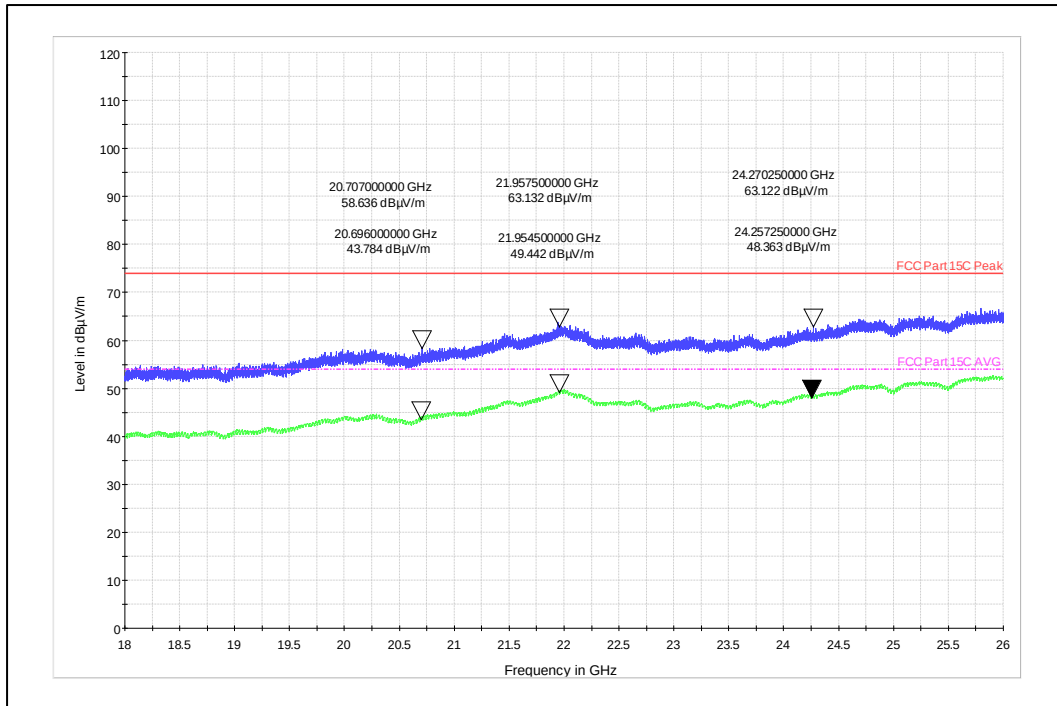
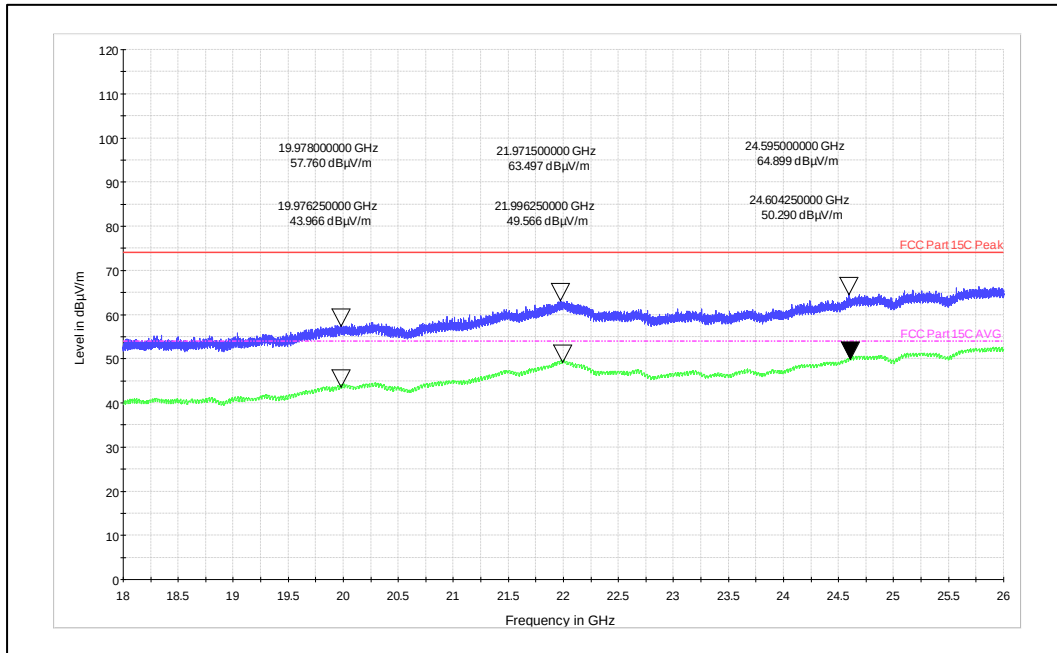




Channel Frequency: 18GHz -26.5GHz

Polarization: Vertical



Channel Frequency: 18GHz -26.5GHz

Polarization: Horizontal

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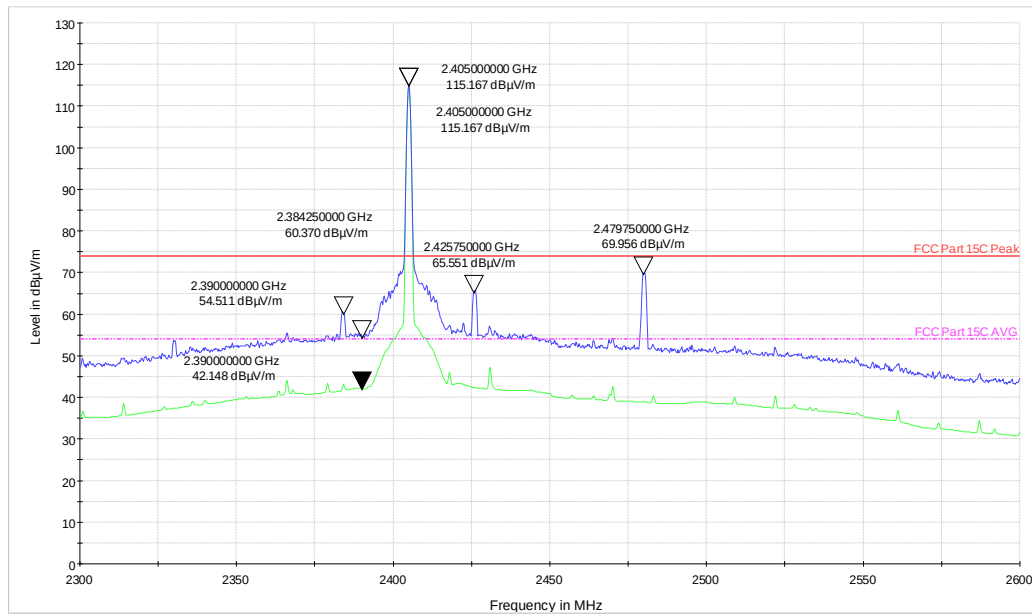
ULR-TC568822300000039F

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Laird Technologies-OD24M-5:

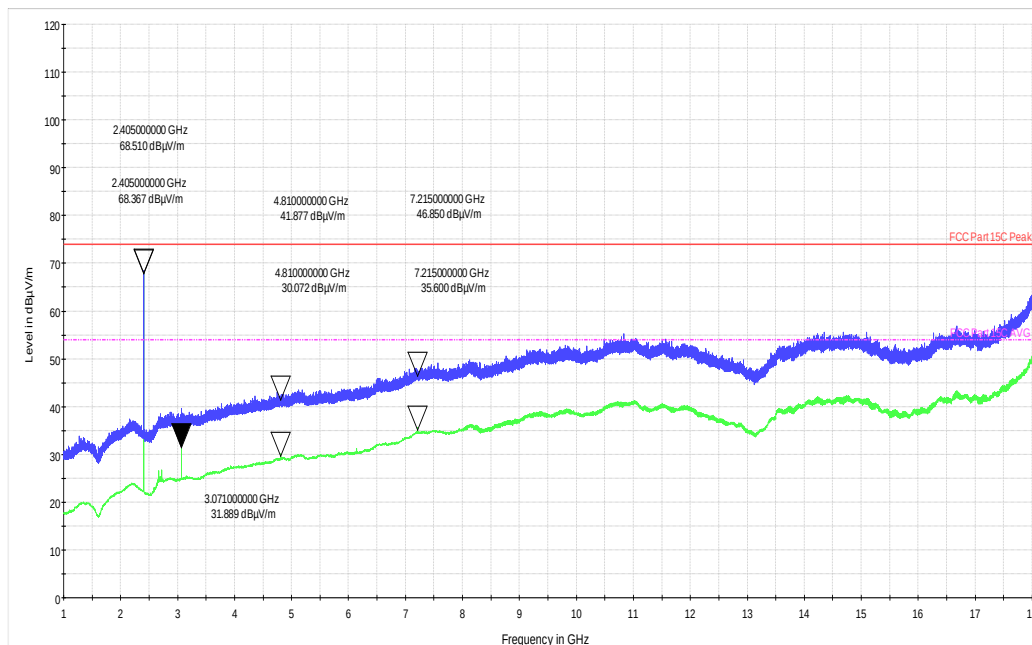
Channel Frequency (MHz)	Frequency (MHz)	Polarization	Measured Emission (dBµV/m)	Limit (dBm)	Margin (dB)
2405	2405(Pk)	Vertical	115.16	-	-
	2405(Av)		115.16	-	-
	2390(Pk)		54.51	74*	-19.49
	2390(Av)		42.14	54*	-11.86
	4810(Pk)		41.87	74	-32.13
	4810(Av)		30.07	54	-23.93
	7215(Pk)		46.85	74	-27.15
	7215(Av)		35.60	54	-18.40
	2405(Pk)	Horizontal	88.20	-	-
	2405(Av)		88.20	-	-
	2390(Pk)		37.83	74*	-36.17
	2390(Av)		24.84	54*	-29.16
	4810(Pk)		43.22	74	-30.78
	4810(Av)		31.89	54	-22.11
	7215(Pk)		47.27	74	-26.73
	7215(Av)		36.04	54	-17.96
2442.5	2442.5(Pk)	Vertical	116.32	-	-
	2442.5(Av)		116.32	-	-
	4885(Pk)		43.04	74	-30.96
	4885(Av)		33.92	54	-20.08
	7327.5(Pk)		49.03	74	-24.97
	7327.5(Av)		39.53	54	-14.47
	2442.5(Pk)	Horizontal	90.59	-	-
	2442.5(Av)		90.51	-	-
	4885(Pk)		42.05	74	-31.95
	4885(Av)		32.13	54	-21.87
	7327.5(Pk)		37.69	74	-36.31
	7327.5(Av)		47.35	54	-6.65
2477.5	2483.5(Pk)	Vertical	115.04	-	-
	2483.5(Av)		115.03	-	-
	2477.5(Pk)		61.89	74*	-12.11
	2477.5(Av)		49.97	54*	-4.03
	4955(Pk)		44.14	74	-29.86
	4955(Av)		36.75	54	-17.25
	7432.5(Pk)		48.91	74	-25.09
	7432.5(Av)		36.67	54	-17.33
	2483.5(Pk)	Horizontal	89.62	-	-
	2483.5(Av)		89.62	-	-
	2477.5(Pk)		39.46	74*	-34.54
	2477.5(Av)		27.20	54*	-26.80
	4955(Pk)		43.51	74	-30.49
	4955(Av)		31.02	54	-22.98
	7432.5(Pk)		49.37	74	-24.63
	7432.5(Av)		36.52	54	-17.48

Pk: Peak Detector;
Av: Average Detector;
*→ Restricted Bands
- → Fundamental Frequency



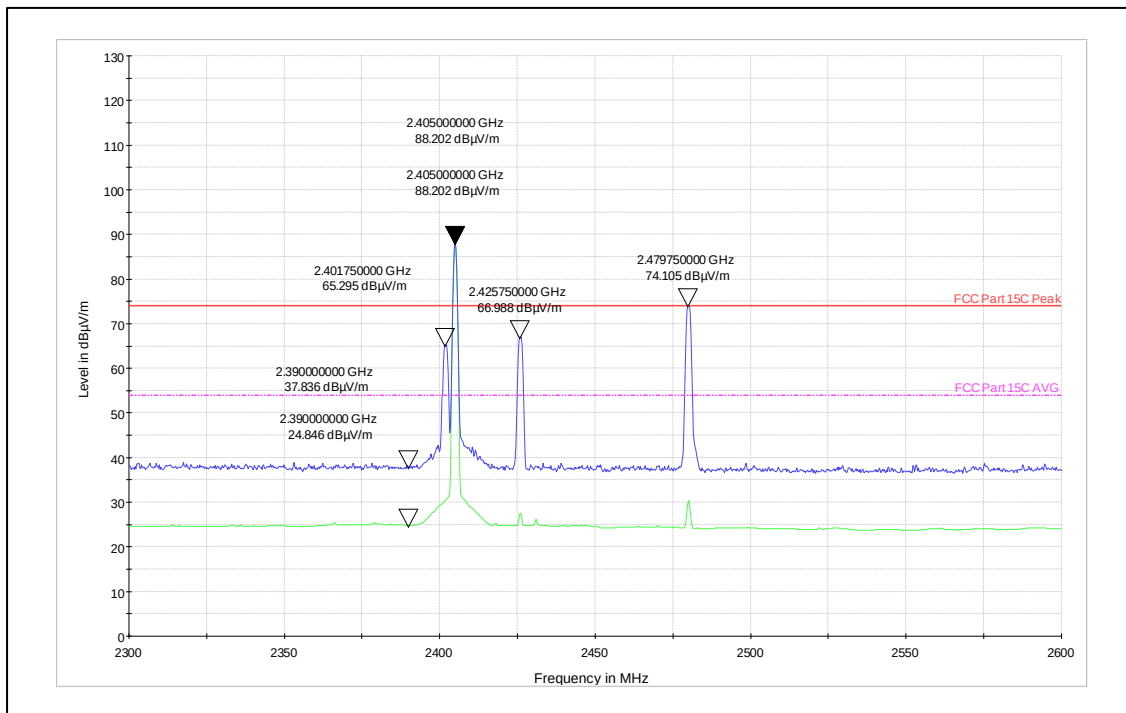
Channel Frequency: 2405MHz

Polarization: Vertical



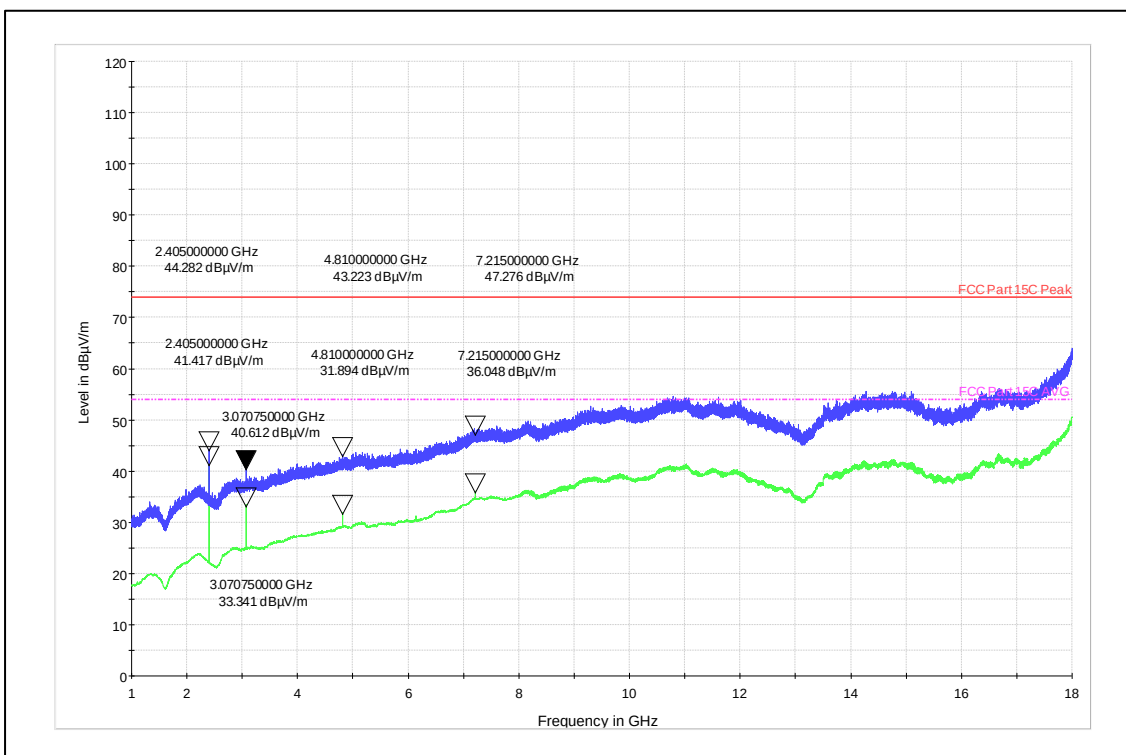
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



