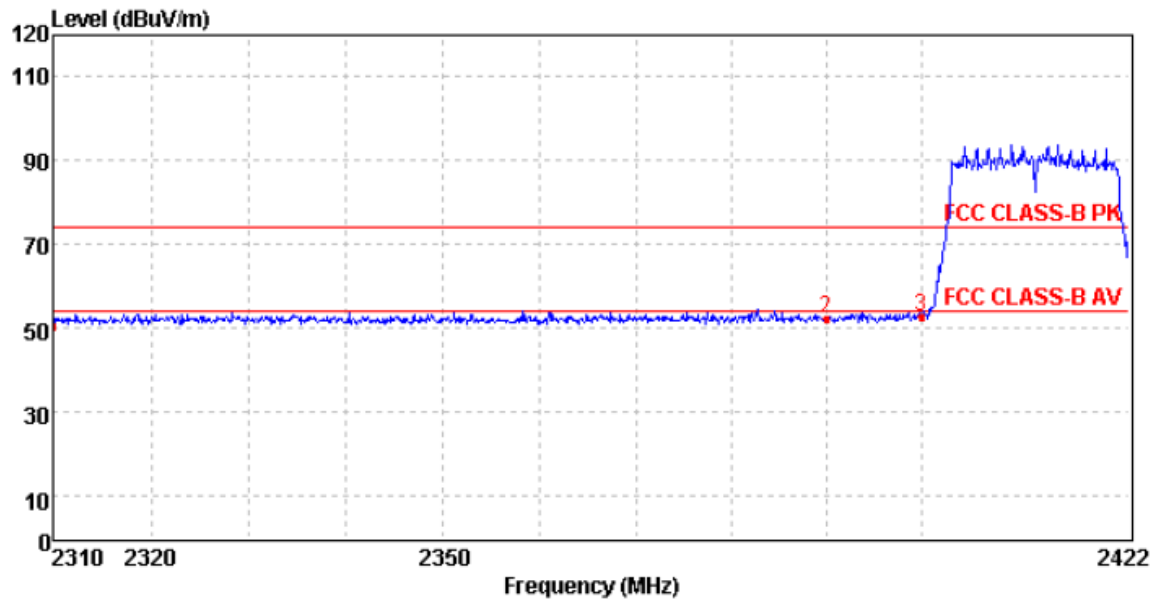
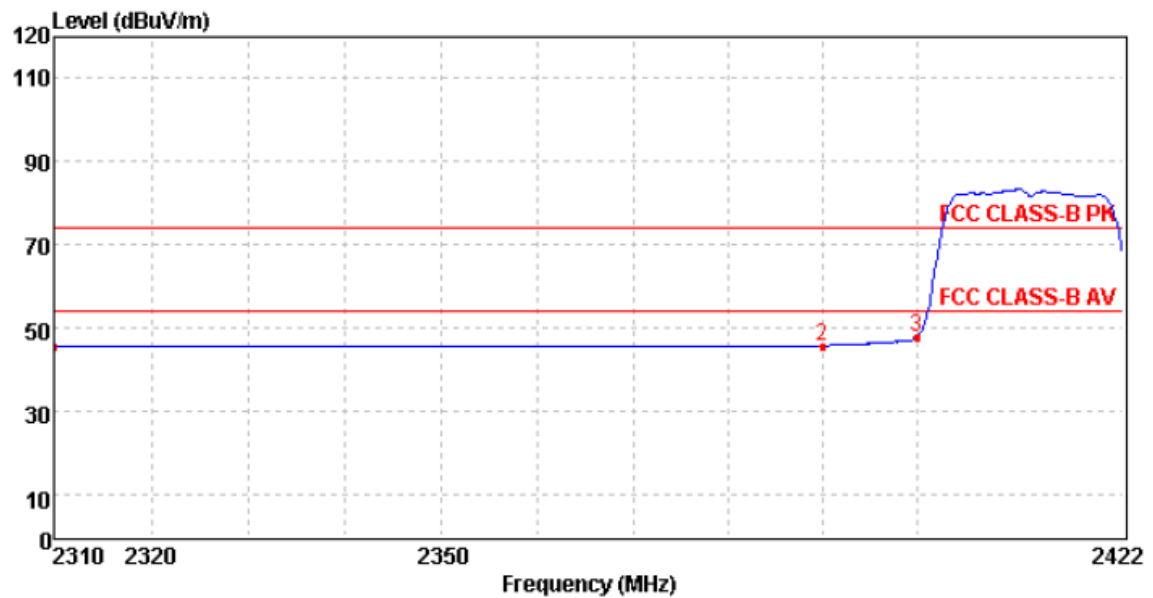


Test mode:	802.11 n(H20) CH01	Polarization	Vertical
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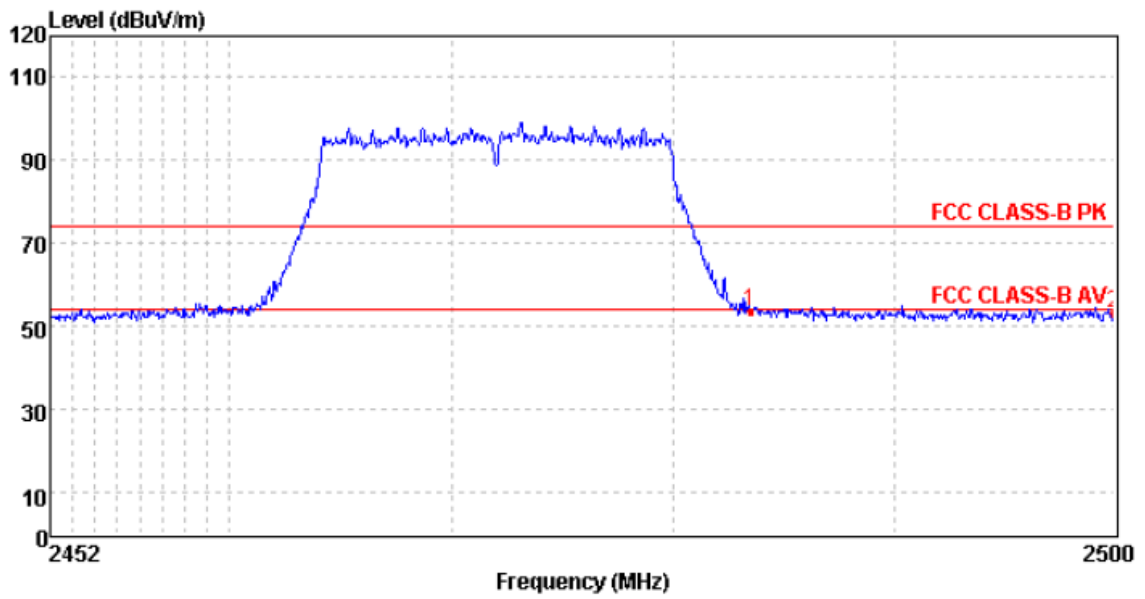


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2310.00	16.43	27.27	6.62	0.00	50.32	74.00	-23.68	Peak
2	2389.99	17.95	27.53	6.75	0.00	52.23	74.00	-21.77	Peak
3	2399.97	18.23	27.57	6.77	0.00	52.57	74.00	-21.43	Peak

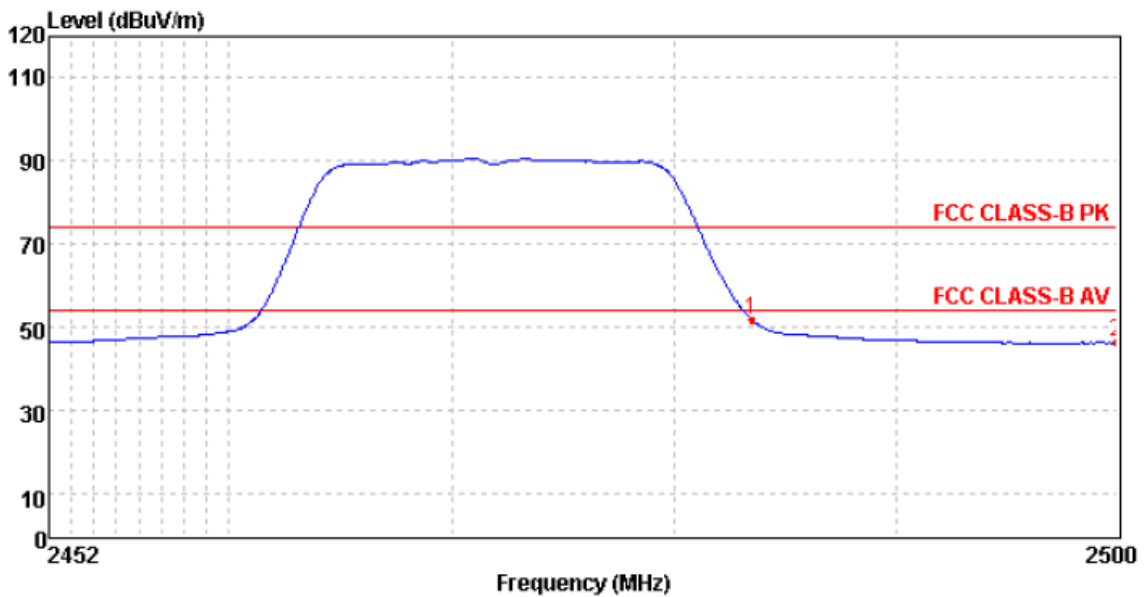


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2310.00	11.64	27.27	6.62	0.00	45.53	54.00	-8.47	Average
2	2389.99	11.39	27.53	6.75	0.00	45.67	54.00	-8.33	Average
3	2399.97	13.20	27.57	6.77	0.00	47.54	54.00	-6.46	Average

Test mode:	802.11 n(H20) CH11	Polarization	Horizontal
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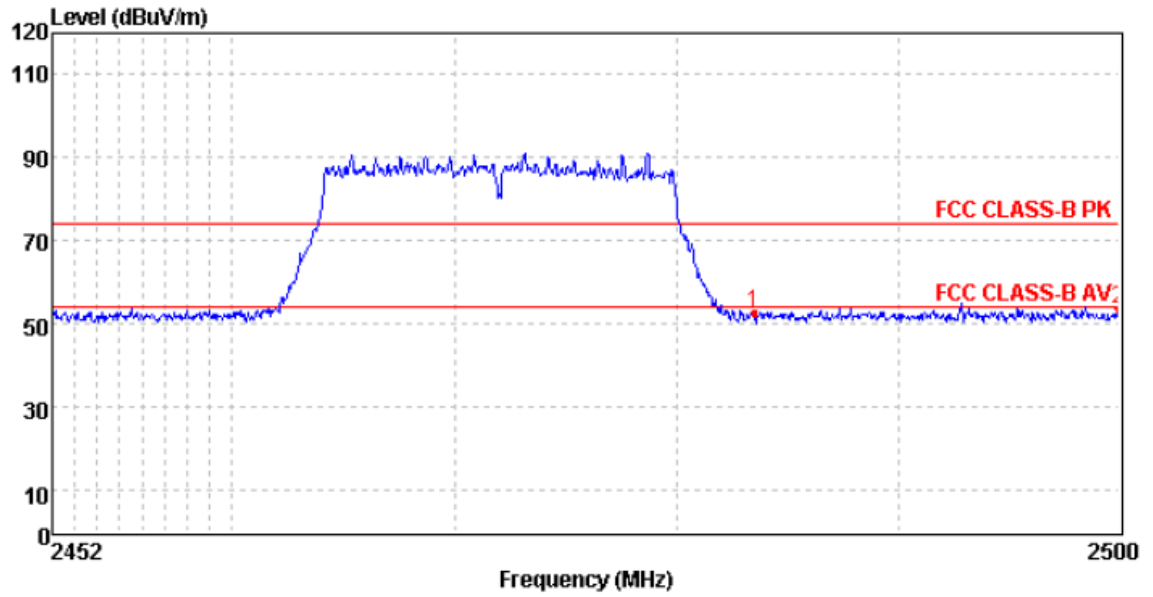


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2483.48	18.67	27.85	6.83	0.00	53.35	74.00	-20.65	Peak
2	2500.00	18.20	27.90	6.84	0.00	52.94	74.00	-21.06	Peak

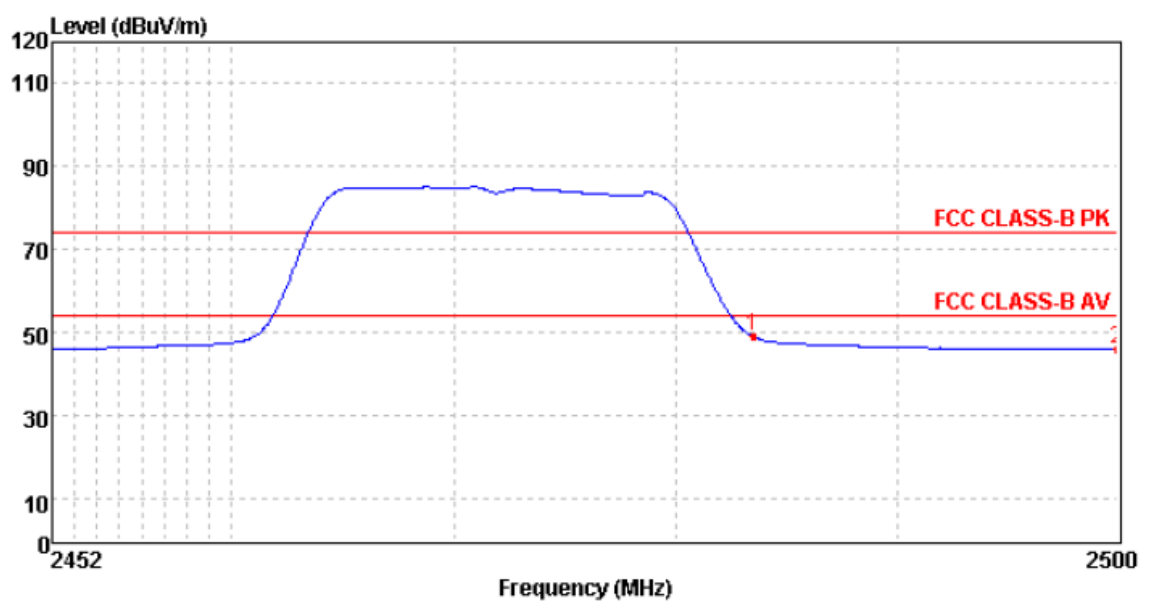


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2483.48	17.20	27.85	6.83	0.00	51.88	54.00	-2.12	Average
2	2500.00	11.43	27.90	6.84	0.00	46.17	54.00	-7.83	Average

Test mode:	802.11 n(H20) CH11	Polarization	Vertical
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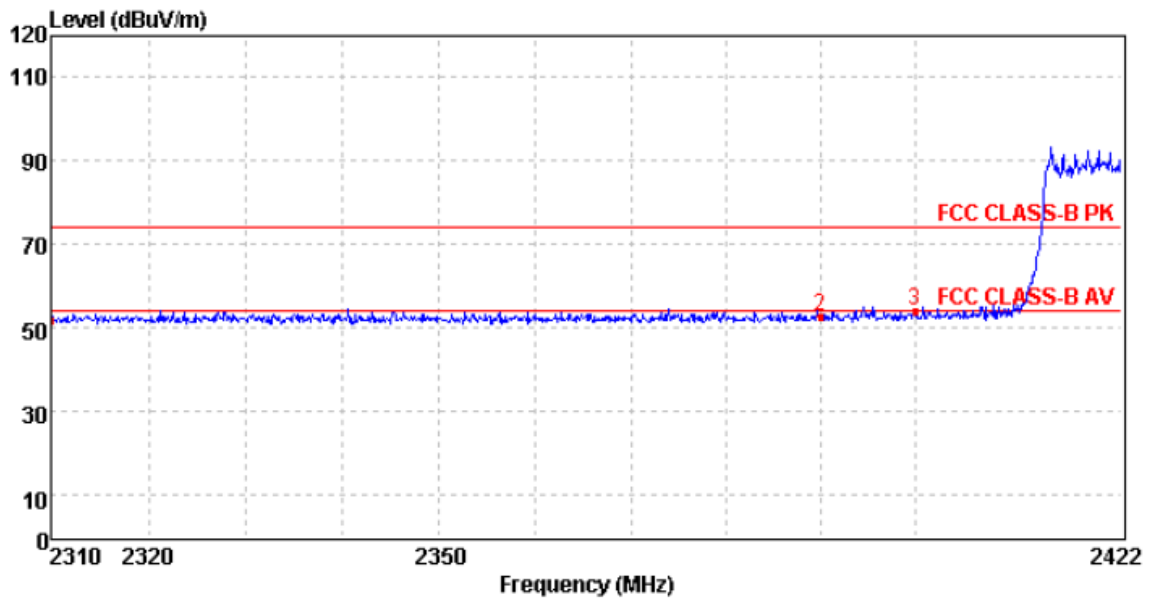


