26.07942	14.32	7.56	10.68	25.00	18.24	60.00	50.00	35.00	31.76	N
8	0.20659	16.34	5.22	9.94	26.28	15.16	63.34	53.34	37.06	38.18	L
9	0.50984	23.20	14.88	9.95	33.15	24.83	56.00	46.00	22.85	21.17	L
10	1.58724	16.12	8.36	10.01	26.13	18.37	56.00	46.00	29.87	27.63	L
11	2.27709	13.06	3.61	10.04	23.10	13.65	56.00	46.00	32.90	32.35	L
12	5.06844	17.09	7.56	10.16	27.25	17.72	60.00	50.00	32.75	32.28	L
13	12.54308	14.92	5.17	10.41	25.33	15.58	60.00	50.00	34.67	34.42	L
14	26.62720	13.29	7.04	10.66	23.95	17.70	60.00	50.00	36.05	32.30	L

9. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	18/12/19	19/12/19	MY49060056
			19/12/16	20/12/16	
Spectrum Analyzer	Agilent Technologies	N9020A	18/12/19	19/12/19	MY48011700
			19/12/16	20/12/16	
Spectrum Analyzer	Agilent Technologies	N9020A	19/06/26	20/06/26	MY46471251
			19/12/19	20/12/19	
DC Power Supply	Agilent Technologies	66332A	18/12/16	19/12/16	US37476998
			19/12/19	20/12/19	
Multimeter	FLUKE	17B	18/12/18	19/12/18	26030065WS
			19/12/16	20/12/16	
Signal Generator	Rohde Schwarz	SMBV100A	18/12/19	19/12/19	255571
			19/12/16	20/12/16	
Signal Generator	ANRITSU	MG3695C	18/12/20	19/12/20	173501
			19/12/16	20/12/16	
Thermohygrometer	BODYCOM	BJ5478	18/12/27	19/12/27	120612-1
			19/12/18	20/12/18	
Thermohygrometer	BODYCOM	BJ5478	18/12/27	19/12/27	120612-2
			19/12/18	20/12/18	
Thermohygrometer	BODYCOM	BJ5478	19/07/03	20/07/03	N/A
Loop Antenna	ETS-Lindgren	6502	19/09/18	20/09/18	00226186
BILOG ANTENNA	Schwarzbeck	VULB 9160	19/04/23	21/04/23	9160-3362
Horn Antenna	ETS-Lindgren	3115	18/01/30	20/01/30	6419
Horn Antenna	A.H.Systems Inc.	SAS-574	19/07/03	21/07/03	155
PreAmplifier	tsj	MLA-0118-B01-40	18/12/18	19/12/18	1852267
			19/12/16	20/12/16	
PreAmplifier	tsj	MLA-1840-J02-45	19/06/27	20/06/27	16966-10728
PreAmplifier	H.P	8447D	18/12/18	19/12/18	2944A07774
			19/12/16	20/12/16	
High Pass Filter	Wainwright Instruments	WHKX12-935-1000-15000-40SS	19/06/26	20/06/26	8
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300-18000-60SS	19/06/26	20/06/26	1
High Pass Filter	Wainwright Instruments	WHNX8.0/26.5-6SS	19/06/27	20/06/27	3
Attenuator	Hefei Shunze	SS5T2.92-10-40	19/06/27	20/06/27	16012202
Attenuator	SRTechnology	F01-B0606-01	19/06/27	20/06/27	13092403
Attenuator	Aeroflex/Weinschel	20515	19/06/27	20/06/27	Y2370
Attenuator	SMAJK	SMAJK-2-3	19/06/27	20/06/27	2
Attenuator	SMAJK	SMAJK-50-10	19/06/25	20/06/25	15081903
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2496A ML2495A	19/06/24	20/06/24	1338004
			19/12/16	20/12/16	1306007
EMI Receiver	ROHDE&SCHWARZ	ESW44	19/07/30	20/07/30	101645
Cable	Junkosha	MWX241	19/01/14	20/01/14	G-04
Cable	Junkosha	MWX241	19/01/14	20/01/14	G-07
Cable	DT&C	Cable	19/01/14	20/01/14	G-13
Cable	DT&C	Cable	19/01/14	20/01/14	G-14
Cable	HUBER+SUHNER	SUCOFLEX 104	19/01/14	20/01/14	G-15
Cable	Radiall	TESTPRO3	19/01/16	20/01/16	M-01

Cable	Junkosha	MWX315	19/01/16	20/01/16	M-05
Cable	Junkosha	MWX221	19/01/16	20/01/16	M-06
Thermohygrometer	TESTO	608-H1	19/01/31	20/01/31	34862883
EMI Test Receiver	Rohde Schwarz	ESCI7	19/01/30	20/01/30	100910
PULSE LIMITER	Rohde Schwarz	ESH3-Z2	19/09/17	20/09/17	101333
LISN	SCHWARZBECK	NNLK 8121	19/05/23	20/05/23	6183
Cable	DT&C	Cable	19/01/16	20/01/16	RF-82

Note1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017

Note2: The cable is not a regular calibration item, so it has been calibrated by DT & C itself.

APPENDIX I

Duty cycle plots

• Test Procedure

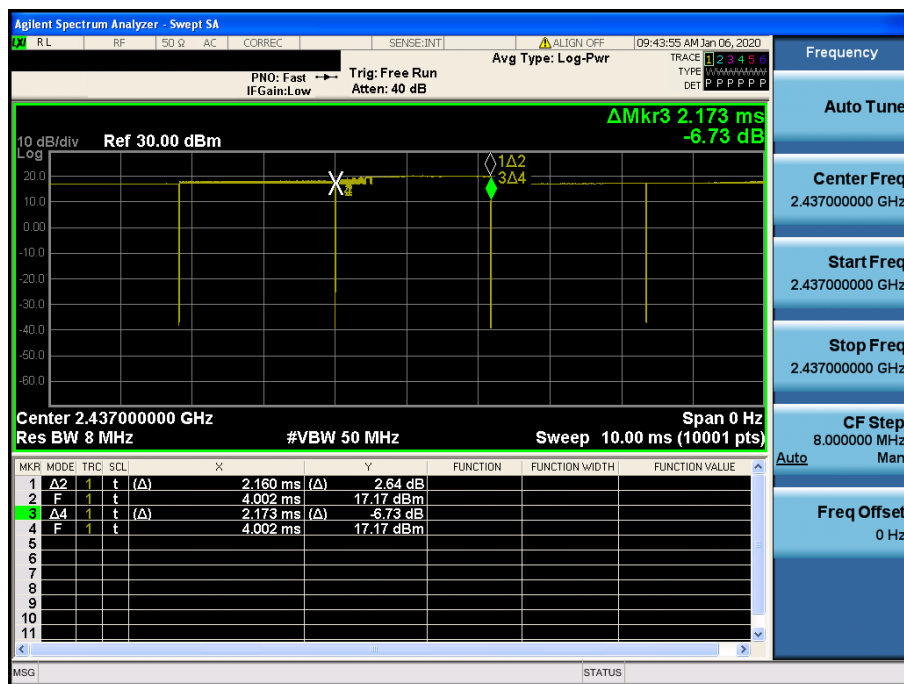
Duty Cycle was measured using **section 6.0 b) of KDB558074 D01v05r02** :

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.)

