5.6. AC Power-Line Conducted Emissions

▣ **Test Requirements and limit, Part 15.207**

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 uH/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 C63.10-2013.

1. The test procedure is performed in a 6.5 m × 3.5 m × 3.5 m (L × W × H) shielded room. The EUT along with its peripherals were placed on a 1.0 m (W) × 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.

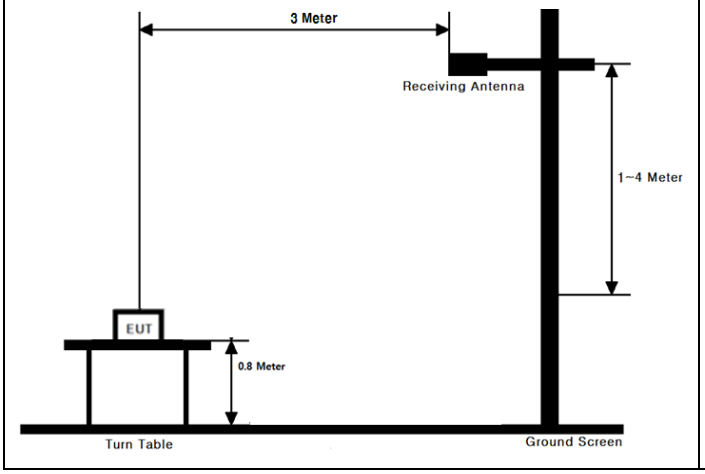
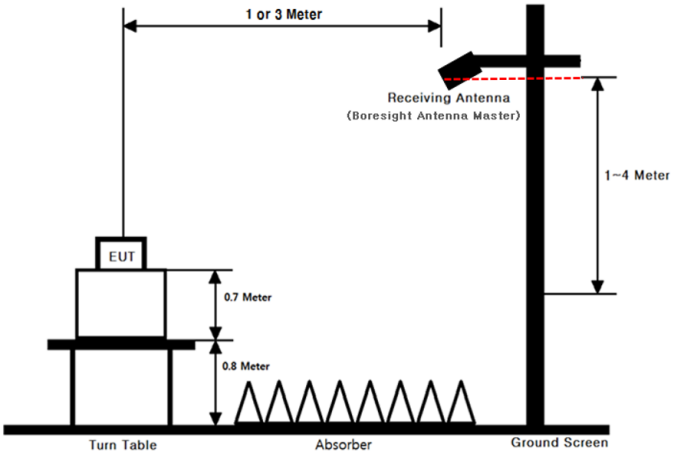
5.6.3. Test Results

NA

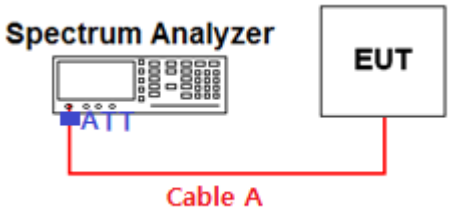
APPENDIX I

Test set up diagrams

- **Radiated Measurement**

Below 1 GHz	Above 1 GHz
	

- **Conducted Measurement**



Path loss information

Frequency (GHz)	Path Loss (dB)	Frequency (GHz)	Path Loss (dB)
0.03	9.43	15	10.54
1	9.52	20	10.82
2.412 & 2.437 & 2.462	9.82	25	11.35
5	10.14	-	-
10	10.18	-	-

Note 1: The path loss from EUT to Spectrum analyzer was measured and used for test.
Path loss (S/A's correction factor) = Cable A + Attenuator