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2483.48	17.79	27.85	6.83	0.00	52.47	74.00	-21.53	Peak
2	2500.00	18.71	27.90	6.84	0.00	53.45	74.00	-20.55	Peak

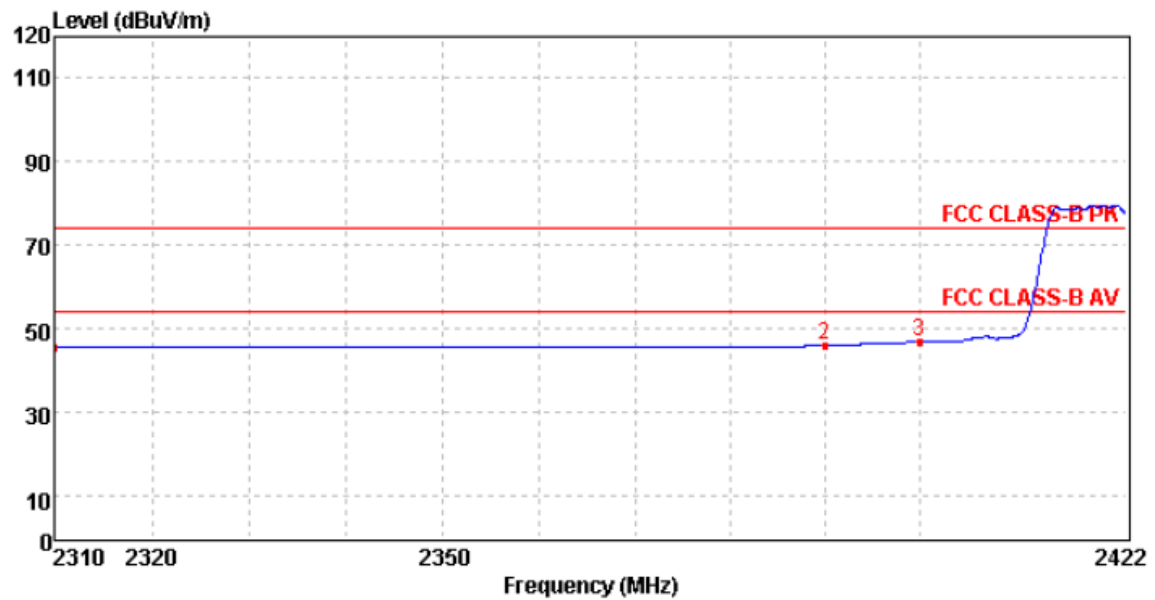


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2483.48	14.25	27.85	6.83	0.00	48.93	54.00	-5.07	Average
2	2500.00	11.23	27.90	6.84	0.00	45.97	54.00	-8.03	Average

Test mode:	802.11 n(H40) CH03	Polarization	Horizontal
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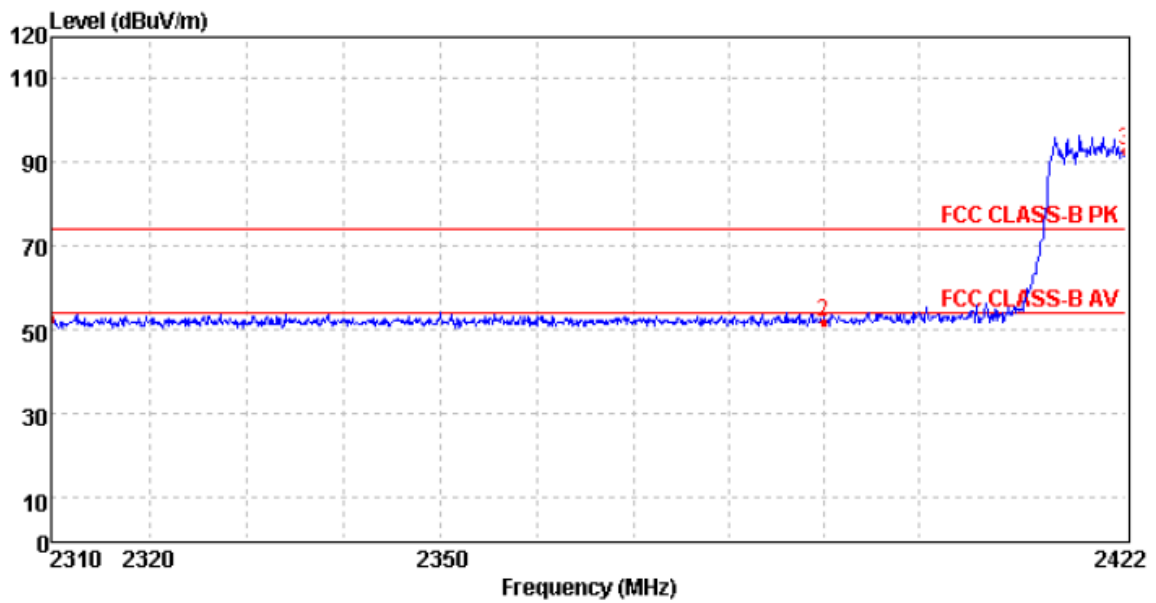


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2310.00	17.95	27.27	6.62	0.00	51.84	74.00	-22.16	Peak
2	2389.99	18.41	27.53	6.75	0.00	52.69	74.00	-21.31	Peak
3	2399.97	19.49	27.57	6.77	0.00	53.83	74.00	-20.17	Peak

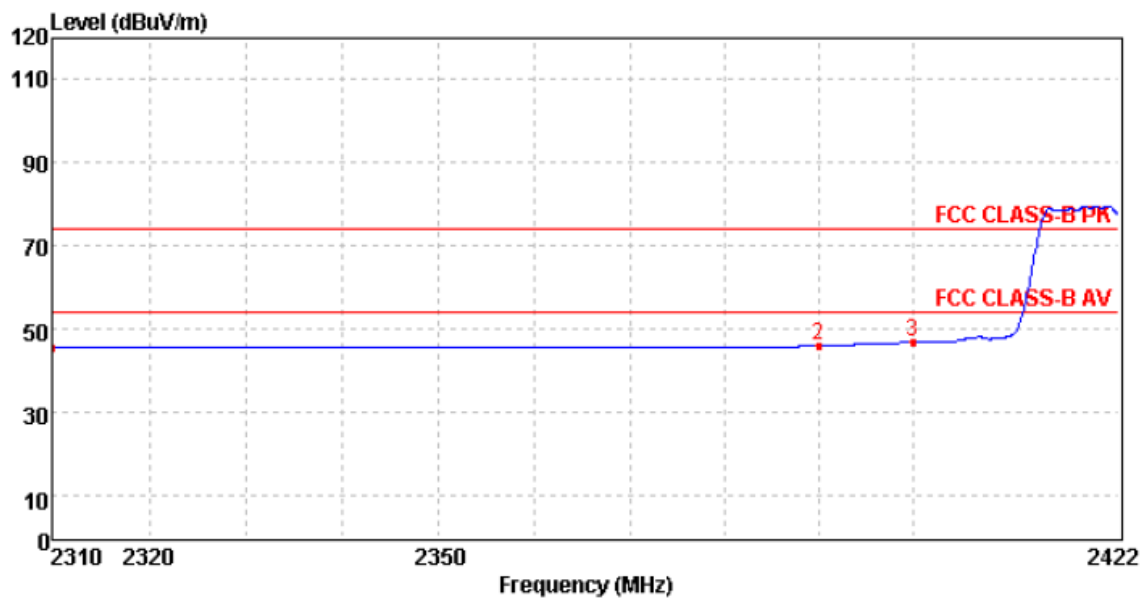


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2310.00	11.61	27.27	6.62	0.00	45.50	54.00	-8.50	Average
2	2389.99	11.52	27.53	6.75	0.00	45.80	54.00	-8.20	Average
3	2399.97	12.52	27.57	6.77	0.00	46.86	54.00	-7.14	Average

Test mode:	802.11 n(H40) CH03	Polarization	Vertical
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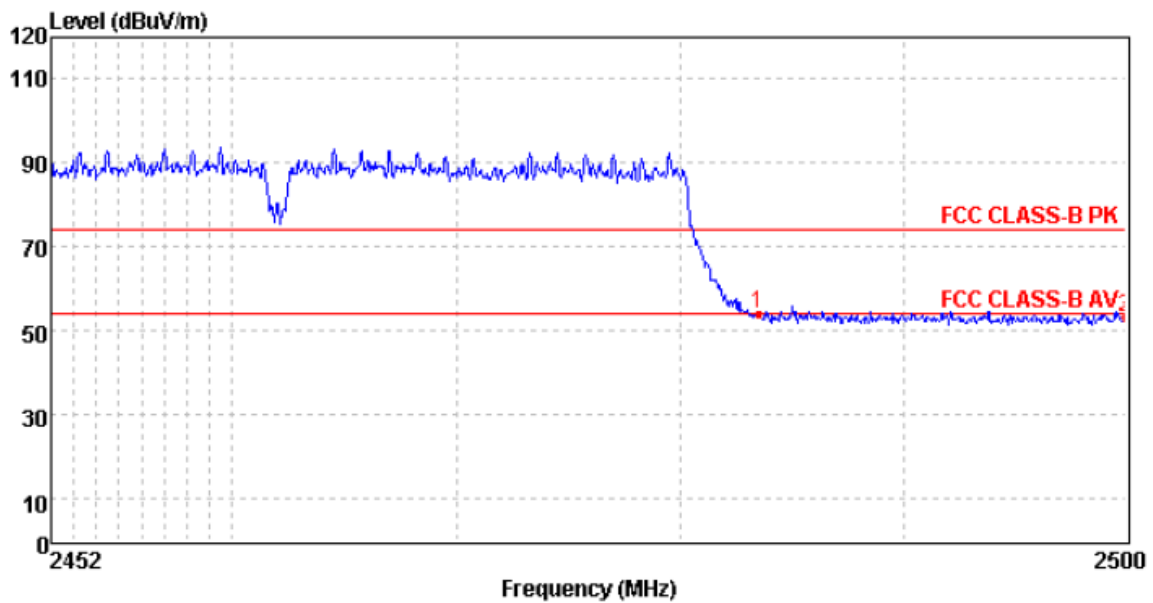


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2310.00	18.79	27.27	6.62	0.00	52.68	74.00	-21.32	Peak
2	2389.99	17.29	27.53	6.75	0.00	51.57	74.00	-22.43	Peak
3	2422.00	58.27	27.64	6.79	0.00	92.70	74.00	18.70	Peak

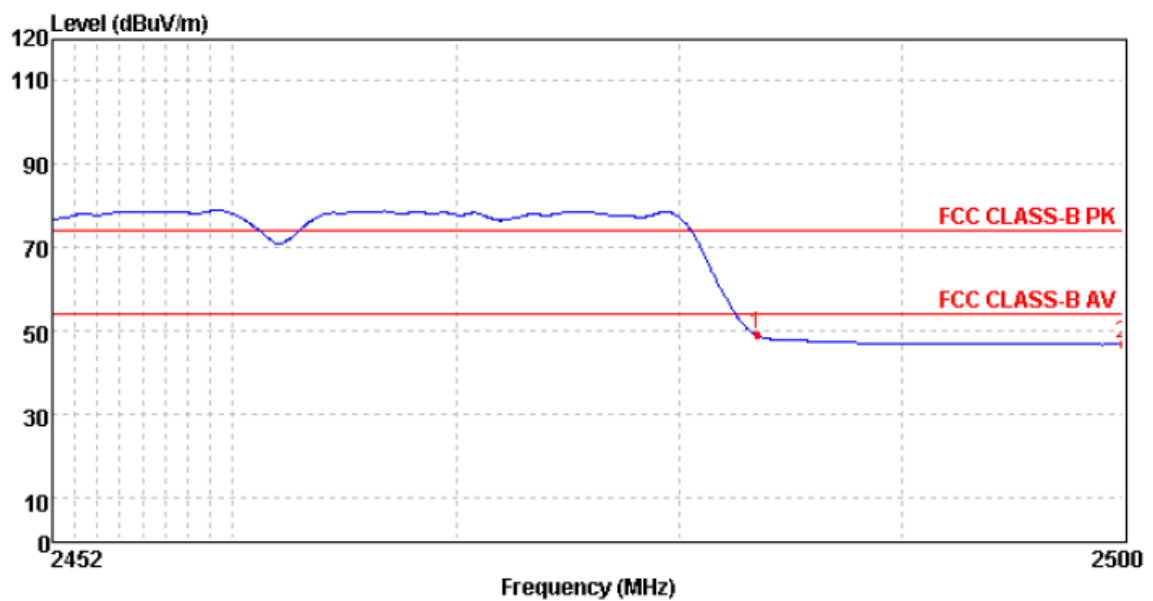


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2310.00	11.61	27.27	6.62	0.00	45.50	54.00	-8.50	Average
2	2389.99	11.52	27.53	6.75	0.00	45.80	54.00	-8.20	Average
3	2399.97	12.52	27.57	6.77	0.00	46.86	54.00	-7.14	Average

Test mode:	802.11 n(H40) CH09	Polarization	Horizontal
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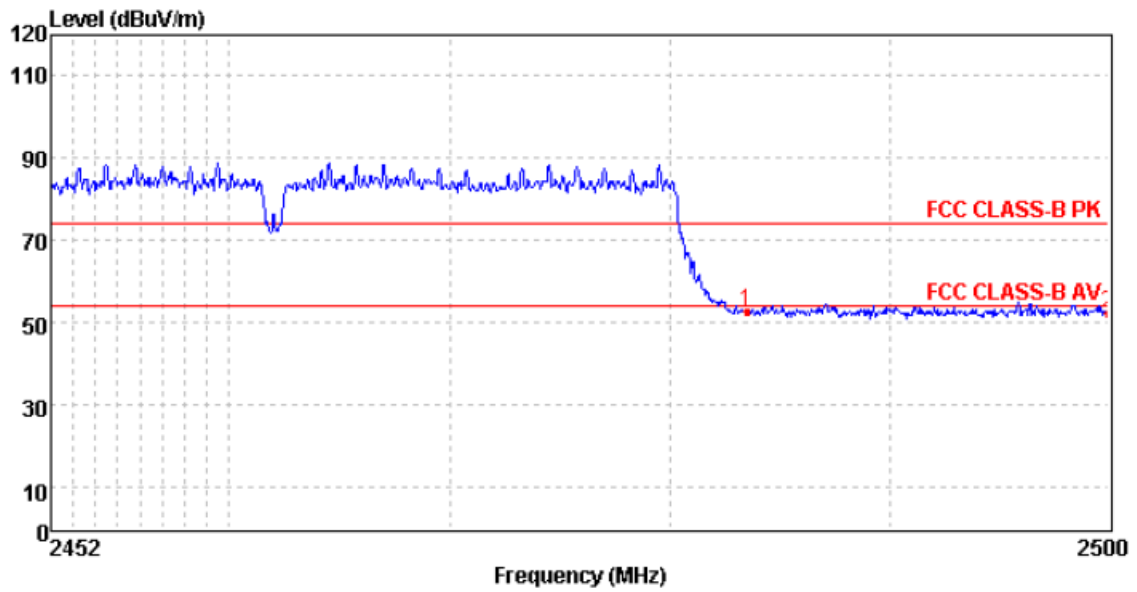


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2483.48	19.18	27.85	6.83	0.00	53.86	74.00	-20.14	Peak
3	2500.00	18.21	27.90	6.84	0.00	52.95	74.00	-21.05	Peak