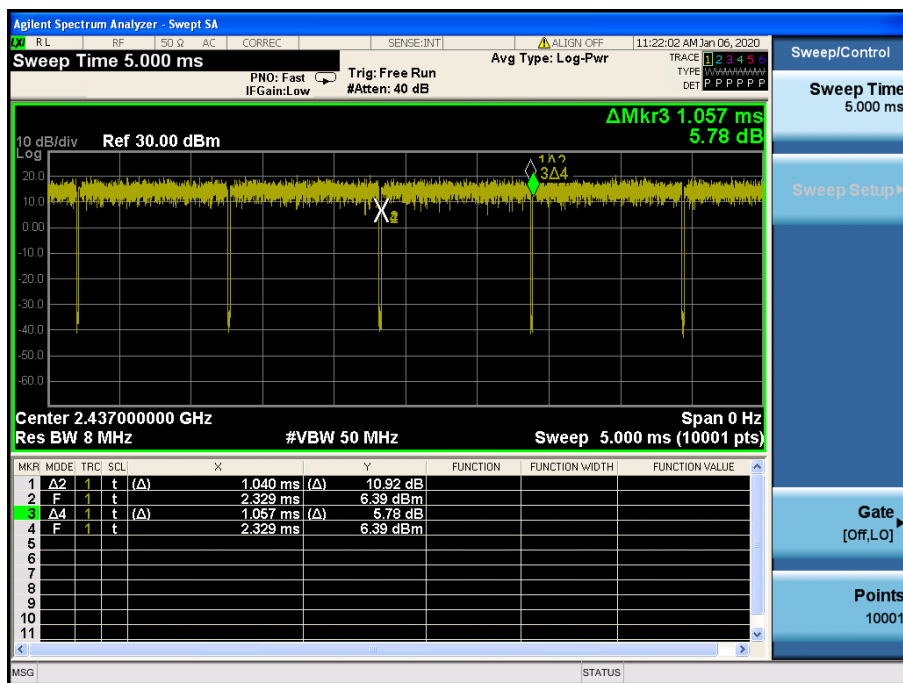
Duty Cycle

TM 1 & ANT 1 & 2437 MHz & 1 Mbps



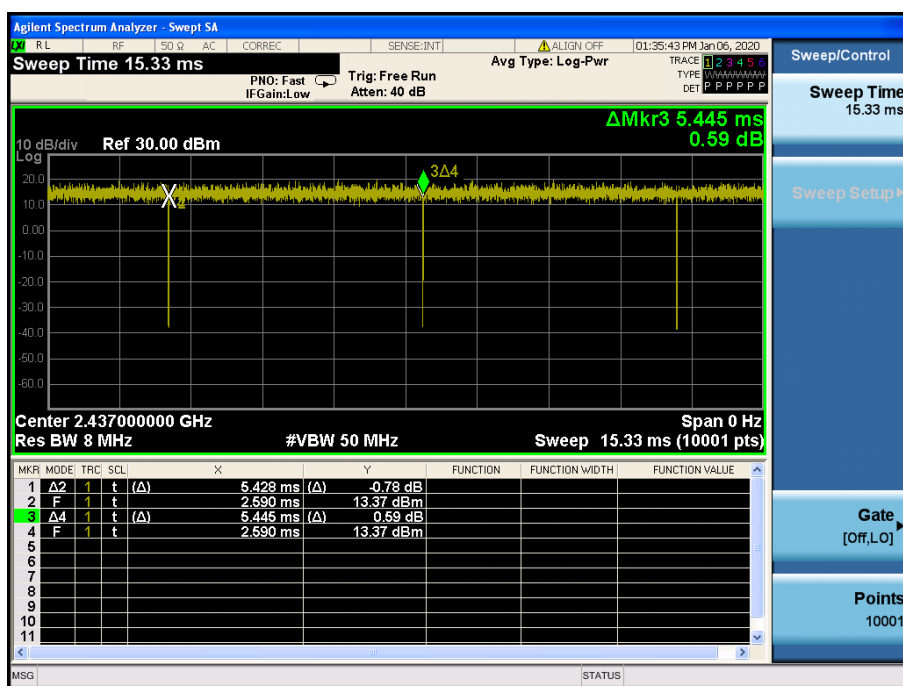
Duty Cycle

TM 2 & ANT 1 & 2437 MHz & 36 Mbps



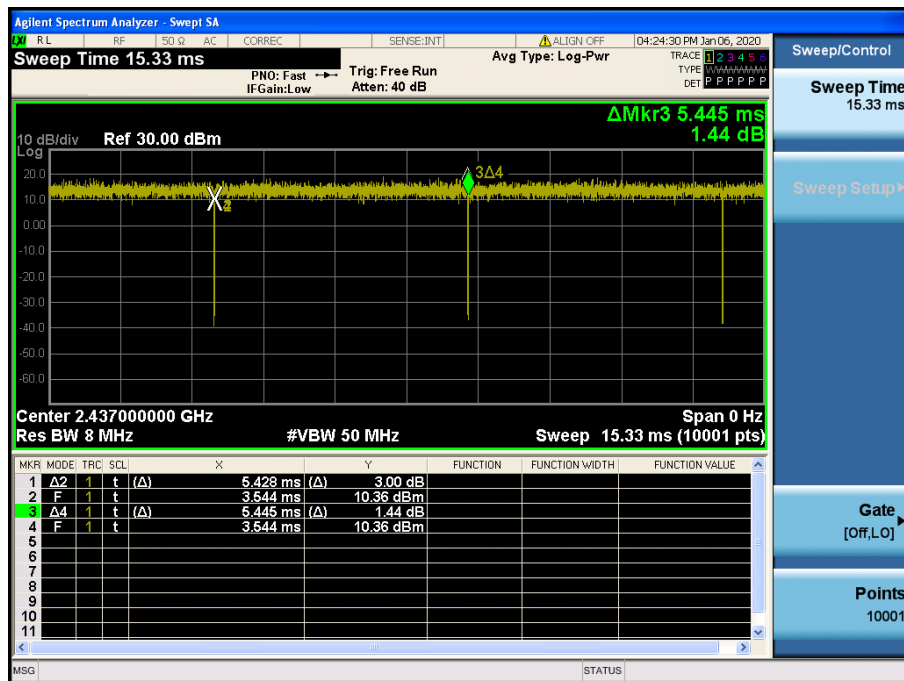
Duty Cycle

TM 3 & ANT 1 & 2437 MHz & MCS 4



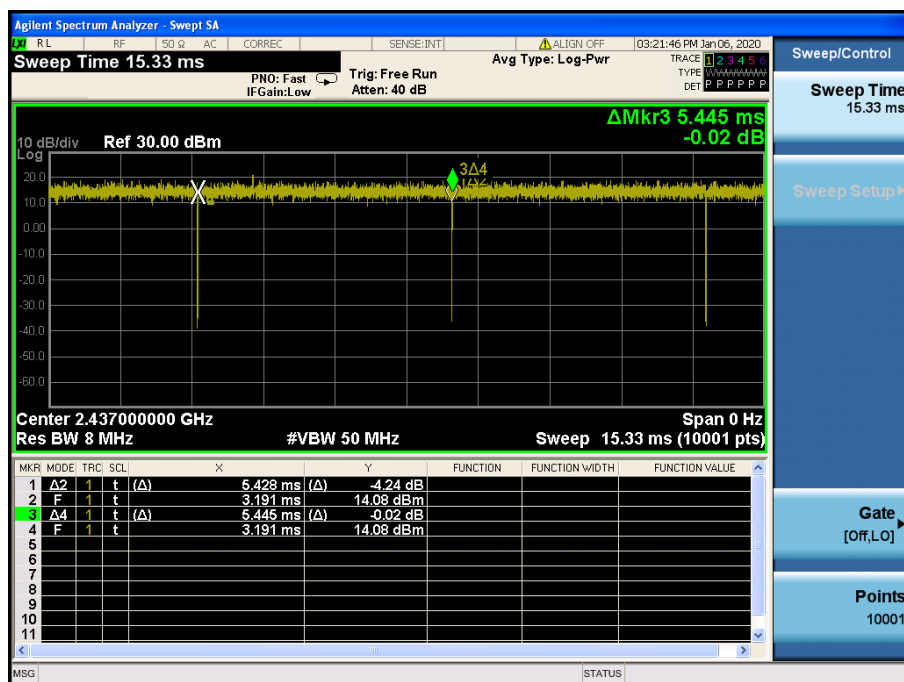
Duty Cycle

TM 4 & ANT 1 & 2437 MHz & MCS 4



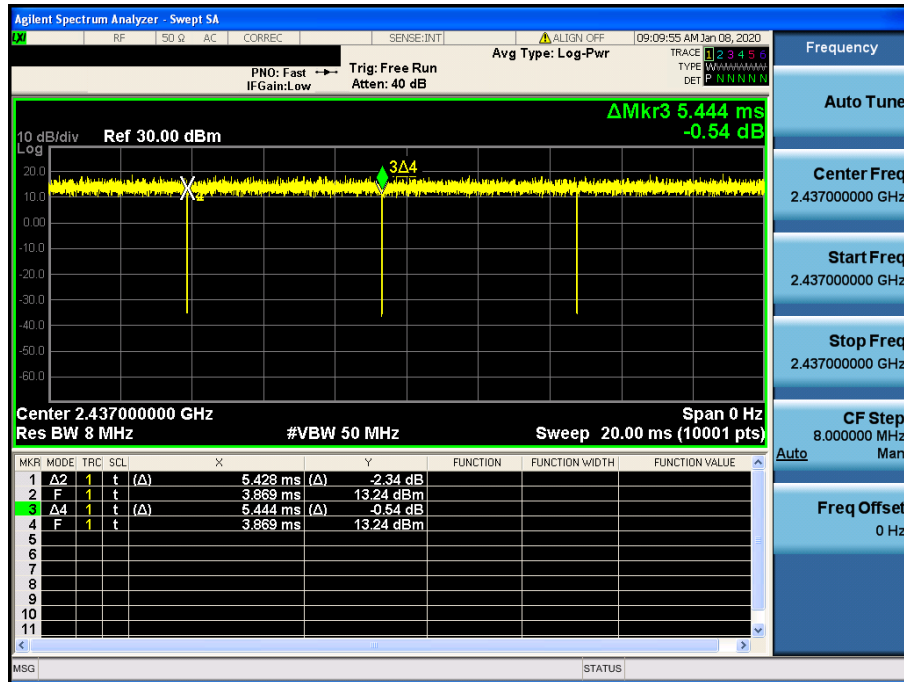
Duty Cycle

TM 5 & ANT 1 & 2437 MHz & MCS 12



Duty Cycle

TM 6 & ANT 1 & 2437 MHz & MCS 4

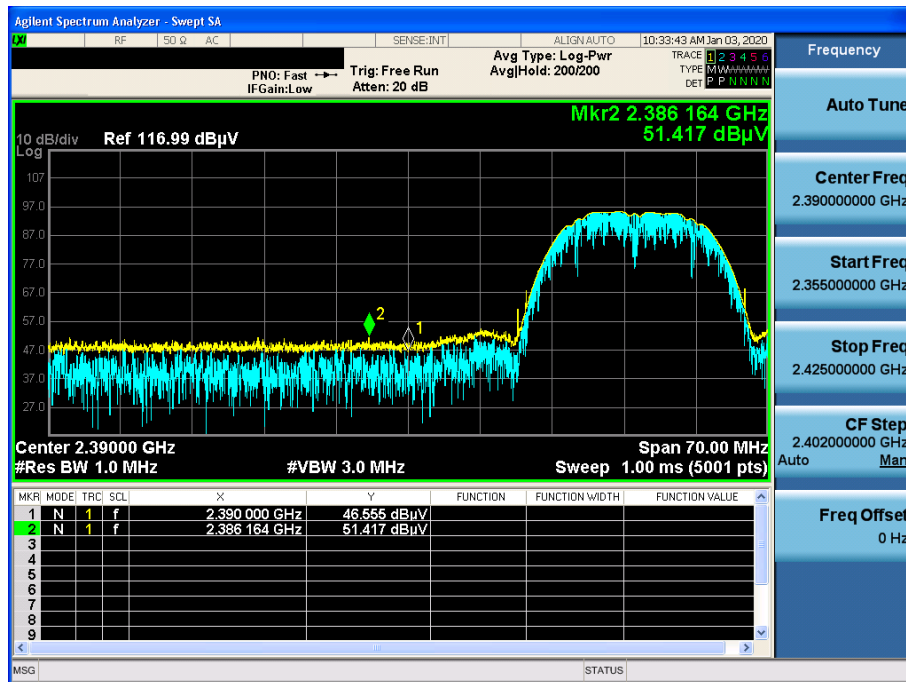


APPENDIX I

Unwanted Emissions (Radiated) Test Plot _ Normal

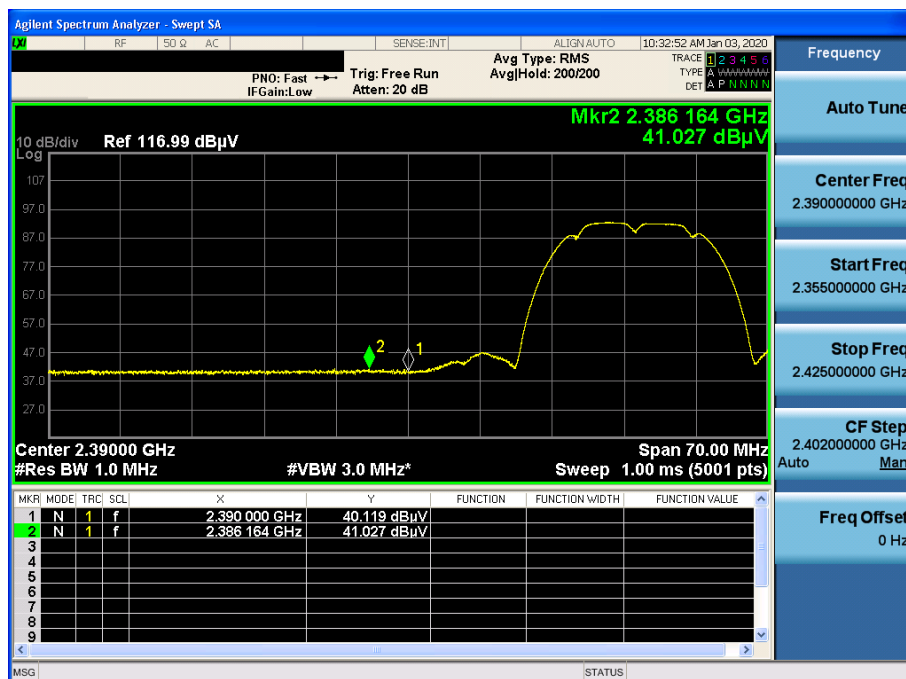
TM 1 & ANT 1 & 2412 & Z axis & Ver

Detector Mode : PK



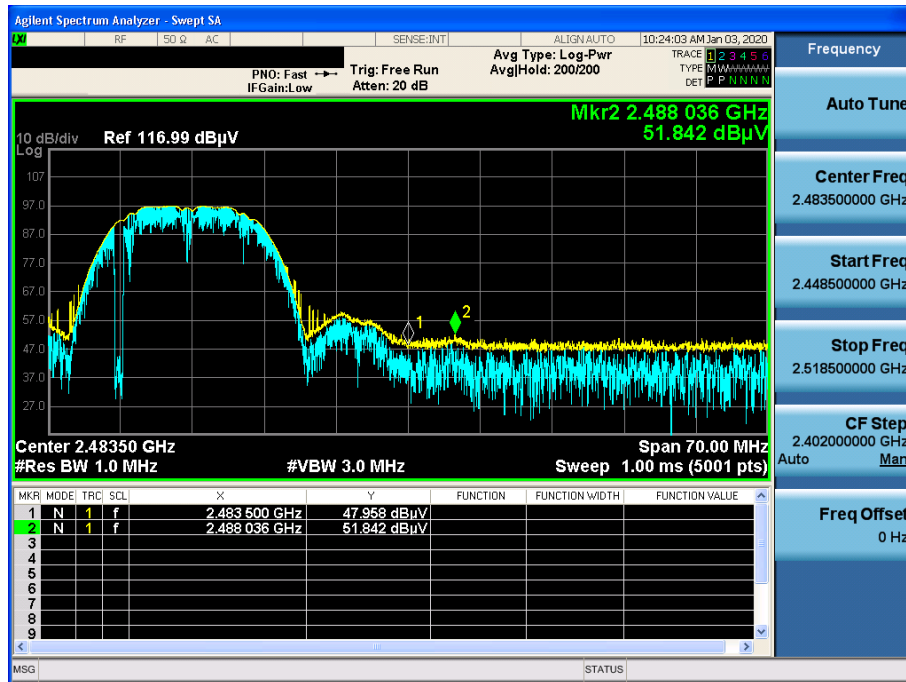
TM 1 & ANT 1 & 2412 & Z axis & Ver

Detector Mode : AV



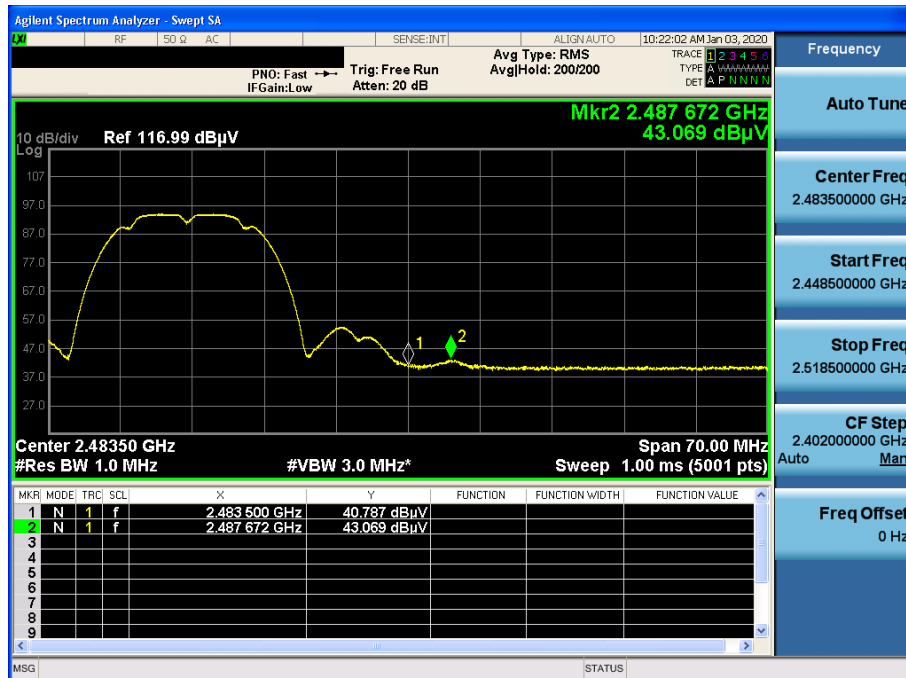
TM 1 & ANT 1 & 2462 & Z axis & Ver

Detector Mode : PK



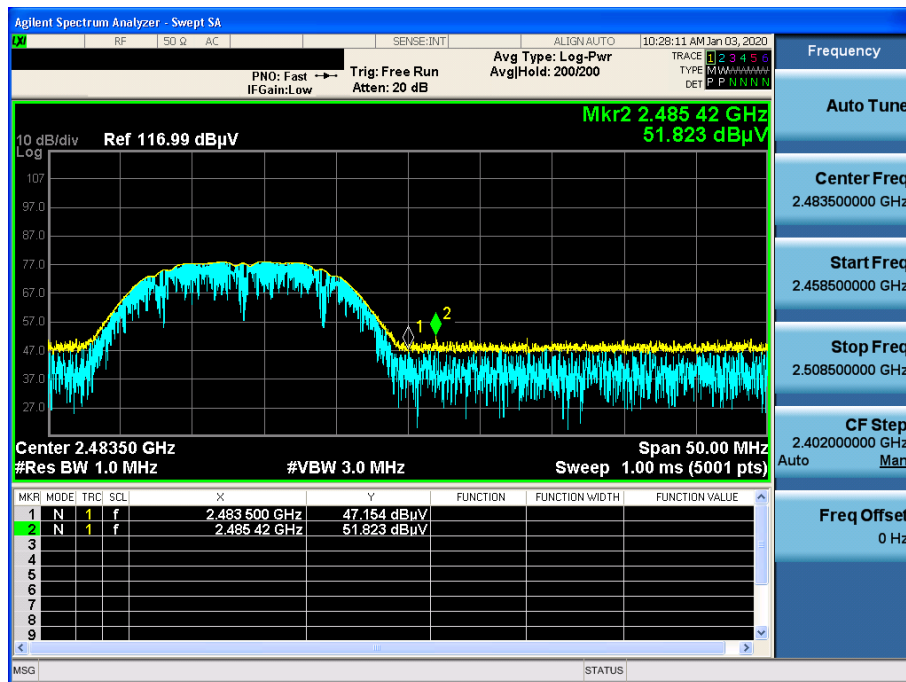
TM 1 & ANT 1 & 2462 & Z axis & Ver

Detector Mode : AV



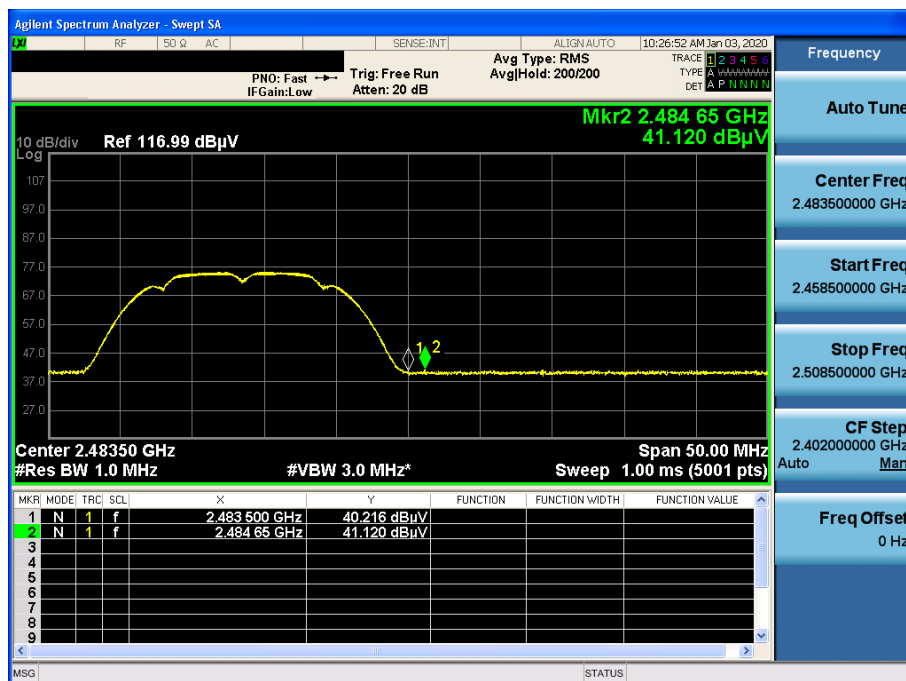