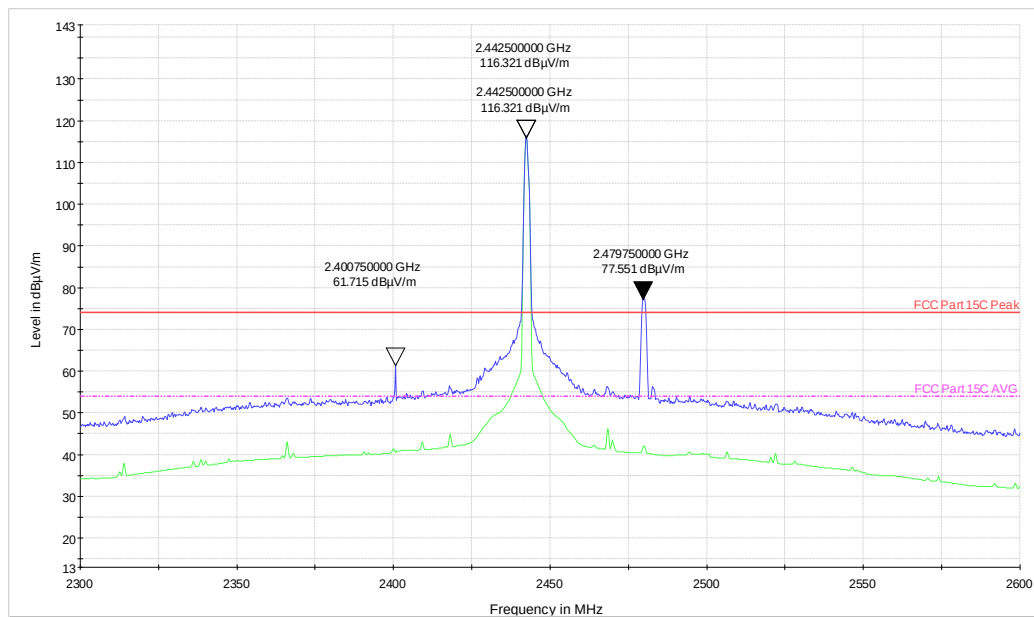
Channel Frequency: 2405MHz

Polarization: Horizontal



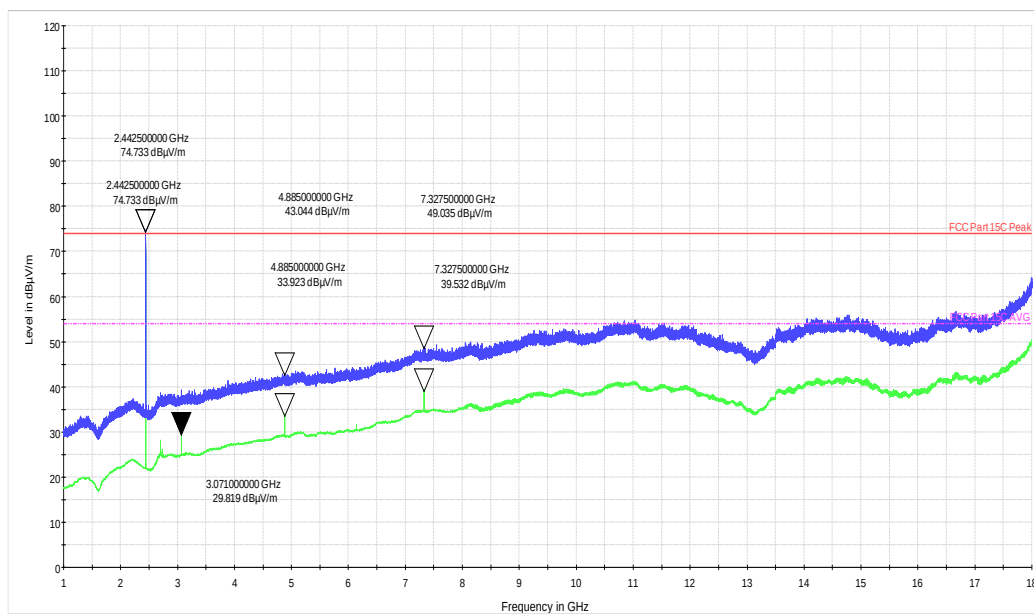
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



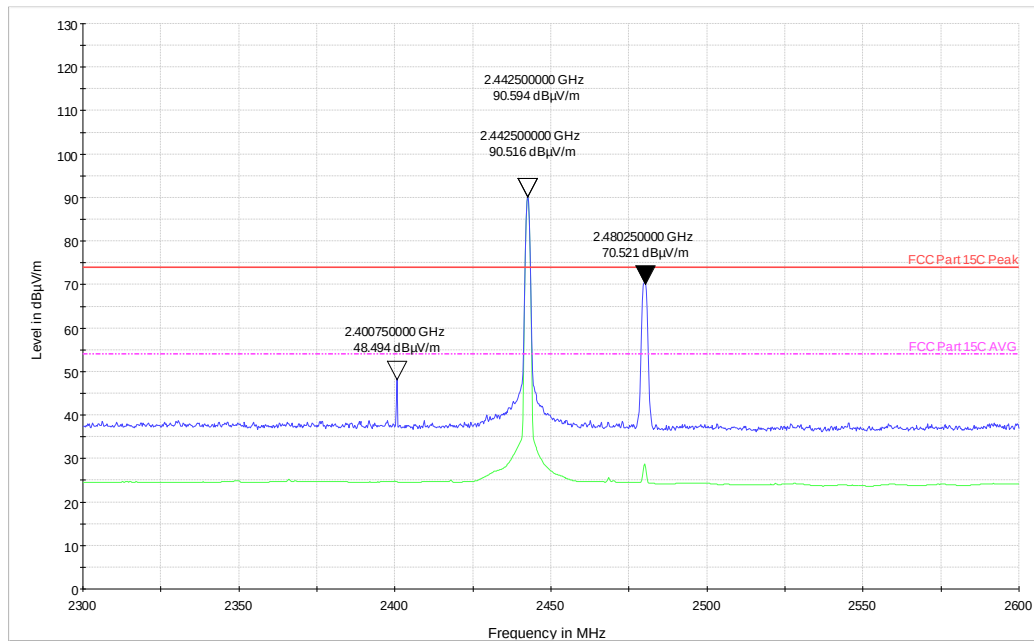
Channel Frequency: 2442.5MHz

Polarization: Vertical



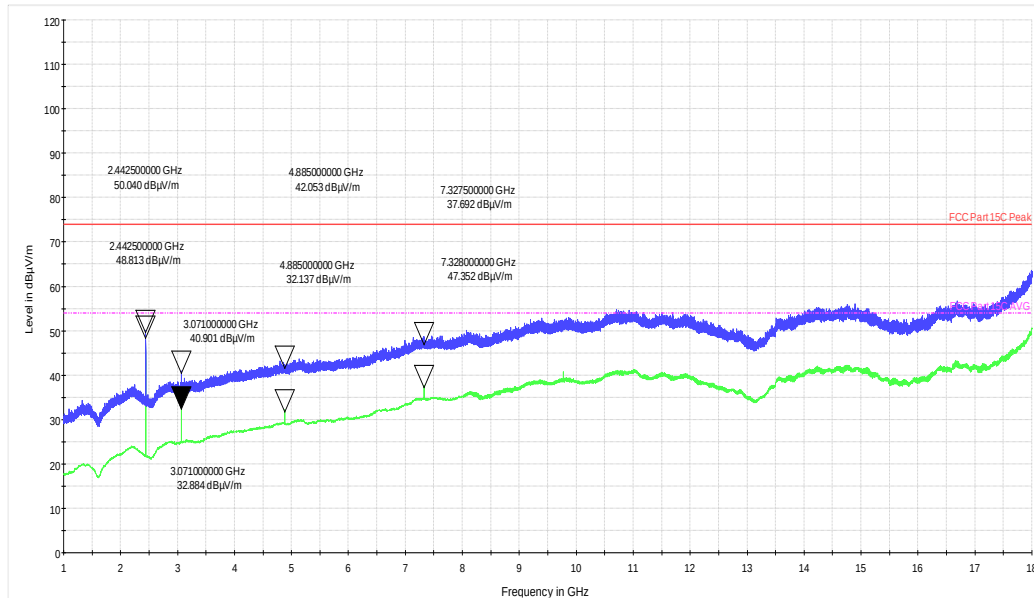
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



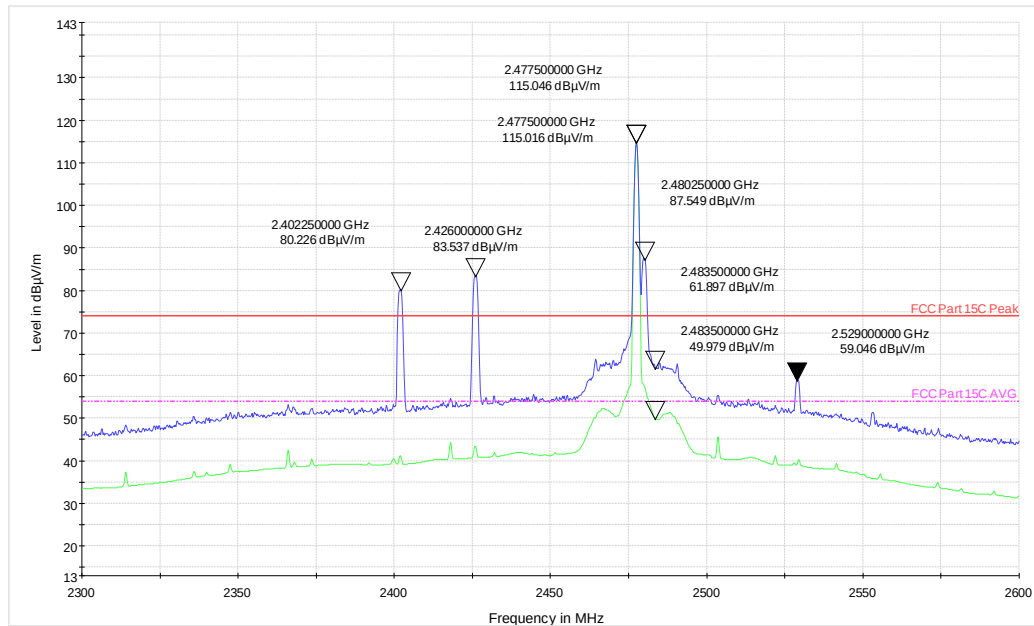
Channel Frequency: 2442.5MHz

Polarization: Horizontal



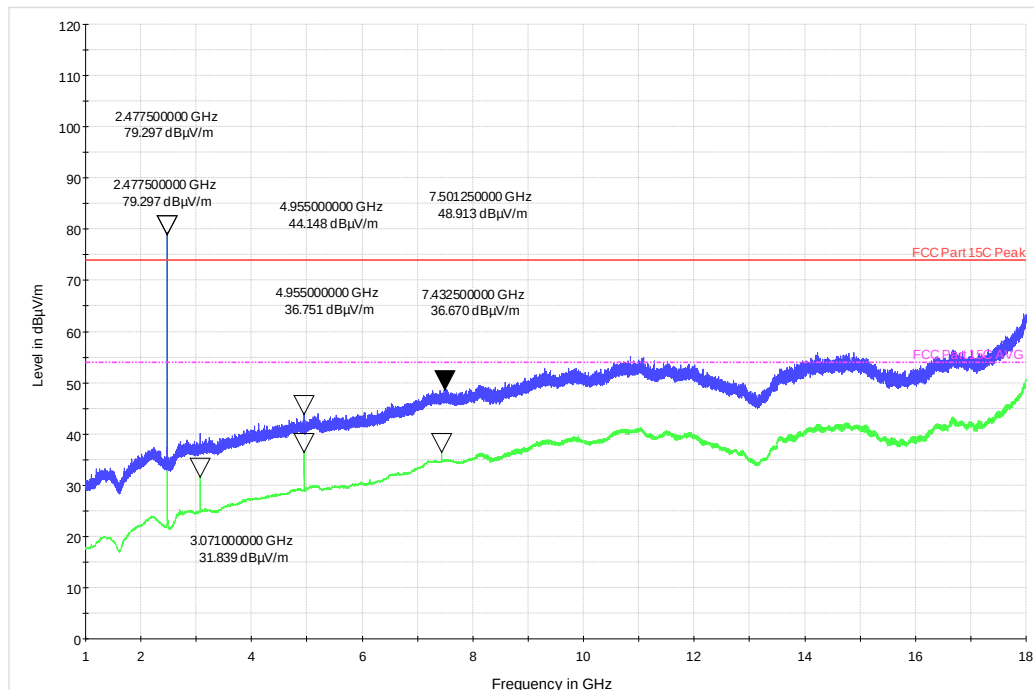
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



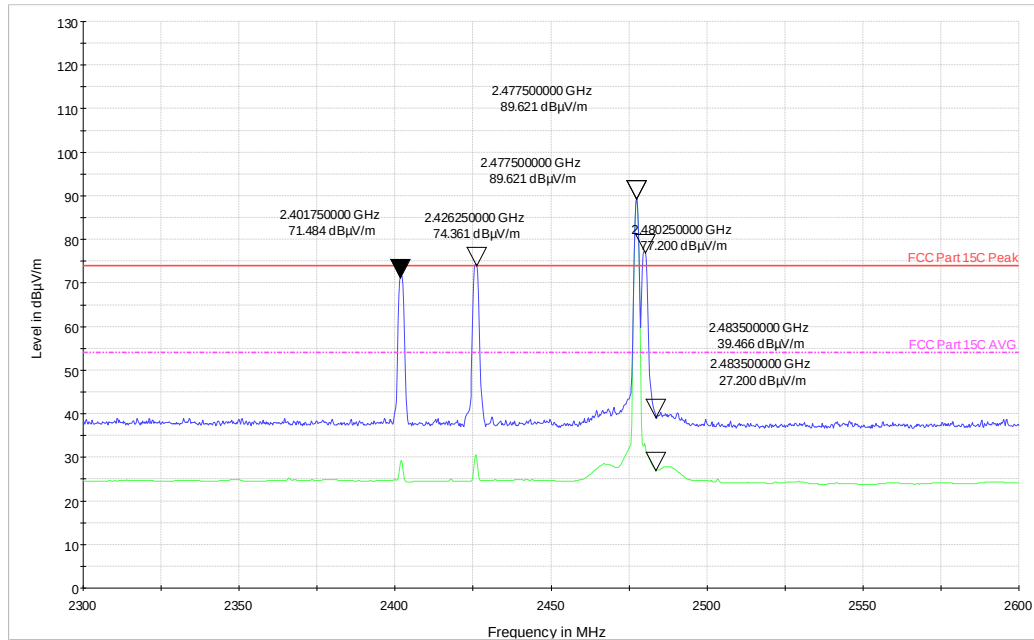
Channel Frequency: 2477.5MHz

Polarization: Vertical



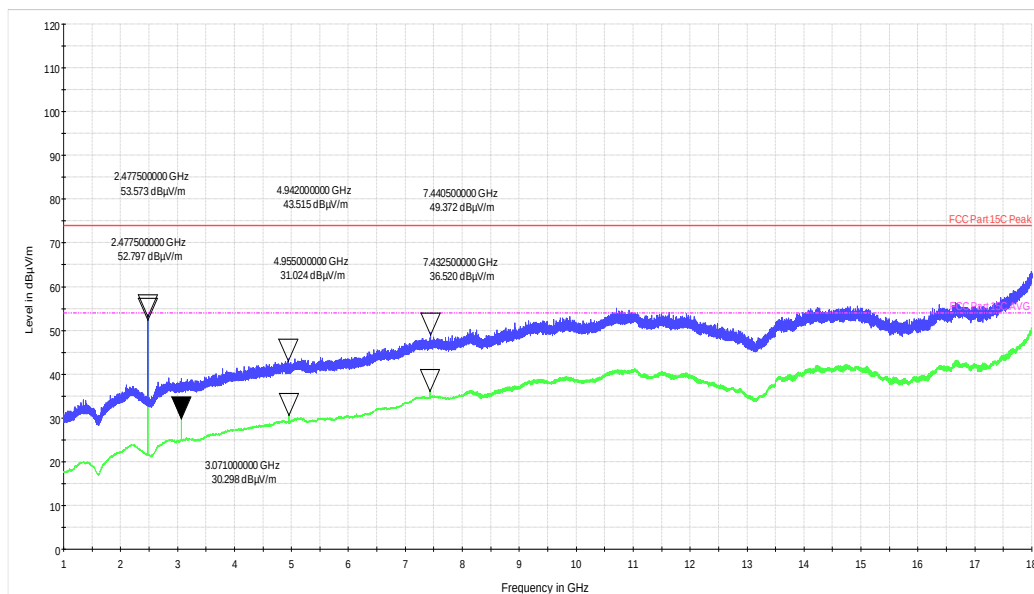
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