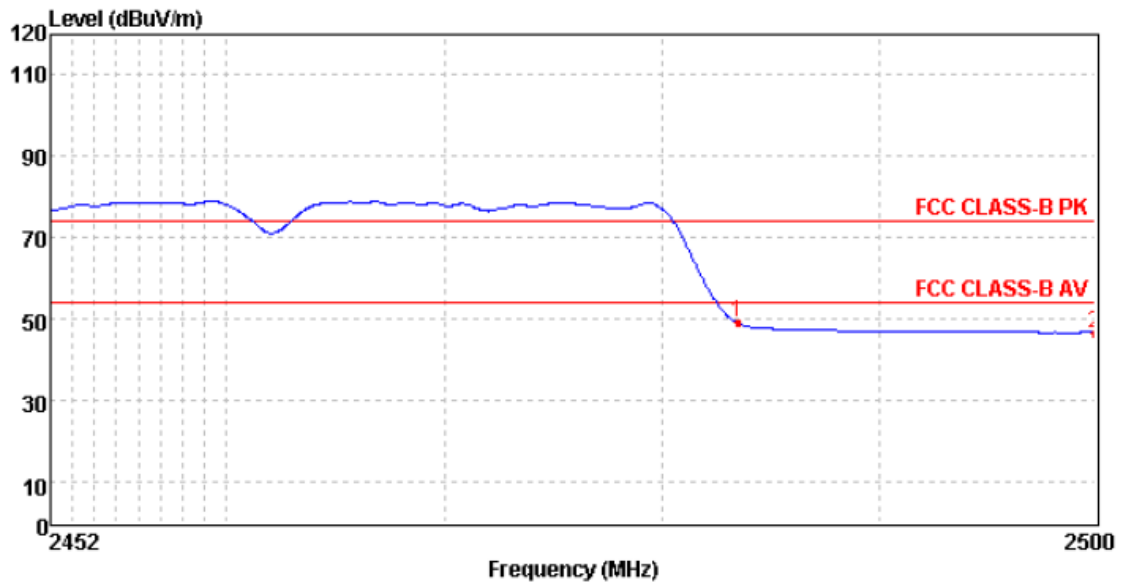


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2483.48	14.26	27.85	6.83	0.00	48.94	54.00	-5.06	Average
2	2500.00	11.93	27.90	6.84	0.00	46.67	54.00	-7.33	Average

Test mode:	802.11 n(H40) CH09	Polarization	Vertical
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Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2483.48	17.82	27.85	6.83	0.00	52.50	74.00	-21.50	Peak
2	2500.00	17.39	27.90	6.84	0.00	52.13	74.00	-21.87	Peak



Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	2483.48	14.21	27.85	6.83	0.00	48.89	54.00	-5.11	Average
2	2500.00	11.87	27.90	6.84	0.00	46.61	54.00	-7.39	Average

Remark: $Final\ Level = Receiver\ Reading + Antenna\ Factor + Cable\ Loss - Preamplifier\ Factor$

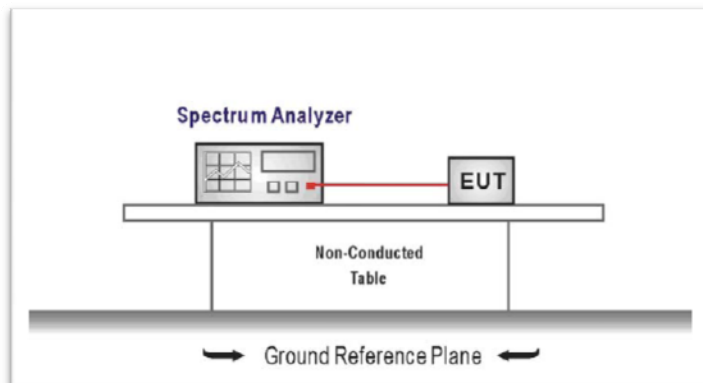
4.7. Band edge and Spurious Emission (conducted)

LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d):

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

TEST CONFIGURATION



TEST PROCEDURE

1. Connect the antenna port(s) to the spectrum analyzer input.
2. **Establish a reference level by using the following procedure**
Center frequency=DTS channel center frequency
The span = 1.5 times the DTS bandwidth.
RBW = 100 kHz, VBW ≥ 3 x RBW
Detector = peak, Sweep time = auto couple, Trace mode = max hold
Allow trace to fully stabilize
Use the peak marker function to determine the maximum PSD level

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

3. **Emission level measurement**

Set the center frequency and span to encompass frequency range to be measured

RBW = 100 kHz, VBW ≥ 3 x RBW

Detector = peak, Sweep time = auto couple, Trace mode = max hold

Allow trace to fully stabilize

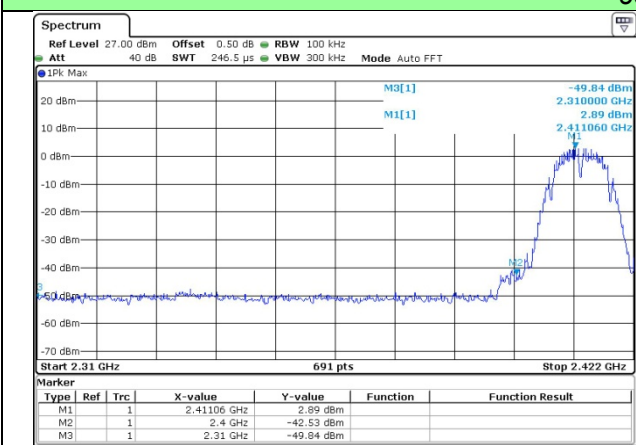
Use the peak marker function to determine the maximum amplitude level.

4. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.
5. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band excluding restricted frequency bands) are attenuated by at least the minimum requirements specified (at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz). Report the three highest emissions relative to the limit.

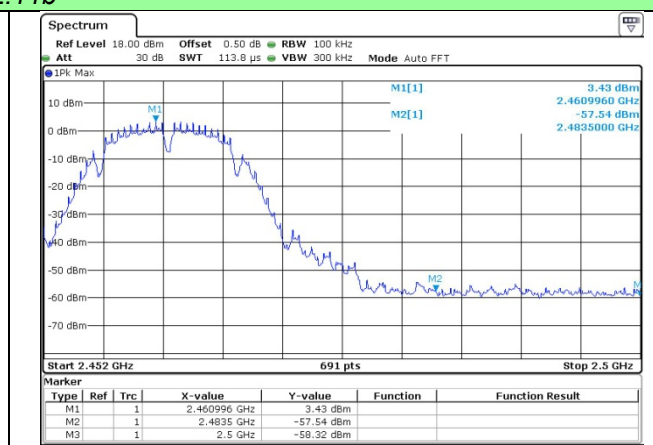
TEST RESULTS

Test plot as follows:

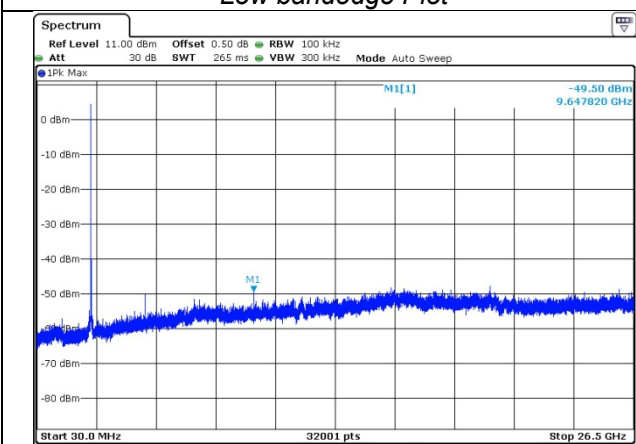
802.11b



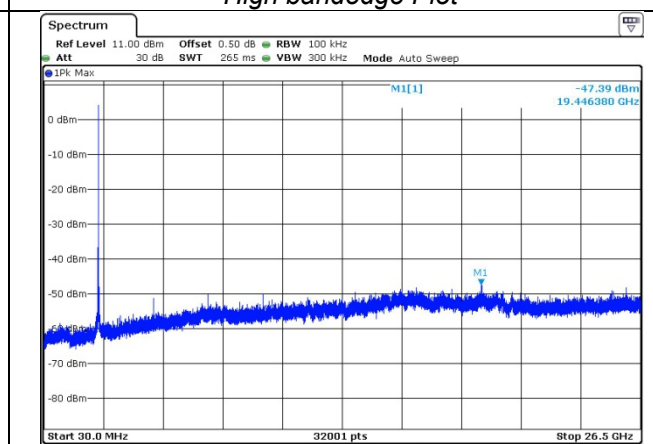
Low bandedge Plot



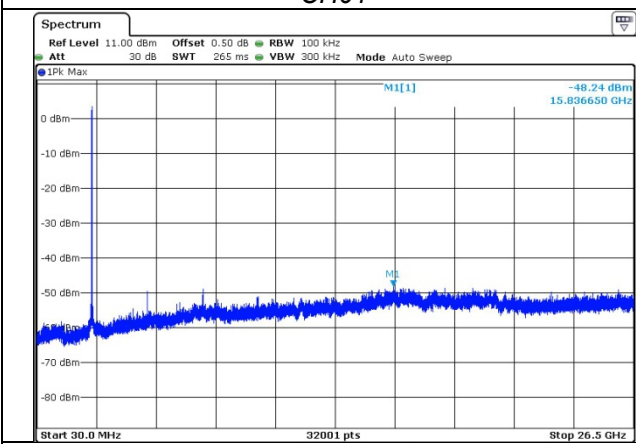
High bandedge Plot



CH01

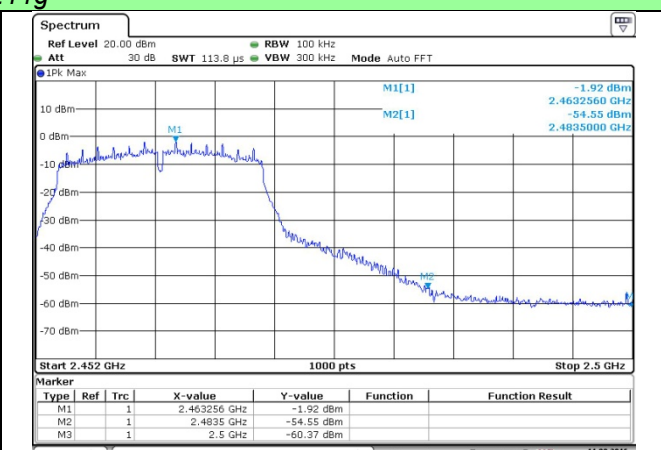
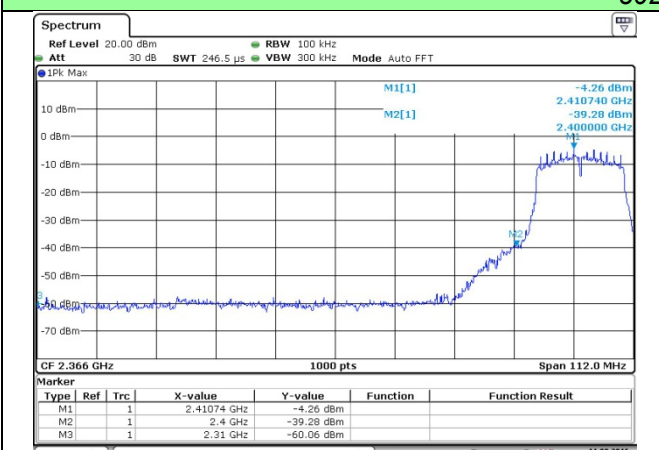


CH06



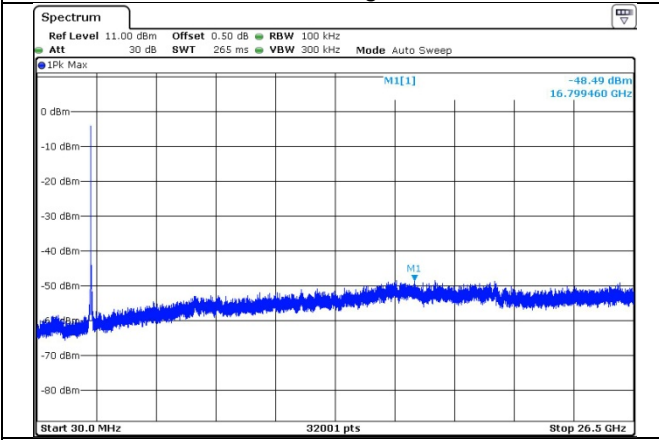
CH11

802.11g

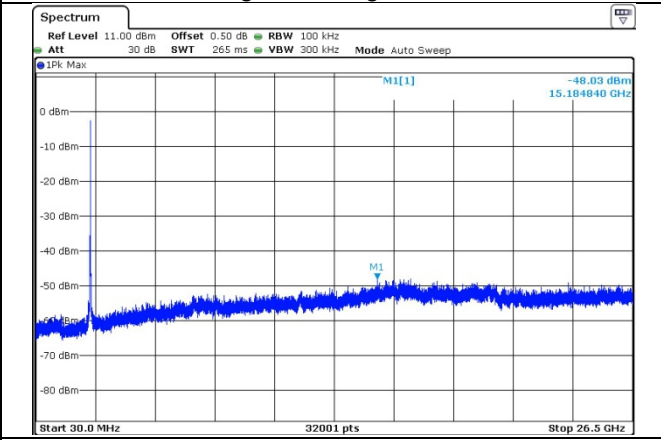


Low bandedge Plot

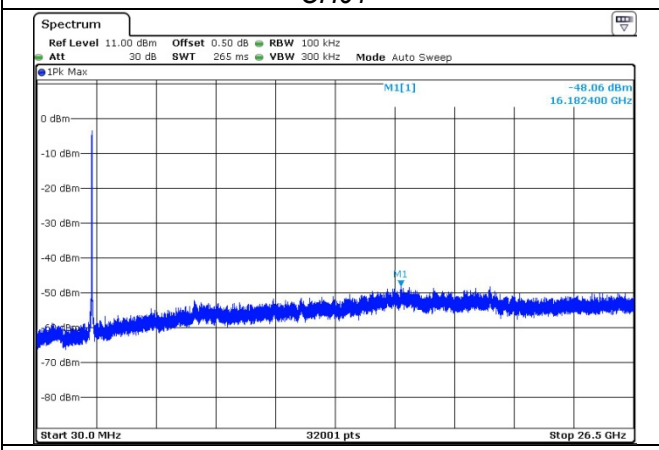
High bandedge Plot



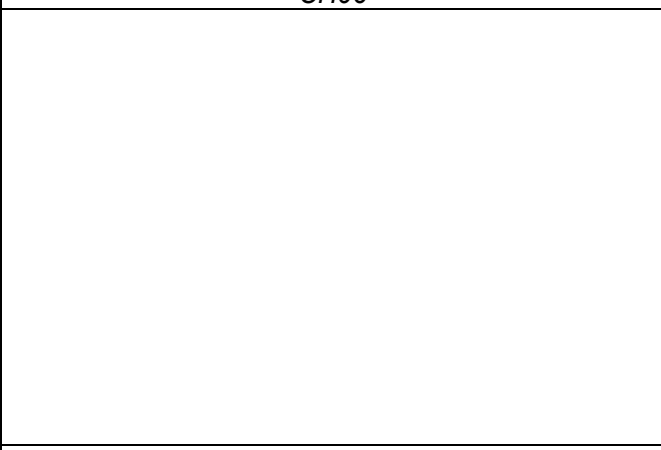
CH01



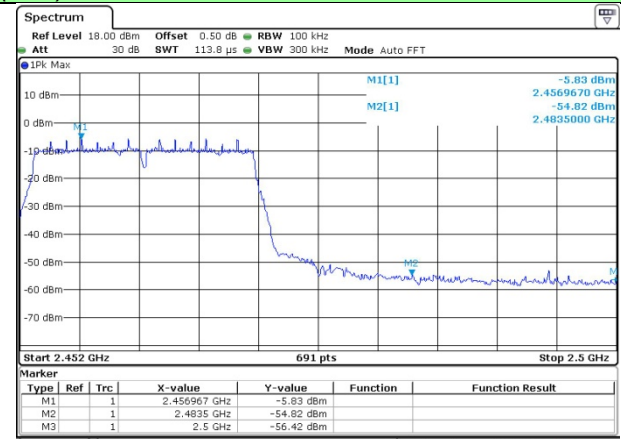
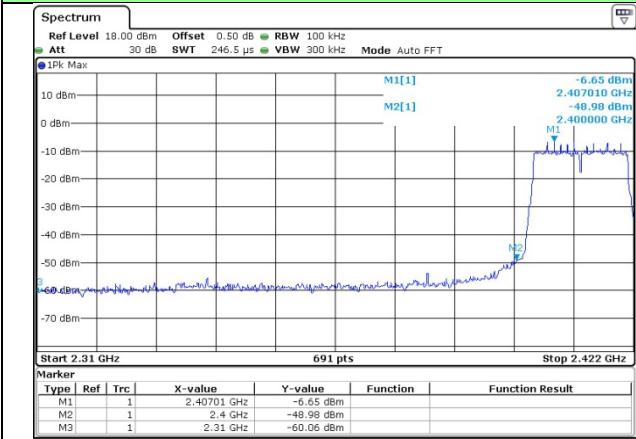
CH06



