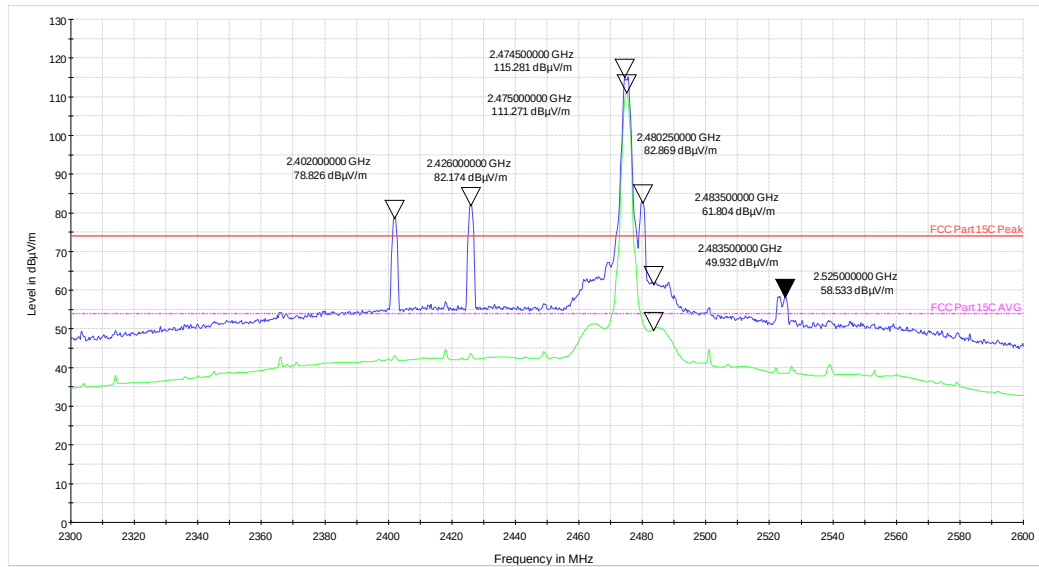
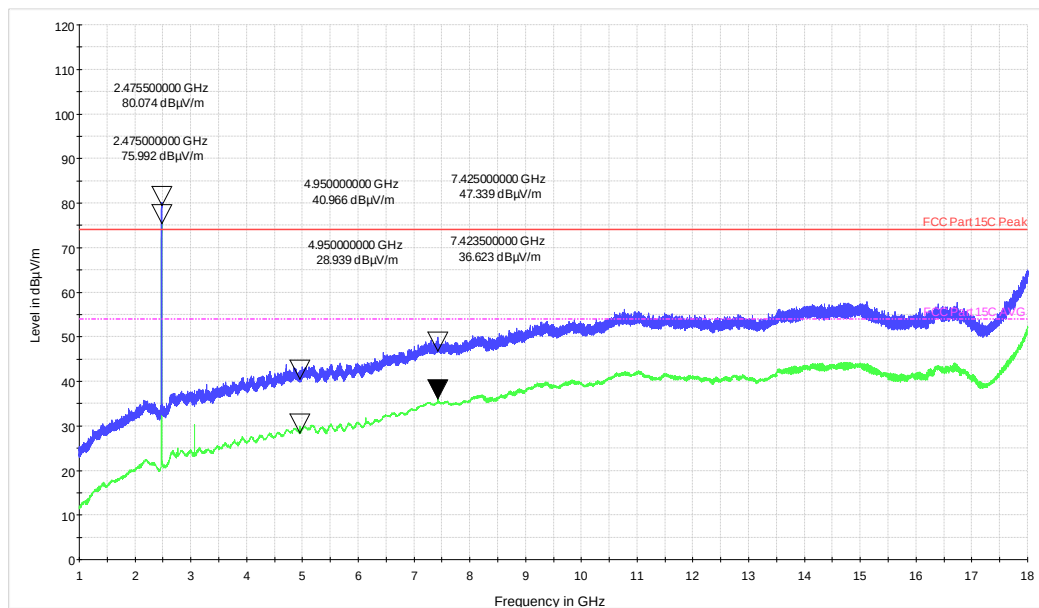




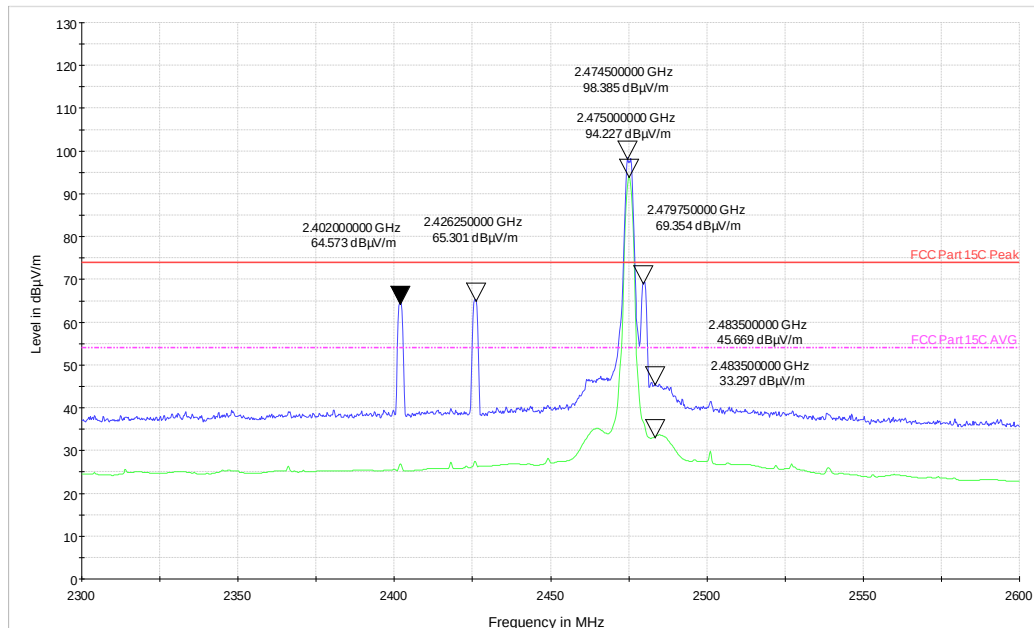
Channel Frequency: 2475MHz

Polarization: vertical



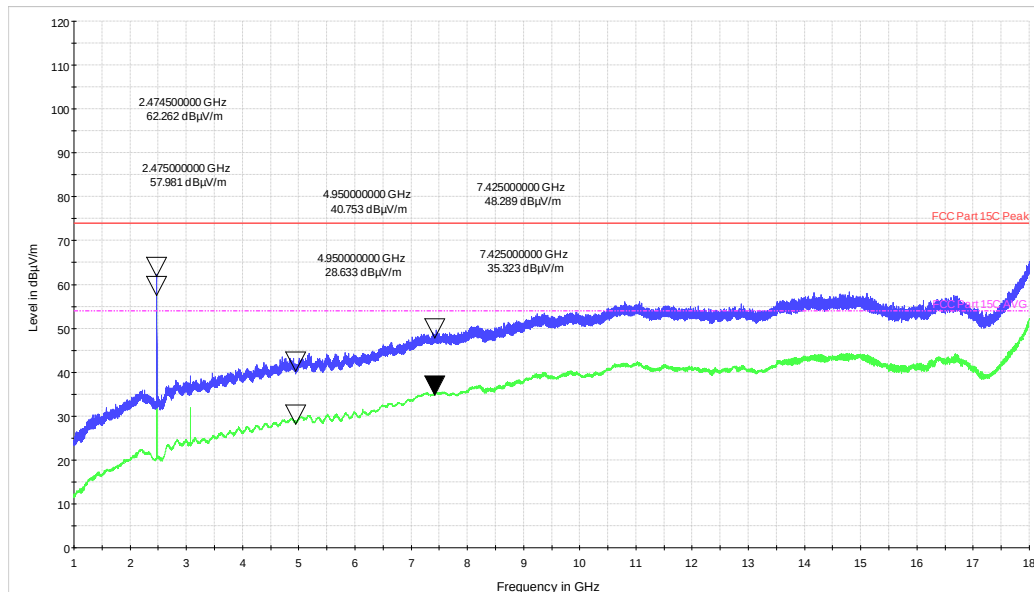
Channel Frequency: 1GHz -18GHz

Polarization: vertical



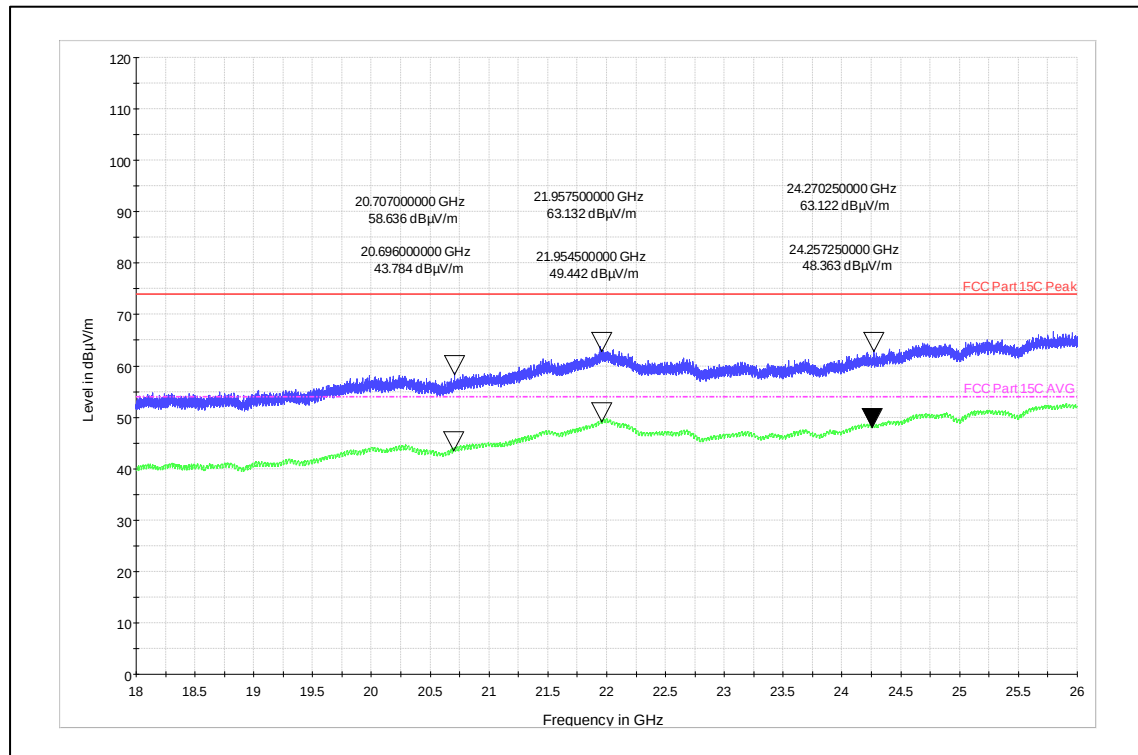
Channel Frequency: 2475MHz

Polarization: Horizontal



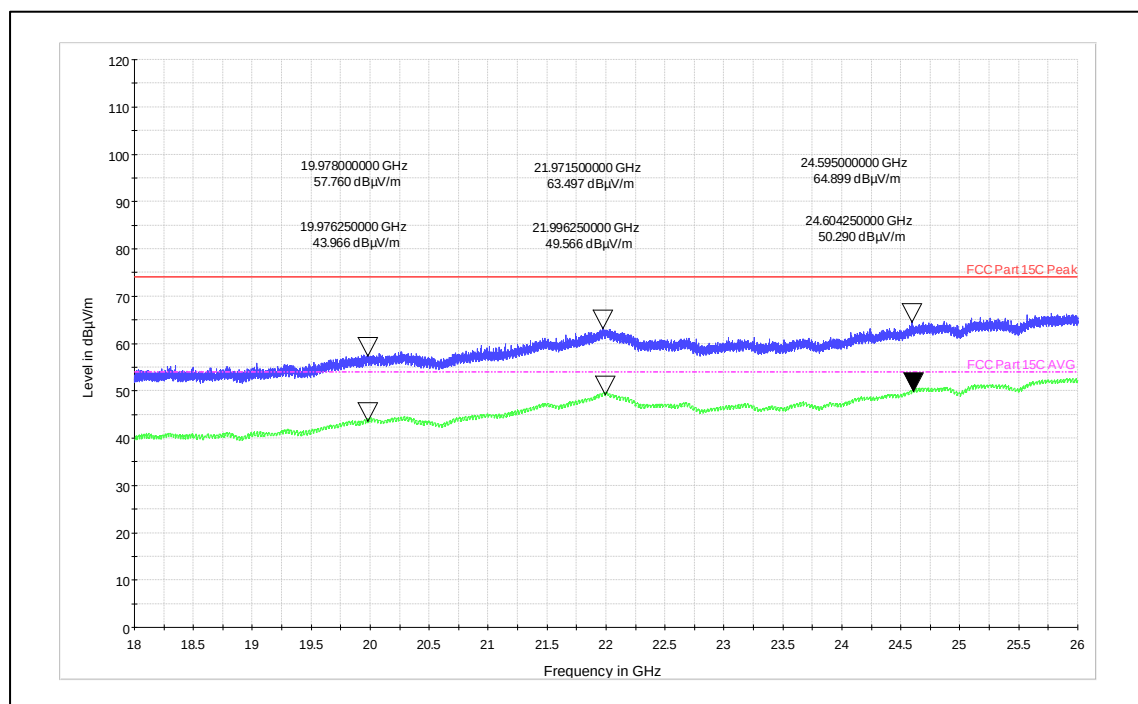
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



Channel Frequency: 18GHz -26GHz

Polarization: Vertical



Channel Frequency: 18GHz -26GHz

Polarization: Horizontal

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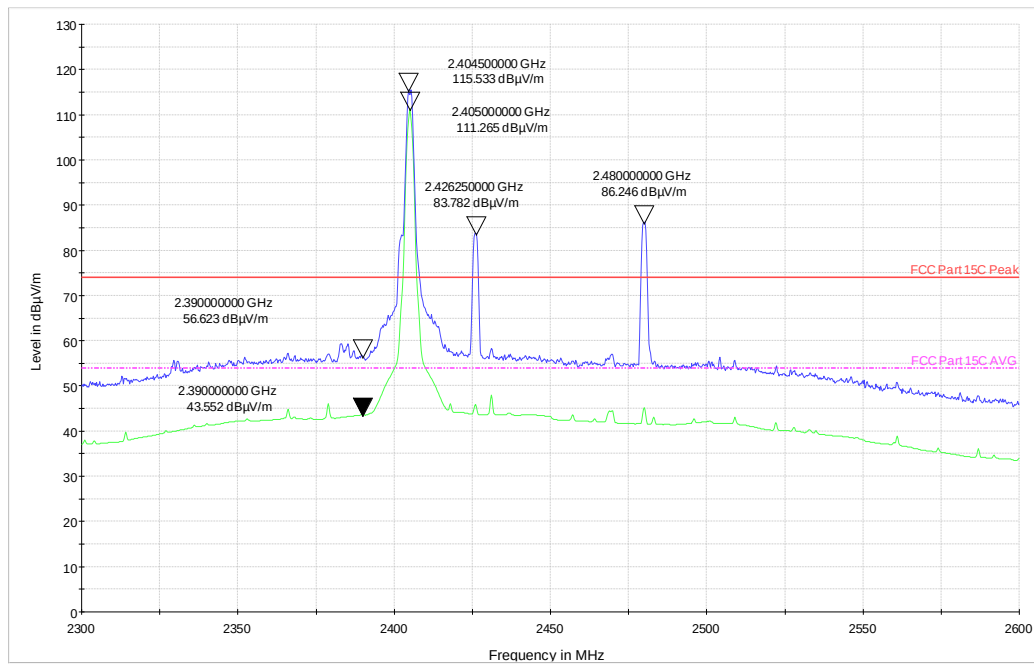
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Laird Technologies-OD24M-5:

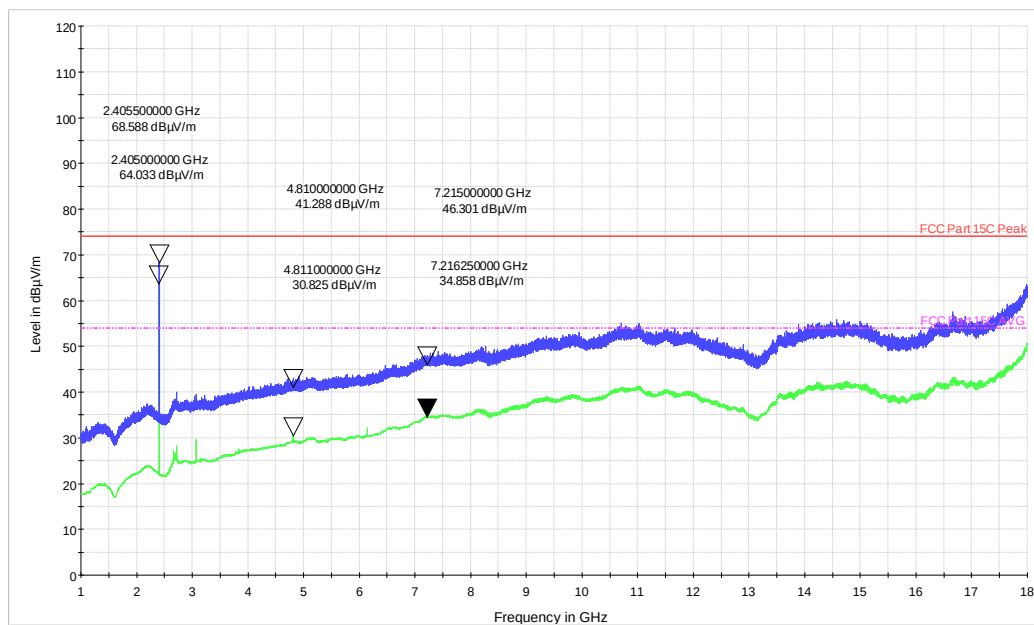
Channel Frequency (MHz)	Frequency (MHz)	Polarization	Measured Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2405	2390(Pk)	Vertical	56.62	74*	-17.38
	2390(Av)		43.55	54*	-10.45
	2405(Pk)		115.53	-	-
	2405(Av)		111.25	-	-
	4810(Pk)		41.28	74	-32.72
	4810(Av)		30.82	54	-23.18
	7215(Pk)		46.30	74	-27.70
	7215(Av)		34.85	54	-19.15
	2390(Pk)	Horizontal	37.20	74*	-36.80
	2390(Av)		24.74	54*	-29.26
	2405(Pk)		88.03	-	-
	2405(Av)		83.72	-	-
	4810(Pk)		42.34	74	-31.66
	4810(Av)		29.37	54	-24.63
	7215(Pk)		46.54	74	-27.46
	7215(Av)		34.67	54	-19.33
2440	2440(Pk)	Vertical	116.33	-	-
	2440(Av)		112.13	-	-
	4880(Pk)		42.66	74	-31.34
	4880(Av)		30.72	54	-23.28
	7320(Pk)		50.10	74	-23.90
	7320(Av)		37.32	54	-16.68
	2440(Pk)	Horizontal	91.69	-	-
	2440(Av)		87.35	-	-
	4880(Pk)		41.64	74	-32.36
	4880(Av)		30.92	54	-23.08
	7320(Pk)		47.02	74	-26.98
	7320(Av)		36.05	54	-17.95
2475	2475(Pk)	Vertical	115.54	-	-
	2475(Av)		111.33	-	-
	2483.5(Pk)		62.92	74*	-11.08
	2483.5(Av)		50.38	54*	-3.62
	4950(Pk)		44.05	74	-29.95
	4950(Av)		33.27	54	-20.73
	7425(Pk)		46.88	74	-27.12
	7425(Av)		35.55	54	-18.45
	2475(Pk)	Horizontal	89.89	-	-
	2475(Av)		85.52	-	-
	2483.5(Pk)		39.75	74*	-34.25
	2483.5(Av)		26.92	54*	-27.08
	4950(Pk)		44.05	74	-29.95
	4950(Av)		33.27	54	-20.73
	7425(Pk)		46.88	74	-27.12
	7425(Av)		35.55	54	-18.45

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



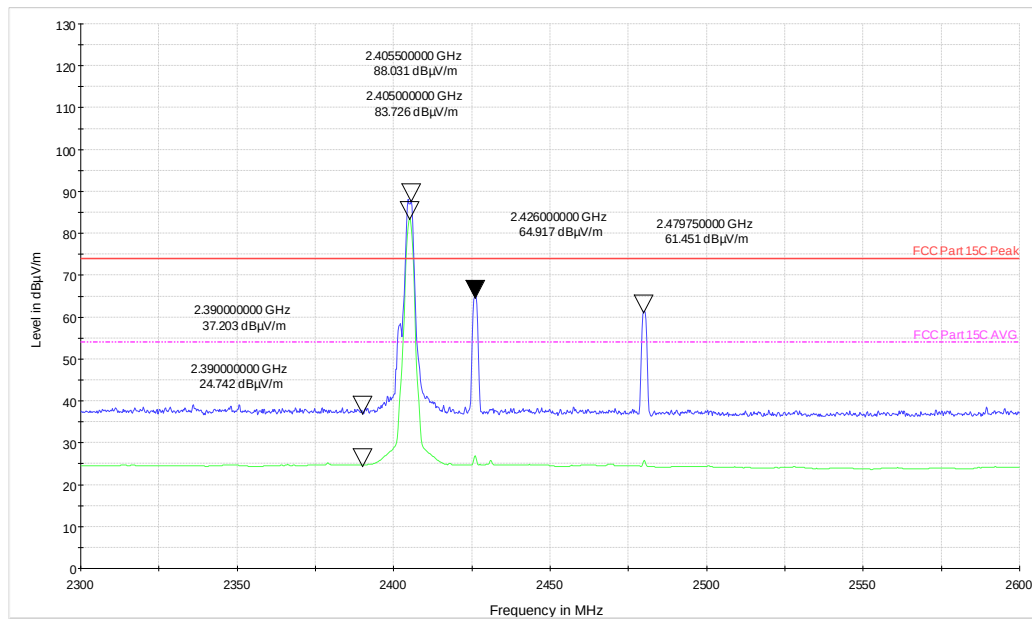
Channel Frequency: 2405MHz

Polarization: Vertical



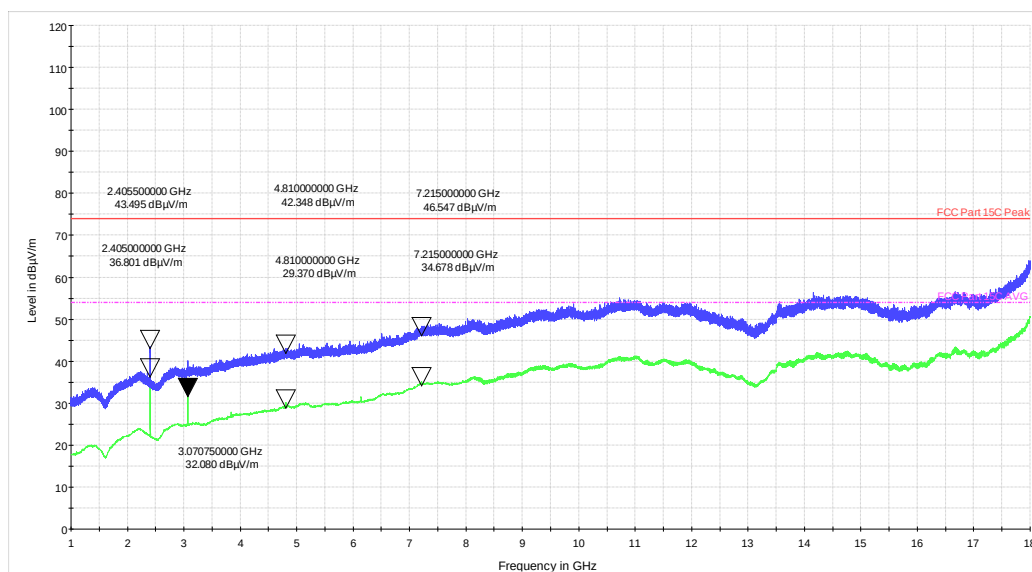
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



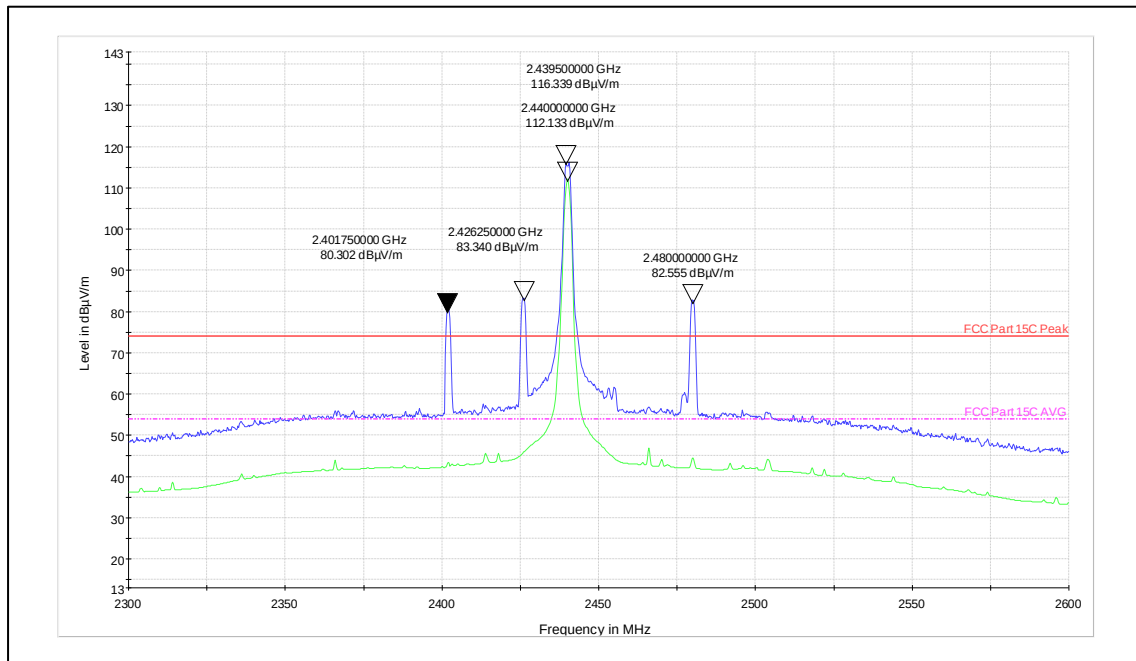
Channel Frequency: 2405MHz

Polarization: Horizontal



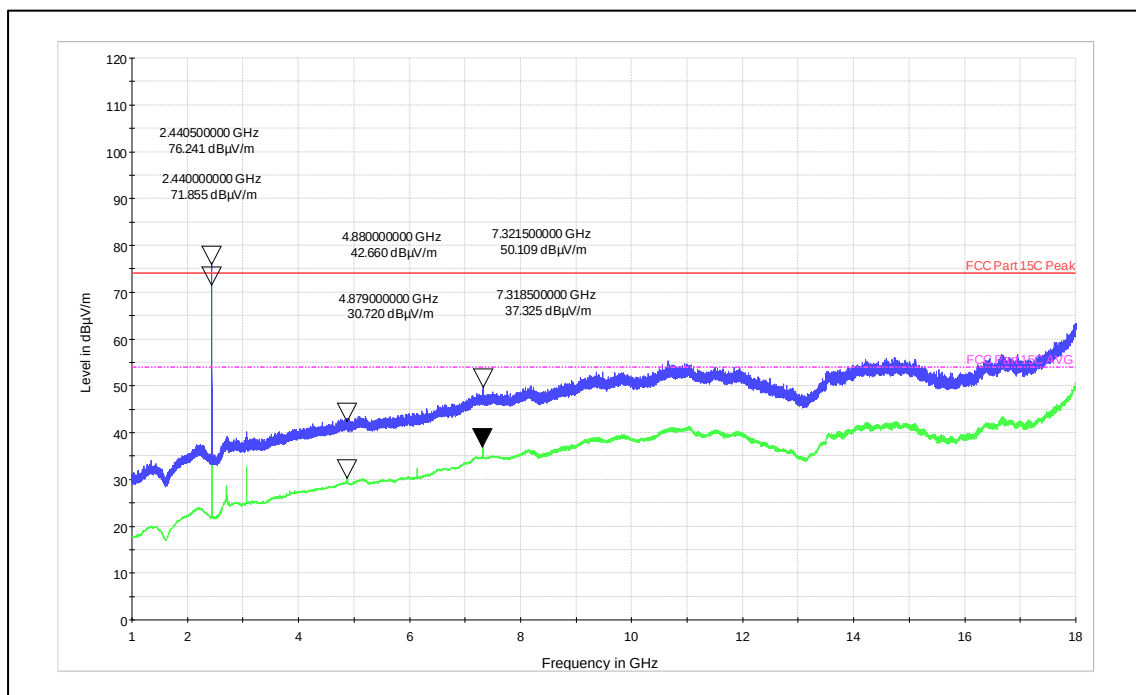
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