APPENDIX II

Duty cycle plots

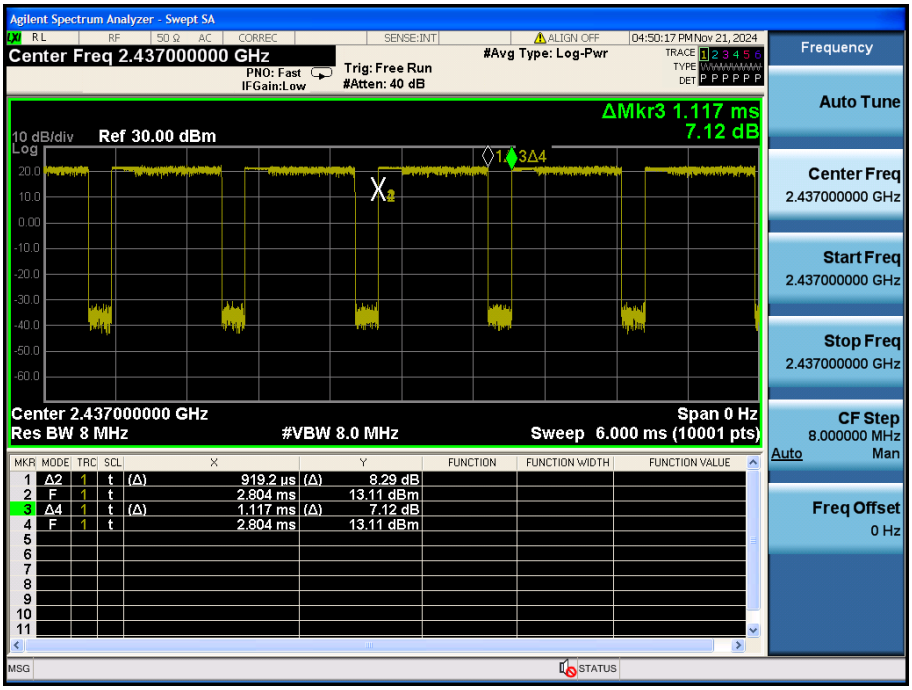
- **Test Procedures**

- KDB558074 D01v05r02 – Section 6

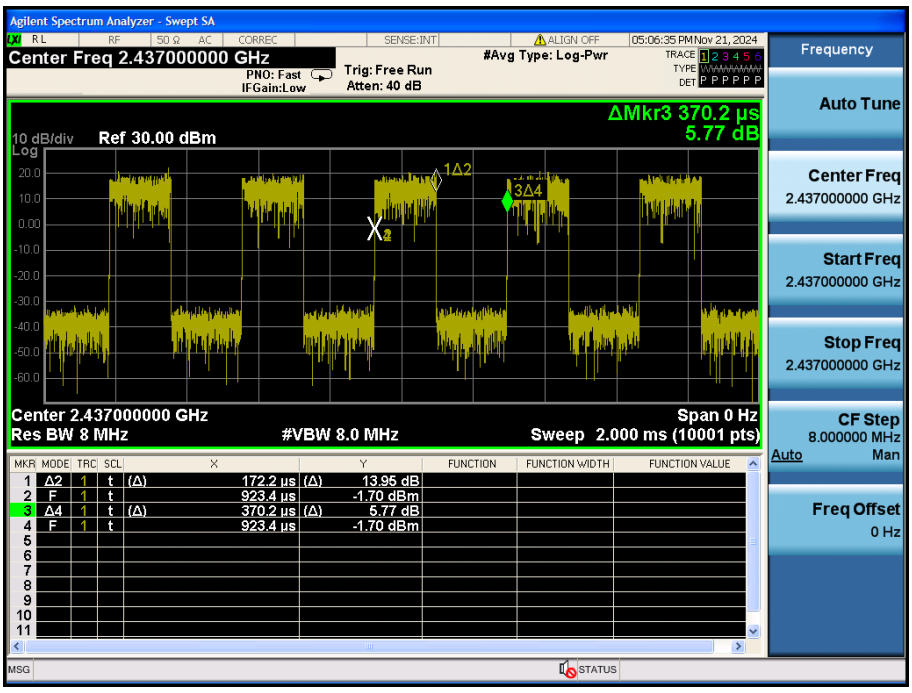
The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value. Set VBW ≥ 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 ≤ 16.7 microseconds.)