CH11

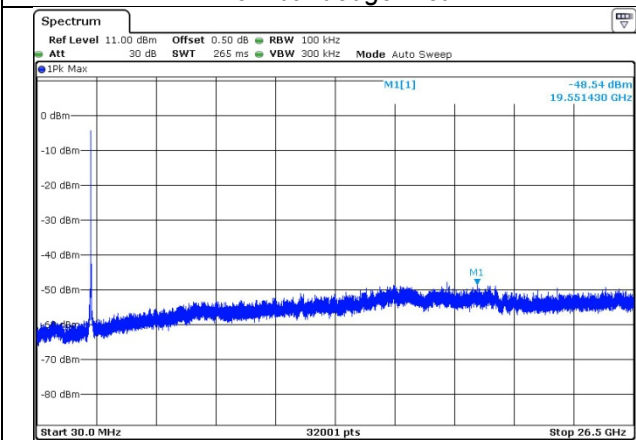


802.11n(H20)

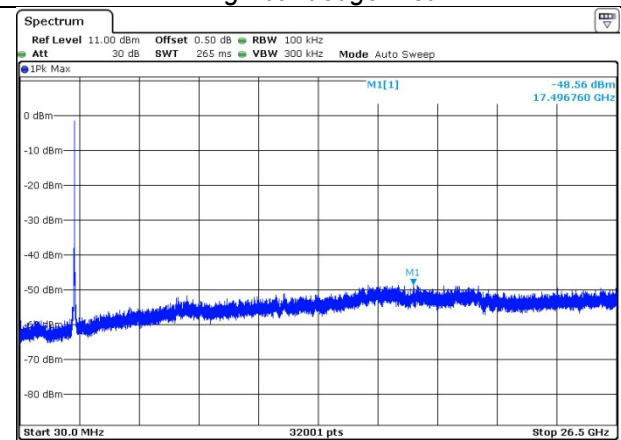


Low bandedge Plot

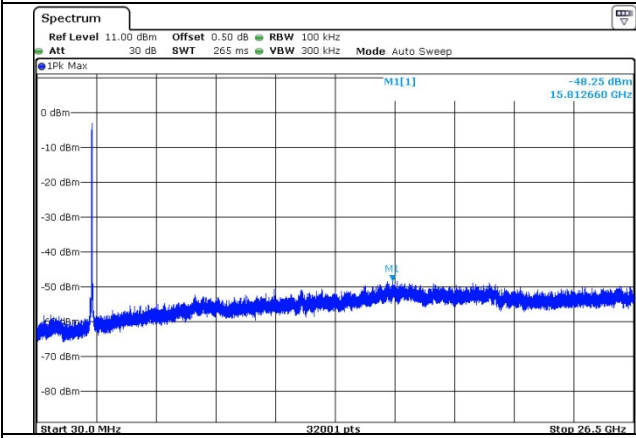
High bandedge Plot



CH01

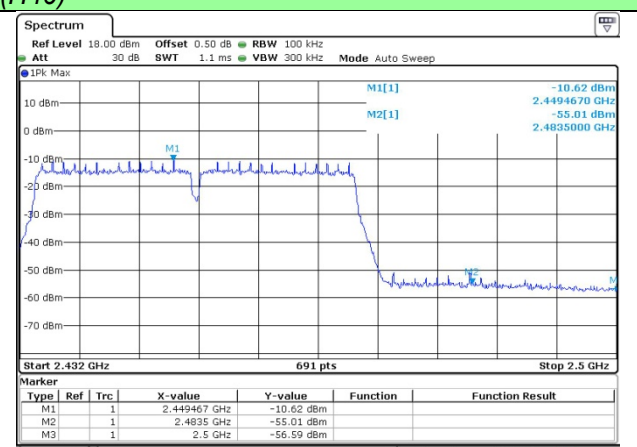
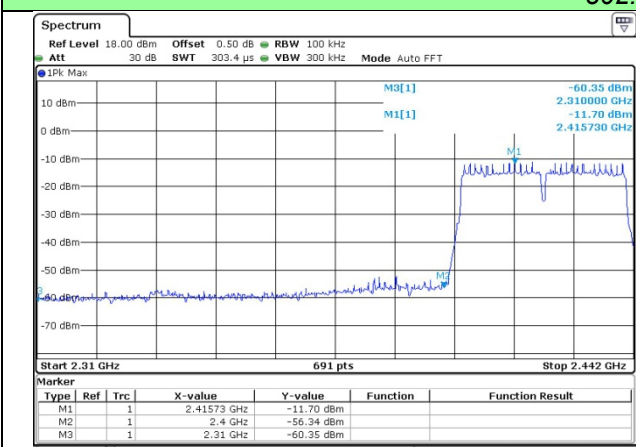


CH06



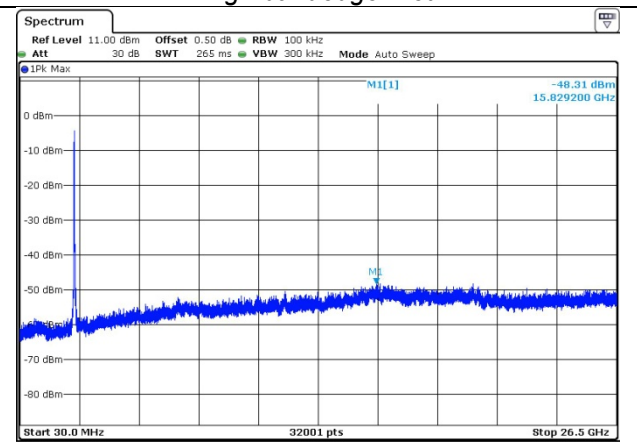
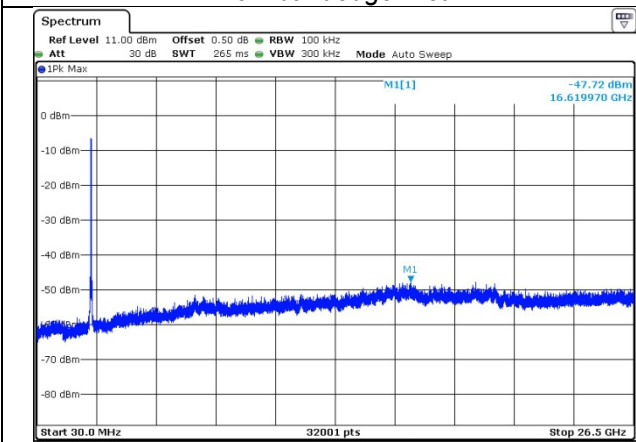
CH11

802.11n(H40)



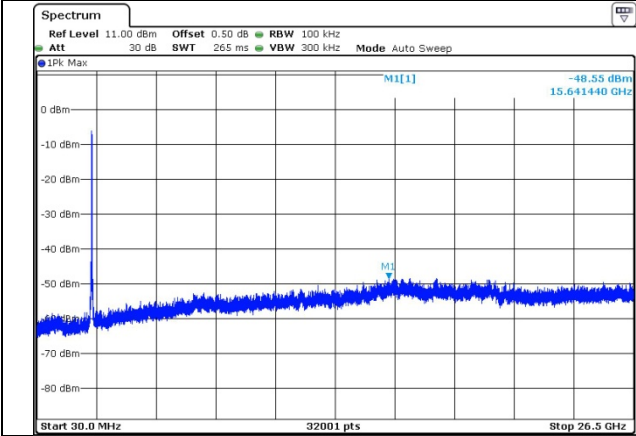
Low bandedge Plot

High bandedge Plot



CH03

CH06



CH09

4.8. Spurious Emission (radiated)

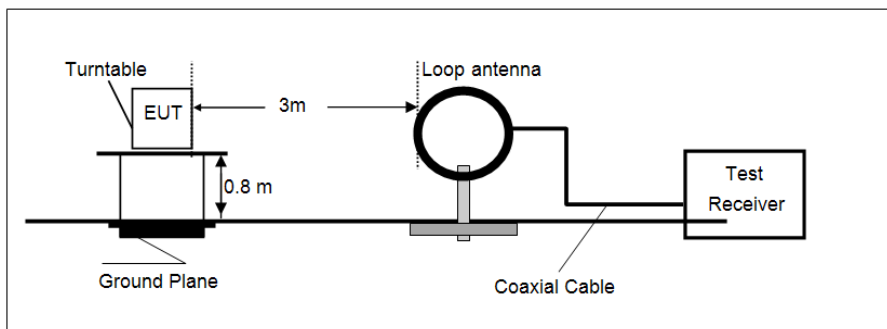
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

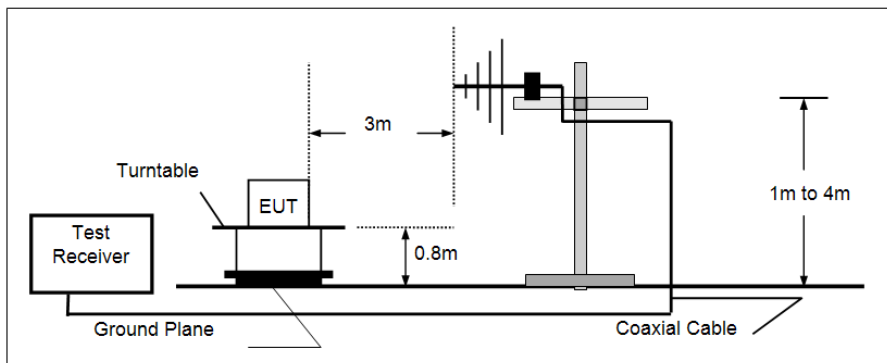
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

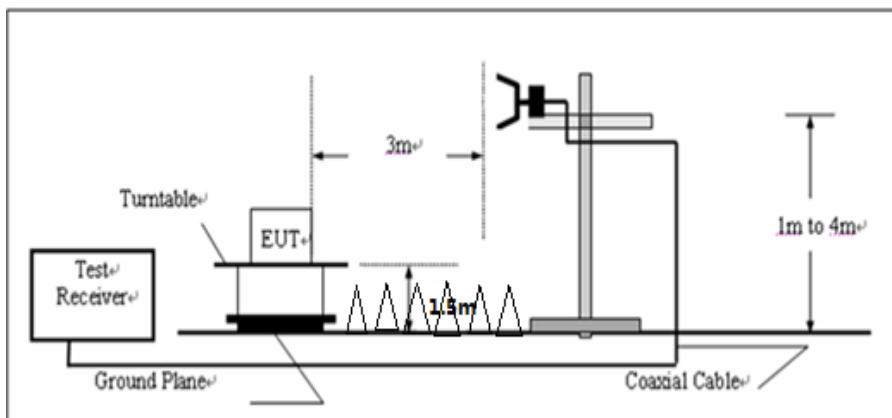
- 9KHz ~30MHz



- 30MHz ~ 1GHz



- Above 1GHz



TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10:2013 for compliance to FCC 47CFR 15.247 requirements.
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1GHz, and 1.5m for above 1GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.
5. Use the following spectrum analyzer settings
 - (1) Span shall be wide enough to fully capture the emission being measured;
 - (2) Below 1GHz, RBW=120KHz, VBW=300KHz, Sweep=auto, Detector function=peak, Trace=max hold; *If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.*
 - (3) Above 1GHz, RBW=1MHz, VBW=3MHz for Peak value
RBW=1MHz, VBW=10Hz for Average value.

TEST RESULTS

Noted:

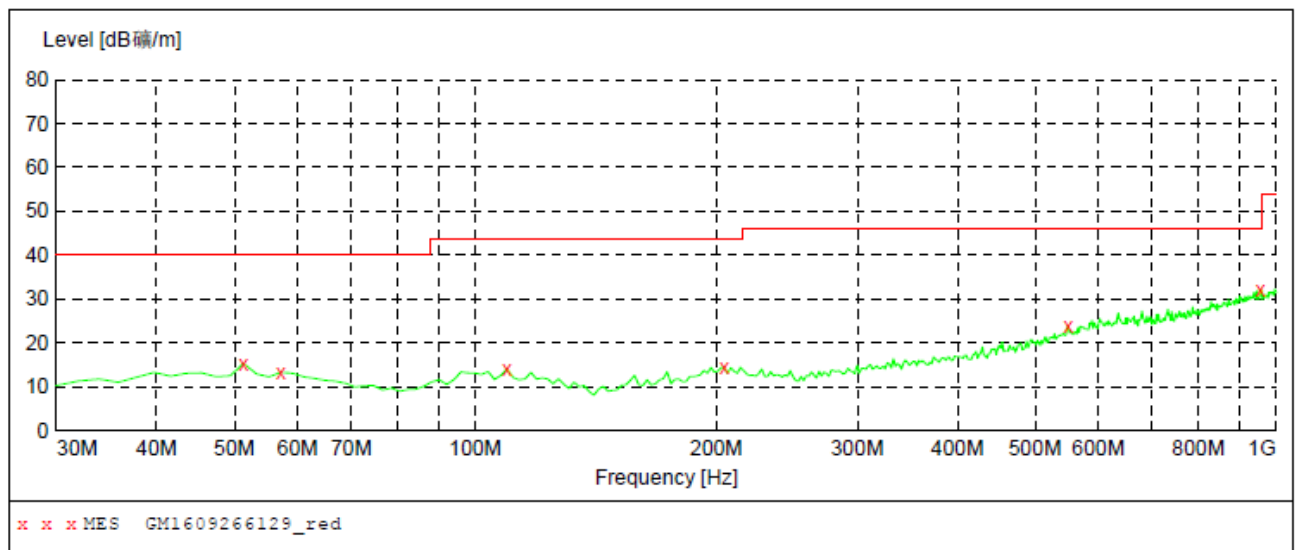
Below 1GHz, Have pre-scan all modulation mode, found the 802.11b mode CH01 which it was worst case, so only the worst case's data on the test report.