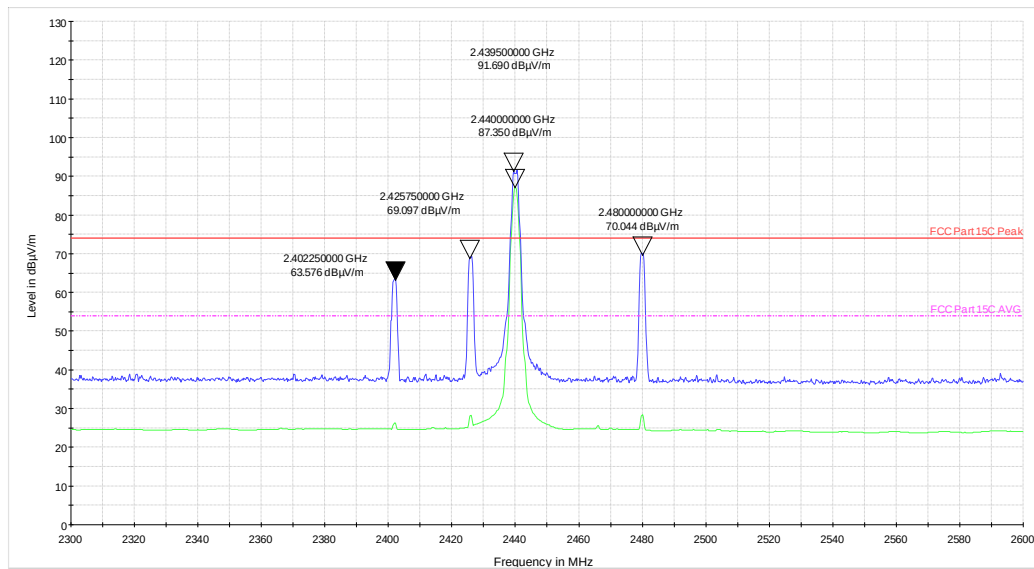
Channel Frequency: 2440MHz

Polarization: vertical



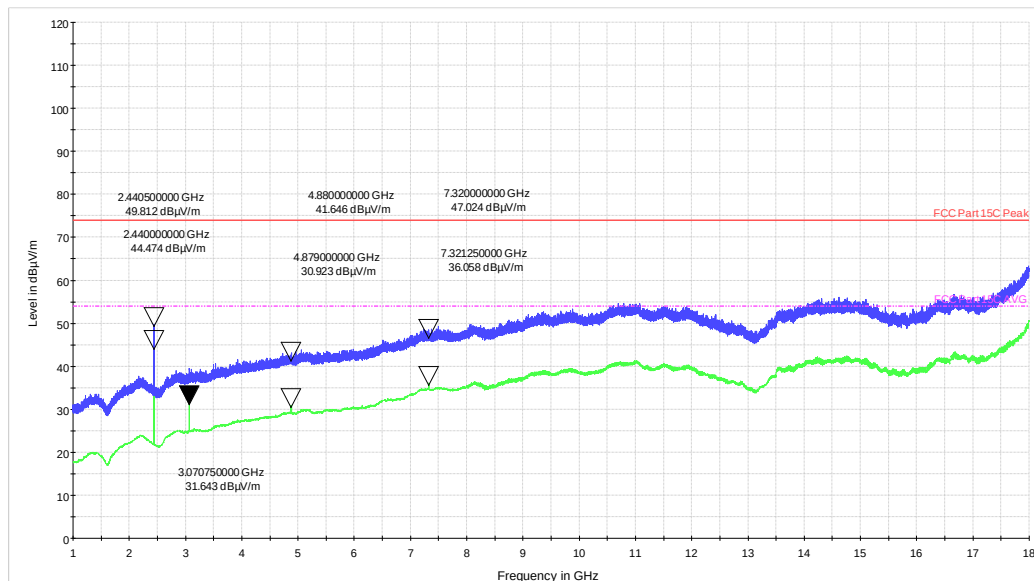
Channel Frequency: 1GHz -18GHz

Polarization: vertical



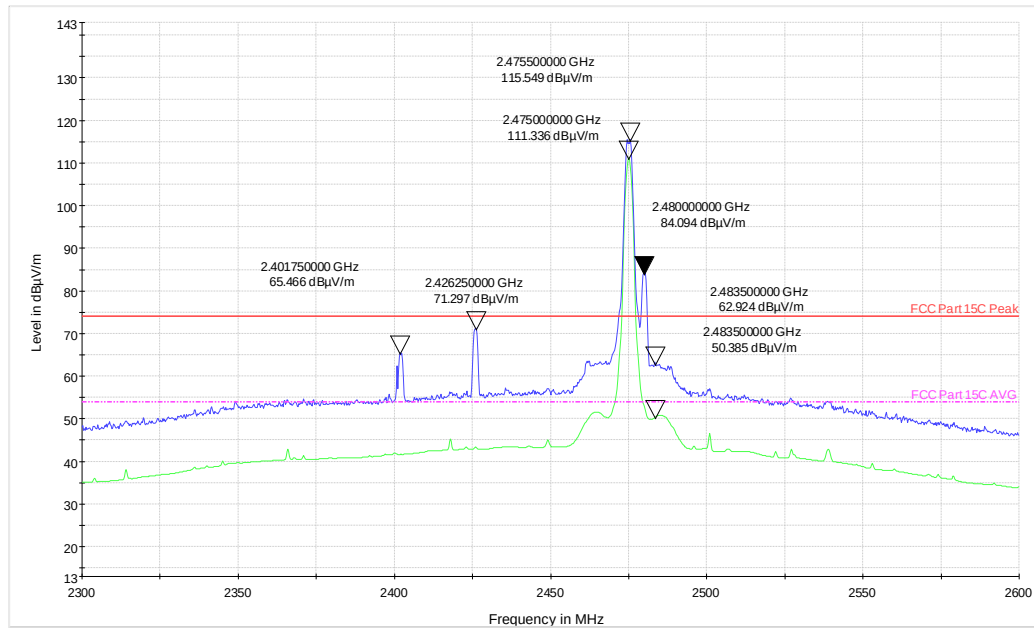
Channel Frequency: 2440MHz

Polarization: Horizontal



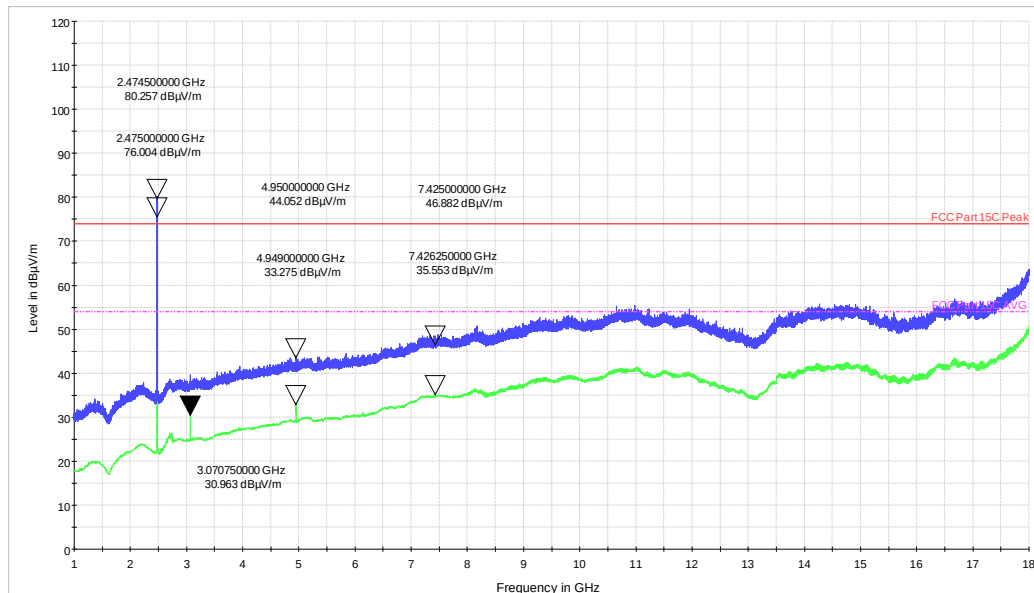
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



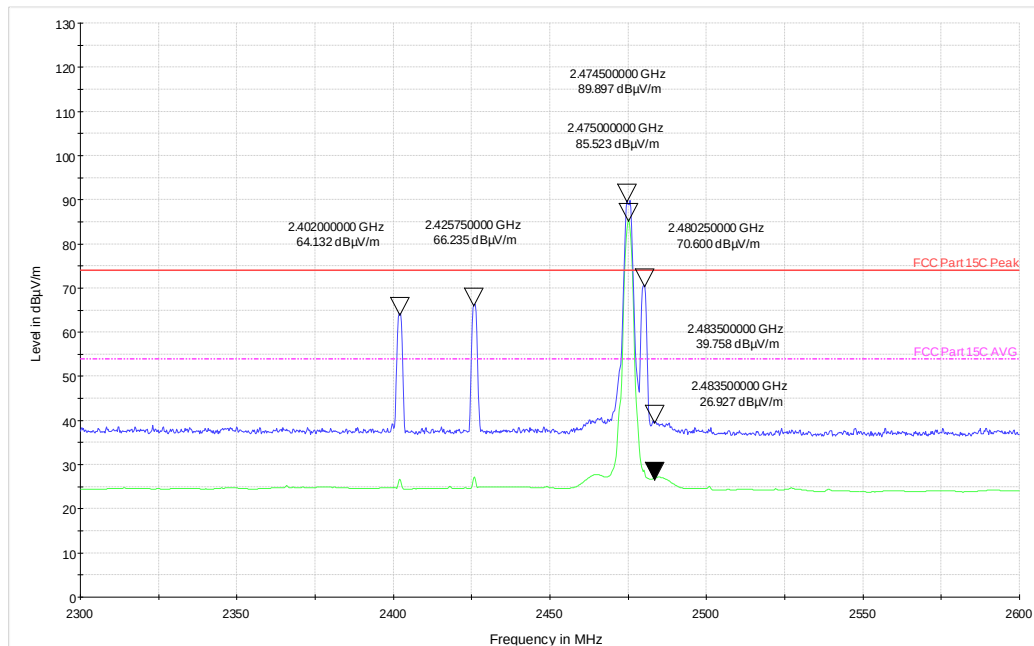
Channel Frequency: 2475MHz

Polarization: vertical



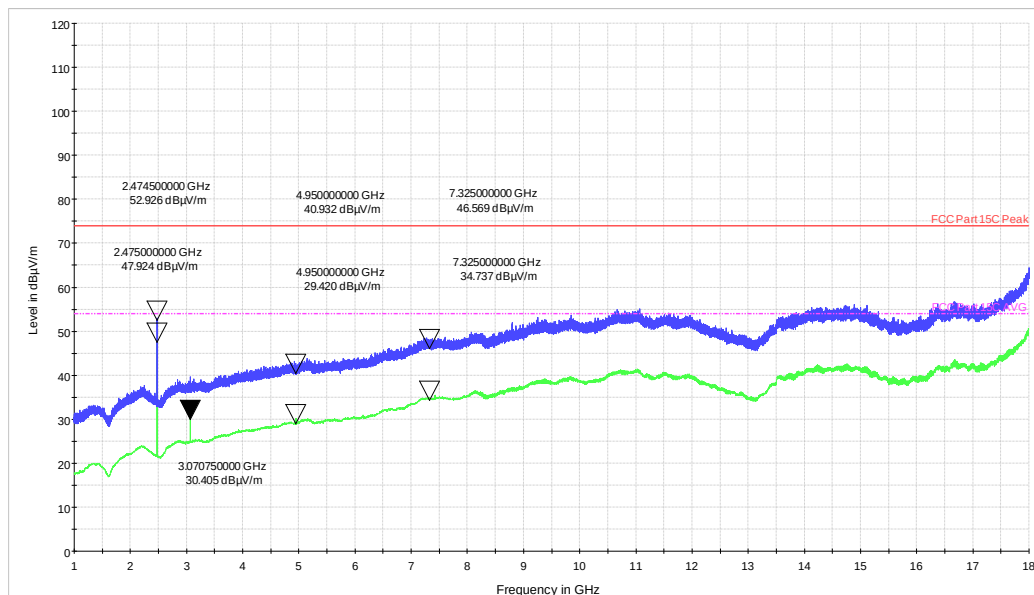
Channel Frequency: 1GHz -18GHz

Polarization: vertical



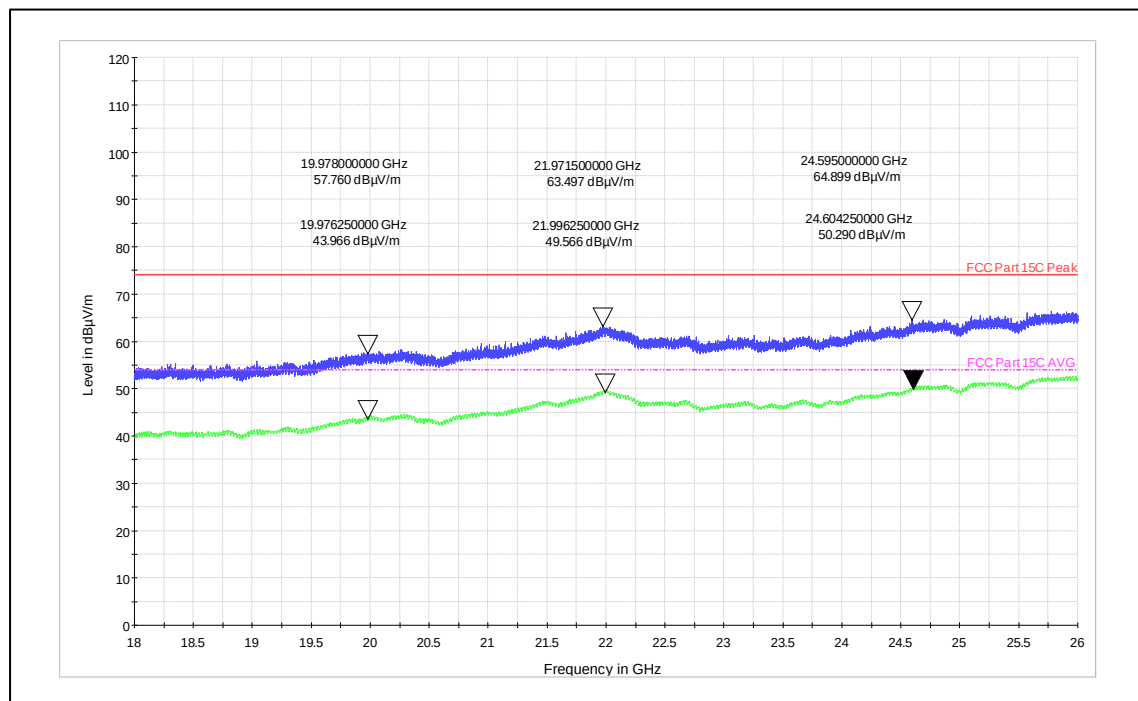
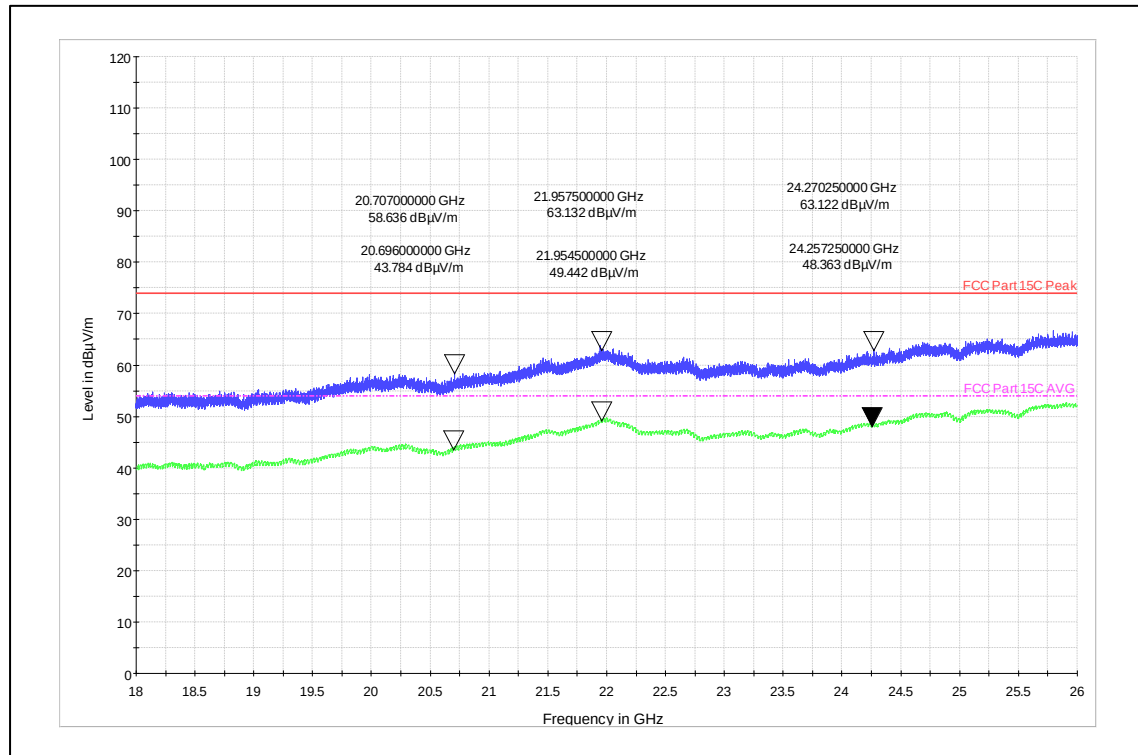
Channel Frequency: 2475MHz

Polarization: Horizontal



Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



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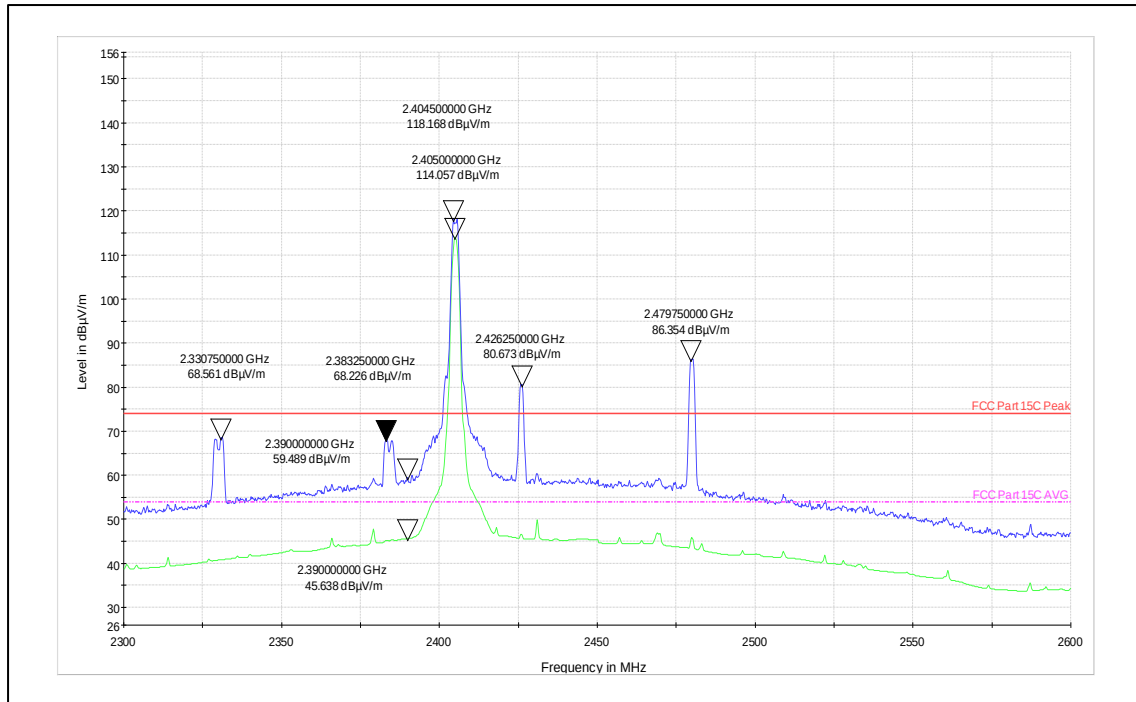
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L-COM HGV-2409U:

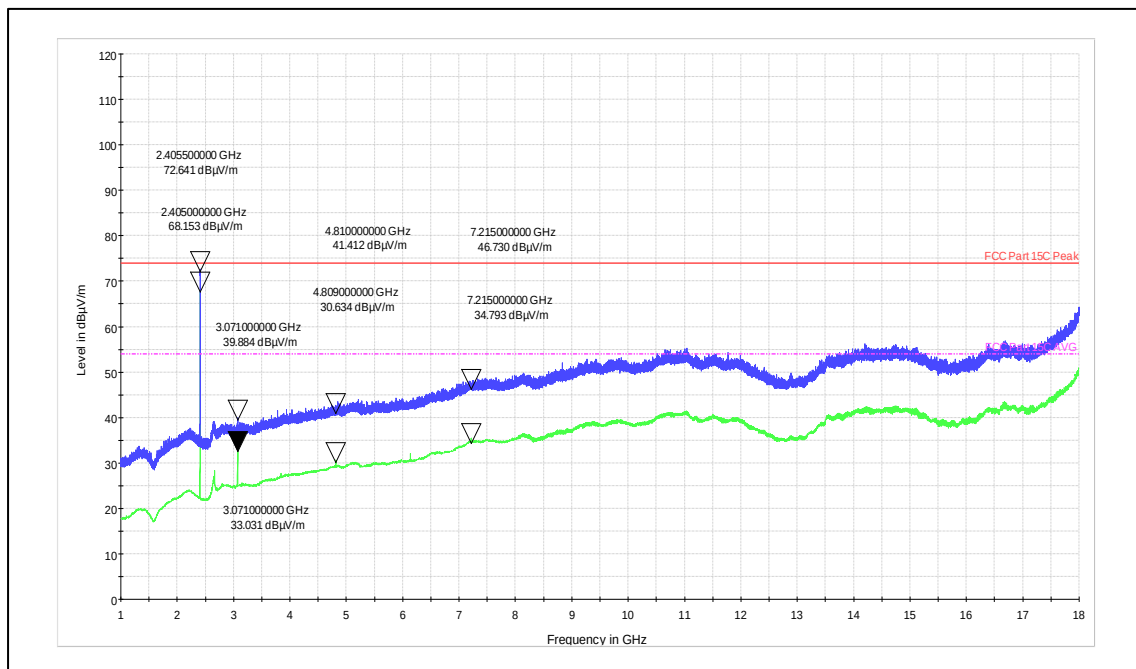
Channel Frequency (MHz)	Frequency (MHz)	Polarization	Measured Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2405	2390(Pk)	Vertical	59.48	74*	-14.52
	2390(Av)		45.63	54*	-8.37
	2405(Pk)		118.16	-	-
	2405(Av)		114.05	-	-
	4810(Pk)		41.41	74	-32.59
	4810(Av)		30.63	54	-23.37
	7215(Pk)		46.73	74	-27.27
	7215(Av)		34.79	54	-19.21
	2390(Pk)	Horizontal	38.32	74*	-35.68
	2390(Av)		26.29	54*	-27.71
	2405(Pk)		95.81	-	-
	2405(Av)		91.50	-	-
	4810(Pk)		41.84	74	-32.16
	4810(Av)		29.41	54	-24.59
	7215(Pk)		46.79	74	-27.21
	7215(Av)		34.78	54	-19.22
2440	2440(Pk)	Vertical	118.60	-	-
	2440(Av)		114.58	-	-
	4880(Pk)		41.28	74	-32.72
	4880(Av)		31.22	54	-22.78
	7320(Pk)		49.56	74	-24.44
	7320(Av)		37.48	54	-16.52
	2440(Pk)	Horizontal	95.77	-	-
	2440(Av)		91.53	-	-
	4880(Pk)		40.45	74	-33.55
	4880(Av)		28.12	54	-25.88
	7320(Pk)		47.87	74	-26.13
	7320(Av)		35.76	54	-18.24
2475	2475(Pk)	Vertical	118.24	-	-
	2475(Av)		114.31	-	-
	2483.5(Pk)		64.67	74*	-9.33
	2483.5(Av)		52.72	54*	-1.28
	4950(Pk)		43.13	74	-30.87
	4950(Av)		31.75	54	-22.25
	7425(Pk)		49.96	74	-24.04
	7425(Av)		37.50	54	-16.50
	2475(Pk)	Horizontal	93.03	-	-
	2475(Av)		88.54	-	-
	2483.5(Pk)		40.90	74*	-33.10
	2483.5(Av)		28.31	54*	-25.69
	4950(Pk)		40.95	74	-33.05
	4950(Av)		29.18	54	-24.82
	7425(Pk)		46.14	74	-27.86
	7425(Av)		34.61	54	-19.39

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



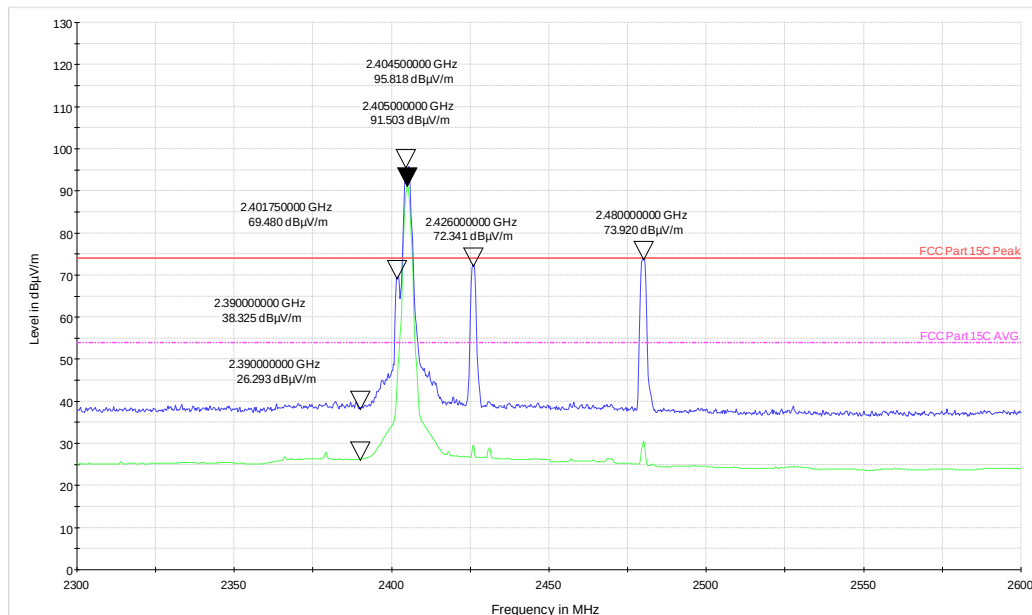
Channel Frequency: 2405MHz

Polarization: Vertical



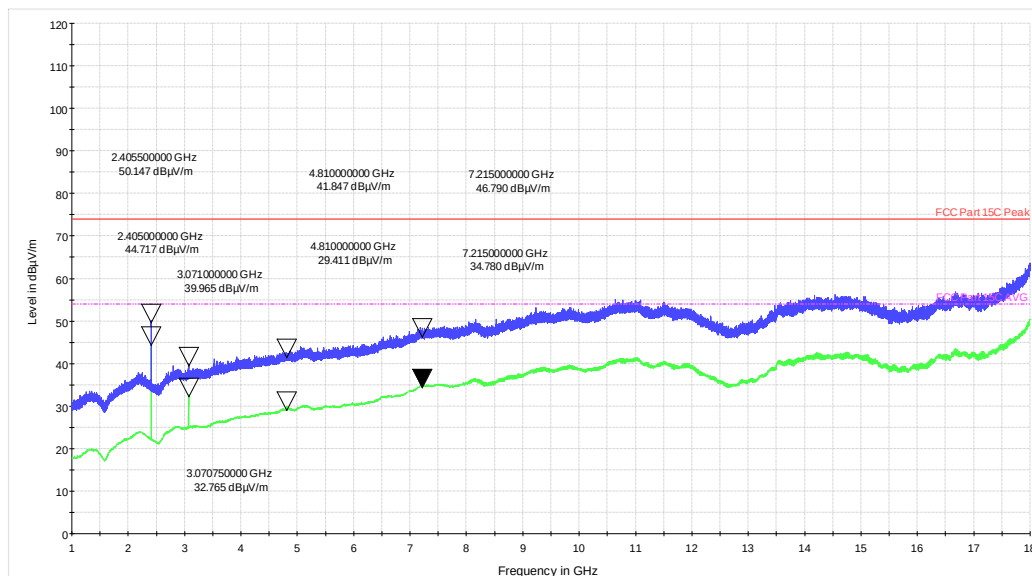
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



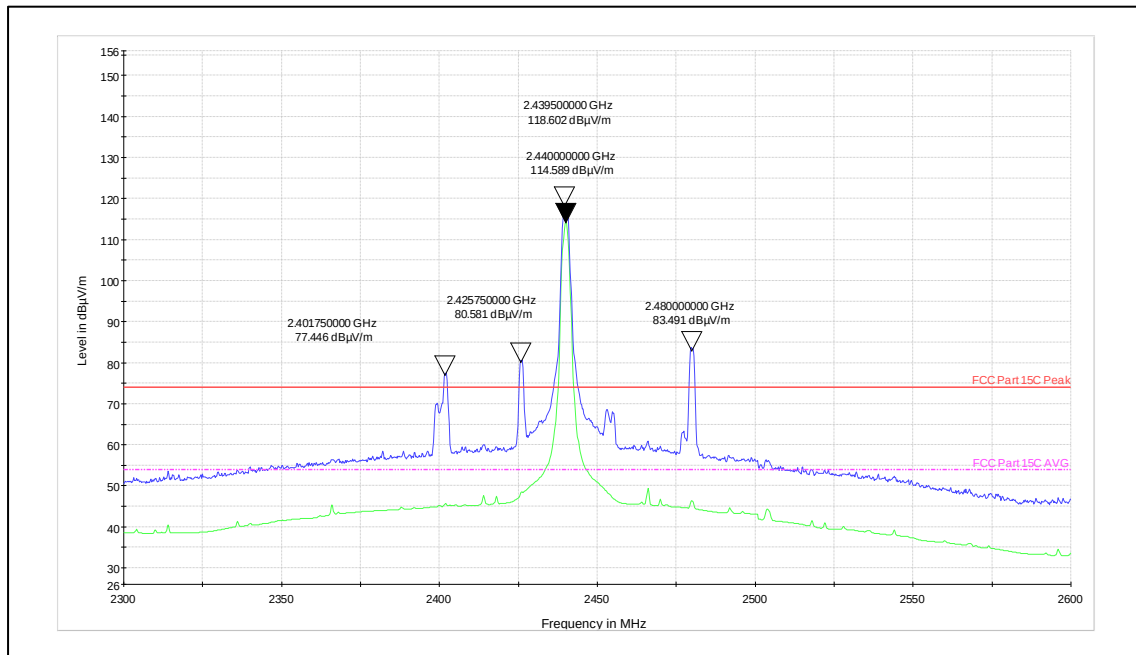
Channel Frequency: 2405MHz

Polarization: Horizontal



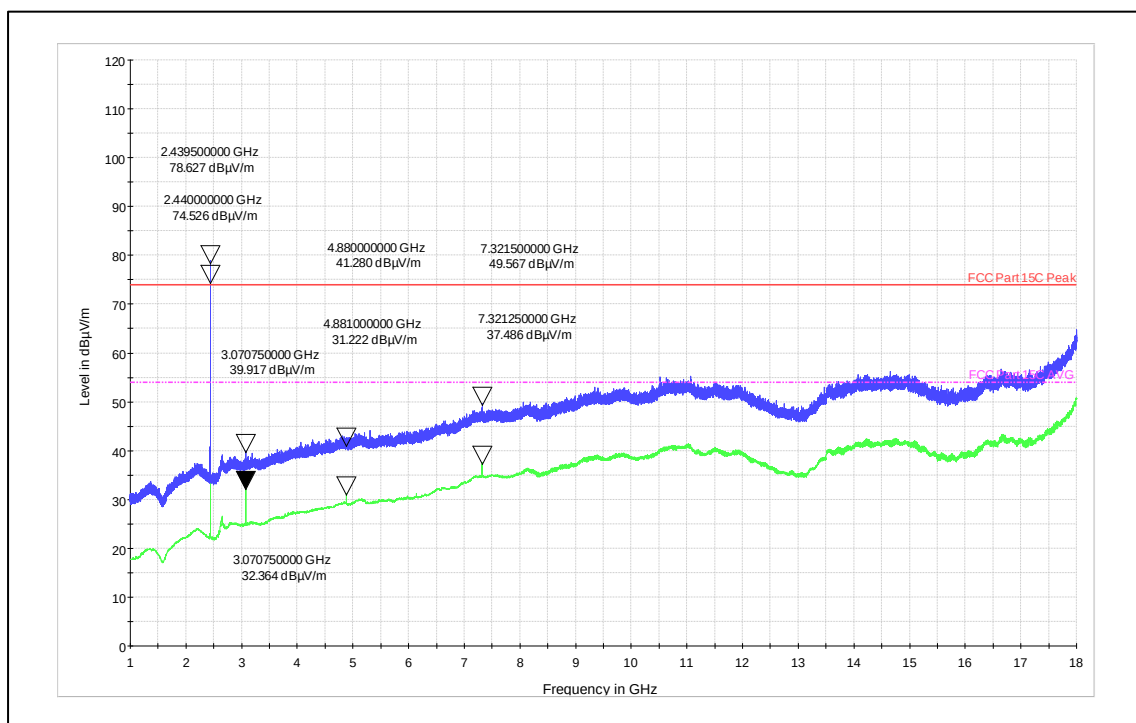
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