TM 1 & ANT 1 & 2472 & Z axis & Ver

Detector Mode : PK



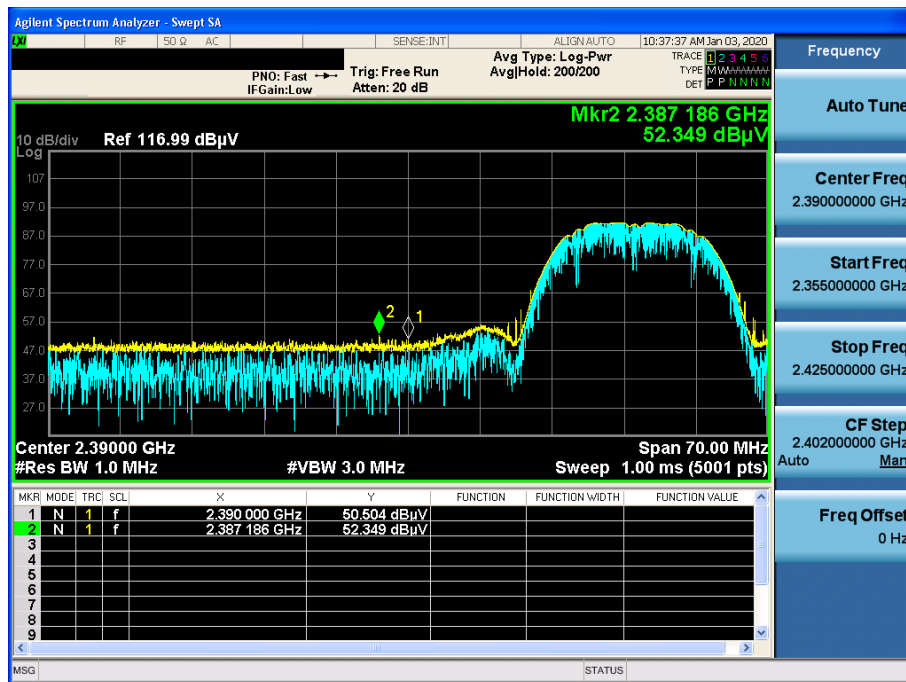
TM 1 & ANT 1 & 2472 & Z axis & Ver

Detector Mode : AV



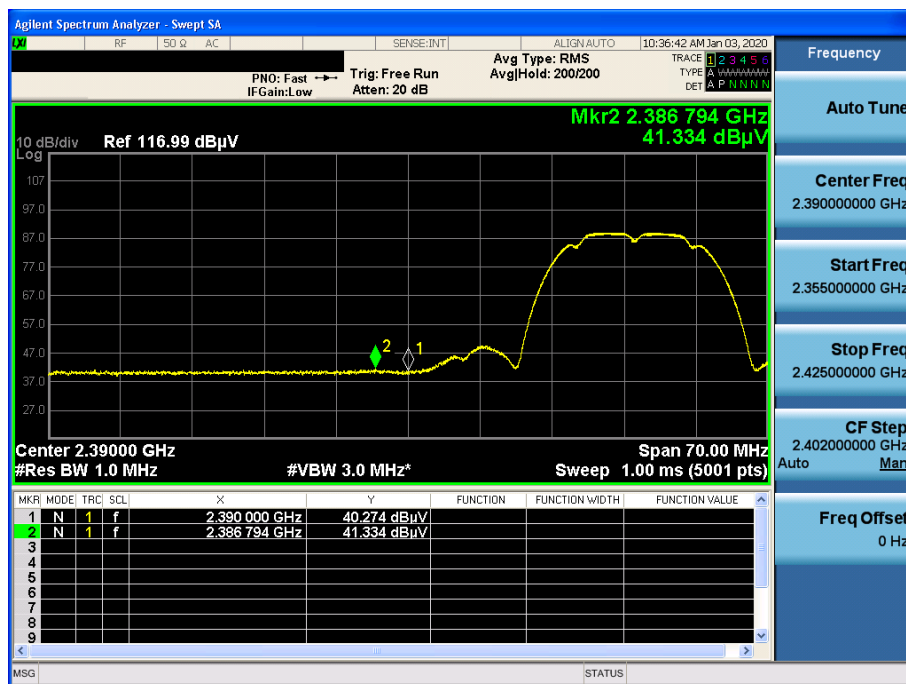
TM 1 & ANT 2 & 2412 & X axis & Hor

Detector Mode : PK



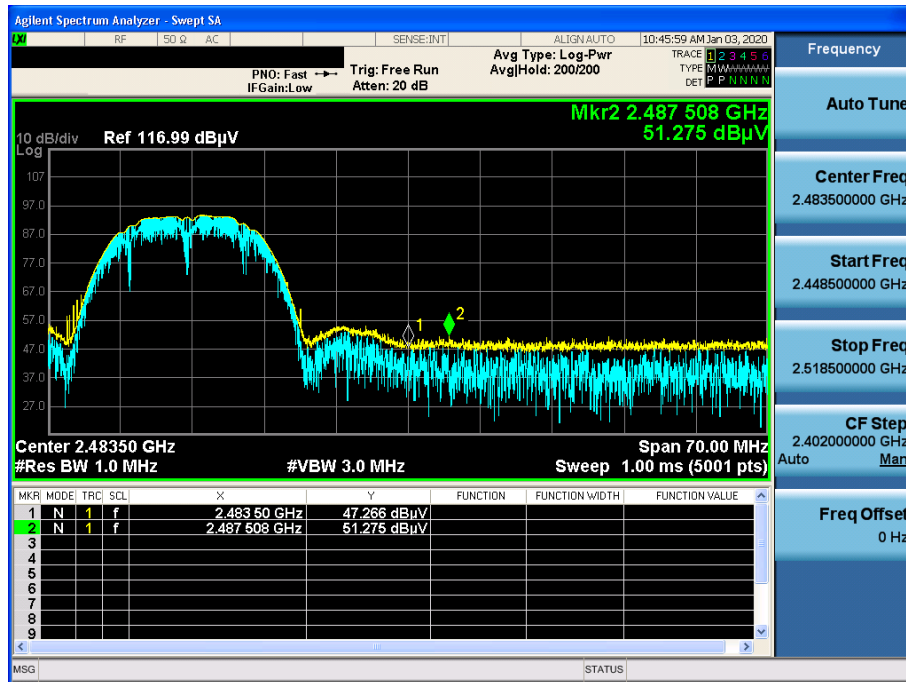
TM 1 & ANT 2 & 2412 & X axis & Hor

Detector Mode : AV



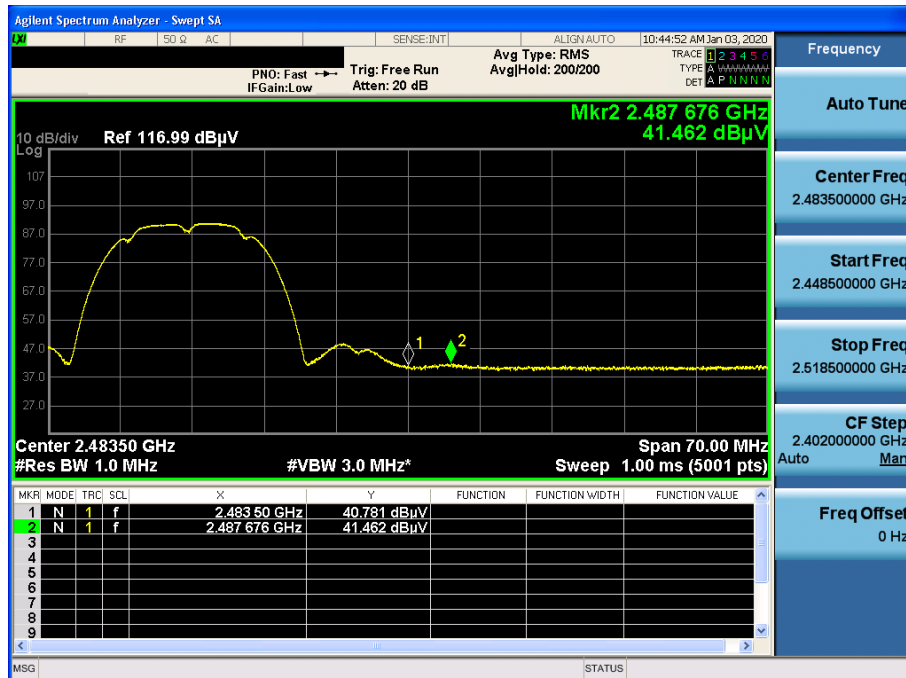
TM 1 & ANT 2 & 2462 & X axis & Hor

Detector Mode : PK



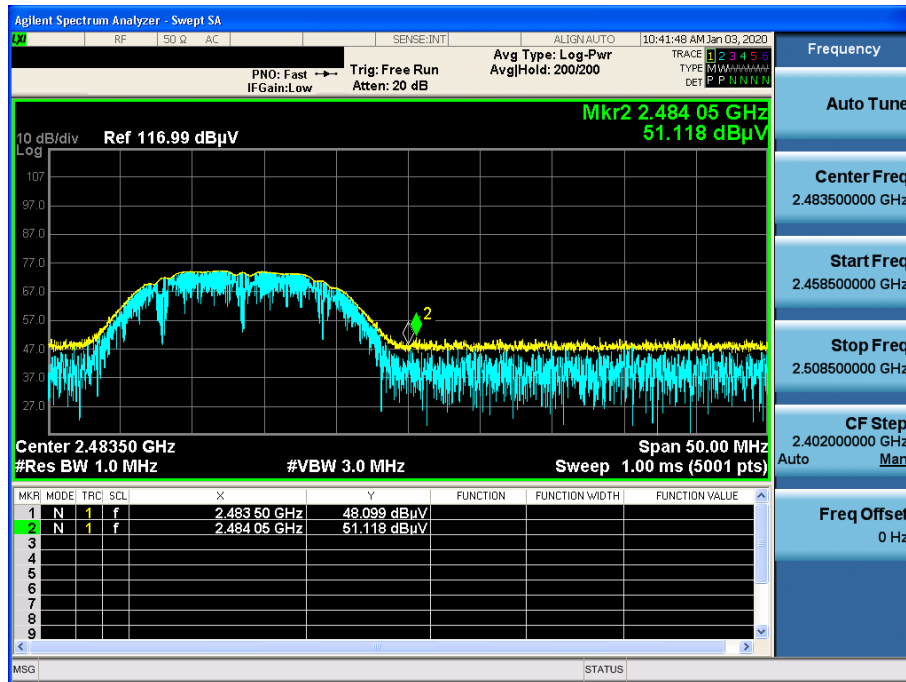
TM 1 & ANT 2 & 2462 & X axis & Hor

Detector Mode : AV



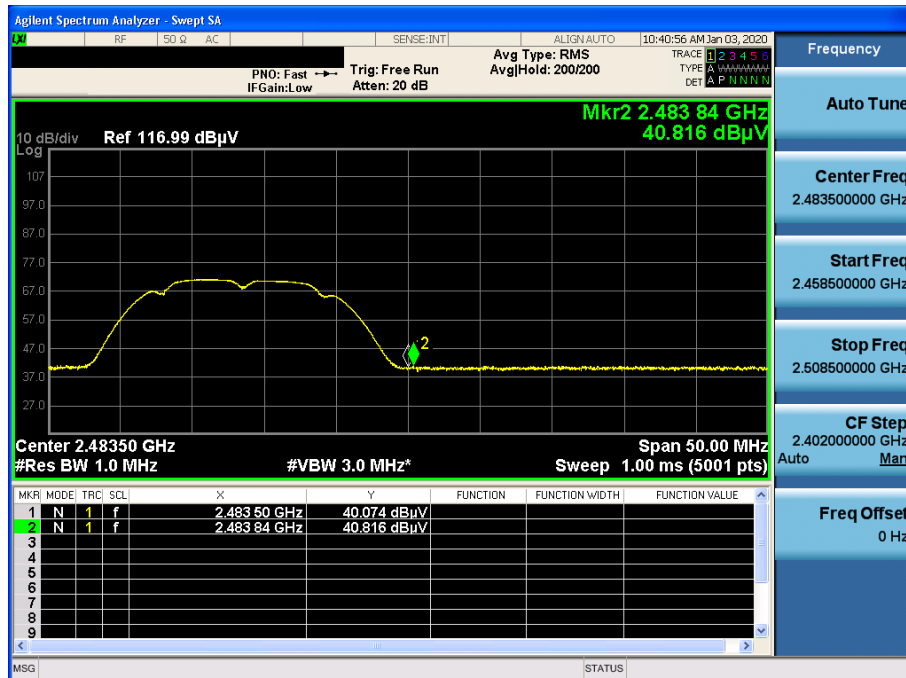
TM 1 & ANT 2 & 2472 & X axis & Hor

Detector Mode : PK



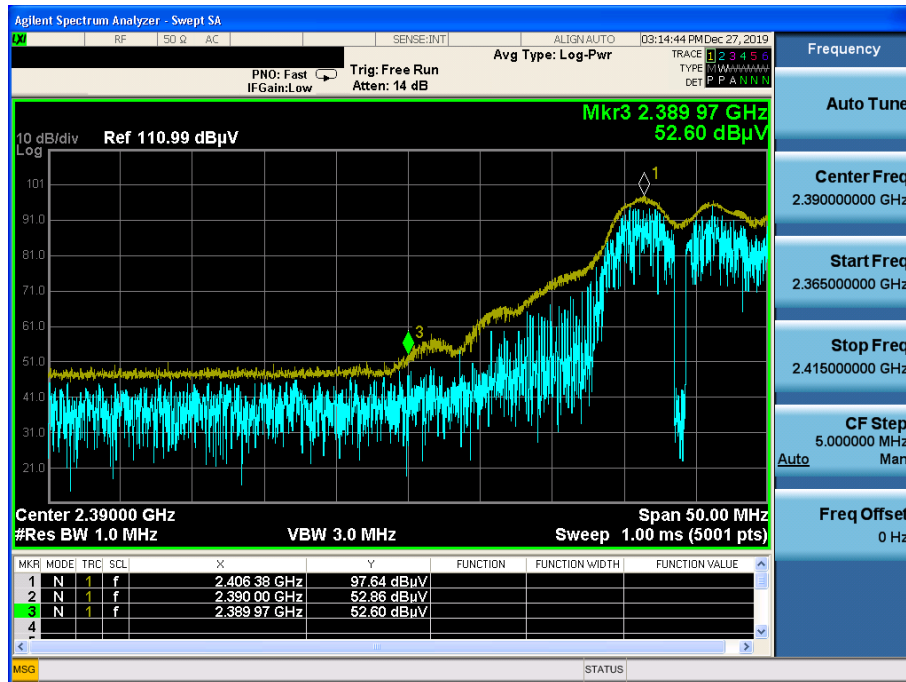
TM 1 & ANT 2 & 2472 & X axis & Hor

Detector Mode : AV



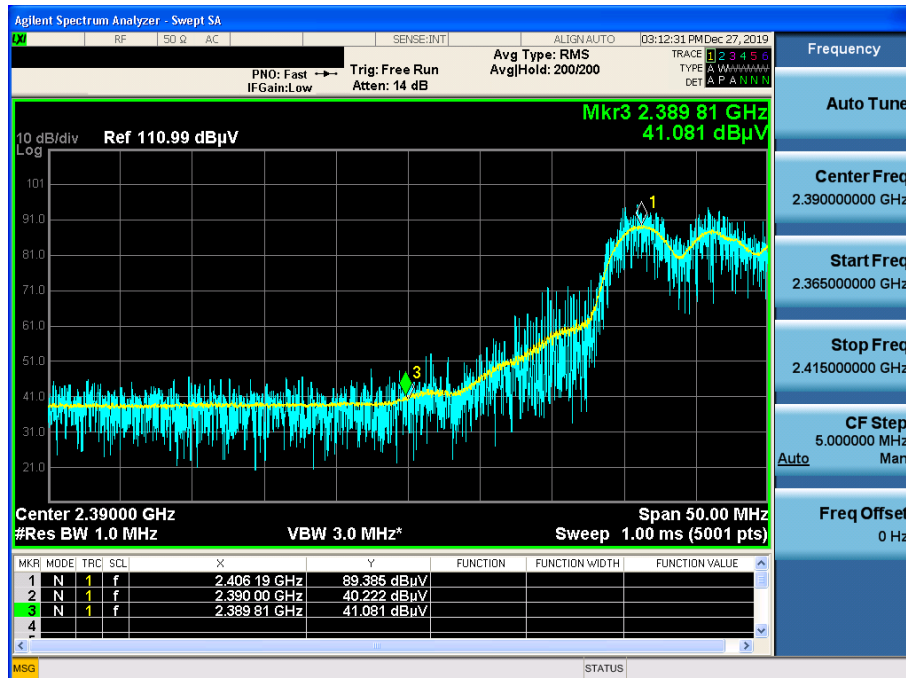
TM 2 & 2412 & Z axis & Ver

Detector Mode : PK



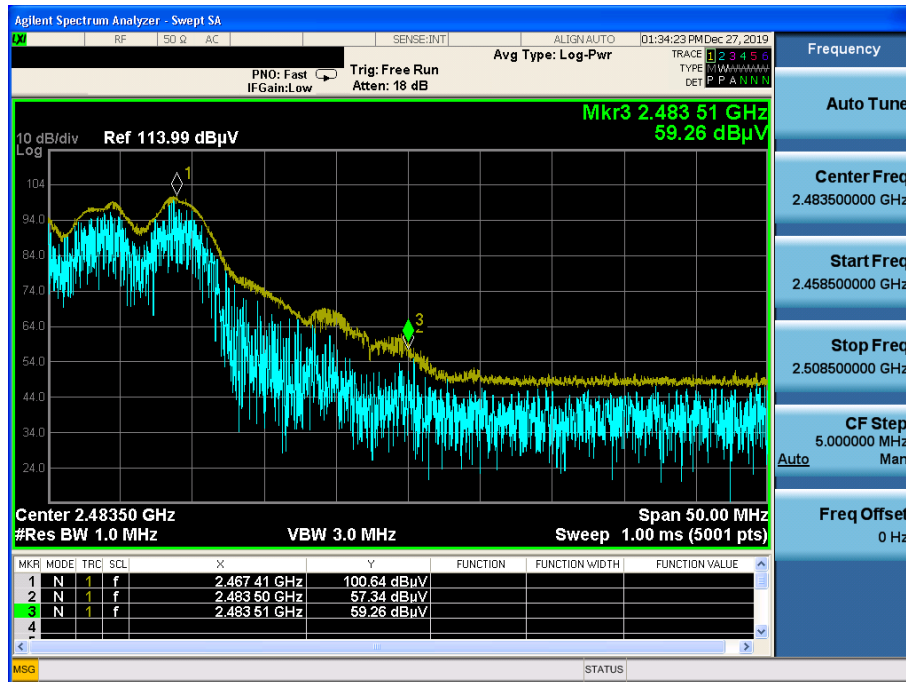
TM 2 & 2412 & Z axis & Ver

Detector Mode : AV



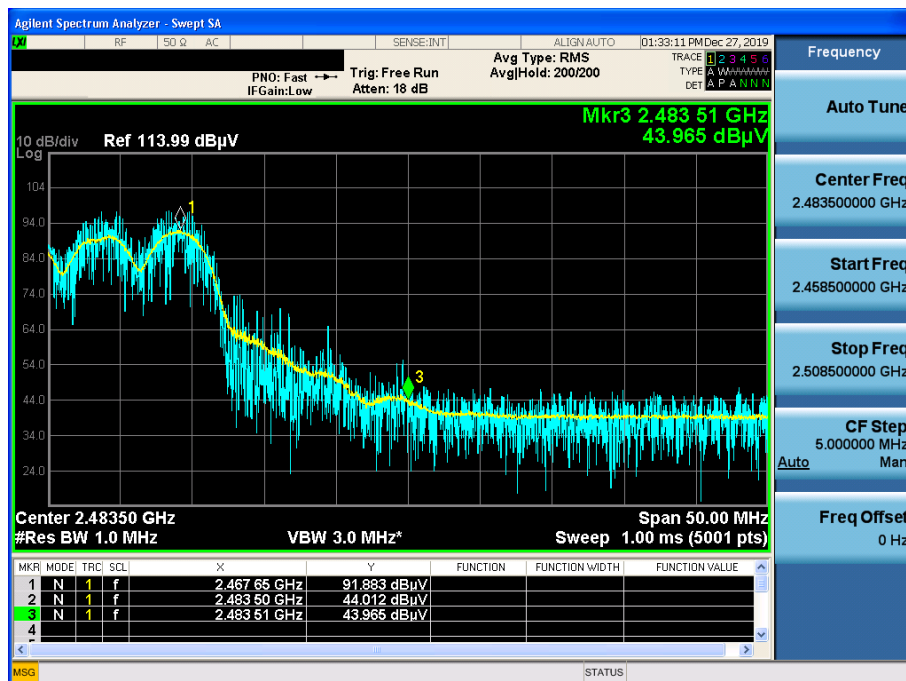
TM 2 & 2462 & Z axis & Ver

Detector Mode : PK



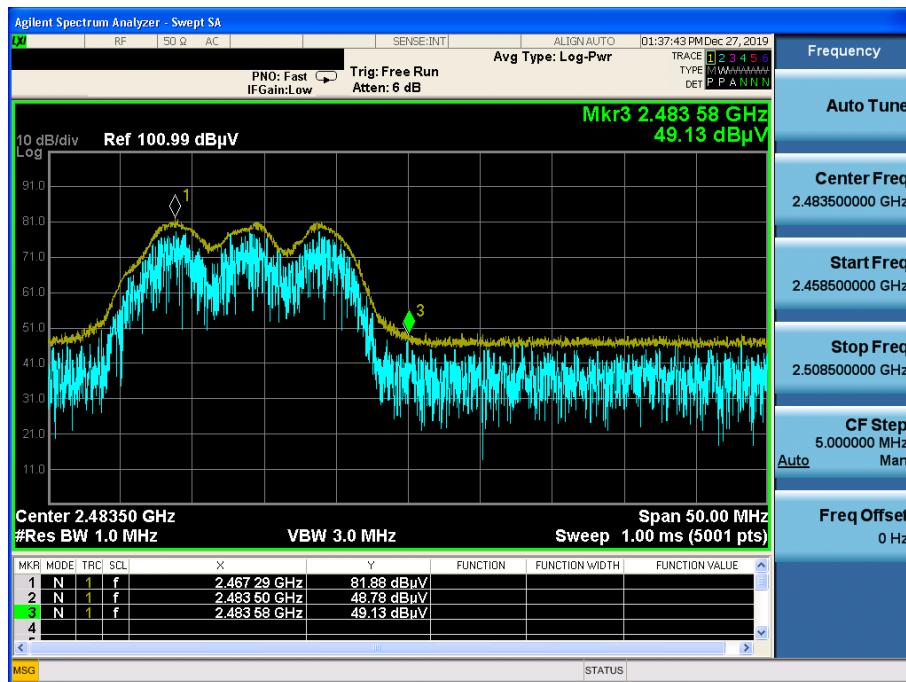