Measurement data:

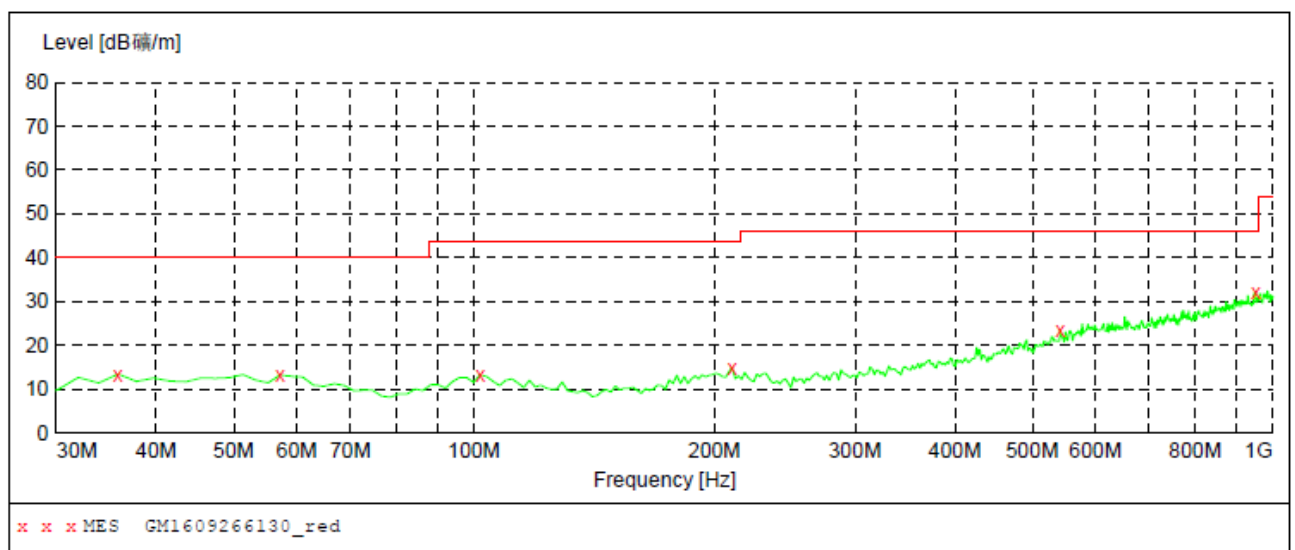
■ 9kHz ~ 30MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

■ 30MHz ~ 1GHz



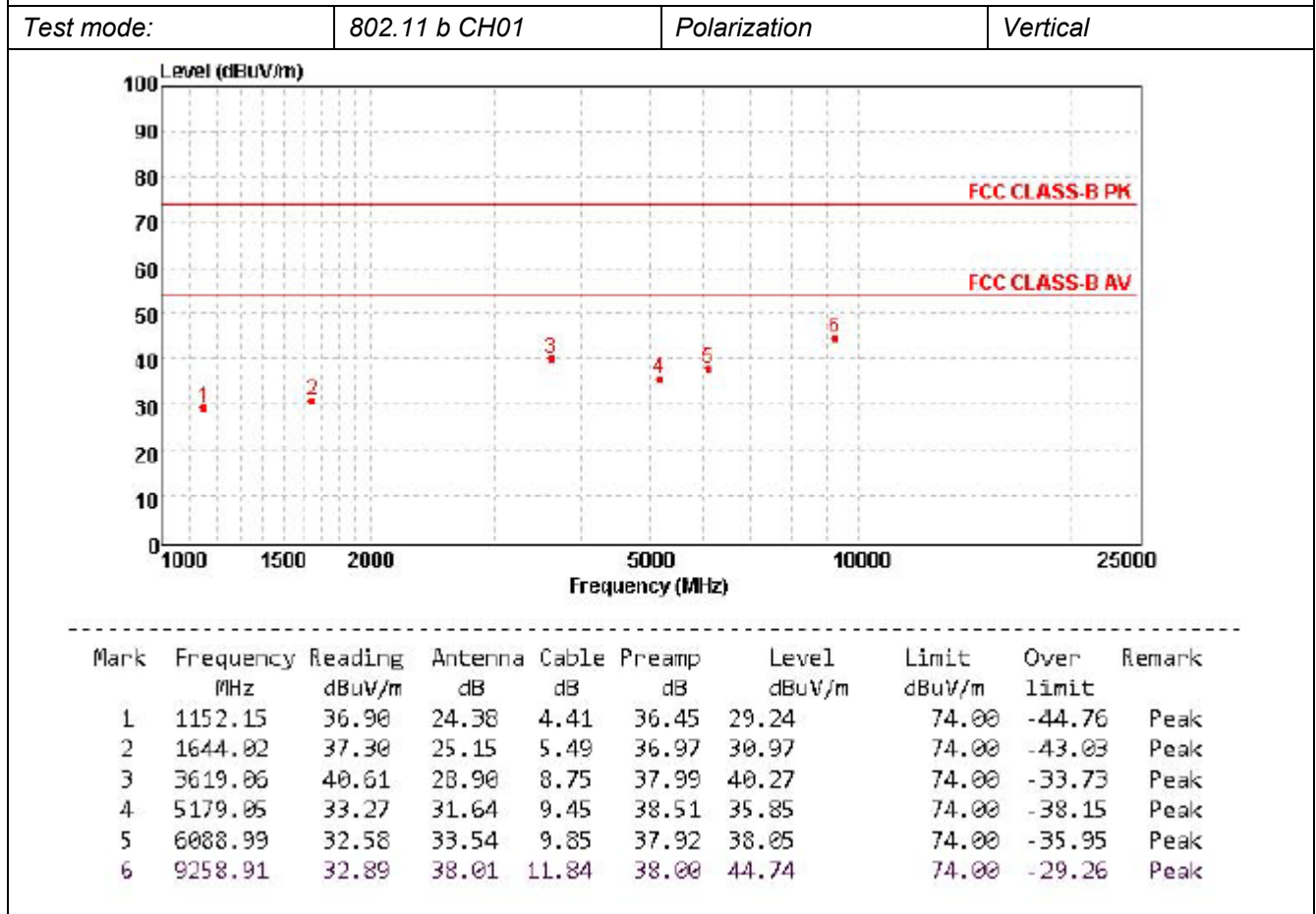
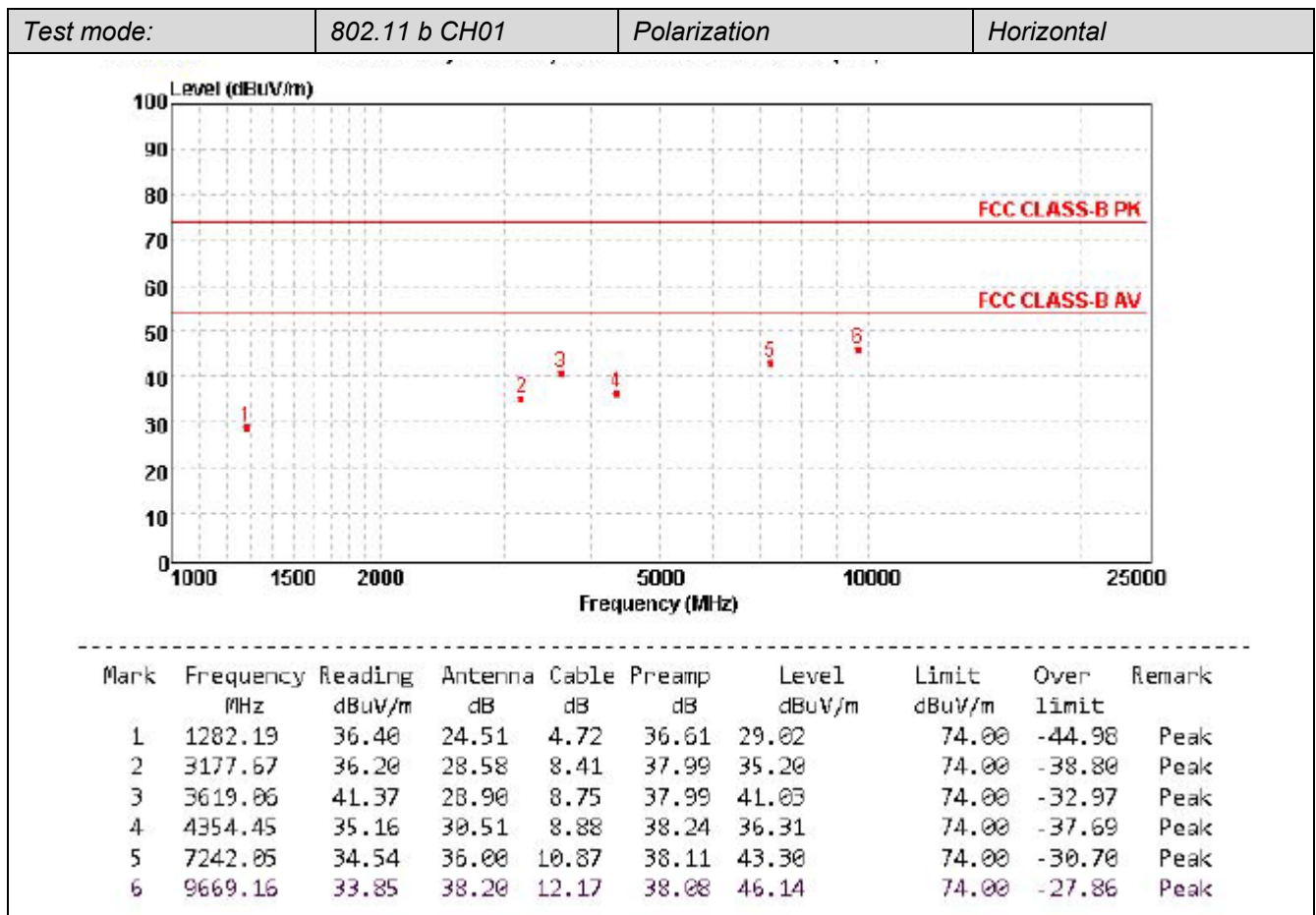
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
51.340000	15.30	-14.4	40.0	24.7	QP	300.0	66.00	HORIZONTAL
57.160000	13.20	-14.7	40.0	26.8	QP	100.0	27.00	HORIZONTAL
109.540000	14.00	-15.1	43.5	29.5	QP	100.0	212.00	HORIZONTAL
204.600000	14.40	-13.8	43.5	29.1	QP	300.0	360.00	HORIZONTAL
549.920000	23.70	-4.8	46.0	22.3	QP	100.0	340.00	HORIZONTAL
955.380000	32.10	3.8	46.0	13.9	QP	300.0	360.00	HORIZONTAL

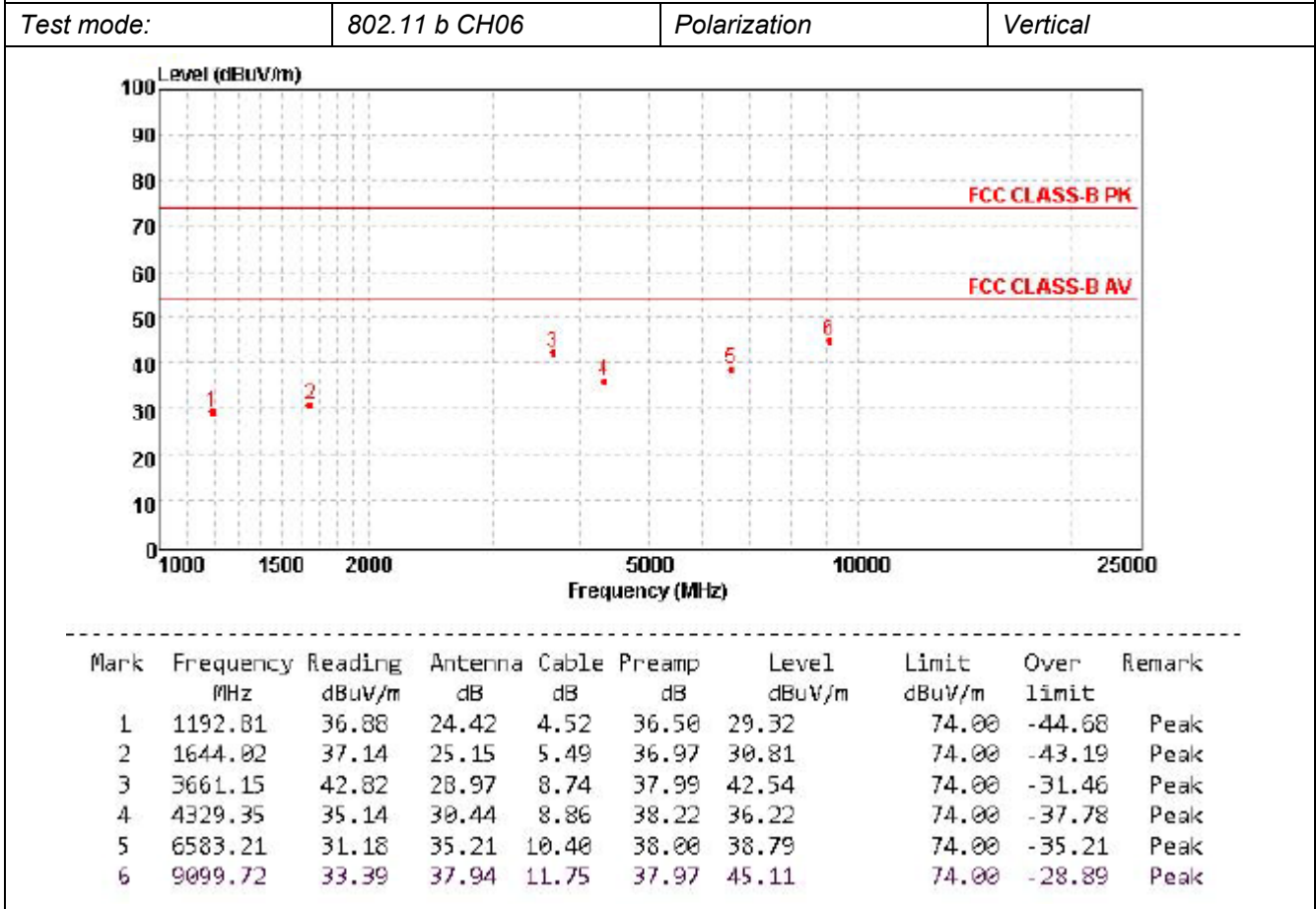
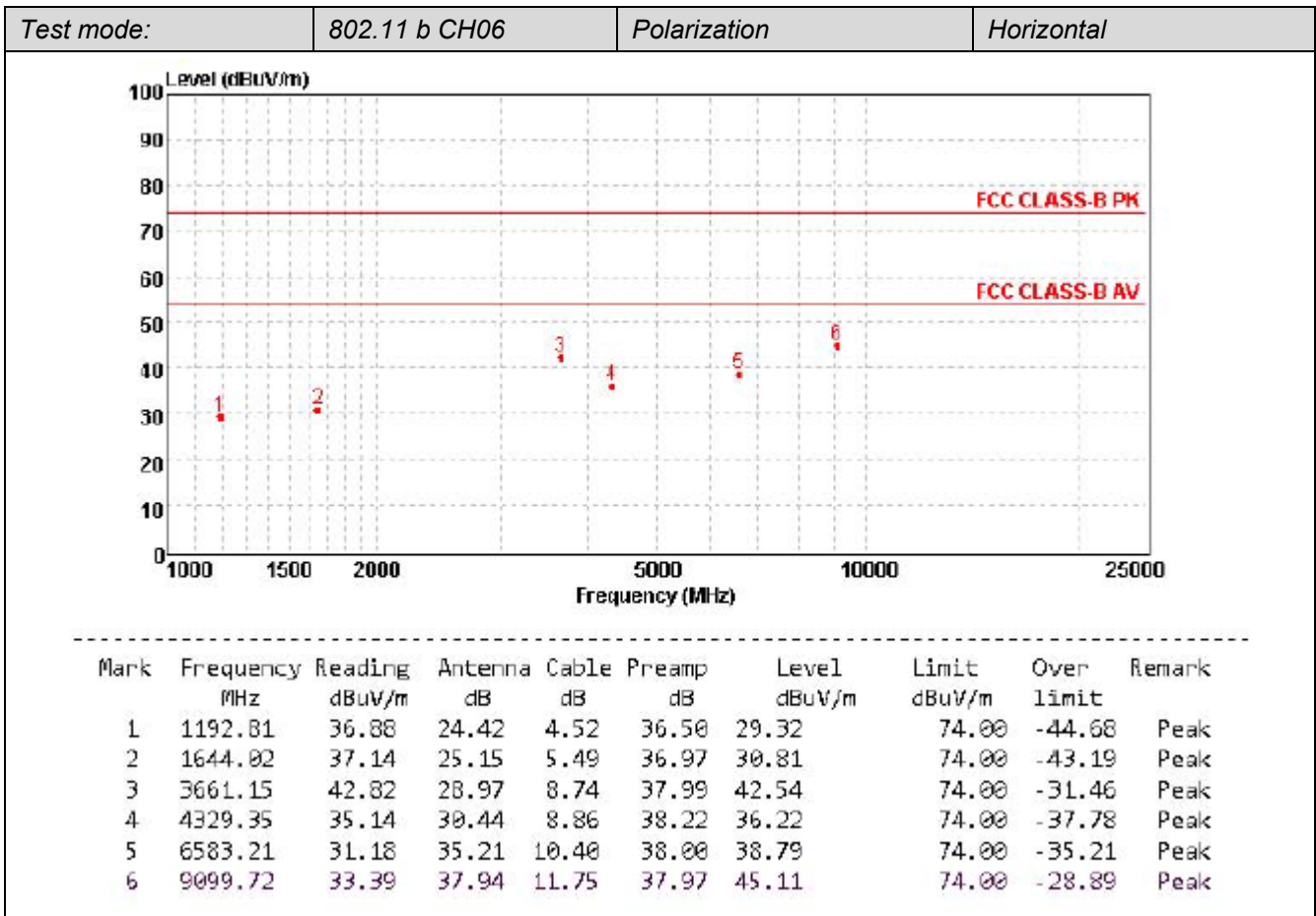