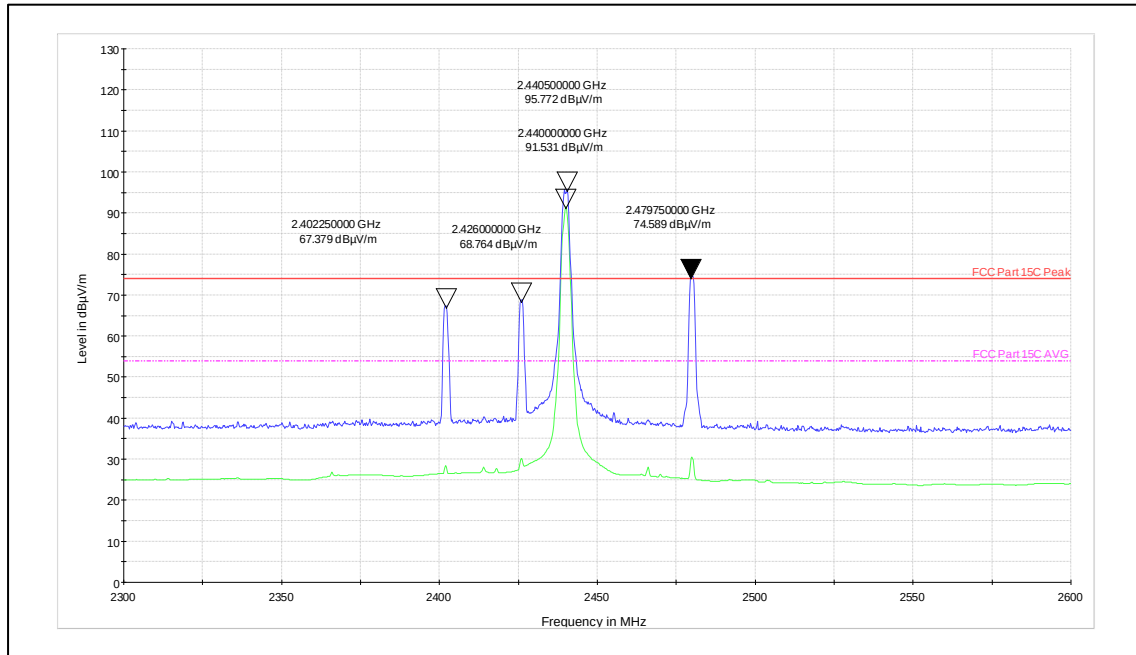
Channel Frequency: 2440MHz

Polarization: vertical



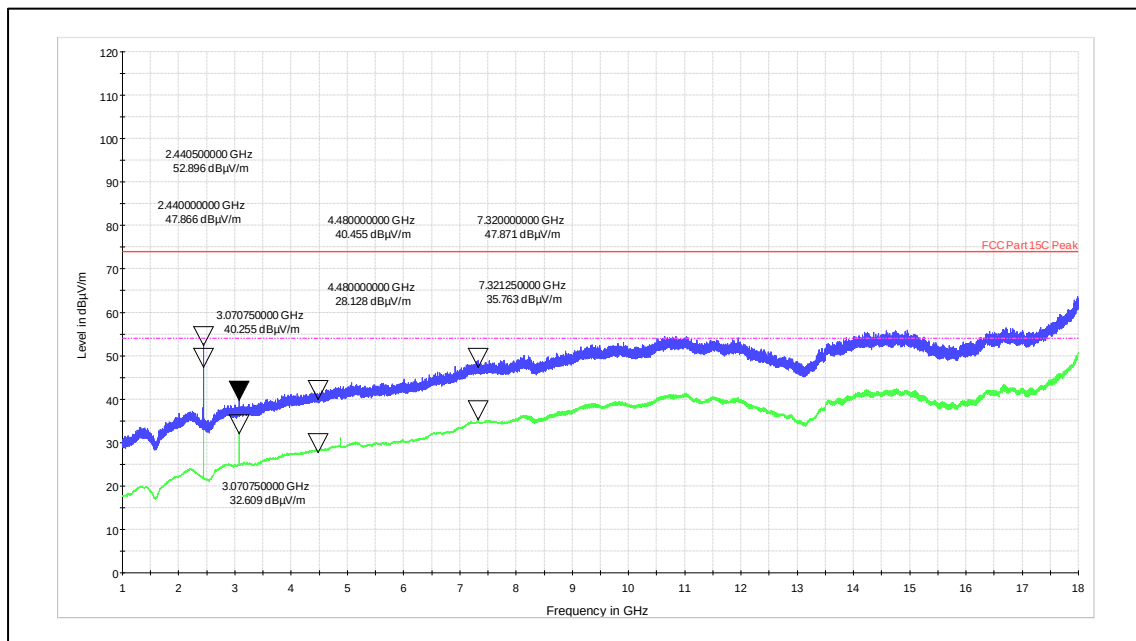
Channel Frequency: 1GHz -18GHz

Polarization: vertical



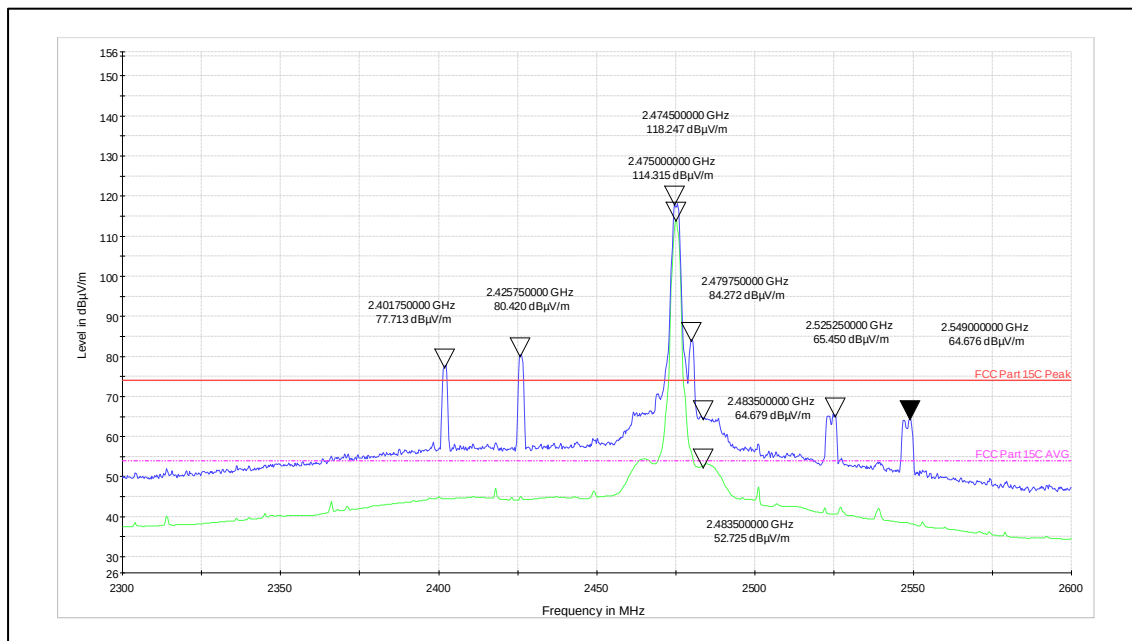
Channel Frequency: 2440MHz

Polarization: Horizontal



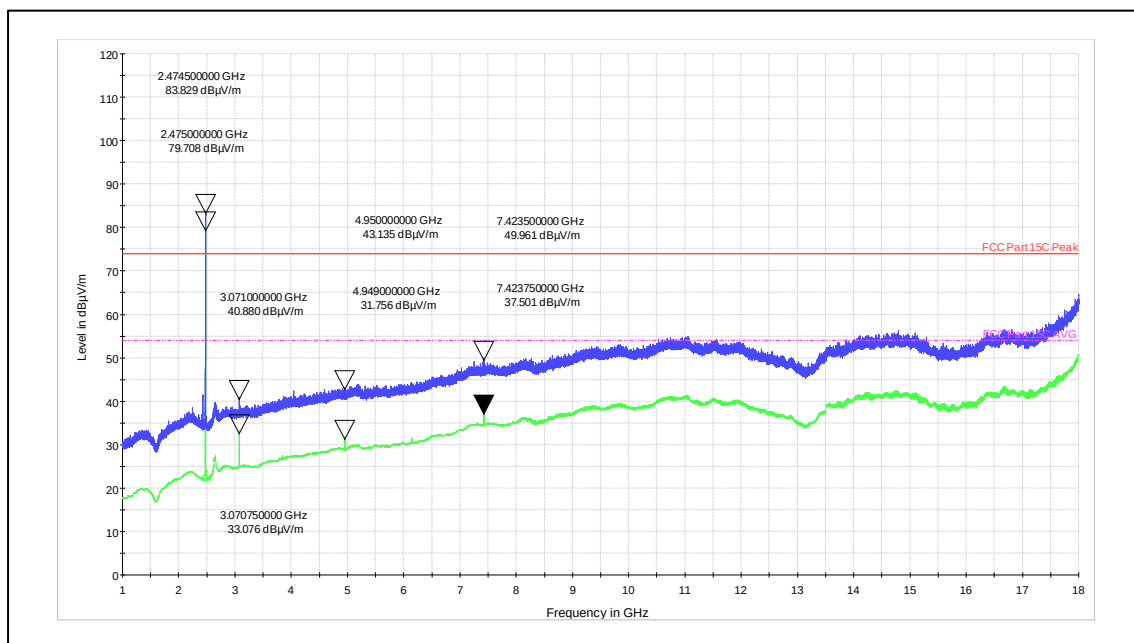
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



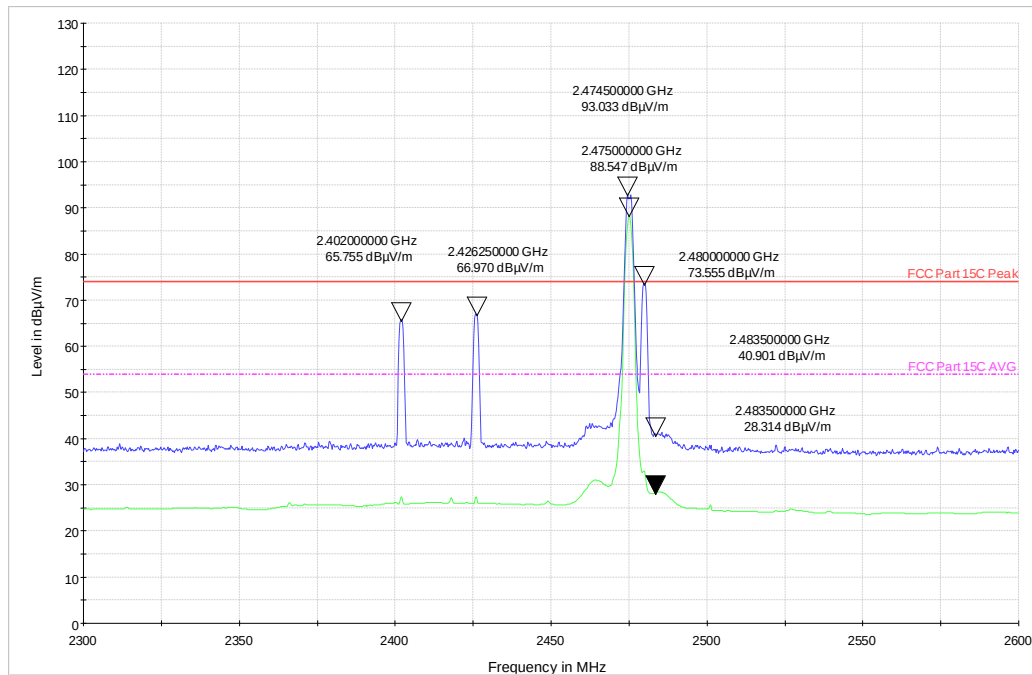
Channel Frequency: 2475MHz

Polarization: vertical



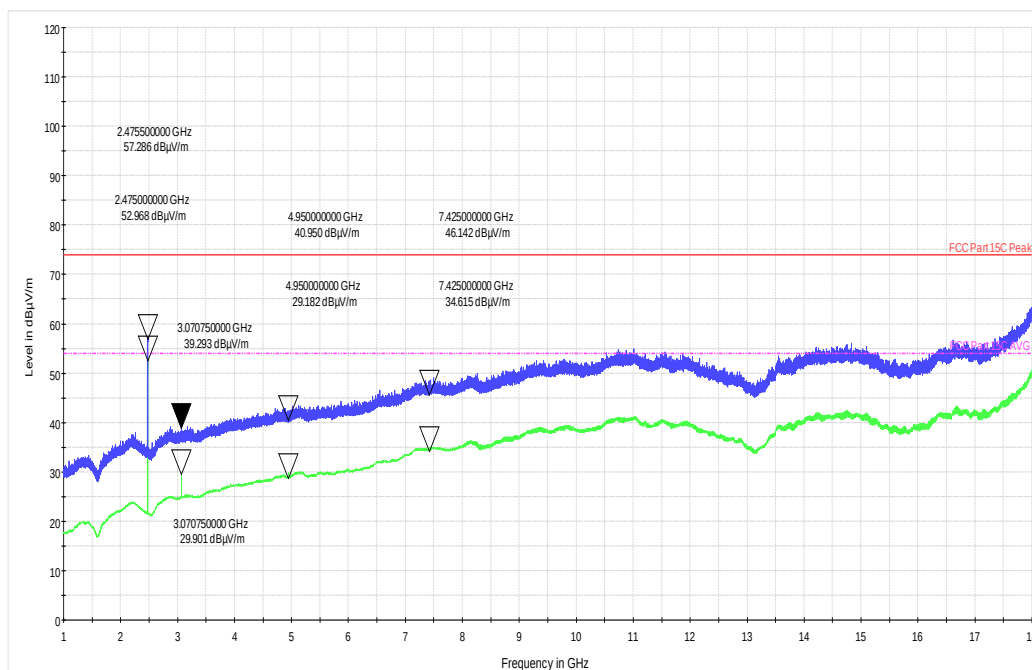
Channel Frequency: 1GHz -18GHz

Polarization: vertical



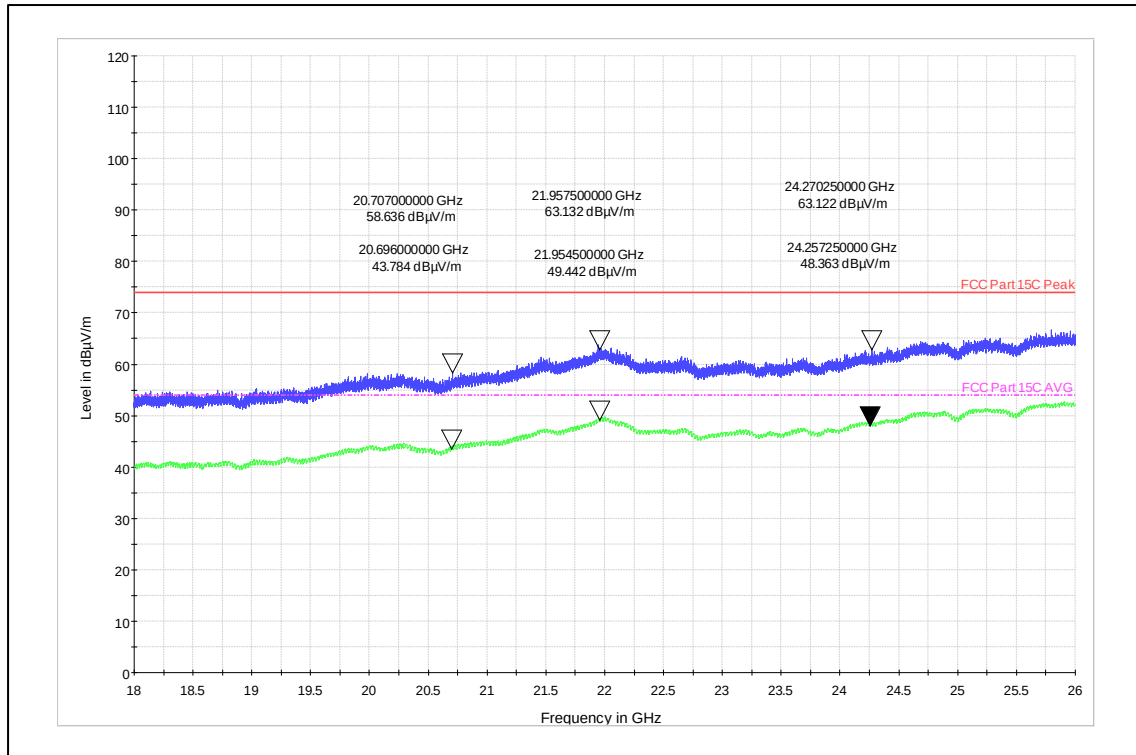
Channel Frequency: 2475MHz

Polarization: Horizontal



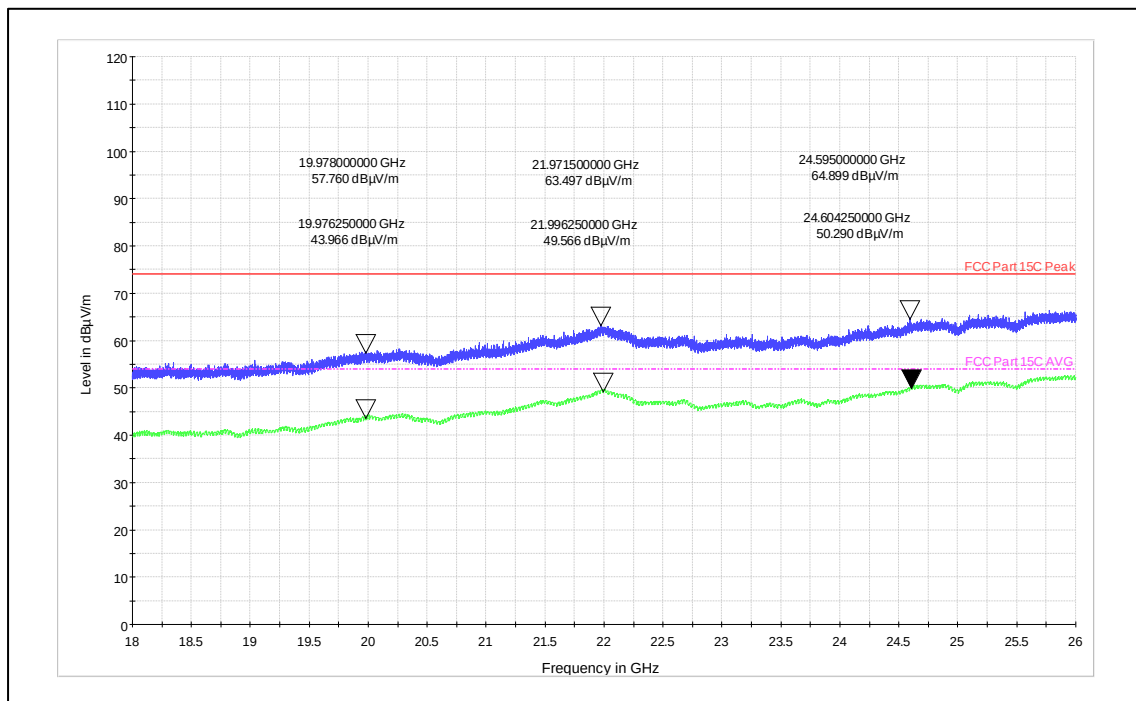
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