TM 2 & 2462 & Z axis & Ver

Detector Mode : AV



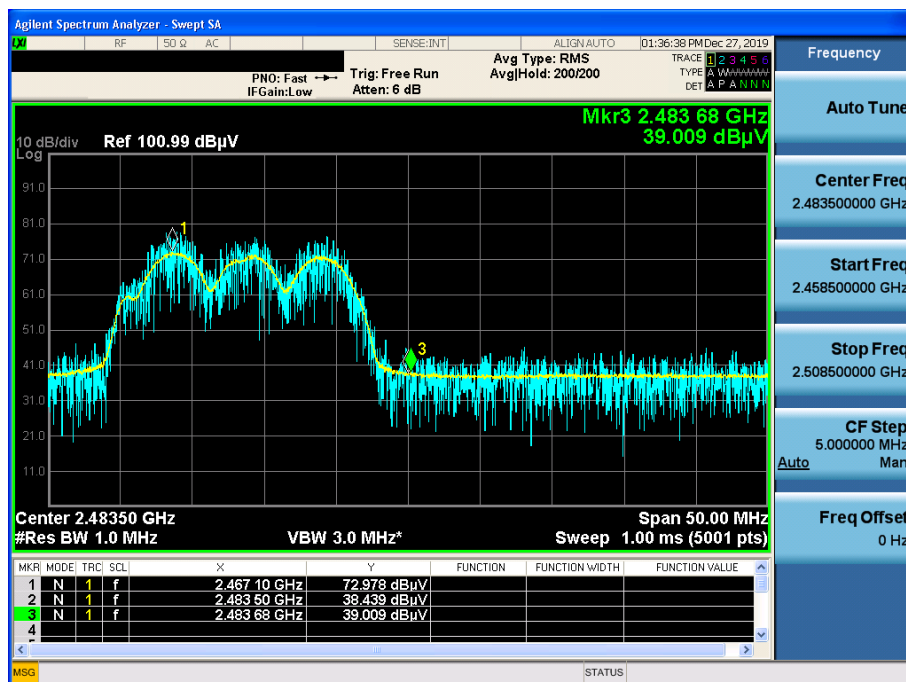
TM 2 & 2472 & Z axis & Ver

Detector Mode : PK



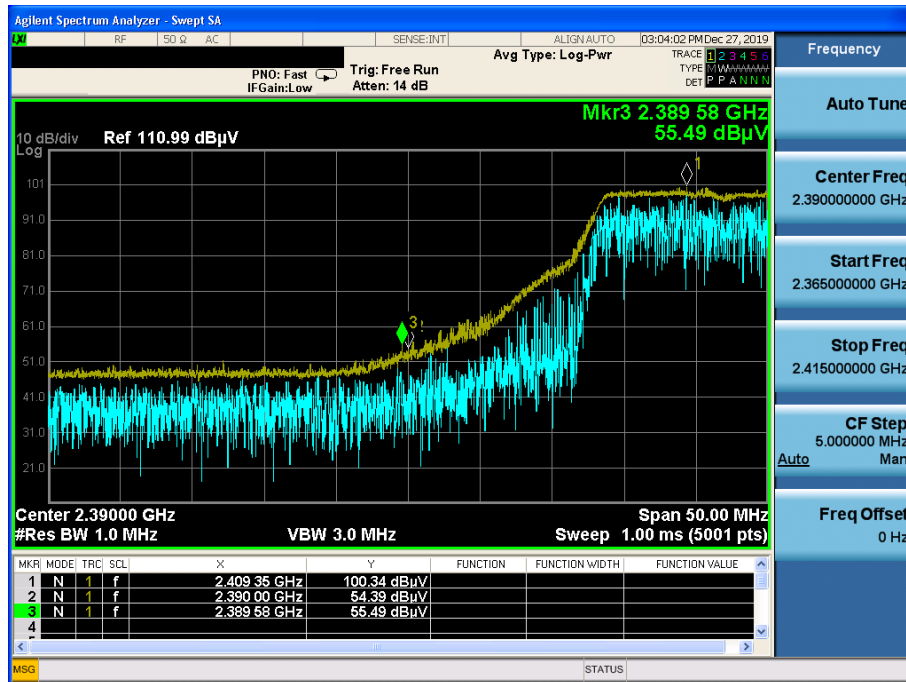
TM 2 & 2472 & Z axis & Ver

Detector Mode : AV



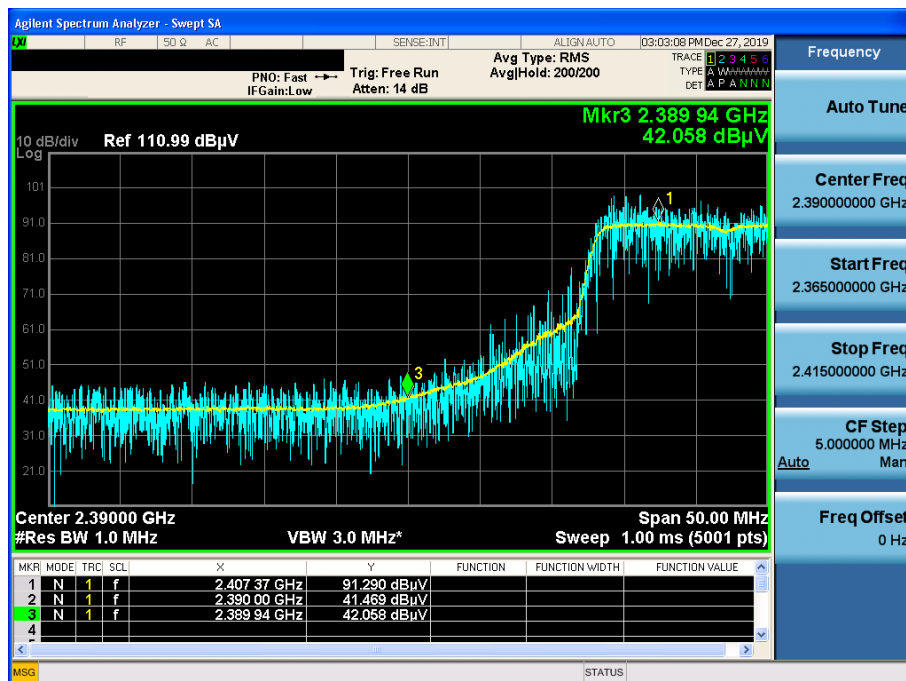
TM 3 & 2412 & Z axis & Ver

Detector Mode : PK



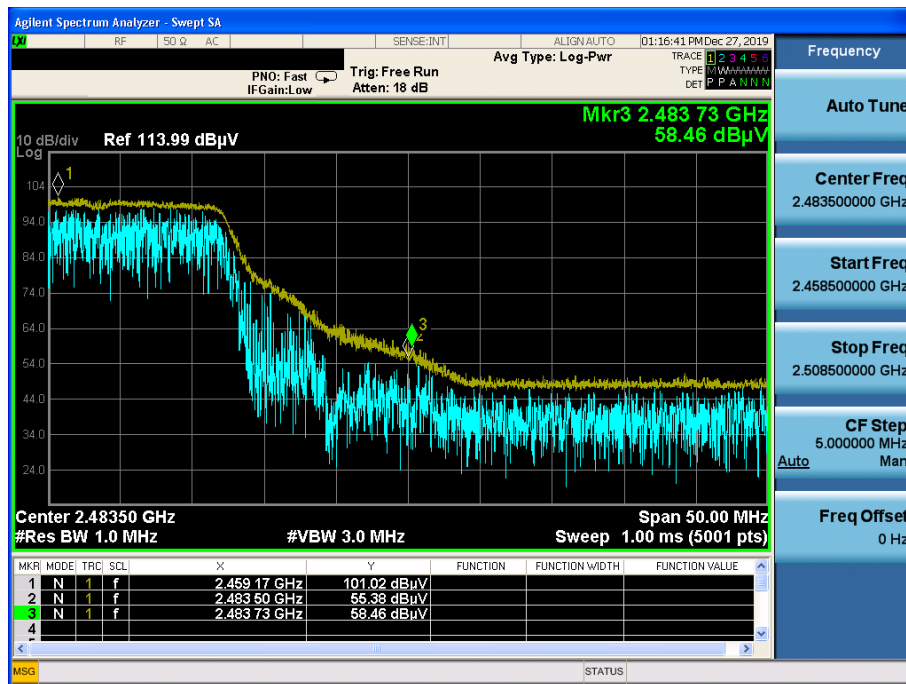
TM 3 & 2412 & Z axis & Ver

Detector Mode : AV



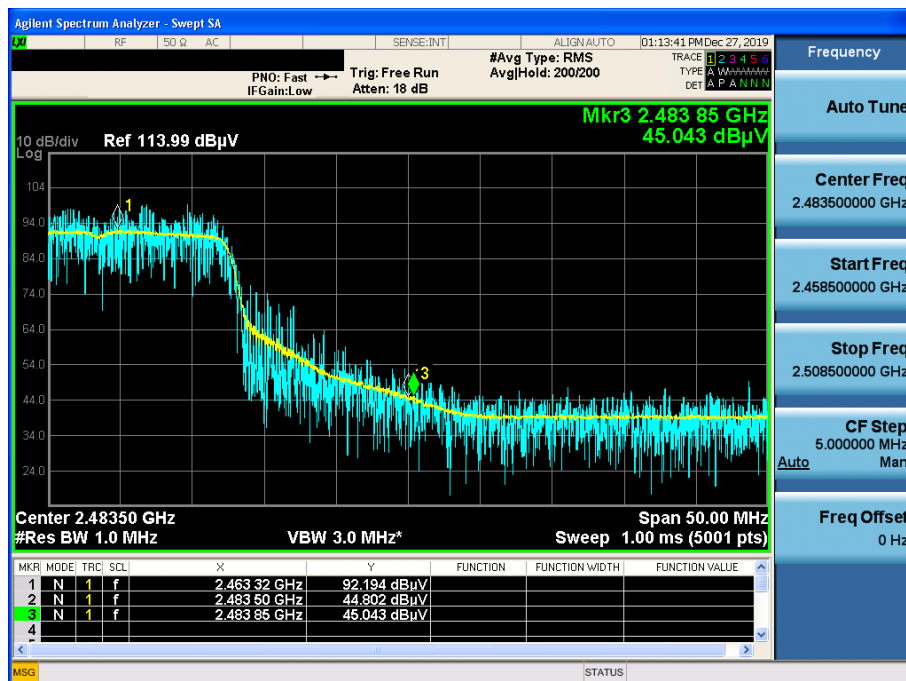
TM 3 & 2462 & Z axis & Ver

Detector Mode : PK



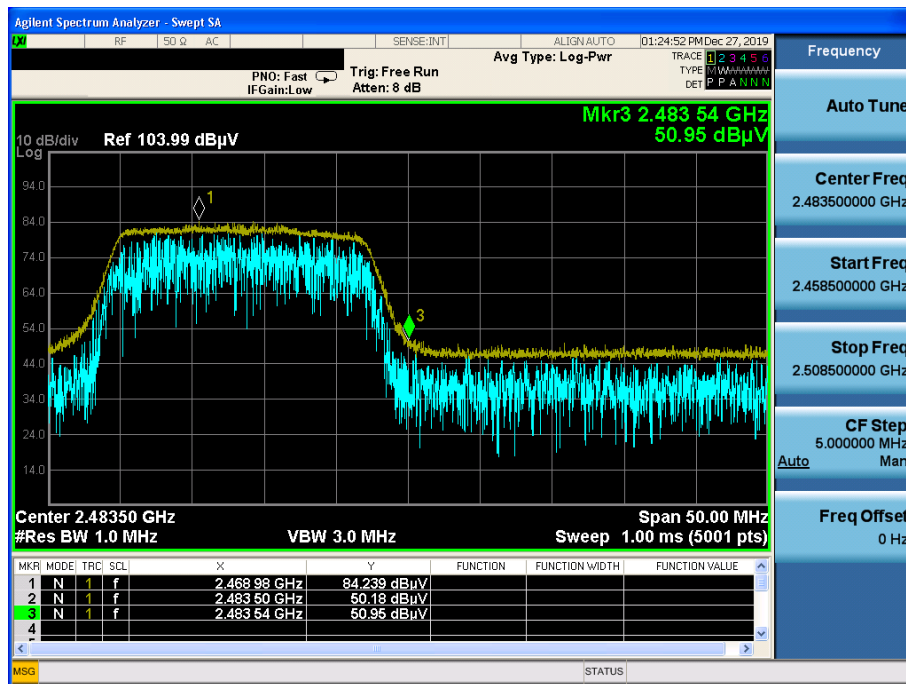
TM 3 & 2462 & Z axis & Ver

Detector Mode : AV



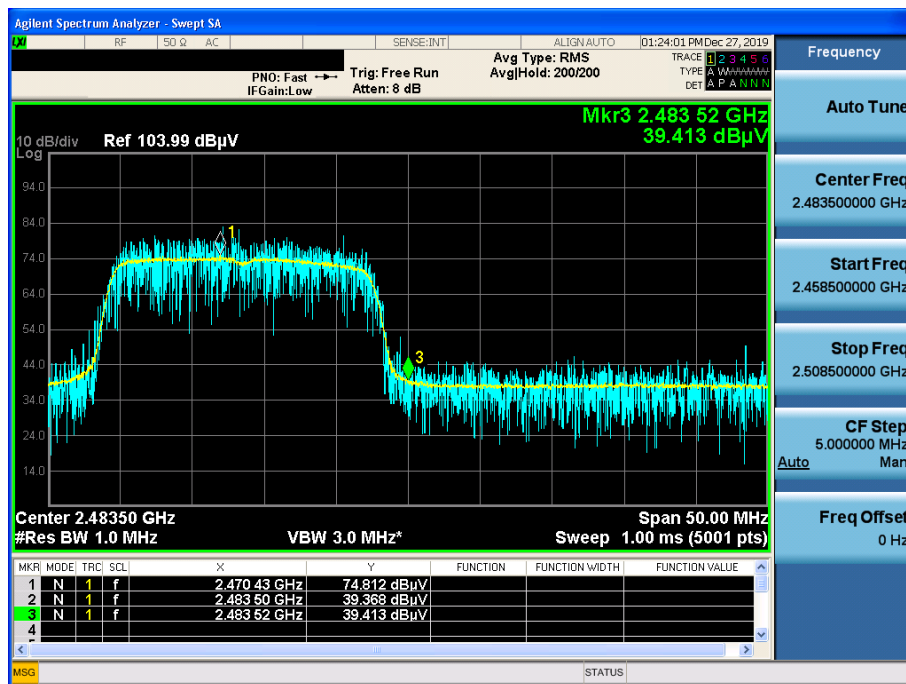
TM 3 & 2472 & Z axis & Ver

Detector Mode : PK



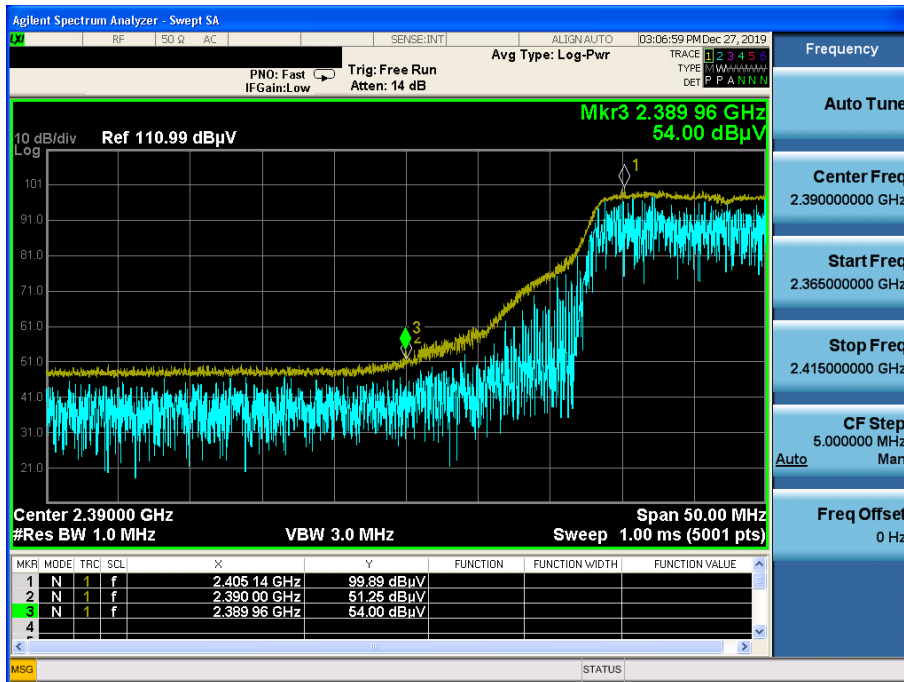
TM 3 & 2472 & Z axis & Ver

Detector Mode : AV



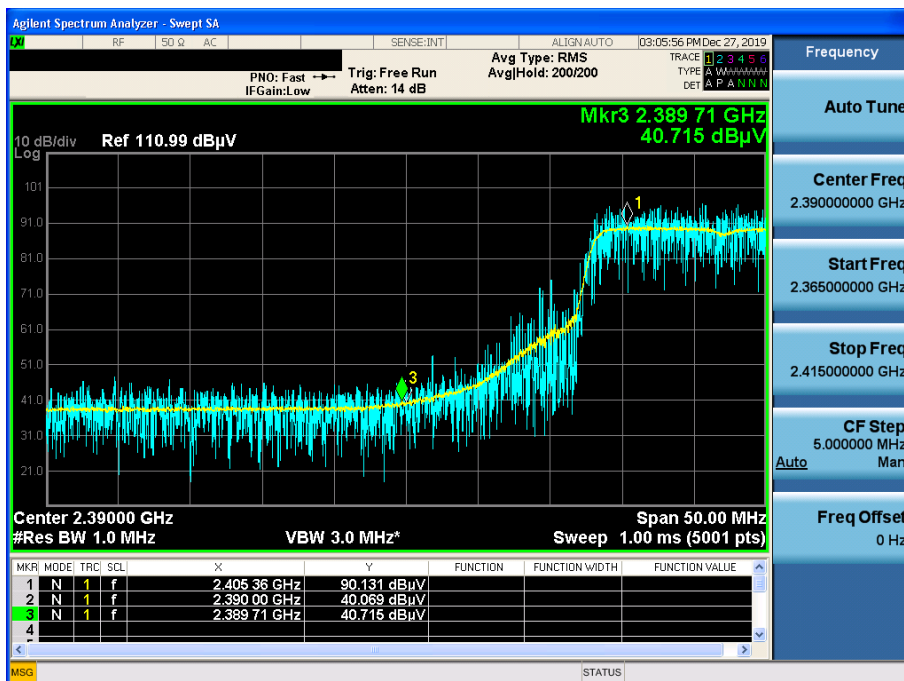
TM 4 & 2412 & Z axis & Ver

Detector Mode : PK



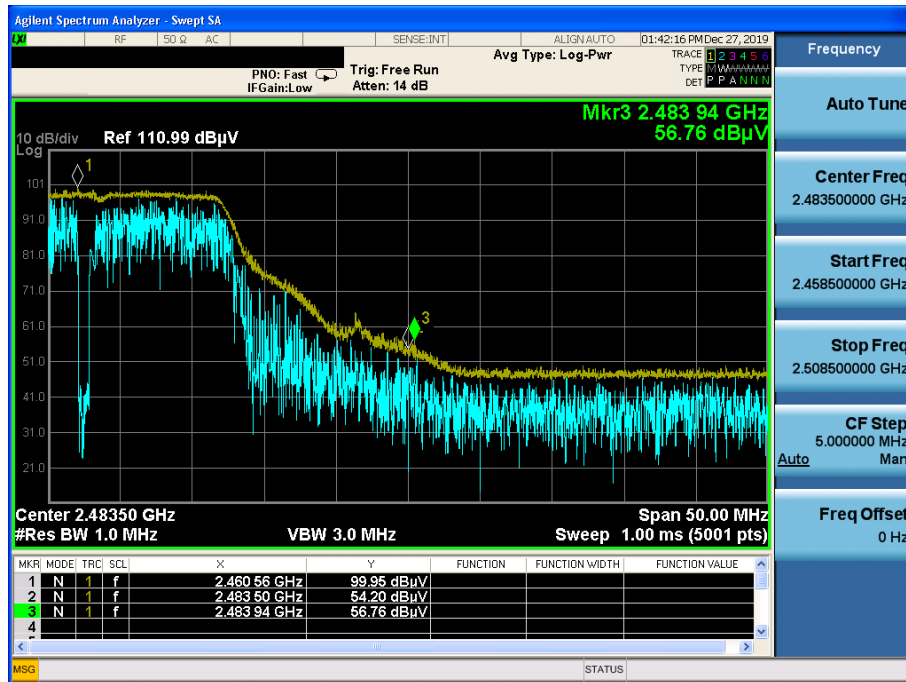
TM 4 & 2412 & Z axis & Ver

Detector Mode : AV



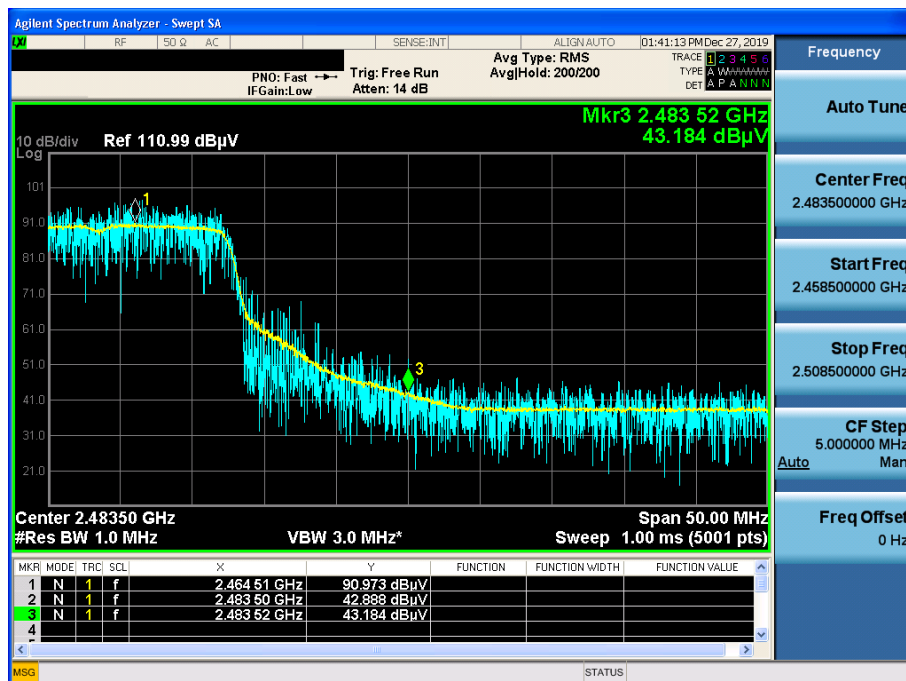
TM 4 & 2462 & Z axis & Ver

Detector Mode : PK



