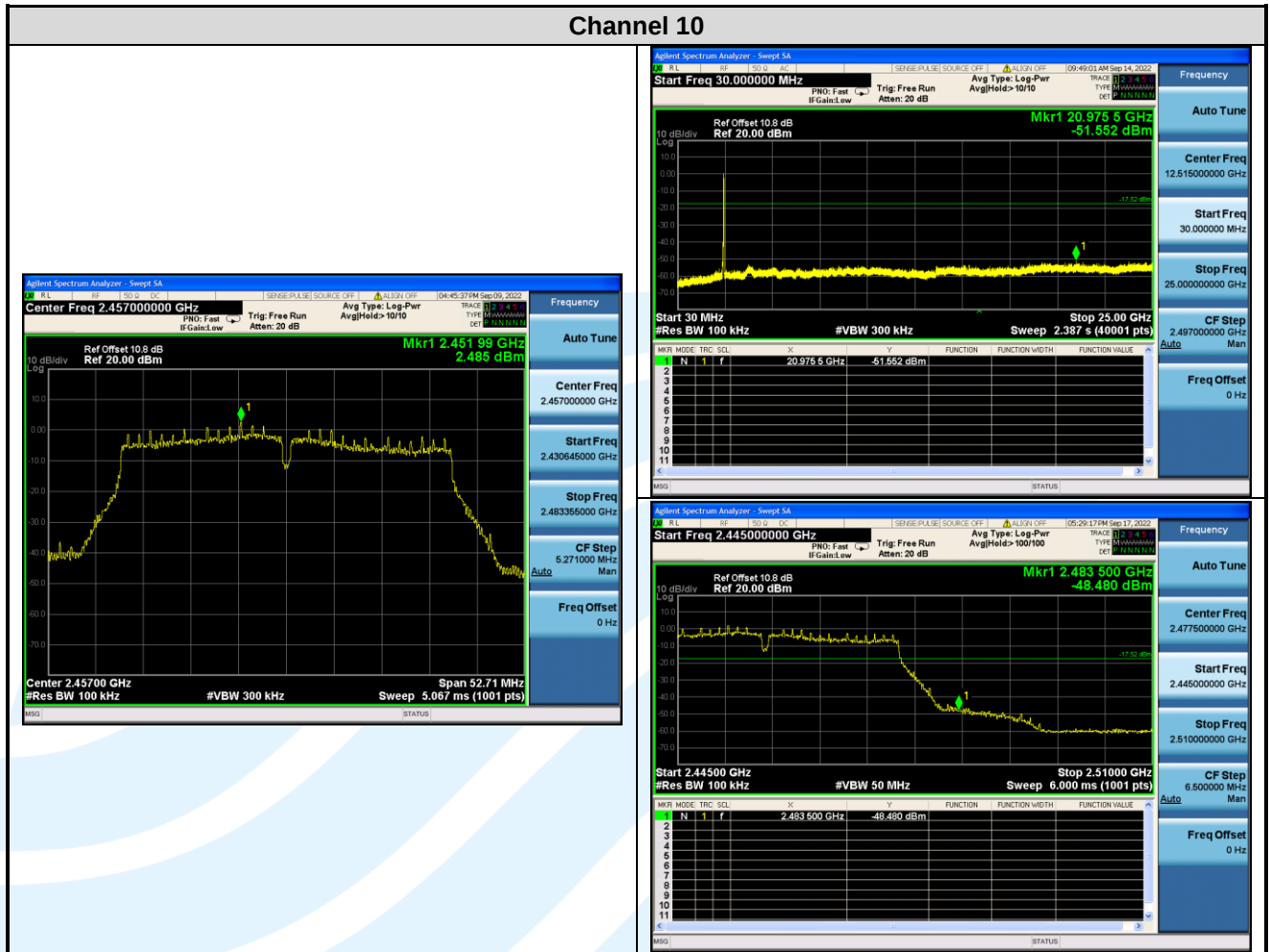
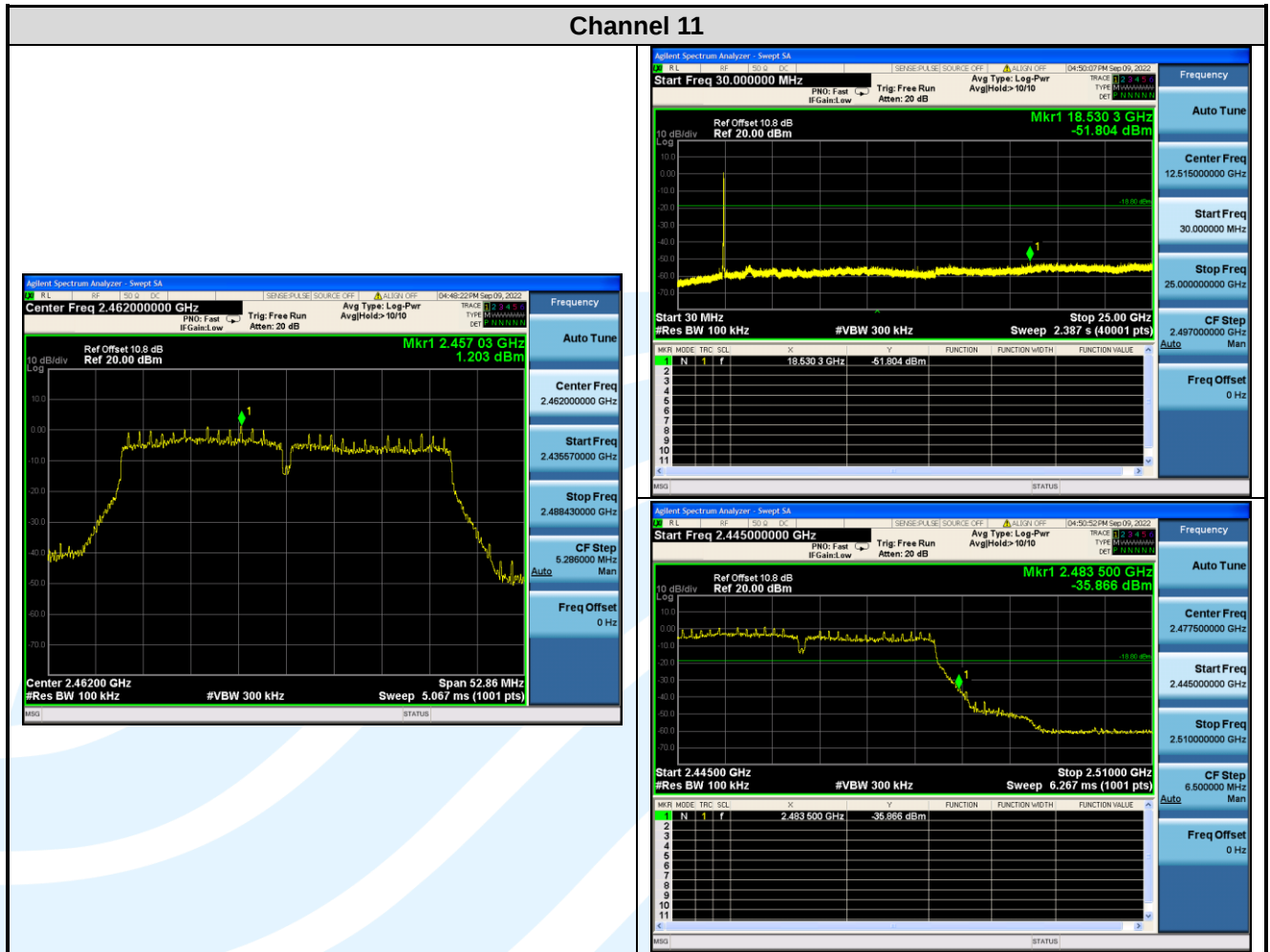






5.7 RADIATED SPURIOUS EMISSIONS

Test Requirement: FCC 47 CFR Part 15 Subpart C Section 15.205/15.209

Test Method: ANSI C63.10-2013 Clause 11.11 & Clause 11.12

Receiver Setup:

Frequency	RBW
0.009 MHz-0.150 MHz	200/300 kHz
0.150 MHz -30 MHz	9/10 kHz
30 MHz-1 GHz	100/120 kHz
Above 1 GHz	1 MHz

Limits:

Spurious Emissions

Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009 MHz-0.490 MHz	2400/F(kHz)	--	--	300
0.490 MHz-1.705 MHz	24000/F(kHz)	--	--	30
1.705 MHz-30 MHz	30	--	--	30
30 MHz-88 MHz	100	40.0	Quasi-peak	3
88 MHz-216 MHz	150	43.5	Quasi-peak	3
216 MHz-960 MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1 GHz	500	54.0	Average	3

Remark:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Test Setup: Refer to section 4.5.1 for details.

Test Procedures:

1. From 30 MHz to 1GHz test procedure as below:

- 1) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 3) The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 4) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.
- 5) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 6) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

2. Above 1GHz test procedure as below:

- 1) Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

<http://www.uttlab.com>

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- 2) Test the EUT in the lowest channel, middle channel, the Highest channel
- 3) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
- 4) Repeat above procedures until all frequencies measured was complete.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

The measurement data as follows:

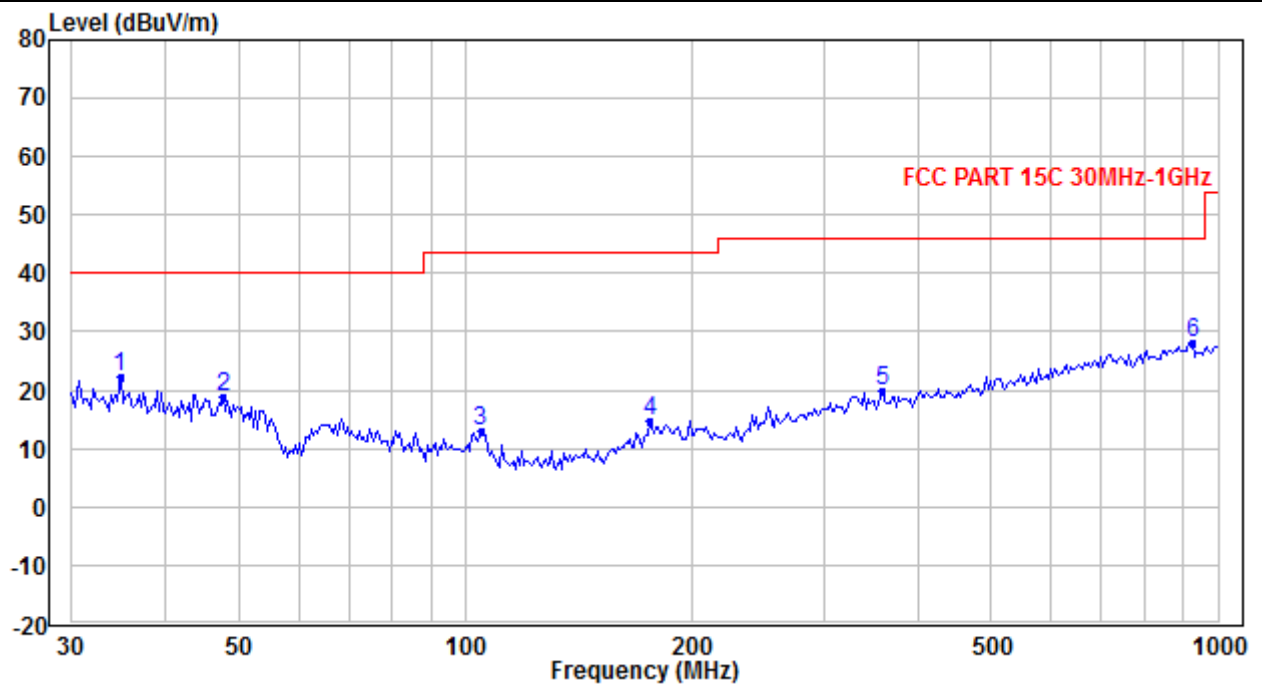
Radiated Emission Test Data (9 kHz ~ 30 MHz):

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

Radiated Emission Test Data (30 MHz ~ 1 GHz):

Worst-Case Configuration

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	34.770	26.98	-4.63	22.35	40.00	-17.65	QP
2	47.703	31.89	-13.18	18.71	40.00	-21.29	QP
3	104.798	28.96	-15.85	13.11	43.50	-30.39	QP
4	176.275	25.35	-10.54	14.81	43.50	-28.69	QP
5	358.450	24.90	-5.15	19.75	46.00	-26.25	QP
6	925.613	23.93	4.20	28.13	46.00	-17.87	QP

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Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

Tel: +86-755-28230888

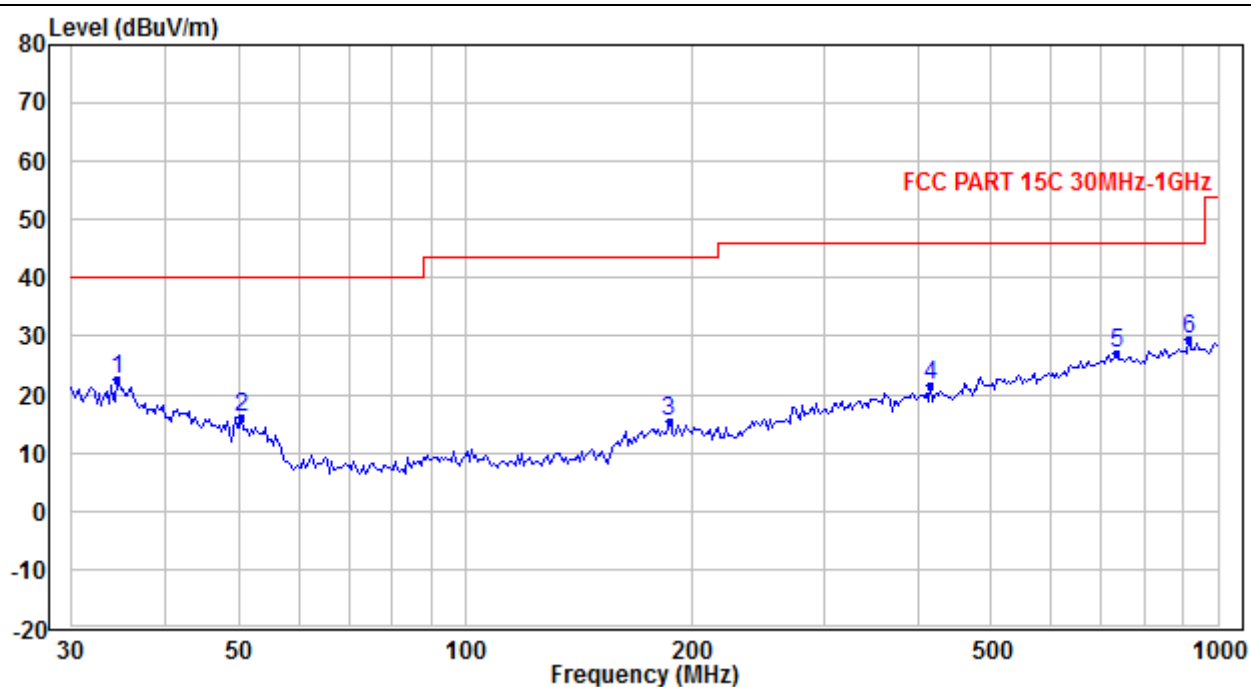
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Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	34.527	27.25	-4.81	22.44	40.00	-17.56	QP
2	50.461	30.97	-14.85	16.12	40.00	-23.88	QP
3	186.468	25.86	-10.51	15.35	43.50	-28.15	QP
4	415.449	26.03	-4.50	21.53	46.00	-24.47	QP
5	734.037	25.44	1.66	27.10	46.00	-18.90	QP
6	912.695	25.33	4.11	29.44	46.00	-16.56	QP

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Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

<http://www.uttlab.com>

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Radiated Emission Test Data (Above 1GHz):
SISO_Ant. 0_IEEE 802.11b_Channel 1:

No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	4824	36.3	-2.3	33.9	74	-40.1	Peak	Horizontal
2	4824	23.9	-2.3	21.6	54	-32.4	Average	Horizontal
3	7236	37.4	1.5	38.9	74	-35.1	Peak	Horizontal
4	7236	25.3	1.5	26.8	54	-27.2	Average	Horizontal
5	4824	35.9	-2.2	33.7	74	-40.3	Peak	Vertical
6	4824	23.9	-2.2	21.7	54	-32.3	Average	Vertical
7	7236	36.6	1.5	38.1	74	-35.9	Peak	Vertical
8	7236	25.1	1.5	26.5	54	-27.5	Average	Vertical

SISO_Ant. 0_IEEE 802.11b_Channel 6:

1	4874	36.2	-2.3	34.0	74	-40.1	Peak	Horizontal
2	4874	24.1	-2.3	21.8	54	-32.2	Average	Horizontal
3	7311	38.7	1.6	40.3	74	-33.7	Peak	Horizontal
4	7311	27.4	1.6	29.0	54	-25.0	Average	Horizontal
5	4874	36.0	-2.3	33.7	74	-40.3	Peak	Vertical
6	4874	24.2	-2.3	22.0	54	-32.1	Average	Vertical
7	7311	38.6	1.6	40.2	74	-33.8	Peak	Vertical
8	7311	27.4	1.6	29.0	54	-25.0	Average	Vertical

SISO_Ant. 0_IEEE 802.11b_Channel 11:

1	4924	36.0	-2.3	33.7	74	-40.3	Peak	Horizontal
2	4924	23.7	-2.3	21.4	54	-32.6	Average	Horizontal
3	7386	38.6	1.7	40.3	74	-33.7	Peak	Horizontal
4	7386	27.2	1.7	28.9	54	-25.1	Average	Horizontal
5	4924	35.1	-2.3	32.9	74	-41.1	Peak	Vertical
6	4924	23.7	-2.3	21.4	54	-32.6	Average	Vertical
7	7386	37.5	1.7	39.3	74	-34.7	Peak	Vertical
8	7386	27.2	1.7	28.9	54	-25.1	Average	Vertical

SISO_Ant. 0_IEEE 802.11b_Channel 12:

1	4934	37.3	-2.3	35.0	74	-39.0	Peak	Horizontal
2	4934	26.1	-2.3	23.8	54	-30.2	Average	Horizontal
3	7401	38.3	1.7	40.0	74	-34.0	Peak	Horizontal
4	7401	25.7	1.7	27.4	54	-26.6	Average	Horizontal
5	4934	37.2	-2.3	34.9	74	-39.1	Peak	Vertical
6	4934	25.9	-2.3	23.6	54	-30.4	Average	Vertical
7	7401	37.2	1.7	38.9	74	-35.1	Peak	Vertical
8	7401	25.8	1.7	27.6	54	-26.4	Average	Vertical

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

<http://www.uttlab.com>

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SISO_Ant. 0_ IEEE 802.11b_ Channel 13:								
No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	4944	40.6	-2.3	38.3	74	-35.7	Peak	Horizontal
2	4944	26.0	-2.3	23.7	54	-30.3	Average	Horizontal
3	7416	38.1	1.8	39.9	74	-34.1	Peak	Horizontal
4	7416	25.8	1.8	27.6	54	-26.4	Average	Horizontal
5	4944	38.2	-2.3	36.0	74	-38.0	Peak	Vertical
6	4944	25.9	-2.3	23.6	54	-30.4	Average	Vertical
7	7416	37.8	1.8	39.5	74	-34.5	Peak	Vertical
8	7416	25.8	1.8	27.6	54	-26.4	Average	Vertical
SISO_Ant. 1_ IEEE 802.11b_ Channel 1:								
1	4824	36.4	-2.3	34.1	74	-39.9	Peak	Horizontal
2	4824	23.9	-2.3	21.6	54	-32.4	Average	Horizontal
3	7236	36.7	1.5	38.1	74	-35.9	Peak	Horizontal
4	7236	25.2	1.5	26.7	54	-27.3	Average	Horizontal
5	4824	36.2	-2.3	33.9	74	-40.1	Peak	Vertical
6	4824	23.8	-2.3	21.5	54	-32.5	Average	Vertical
7	7236	38.5	1.5	39.9	74	-34.1	Peak	Vertical
8	7236	25.2	1.5	26.7	54	-27.3	Average	Vertical
SISO_Ant. 1_ IEEE 802.11b_ Channel 6:								
1	4874	36.1	-2.3	33.8	74	-40.2	Peak	Horizontal
2	4874	24.1	-2.3	21.8	54	-32.2	Average	Horizontal
3	7311	39.3	1.6	40.9	74	-33.2	Peak	Horizontal
4	7311	27.3	1.6	28.9	54	-25.1	Average	Horizontal
5	4874	35.8	-2.3	33.5	74	-40.5	Peak	Vertical
6	4874	24.4	-2.3	22.1	54	-31.9	Average	Vertical
7	7311	37.9	1.6	39.5	74	-34.5	Peak	Vertical
8	7311	27.5	1.6	29.1	54	-24.9	Average	Vertical
SISO_Ant. 1_ IEEE 802.11b_ Channel 11:								
1	4924	34.8	-2.3	32.5	74	-41.5	Peak	Horizontal
2	4924	23.6	-2.3	21.3	54	-32.7	Average	Horizontal
3	7386	38.2	1.7	39.9	74	-34.1	Peak	Horizontal
4	7386	27.1	1.7	28.8	54	-25.2	Average	Horizontal
5	4924	36.5	-2.3	34.3	74	-39.7	Peak	Vertical
6	4924	24.0	-2.3	21.7	54	-32.3	Average	Vertical
7	7386	38.9	1.7	40.6	74	-33.4	Peak	Vertical
8	7386	27.0	1.7	28.7	54	-25.3	Average	Vertical

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

<http://www.uttlab.com>

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SISO_Ant. 1_ IEEE 802.11b_ Channel 12:

No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	4934	38.5	-2.3	36.2	74	-37.8	Peak	Horizontal
2	4934	26.1	-2.3	23.8	54	-30.2	Average	Horizontal
3	7401	38.9	1.7	40.6	74	-33.4	Peak	Horizontal
4	7401	25.8	1.7	27.5	54	-26.5	Average	Horizontal
5	4934	36.9	-2.3	34.7	74	-39.3	Peak	Vertical
6	4934	25.8	-2.3	23.5	54	-30.5	Average	Vertical
7	7401	37.2	1.7	39.0	74	-35.0	Peak	Vertical
8	7401	25.6	1.7	27.3	54	-26.7	Average	Vertical

SISO_Ant. 1_ IEEE 802.11b_ Channel 13:

1	4944	38.8	-2.3	36.5	74	-37.5	Peak	Horizontal
2	4944	26.0	-2.3	23.8	54	-30.2	Average	Horizontal
3	7416	38.5	1.8	40.3	74	-33.7	Peak	Horizontal
4	7416	26.0	1.8	27.7	54	-26.3	Average	Horizontal
5	4944	37.4	-2.3	35.1	74	-38.9	Peak	Vertical
6	4944	26.0	-2.3	23.8	54	-30.2	Average	Vertical
7	7416	38.1	1.8	39.9	74	-34.1	Peak	Vertical
8	7416	25.8	1.8	27.6	54	-26.4	Average	Vertical

SISO_Ant. 0_ IEEE 802.11g_ Channel 1:

1	4824	36.2	-2.3	33.8	74	-40.2	Peak	Horizontal
2	4824	24.2	-2.3	21.9	54	-32.2	Average	Horizontal
3	7236	37.0	1.5	38.5	74	-35.5	Peak	Horizontal
4	7236	25.2	1.5	26.7	54	-27.3	Average	Horizontal
5	4824	35.7	-2.3	33.4	74	-40.6	Peak	Vertical
6	4824	24.0	-2.3	21.7	54	-32.3	Average	Vertical
7	7236	38.2	1.5	39.6	74	-34.4	Peak	Vertical
8	7236	25.4	1.5	26.8	54	-27.2	Average	Vertical

SISO_Ant. 0_ IEEE 802.11g_ Channel 6:

1	4874	36.0	-2.3	33.7	74	-40.3	Peak	Horizontal
2	4874	24.1	-2.3	21.8	54	-32.2	Average	Horizontal
3	7311	38.7	1.6	40.3	74	-33.7	Peak	Horizontal
4	7311	27.3	1.6	28.9	54	-25.1	Average	Horizontal
5	4874	37.3	-2.3	35.0	74	-39.0	Peak	Vertical
6	4874	24.4	-2.3	22.1	54	-31.9	Average	Vertical
7	7311	38.2	1.6	39.8	74	-34.2	Peak	Vertical
8	7311	27.2	1.6	28.8	54	-25.2	Average	Vertical

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

<http://www.uttlab.com>

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SISO_Ant. 0_IEEE 802.11g_Channel 11:								
No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	4924	35.4	-2.3	33.2	74	-40.8	Peak	Horizontal
2	4924	23.8	-2.3	21.5	54	-32.5	Average	Horizontal
3	7386	39.2	1.7	41.0	74	-33.0	Peak	Horizontal
4	7386	27.0	1.7	28.7	54	-25.3	Average	Horizontal
5	4924	35.8	-2.3	33.5	74	-40.5	Peak	Vertical
6	4924	23.7	-2.3	21.4	54	-32.6	Average	Vertical
7	7386	38.3	1.7	40.0	74	-34.0	Peak	Vertical
8	7386	27.0	1.7	28.7	54	-25.3	Average	Vertical
SISO_Ant. 0_IEEE 802.11g_Channel 12:								
1	4934	39.2	-2.3	36.9	74	-37.1	Peak	Horizontal
2	4934	26.0	-2.3	23.8	54	-30.2	Average	Horizontal
3	7401	37.3	1.7	39.0	74	-35.0	Peak	Horizontal
4	7401	26.0	1.7	27.7	54	-26.3	Average	Horizontal
5	4934	38.4	-2.3	36.1	74	-37.9	Peak	Vertical
6	4934	25.8	-2.3	23.5	54	-30.5	Average	Vertical
7	7401	37.3	1.7	39.0	74	-35.0	Peak	Vertical
8	7401	25.6	1.7	27.3	54	-26.7	Average	Vertical
SISO_Ant. 0_IEEE 802.11g_Channel 13:								
1	4944	37.7	-2.3	35.4	74	-38.6	Peak	Horizontal
2	4944	26.1	-2.3	23.8	54	-30.2	Average	Horizontal
3	7416	37.2	1.8	39.0	74	-35.1	Peak	Horizontal
4	7416	25.8	1.8	27.6	54	-26.4	Average	Horizontal
5	4944	37.3	-2.3	35.1	74	-39.0	Peak	Vertical
6	4944	25.9	-2.3	23.6	54	-30.4	Average	Vertical
7	7416	38.0	1.8	39.8	74	-34.2	Peak	Vertical
8	7416	25.6	1.8	27.3	54	-26.7	Average	Vertical
SISO_Ant. 1_IEEE 802.11g_Channel 1:								
1	4824	37.6	-2.3	35.3	74	-38.7	Peak	Horizontal
2	4824	24.2	-2.3	21.9	54	-32.2	Average	Horizontal
3	7236	37.7	1.5	39.1	74	-34.9	Peak	Horizontal
4	7236	25.2	1.5	26.7	54	-27.3	Average	Horizontal
5	4824	37.6	-2.3	35.3	74	-38.7	Peak	Vertical
6	4824	24.1	-2.3	21.8	54	-32.2	Average	Vertical
7	7236	39.0	1.5	40.4	74	-33.6	Peak	Vertical
8	7236	25.1	1.5	26.6	54	-27.4	Average	Vertical