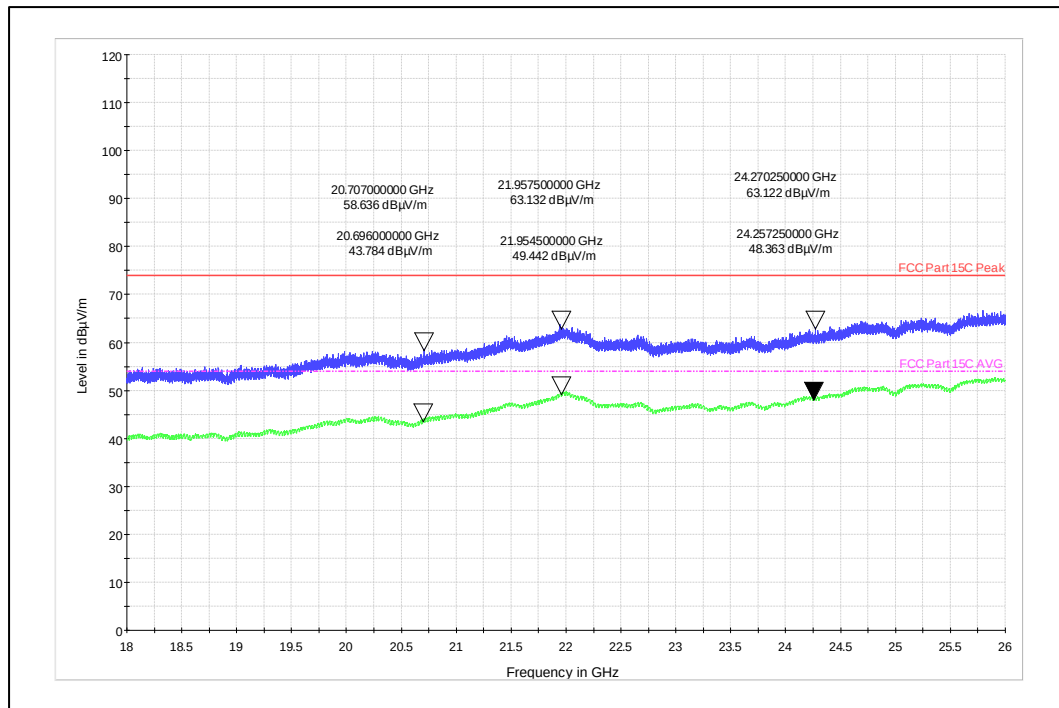
Channel Frequency: 2477.5MHz

Polarization: Horizontal



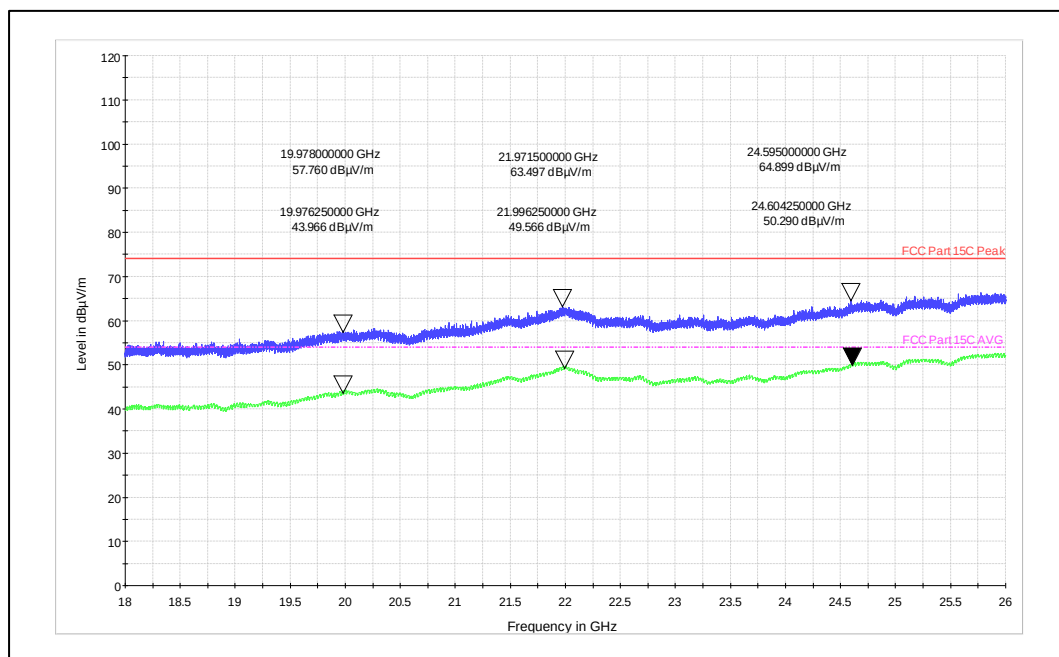
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



Channel Frequency: 18GHz -26.5GHz

Polarization: Vertical



Channel Frequency: 18GHz -26.5GHz

Polarization: Horizontal

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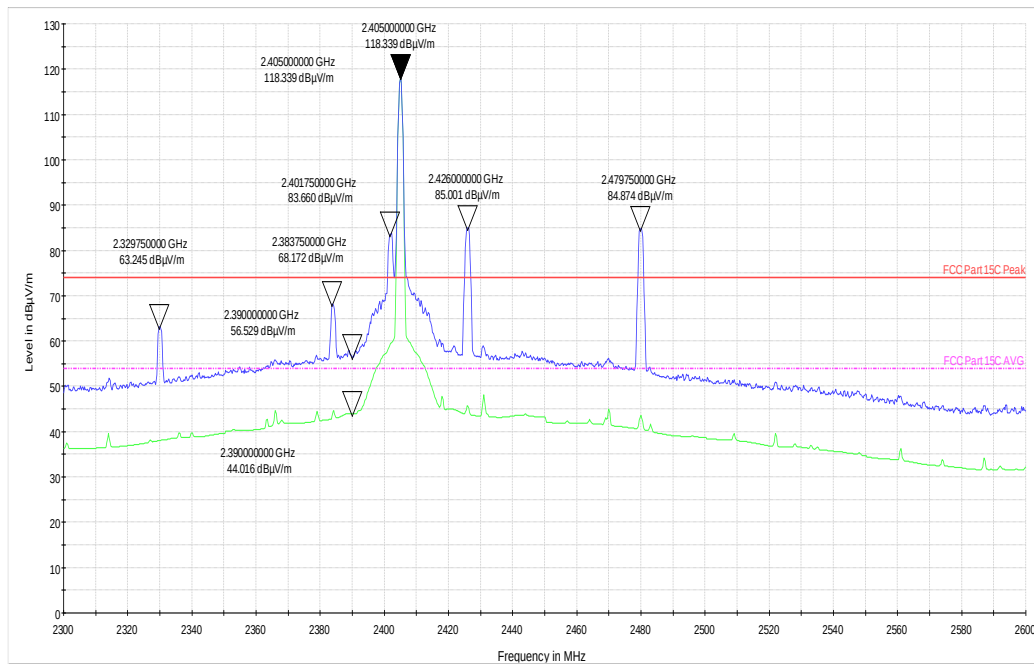
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L-COM HGV-2409U:

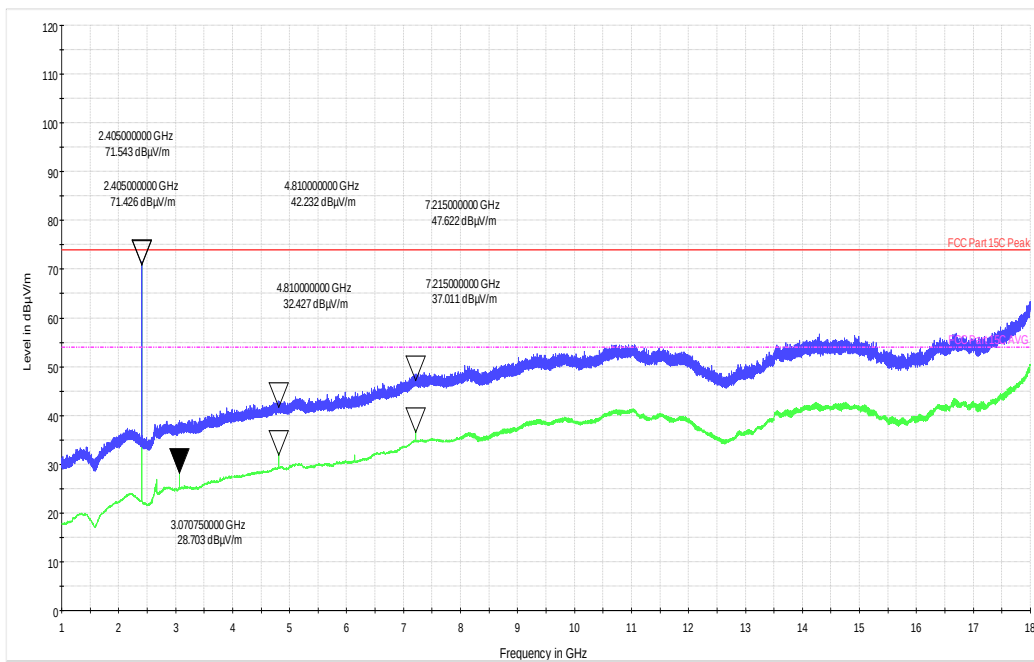
Channel Frequency (MHz)	Frequency (MHz)	Polarization	Measured Emission (dBμV/m)	Limit (dBm)	Margin (dB)
2405	2405(Pk)	Vertical	118.33	-	-
	2405(Av)		118.33	-	-
	2390(Pk)		56.52	74*	-17.48
	2390(Av)		44.01	54*	-9.99
	4810(Pk)		42.23	74	-31.77
	4810(Av)		32.42	54	-21.58
	7215(Pk)		47.62	74	-26.38
	7215(Av)		37.01	54	-16.99
	2405(Pk)	Horizontal	95.37	-	-
	2405(Av)		95.37	-	-
	2390(Pk)		38.92	74*	-35.08
	2390(Av)		25.82	54*	-28.18
	4810(Pk)		42.72	74	-31.28
	4810(Av)		32.09	54	-21.91
	7215(Pk)		47.46	74	-26.54
	7215(Av)		36.39	54	-17.61
2442.5	2442.5(Pk)	Vertical	118.78	-	-
	2442.5(Av)		118.78	-	-
	4885(Pk)		44.10	74	-29.90
	4885(Av)		36.47	54	-17.53
	7327.5(Pk)		49.95	74	-24.05
	7327.5(Av)		41.79	54	-12.21
	2442.5(Pk)	Horizontal	95.20	-	-
	2442.5(Av)		95.20	-	-
	4885(Pk)		42.71	74	-31.29
	4885(Av)		31.86	54	-22.14
	7327.5(Pk)		41.20	74	-32.80
	7327.5(Av)		36.18	54	-17.82
2477.5	2483.5(Pk)	Vertical	117.92	-	-
	2483.5(Av)		117.92	-	-
	2477.5(Pk)		63.51	74*	-10.49
	2477.5(Av)		52.33	54*	-1.67
	4955(Pk)		44.07	74	-29.93
	4955(Av)		36.33	54	-17.67
	7432.5(Pk)		51.00	74	-23.00
	7432.5(Av)		43.48	54	-10.52
	2483.5(Pk)	Horizontal	91.88	-	-
	2483.5(Av)		91.88	-	-
	2477.5(Pk)		40.77	74*	-33.23
	2477.5(Av)		27.89	54*	-26.11
	4955(Pk)		41.55	74	-32.45
	4955(Av)		30.54	54	-23.46
	7432.5(Pk)		47.14	74	-26.86
	7432.5(Av)		34.86	54	-19.14

Pk: Peak Detector;
Av: Average Detector;
*→ Restricted Bands
- → Fundamental Frequency



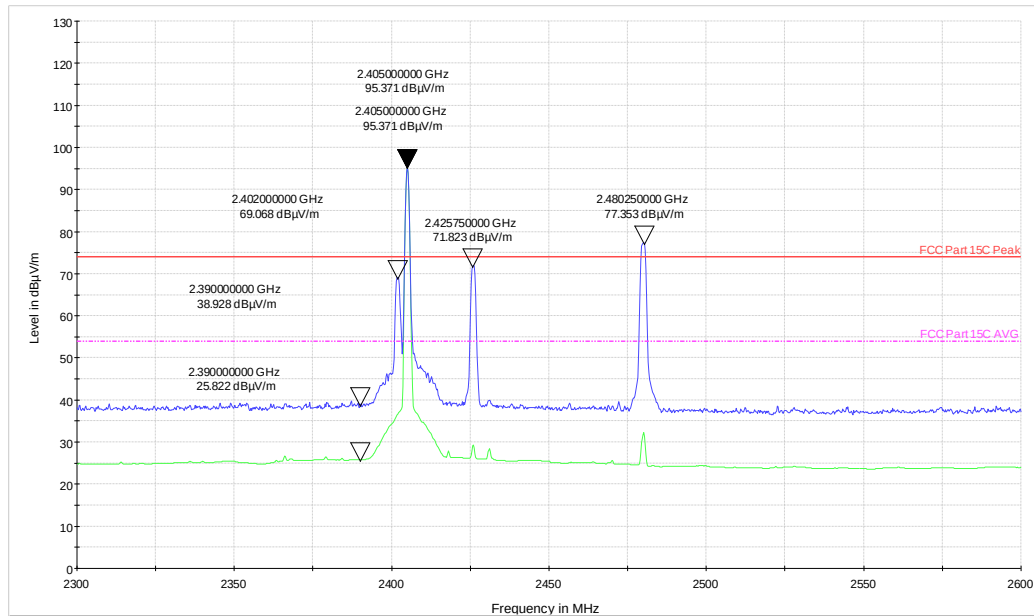
Channel Frequency: 2405MHz

Polarization: Vertical



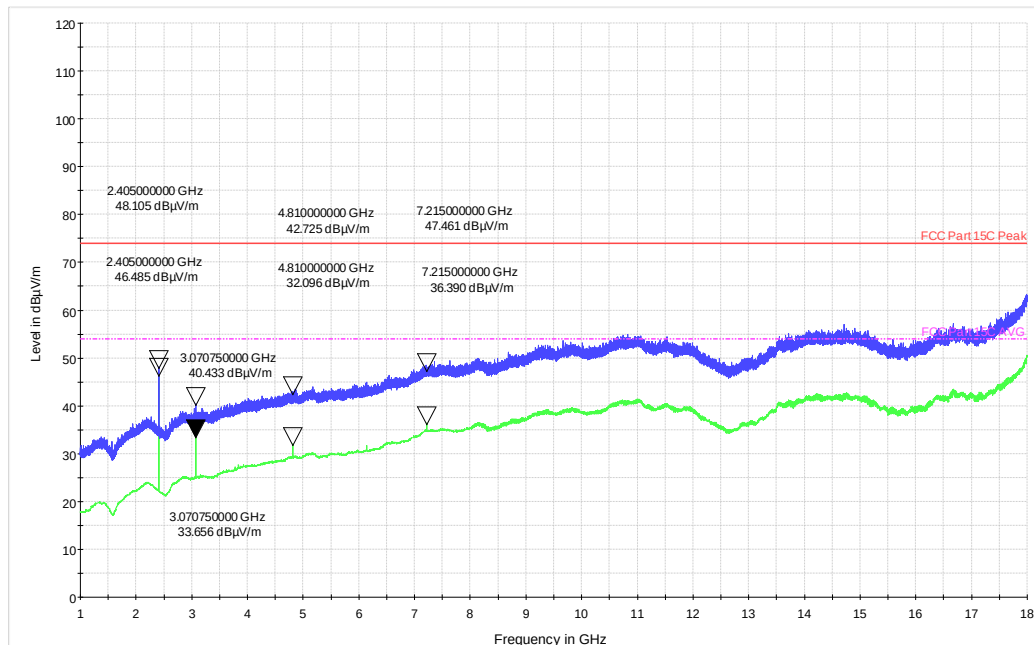
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