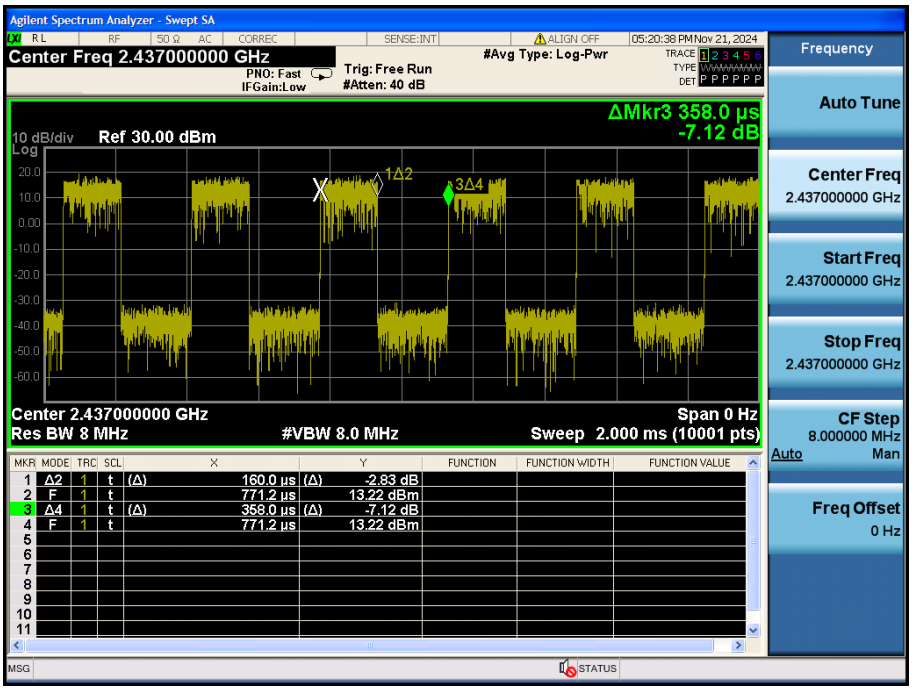
Duty Cycle TM 1 & 2 437 MHz



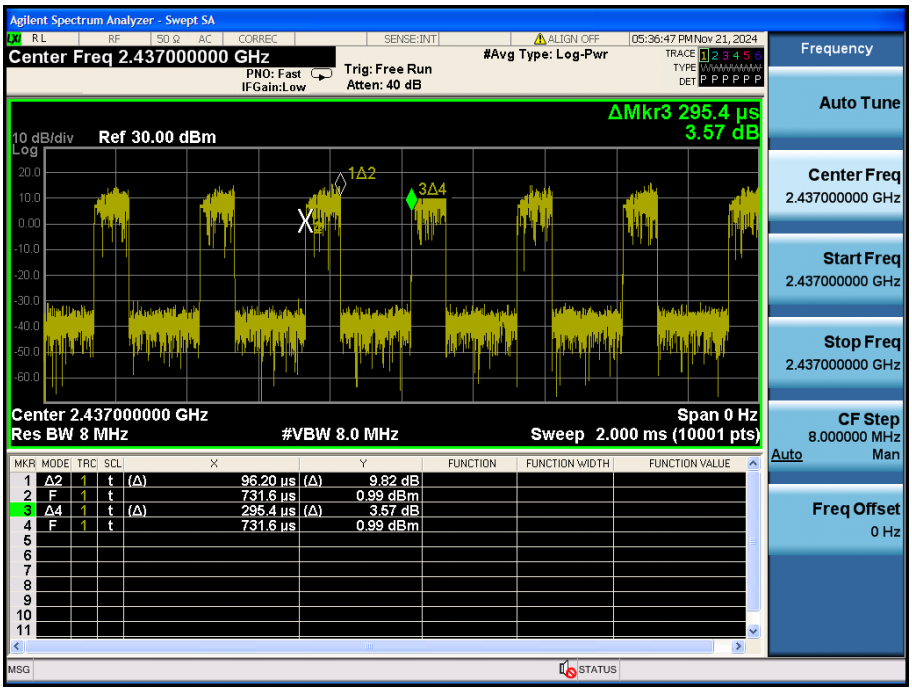
Duty Cycle TM 2 & 2 437 MHz



Duty Cycle TM 3 & 2 437 MHz



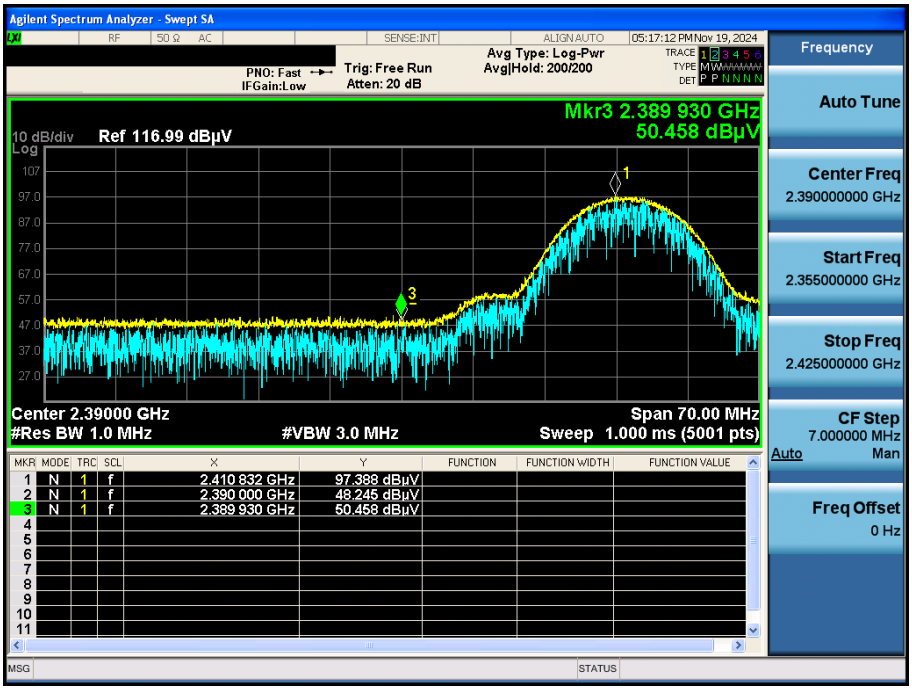
Duty Cycle TM 4 & 2 437 MHz



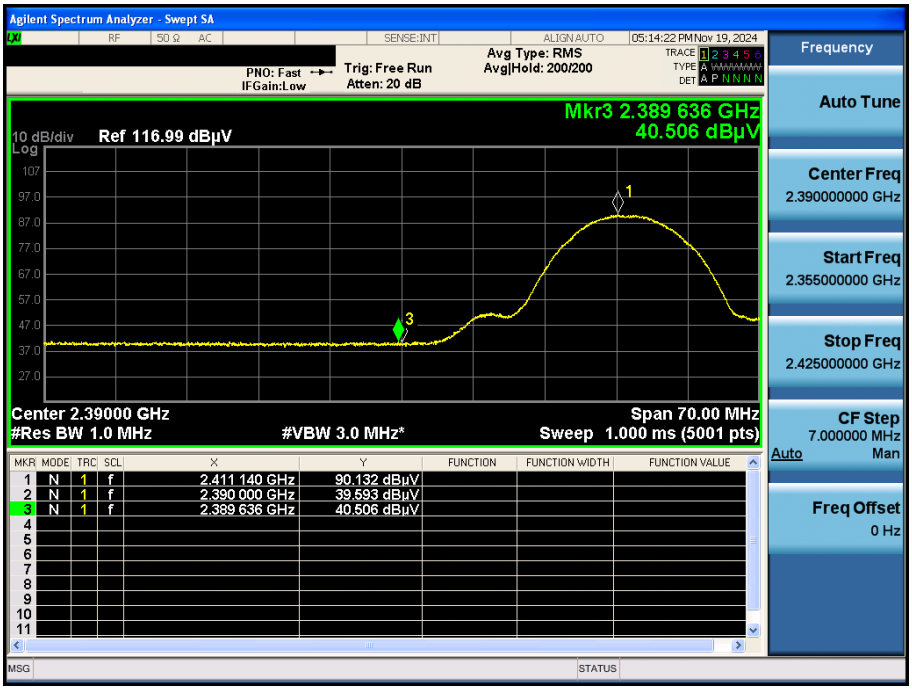
APPENDIX III

Unwanted Emissions (Radiated) Test Plot

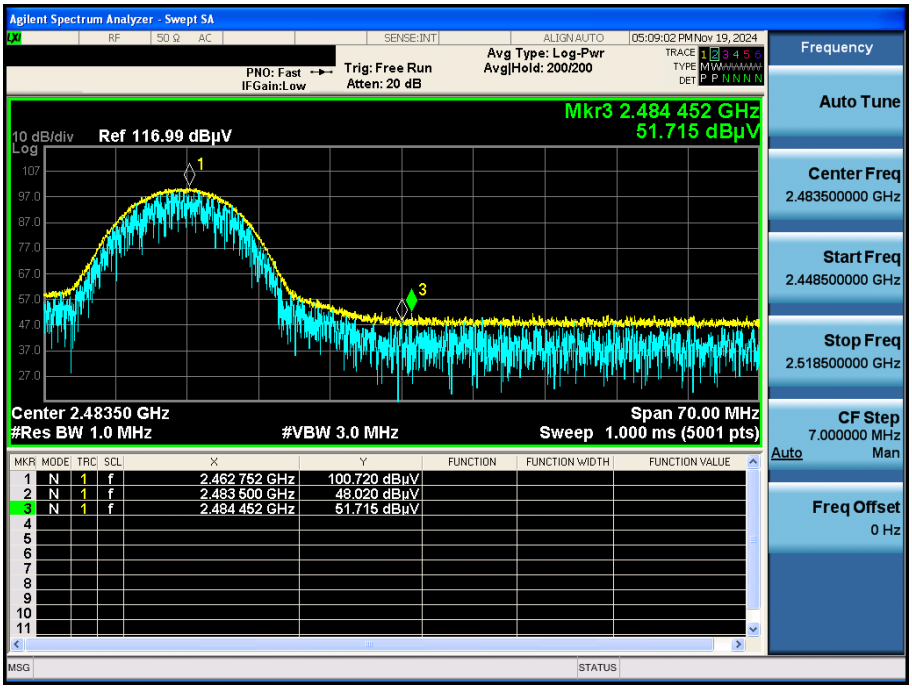
TM 1 & 2 412 & X axis & Hor **Detector Mode : PK**



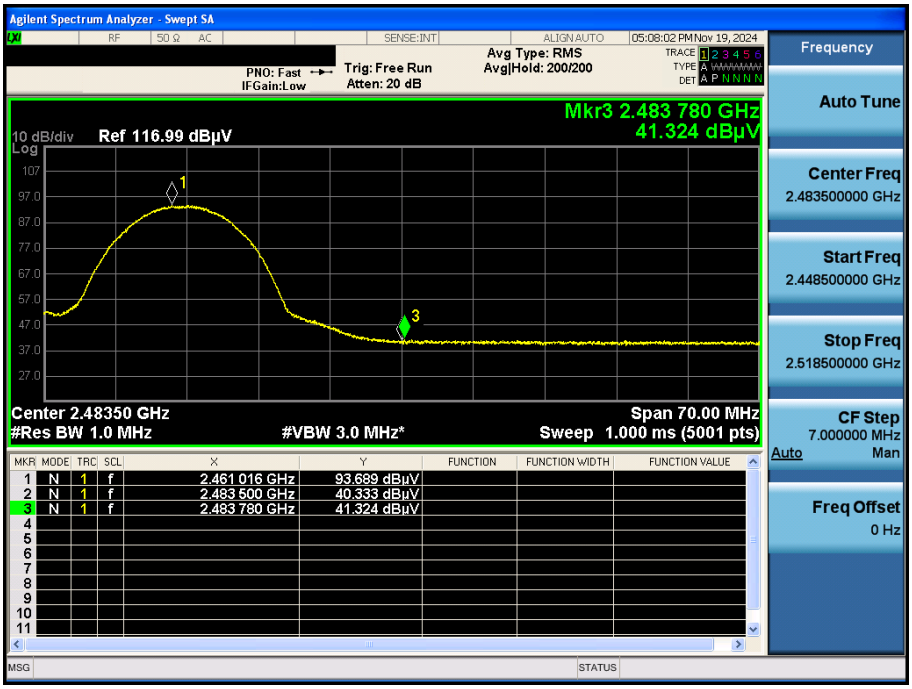
TM 1 & 2 412 & X axis & Hor **Detector Mode : AV**