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

E-mail: info@uttlab.com

<http://www.uttlab.com>

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SISO_Ant. 1_ IEEE 802.11g_Channel 6:								
No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	4874	37.2	-2.3	34.9	74	-39.1	Peak	Horizontal
2	4874	24.5	-2.3	22.2	54	-31.8	Average	Horizontal
3	7311	38.8	1.6	40.4	74	-33.6	Peak	Horizontal
4	7311	27.3	1.6	28.9	54	-25.1	Average	Horizontal
5	4874	36.7	-2.3	34.4	74	-39.6	Peak	Vertical
6	4874	24.5	-2.3	22.2	54	-31.8	Average	Vertical
7	7311	39.0	1.6	40.6	74	-33.4	Peak	Vertical
8	7311	27.3	1.6	28.9	54	-25.1	Average	Vertical
SISO_Ant. 1_ IEEE 802.11g_Channel 11:								
1	4924	35.8	-2.3	33.6	74	-40.4	Peak	Horizontal
2	4924	24.0	-2.3	21.7	54	-32.3	Average	Horizontal
3	7386	39.1	1.7	40.8	74	-33.2	Peak	Horizontal
4	7386	27.2	1.7	28.9	54	-25.1	Average	Horizontal
5	4924	35.9	-2.3	33.6	74	-40.4	Peak	Vertical
6	4924	24.1	-2.3	21.8	54	-32.2	Average	Vertical
7	7386	38.4	1.7	40.1	74	-33.9	Peak	Vertical
8	7386	27.3	1.7	29.1	54	-24.9	Average	Vertical
SISO_Ant. 1_ IEEE 802.11g_Channel 12:								
1	4934	37.4	-2.3	35.1	74	-38.9	Peak	Horizontal
2	4934	26.1	-2.3	23.8	54	-30.2	Average	Horizontal
3	7401	37.8	1.7	39.6	74	-34.4	Peak	Horizontal
4	7401	25.9	1.7	27.6	54	-26.4	Average	Horizontal
5	4934	38.2	-2.3	36.0	74	-38.0	Peak	Vertical
6	4934	26.0	-2.3	23.8	54	-30.2	Average	Vertical
7	7401	37.3	1.7	39.0	74	-35.0	Peak	Vertical
8	7401	26.0	1.7	27.7	54	-26.3	Average	Vertical
SISO_Ant. 1_ IEEE 802.11g_Channel 13:								
1	4944	37.3	-2.3	35.1	74	-38.9	Peak	Horizontal
2	4944	26.1	-2.3	23.8	54	-30.2	Average	Horizontal
3	7416	37.2	1.8	38.9	74	-35.1	Peak	Horizontal
4	7416	25.9	1.8	27.6	54	-26.4	Average	Horizontal
5	4944	38.5	-2.3	36.2	74	-37.8	Peak	Vertical
6	4944	26.1	-2.3	23.8	54	-30.2	Average	Vertical
7	7416	37.7	1.8	39.5	74	-34.5	Peak	Vertical
8	7416	26.0	1.8	27.7	54	-26.3	Average	Vertical

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Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

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Fax: +86-755-28230886

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MIMO_Ant. 0+1_ IEEE 802.11n-HT20_Channel 1:								
No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	4824	38.1	-2.3	35.7	74	-38.3	Peak	Horizontal
2	4824	24.8	-2.3	22.5	54	-31.6	Average	Horizontal
3	7236	38.6	1.5	40.0	74	-34.0	Peak	Horizontal
4	7236	25.5	1.5	27.0	54	-27.0	Average	Horizontal
5	4824	37.2	-2.3	34.9	74	-39.1	Peak	Vertical
6	4824	24.4	-2.3	22.0	54	-32.0	Average	Vertical
7	7236	38.1	1.5	39.6	74	-34.4	Peak	Vertical
8	7236	25.6	1.5	27.1	54	-26.9	Average	Vertical
MIMO_Ant. 0+1_ IEEE 802.11n-HT20_Channel 6:								
1	4874	36.0	-2.3	33.7	74	-40.3	Peak	Horizontal
2	4874	24.4	-2.3	22.1	54	-31.9	Average	Horizontal
3	7311	38.6	1.6	40.2	74	-33.8	Peak	Horizontal
4	7311	27.4	1.6	29.0	54	-25.0	Average	Horizontal
5	4874	36.7	-2.3	34.4	74	-39.6	Peak	Vertical
6	4874	24.5	-2.3	22.2	54	-31.8	Average	Vertical
7	7311	38.1	1.6	39.7	74	-34.3	Peak	Vertical
8	7311	27.4	1.6	29.0	54	-25.0	Average	Vertical
MIMO_Ant. 0+1_ IEEE 802.11n-HT20_Channel 11:								
1	4924	35.3	-2.3	33.1	74	-40.9	Peak	Horizontal
2	4924	24.0	-2.3	21.7	54	-32.3	Average	Horizontal
3	7386	38.5	1.7	40.2	74	-33.8	Peak	Horizontal
4	7386	27.3	1.7	29.0	54	-25.0	Average	Horizontal
5	4924	35.6	-2.3	33.3	74	-40.7	Peak	Vertical
6	4924	23.9	-2.3	21.6	54	-32.4	Average	Vertical
7	7386	38.5	1.7	40.2	74	-33.8	Peak	Vertical
8	7386	27.3	1.7	29.0	54	-25.0	Average	Vertical
MIMO_Ant. 0+1_ IEEE 802.11n-HT20_Channel 12:								
1	4934	37.7	-2.3	35.4	74	-38.6	Peak	Horizontal
2	4934	26.0	-2.3	23.8	54	-30.2	Average	Horizontal
3	7401	37.8	1.7	39.5	74	-34.5	Peak	Horizontal
4	7401	25.6	1.7	27.3	54	-26.7	Average	Horizontal
5	4934	37.5	-2.3	35.2	74	-38.8	Peak	Vertical
6	4934	25.9	-2.3	23.6	54	-30.4	Average	Vertical
7	7401	38.2	1.7	40.0	74	-34.0	Peak	Vertical
8	7401	25.8	1.7	27.6	54	-26.4	Average	Vertical

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Fax: +86-755-28230886

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MIMO_Ant. 0+1_ IEEE 802.11n-HT20_Channel 13:								
No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	4944	37.5	-2.3	35.3	74	-38.7	Peak	Horizontal
2	4944	26.1	-2.3	23.8	54	-30.2	Average	Horizontal
3	7416	38.9	1.8	40.7	74	-33.3	Peak	Horizontal
4	7416	25.9	1.8	27.6	54	-26.4	Average	Horizontal
5	4944	37.0	-2.3	34.8	74	-39.2	Peak	Vertical
6	4944	26.0	-2.3	23.7	54	-30.3	Average	Vertical
7	7416	37.5	1.8	39.3	74	-34.7	Peak	Vertical
8	7416	25.8	1.8	27.6	54	-26.4	Average	Vertical
MIMO_Ant. 0+1_ IEEE 802.11n-HT40_Channel 3:								
1	4844	37.8	-2.3	35.5	74	-38.5	Peak	Horizontal
2	4844	24.3	-2.3	21.9	54	-32.1	Average	Horizontal
3	7266	37.3	1.5	38.8	74	-35.2	Peak	Horizontal
4	7266	25.3	1.5	26.8	54	-27.2	Average	Horizontal
5	4844	37.0	-2.3	34.6	74	-39.4	Peak	Vertical
6	4844	24.3	-2.3	22.0	54	-32.0	Average	Vertical
7	7266	37.2	1.5	38.7	74	-35.3	Peak	Vertical
8	7266	25.2	1.5	26.8	54	-27.2	Average	Vertical
MIMO_Ant. 0+1_ IEEE 802.11n-HT40_Channel 6:								
1	4874	36.0	-2.3	33.7	74	-40.3	Peak	Horizontal
2	4874	24.4	-2.3	22.1	54	-31.9	Average	Horizontal
3	7311	39.0	1.6	40.6	74	-33.4	Peak	Horizontal
4	7311	27.3	1.6	28.9	54	-25.1	Average	Horizontal
5	4874	36.0	-2.3	33.7	74	-40.3	Peak	Vertical
6	4874	24.4	-2.3	22.1	54	-31.9	Average	Vertical
7	7311	39.0	1.6	40.6	74	-33.4	Peak	Vertical
8	7311	27.5	1.6	29.1	54	-24.9	Average	Vertical
MIMO_Ant. 0+1_ IEEE 802.11n-HT40_Channel 9:								
1	4904	35.0	-2.3	32.7	74	-41.3	Peak	Horizontal
2	4904	23.7	-2.3	21.4	54	-32.6	Average	Horizontal
3	7356	39.8	1.7	41.5	74	-32.5	Peak	Horizontal
4	7356	27.3	1.7	29.0	54	-25.0	Average	Horizontal
5	4904	35.2	-2.3	32.9	74	-41.1	Peak	Vertical
6	4904	24.0	-2.3	21.7	54	-32.3	Average	Vertical
7	7356	39.1	1.7	40.7	74	-33.3	Peak	Vertical
8	7356	27.1	1.7	28.8	54	-25.2	Average	Vertical

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Tel: +86-755-28230888

Fax: +86-755-28230886

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MIMO_Ant. 0+1_ IEEE 802.11n-HT40_Channel 10:

No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	4914	35.1	-2.3	32.9	74	-41.1	Peak	Horizontal
2	4914	24.2	-2.3	21.9	54	-32.1	Average	Horizontal
3	7371	37.8	1.7	39.5	74	-34.5	Peak	Horizontal
4	7371	27.1	1.7	28.8	54	-25.2	Average	Horizontal
5	4914	35.0	-2.3	32.8	74	-41.2	Peak	Vertical
6	4914	23.8	-2.3	21.5	54	-32.5	Average	Vertical
7	7371	38.4	1.7	40.1	74	-33.9	Peak	Vertical
8	7371	27.3	1.7	29.0	54	-25.0	Average	Vertical

MIMO_Ant. 0+1_ IEEE 802.11n-HT40_Channel 11:

1	4924	35.0	-2.3	32.8	74	-41.2	Peak	Horizontal
2	4924	24.0	-2.3	21.7	54	-32.3	Average	Horizontal
3	7386	39.4	0.7	40.1	74	-33.9	Peak	Horizontal
4	7386	28.3	0.7	29.1	54	-24.9	Average	Horizontal
5	4924	35.1	-2.3	32.9	74	-41.1	Peak	Vertical
6	4924	23.9	-2.3	21.6	54	-32.4	Average	Vertical
7	7386	38.1	1.7	39.8	74	-34.2	Peak	Vertical
8	7386	27.2	1.7	28.9	54	-25.1	Average	Vertical

Remark:

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

5.8 BAND EDGE MEASUREMENTS (RADIATED)

Test Requirement: FCC 47 CFR Part 15 Subpart C Section 15.205/15.209

Test Method: ANSI C63.10-2013 Clause 11.13

Limits:

Radiated emissions which fall in the restricted bands, as defined in section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a).

Frequency	Limit (dB μ V/m @3m)	Remark
30 MHz-88 MHz	40.0	Quasi-peak Value
88 MHz-216 MHz	43.5	Quasi-peak Value
216 MHz-960 MHz	46.0	Quasi-peak Value
960 MHz-1 GHz	54.0	Quasi-peak Value
Above 1 GHz	54.0	Average Value
	74.0	Peak Value

Test Setup: Refer to section 4.5.1 for details.

Test Procedures:

Radiated band edge measurements at 2390 MHz and 2483.5 MHz were made with the unit transmitting in the low end of the channel range and the high end closest to the restricted bands respectively. The emissions were made on the 966 Semi-Chamber. Use (resolution bandwidth (RBW) = 1 MHz, video bandwidth (VBW) = 3 MHz for peak levels and RBW = 1 MHz and VBW = 10 Hz or 1/T for average levels).

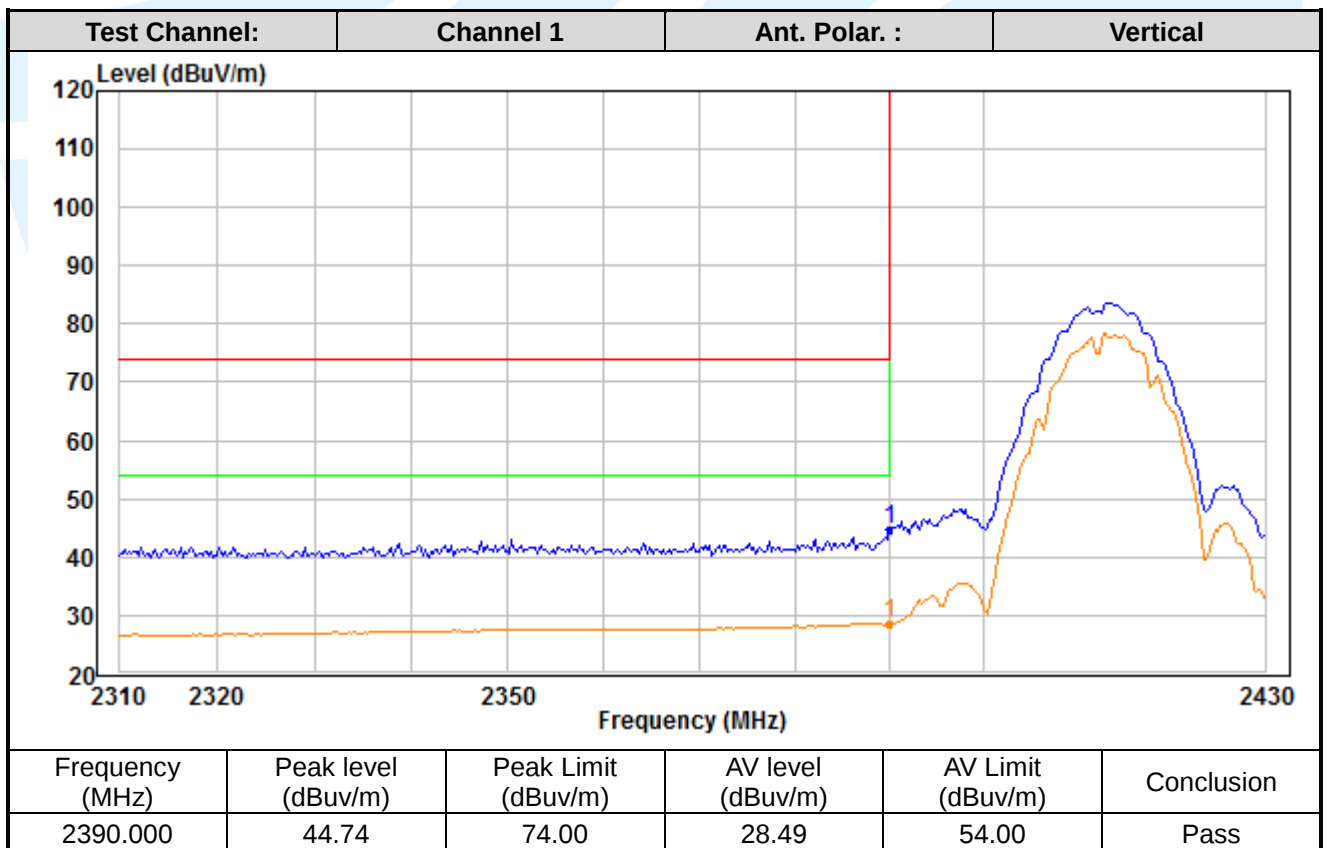
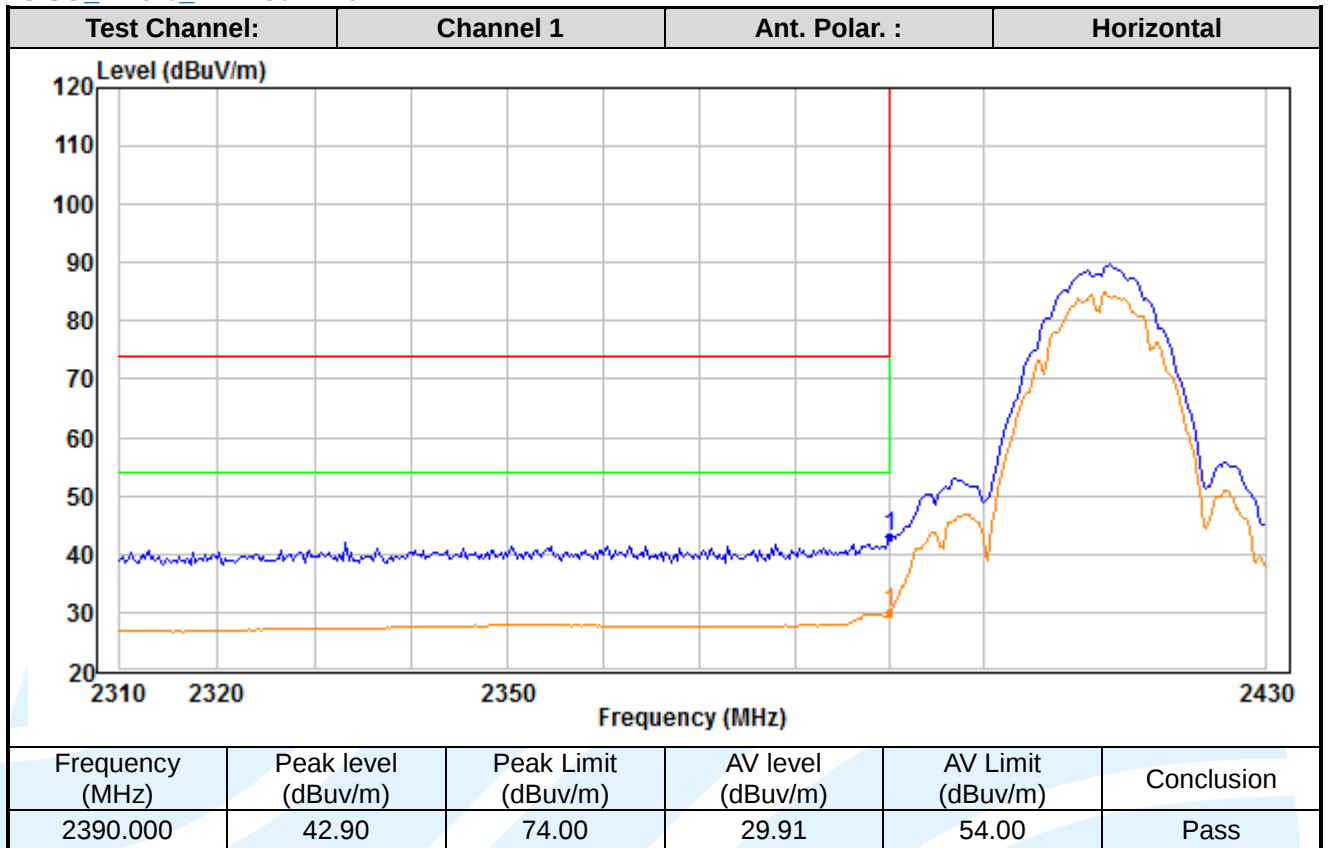
1. Use radiated spurious emission test procedure described in clause 5.7. The transmitter output (antenna port) was connected to the test receiver.
2. Set the PK and AV limit line.
3. Record the fundamental emission and emissions out of the band-edge.
4. Determine band-edge compliance as required.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

The measurement data as follows:

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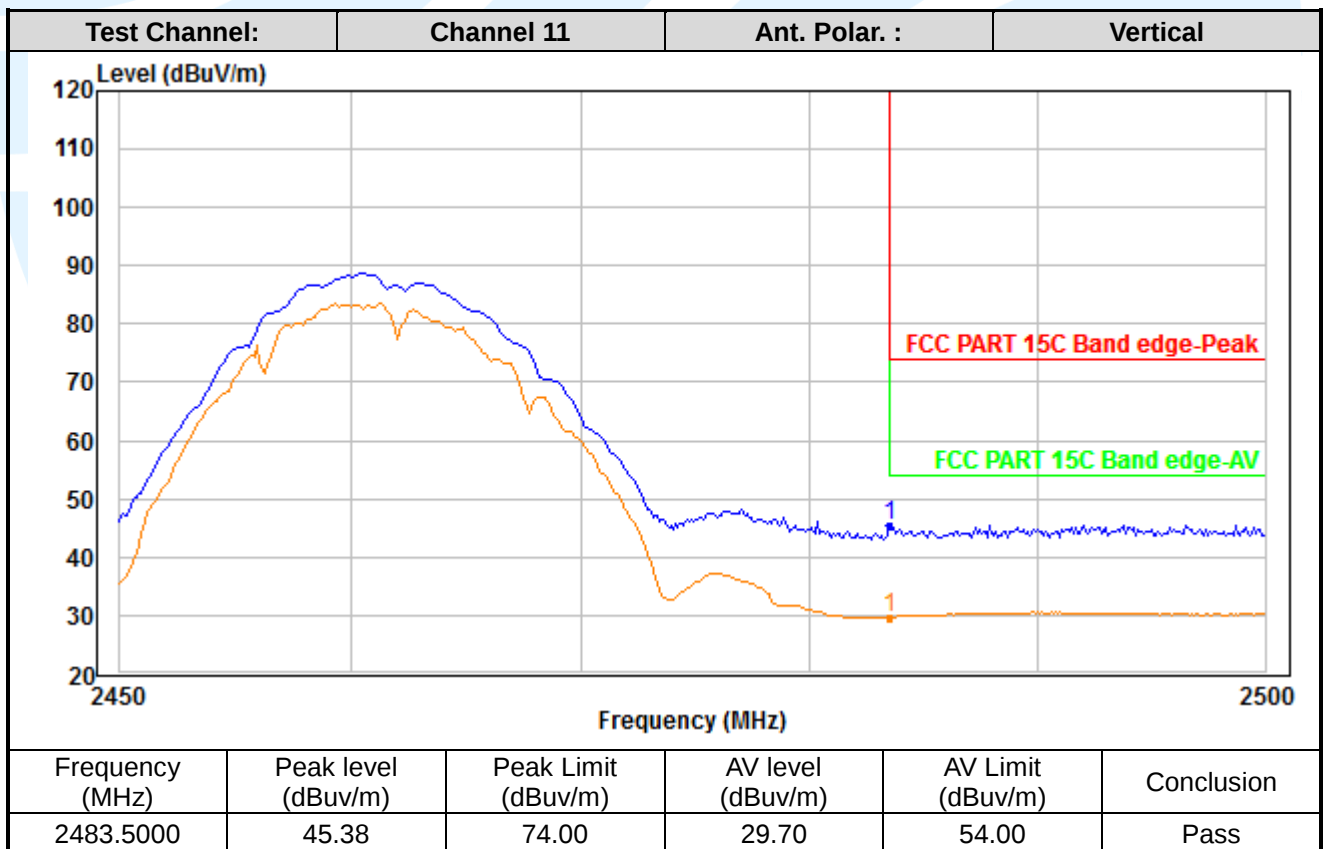
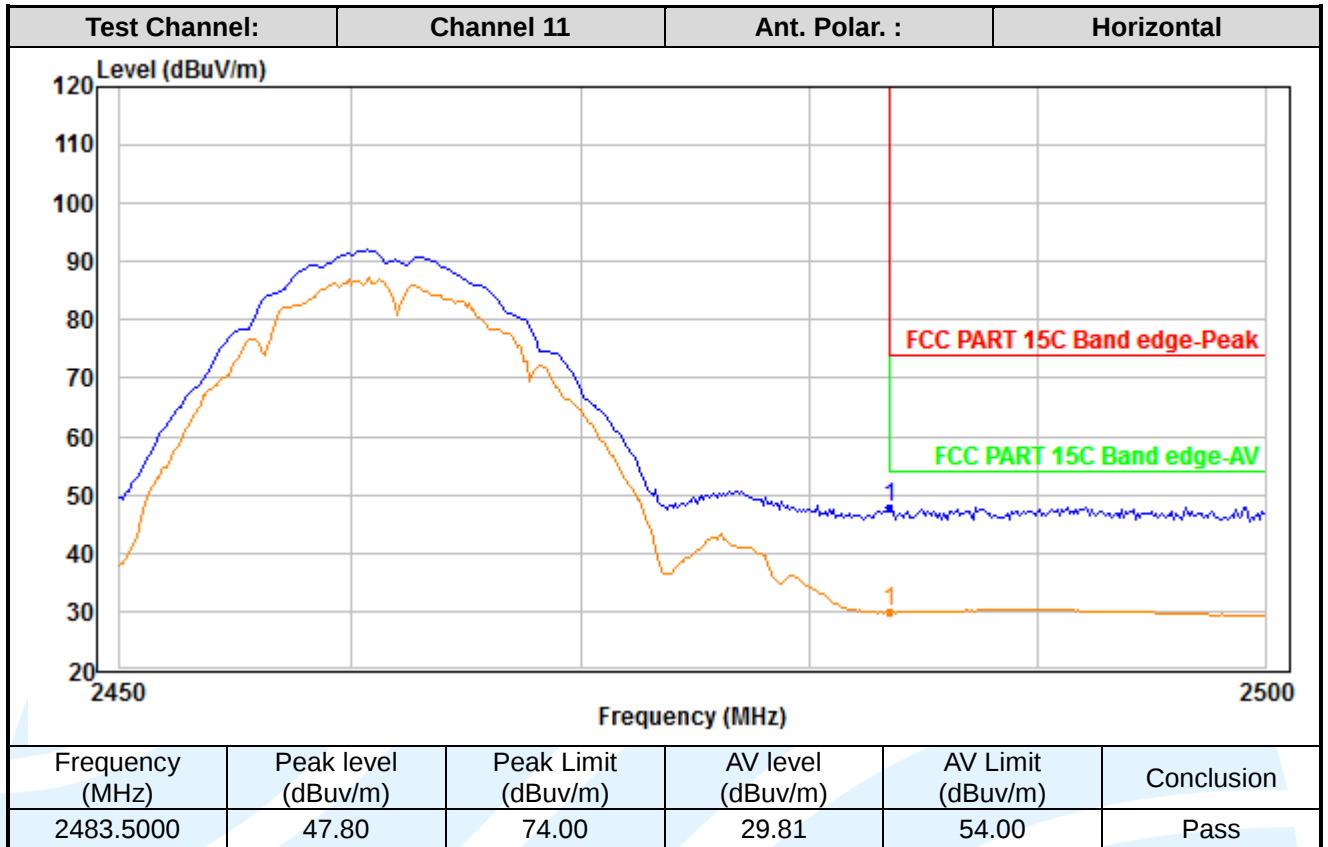
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E-mail: info@uttlab.com