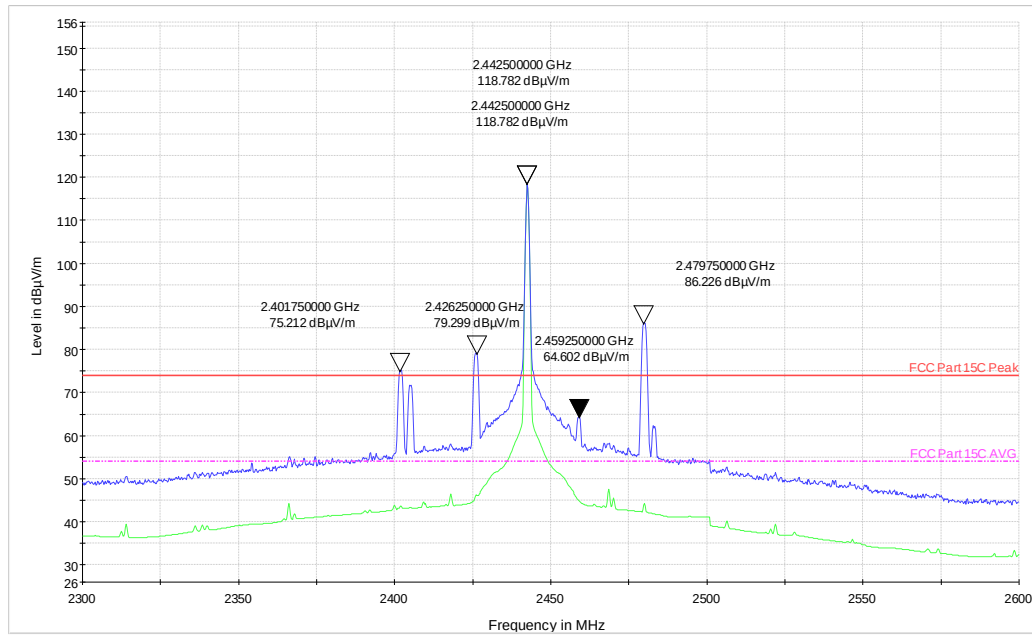
Channel Frequency: 2405MHz

Polarization: Horizontal



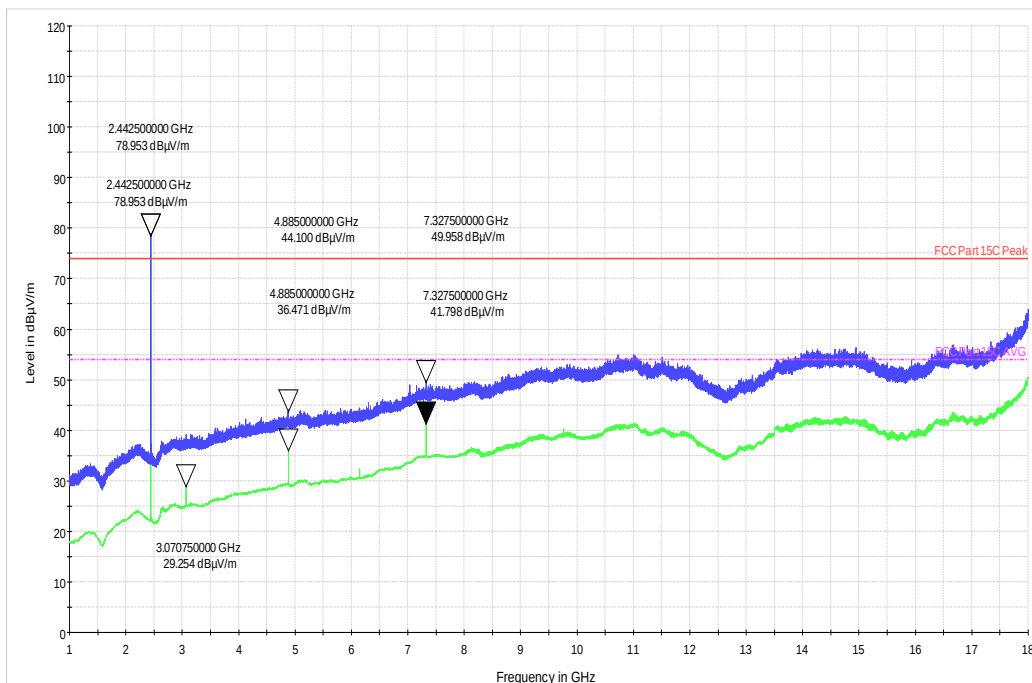
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



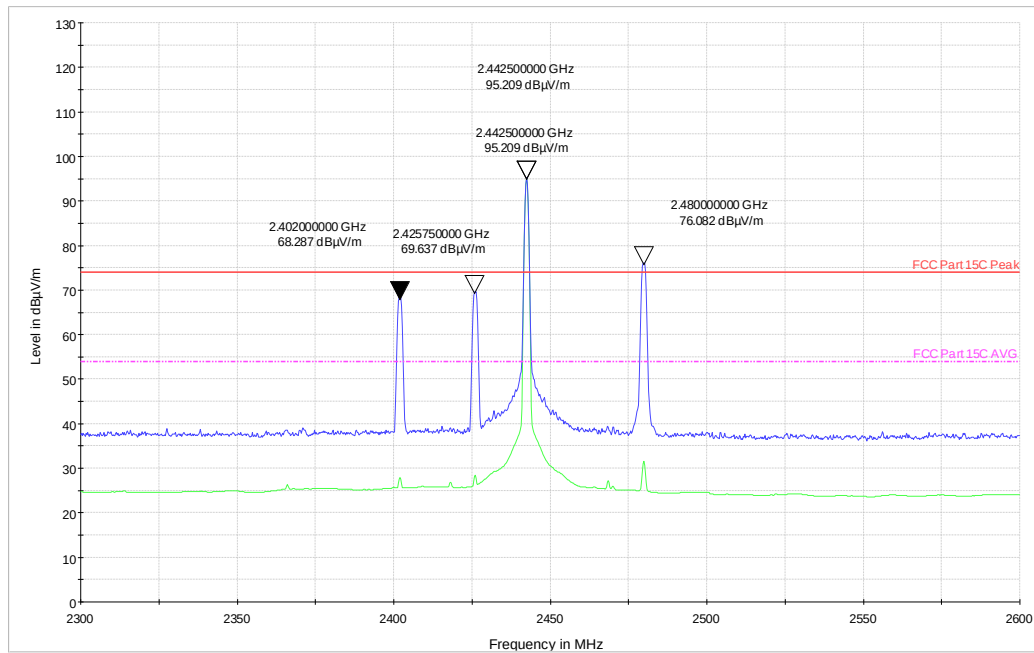
Channel Frequency: 2442.5MHz

Polarization: Vertical



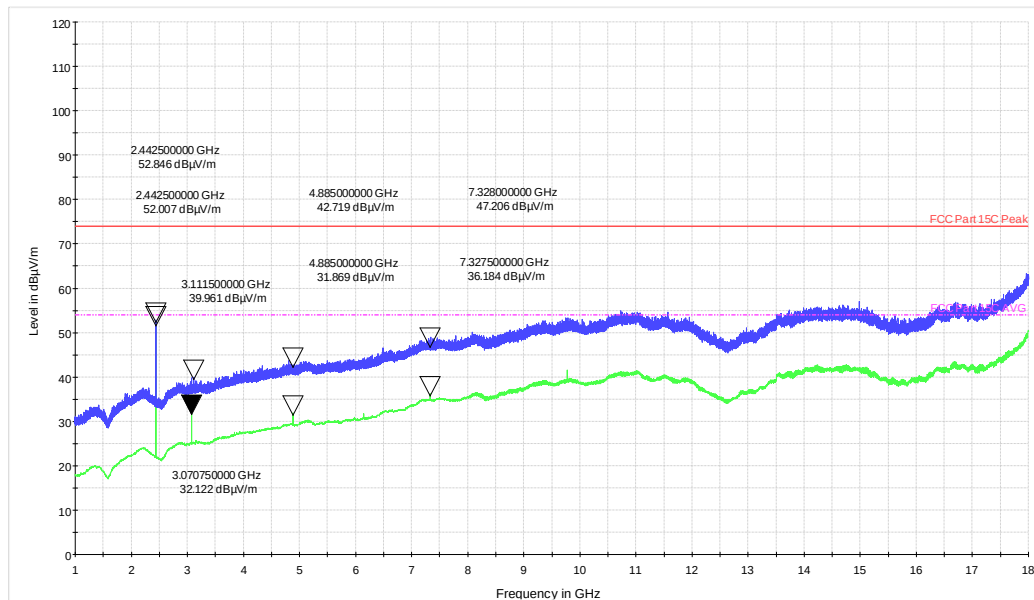
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



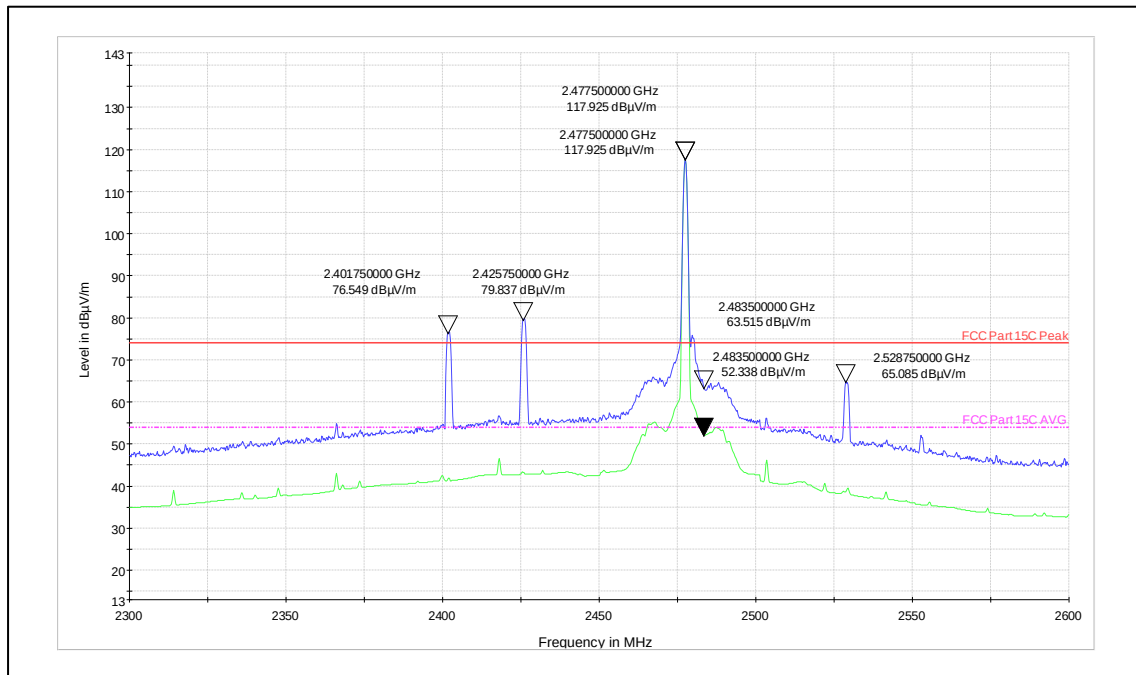
Channel Frequency: 2442.5MHz

Polarization: Horizontal



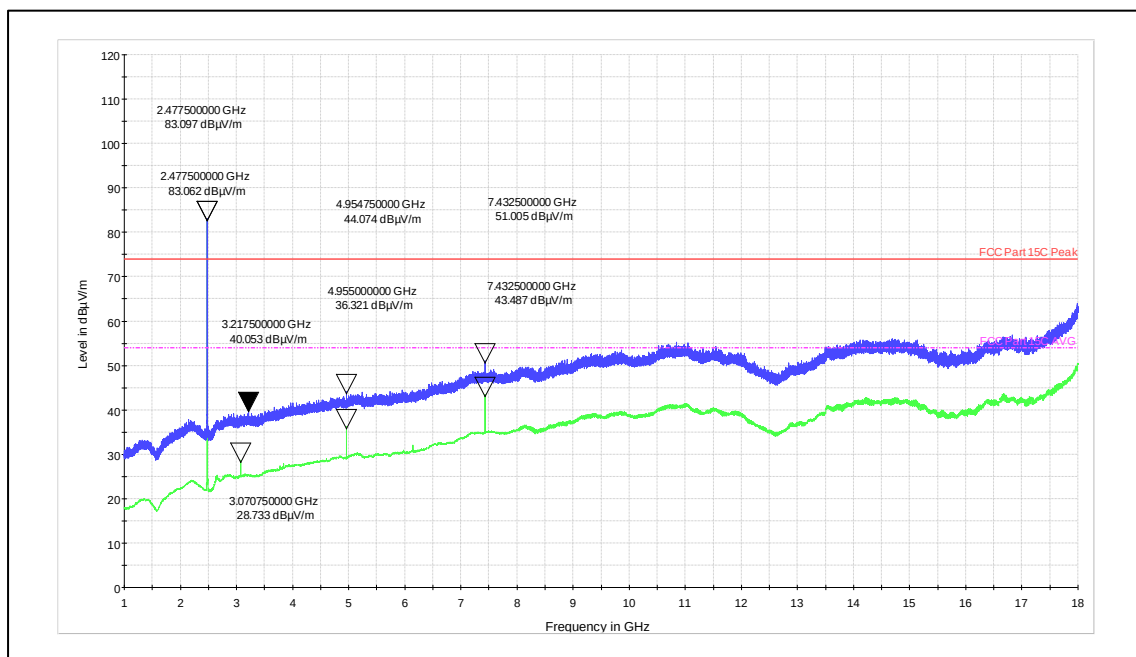
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