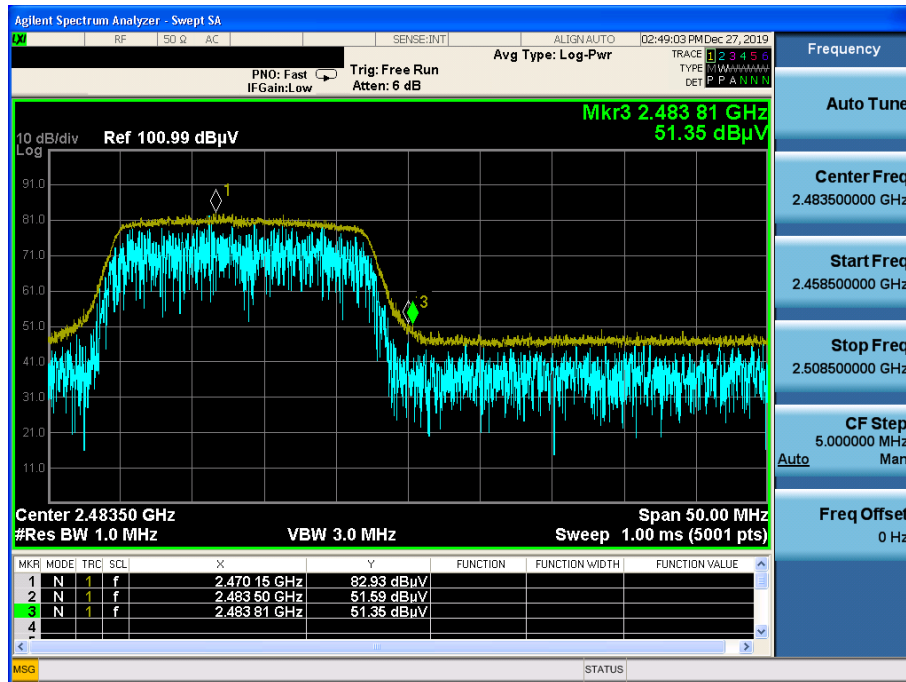
TM 4 & 2462 & Z axis & Ver

Detector Mode : AV



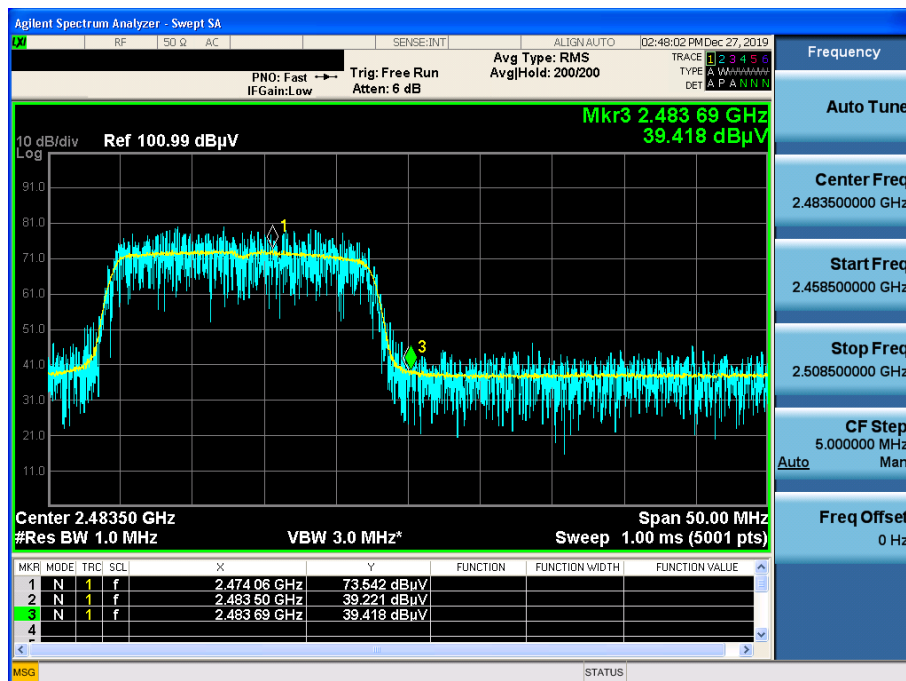
TM 4 & 2472 & Z axis & Ver

Detector Mode : PK



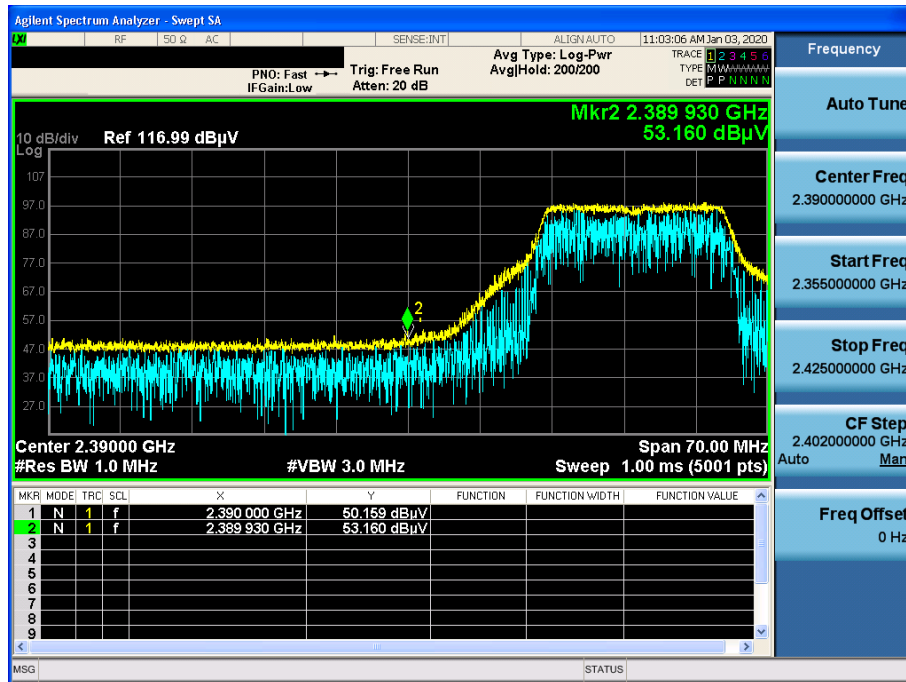
TM 4 & 2472 & Z axis & Ver

Detector Mode : AV



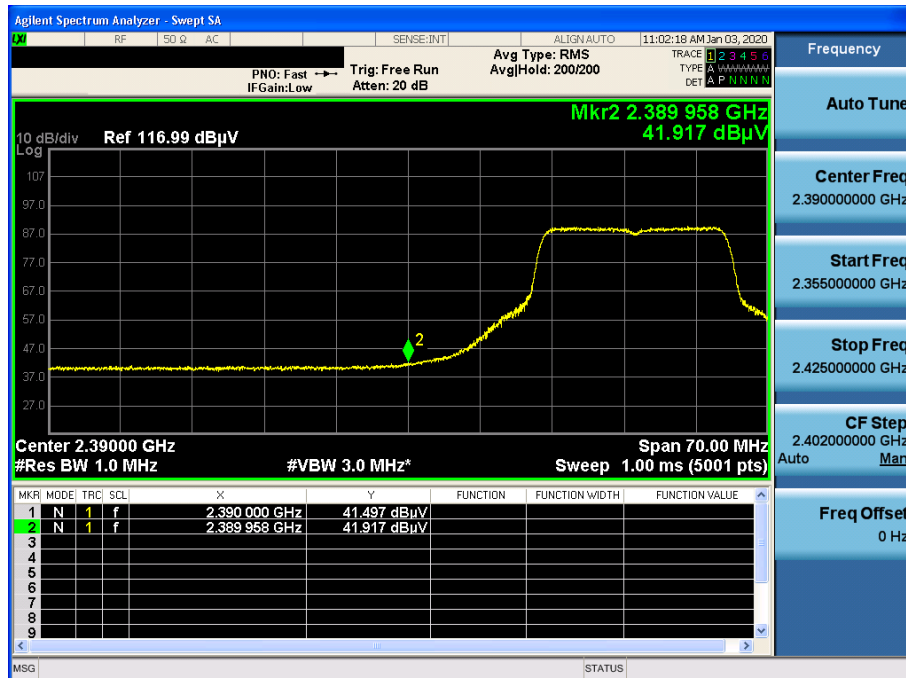
TM 5 & 2412 & X axis & Hor

Detector Mode : PK



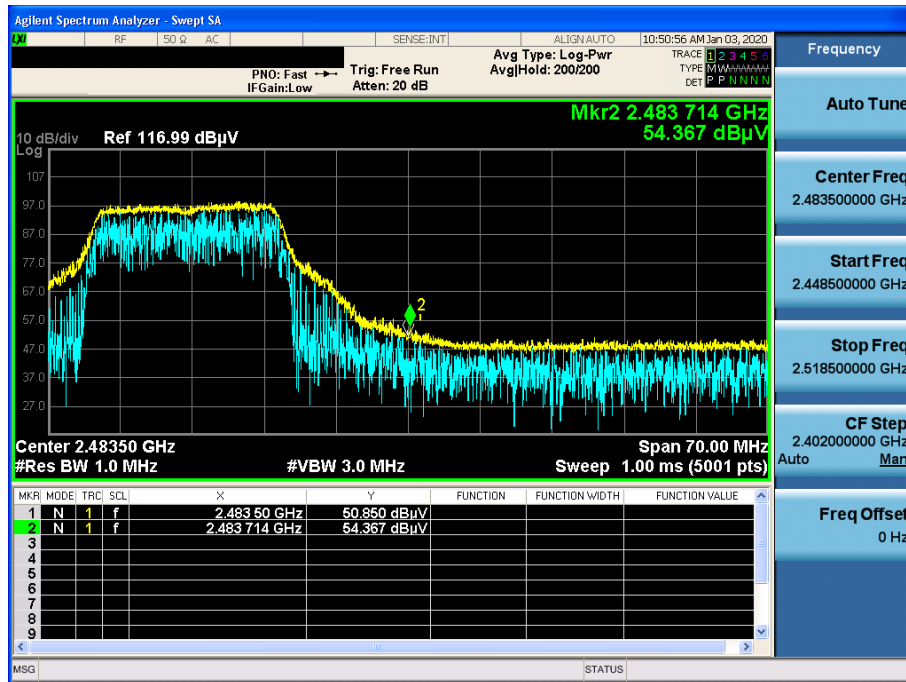
TM 5 & 2412 & X axis & Hor

Detector Mode : AV



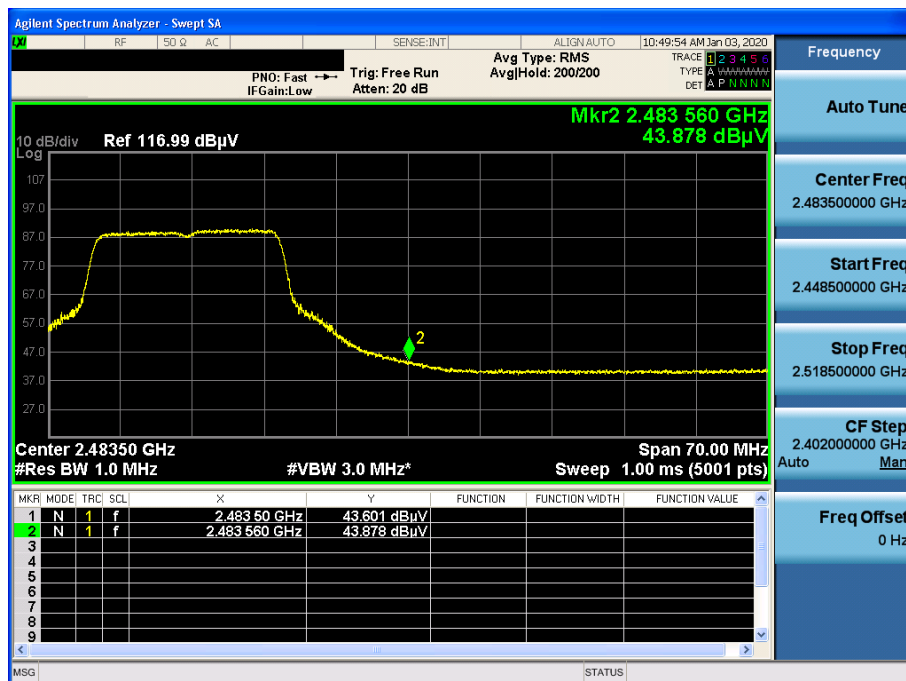
TM 5 & 2462 & X axis & Hor

Detector Mode : PK



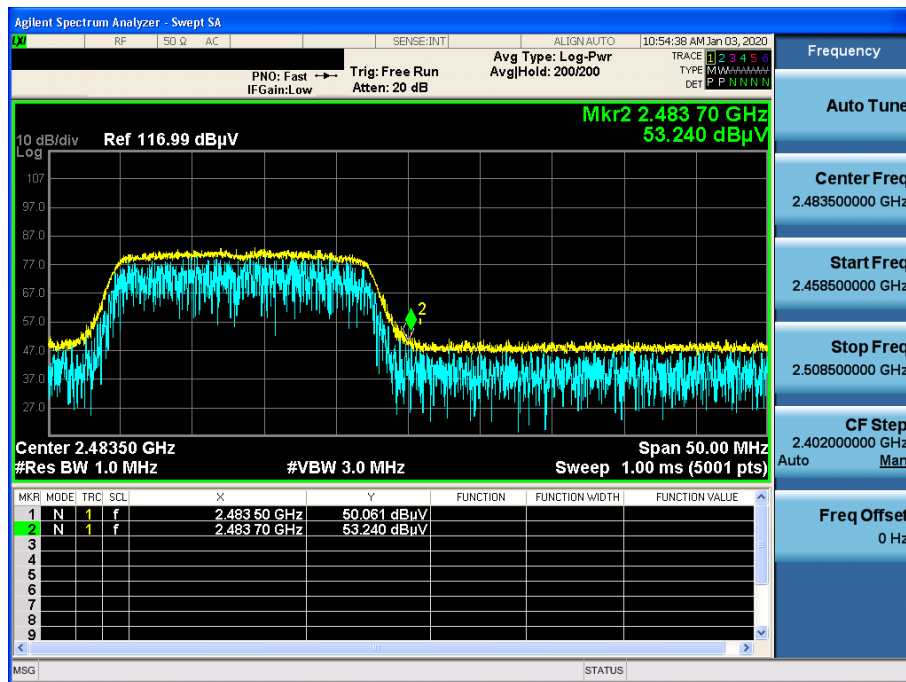
TM 5 & 2462 & X axis & Hor

Detector Mode : AV



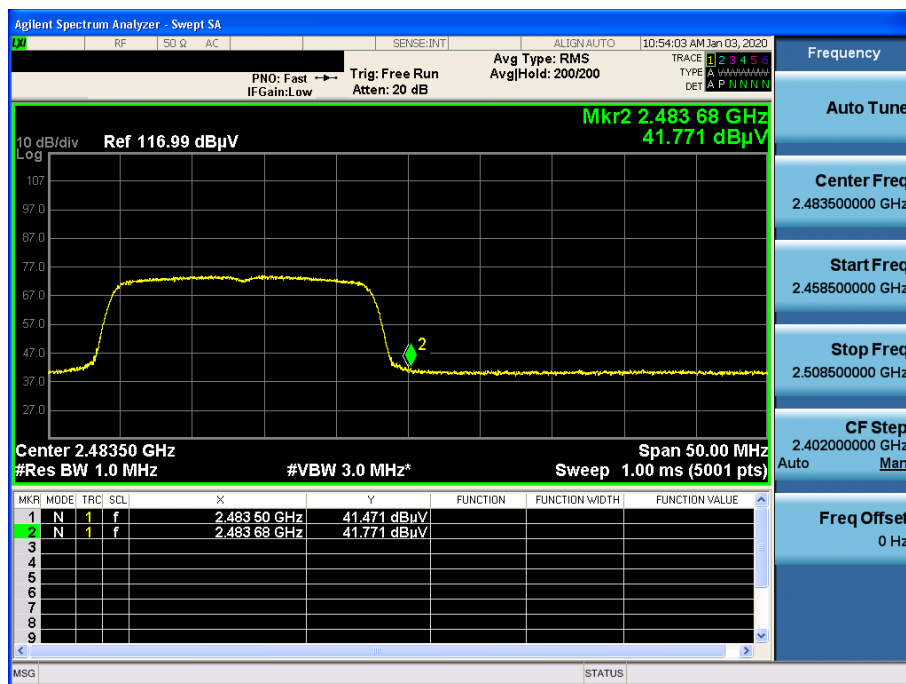
TM 5 & 2472 & X axis & Hor

Detector Mode : PK



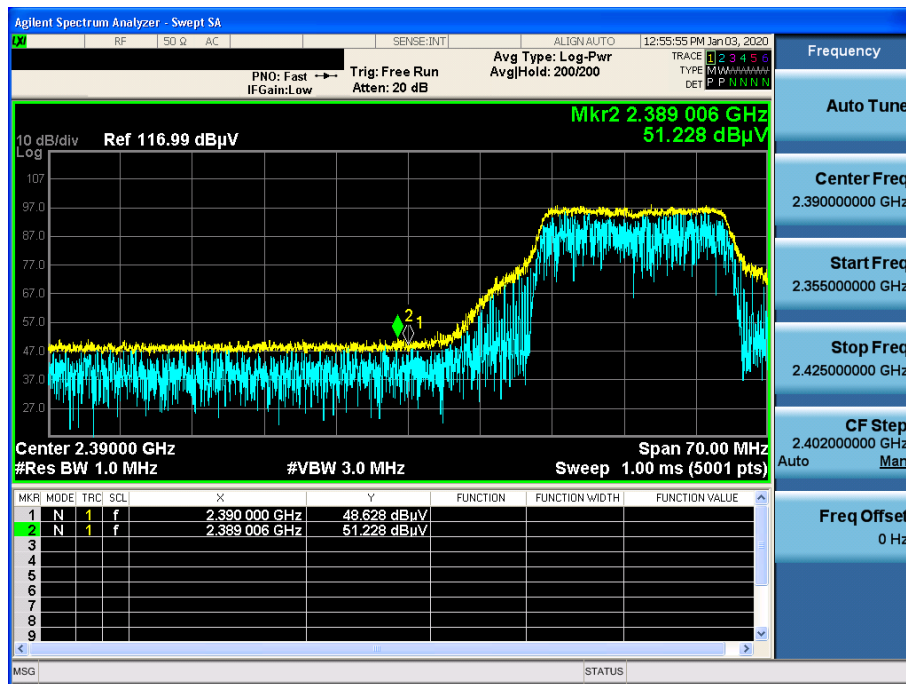
TM 5 & 2472 & X axis & Hor

Detector Mode : AV



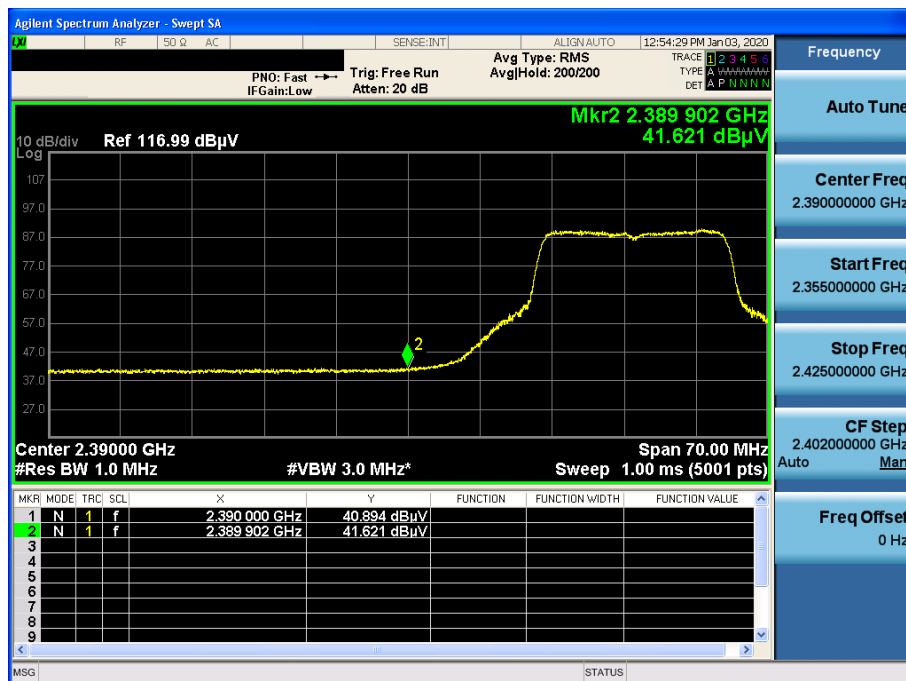
TM 6 & 2412 & X axis & Hor

Detector Mode : PK



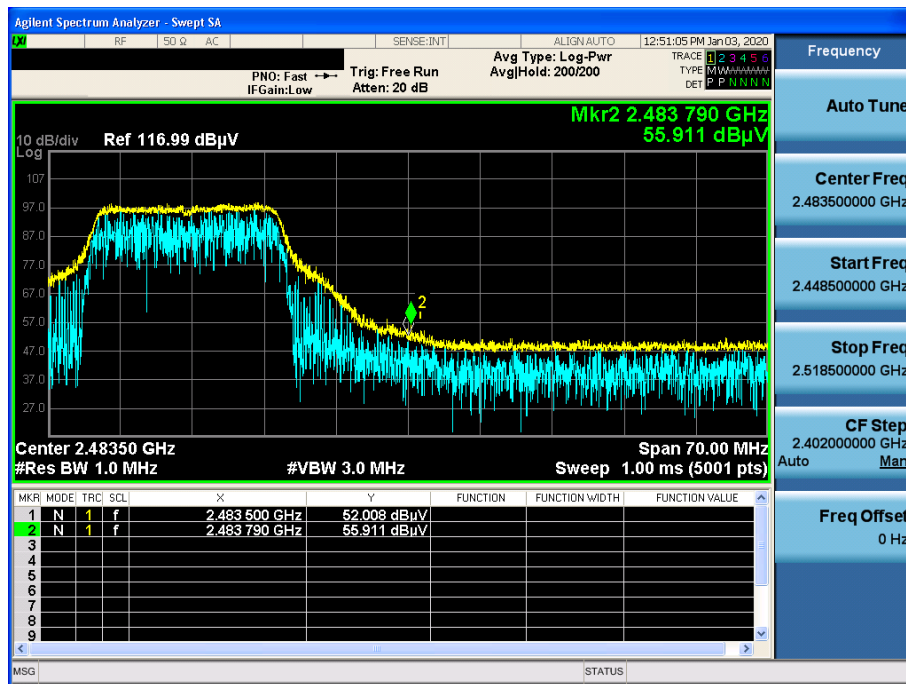
TM 6 & 2412 & X axis & Hor

Detector Mode : AV



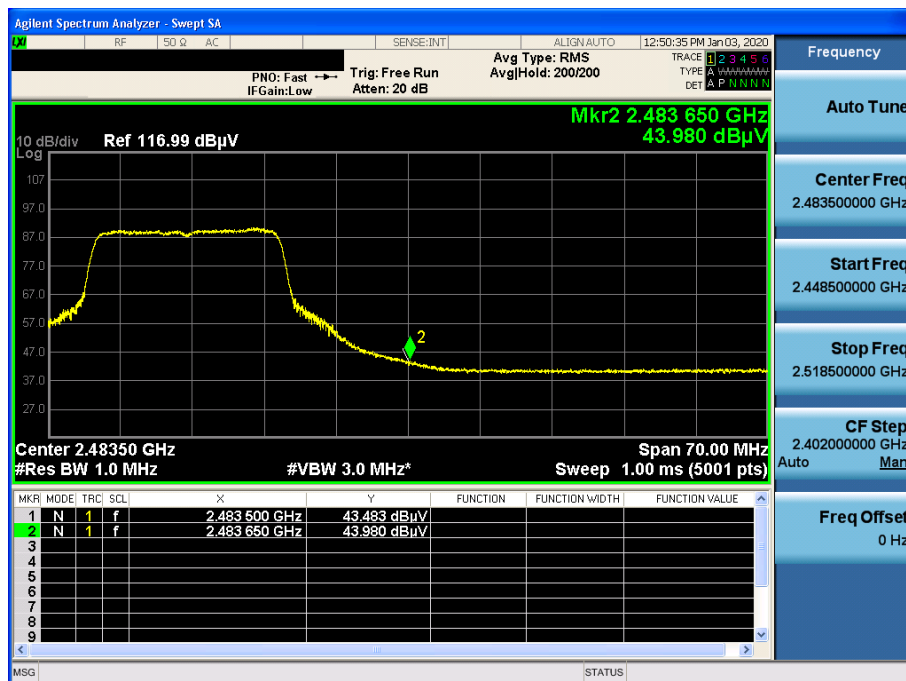