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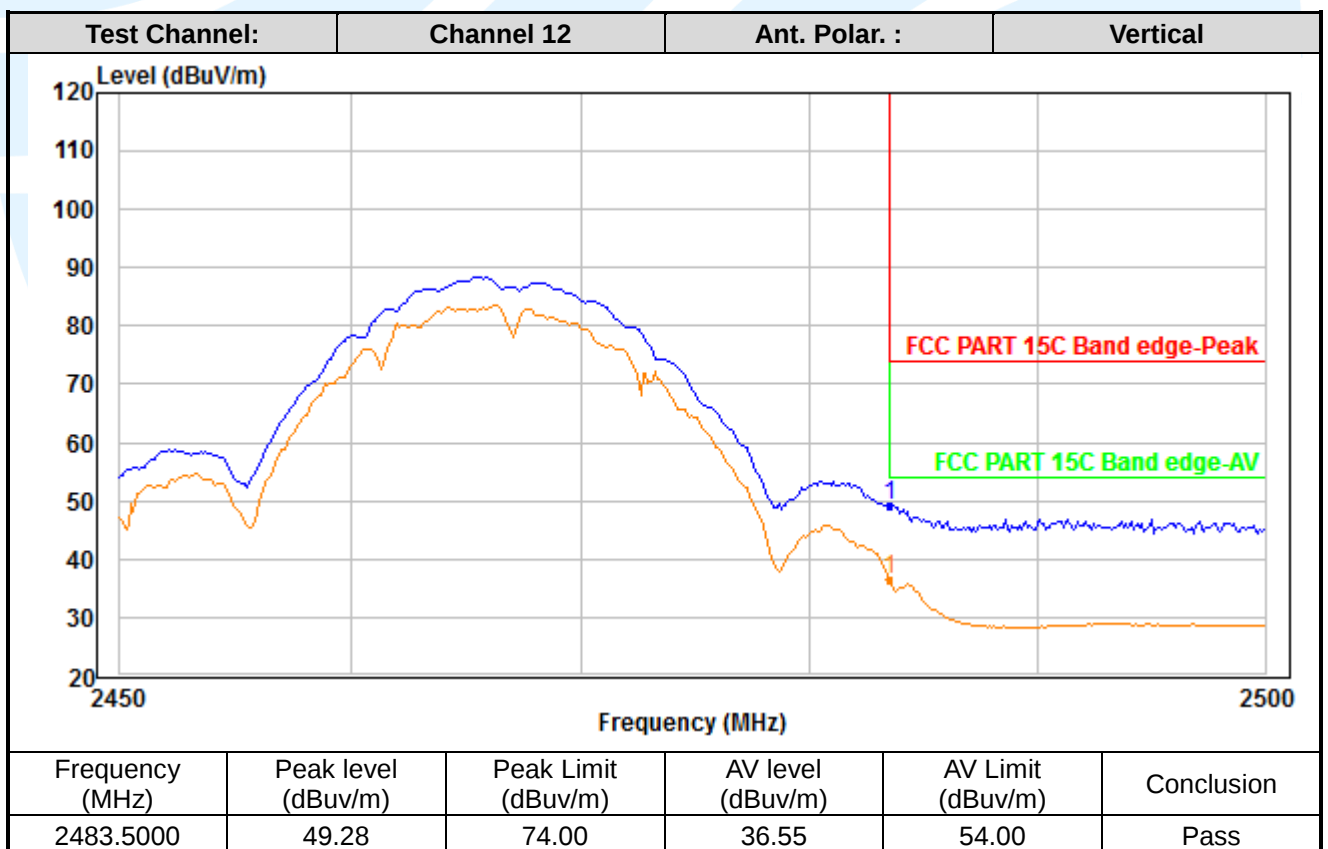
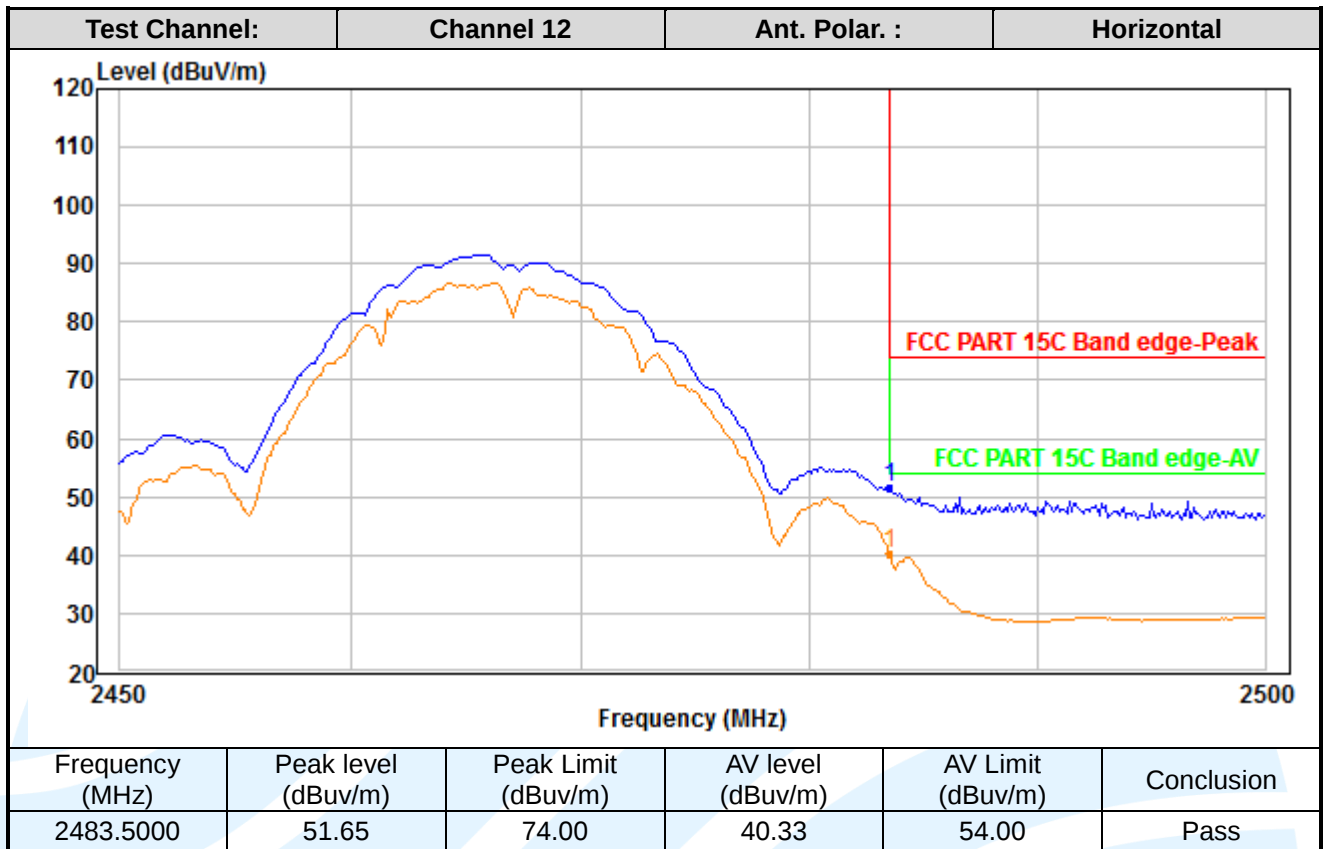
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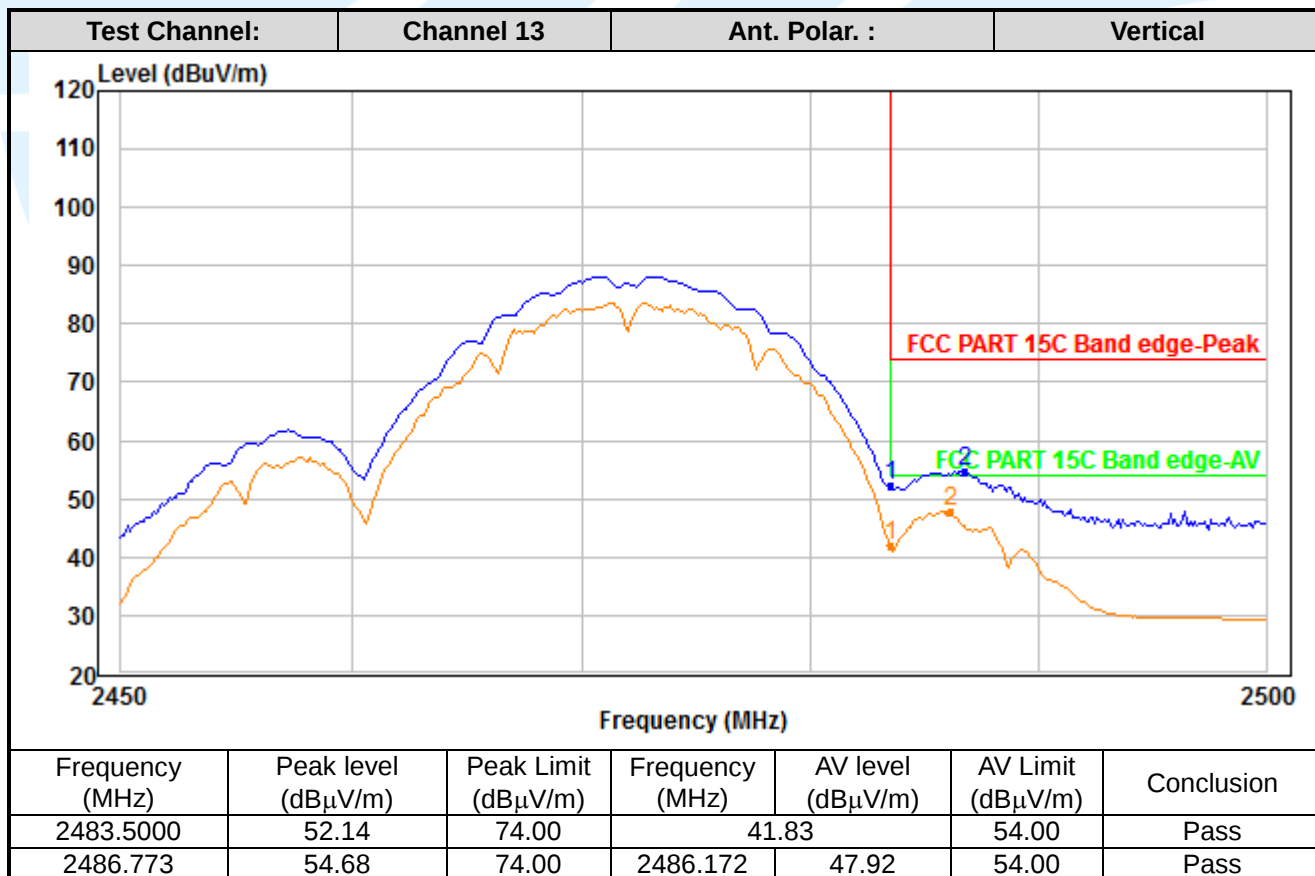
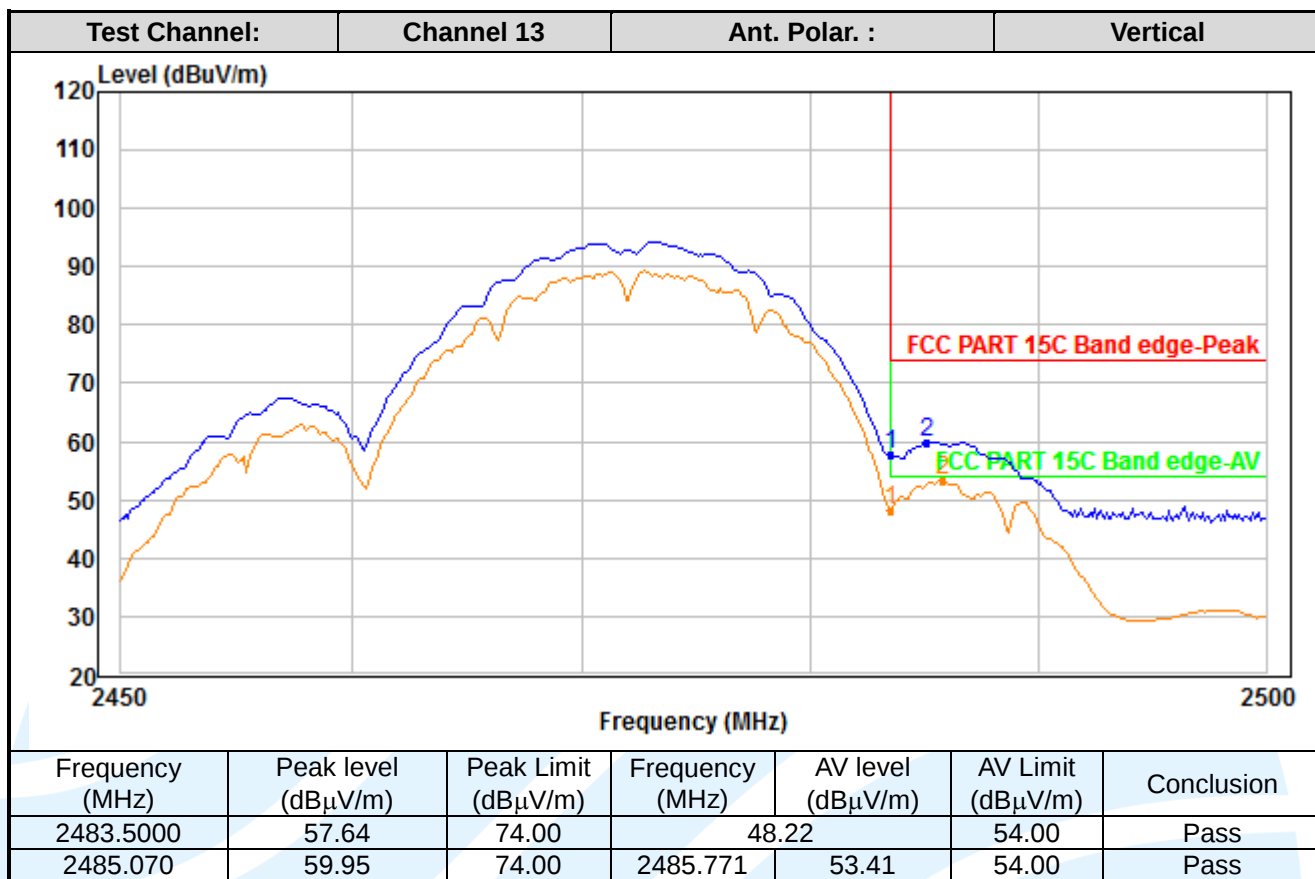
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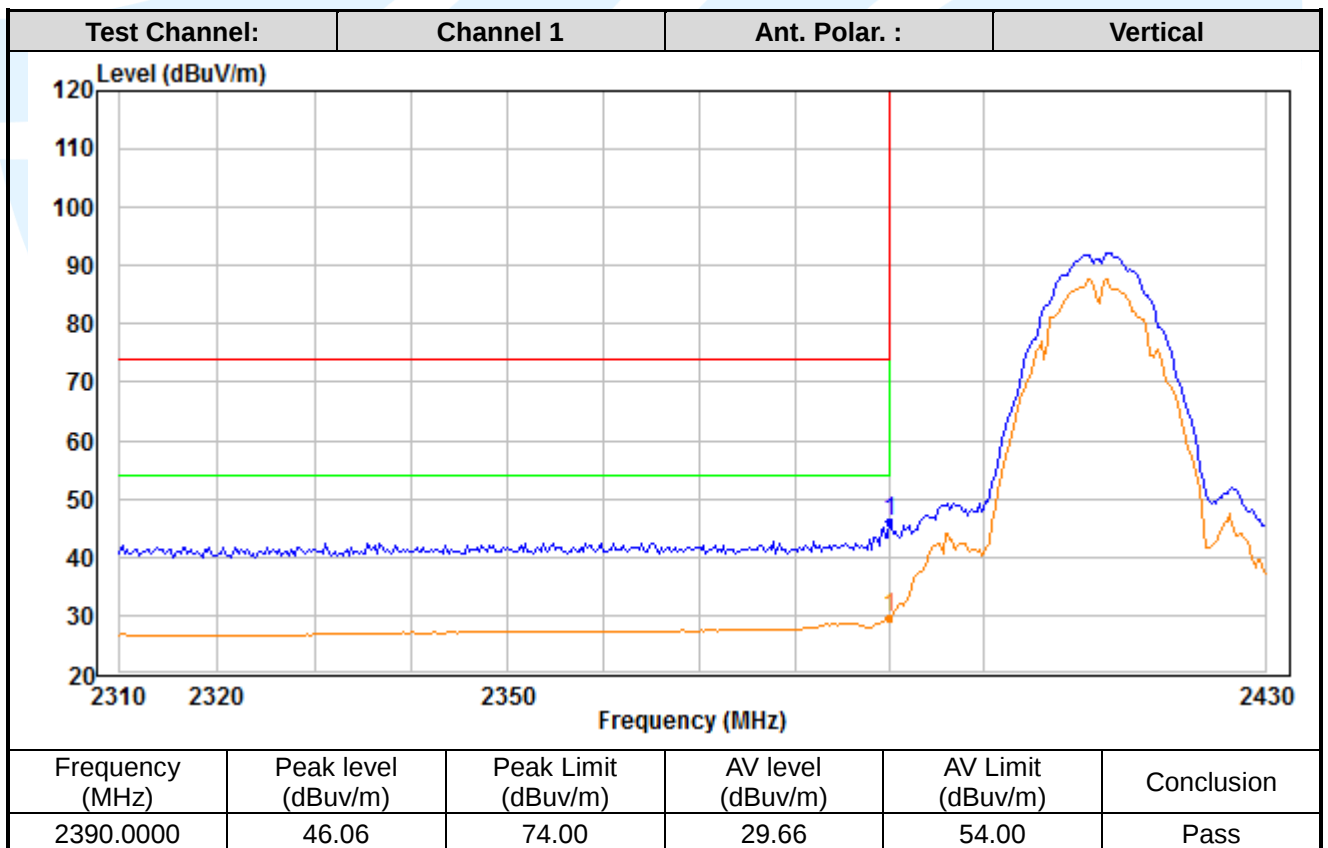
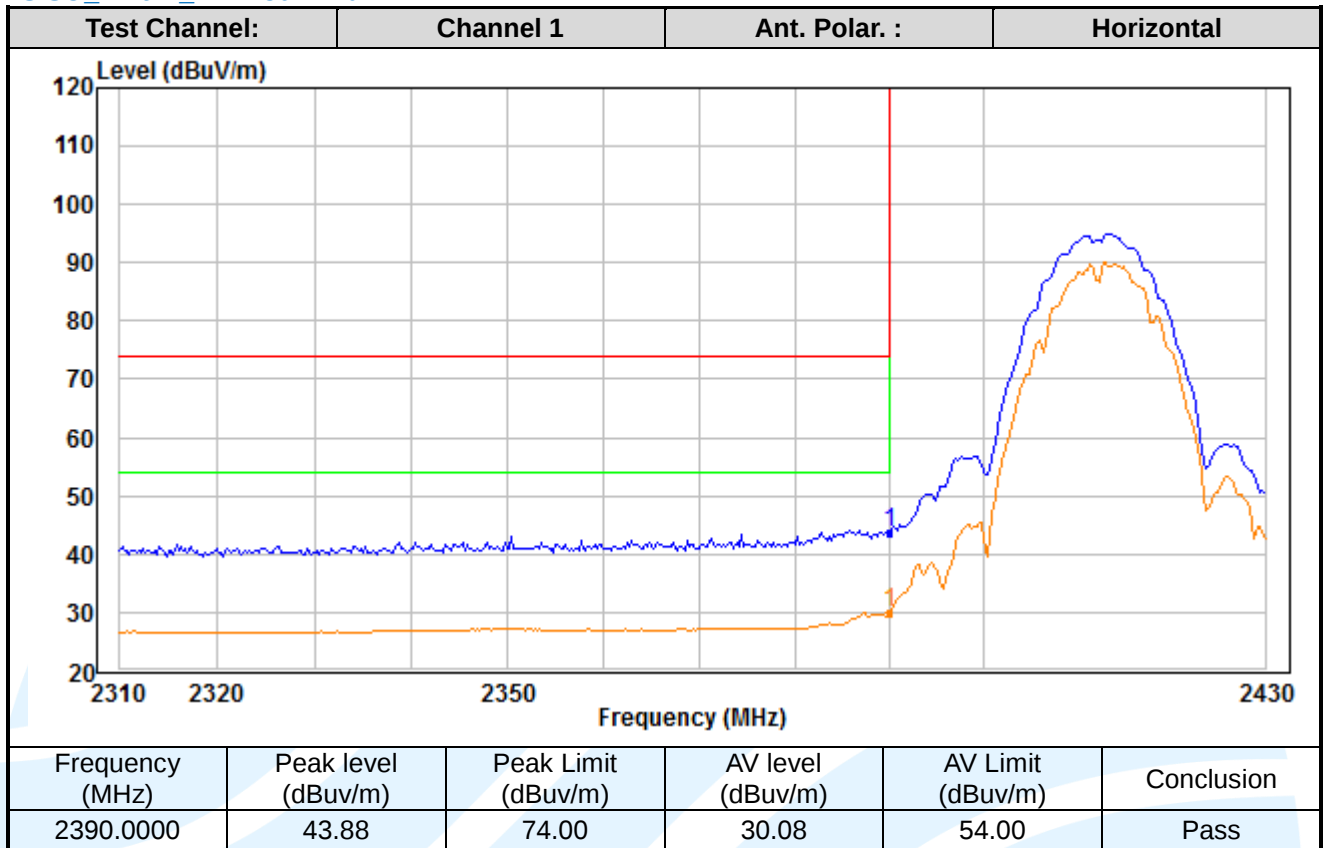
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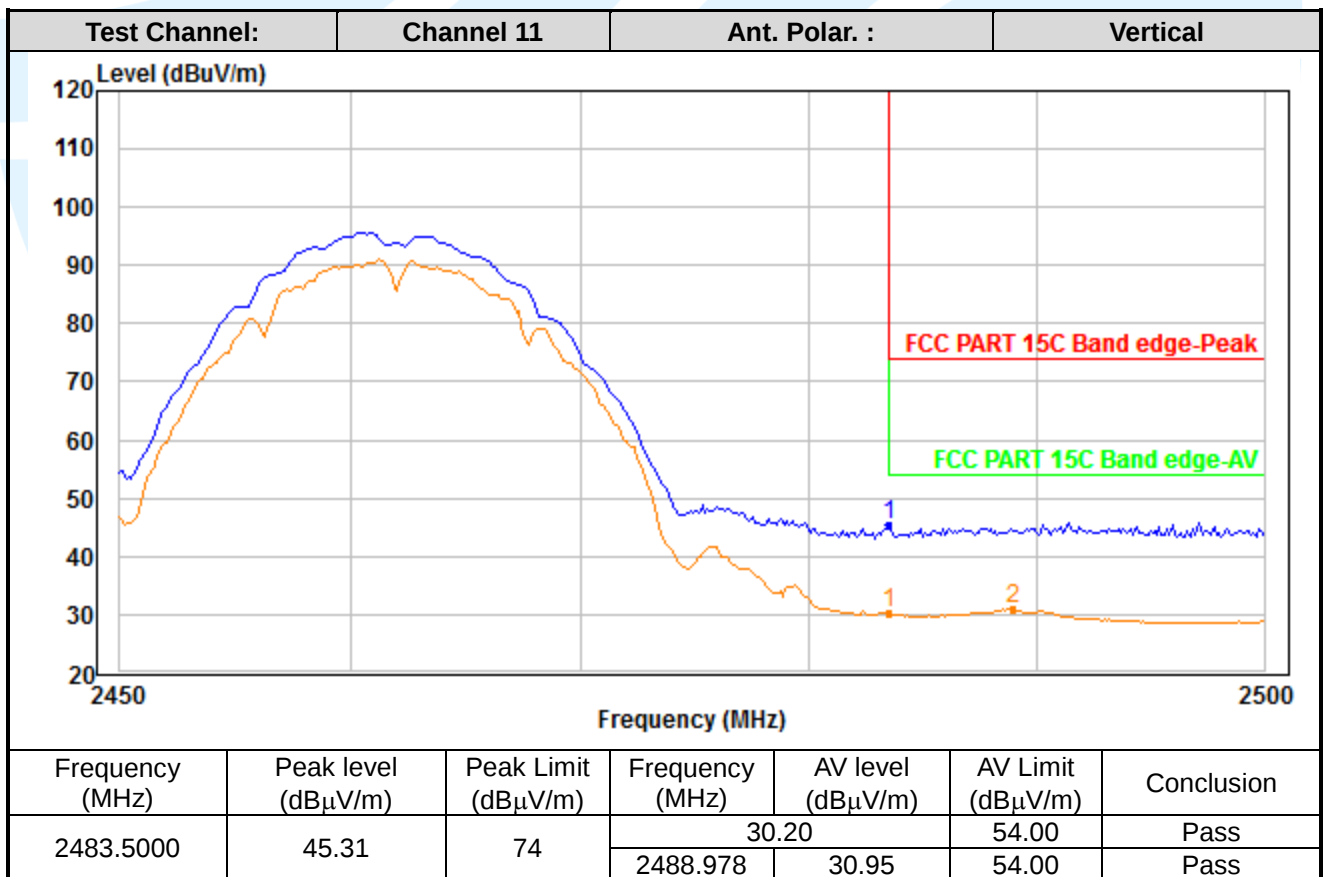
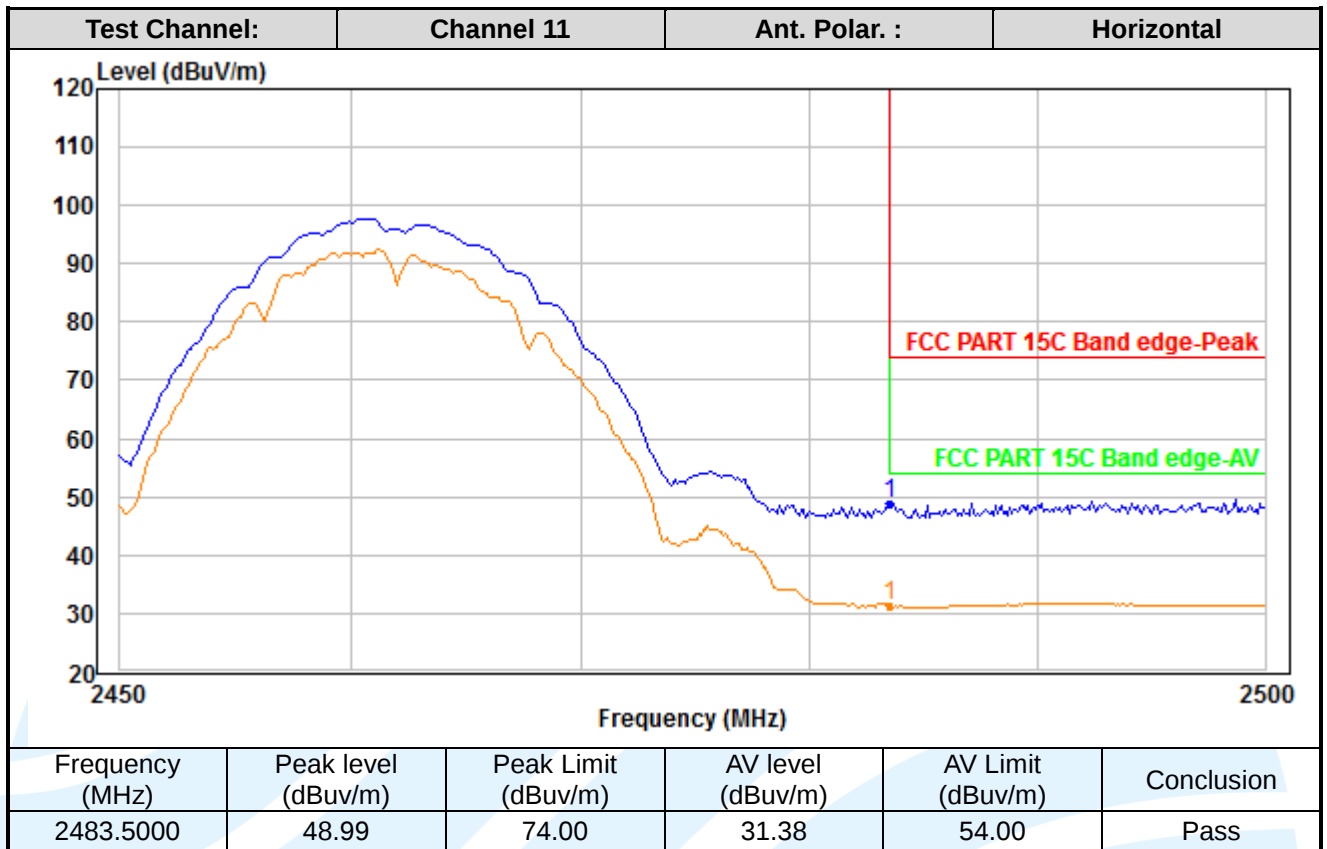
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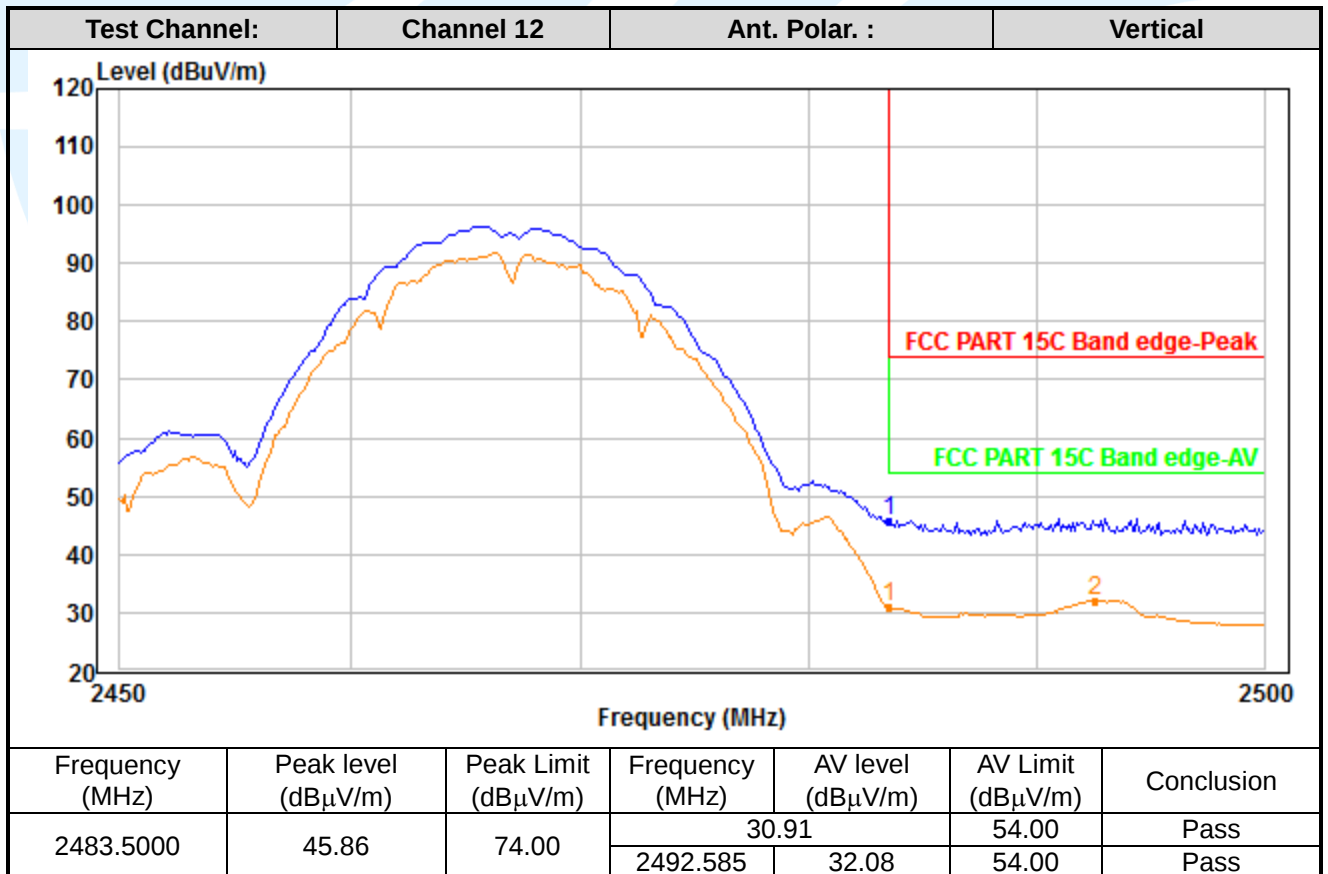
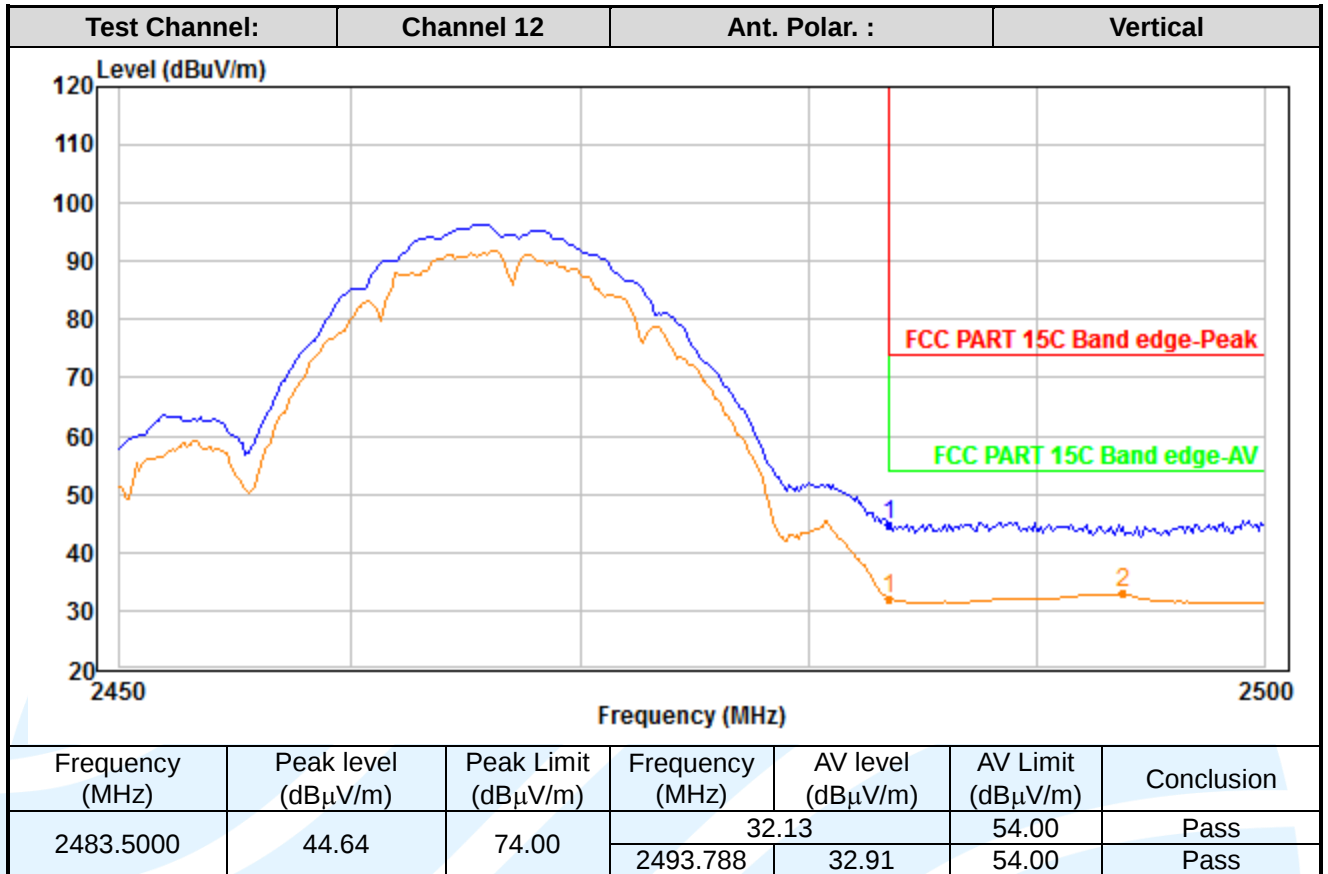
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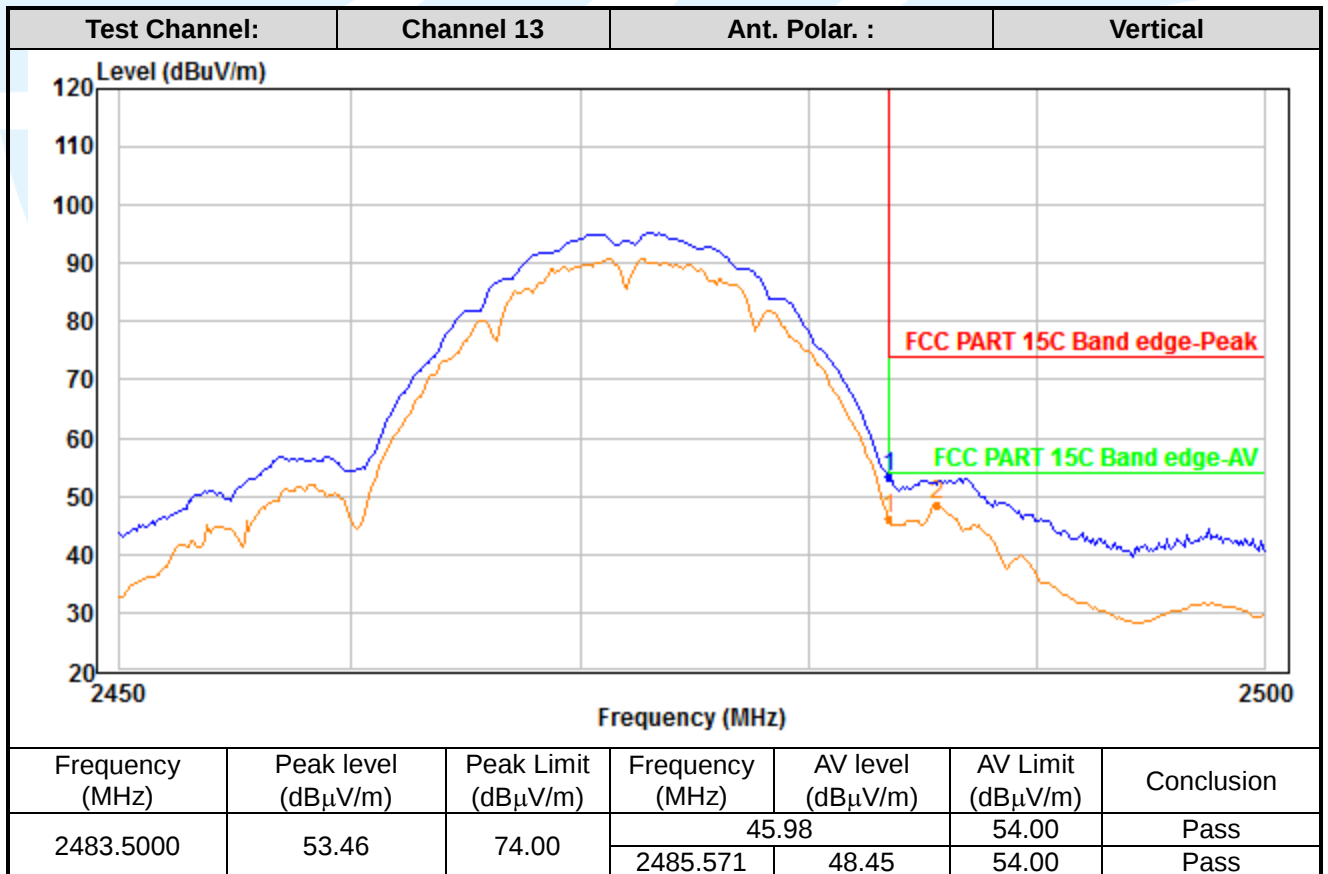
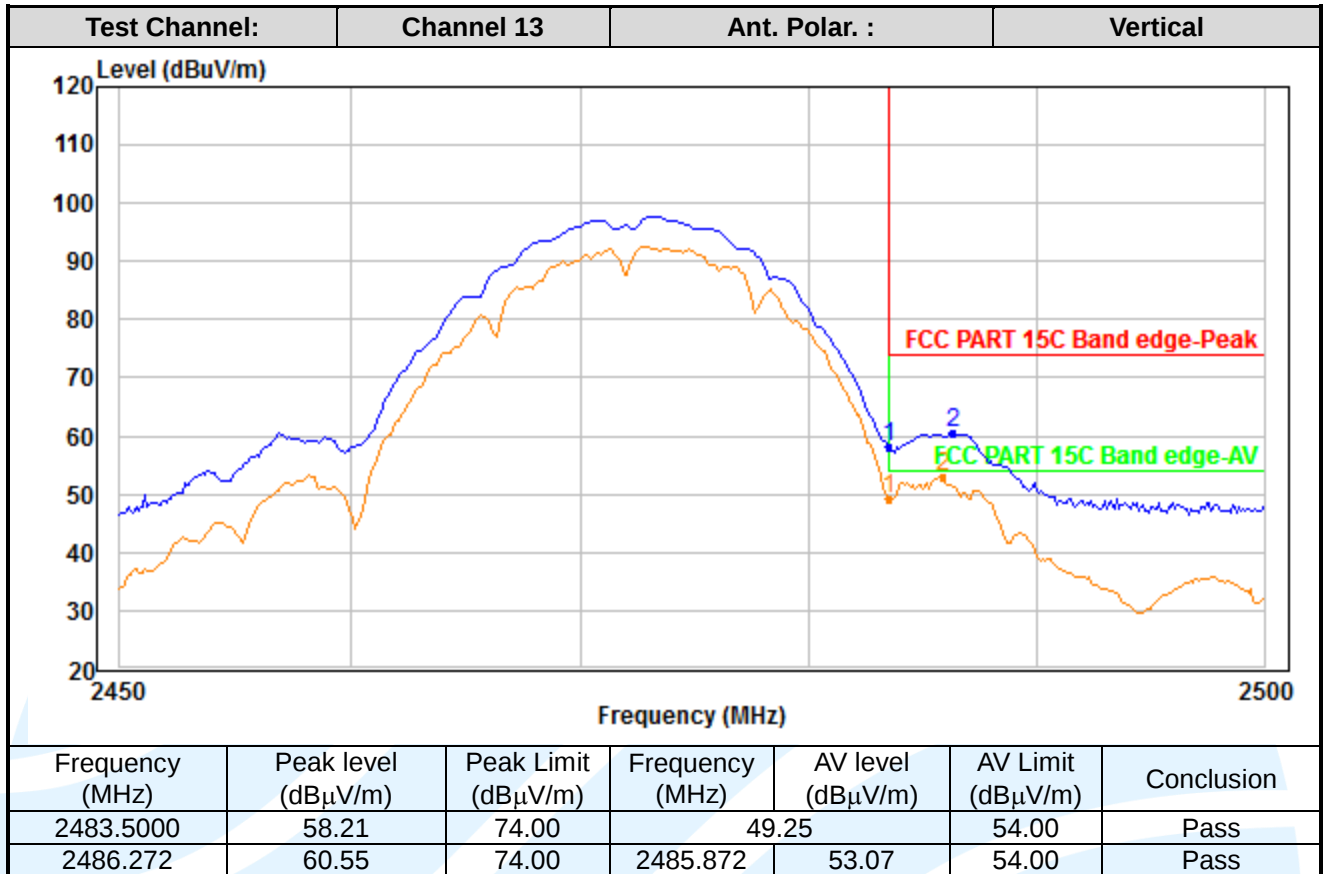
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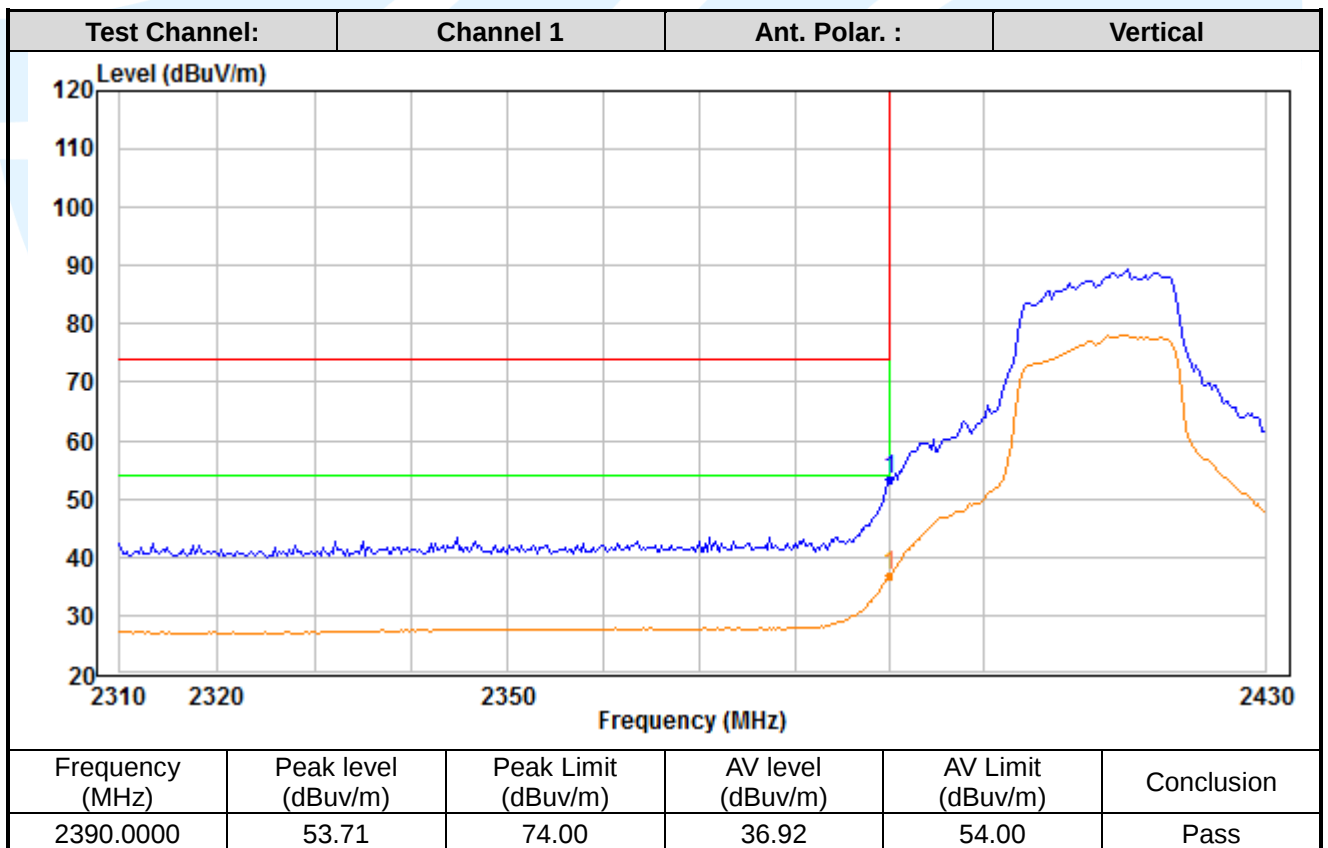
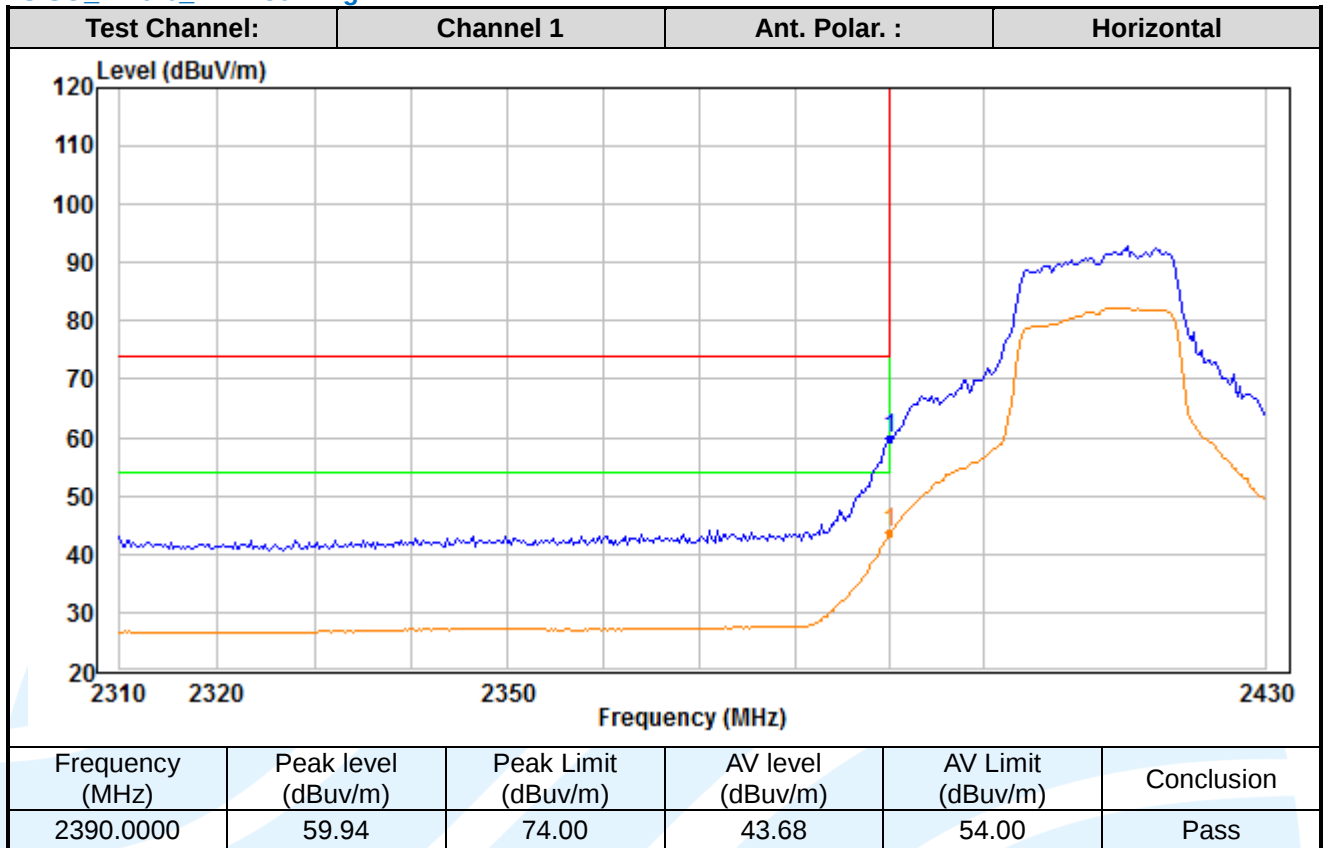
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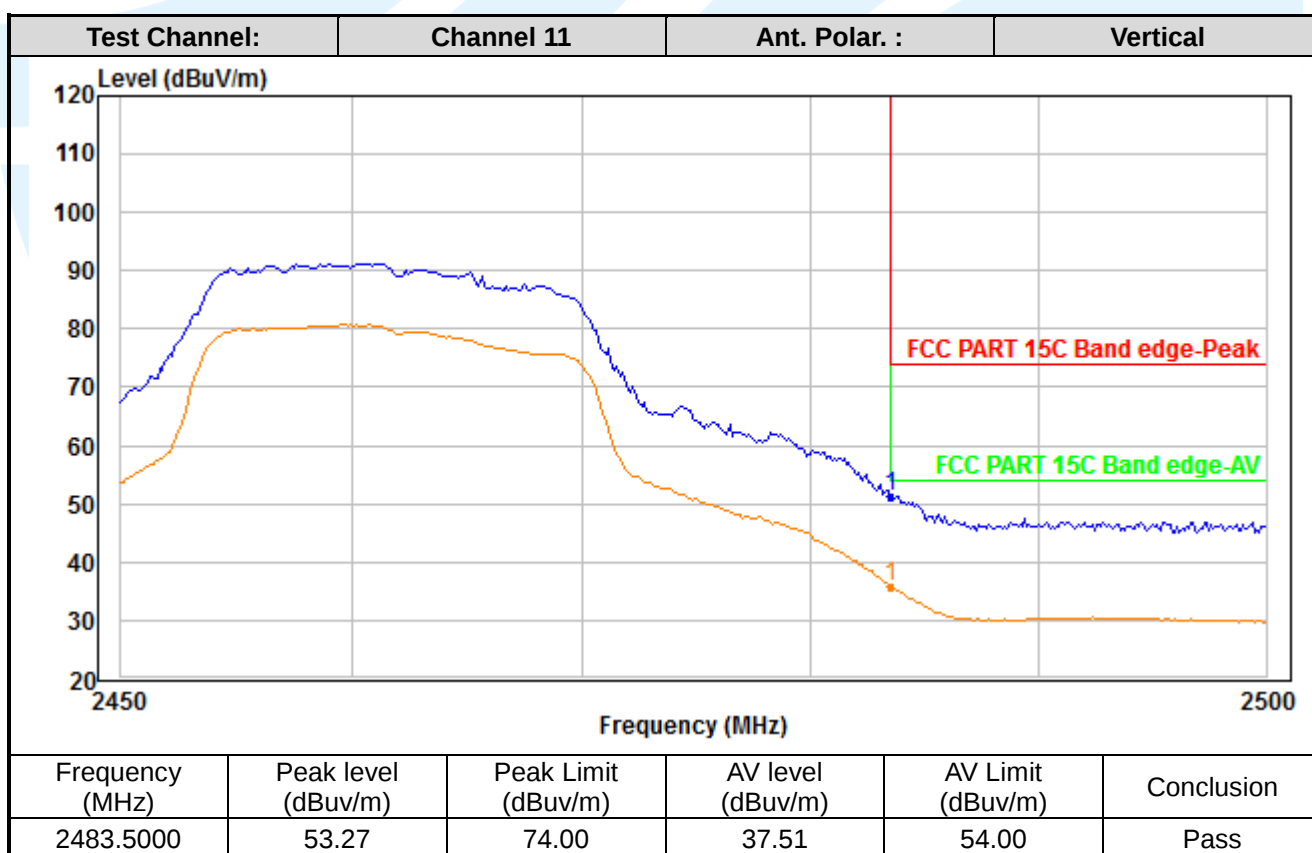
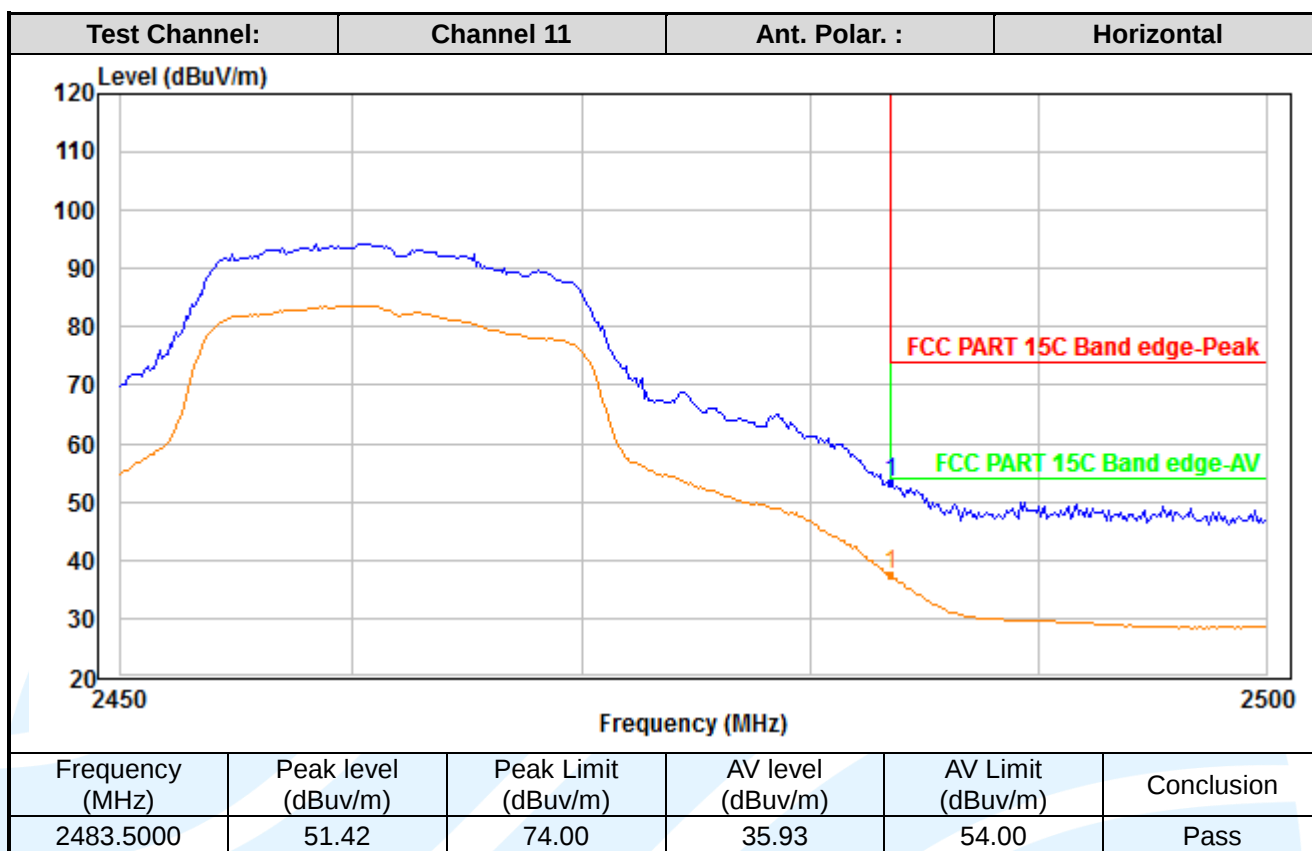
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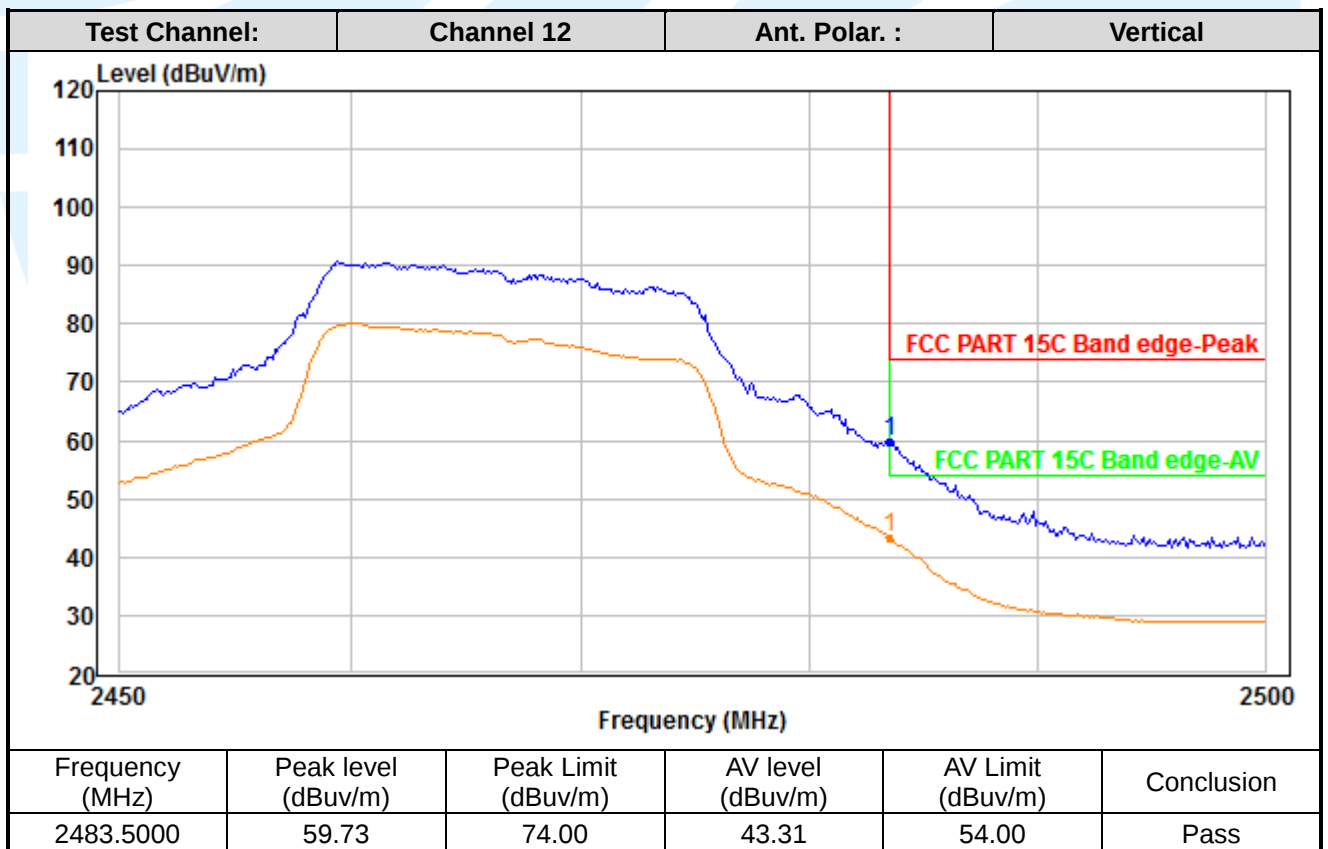
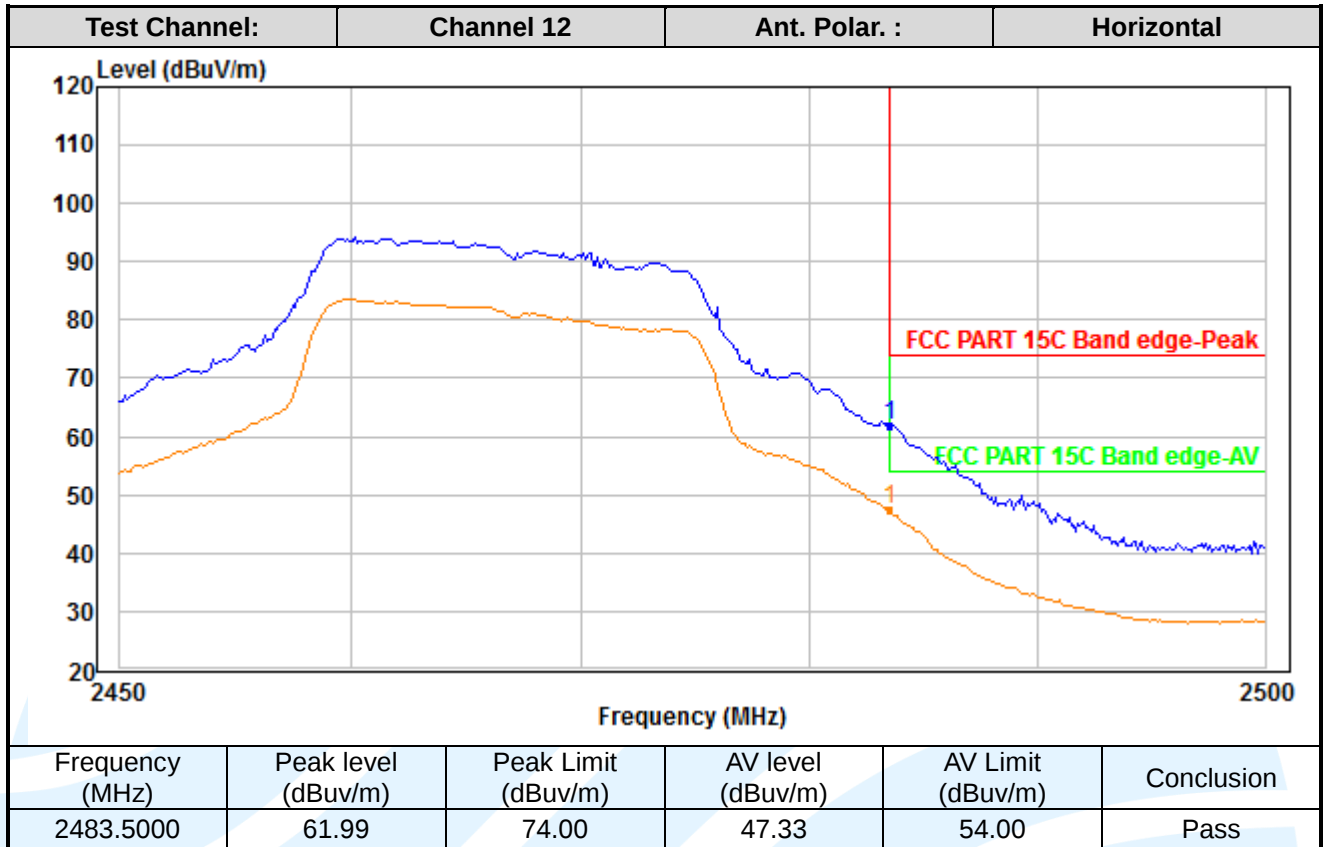
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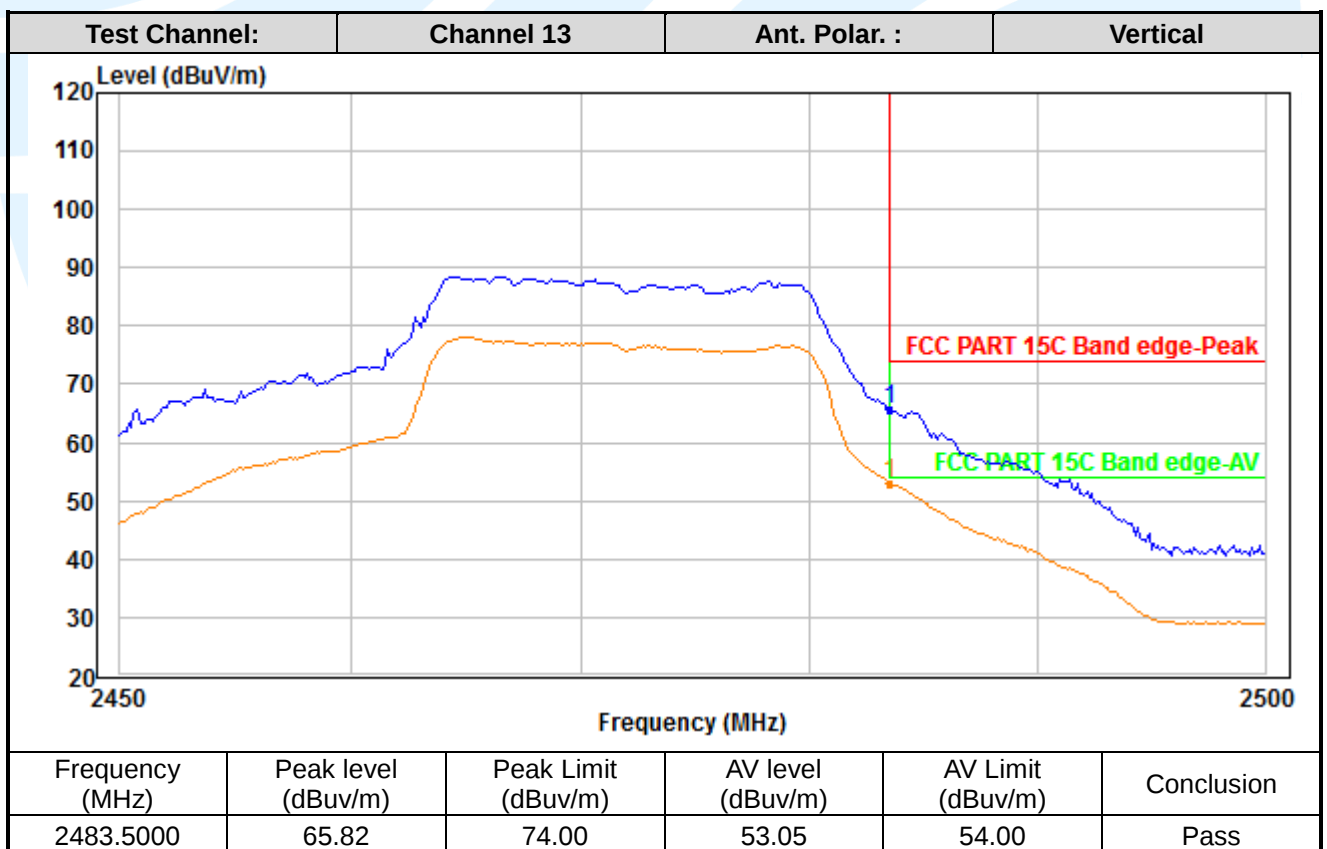
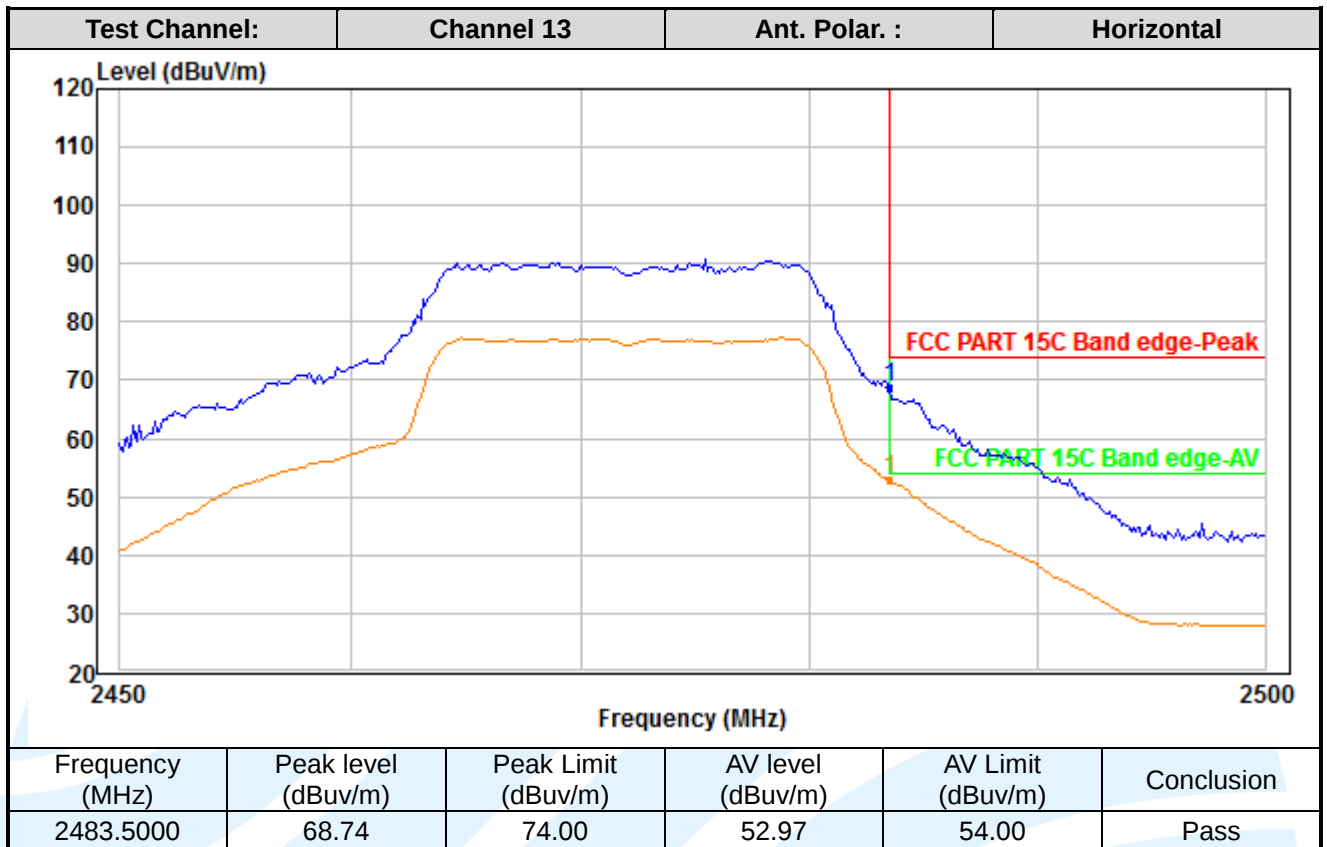
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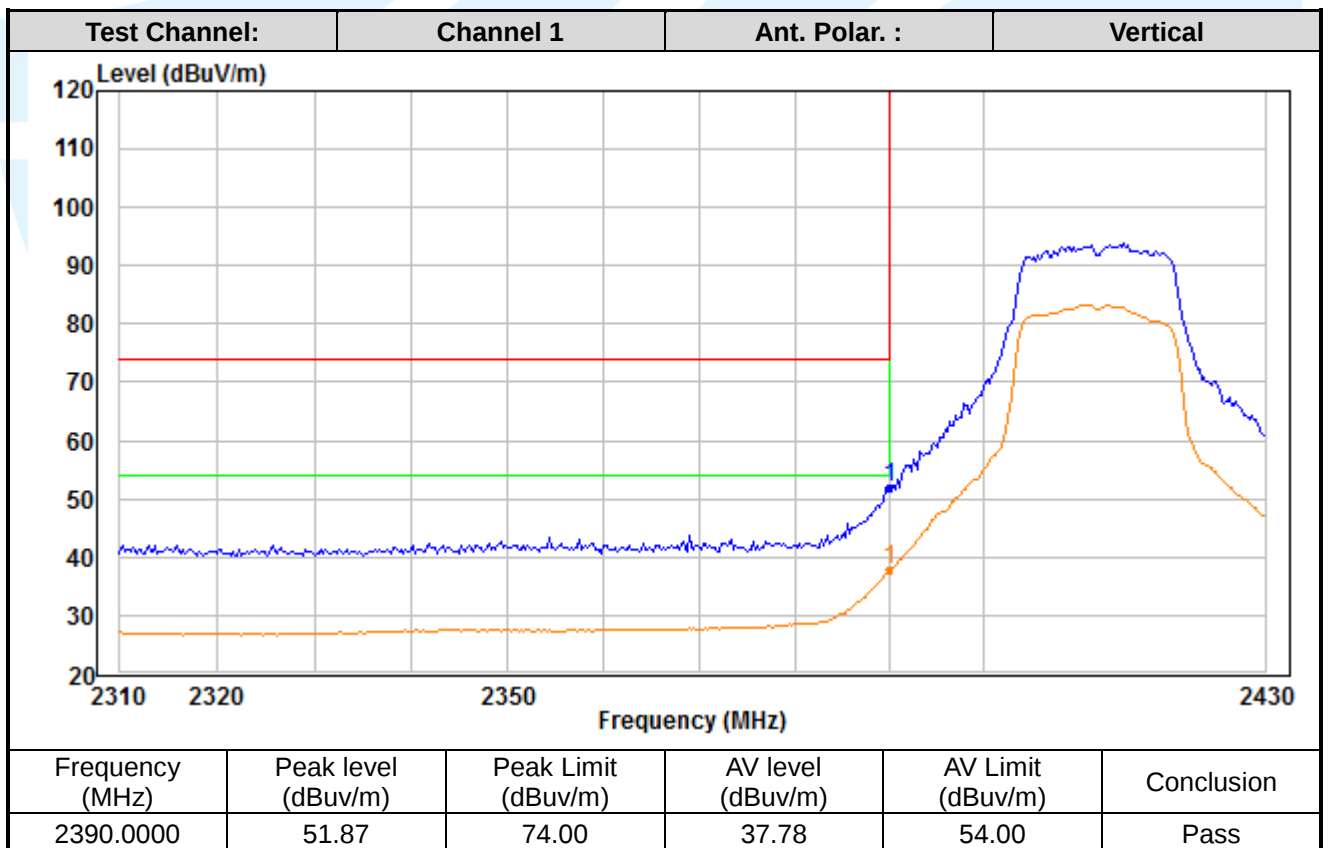
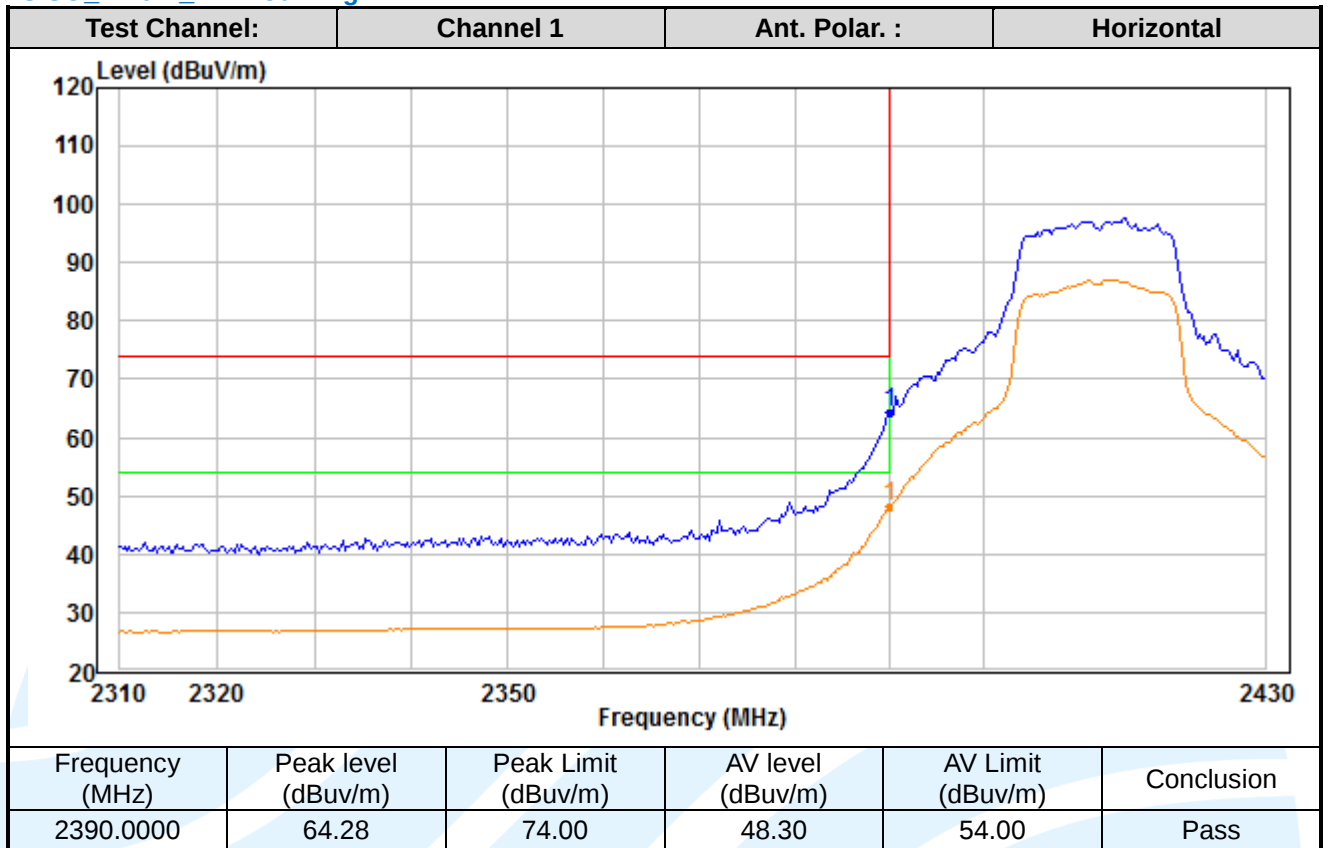
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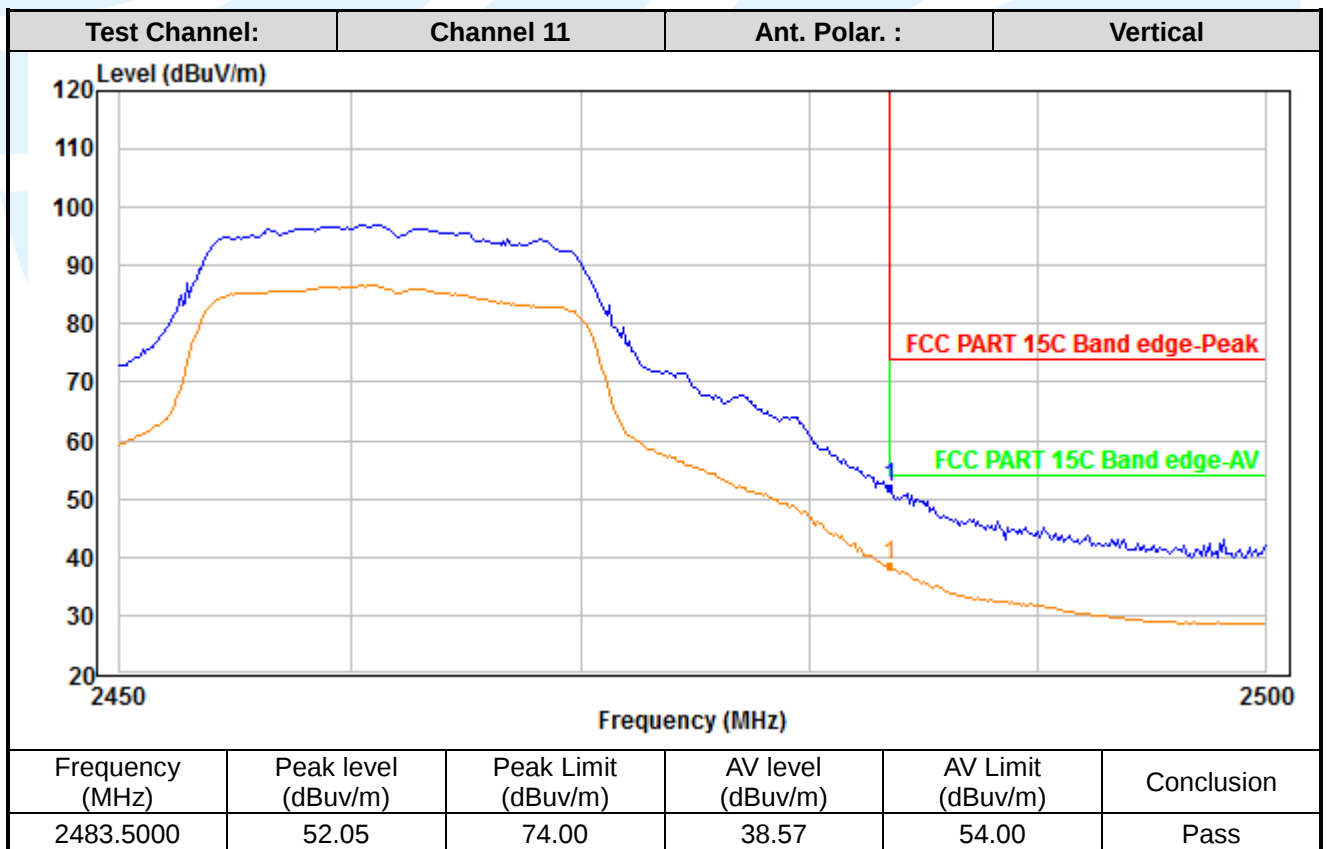
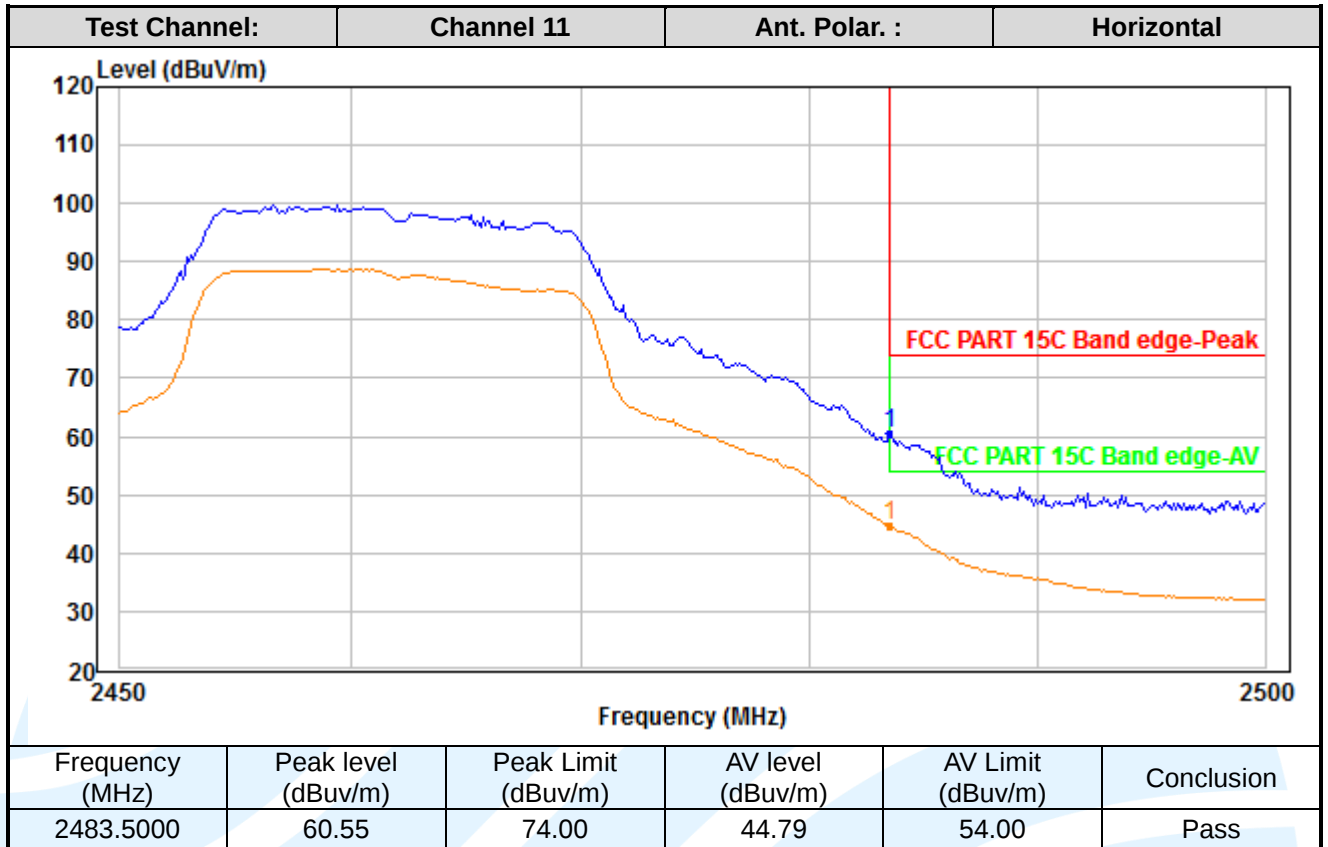
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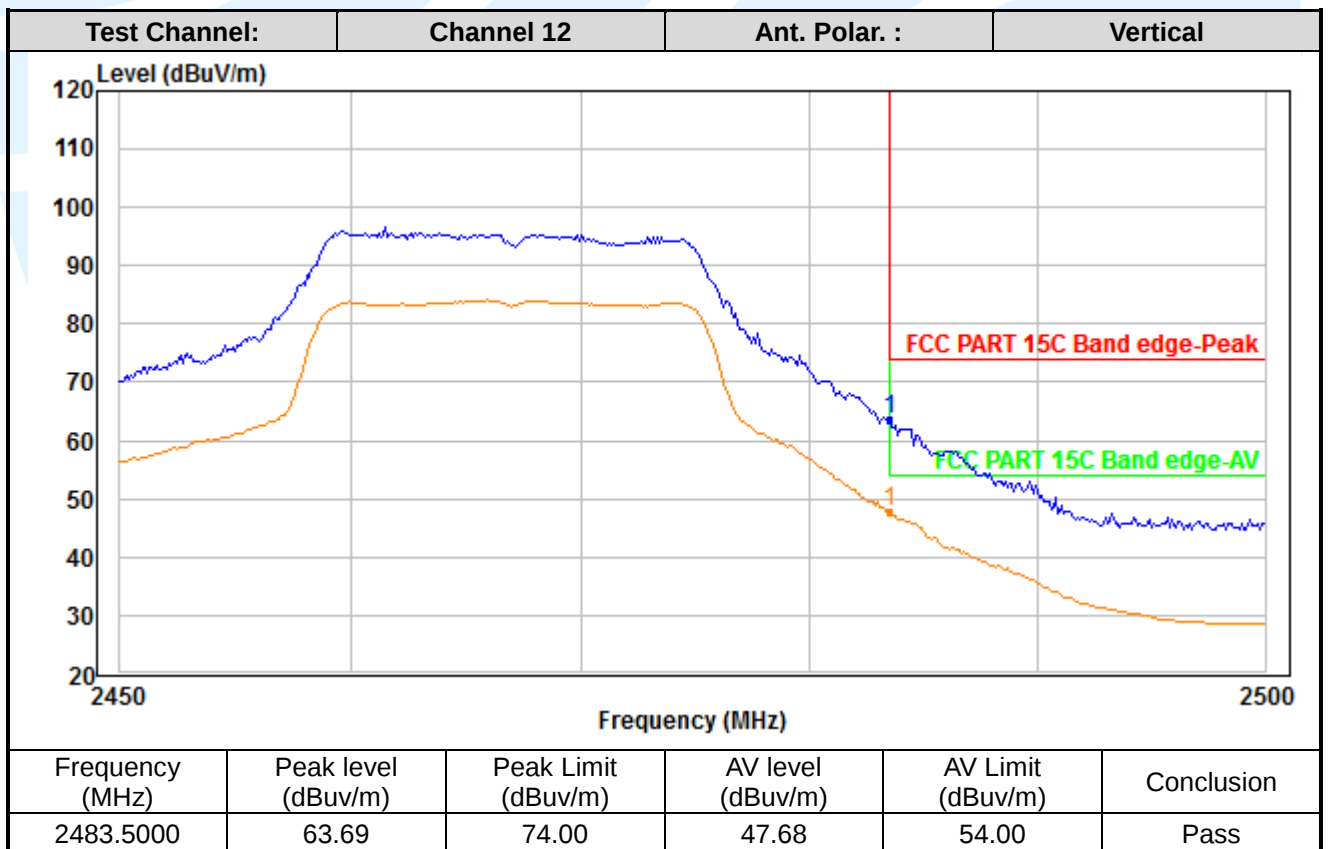
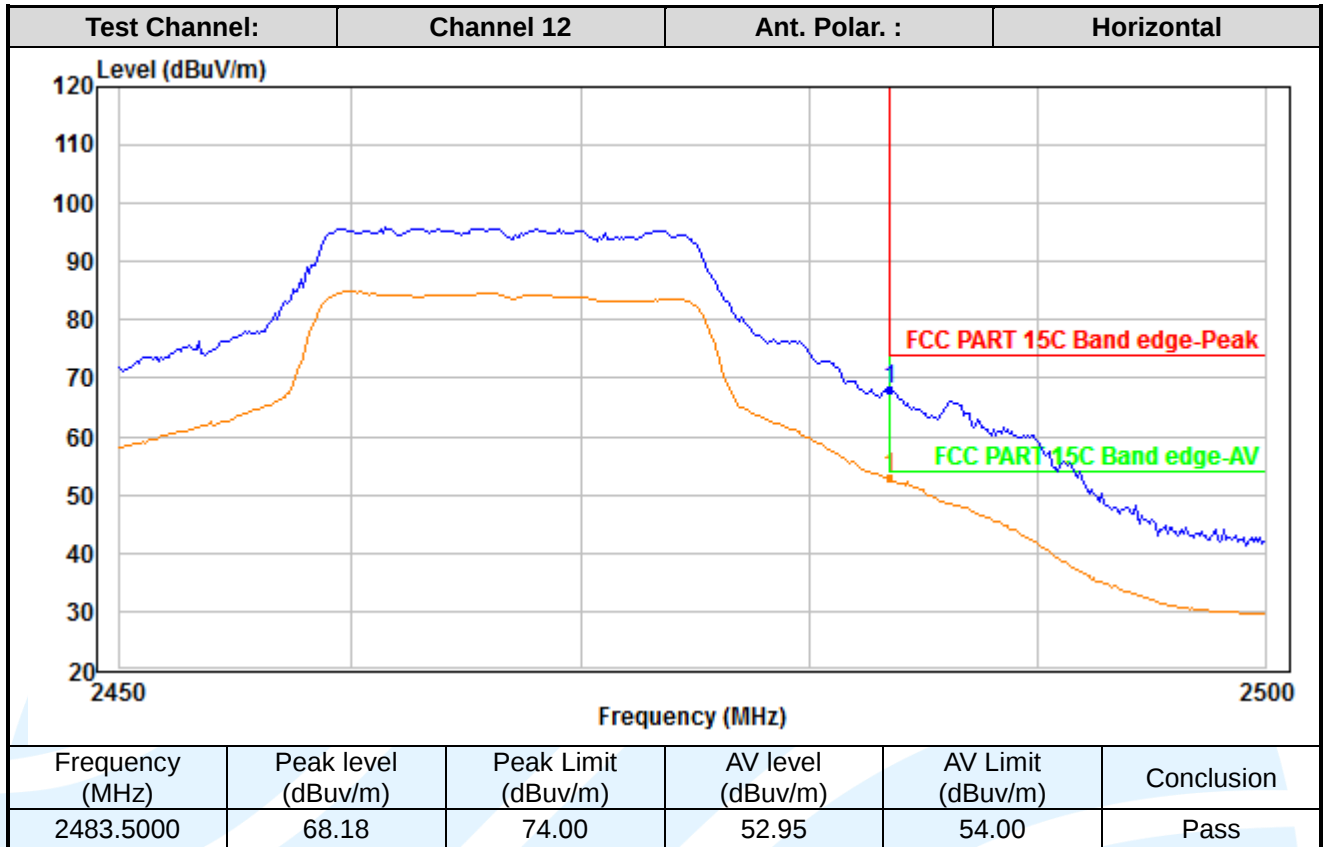
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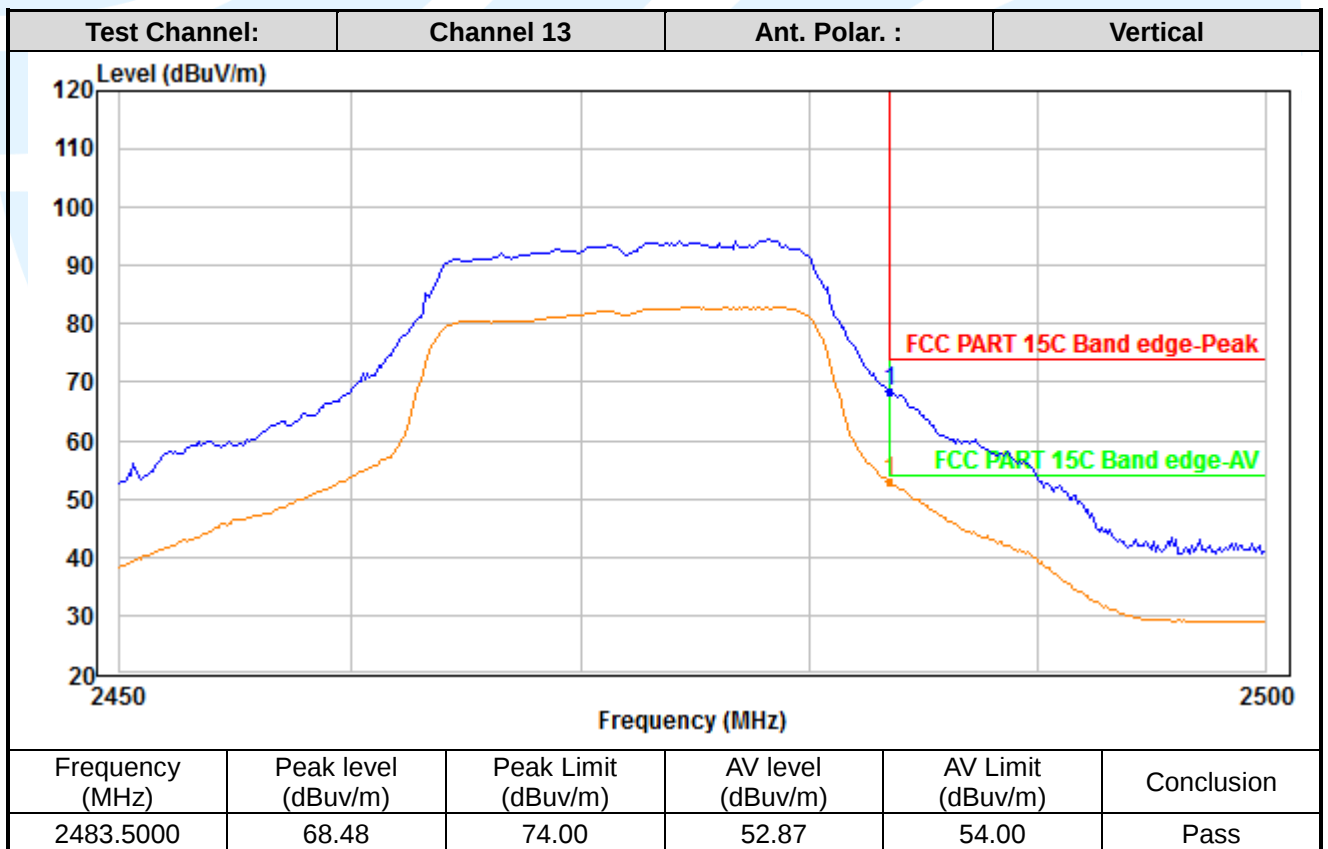
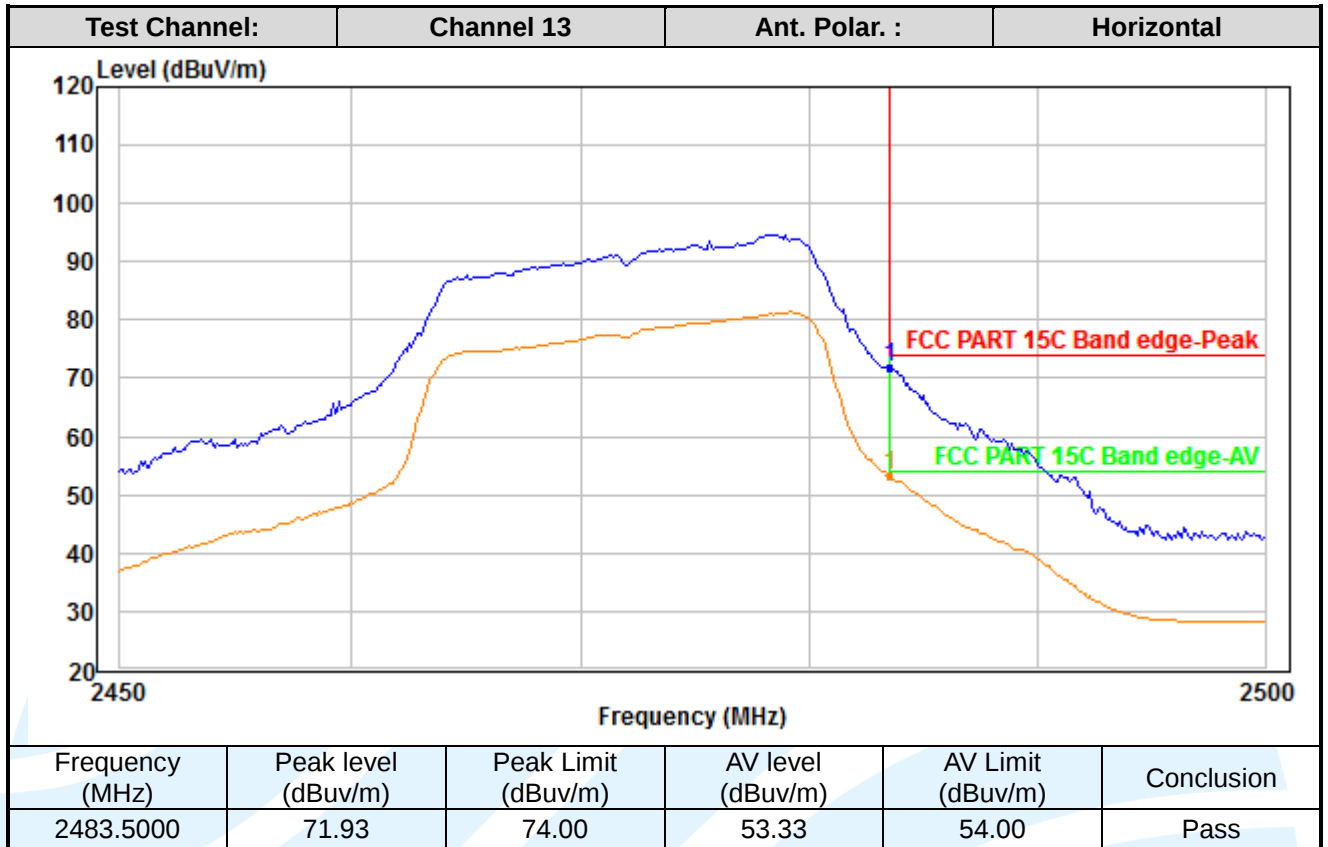
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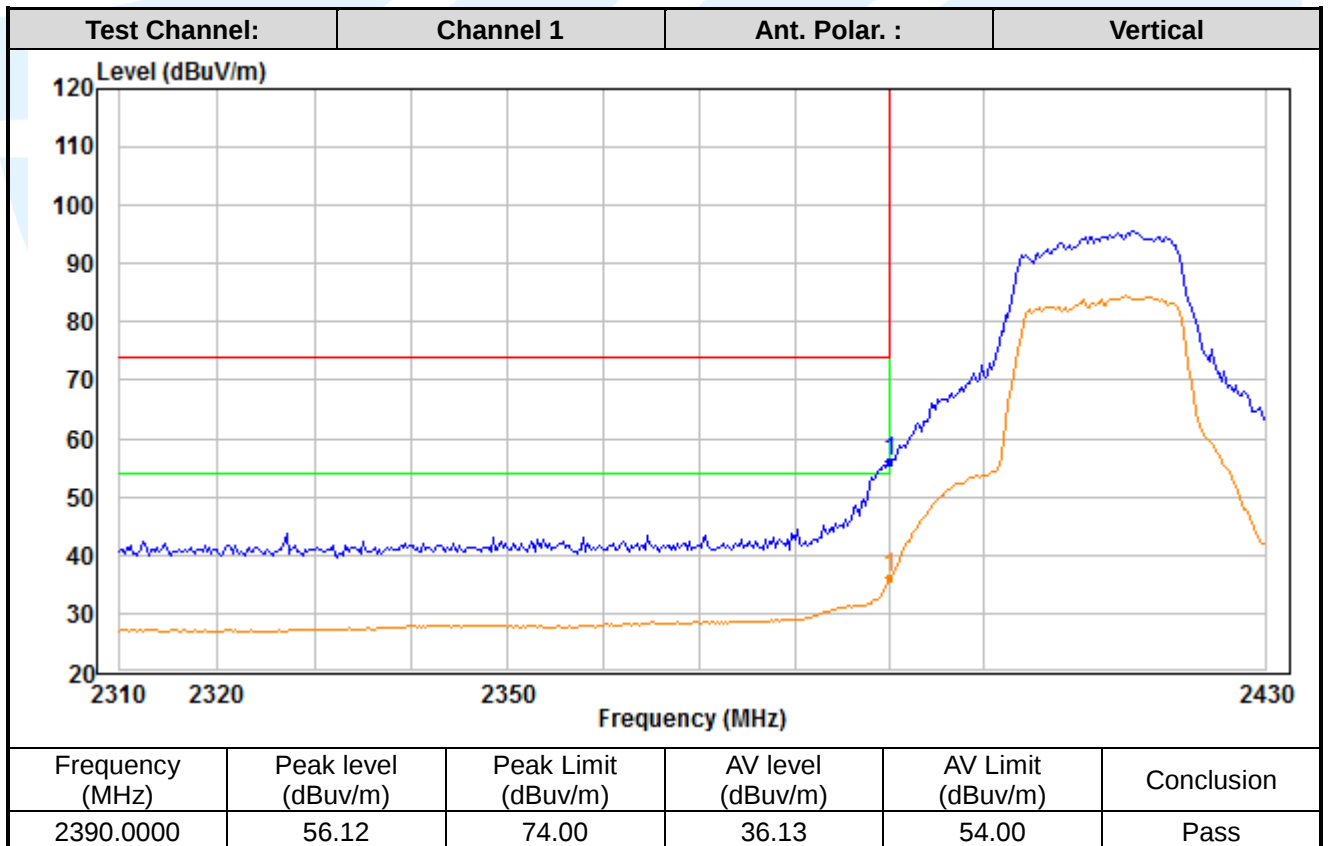
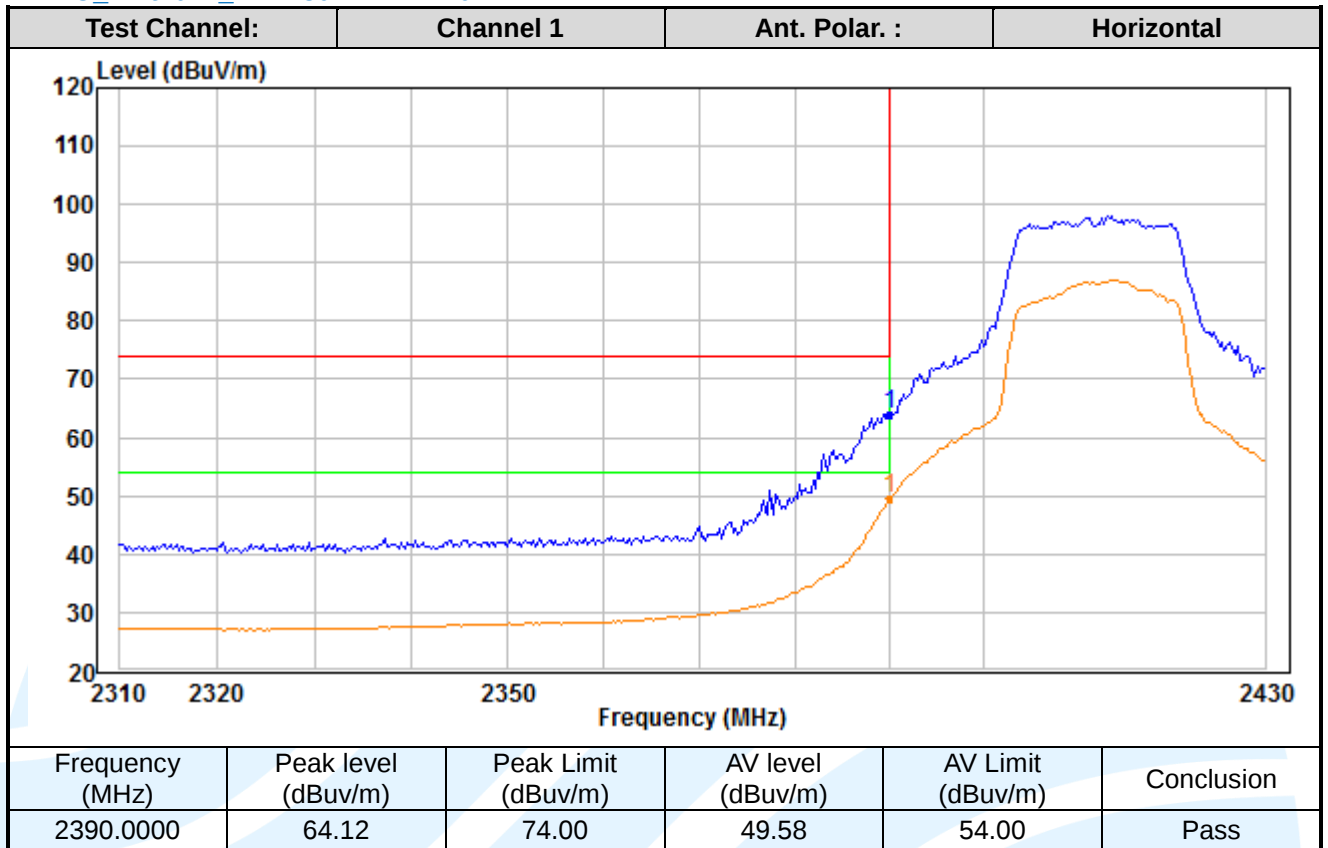
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MIMO_Ant. 0+1_ IEEE 802.11n-HT20