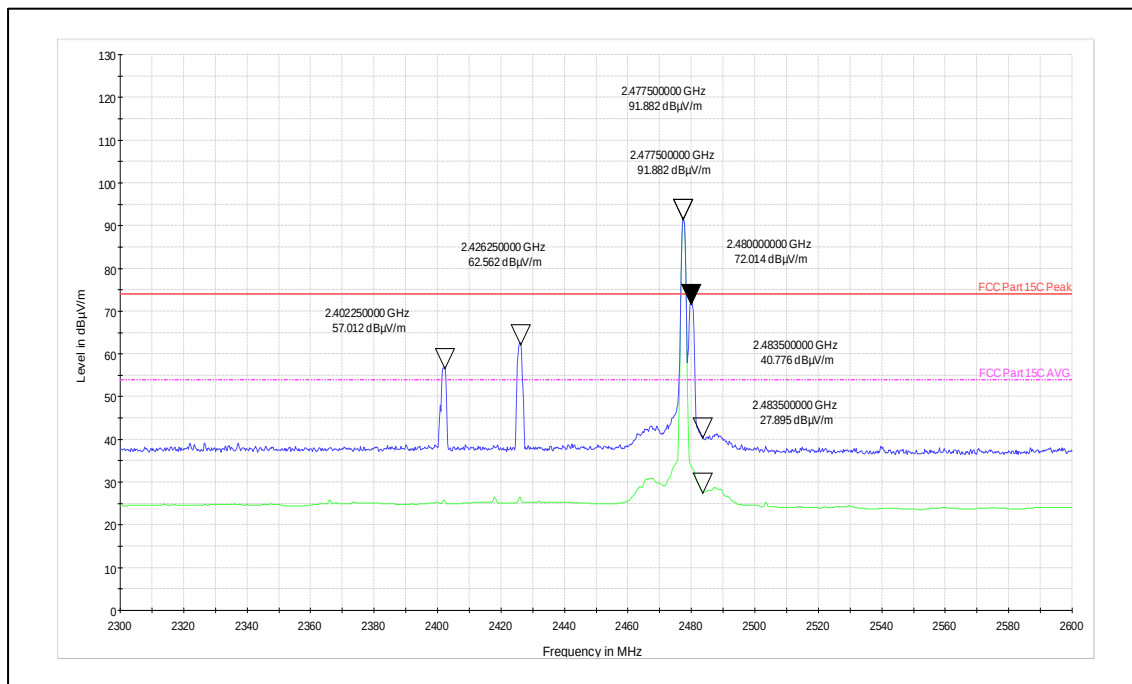
Channel Frequency: 2477.5MHz

Polarization: Vertical



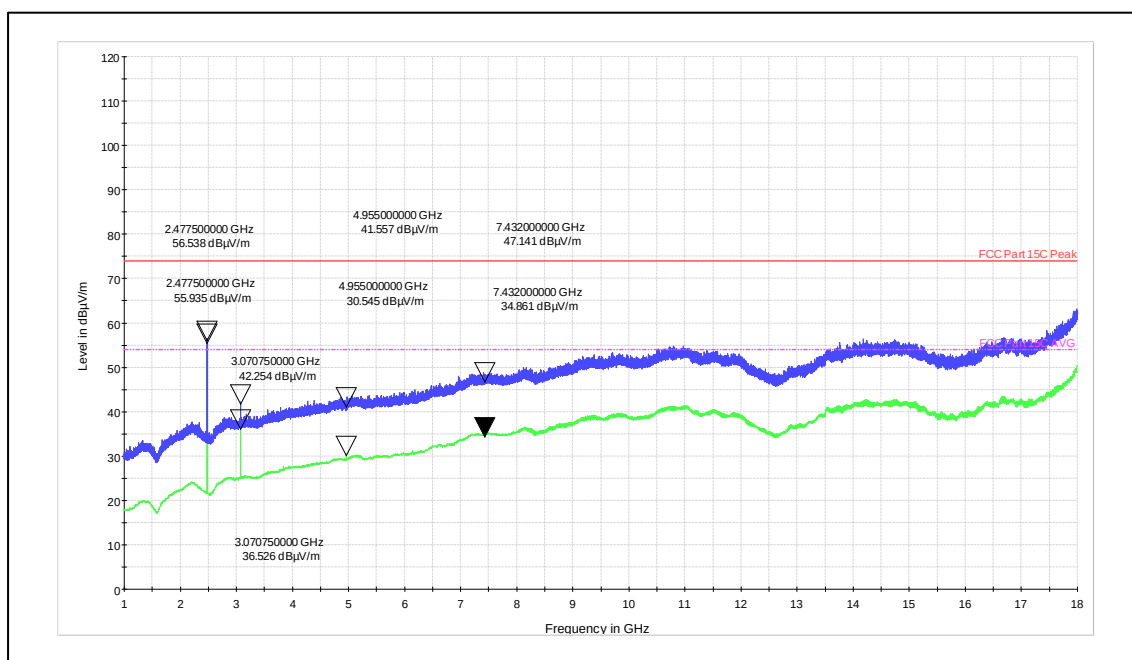
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



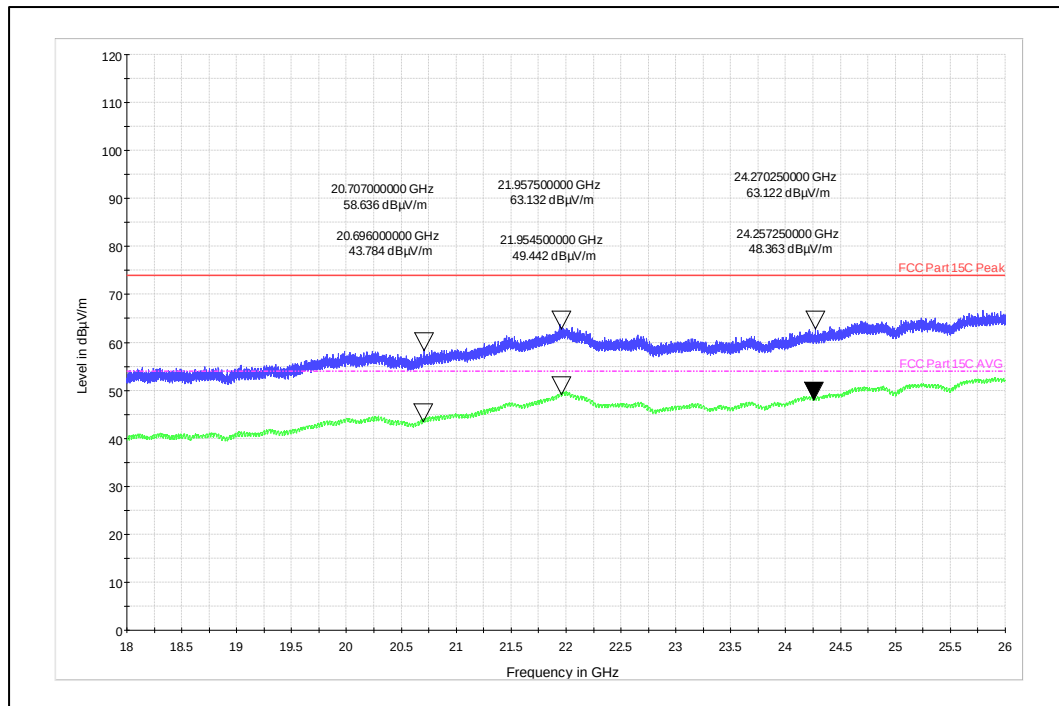
Channel Frequency: 2477.5MHz

Polarization: Horizontal



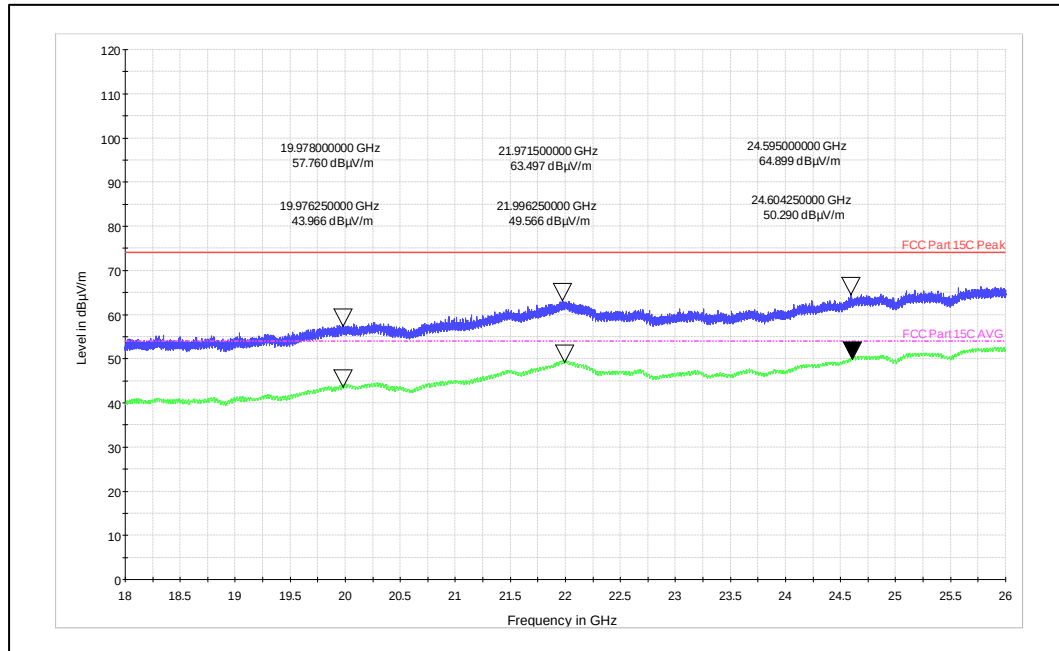
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



Channel Frequency: 18GHz -26.5GHz

Polarization: Vertical



Channel Frequency: 18GHz -26.5GHz

Polarization: Horizontal

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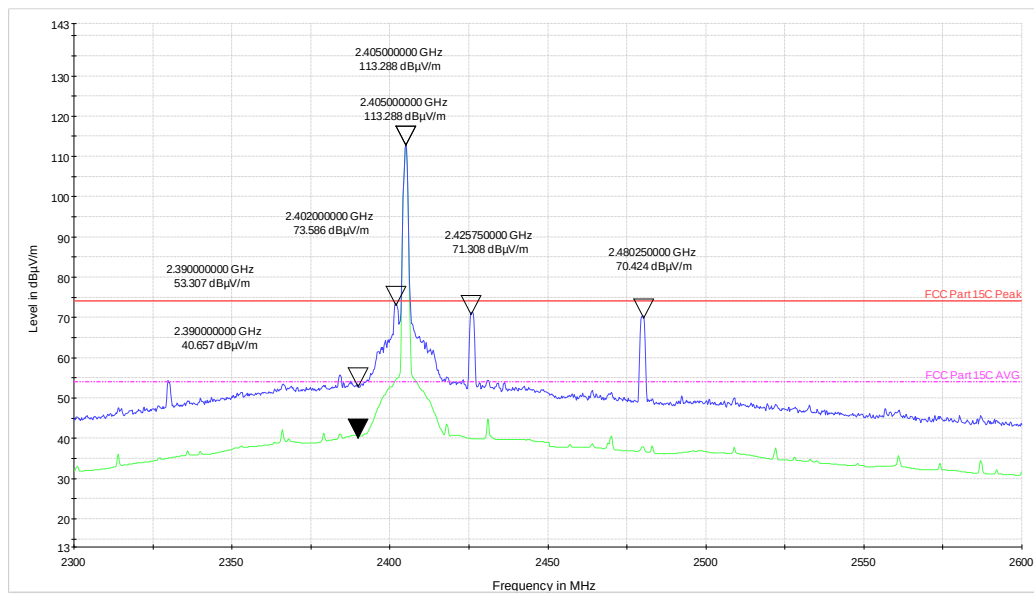
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SG1015NM-2450-5dBi:

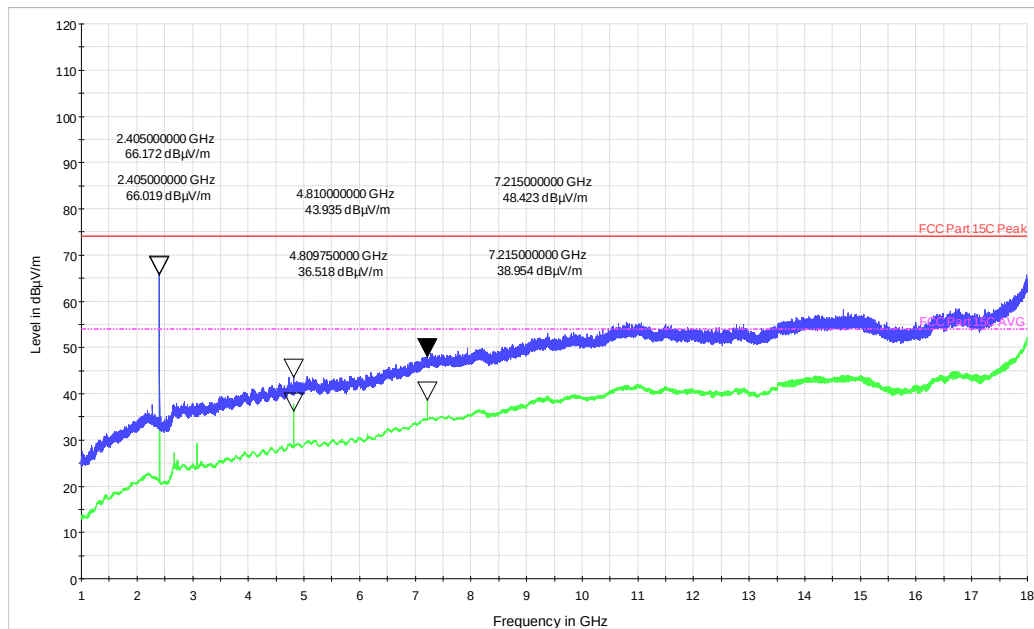
Channel Frequency (MHz)	Frequency (MHz)	Polarization	Measured Emission (dBμV/m)	Limit (dBm)	Margin (dB)
2405	2405(Pk)	Vertical	113.28	-	-
	2405(Av)		113.28	-	-
	2390(Pk)		53.30	74*	-20.70
	2390(Av)		40.65	54*	-13.35
	4810(Pk)		43.93	74	-30.07
	4810(Av)		36.51	54	-17.49
	7215(Pk)		48.42	74	-25.58
	7215(Av)		38.95	54	-15.05
	2405(Pk)	Horizontal	95.87	-	-
	2405(Av)		95.87	-	-
	2390(Pk)		38.08	74*	-35.92
	2390(Av)		25.80	54*	-28.20
	4810(Pk)		41.82	74	-32.18
	4810(Av)		31.20	54	-22.80
	7215(Pk)		47.18	74	-26.82
	7215(Av)		35.53	54	-18.47
2442.5	2442.5(Pk)	Vertical	113.59	-	-
	2442.5(Av)		113.59	-	-
	4885(Pk)		44.74	74	-29.26
	4885(Av)		37.48	54	-16.52
	7327.5(Pk)		47.50	74	-26.50
	7327.5(Av)		39.38	54	-14.62
	2442.5(Pk)	Horizontal	96.65	-	-
	2442.5(Av)		96.65	-	-
	4885(Pk)		41.51	74	-32.49
	4885(Av)		30.29	54	-23.71
	7327.5(Pk)		46.21	74	-27.79
	7327.5(Av)		34.86	54	-19.14
2477.5	2483.5(Pk)	Vertical	113.26	-	-
	2483.5(Av)		113.26	-	-
	2477.5(Pk)		59.83	74*	-14.17
	2477.5(Av)		48.14	54*	-5.86
	4955(Pk)		41.40	74	-32.60
	4955(Av)		32.13	54	-21.87
	7432.5(Pk)		49.51	74	-24.49
	7432.5(Av)		40.01	54	-13.99
	2483.5(Pk)	Horizontal	97.30	-	-
	2483.5(Av)		97.30	-	-
	2477.5(Pk)		44.13	74*	-29.87
	2477.5(Av)		32.65	54*	-21.35
	4955(Pk)		40.57	74	-33.43
	4955(Av)		28.49	54	-25.51
	7432.5(Pk)		49.30	74	-24.70
	7432.5(Av)		34.83	54	-19.17

Pk: Peak Detector;
Av: Average Detector;
*→ Restricted Bands
- → Fundamental Frequency