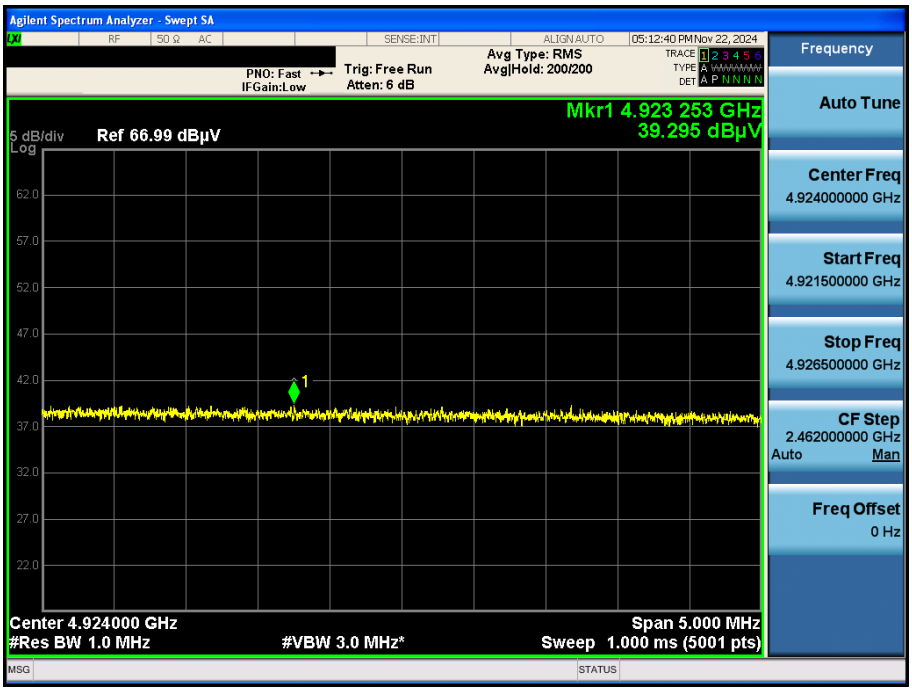
TM 1 & 2 462 & X axis & Hor **Detector Mode : PK**



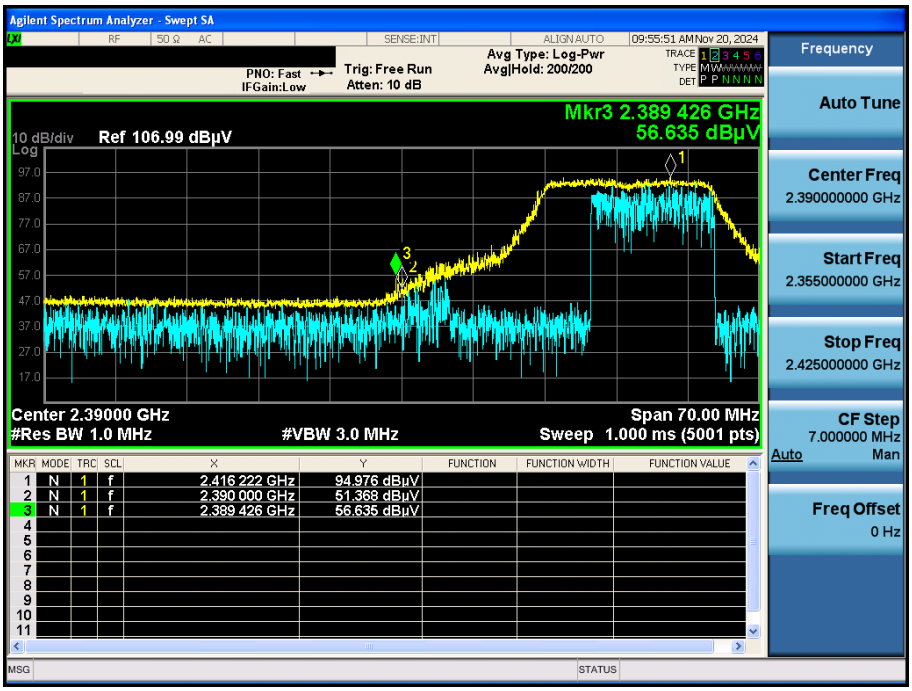
TM 1 & 2 462 & X axis & Hor **Detector Mode : AV**



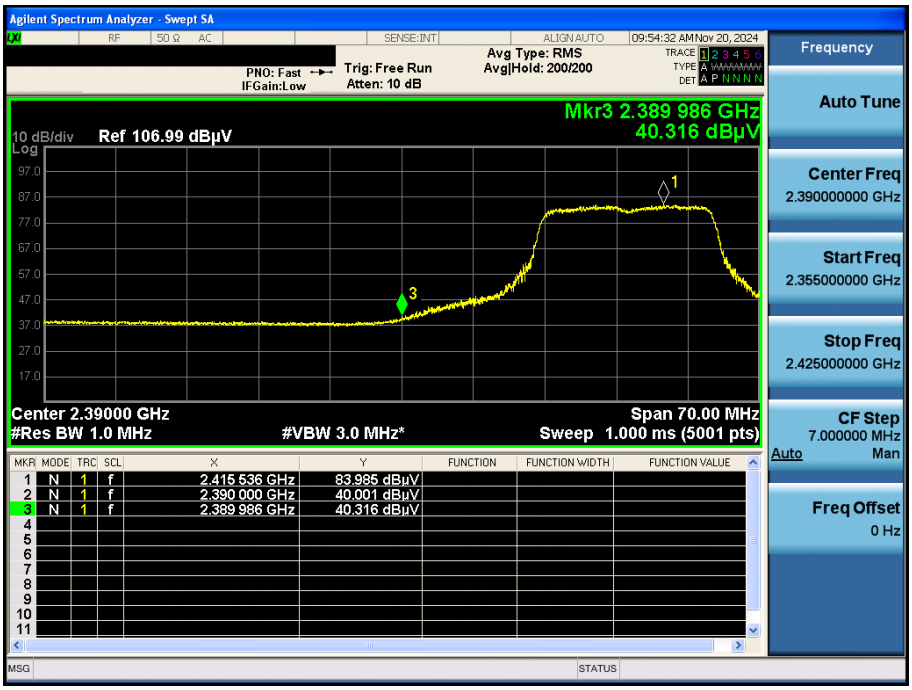
TM 1 & 2 462 & X axis & Hor **Detector Mode : AV**