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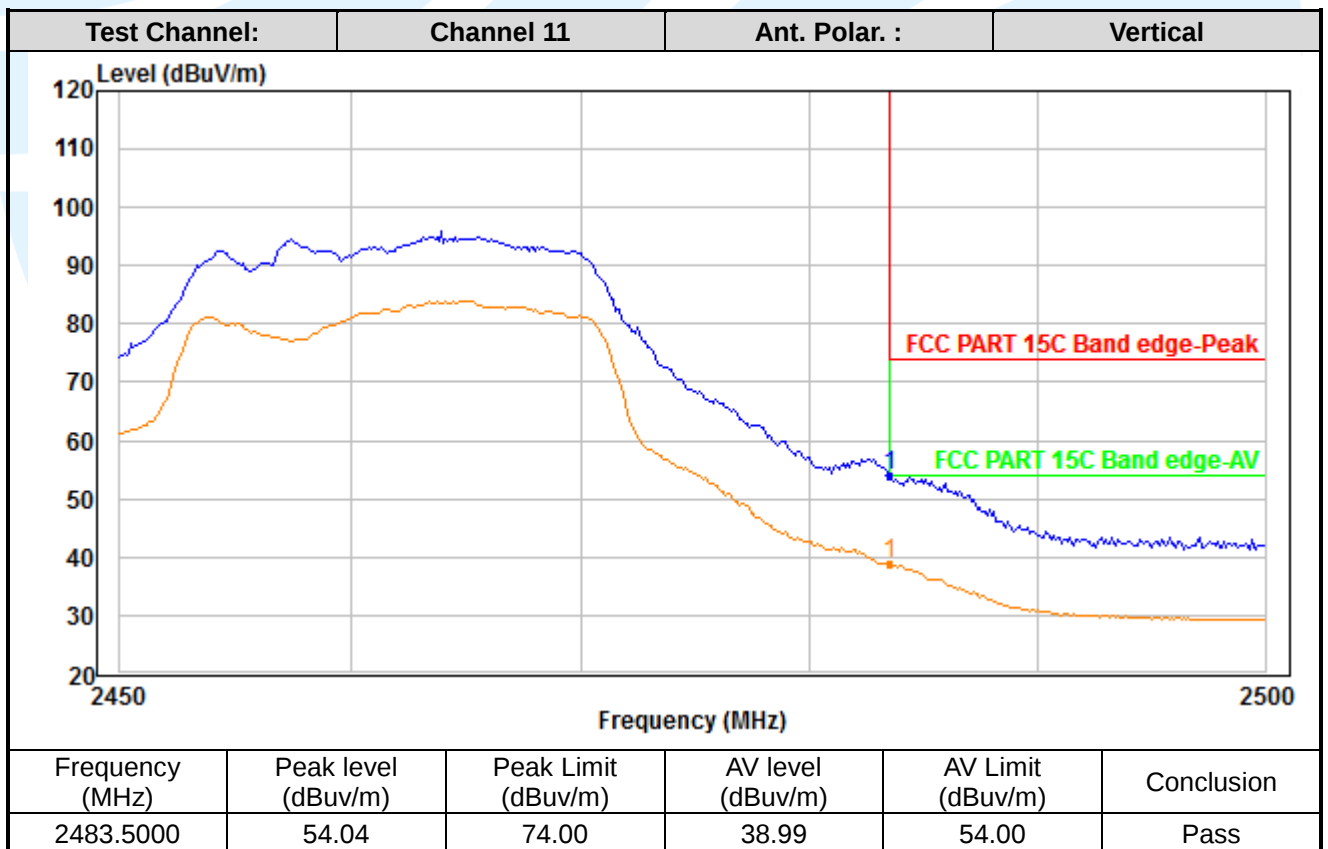
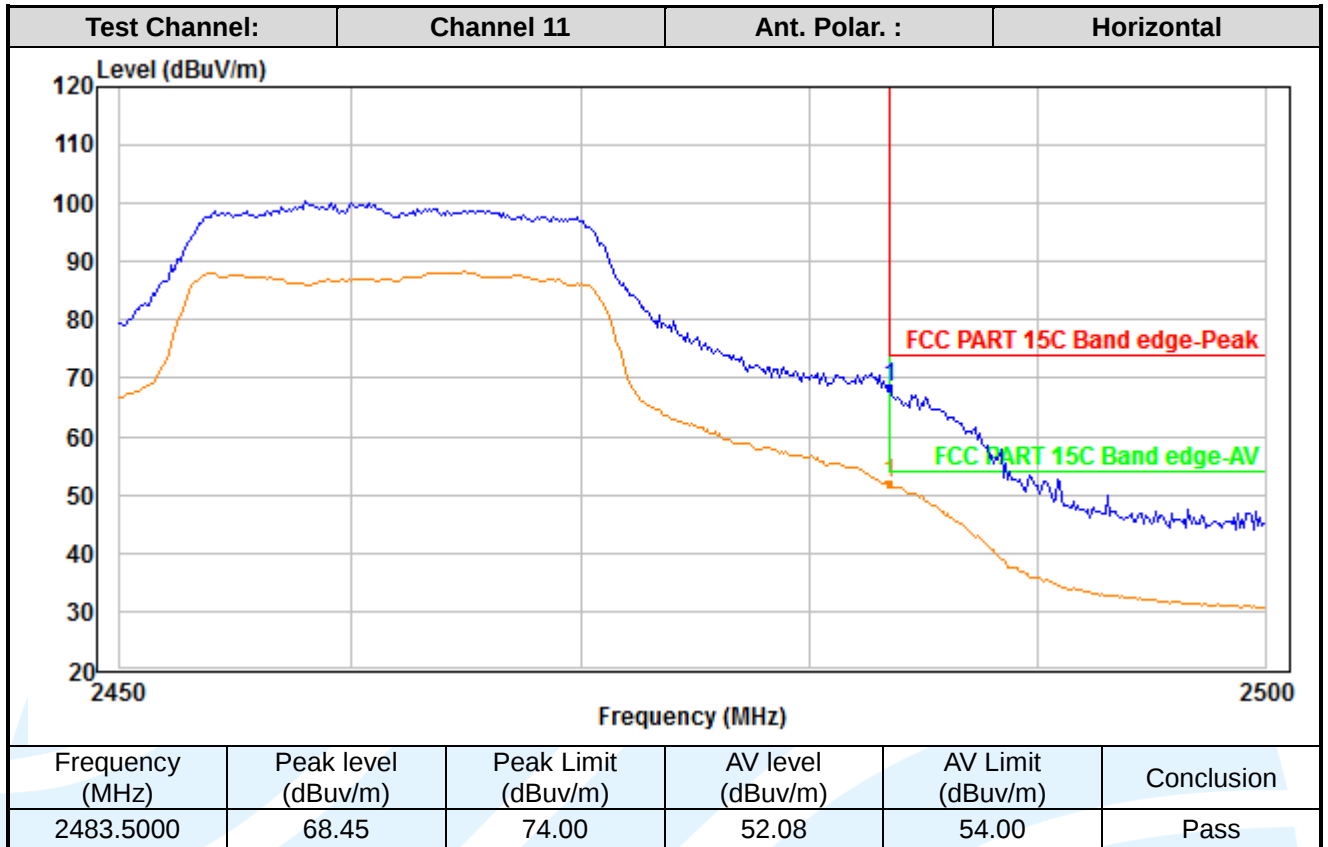
Tel: +86-755-28230888