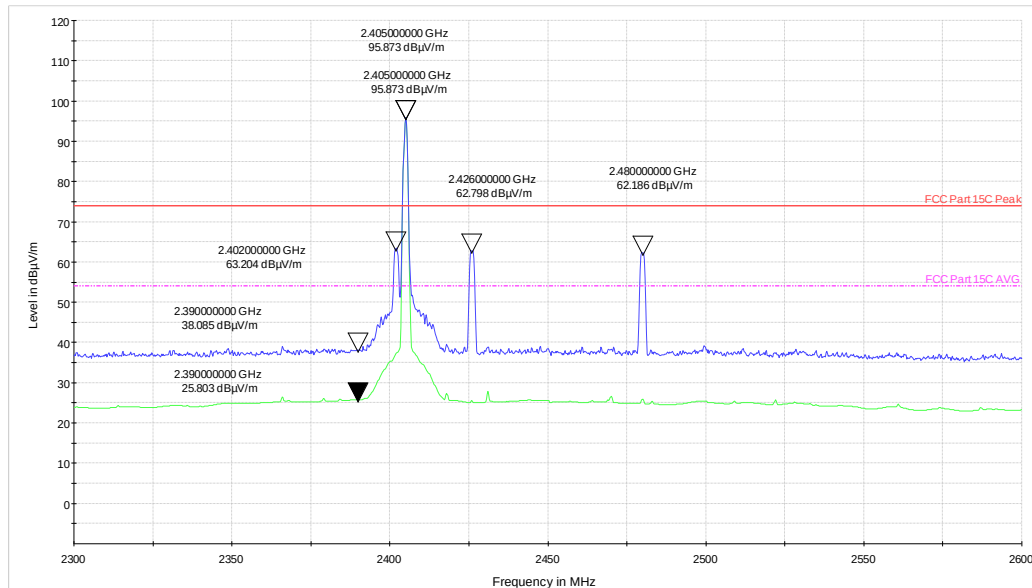
Channel Frequency: 2405MHz

Polarization: Vertical



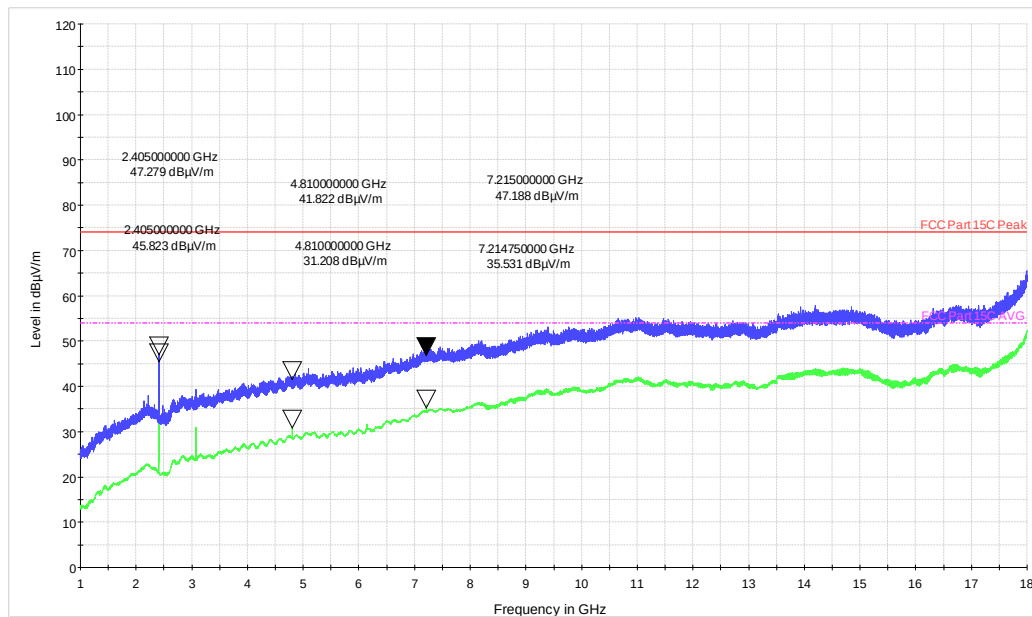
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



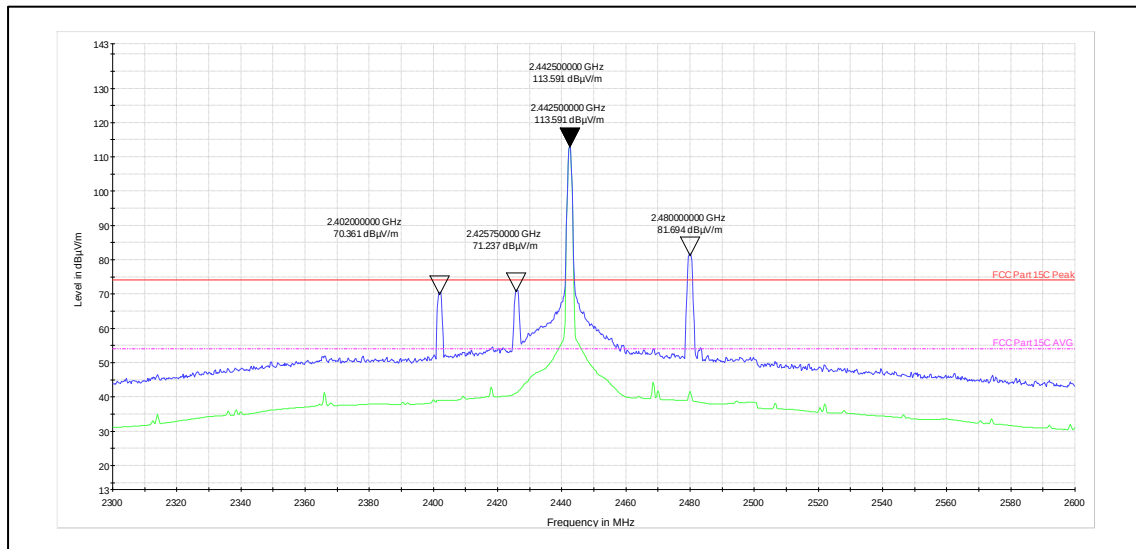
Channel Frequency: 2405MHz

Polarization: Horizontal



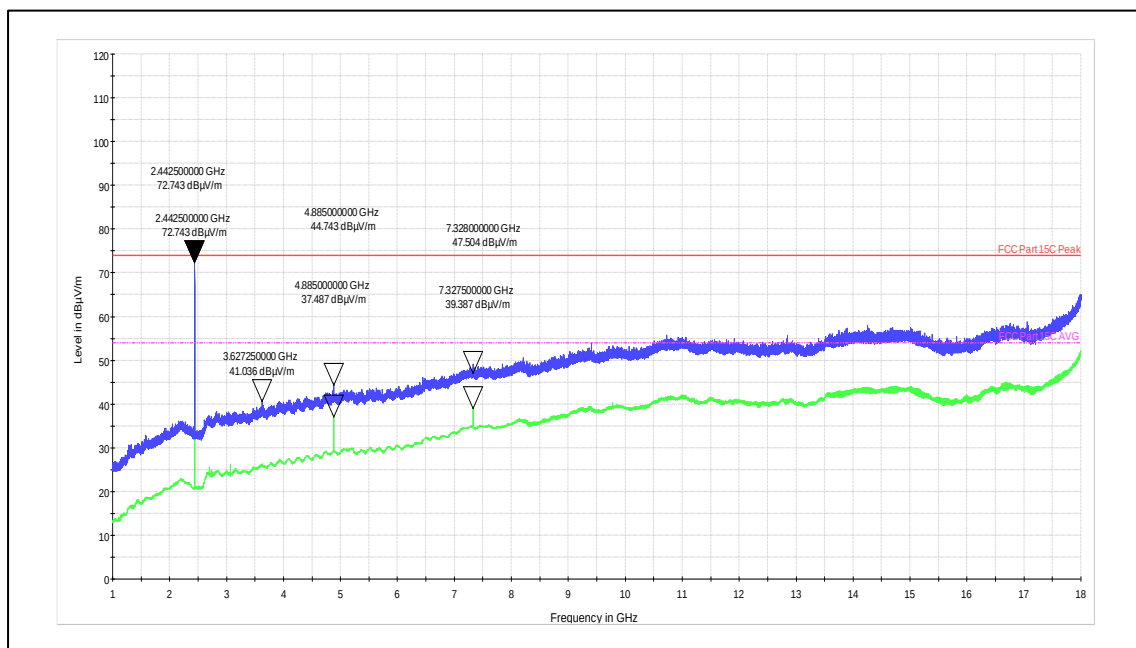
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



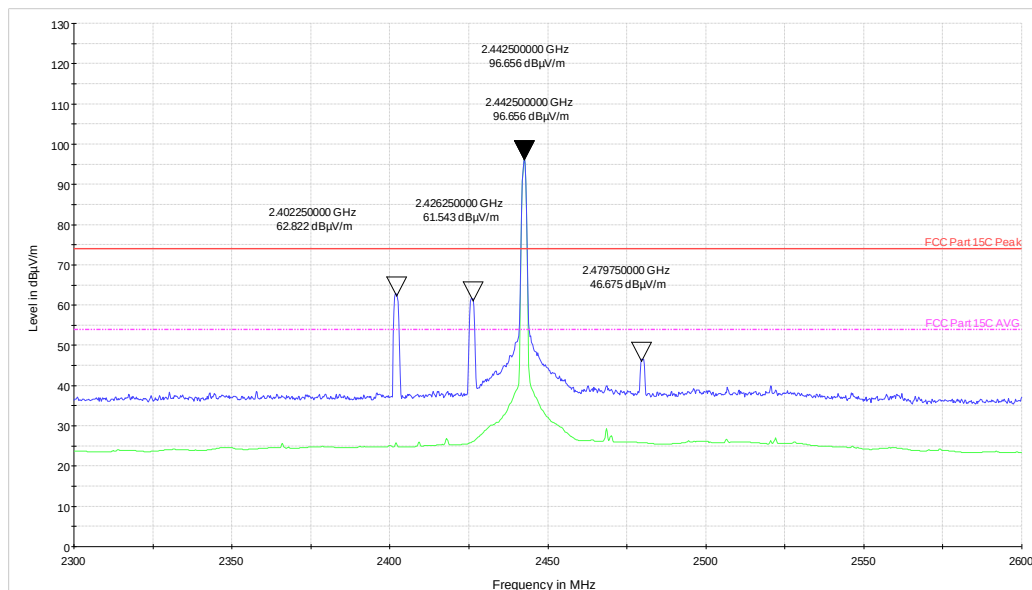
Channel Frequency: 2442.5MHz

Polarization: Vertical



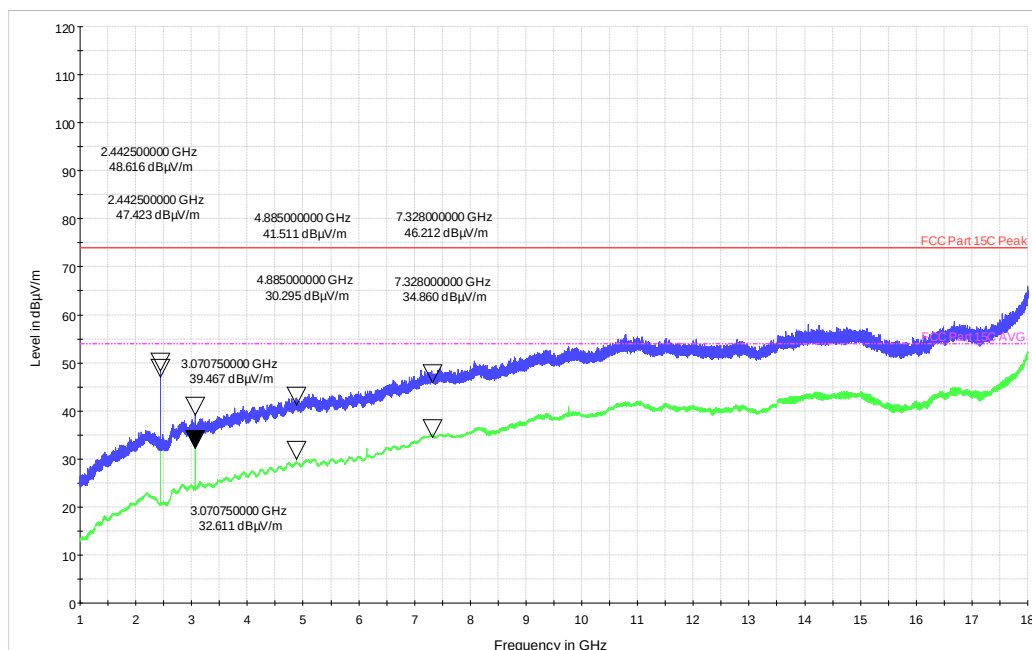
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



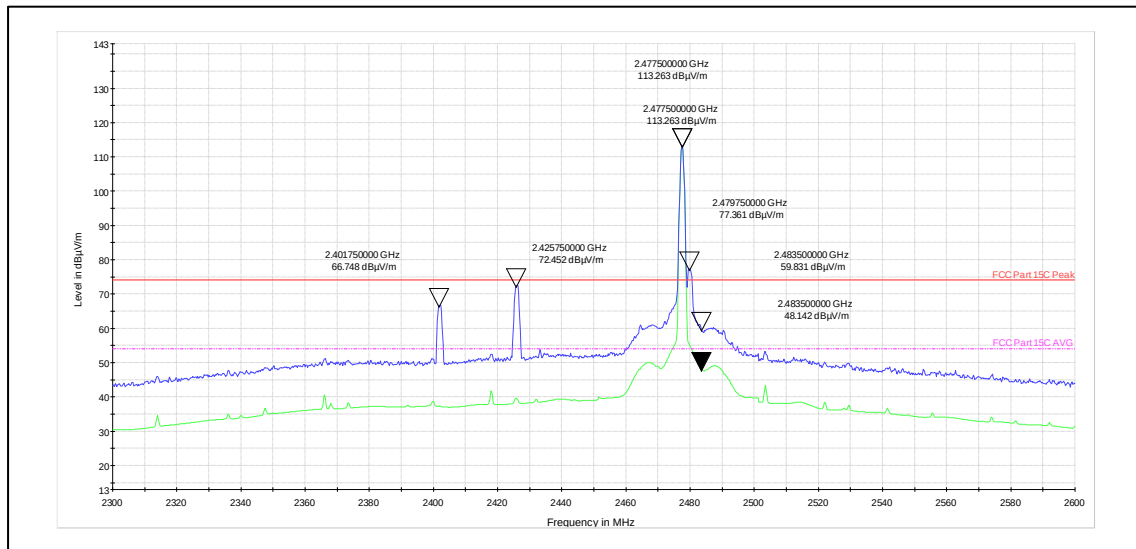
Channel Frequency: 2442.5MHz

Polarization: Horizontal



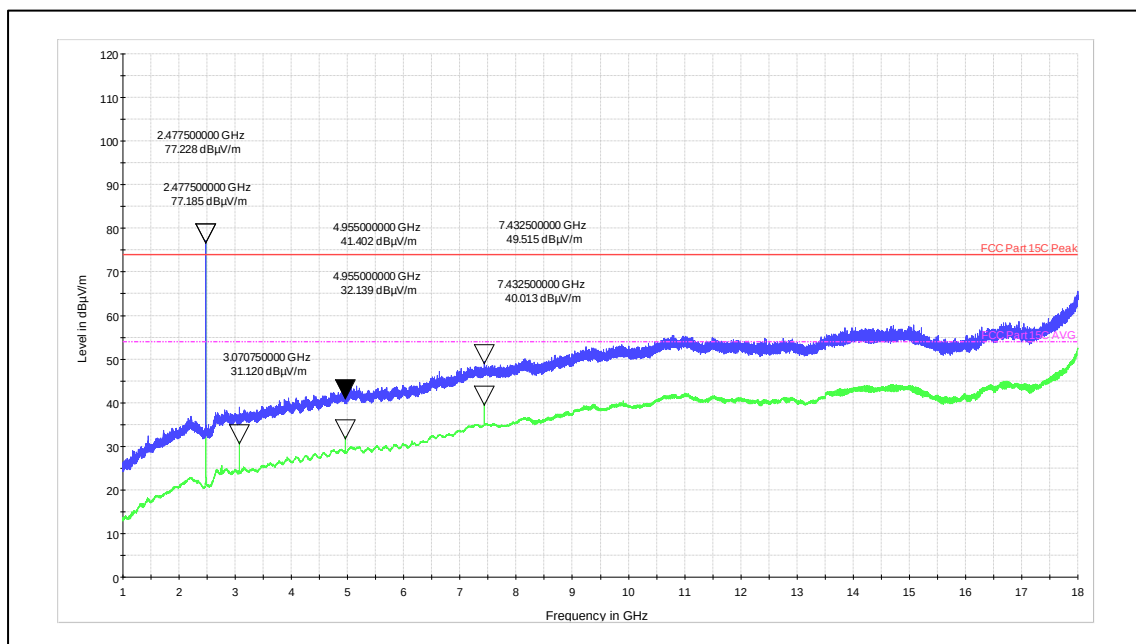
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