Channel Frequency: 18GHz -26GHz

Polarization: Vertical



Channel Frequency: 18GHz -26GHz

Polarization: Horizontal

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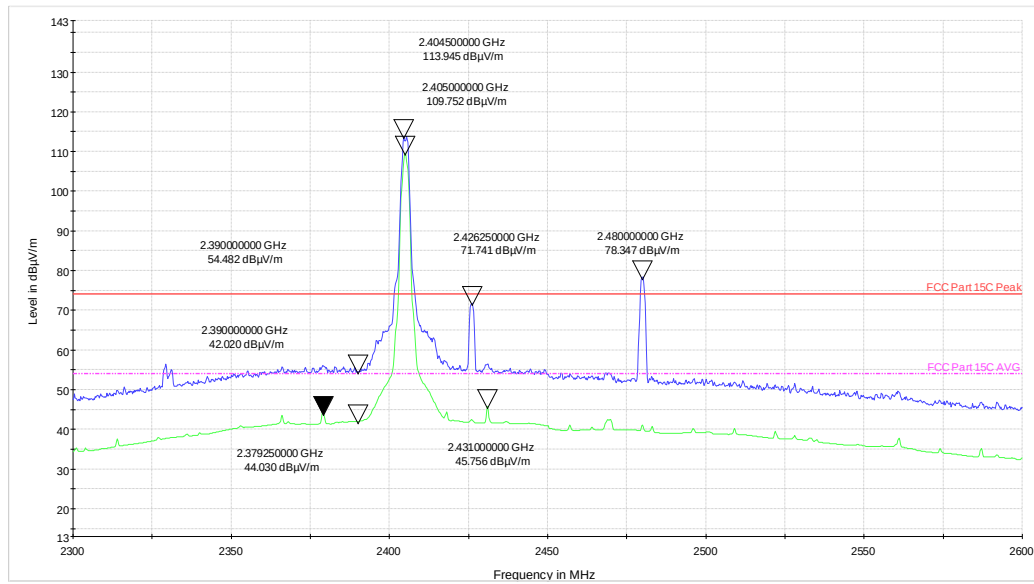
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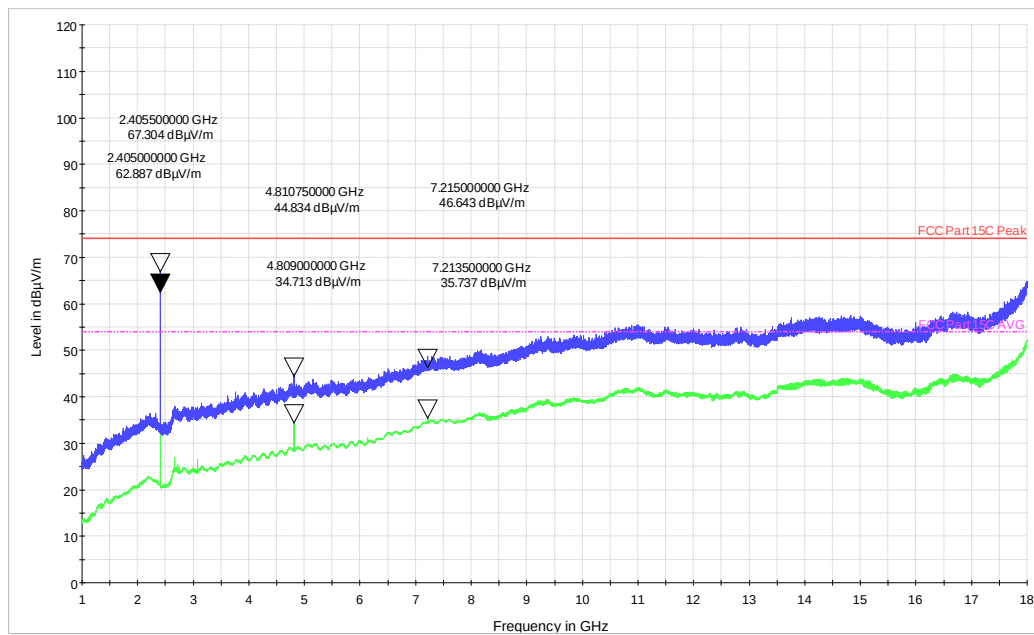
Channel Frequency (MHz)	Frequency (MHz)	Polarization	Measured Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2405	2390(Pk)	Vertical	54.43	74*	-19.57
	2390(Av)		42.02	54*	-11.98
	2405(Pk)		113.94	-	-
	2405(Av)		109.75	-	-
	4810(Pk)		44.83	74	-29.17
	4810(Av)		34.71	54	-19.29
	7215(Pk)		46.64	74	-27.36
	7215(Av)		35.73	54	-18.27
	2390(Pk)	Horizontal	37.18	74*	-36.82
	2390(Av)		24.84	54*	-29.16
	2405(Pk)		93.87	-	-
	2405(Av)		89.68	-	-
	4810(Pk)		42.11	74	-31.89
	4810(Av)		29.86	54	-24.14
	7215(Pk)		46.06	74	-27.94
	7215(Av)		34.49	54	-19.51
2440	2440(Pk)	Vertical	114.36	-	-
	2440(Av)		110.20	-	-
	4880(Pk)		41.33	74	-32.67
	4880(Av)		31.54	54	-22.46
	7320(Pk)		49.03	74	-24.97
	7320(Av)		36.44	54	-17.56
	2440(Pk)	Horizontal	97.90	-	-
	2440(Av)		93.82	-	-
	4880(Pk)		41.50	74	-32.50
	4880(Av)		30.51	54	-23.49
	7320(Pk)		47.02	74	-26.98
	7320(Av)		34.81	54	-19.19
2475	2475(Pk)	Vertical	114.16	-	-
	2475(Av)		110.00	-	-
	2483.5(Pk)		60.91	74*	-13.09
	2483.5(Av)		48.92	54*	-5.08
	4950(Pk)		40.11	74	-33.89
	4950(Av)		28.76	54	-25.24
	7425(Pk)		47.57	74	-26.43
	7425(Av)		36.25	54	-17.75
	2475(Pk)	Horizontal	93.52	-	-
	2475(Av)		90.32	-	-
	2483.5(Pk)		44.46	74*	-29.54
	2483.5(Av)		32.85	54*	-21.15
	4950(Pk)		40.61	74	-33.39
	4950(Av)		28.75	54	-25.25
	7425(Pk)		46.67	74	-27.33
	7425(Av)		34.87	54	-19.13

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



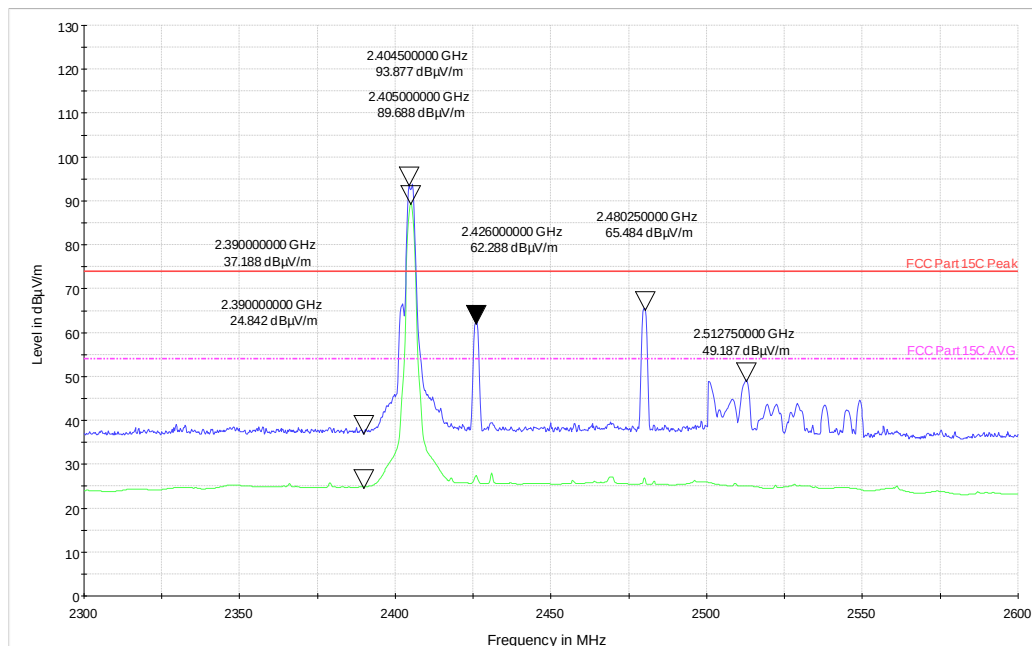
Channel Frequency: 2405MHz

Polarization: Vertical



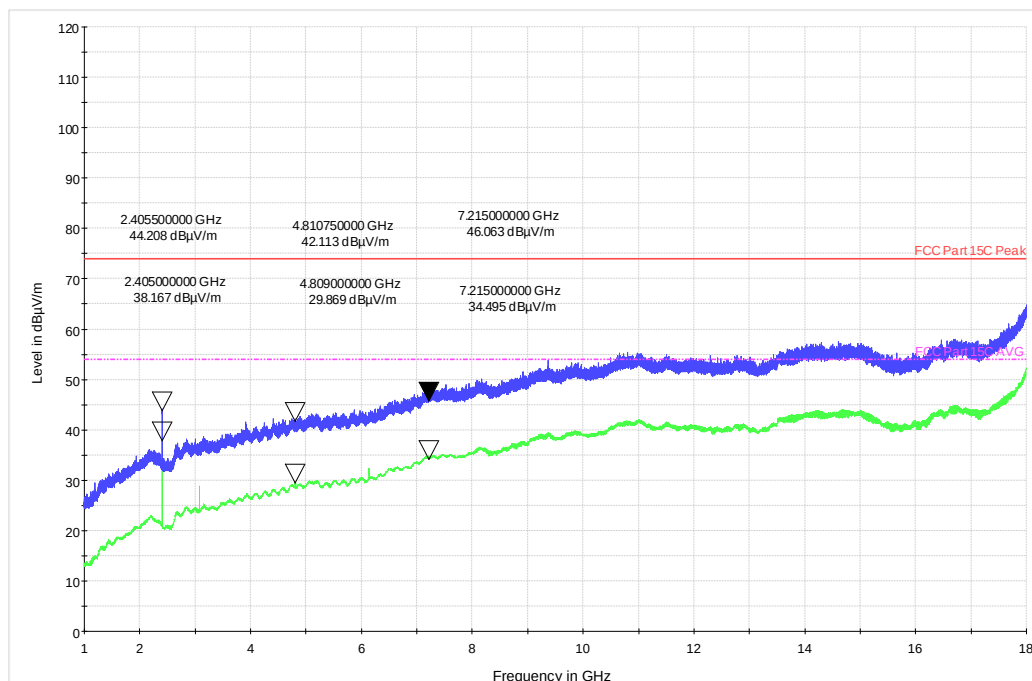
Channel Frequency: 1GHz -18GHz

Polarization: Vertical



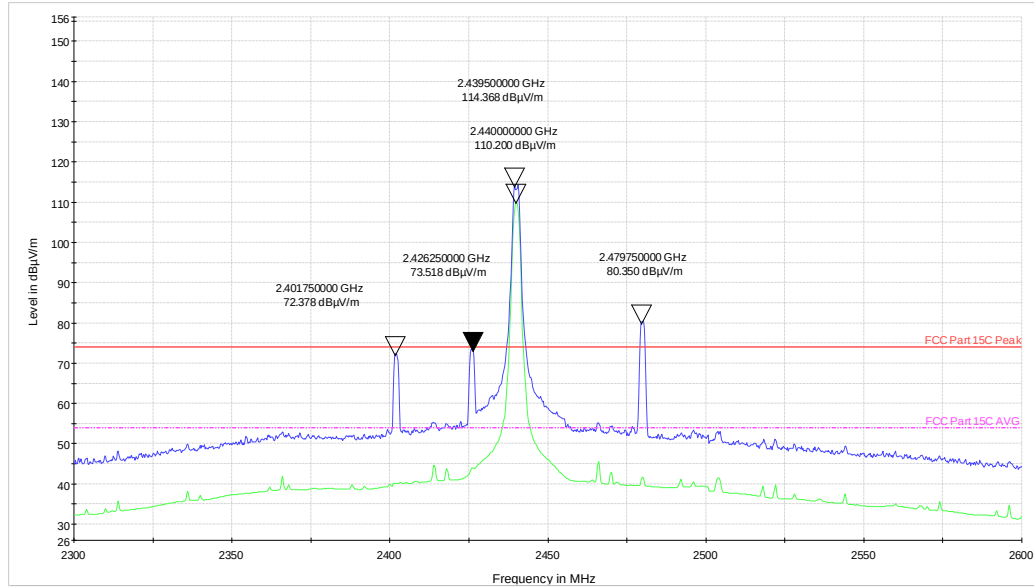
Channel Frequency: 2405MHz

Polarization: Horizontal



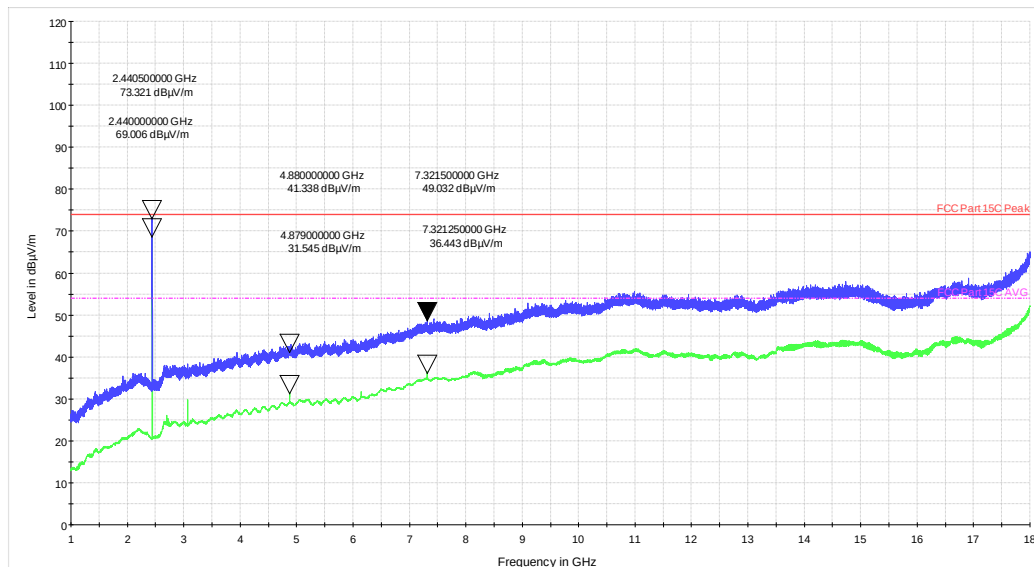
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