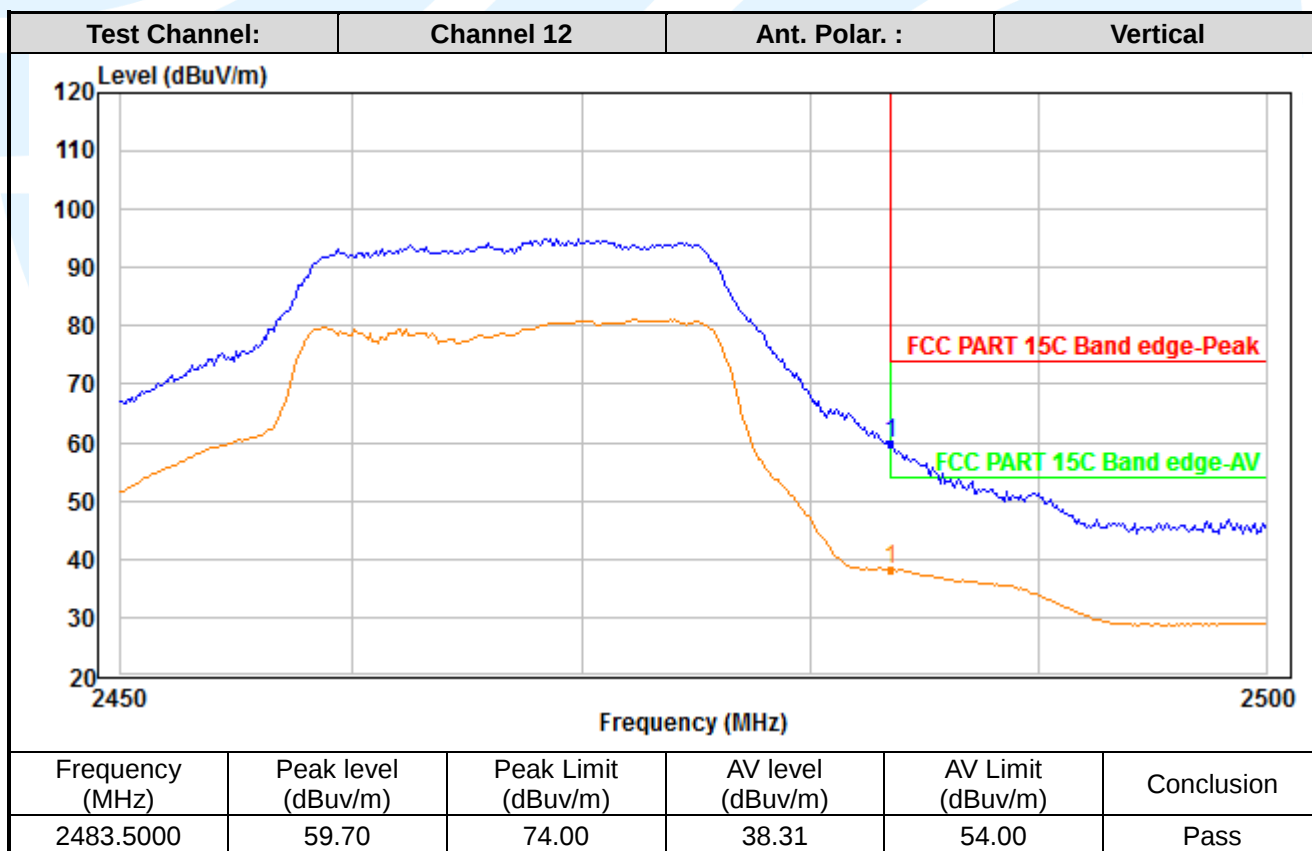
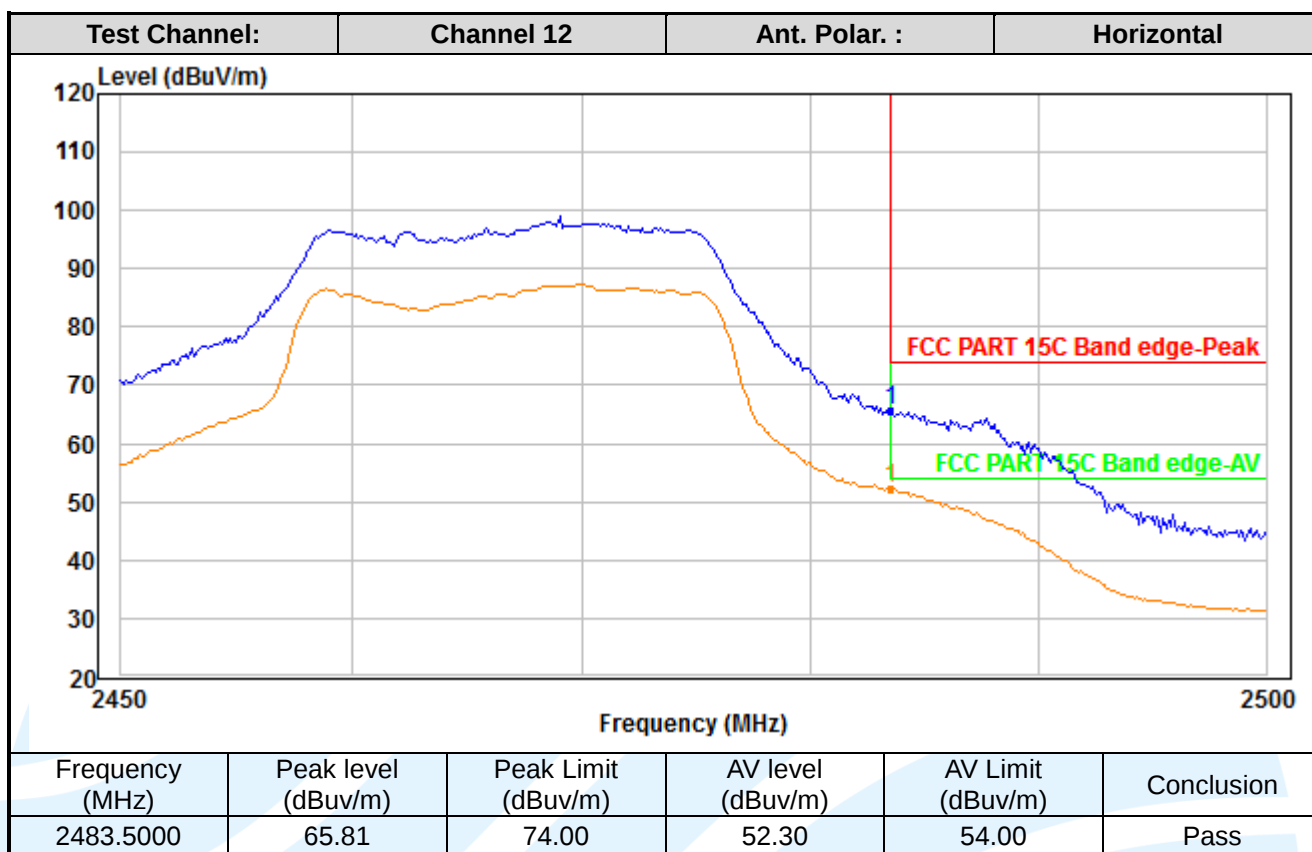
Fax: +86-755-28230886