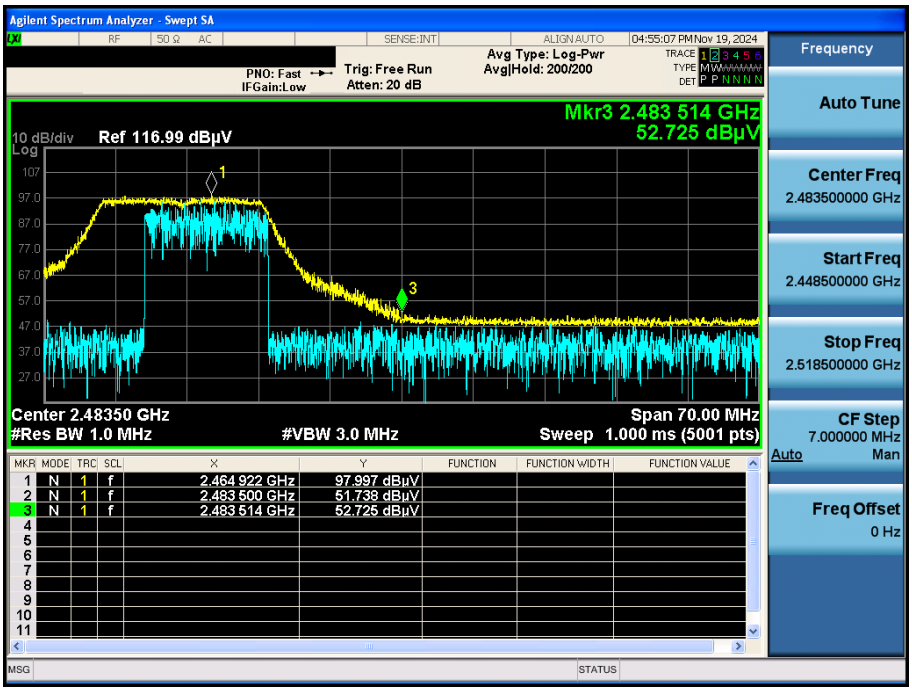
TM 2 & 2 412 & X axis & Hor **Detector Mode : PK**



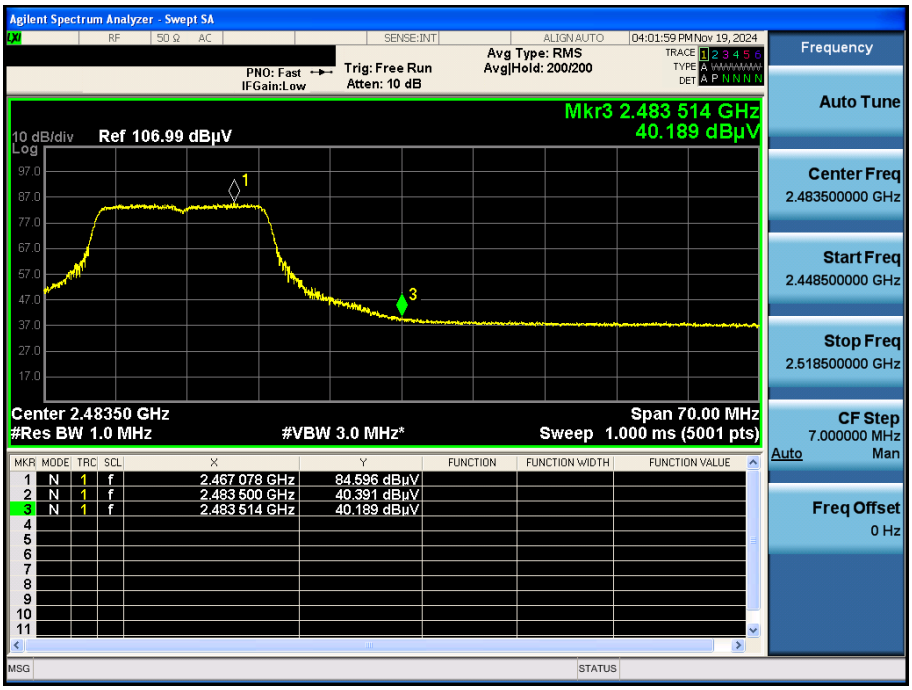
TM 2 & 2 412 & X axis & Hor **Detector Mode : AV**



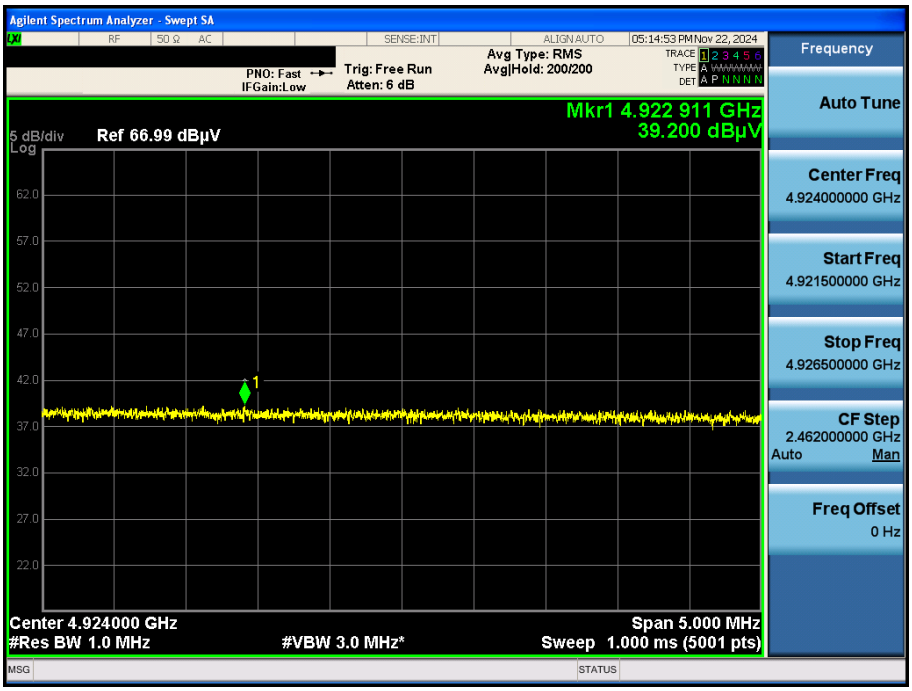
TM 2 & 2 462 & X axis & Hor **Detector Mode : PK**