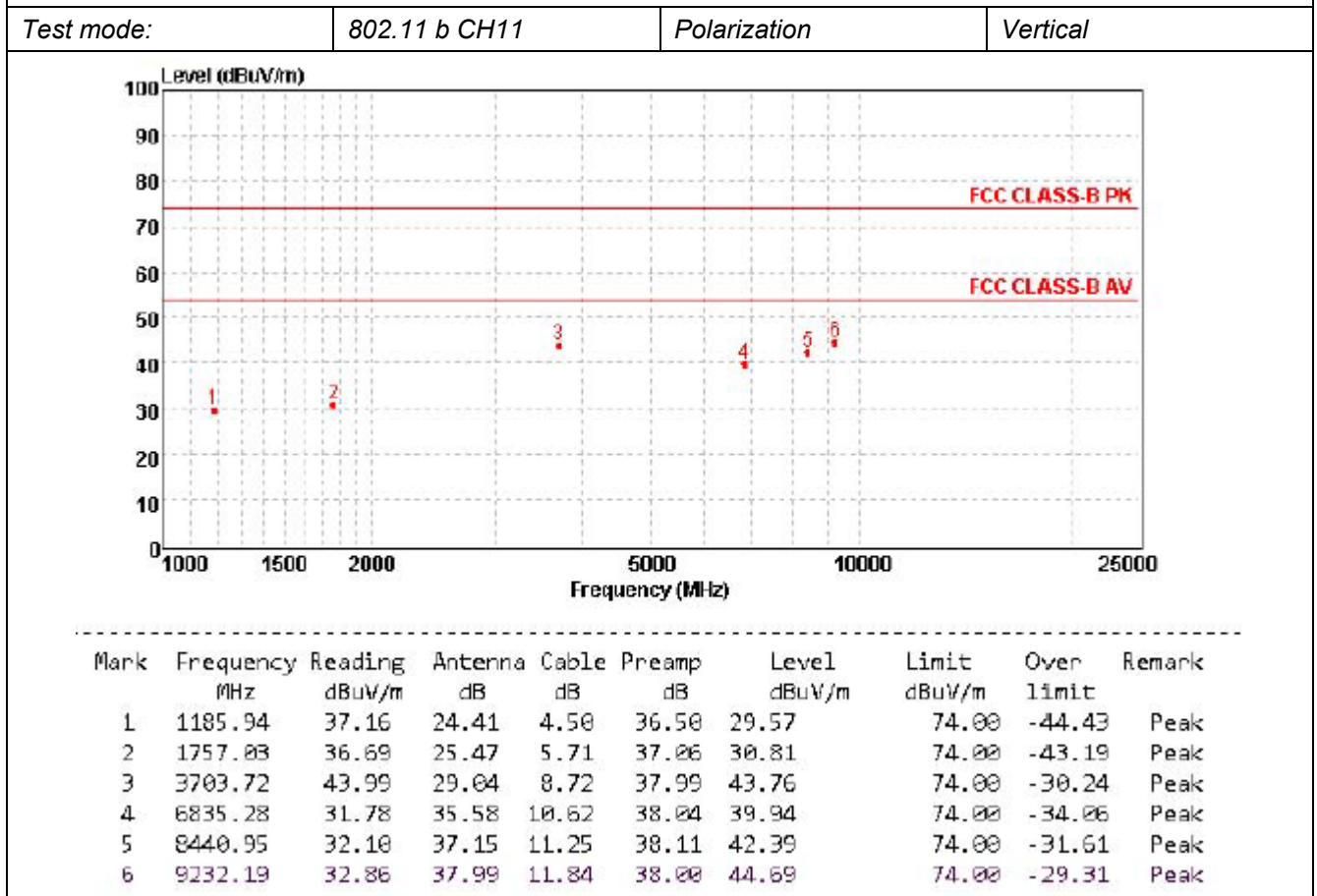
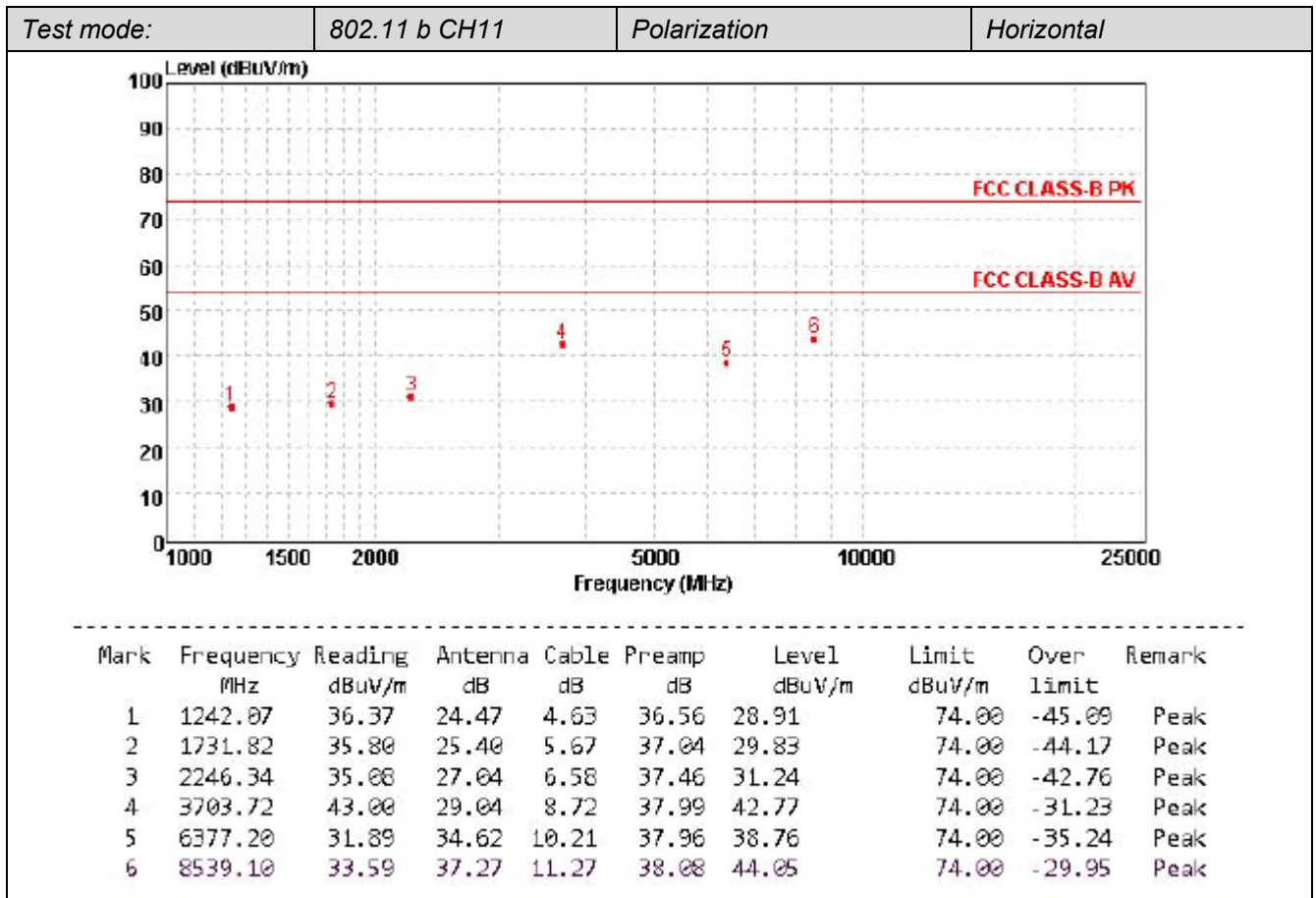
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
35.820000	13.40	-15.9	40.0	26.6	QP	100.0	44.00	VERTICAL
57.160000	13.20	-14.7	40.0	26.8	QP	100.0	23.00	VERTICAL
101.780000	13.20	-14.4	43.5	30.3	QP	100.0	160.00	VERTICAL
210.420000	14.90	-14.0	43.5	28.6	QP	100.0	206.00	VERTICAL
542.160000	23.30	-5.2	46.0	22.7	QP	100.0	275.00	VERTICAL
951.500000	32.10	3.7	46.0	13.9	QP	100.0	23.00	VERTICAL

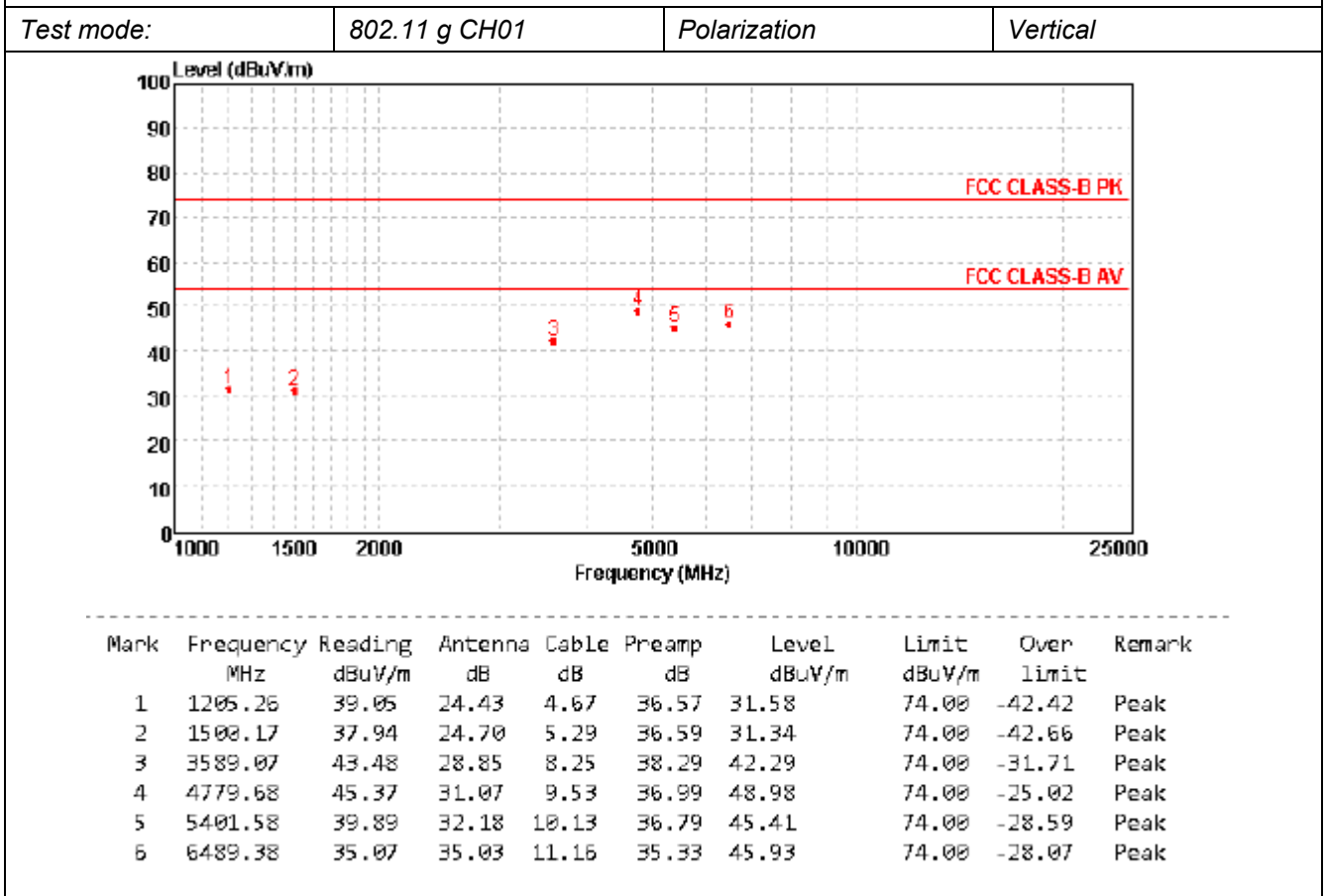
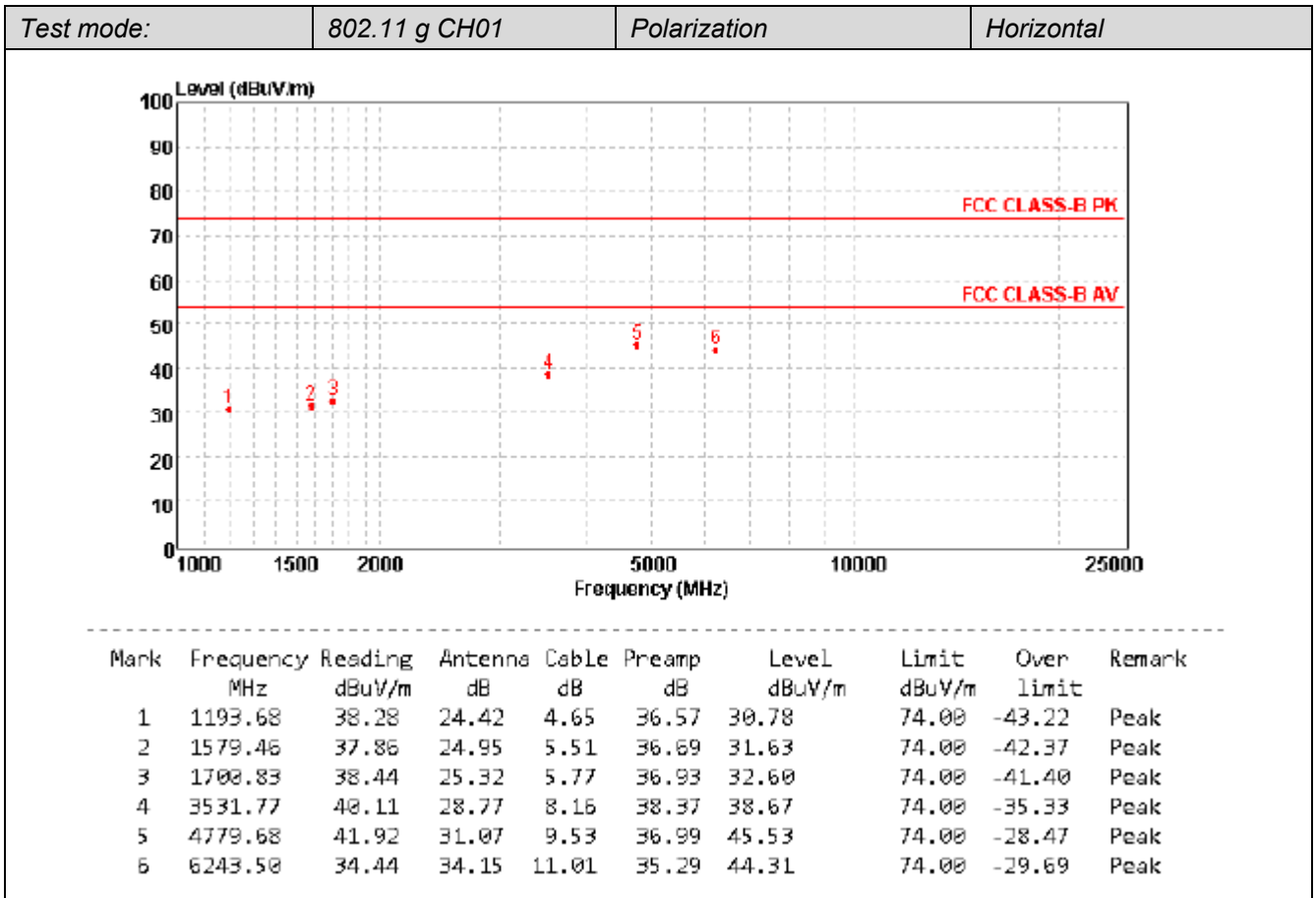
Remark: Transd=Cable lose+Antenna factor-Pre-amplifier; Margin=Limit-Level