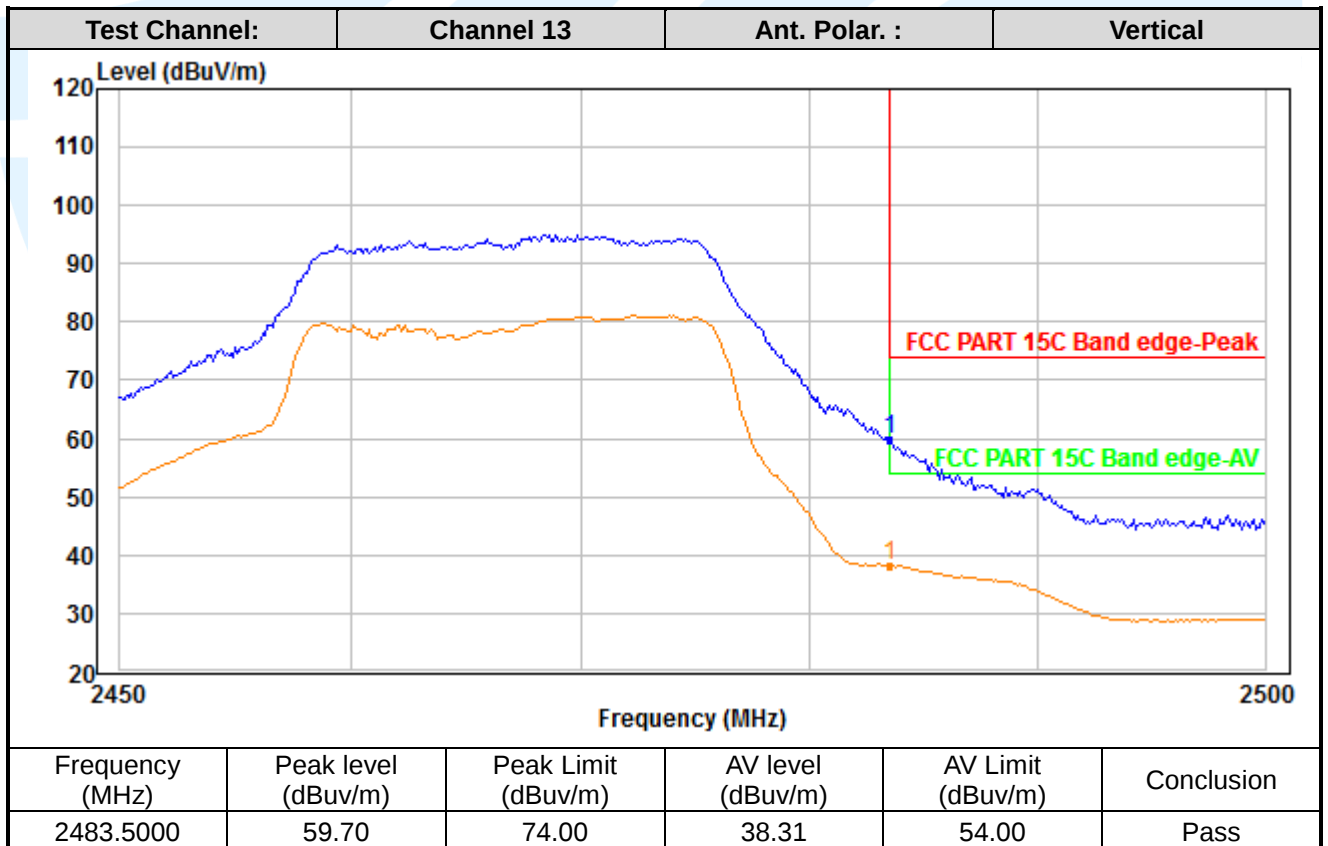
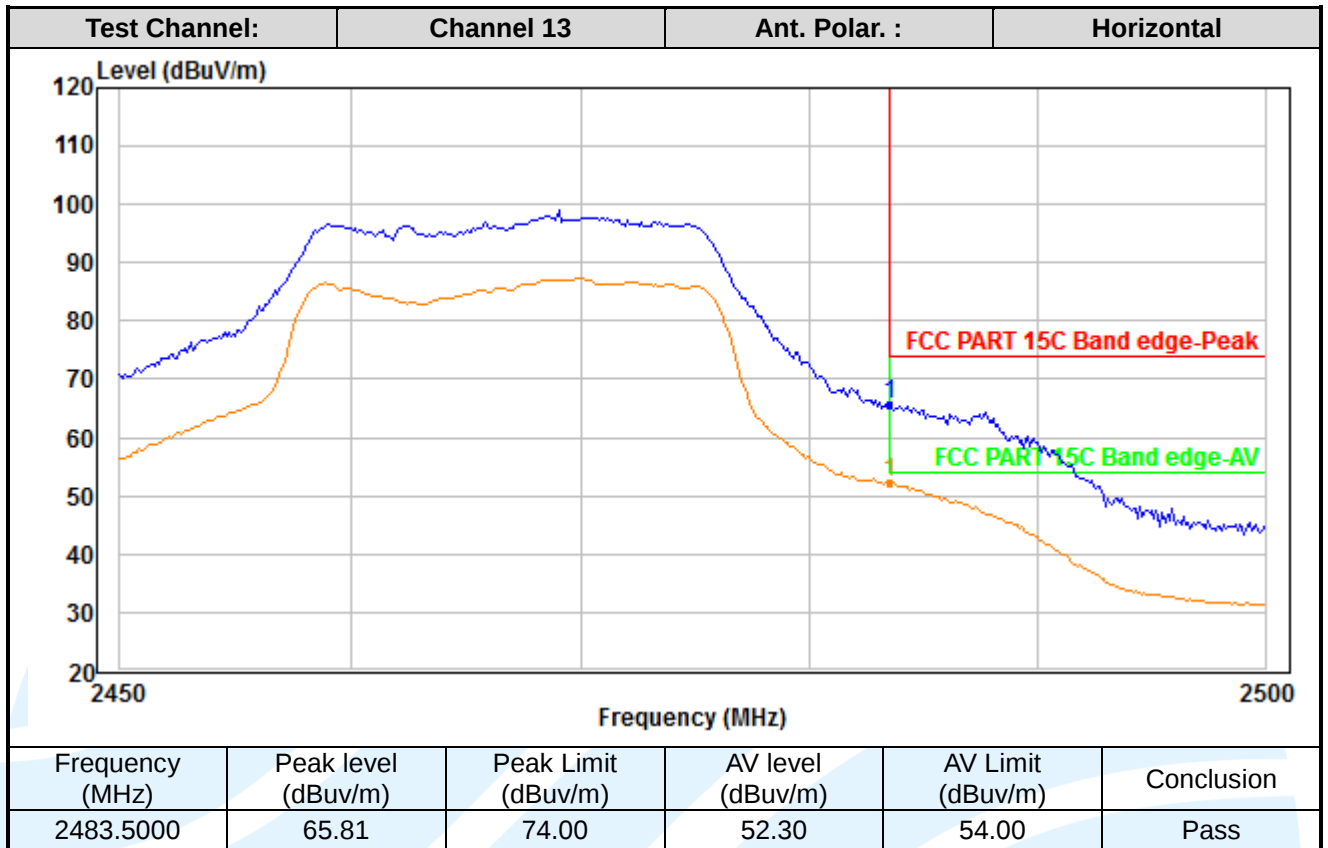
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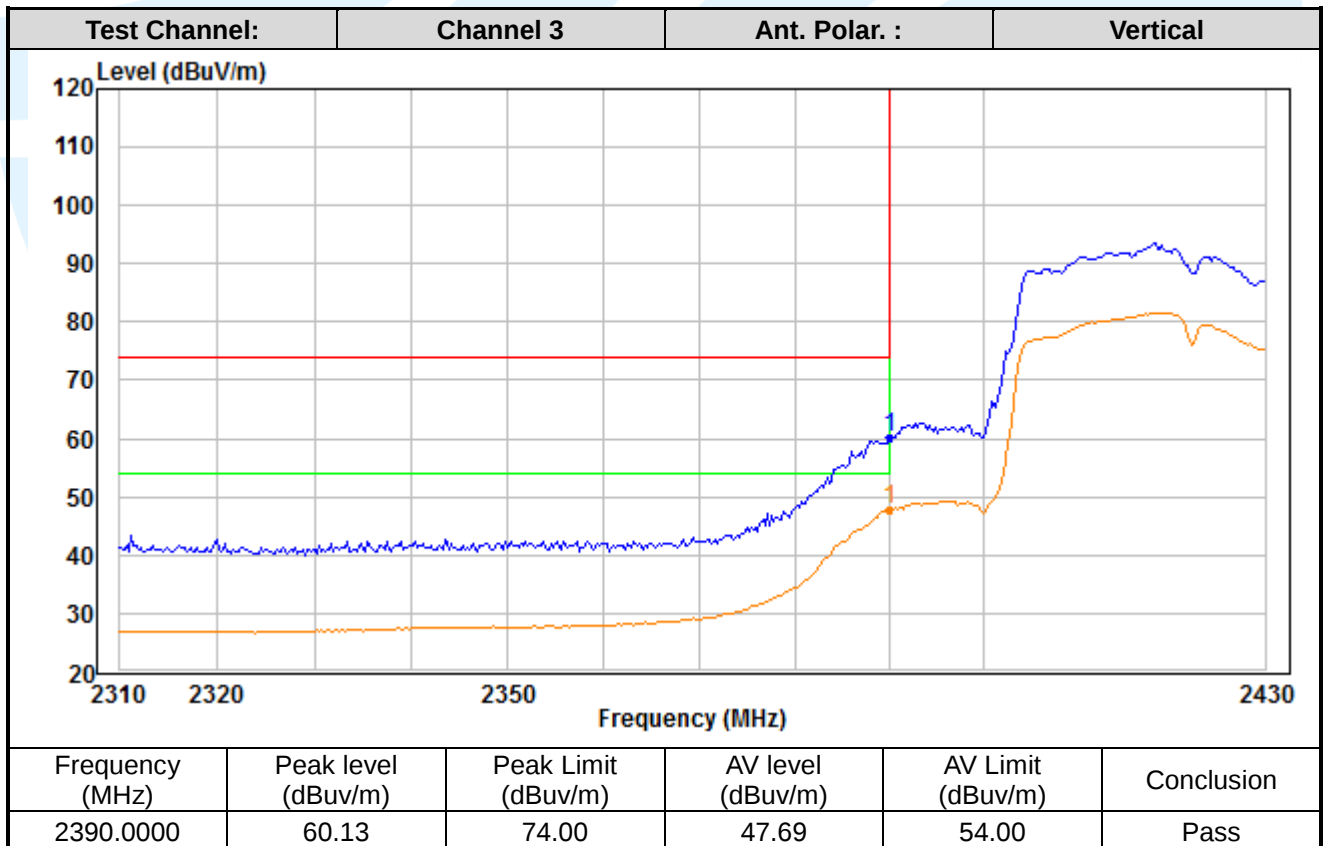
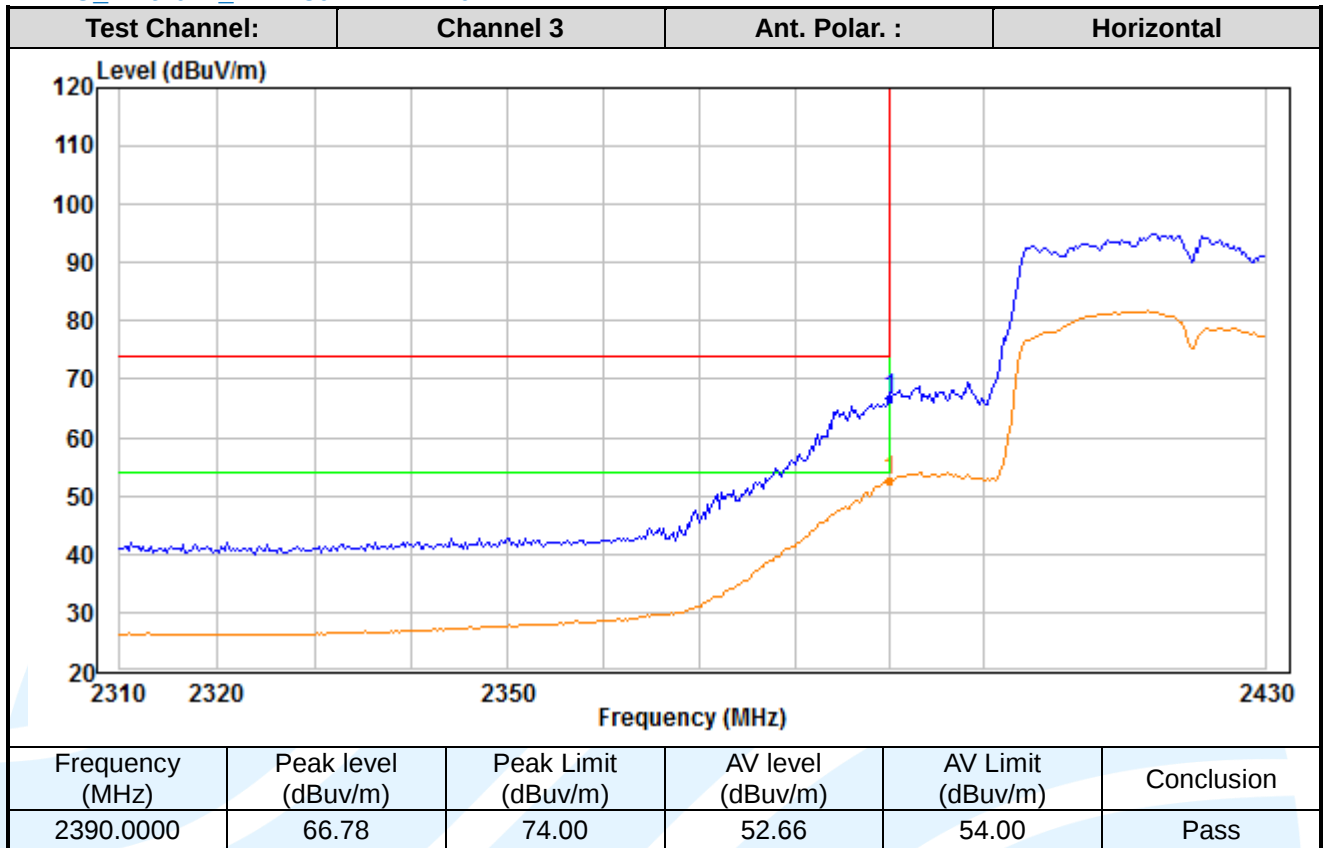
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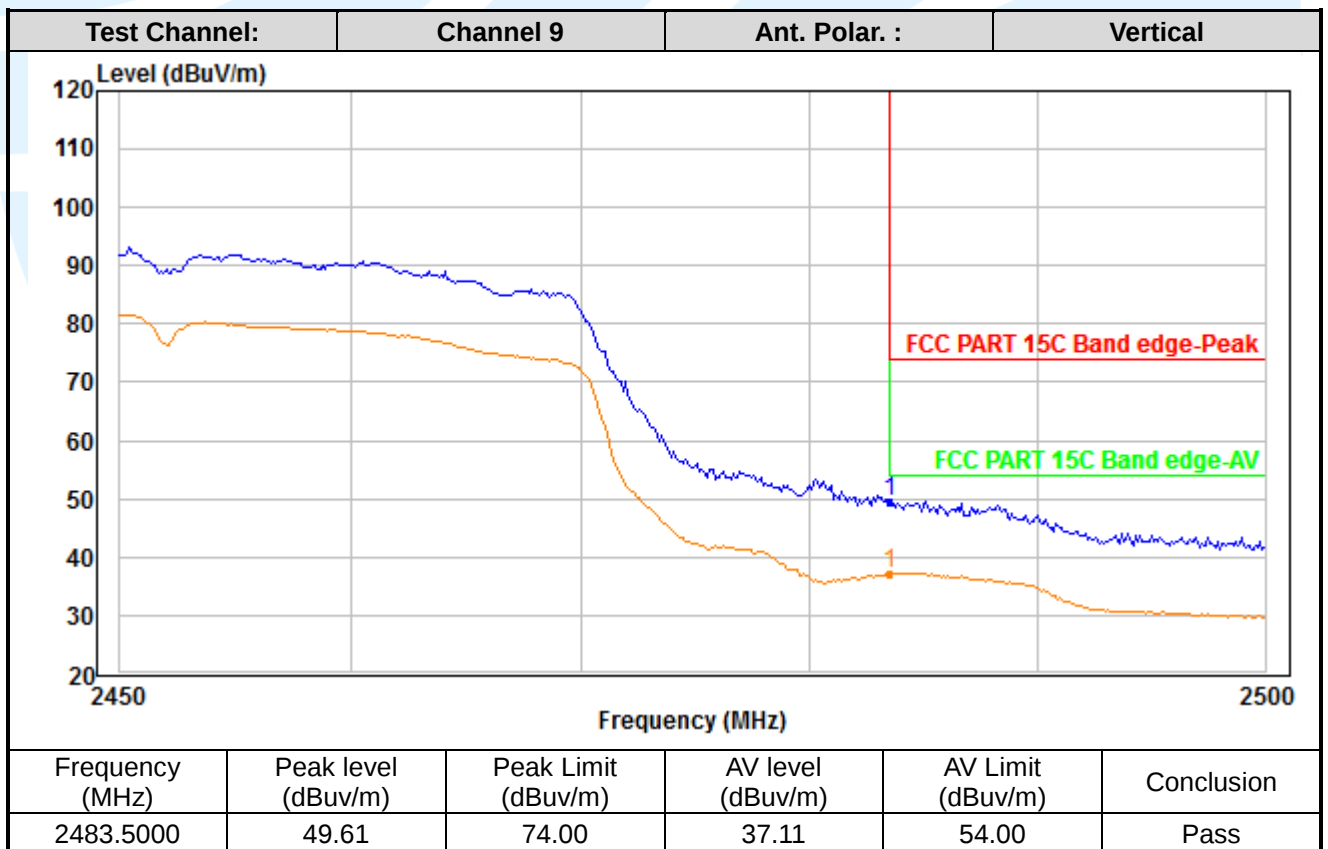
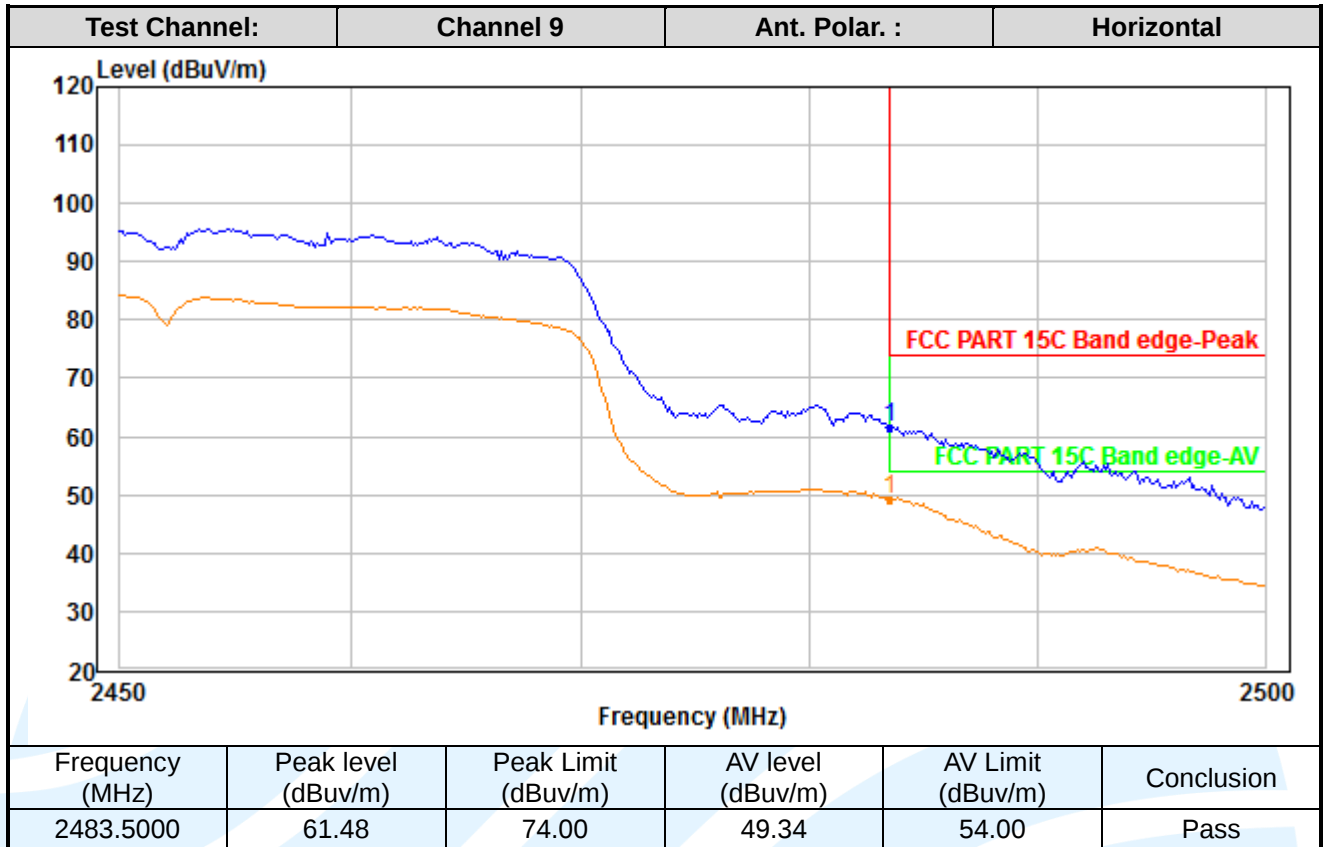
Tel: +86-755-28230888