TM 6 & 2462 & X axis & Hor

Detector Mode : PK



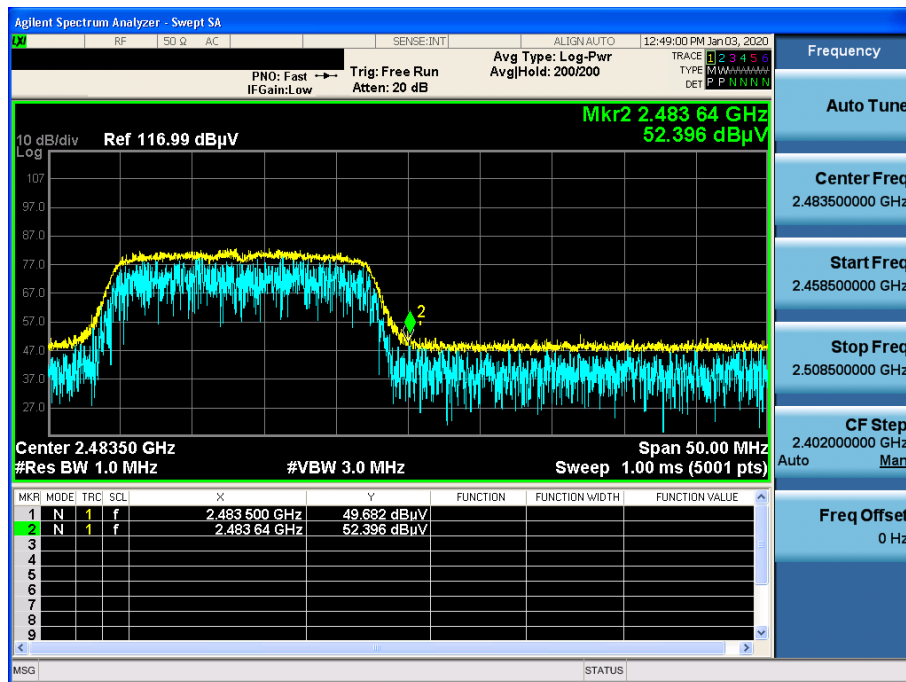
TM 6 & 2462 & X axis & Hor

Detector Mode : AV



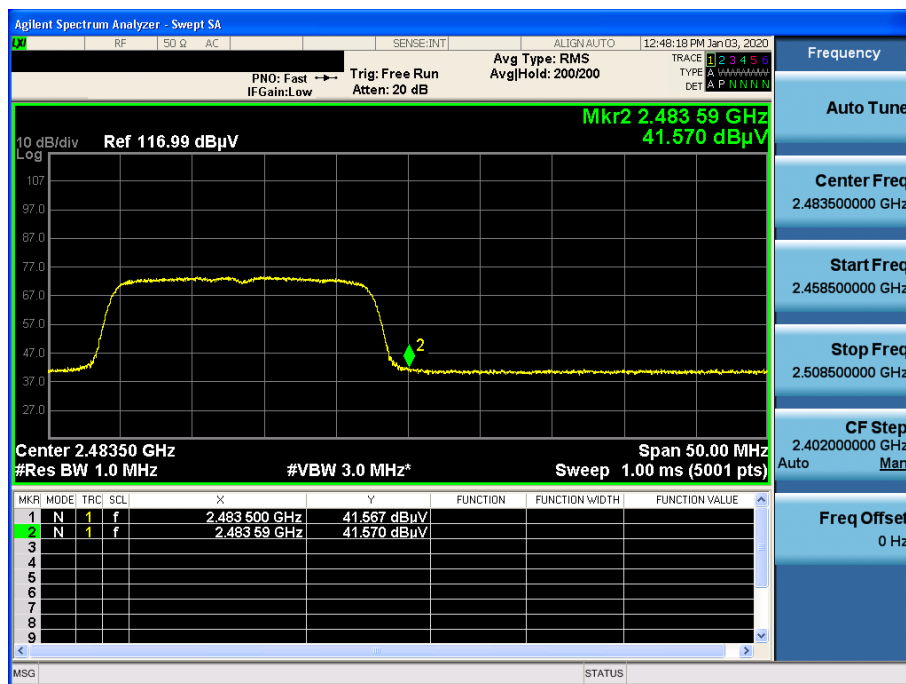
TM 6 & 2472 & X axis & Hor

Detector Mode : PK



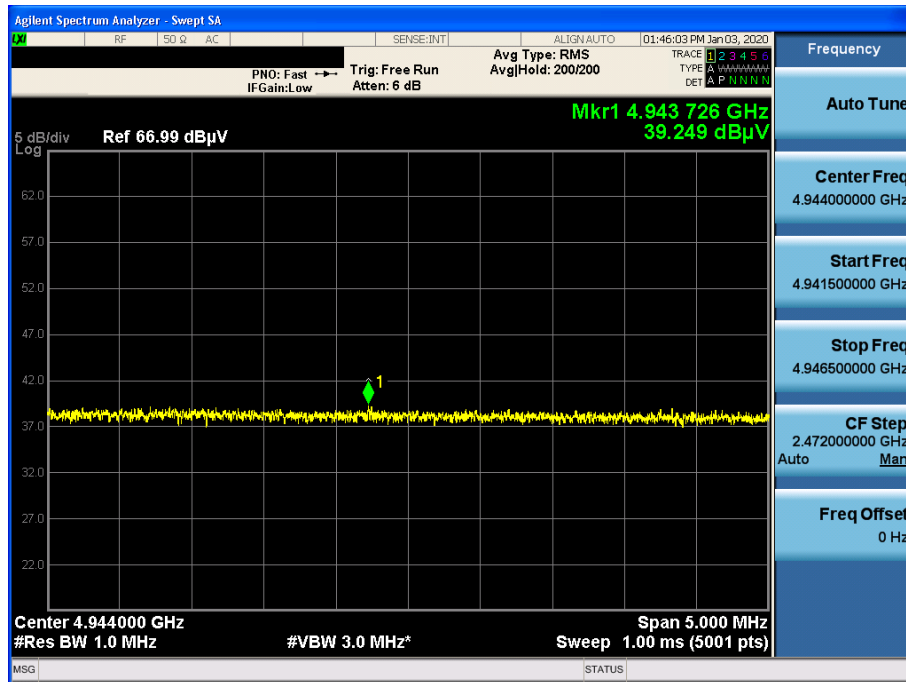
TM 6 & 2472 & X axis & Hor

Detector Mode : AV



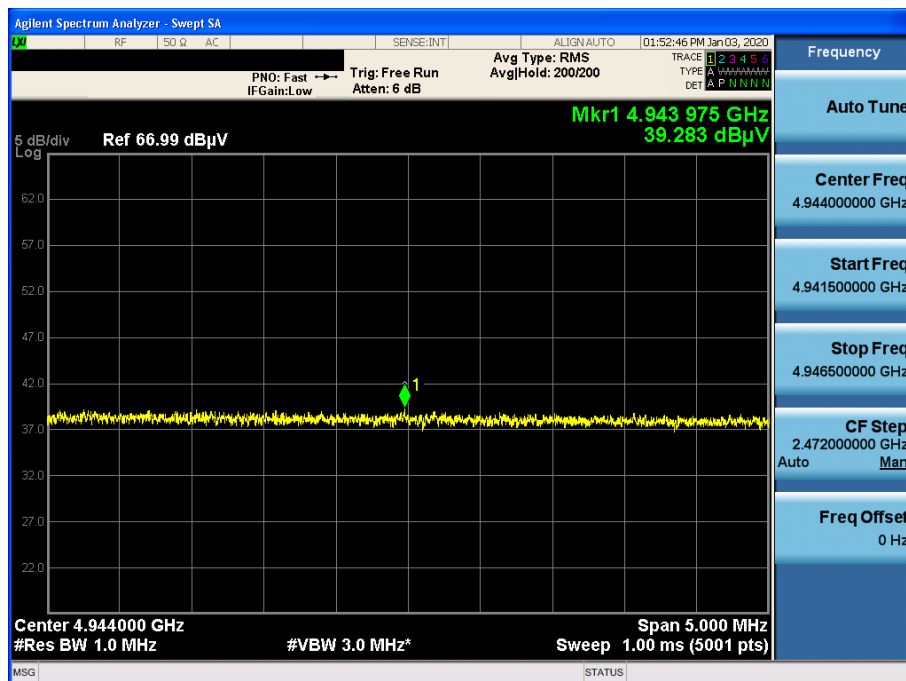
TM 1 & ANT 1 & 2472 & X axis & Hor

Detector Mode : AV



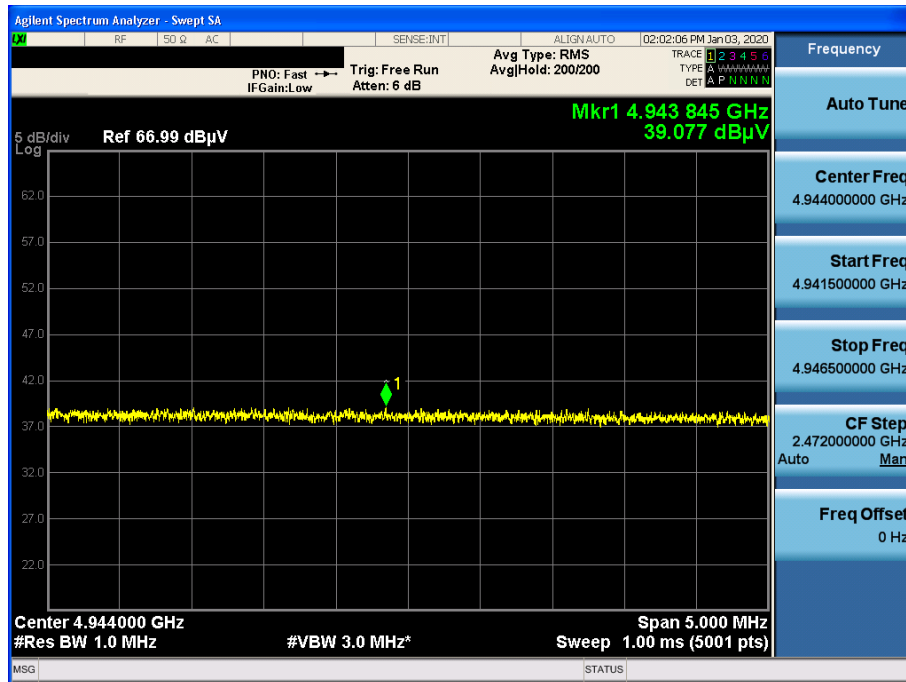
TM 1 & ANT 2 & 2472 & X axis & Hor

Detector Mode : AV



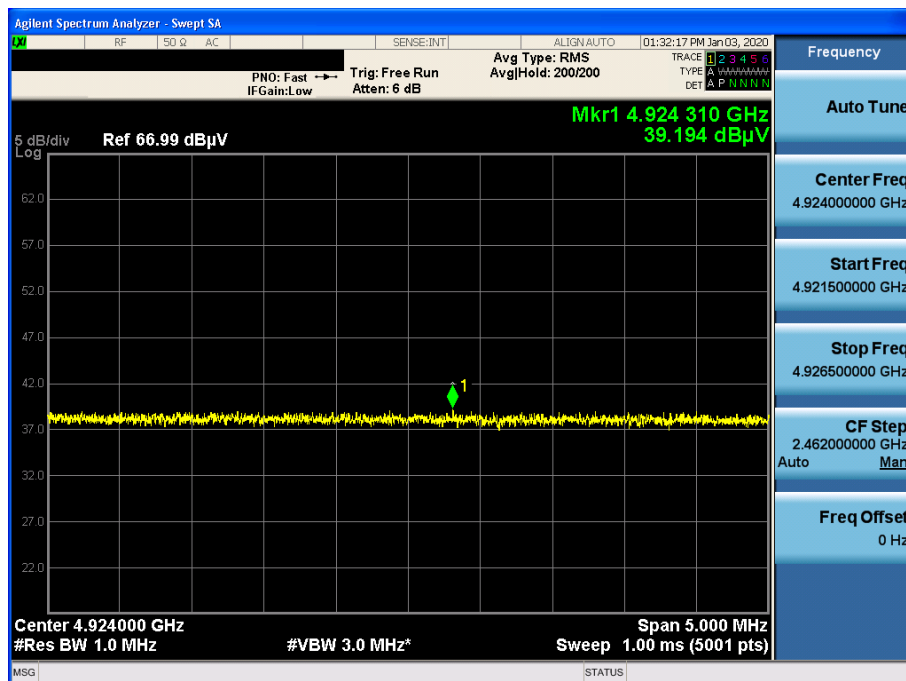
TM 2 & 2472 & X axis & Hor

Detector Mode : AV



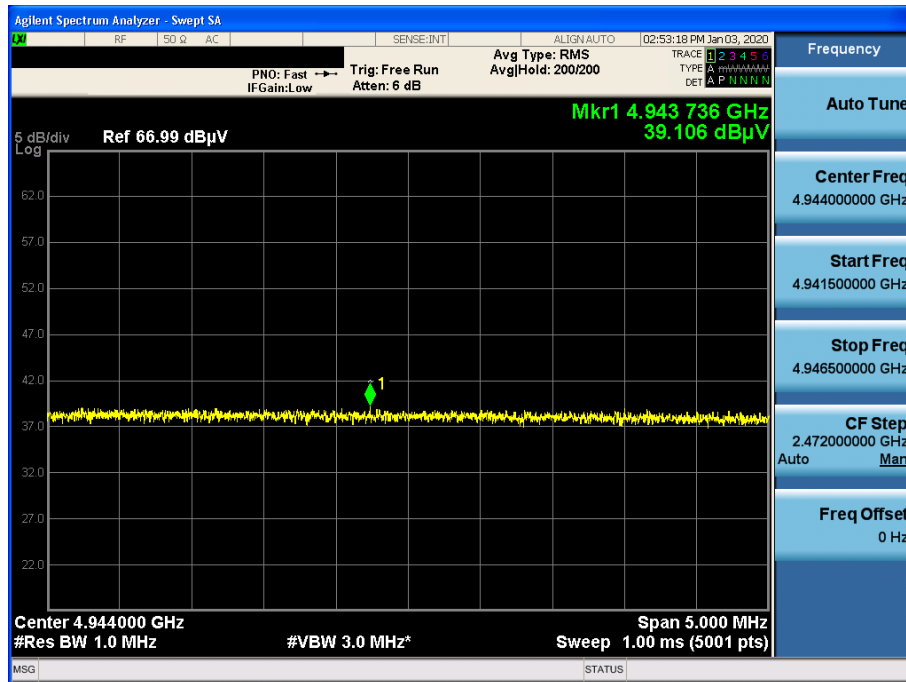
TM 3 & 2462 & X axis & Hor

Detector Mode : AV



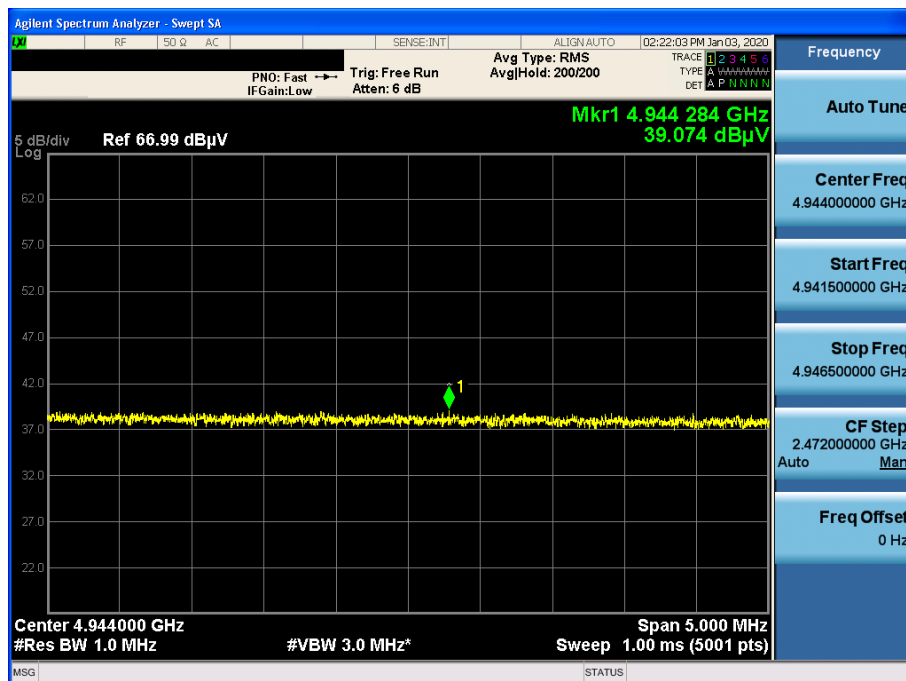
TM 4 & 2472 & X axis & Hor

Detector Mode : AV



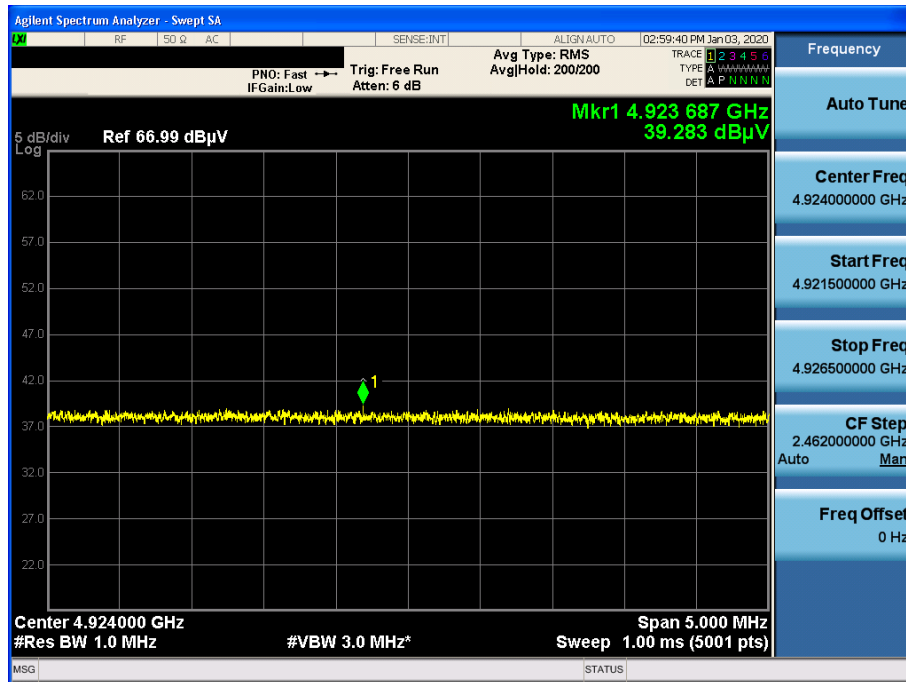
TM 5 & 2472 & X axis & Hor

Detector Mode : AV



TM 6 & 2462 & X axis & Hor

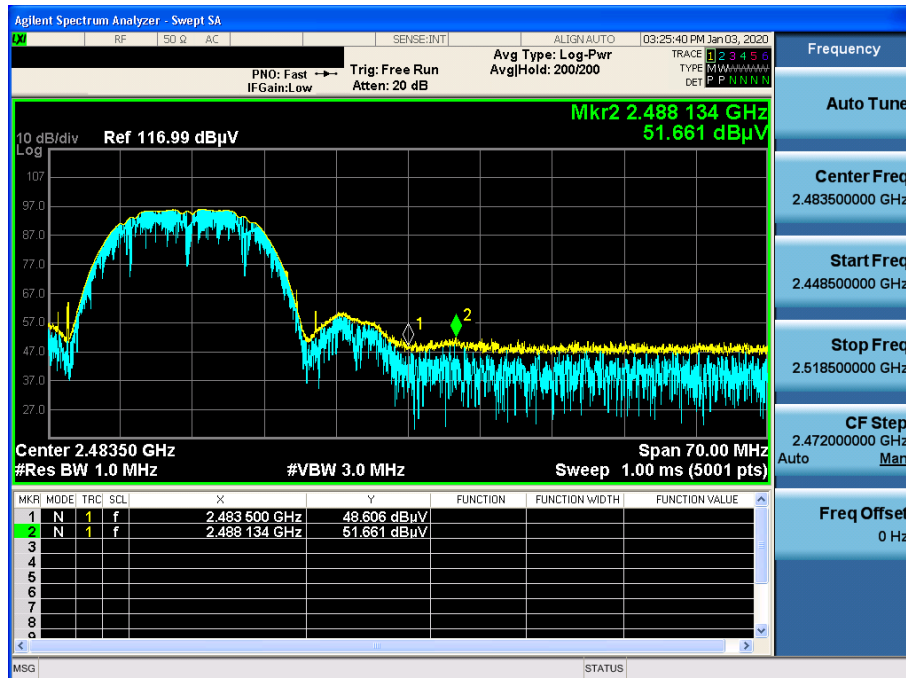
Detector Mode : AV



Unwanted Emissions (Radiated) Test Plot _ Wireless Charging