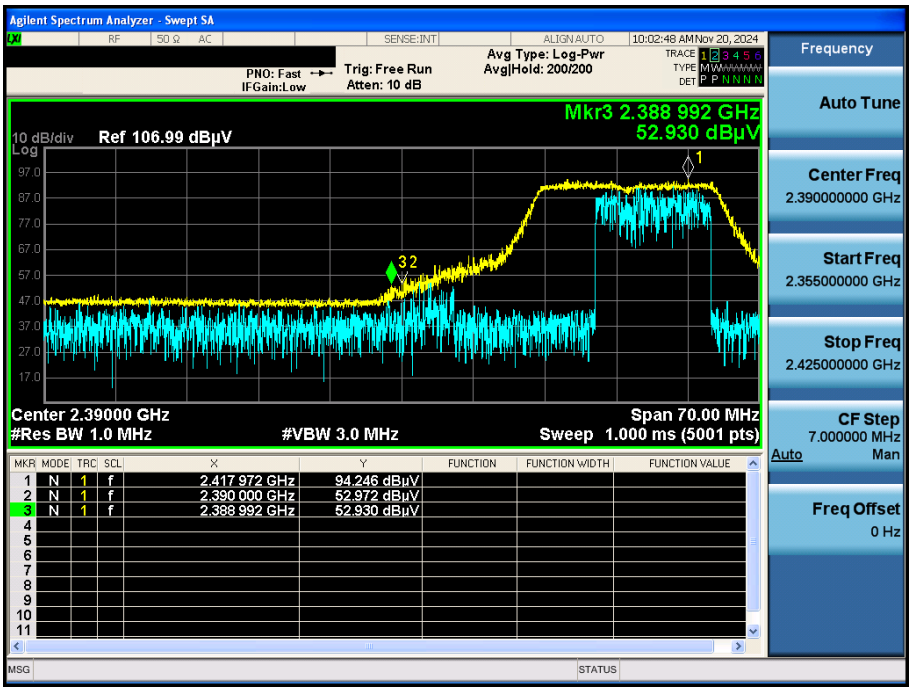
TM 2 & 2 462 & X axis & Hor **Detector Mode : AV**



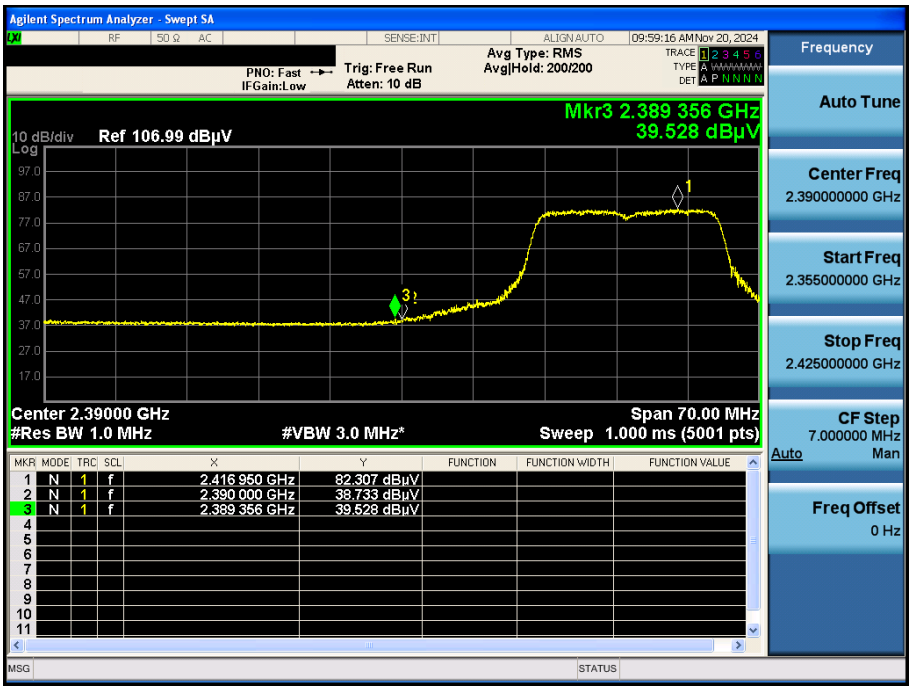
TM 2 & 2 462 & X axis & Hor **Detector Mode : AV**



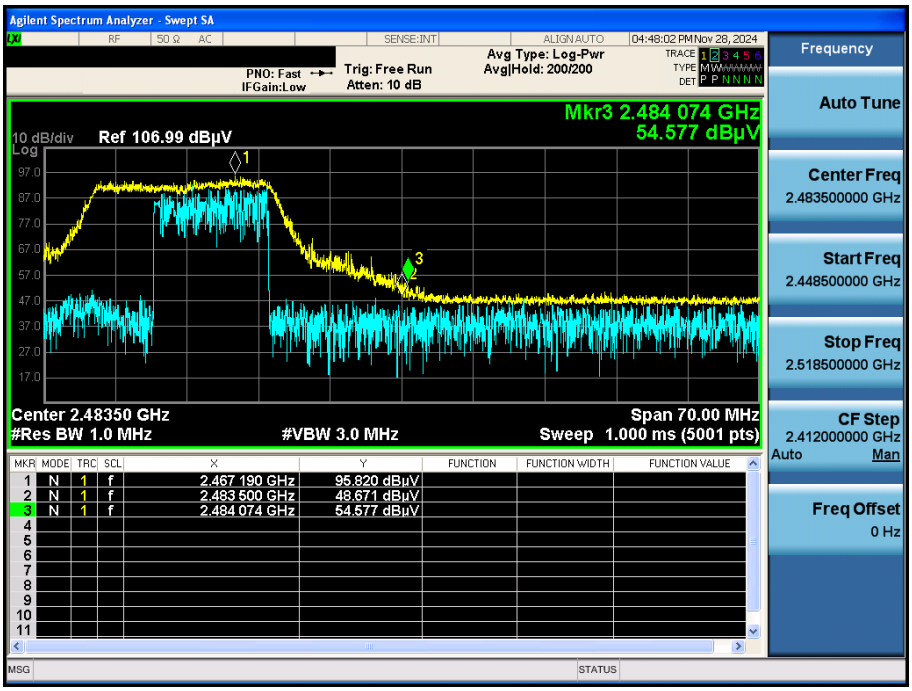
TM 3 & 2 412 & X axis & Hor **Detector Mode : PK**