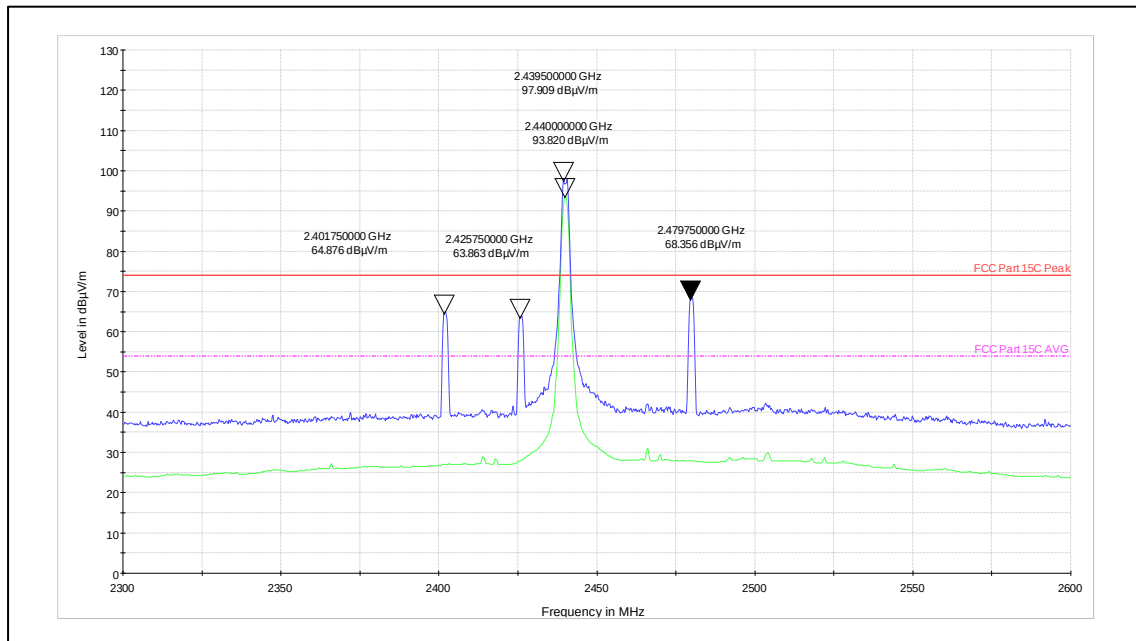
Channel Frequency: 2440MHz

Polarization: vertical



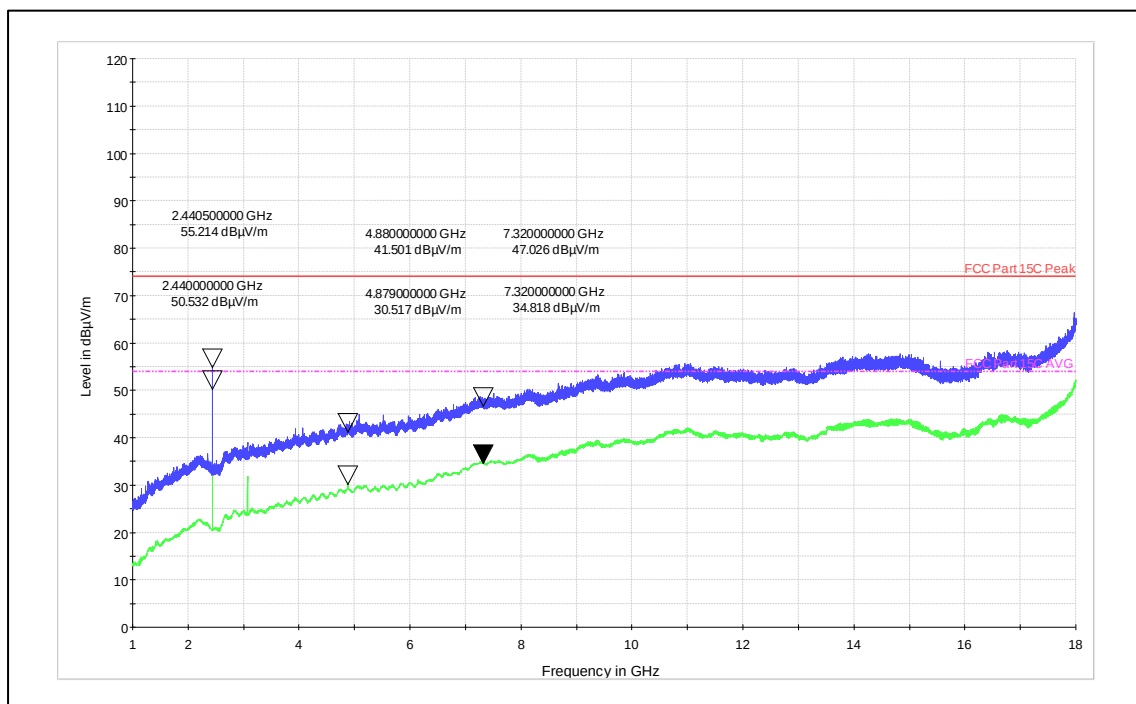
Channel Frequency: 1GHz -18GHz

Polarization: vertical



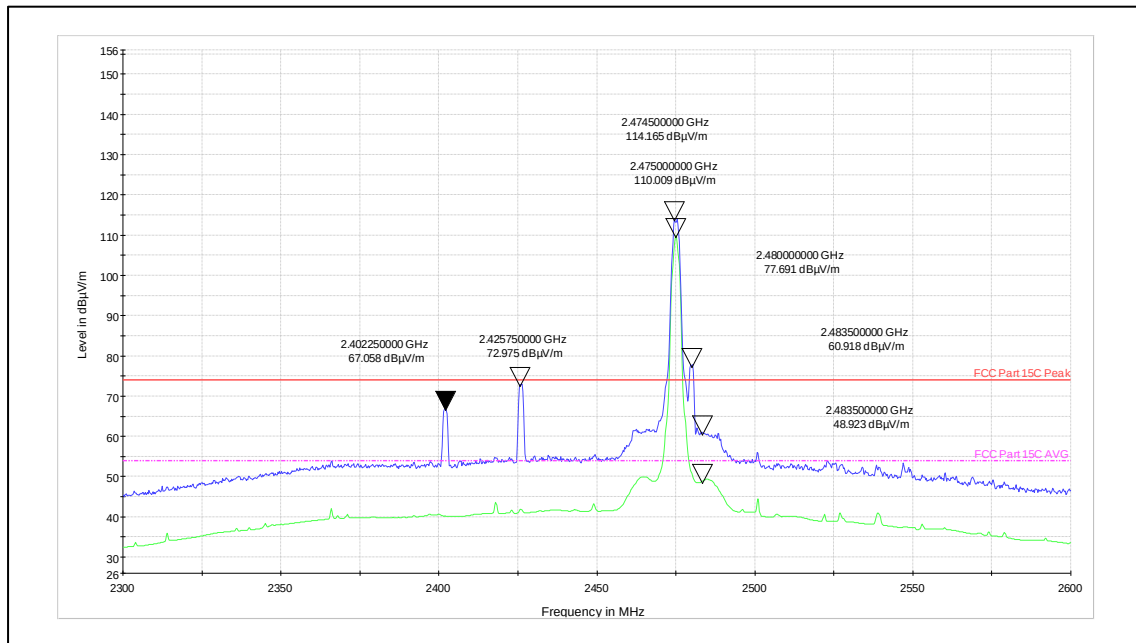
Channel Frequency: 2440MHz

Polarization: Horizontal



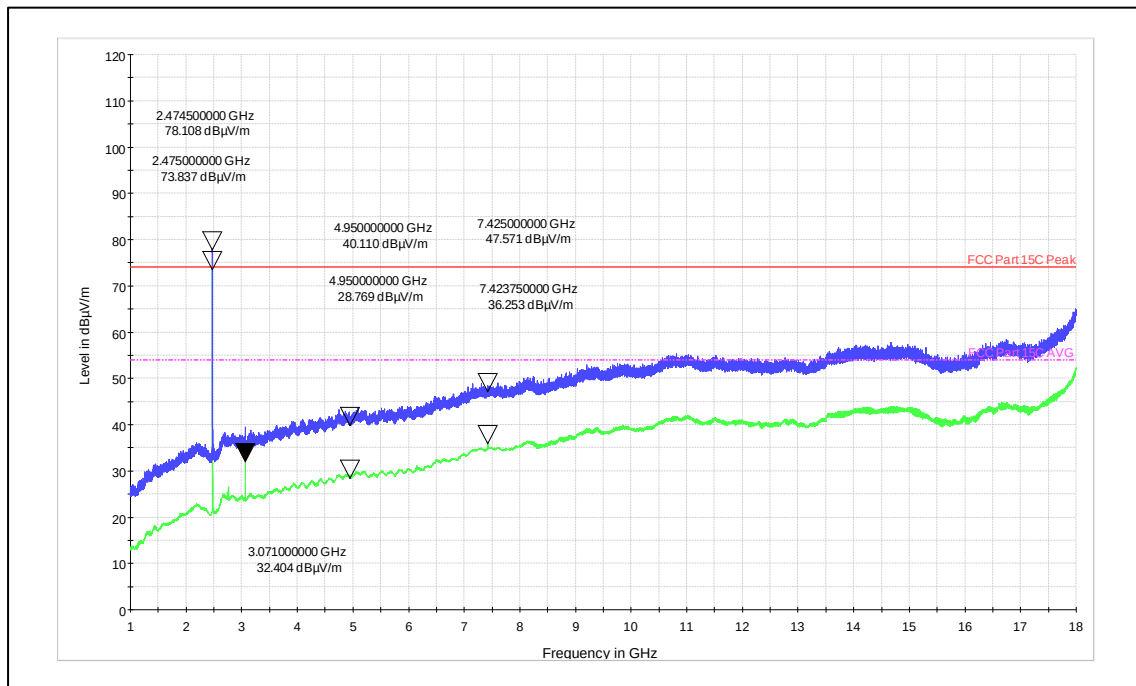
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



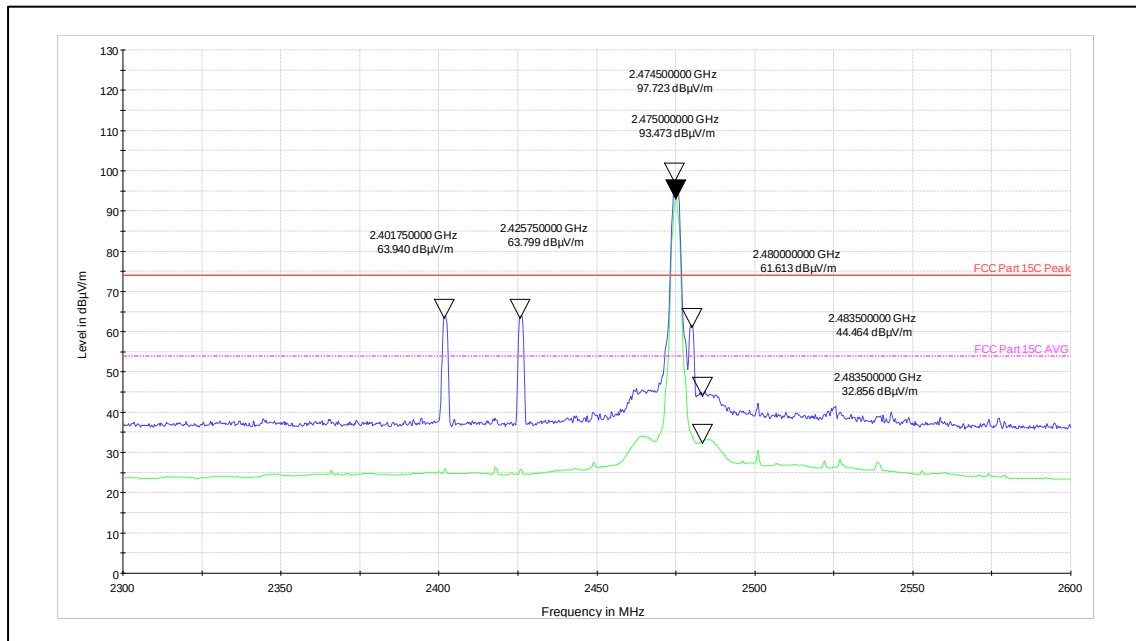
Channel Frequency: 2475MHz

Polarization: vertical



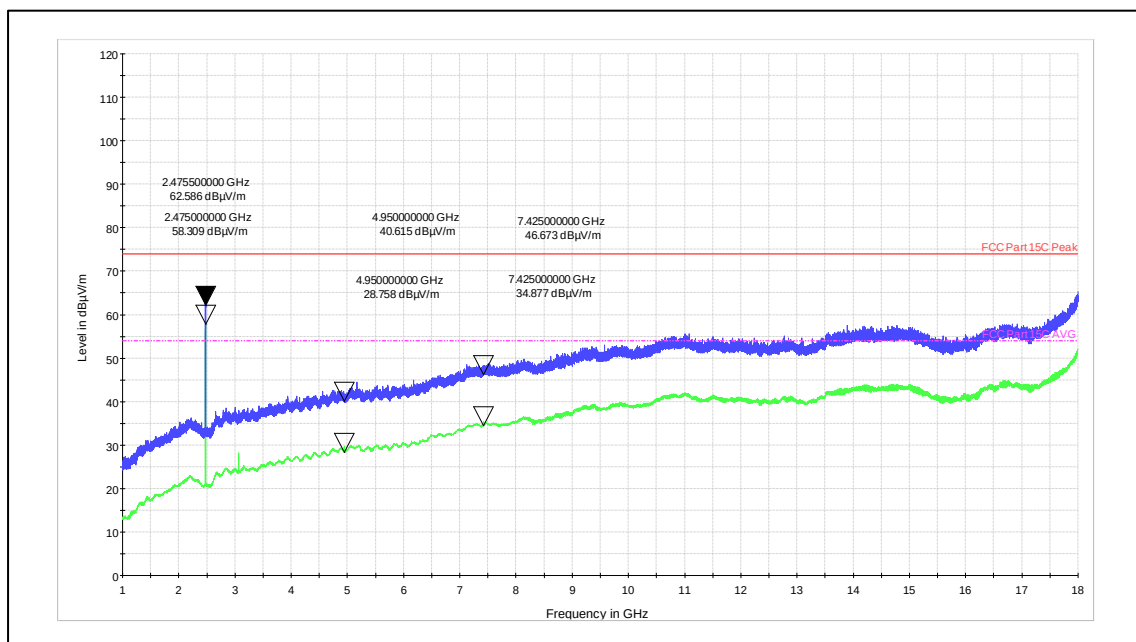
Channel Frequency: 1GHz -18GHz

Polarization: vertical



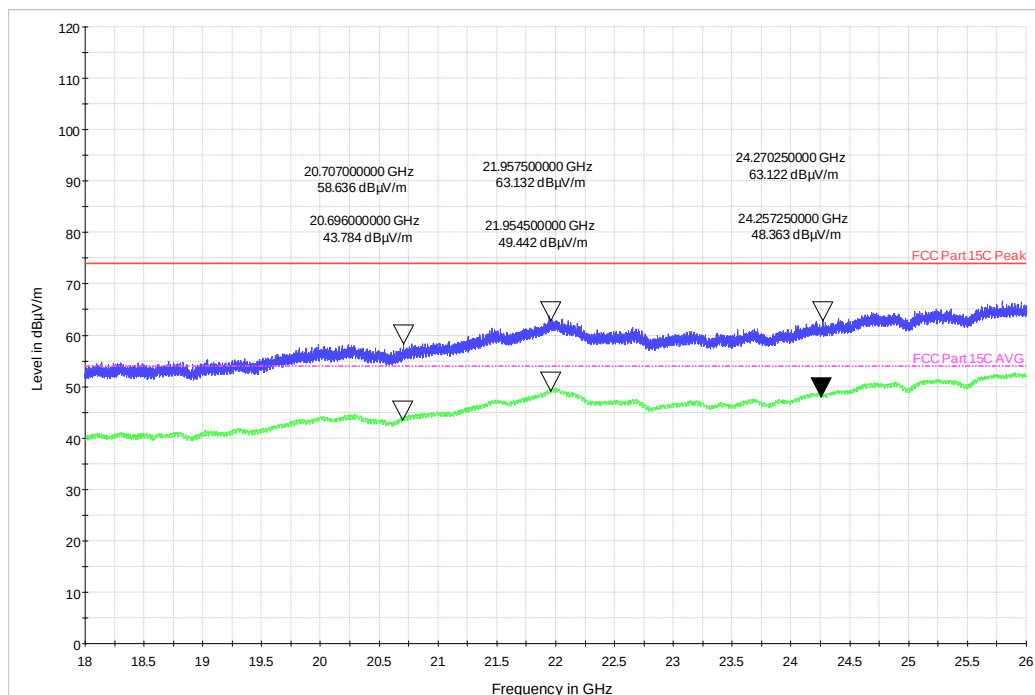
Channel Frequency: 2475MHz

Polarization: Horizontal



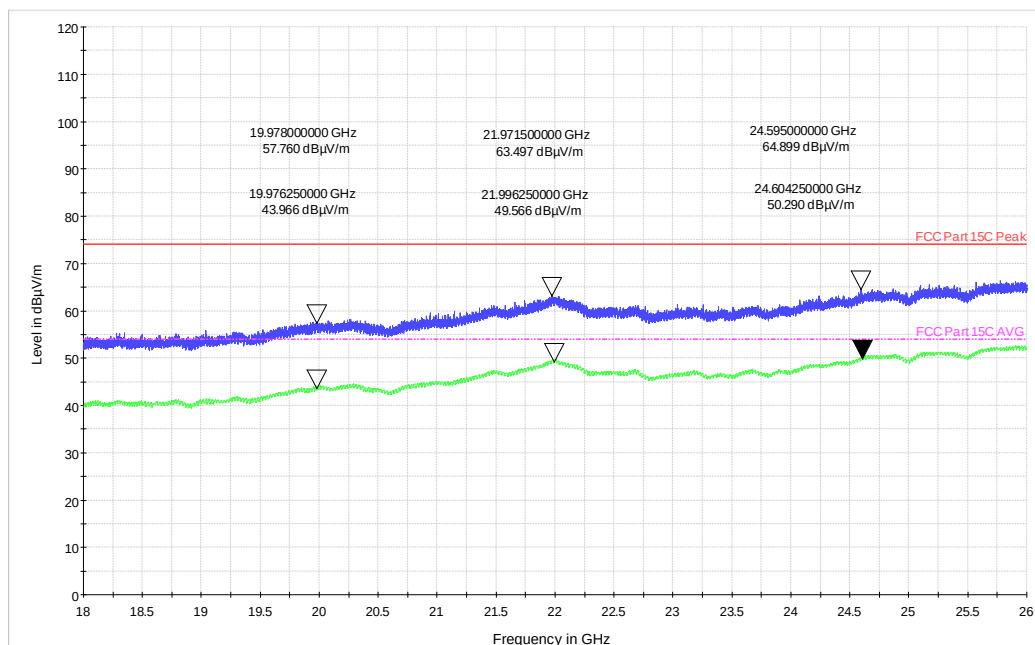
Channel Frequency: 1GHz -18GHz

Polarization: Horizontal



Channel Frequency: 18GHz -26GHz

Polarization: Vertical



Channel Frequency: 18GHz -26GHz

Polarization: Horizontal

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8.5.1 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

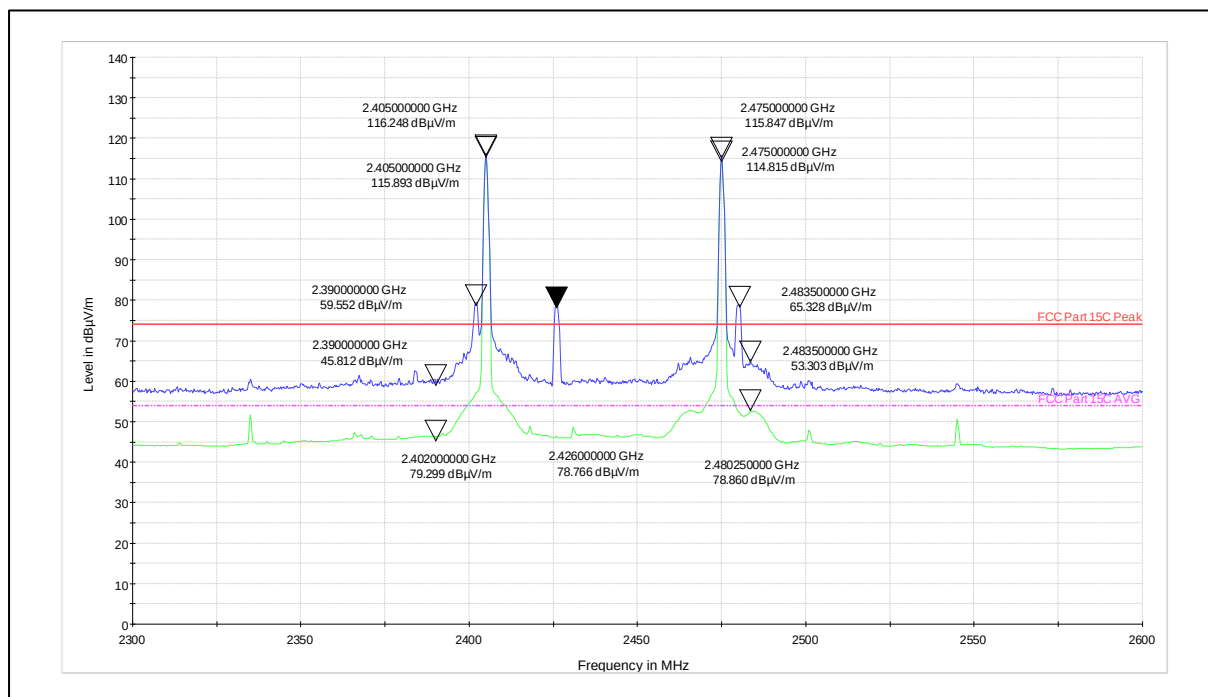
Combination: IEEE 802.15.4 + IEEE 802.15.4 + BLE