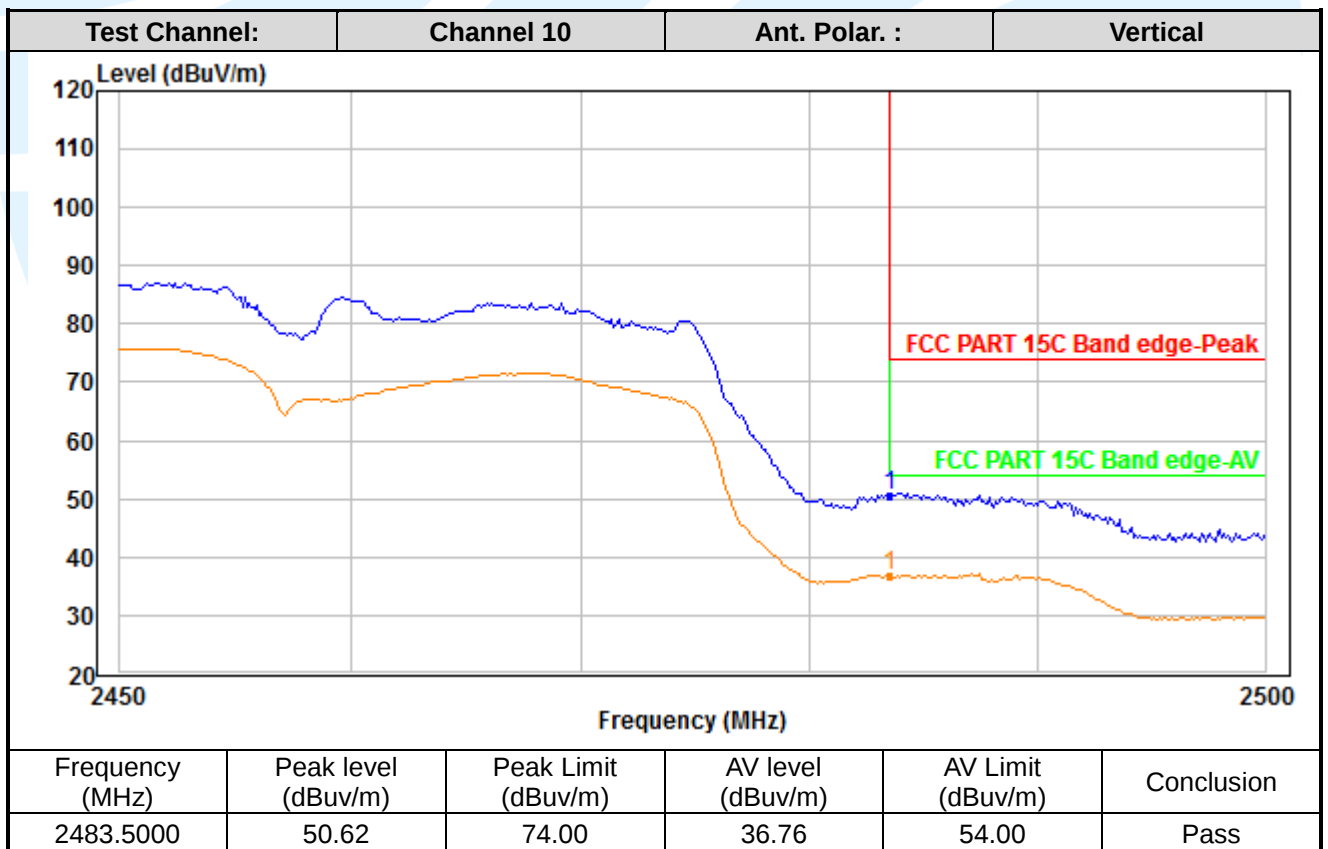
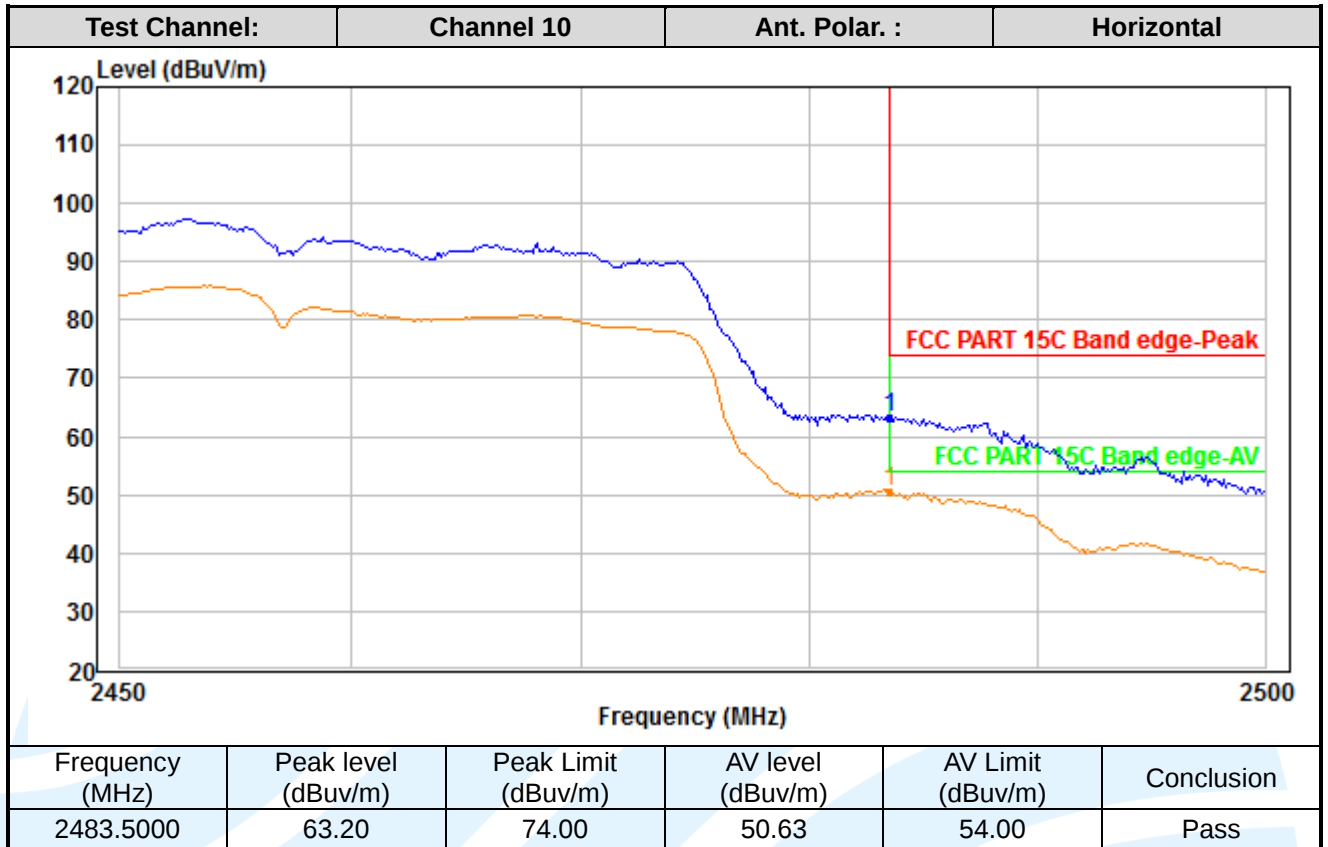
Fax: +86-755-28230886