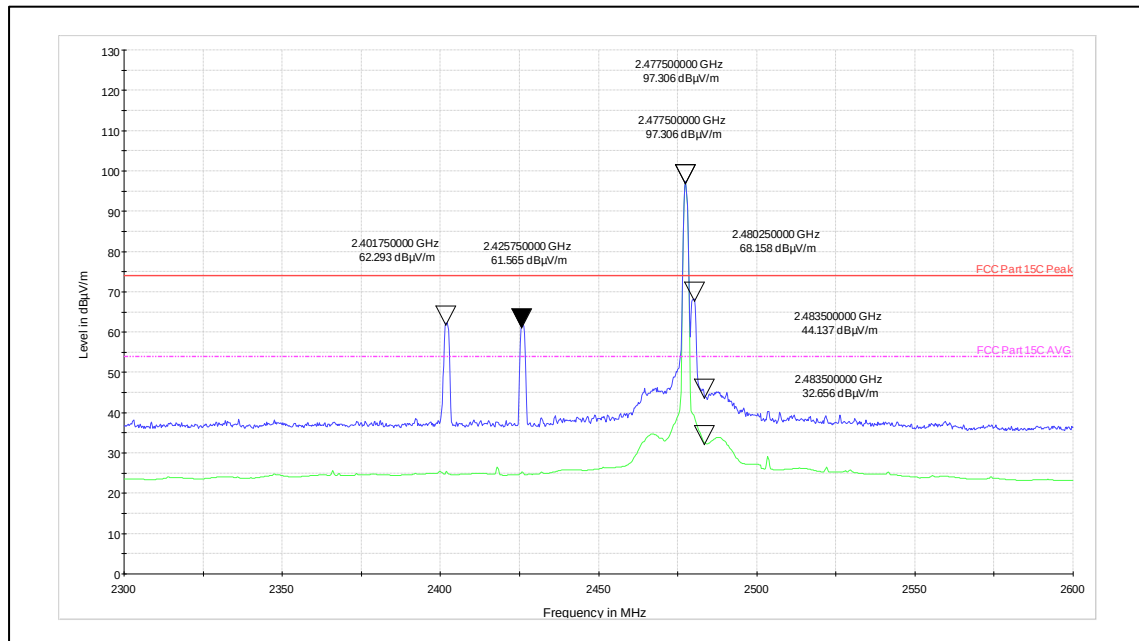
Channel Frequency: 2477.5MHz

Polarization: Vertical



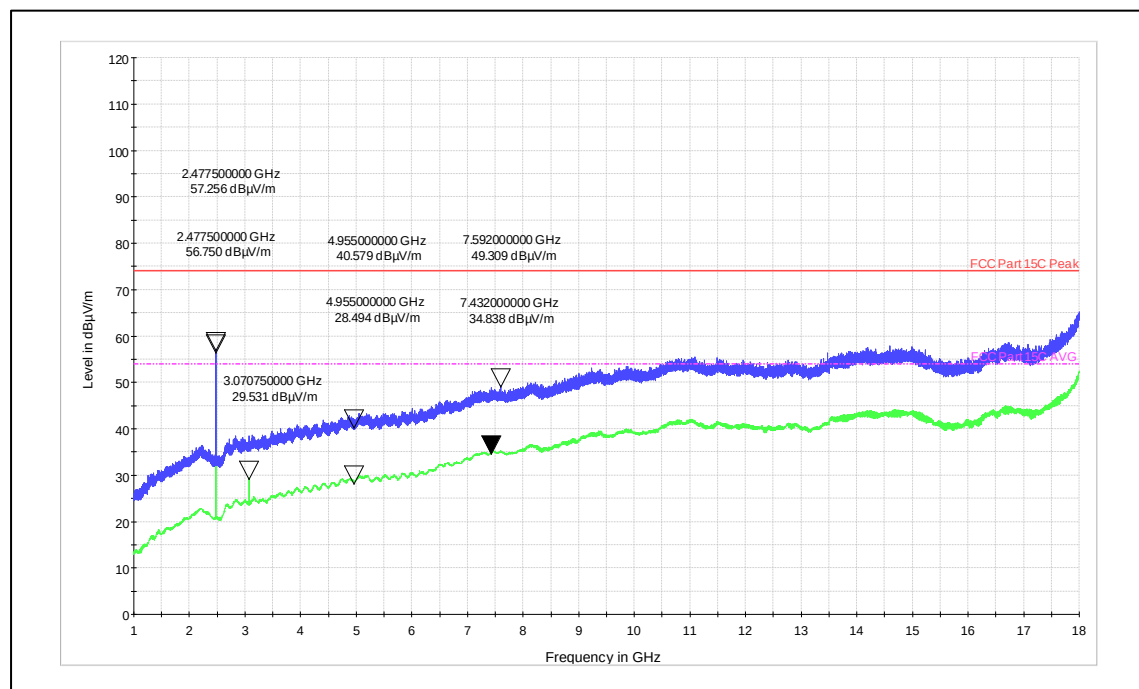
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



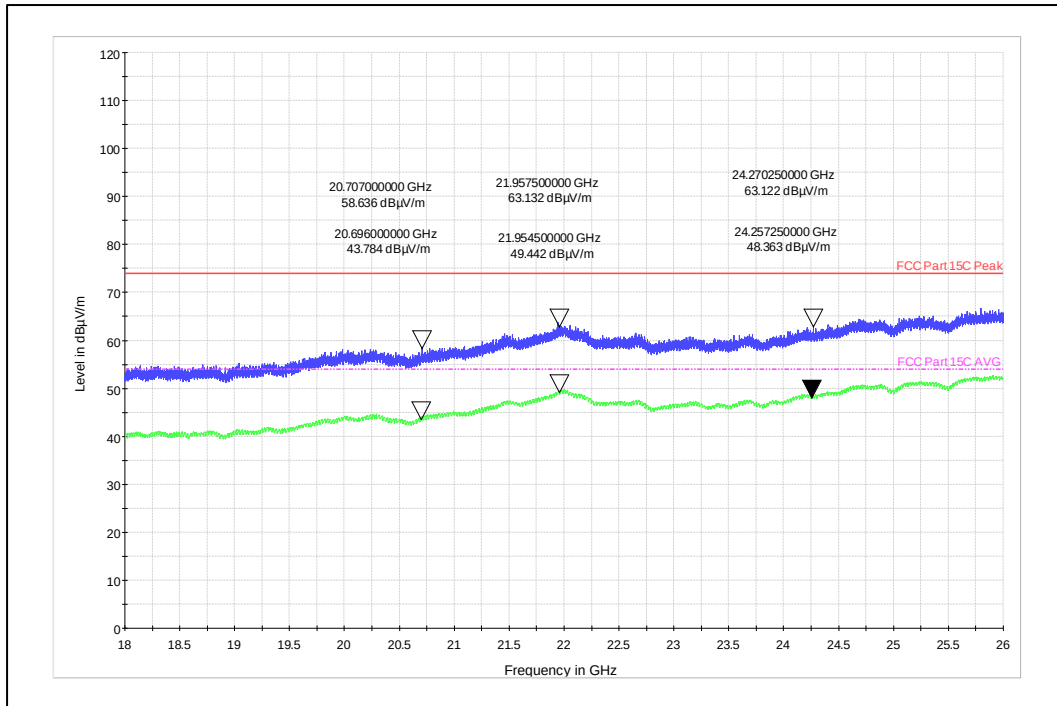
Channel Frequency: 2477.5MHz

Polarization: Horizontal



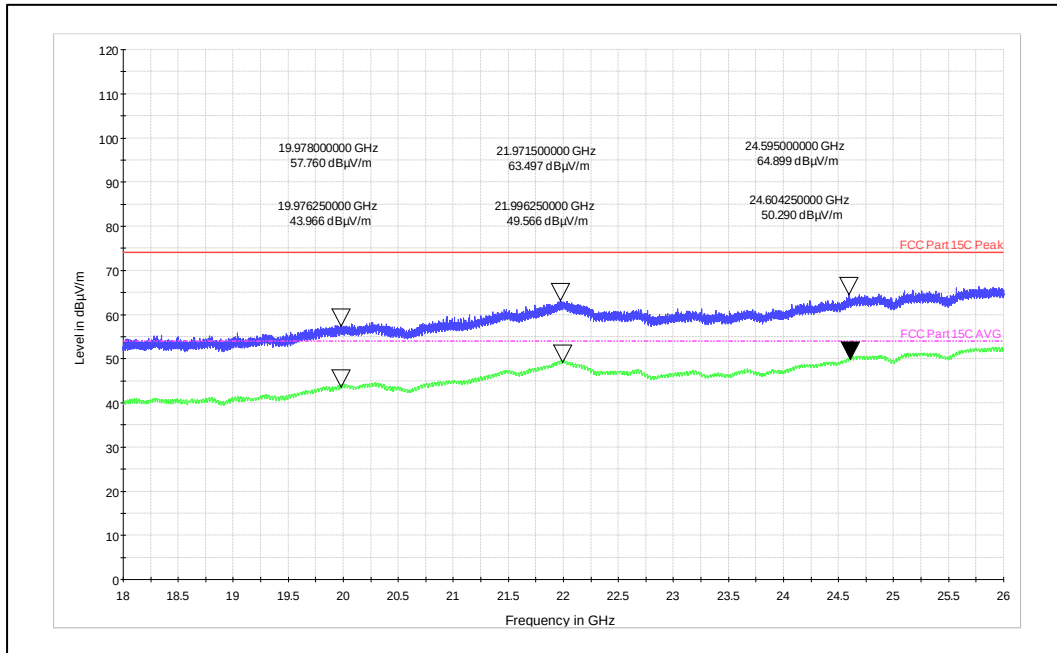
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



Channel Frequency: 18GHz -26.5GHz

Polarization: Vertical



Channel Frequency: 18GHz -26.5GHz

Polarization: Horizontal

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8.7.1 RSE Test Results of Simultaneous Operation with Anchor 1, Anchor 2 and BLE:

Note: Simultaneous Operation was performed As specified under the section 4.4 and worst case test results are mentioned in this report.

Test results for Simultaneous operation

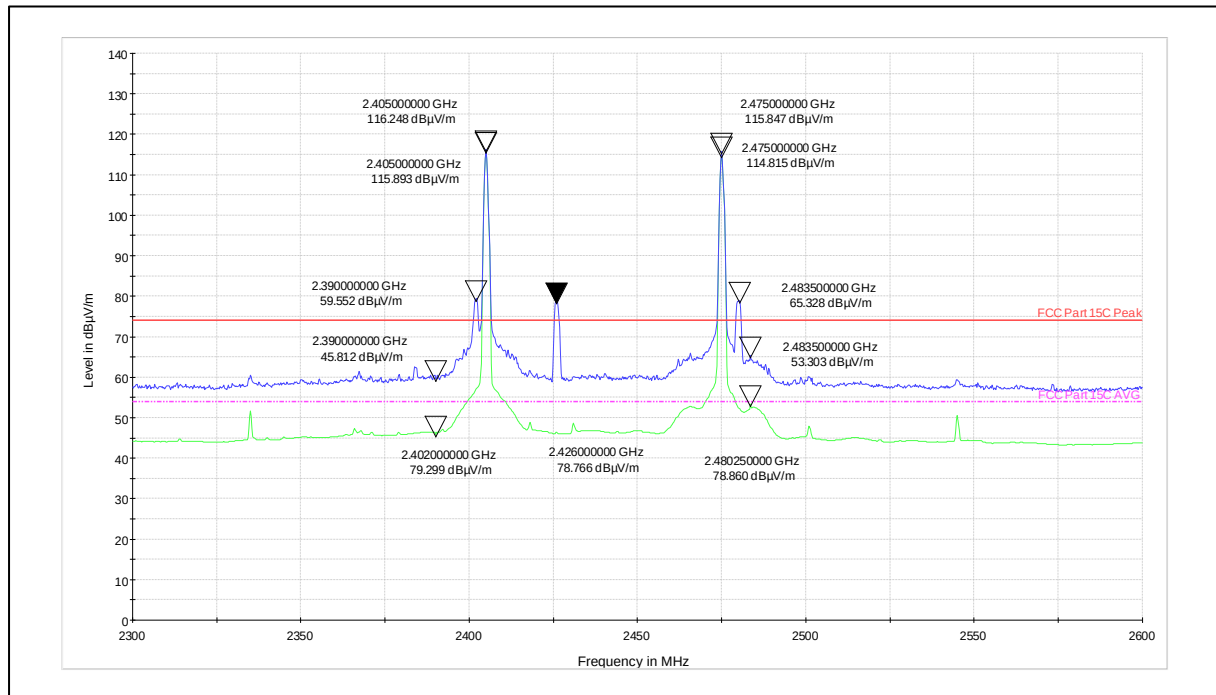
Combination: IEEE 802.15.4 + IEEE 802.15.4 + BLE

AIR-ANT2450V-N:

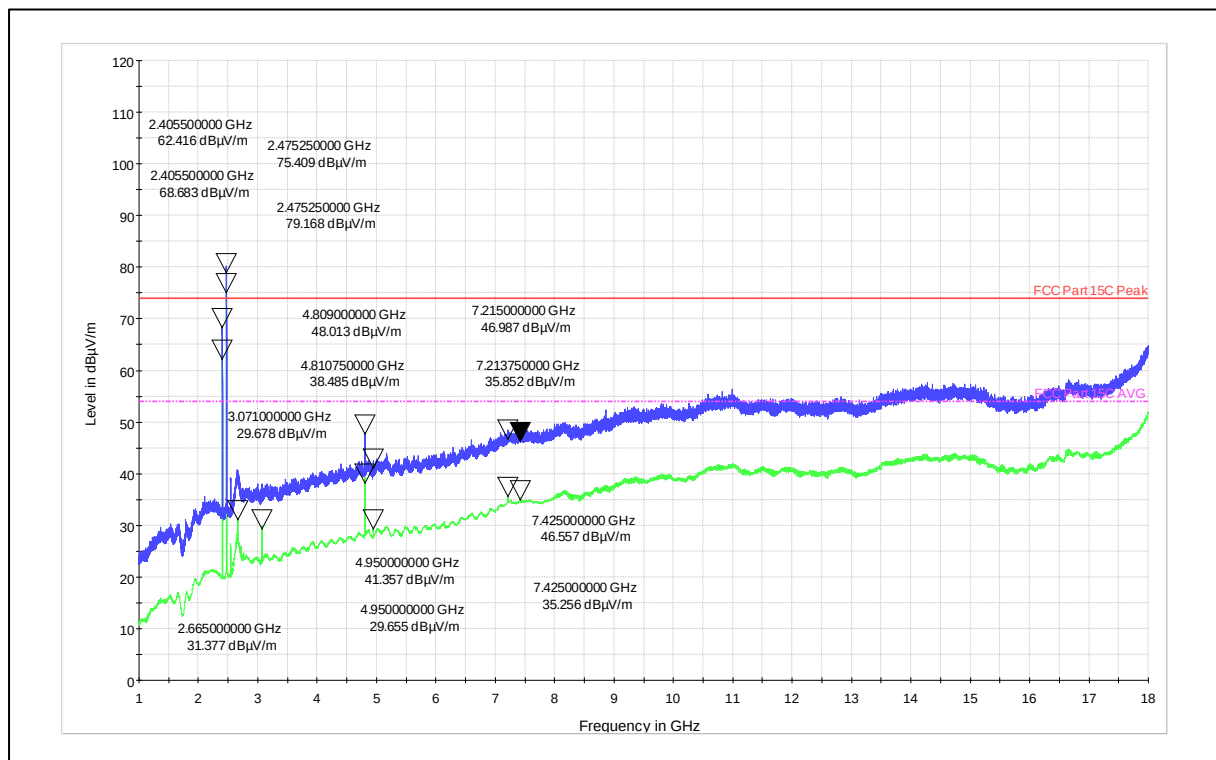
Protocol	Polarization	Measured Frequency (MHz)	Measured Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
IEEE 802.15.4	Vertical	2405(Pk)	116.24	-	-
		2405(Av)	115.89	-	-
		2390(Pk)	59.55	74*	-14.45
		2390(Av)	45.81	54*	-8.19
		4810(Pk)	48.01	74	-25.99
		4810(Av)	38.48	54	-15.52
		7215(Pk)	46.98	74	-27.02
		7215(Av)	35.85	54	-18.15
IEEE 802.15.4		2475(Pk)	115.84	-	-
		2475(Av)	114.81	-	-
		2483.5(Pk)	65.32	74*	-8.68
		2483.5(Av)	53.30	54*	-0.7
		4950(Pk)	41.35	74	-32.65
		4950(Av)	29.65	54	-24.35
		7425(Pk)	46.55	74	-27.45
		7425(Av)	35.25	54	-18.75
IEEE 802.15.4	Horizontal	2405(Pk)	90.88	-	-
		2405(Av)	90.20	-	-
		2390(Pk)	55.74	74*	-18.26
		2390(Av)	42.35	54*	-11.65
		4810(Pk)	40.95	74	-33.05
		4810(Av)	30.76	54	-23.24
		7215(Pk)	49.85	74	-24.15
		7215(Av)	37.78	54	-16.22
IEEE 802.15.4		2475(Pk)	89.53	-	-
		2475(Av)	89.45	-	-
		2483.5(Pk)	54.25	74*	-19.75
		2483.5(Av)	42.61	54*	-11.39
		4950(Pk)	41.25	74	-32.75
		4950(Av)	30.22	54	-23.78
		7425(Pk)	47.67	74	-26.33
		7425(Av)	34.77	54	-19.23