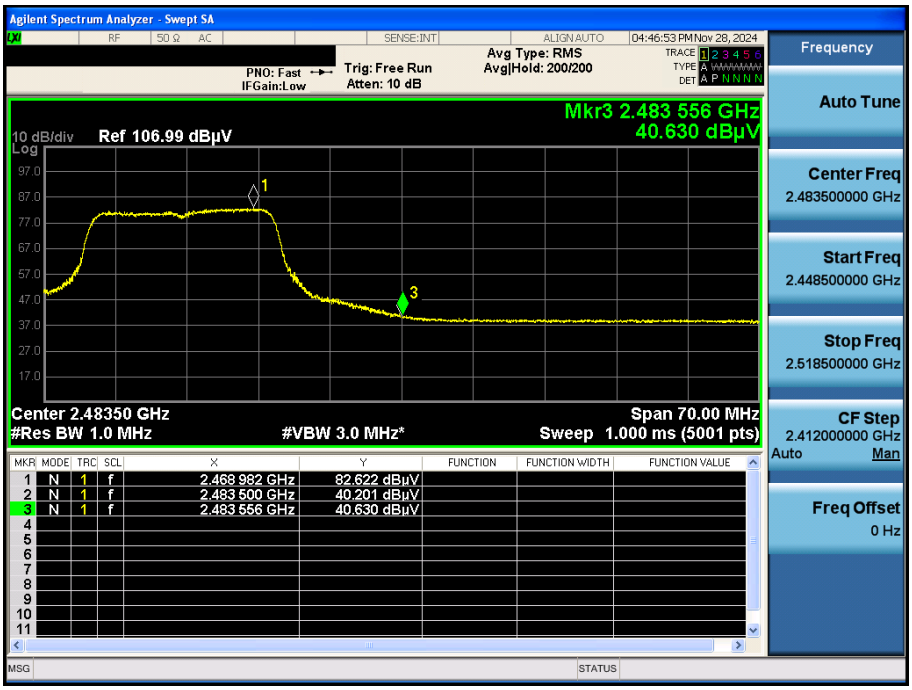
TM 3 & 2 412 & X axis & Hor **Detector Mode : AV**



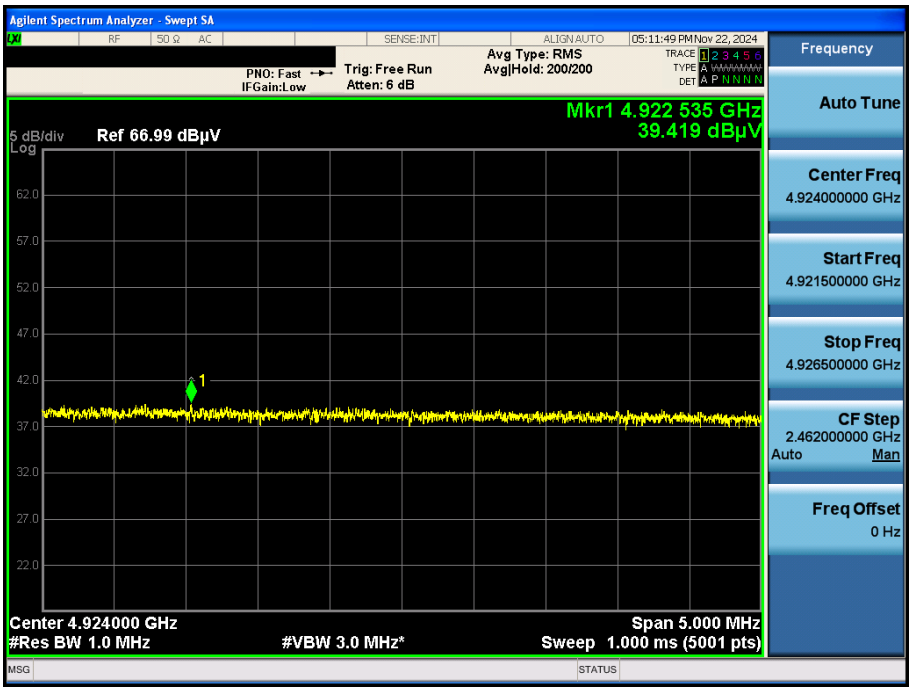
TM 3 & 2 462 & X axis & Hor **Detector Mode : PK**



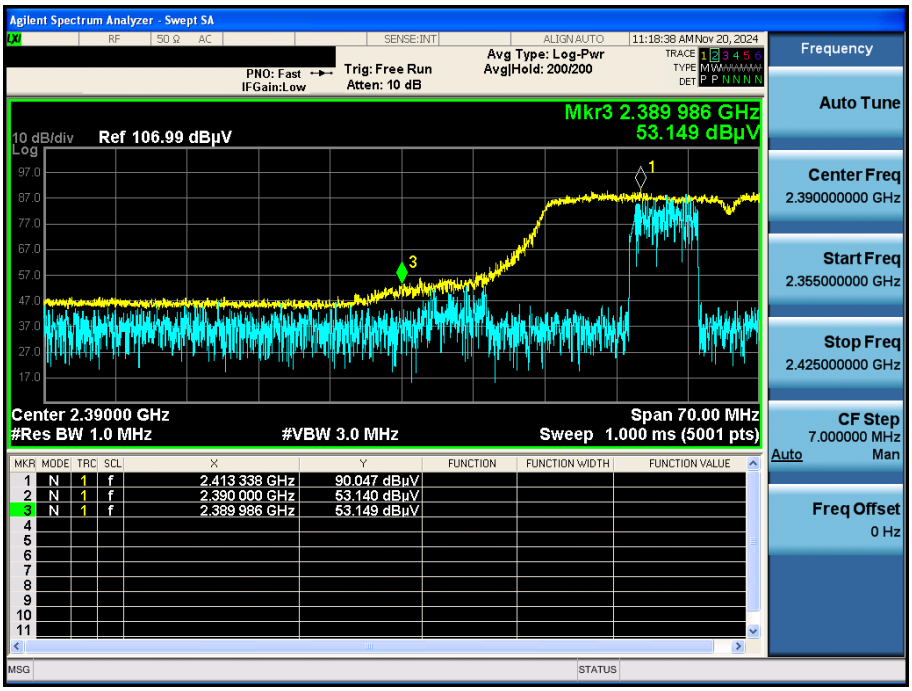
TM 3 & 2 462 & X axis & Hor **Detector Mode : AV**