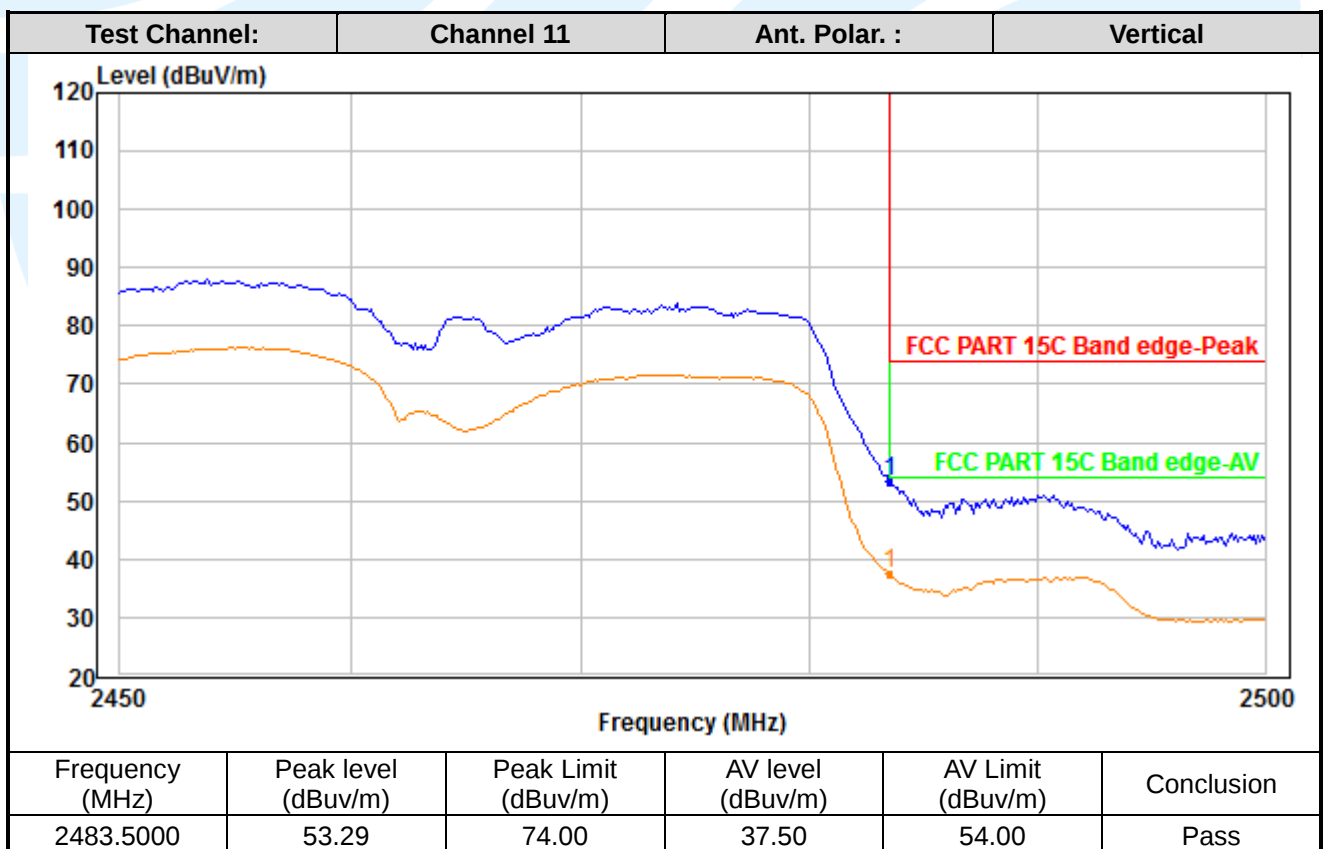
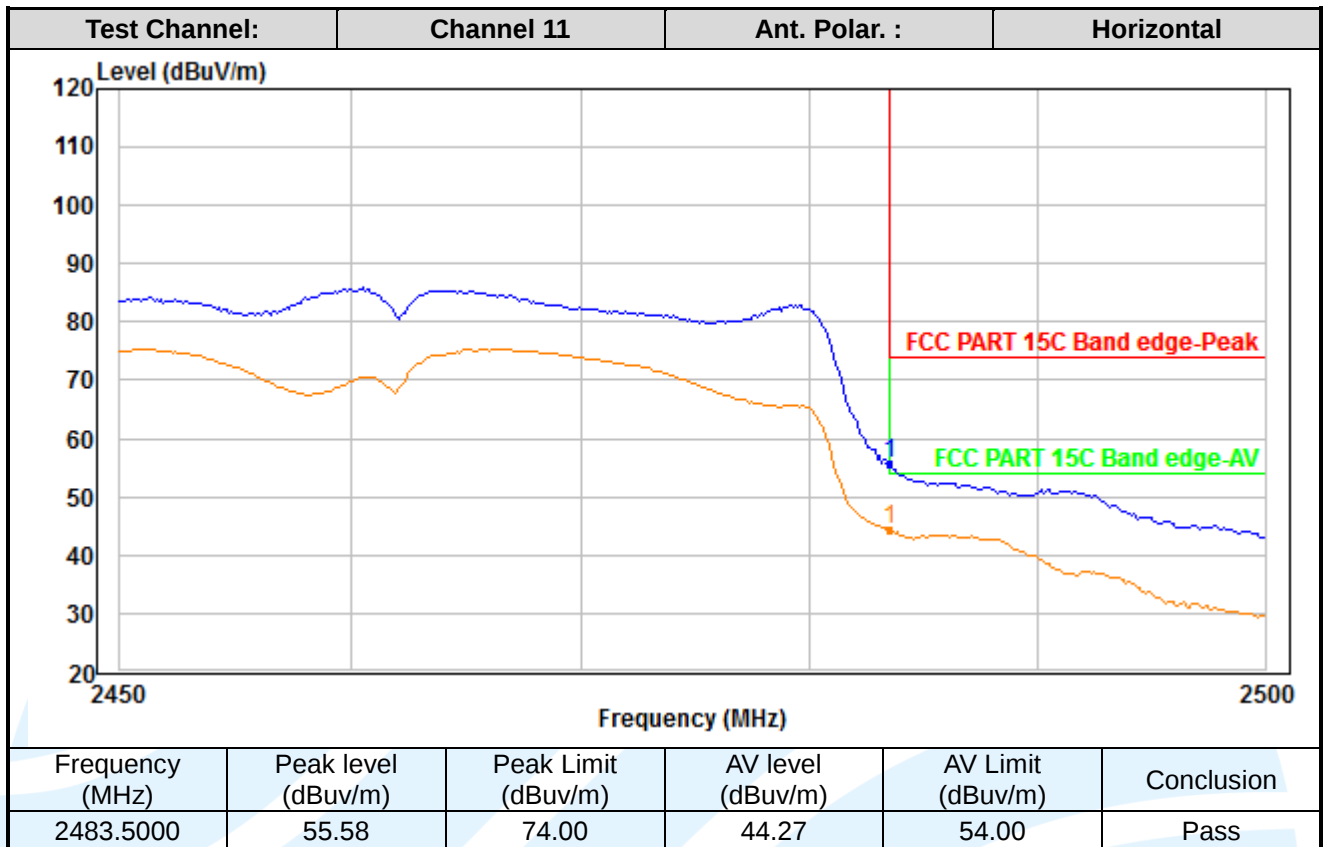
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5.9 CONDUCTED EMISSION

Test Requirement: 47 CFR Part 15C Section 15.207

Test Method: ANSI C63.10-2013 Section 6.2

Limits:

Frequency range (MHz)	Limits (dB(μV))	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

Remark:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

Test Setup: Refer to section 4.5.2 for details.

Test Procedures:

Test frequency range :150KHz-30MHz

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Equipment Used: Refer to section 3 for details.

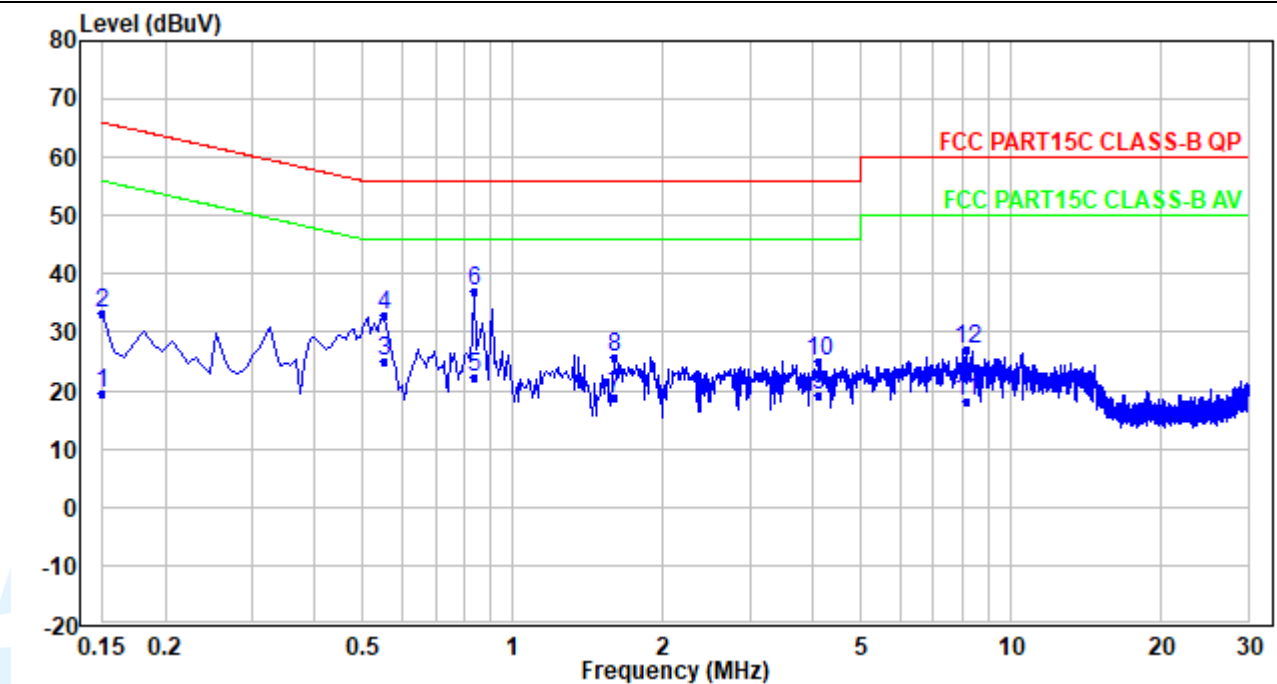
Test Result: Pass

The measurement data as follows:

Quasi Peak and Average:

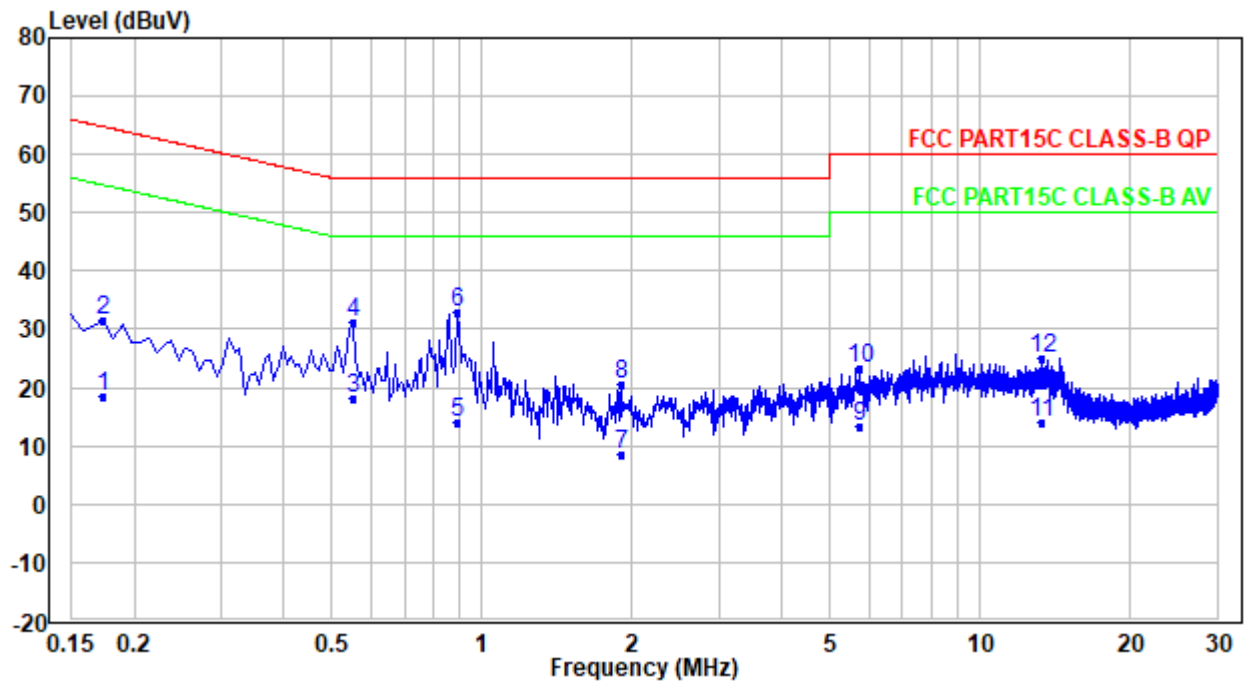
Mode: WIFI Link

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.150	9.29	10.12	19.41	56.00	-36.59	Average
2	0.150	23.29	10.12	33.41	66.00	-32.59	QP
3	0.550	14.82	10.16	24.98	46.00	-21.02	Average
4	0.550	22.82	10.16	32.98	56.00	-23.02	QP
5	0.838	12.01	10.20	22.21	46.00	-23.79	Average
6	0.838	27.01	10.20	37.21	56.00	-18.79	QP
7	1.606	8.61	10.24	18.85	46.00	-27.15	Average
8	1.606	15.61	10.24	25.85	56.00	-30.15	QP
9	4.125	8.73	10.30	19.03	46.00	-26.97	Average
10	4.125	14.73	10.30	25.03	56.00	-30.97	QP
11	8.156	7.49	10.51	18.00	50.00	-32.00	Average
12	8.156	16.49	10.51	27.00	60.00	-33.00	QP

Neutral Line



No.	Frequency (MHz)	Reading (dBUV)	Correction factor (dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Detector
1	0.174	8.35	10.12	18.47	54.77	-36.30	Average
2	0.174	21.35	10.12	31.47	64.77	-33.30	QP
3	0.550	8.06	10.13	18.19	46.00	-27.81	Average
4	0.550	21.06	10.13	31.19	56.00	-24.81	QP
5	0.894	3.71	10.15	13.86	46.00	-32.14	Average
6	0.894	22.71	10.15	32.86	56.00	-23.14	QP
7	1.902	-1.55	10.17	8.62	46.00	-37.38	Average
8	1.902	10.45	10.17	20.62	56.00	-35.38	QP
9	5.725	2.91	10.40	13.31	50.00	-36.69	Average
10	5.725	12.91	10.40	23.31	60.00	-36.69	QP
11	13.323	3.19	10.76	13.95	50.00	-36.05	Average
12	13.323	14.19	10.76	24.95	60.00	-35.05	QP

Remark:

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit
4. An initial pre-scan was performed on the Phase and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.
5. All possible modes of operation were investigated, and testing at two nominal voltages of 240V/50Hz and 120V/60Hz, only the worst case emissions reported.

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APPENDIX 1 PHOTOS OF TEST SETUP

See test photos attached in Appendix 1 for the actual connections between Product and support equipment.

APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photos.

*** End of Report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of UnionTrust, this report can't be reproduced except in full.