AIR-ANT2450V-N:

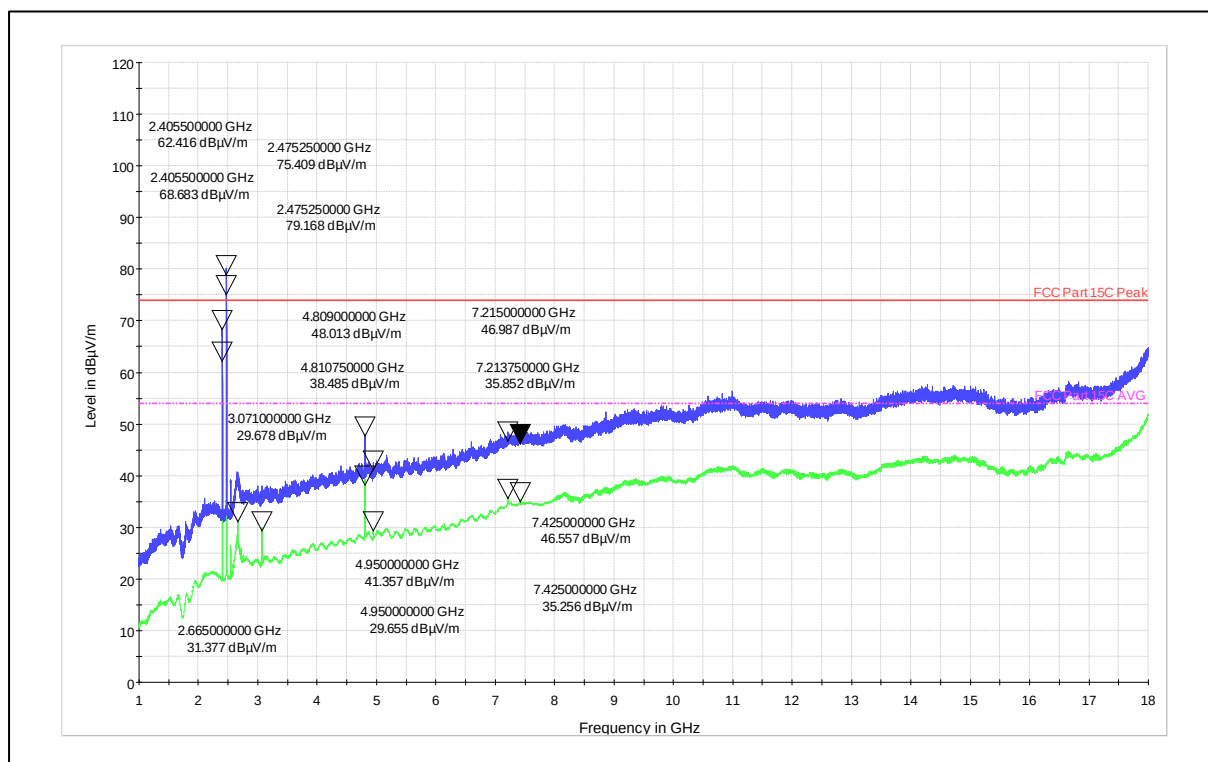
Protocol	Polarization	Measured Frequency (MHz)	Measured Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
IEEE 802.15.4	Vertical	2405(Pk)	116.24	-	-
		2405(Av)	115.89	-	-
		2390(Pk)	59.55	74*	-14.45
		2390(Av)	45.81	54*	-8.19
		4810(Pk)	48.01	74	-25.99
		4810(Av)	38.48	54	-15.52
		7215(Pk)	46.98	74	-27.02
		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

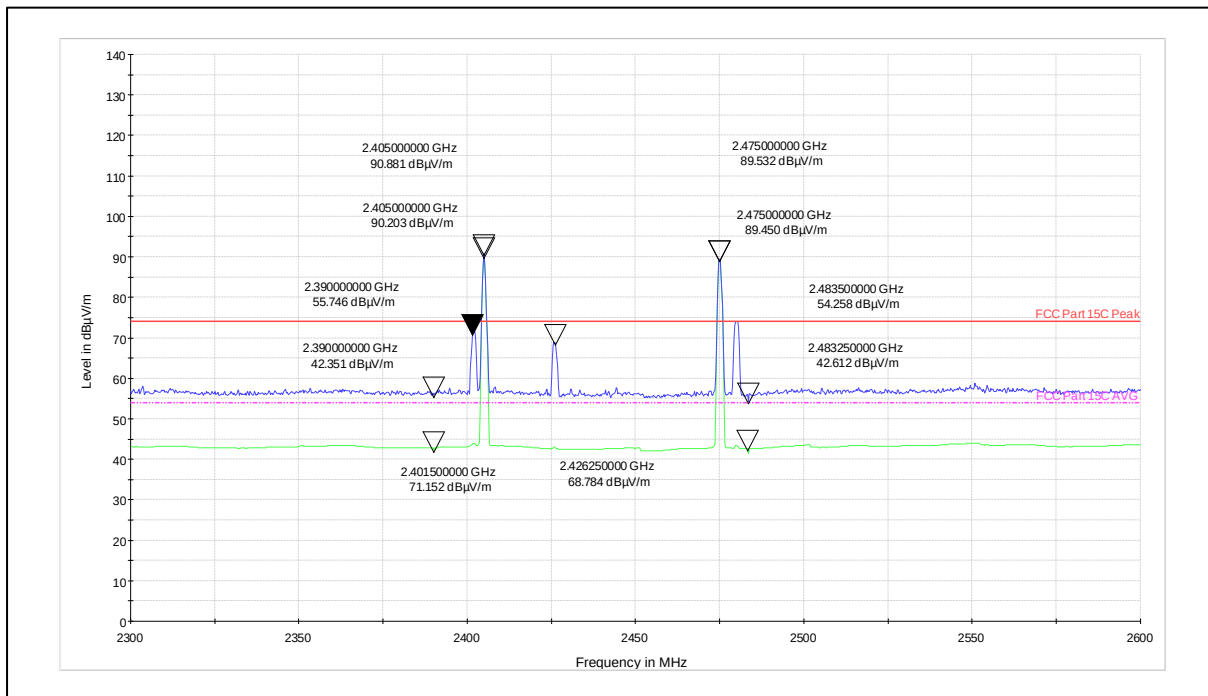
Test Plots:



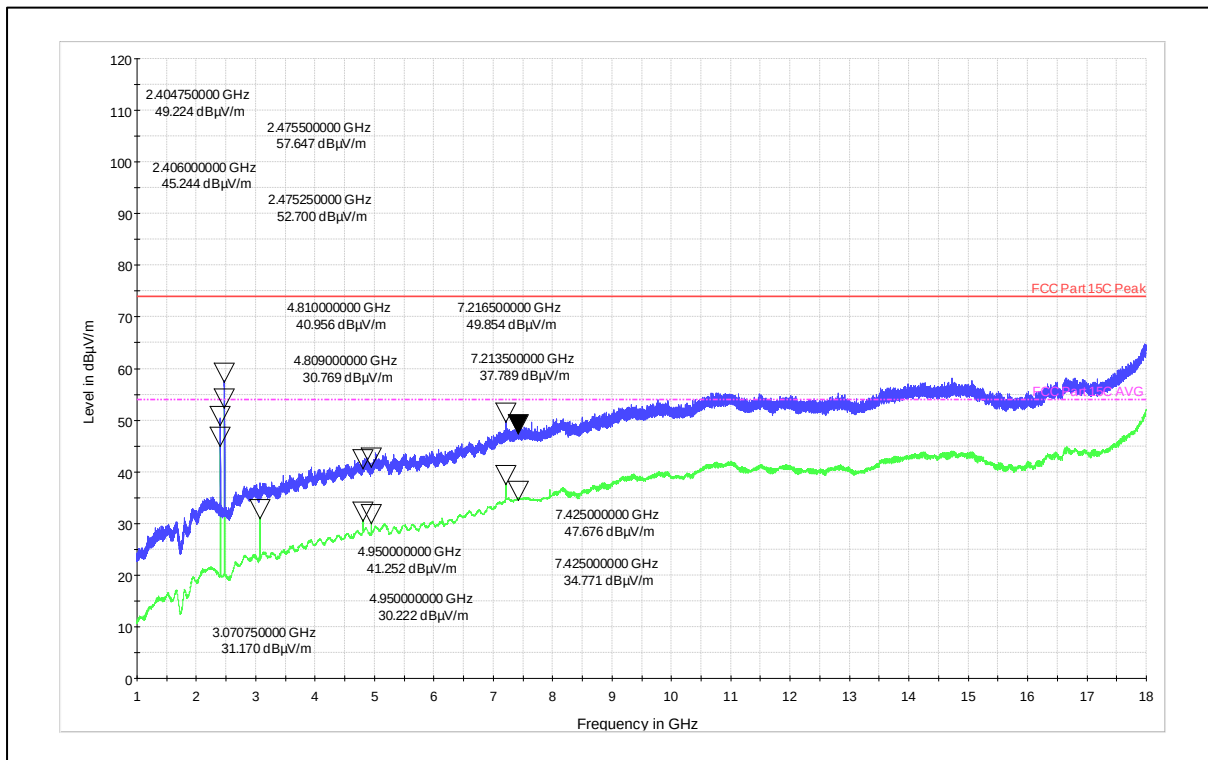
Fundamental Frequency: (IEEE 802.15.4-2405MHz, IEEE 802.15.4-2475MHz) Polarization: vertical



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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8.6 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 GENERAL REMARKSTEST METHODOLOGY

Table 9: 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%

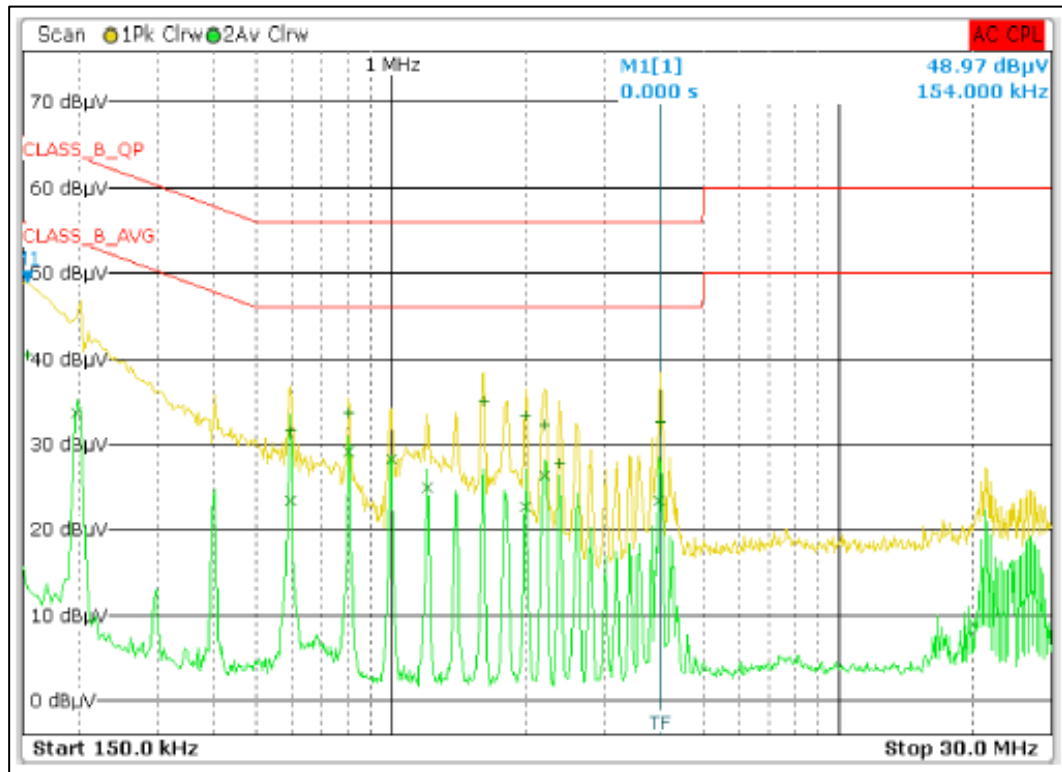
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Test results:

110VAC-60Hz-Line



S

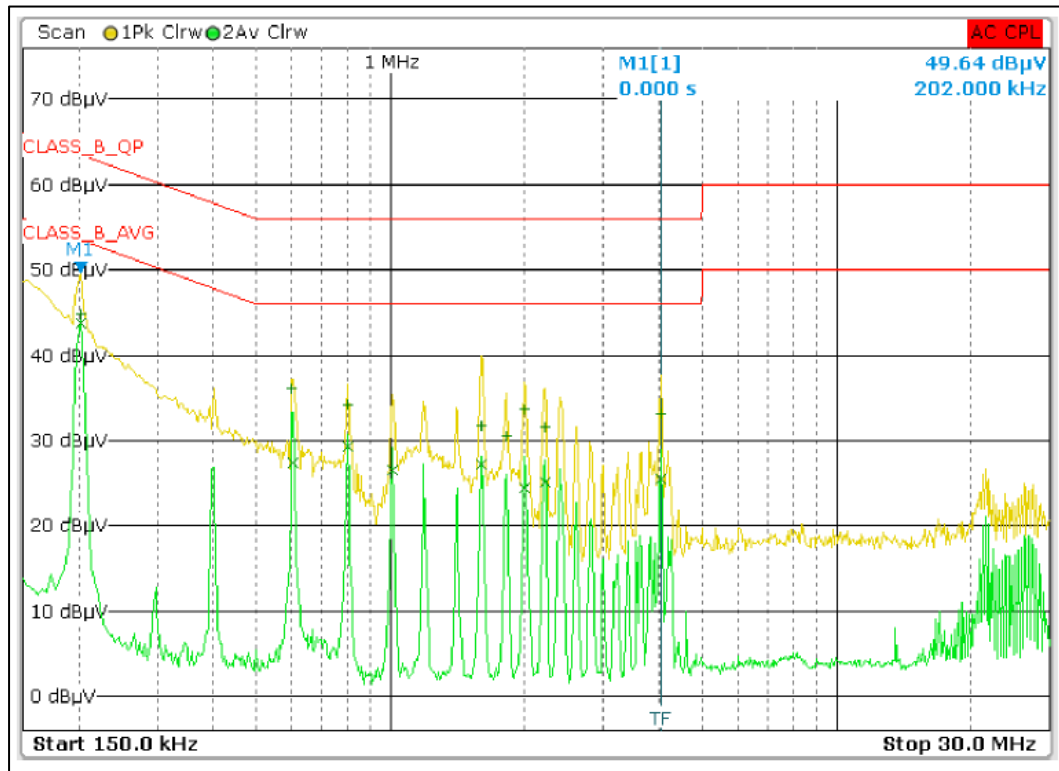
Trace	Frequency	Level (dBμV)	Phase	Detector	Delta Limit/dB
2	802.000000000 kHz	29.15		Average	-16.85
2	998.000000000 kHz	28.18		Average	-17.82
2	2.206000000 MHz	26.30		Average	-19.70
2	198.000000000 kHz	33.67		Average	-20.02
1	1.610000000 MHz	35.01		Quasi Peak	-20.99
2	1.206000000 MHz	24.96		Average	-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	202.000000000 kHz	43.67		Average	-9.86
2	802.000000000 kHz	29.35		Average	-16.65
2	606.000000000 kHz	27.37		Average	-18.63
1	202.000000000 kHz	44.79		Quasi Peak	-18.74
2	1.602000000 MHz	27.26		Average	-18.74
2	1.006000000 MHz	26.53		Average	-19.47
1	602.000000000 kHz	36.15		Quasi Peak	-19.85
2	4.026000000 MHz	25.46		Average	-20.54
2	2.218000000 MHz	25.18		Average	-20.82
2	2.002000000 MHz	24.46		Average	-21.54
1	802.000000000 kHz	34.12		Quasi Peak	-21.88
1	2.002000000 MHz	33.56		Quasi Peak	-22.44
1	4.022000000 MHz	33.19		Quasi Peak	-22.81
1	1.602000000 MHz	31.65		Quasi Peak	-24.35
1	2.222000000 MHz	31.63		Quasi Peak	-24.37
1	1.818000000 MHz	30.57		Quasi Peak	-25.43

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