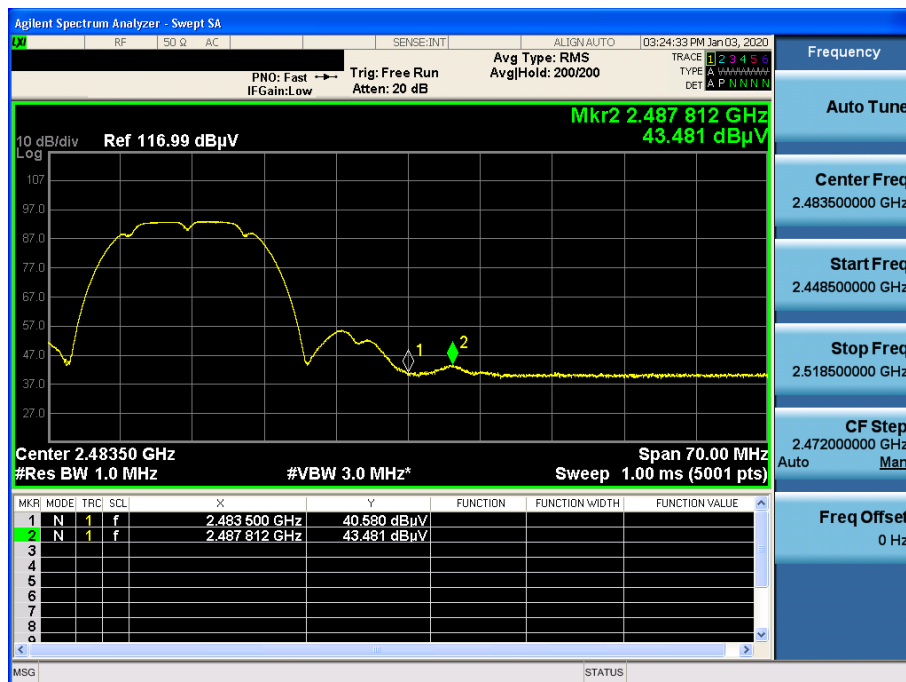
TM 1 & ANT 1 & 2462 & X axis & Hor

Detector Mode : PK



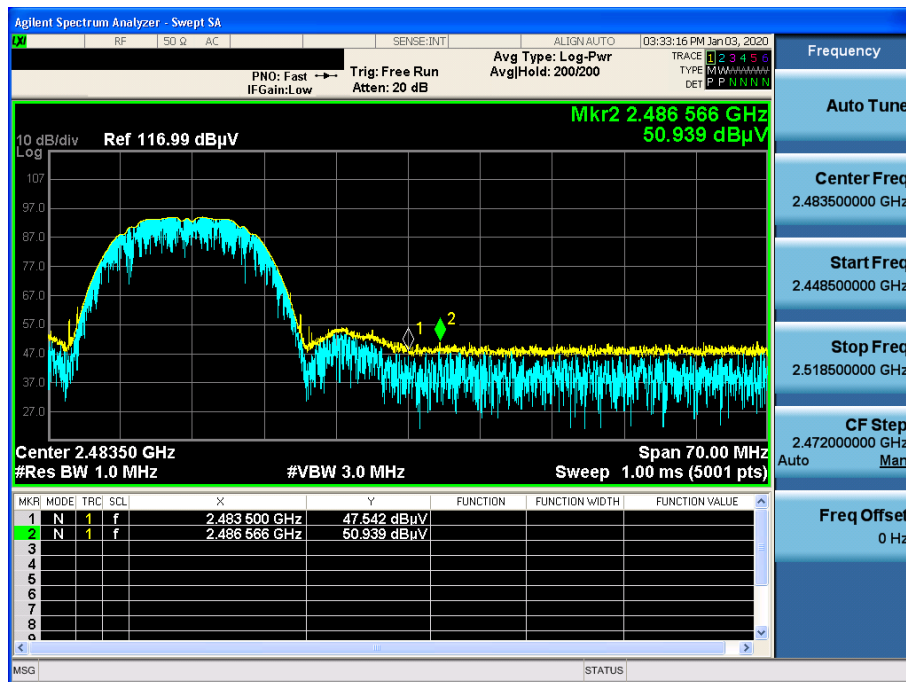
TM 1 & ANT 1 & 2412 & X axis & Hor

Detector Mode : AV



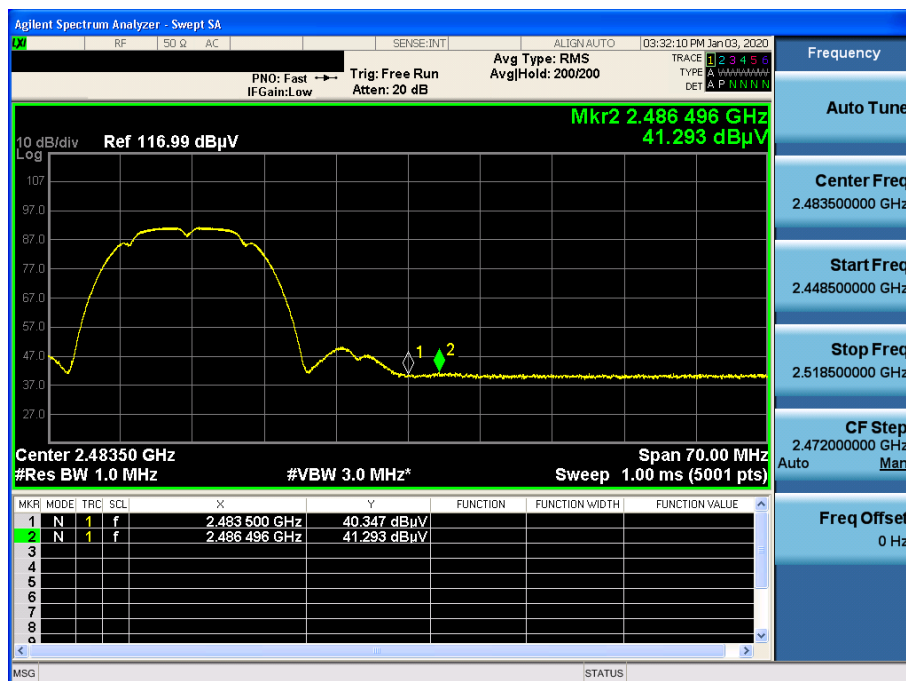
TM 1 & ANT 2 & 2462 & X axis & Hor

Detector Mode : PK



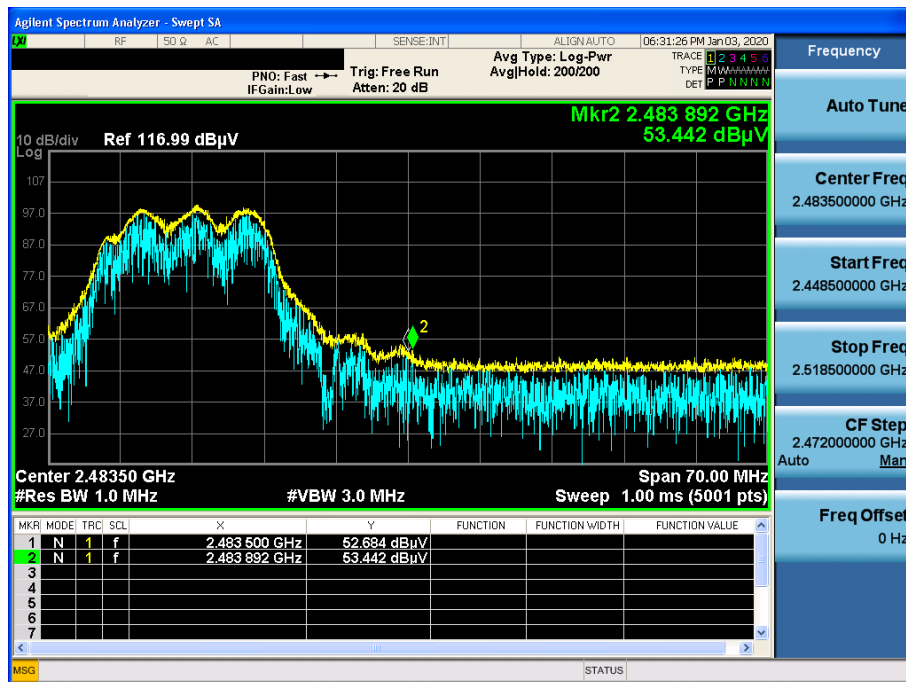
TM 1 & ANT 2 & 2412 & X axis & Hor

Detector Mode : AV



TM 2 & 2462 & X axis & Hor

Detector Mode : PK



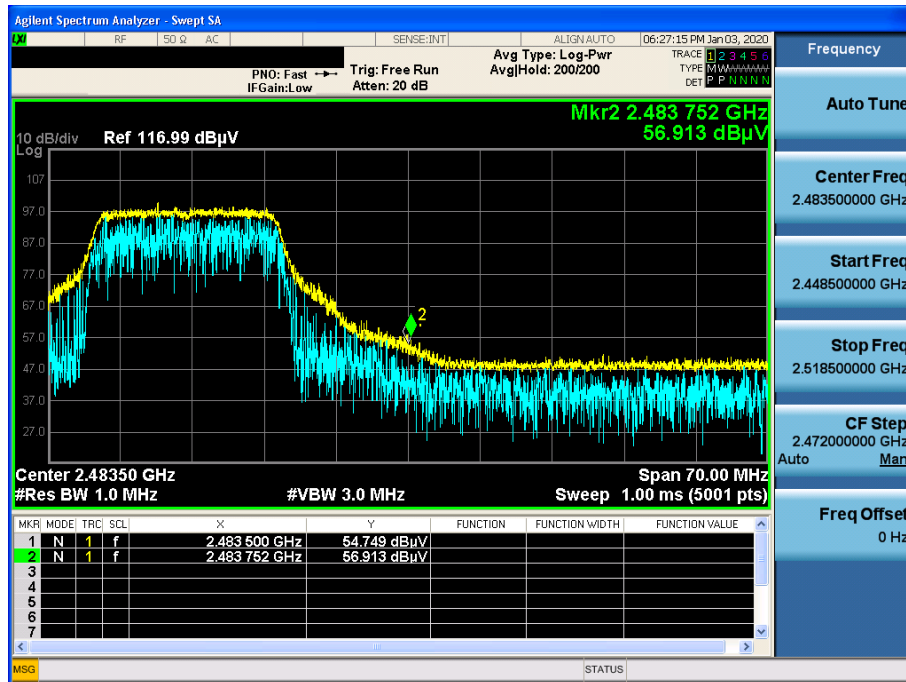
TM 2 & 2462 & X axis & Hor

Detector Mode : AV



TM 3 & 2462 & X axis & Hor

Detector Mode : PK



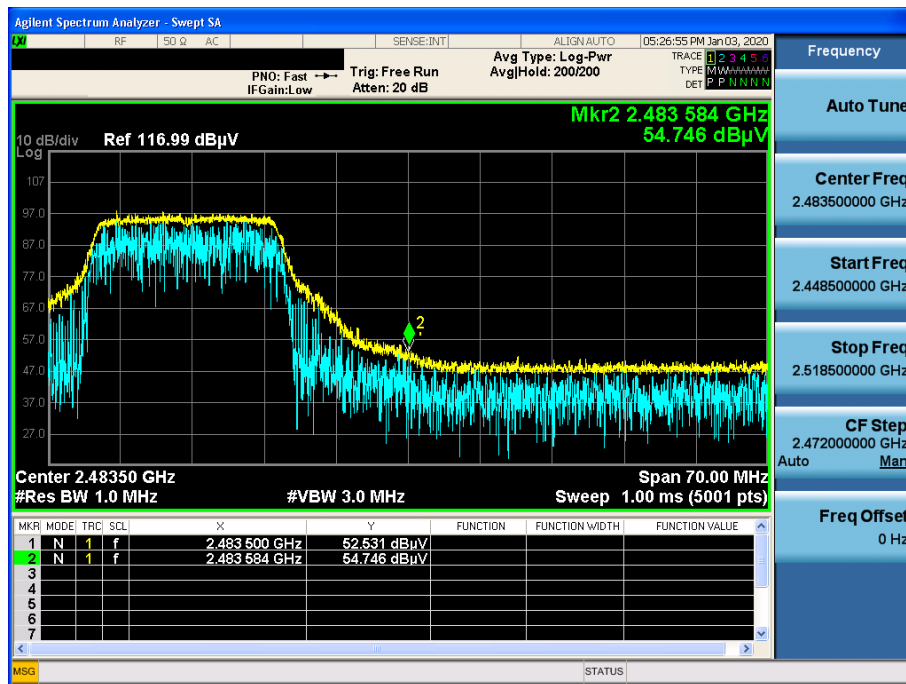
TM 3 & 2462 & X axis & Hor

Detector Mode : AV



TM 4 & 2462 & X axis & Hor

Detector Mode : PK



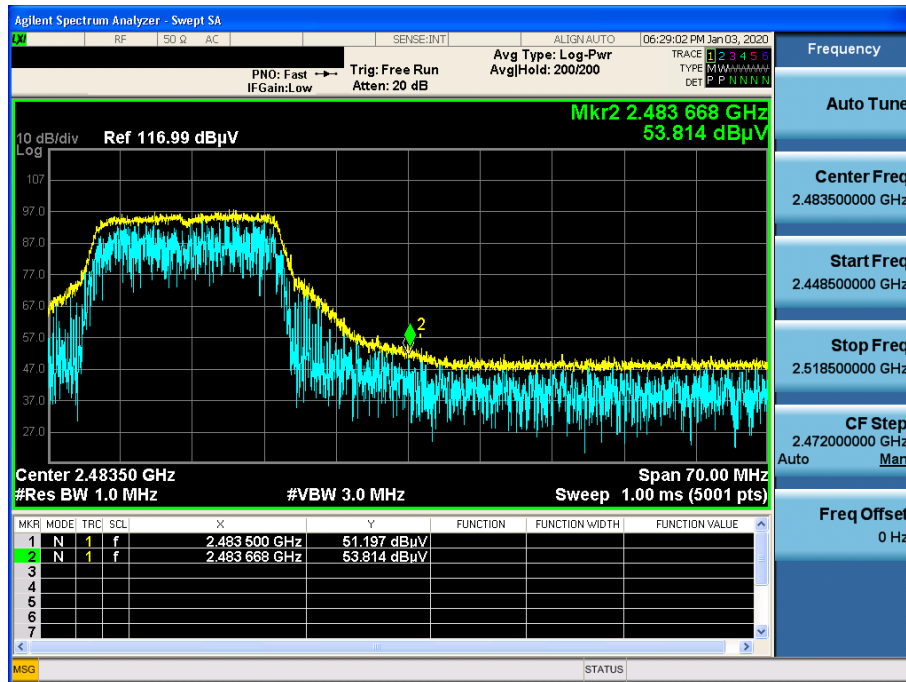
TM 4 & 2462 & X axis & Hor

Detector Mode : AV



TM 5 & 2462 & X axis & Hor

Detector Mode : PK



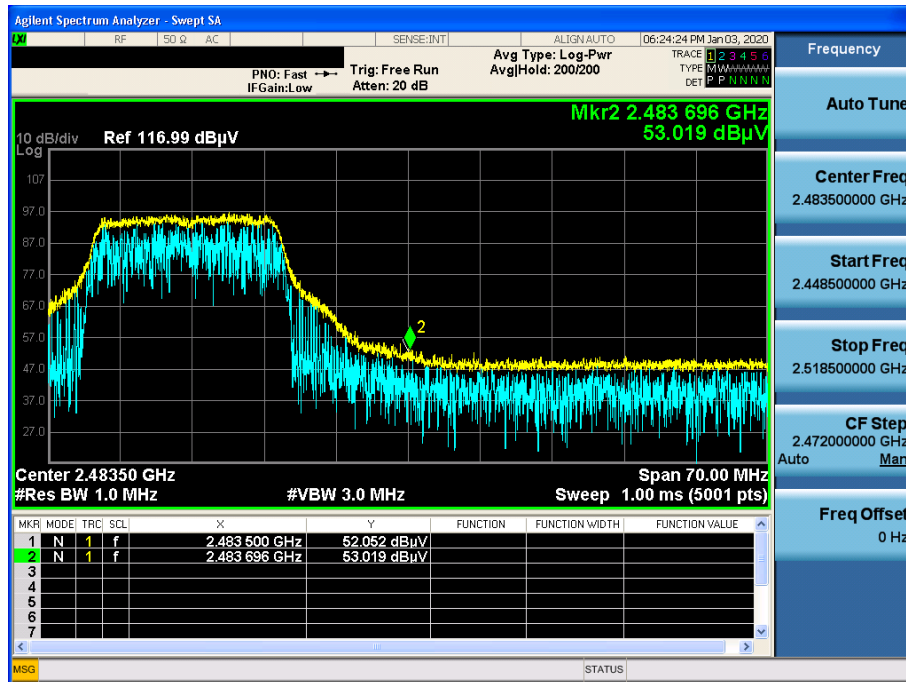
TM 5 & 2462 & X axis & Hor

Detector Mode : AV



TM 6 & 2462 & X axis & Hor

Detector Mode : PK



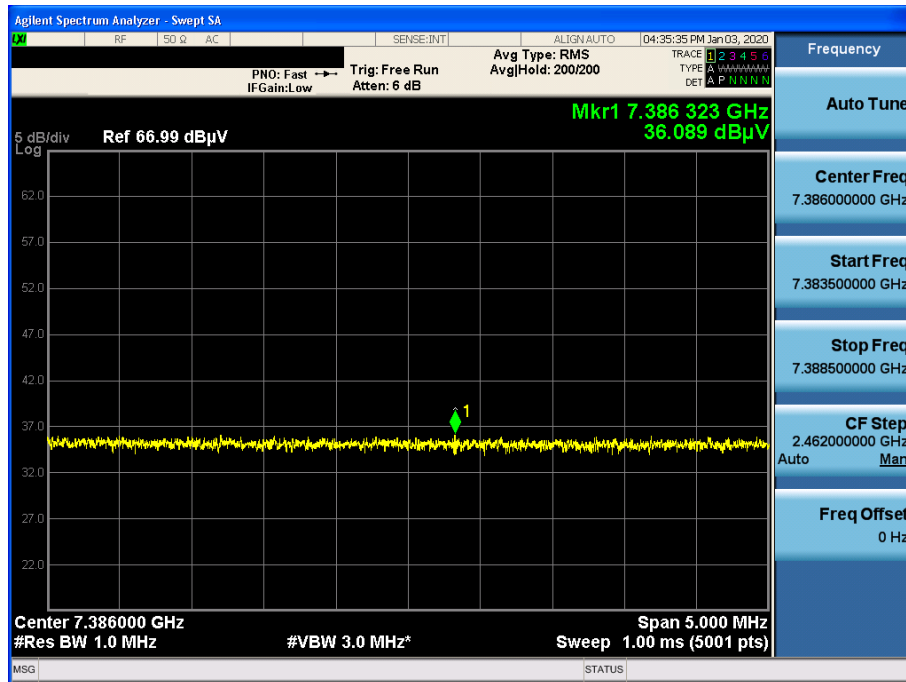