Above 1GHz

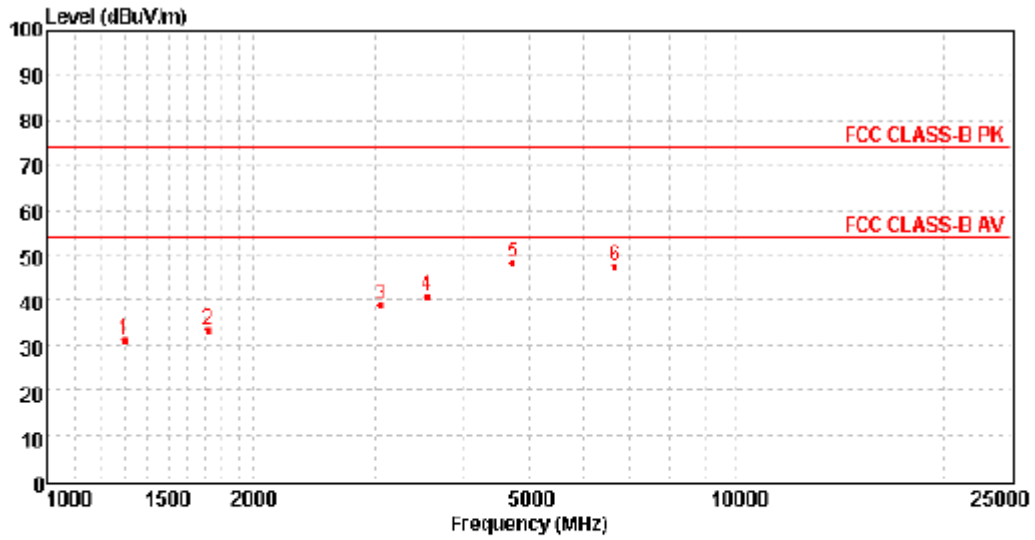






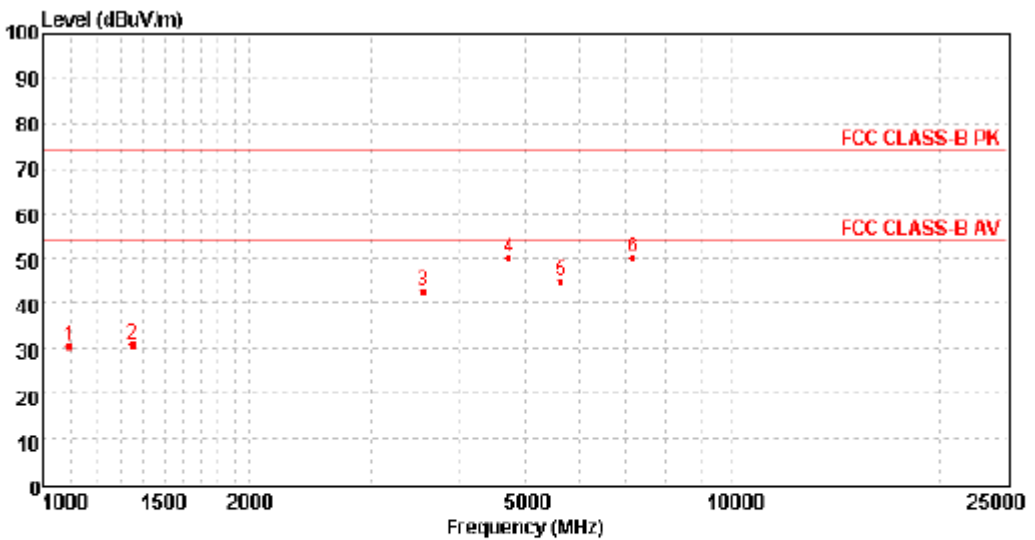


Test mode:	802.11 g CH06	Polarization	Horizontal
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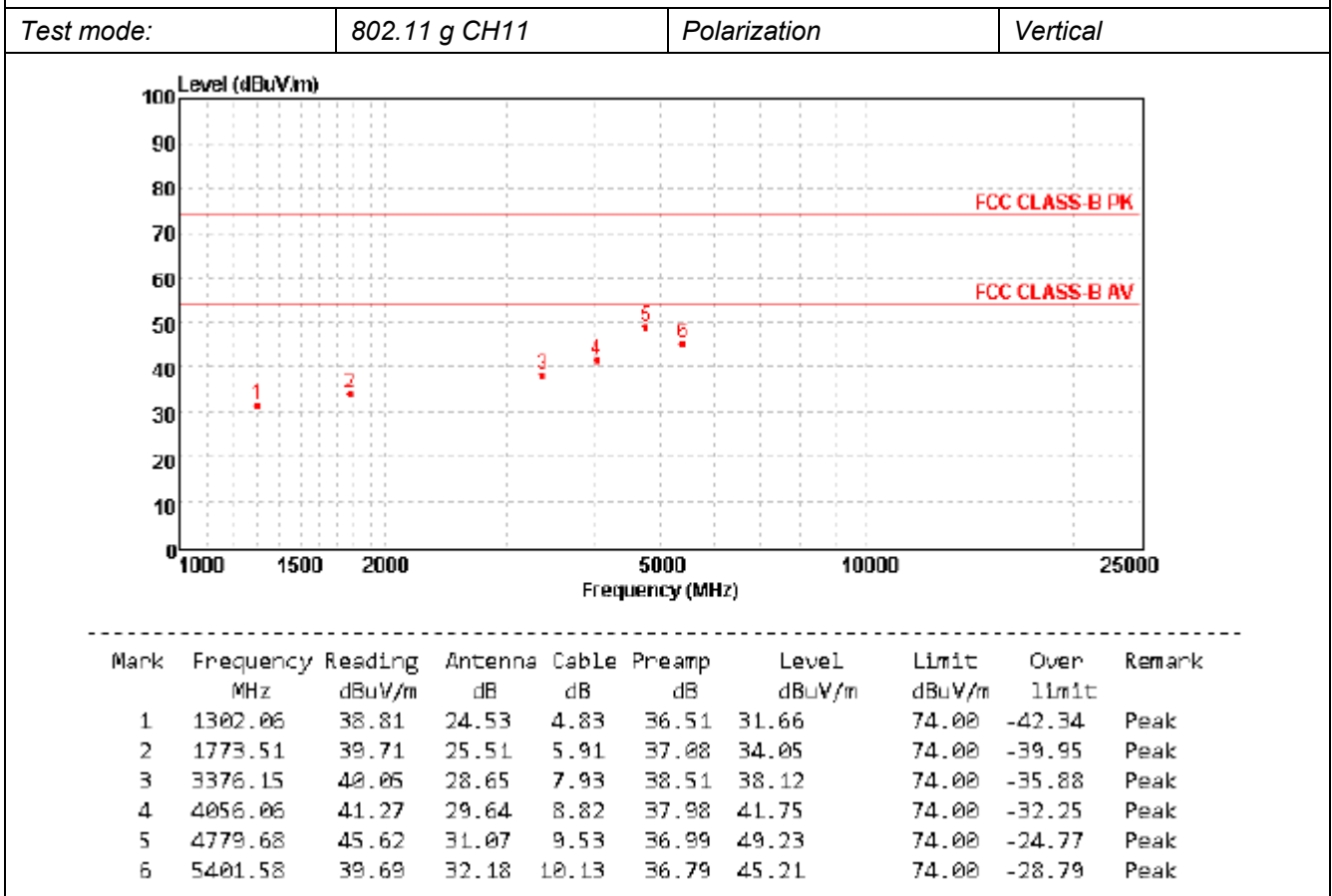
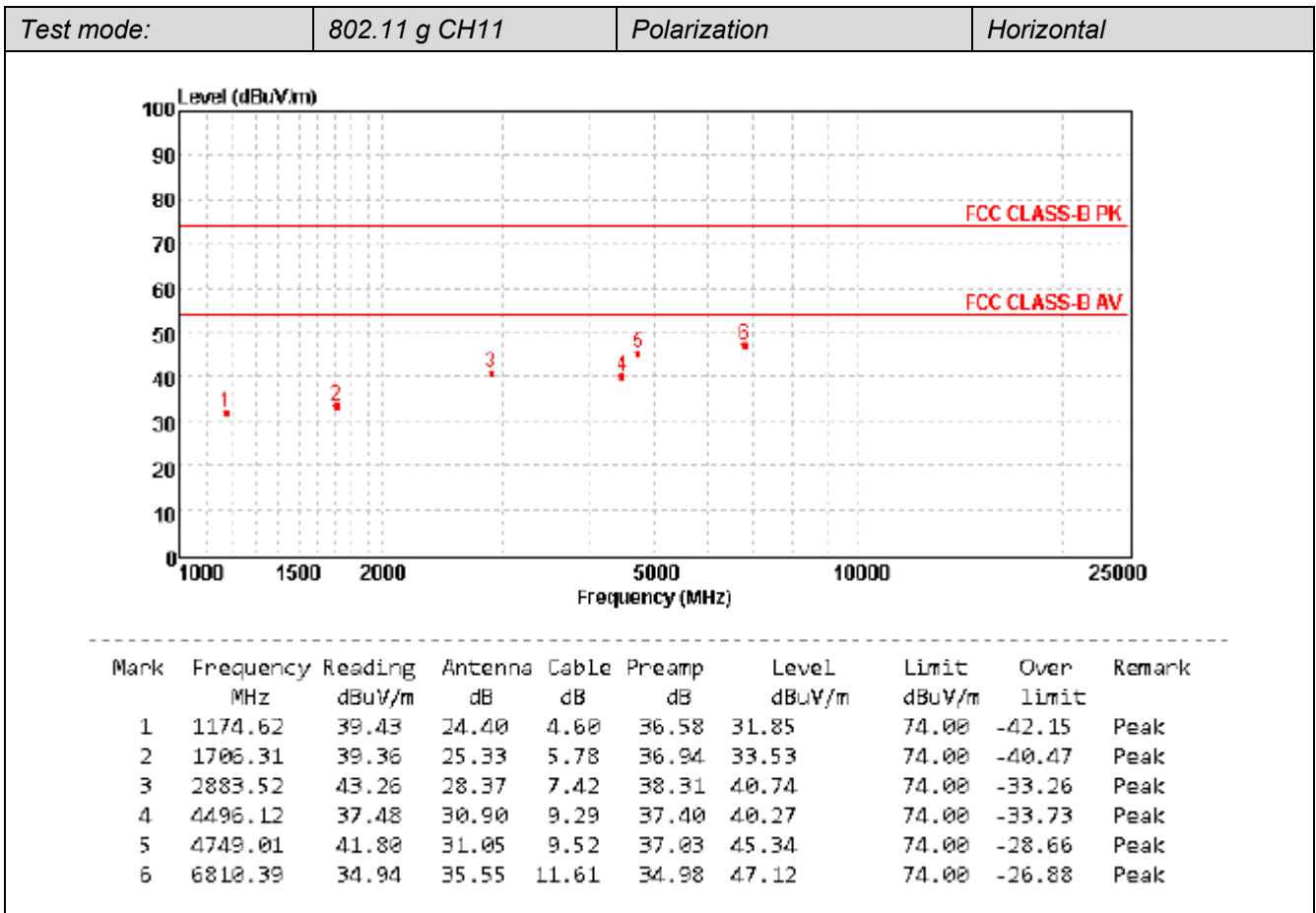


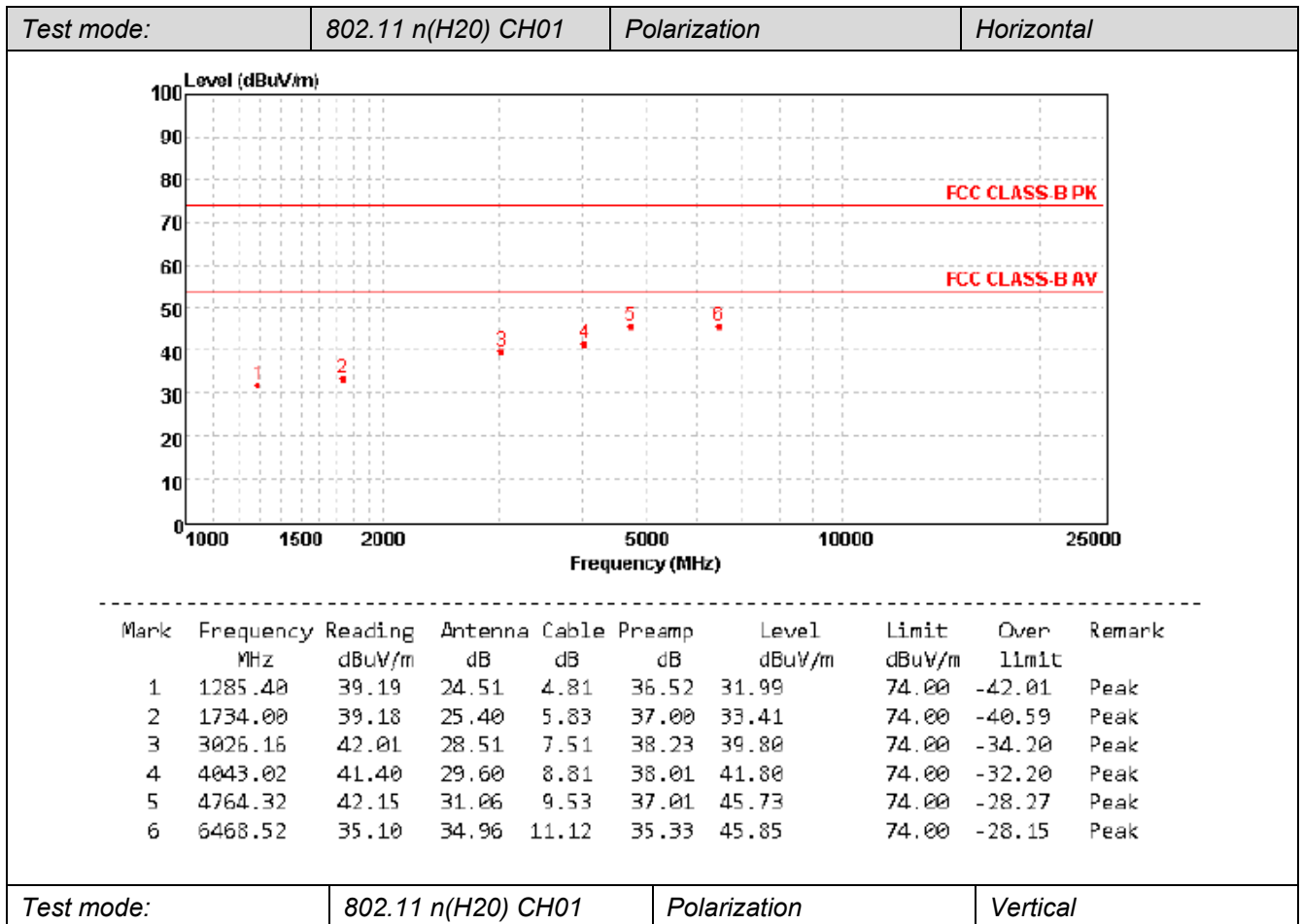
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1297.88	38.55	24.52	4.83	36.52	31.38	74.00	-42.62	Peak
2	1717.33	39.15	25.36	5.80	36.97	33.34	74.00	-40.66	Peak
3	3055.52	41.04	28.52	7.55	38.22	38.89	74.00	-35.11	Peak
4	3566.04	42.08	28.82	8.22	38.32	40.80	74.00	-33.20	Peak
5	4749.01	44.85	31.05	9.52	37.03	48.39	74.00	-25.61	Peak
6	6680.13	35.85	35.35	11.46	35.21	47.45	74.00	-26.55	Peak