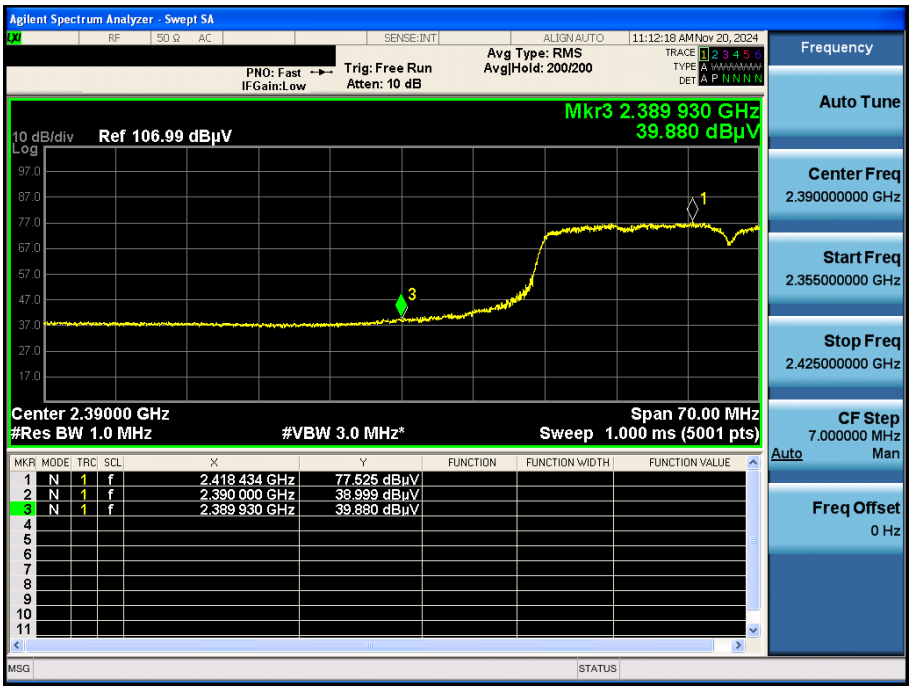
TM 3 & 2 462 & X axis & Hor **Detector Mode : AV**



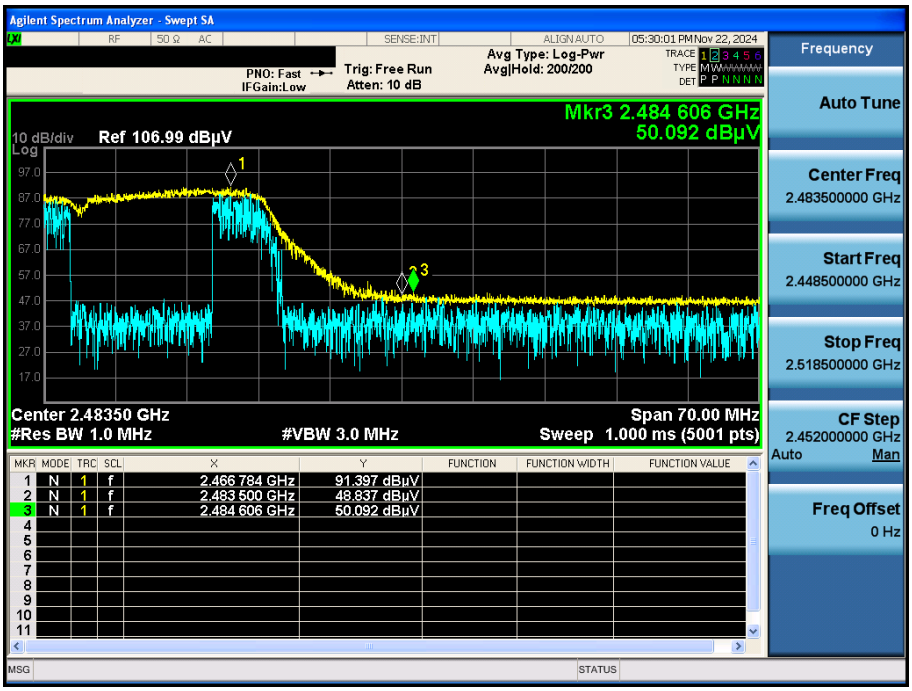
TM 4 & 2 422 & X axis & Hor **Detector Mode : PK**



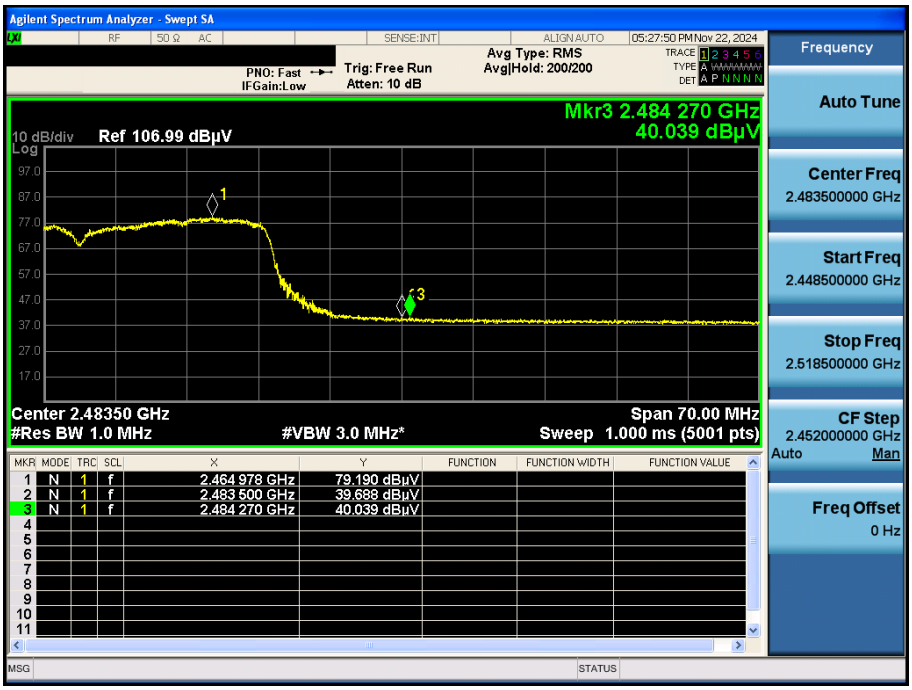
TM 4 & 2 422 & X axis & Hor **Detector Mode : AV**



TM 4 & 2 452 & X axis & Hor **Detector Mode : PK**



TM 4 & 2 452 & X axis & Hor **Detector Mode : AV**



TM 4 & 2 452 & X axis & Hor **Detector Mode : AV**