Pk: Peak Detector;
Av: Average Detector;
*→ Restricted Bands
- → Fundamental Frequency

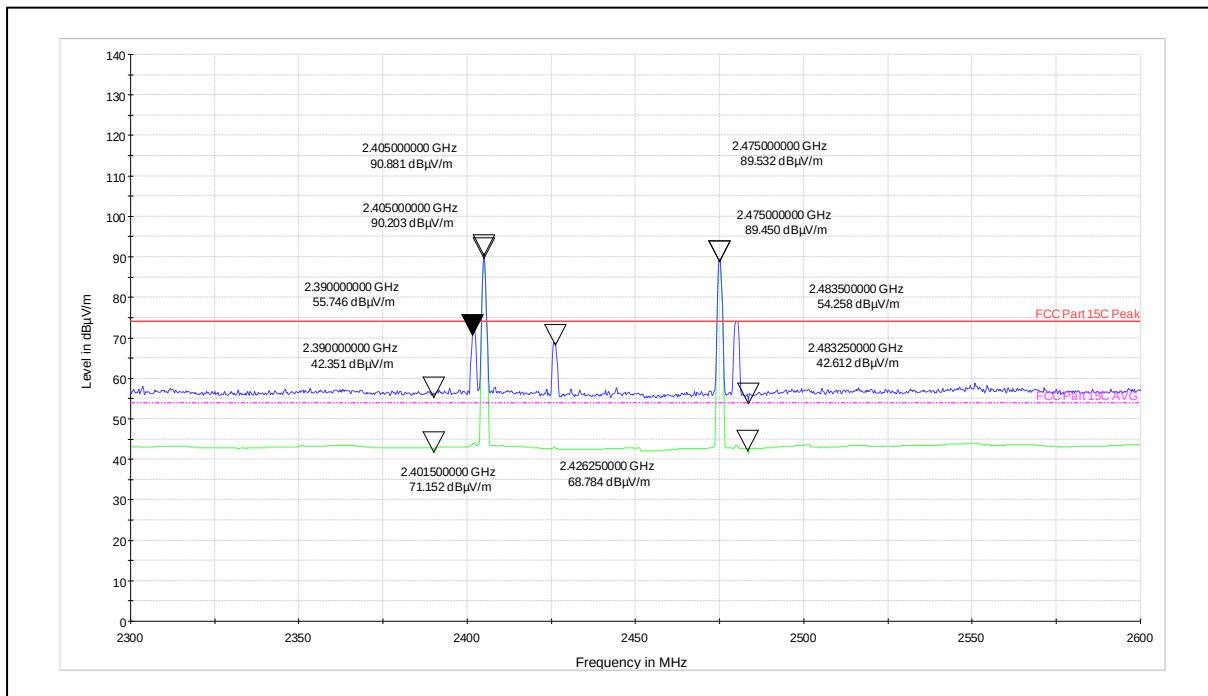
Test Plots:



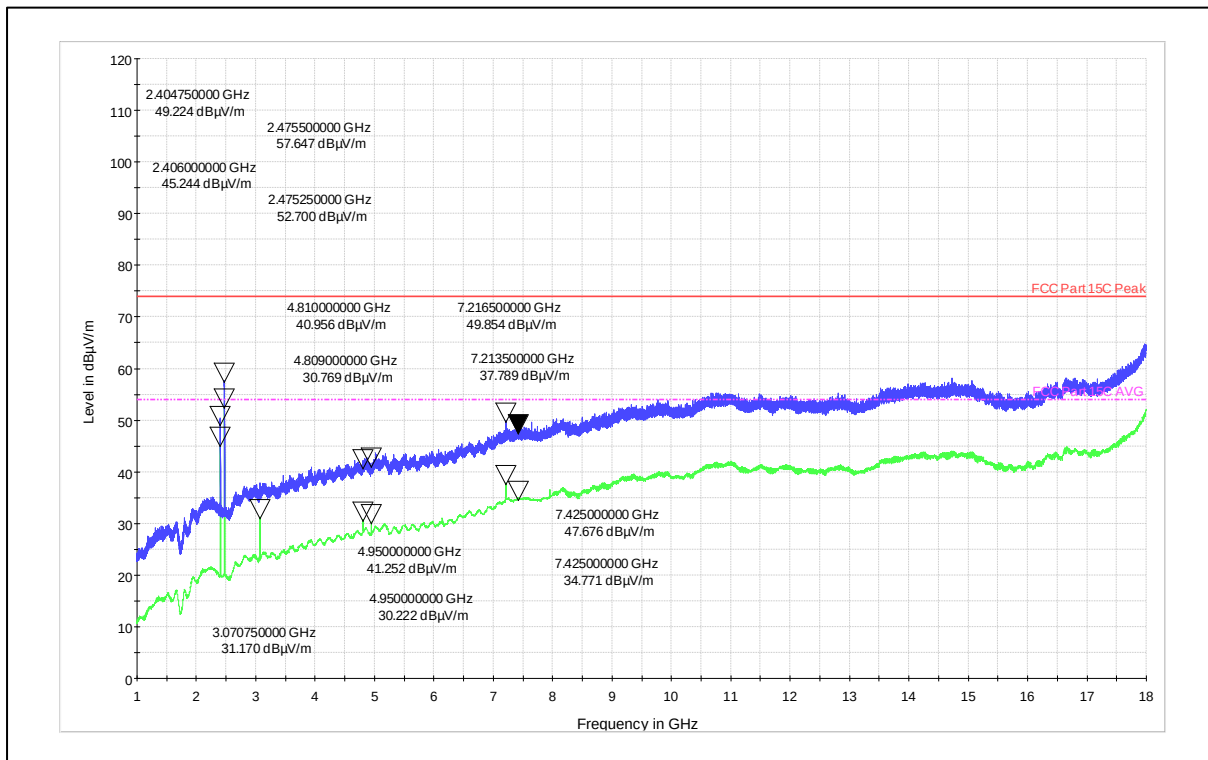
Fundamental Frequency: (IEEE 802.15.4-2405MHz, IEEE 802.15.4-2475MHz) Polarization: vertical



Channel Frequency: 1GHz -18GHz Polarization: vertical



Fundamental Frequency: (IEEE 802.15.4-2405MHz, IEEE 802.15.4-2475MHz) Polarization: Horizontal



Channel Frequency: 1GHz -18GHz

Polarization: Horizontal

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8.8 Conducted spurious emission Test on AC Power lines

Result

Pass

Test Specification : FCC Part 15 Section 15.207 / RSS Gen Issue 5 Section 8.8
Test Method : ANSI C 63.10-2013
Testing Location : Screened room
Measurement Bandwidth : 9kHz
Frequency Range : 150kHz – 30MHz
Supply Voltage : 110VAC,60Hz
Test Method : Refer TEST METHODOLOGY

Table 10: Limits for Conducted poweline emission

Frequency of emission (MHz)	QP Limit (dBμV)	AV Limit (dBμV/m)
0.15 – 0.5	66 – 56*	56 – 46*
0.5 – 5	56	46
5 – 30	60	50

* Decreases with the logarithm of the frequency

Test Conditions:

Temperature (Norm) = +23.1 °C Voltage = 24V DC (AC - DC Adapter) Relative humidity: 66%

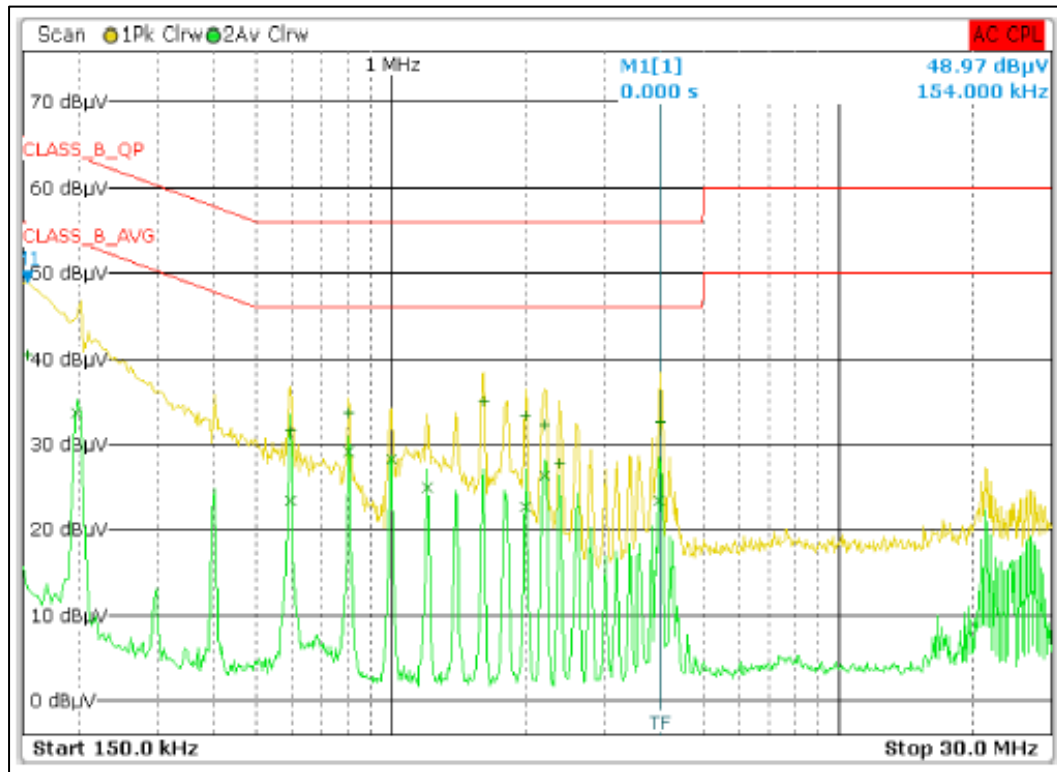
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Test results:

110VAC-60Hz-Line



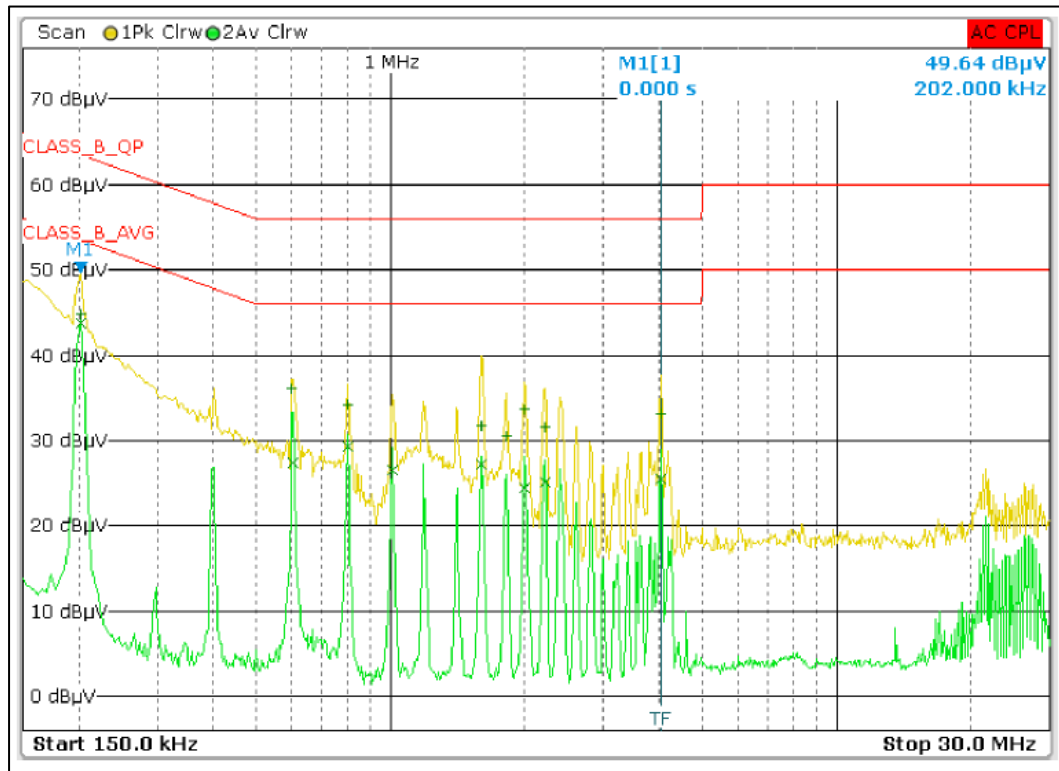
Trace	Frequency	Level (dBµV)	Phase	Detector	Delta Limit/dB
2	802.000000000 kHz	29.15		Average	-16.85
2	998.000000000 kHz	28.18		Average	-17.82
2	2.206000000 MHz	26.30		Average	-19.70
2	198.000000000 kHz	33.67		Average	-20.02
1	1.610000000 MHz	35.01		Quasi Peak	-20.99
2	1.206000000 MHz	24.96		Average	-21.04
1	802.000000000 kHz	33.57		Quasi Peak	-22.43
2	3.986000000 MHz	23.44		Average	-22.56
2	594.000000000 kHz	23.39		Average	-22.61
1	1.998000000 MHz	33.30		Quasi Peak	-22.70
2	1.998000000 MHz	22.73		Average	-23.27
1	3.994000000 MHz	32.64		Quasi Peak	-23.36
1	2.206000000 MHz	32.30		Quasi Peak	-23.70
1	594.000000000 kHz	31.56		Quasi Peak	-24.44
1	154.000000000 kHz	40.40		Quasi Peak	-25.38
1	2.382000000 MHz	27.73		Quasi Peak	-28.27

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110VAC-60Hz-Neutral:



Trace	Frequency	Level (dBμV)	Phase	Detector	Delta Limit/dB
2	202.00000000 kHz	43.67		Average	-9.86
2	802.00000000 kHz	29.35		Average	-16.65
2	606.00000000 kHz	27.37		Average	-18.63
1	202.00000000 kHz	44.79		Quasi Peak	-18.74
2	1.60200000 MHz	27.26		Average	-18.74
2	1.00600000 MHz	26.53		Average	-19.47
1	602.00000000 kHz	36.15		Quasi Peak	-19.85
2	4.02600000 MHz	25.46		Average	-20.54
2	2.21800000 MHz	25.18		Average	-20.82
2	2.00200000 MHz	24.46		Average	-21.54
1	802.00000000 kHz	34.12		Quasi Peak	-21.88
1	2.00200000 MHz	33.56		Quasi Peak	-22.44
1	4.02200000 MHz	33.19		Quasi Peak	-22.81
1	1.60200000 MHz	31.65		Quasi Peak	-24.35
1	2.22200000 MHz	31.63		Quasi Peak	-24.37
1	1.81800000 MHz	30.57		Quasi Peak	-25.43

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*****End of test report*****