TM 6 & 2462 & X axis & Hor

Detector Mode : AV



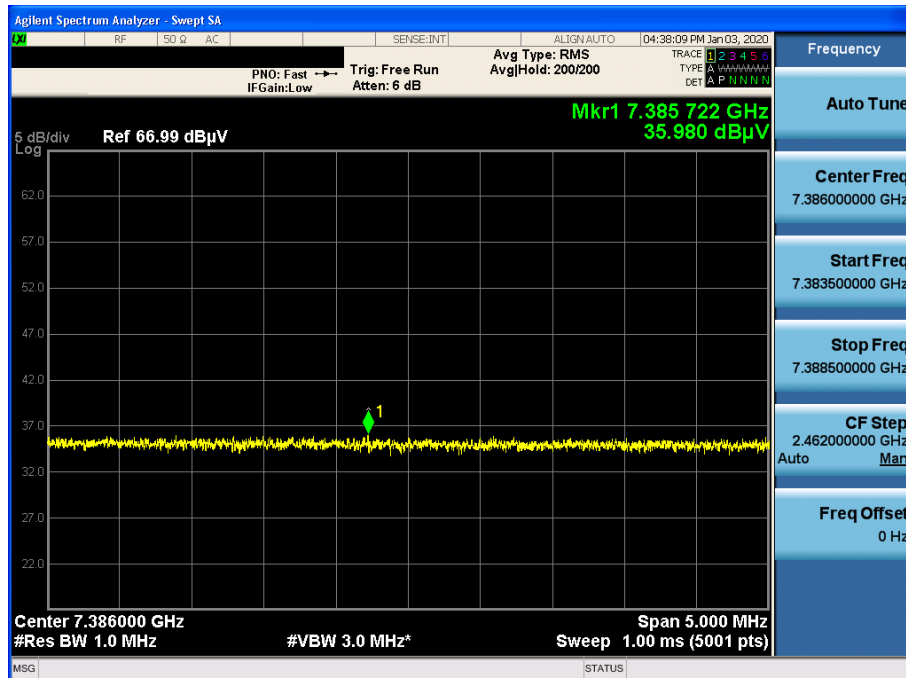
TM 1 & ANT 1 & 2462 & X axis & Hor

Detector Mode : AV



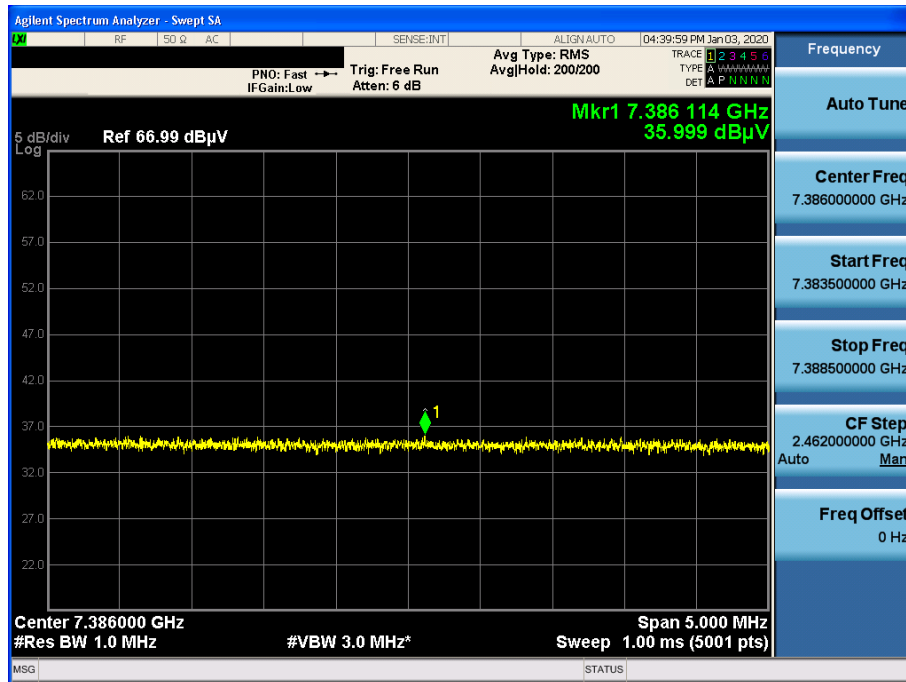
TM 1 & ANT 2 & 2462 & X axis & Hor

Detector Mode : AV



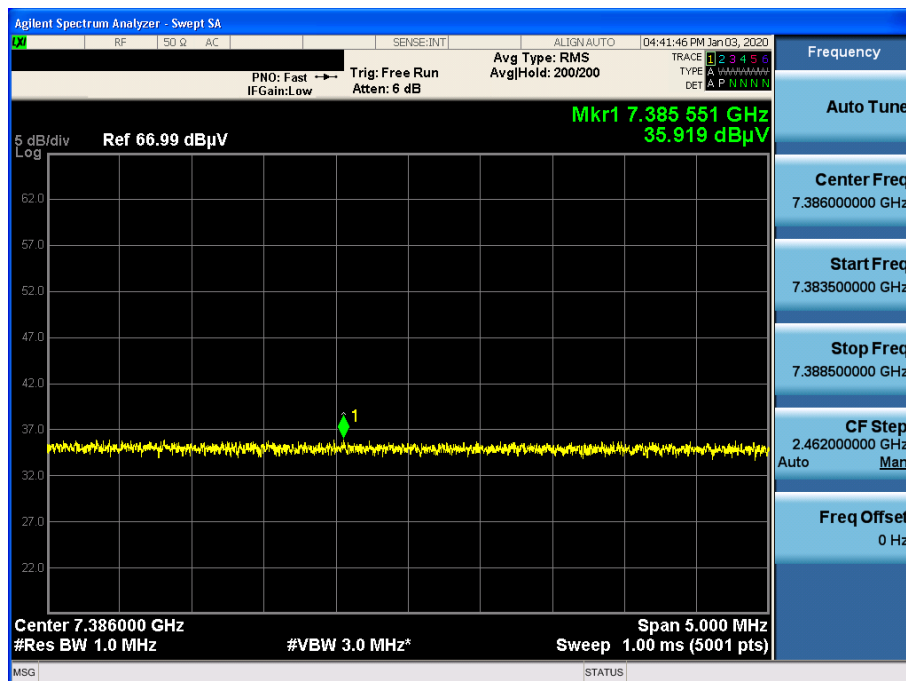
TM 2 & 2462 & X axis & Hor

Detector Mode : AV



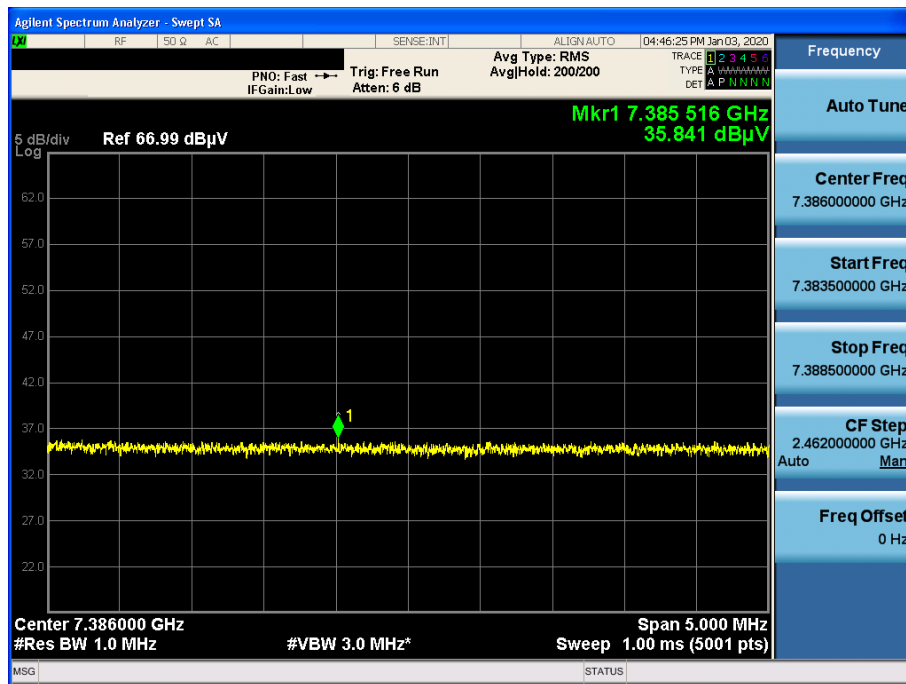
TM 3 & 2462 & X axis & Hor

Detector Mode : AV



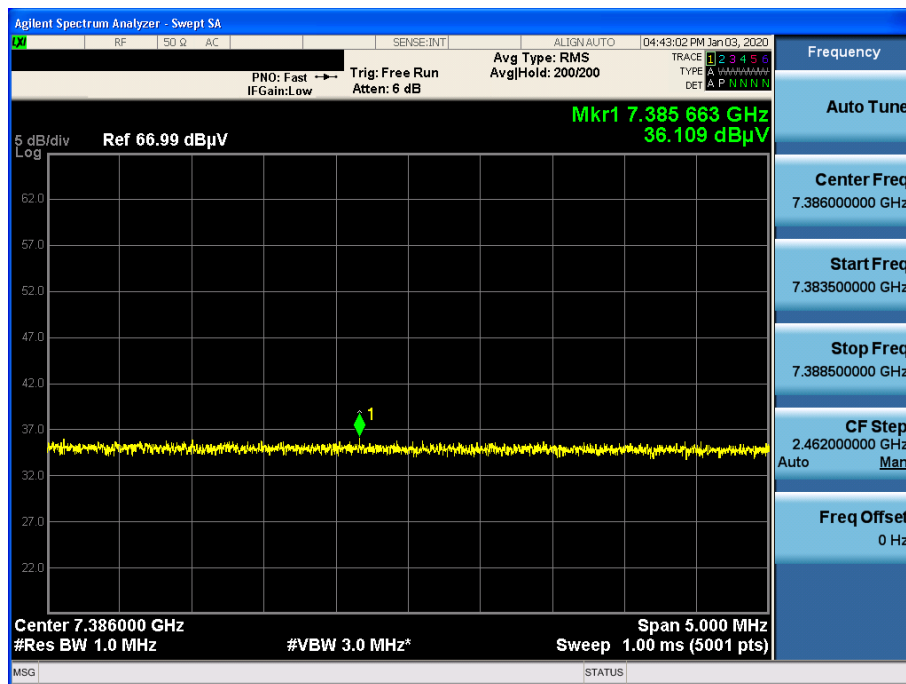
TM 4 & 2462 & X axis & Hor

Detector Mode : AV



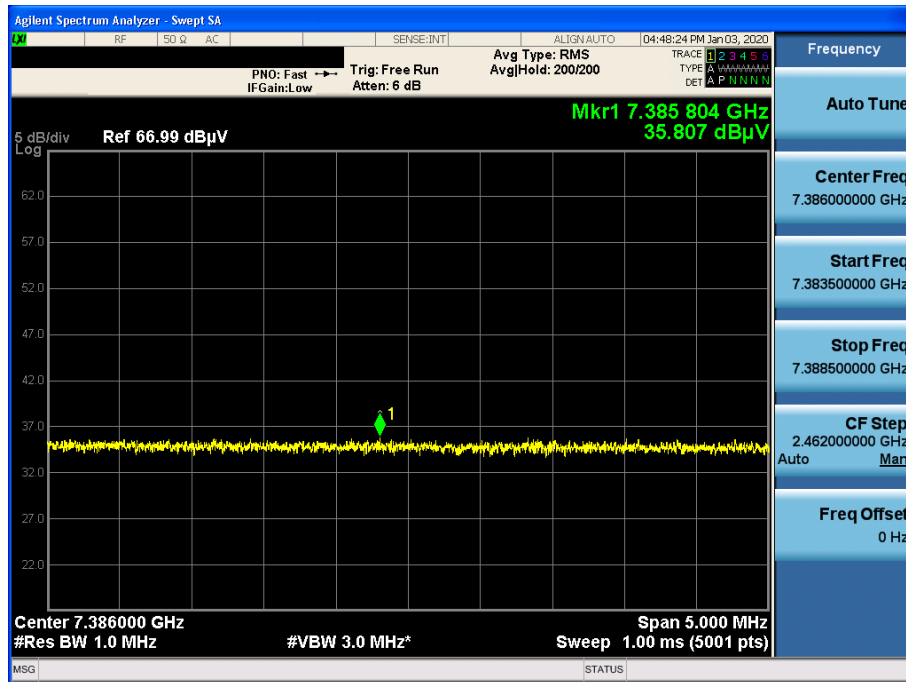
TM 5 & 2462 & X axis & Hor

Detector Mode : AV



TM 6 & 2462 & X axis & Hor

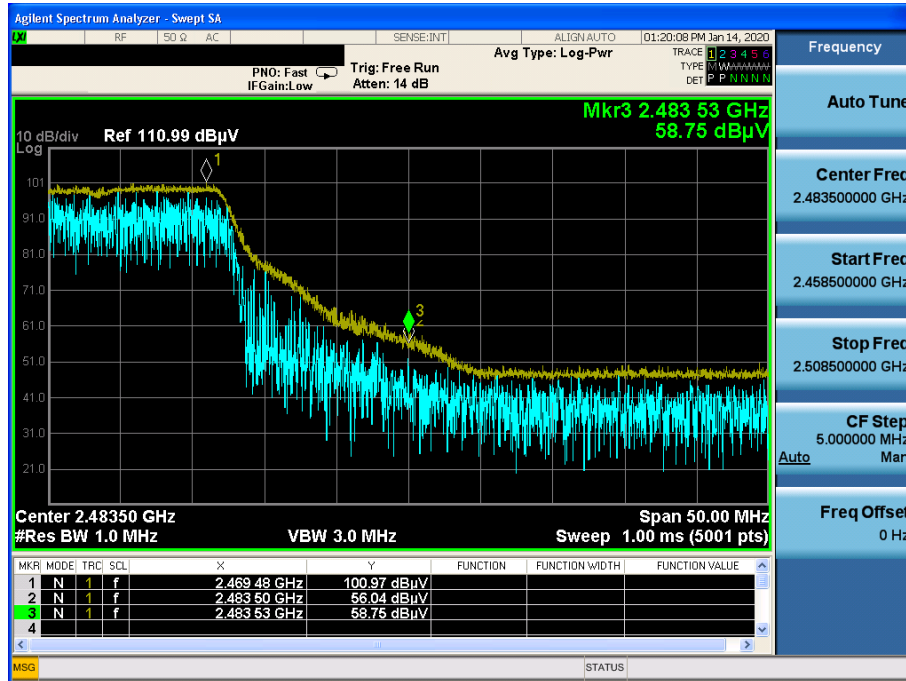
Detector Mode : AV



Unwanted Emissions (Radiated) Test Plot _ With Dual Display

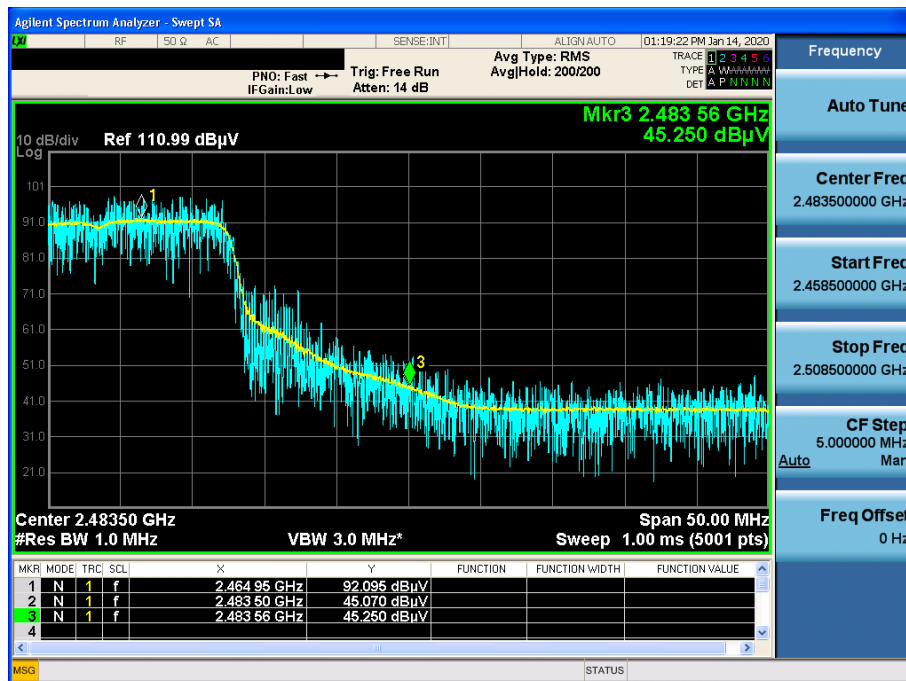
TM 3 & 2462 & X axis & Hor

Detector Mode : PK



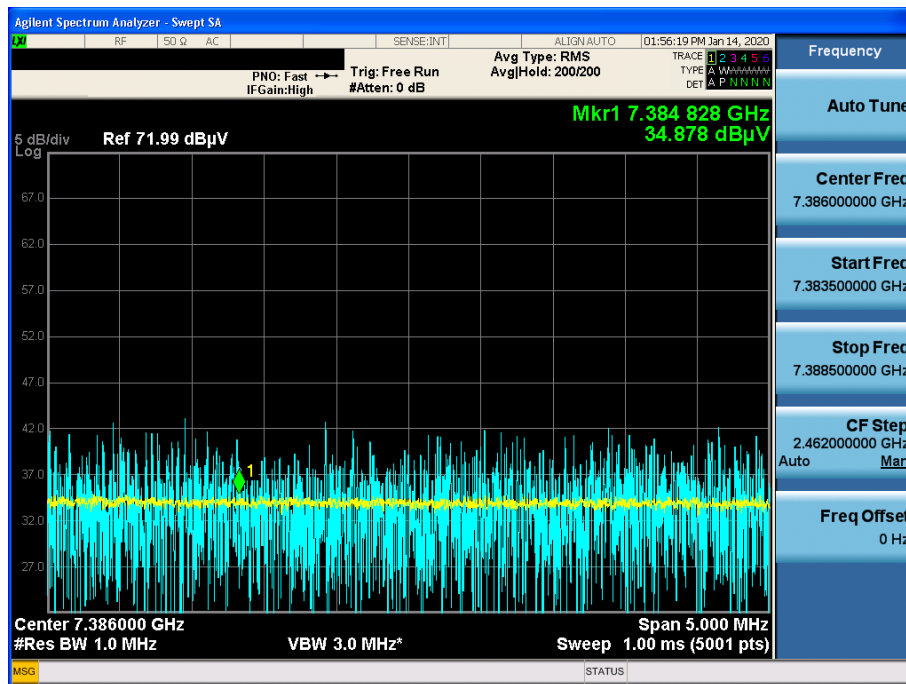
TM 3 & 2462 & X axis & Hor

Detector Mode : AV



TM 3 & 2462 & X axis & Hor

Detector Mode : AV



TM 3 & 2462 & X axis & Hor

Detector Mode : AV