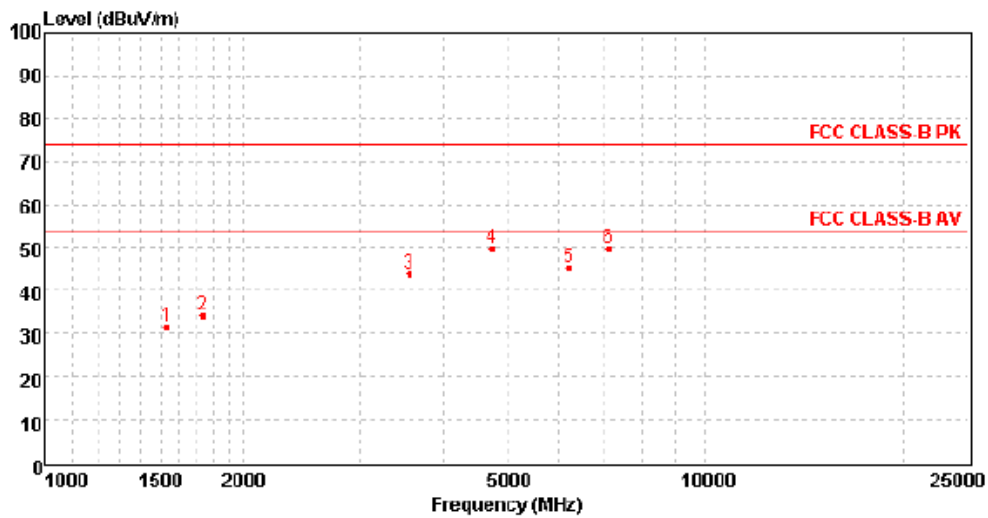
Test mode:	802.11 g CH06	Polarization	Vertical
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Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1094.32	38.26	24.31	4.42	36.62	30.37	74.00	-43.63	Peak
2	1348.99	37.74	24.57	4.91	36.49	30.73	74.00	-43.27	Peak
3	3566.04	43.94	28.82	8.22	38.32	42.66	74.00	-31.34	Peak
4	4749.01	46.66	31.05	9.52	37.03	50.20	74.00	-23.80	Peak
5	5650.56	37.82	32.64	10.35	35.73	45.08	74.00	-28.92	Peak
6	7170.33	37.55	35.95	11.86	35.04	50.32	74.00	-23.68	Peak

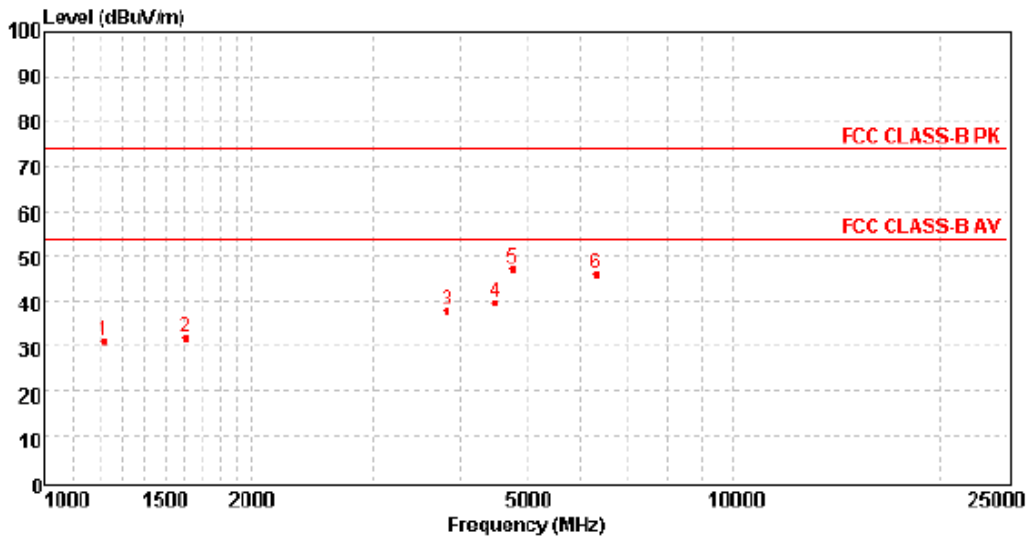






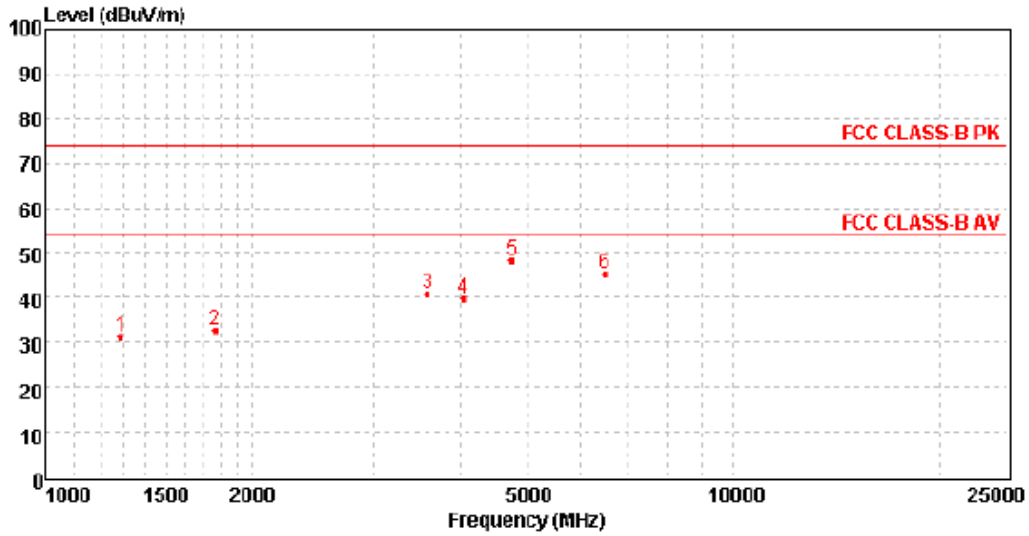
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1529.43	37.89	24.80	5.37	36.63	31.43	74.00	-42.57	Peak
2	1734.00	39.82	25.40	5.83	37.00	34.05	74.00	-39.95	Peak
3	3566.04	45.12	28.82	8.22	38.32	43.84	74.00	-30.16	Peak
4	4764.32	46.19	31.06	9.53	37.01	49.77	74.00	-24.23	Peak
5	6223.43	35.39	34.08	11.01	35.29	45.19	74.00	-28.81	Peak
6	7147.29	37.19	35.92	11.86	35.00	49.97	74.00	-24.03	Peak

Test mode: 802.11 n(H20) CH06 Polarization Horizontal



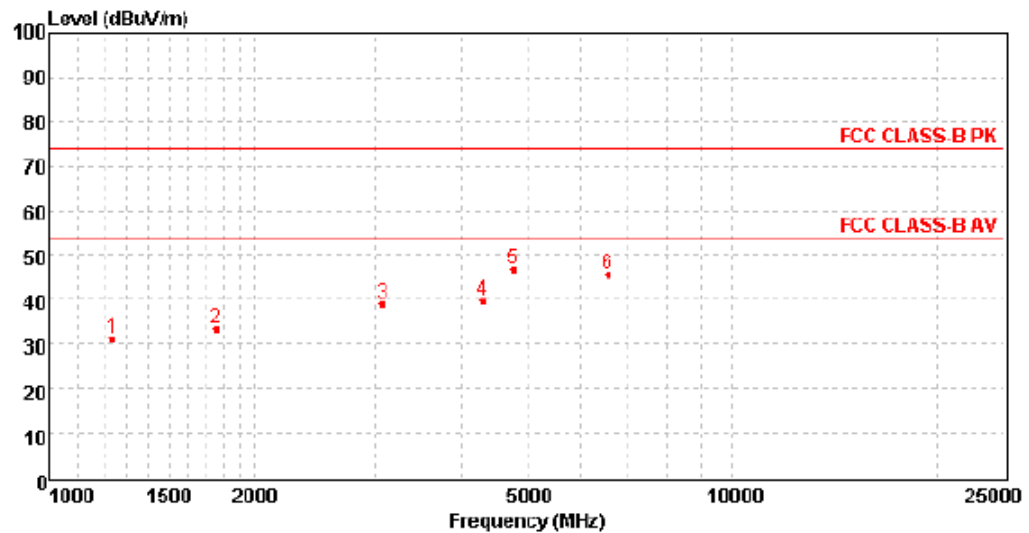
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1220.88	38.71	24.45	4.70	36.56	31.30	74.00	-42.70	Peak
2	1605.08	38.04	25.04	5.58	36.73	31.93	74.00	-42.07	Peak
3	3840.07	38.22	29.26	8.56	38.21	37.83	74.00	-36.17	Peak
4	4510.62	37.04	30.91	9.31	37.38	39.88	74.00	-34.12	Peak
5	4795.09	43.59	31.08	9.54	36.97	47.24	74.00	-26.76	Peak
6	6324.40	36.00	34.42	11.00	35.30	46.12	74.00	-27.88	Peak

Test mode: 802.11 n(H20) CH06 Polarization Vertical

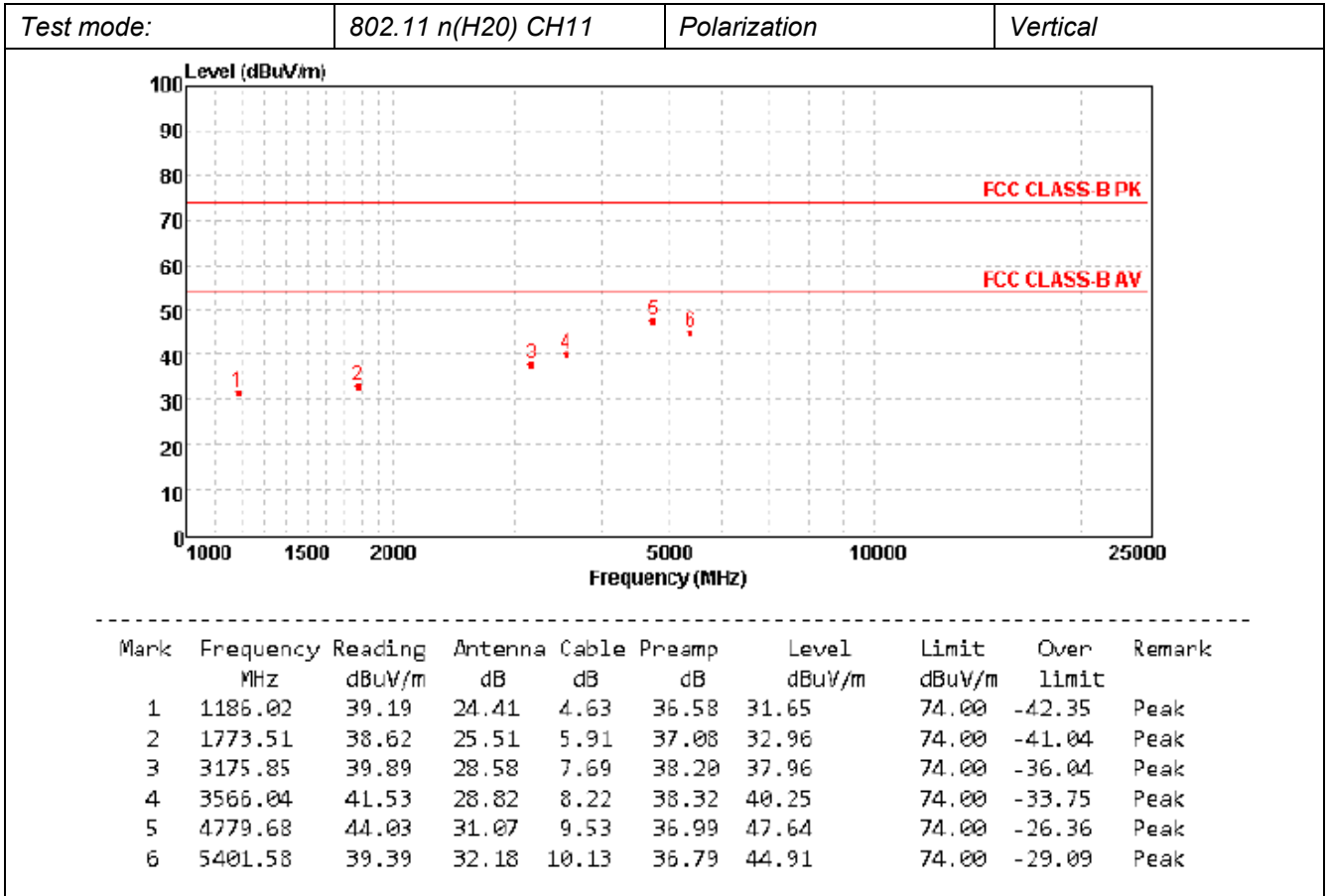


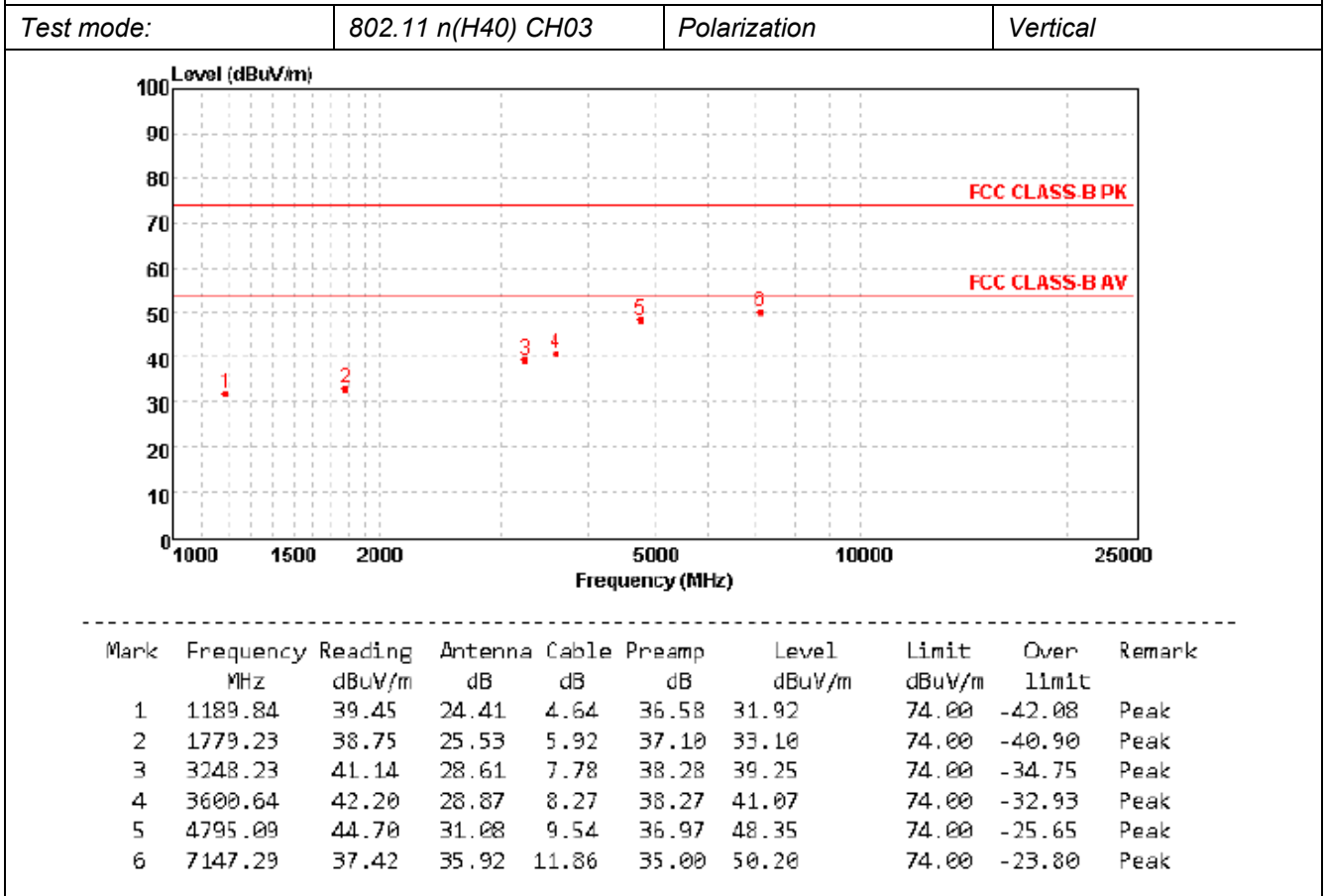
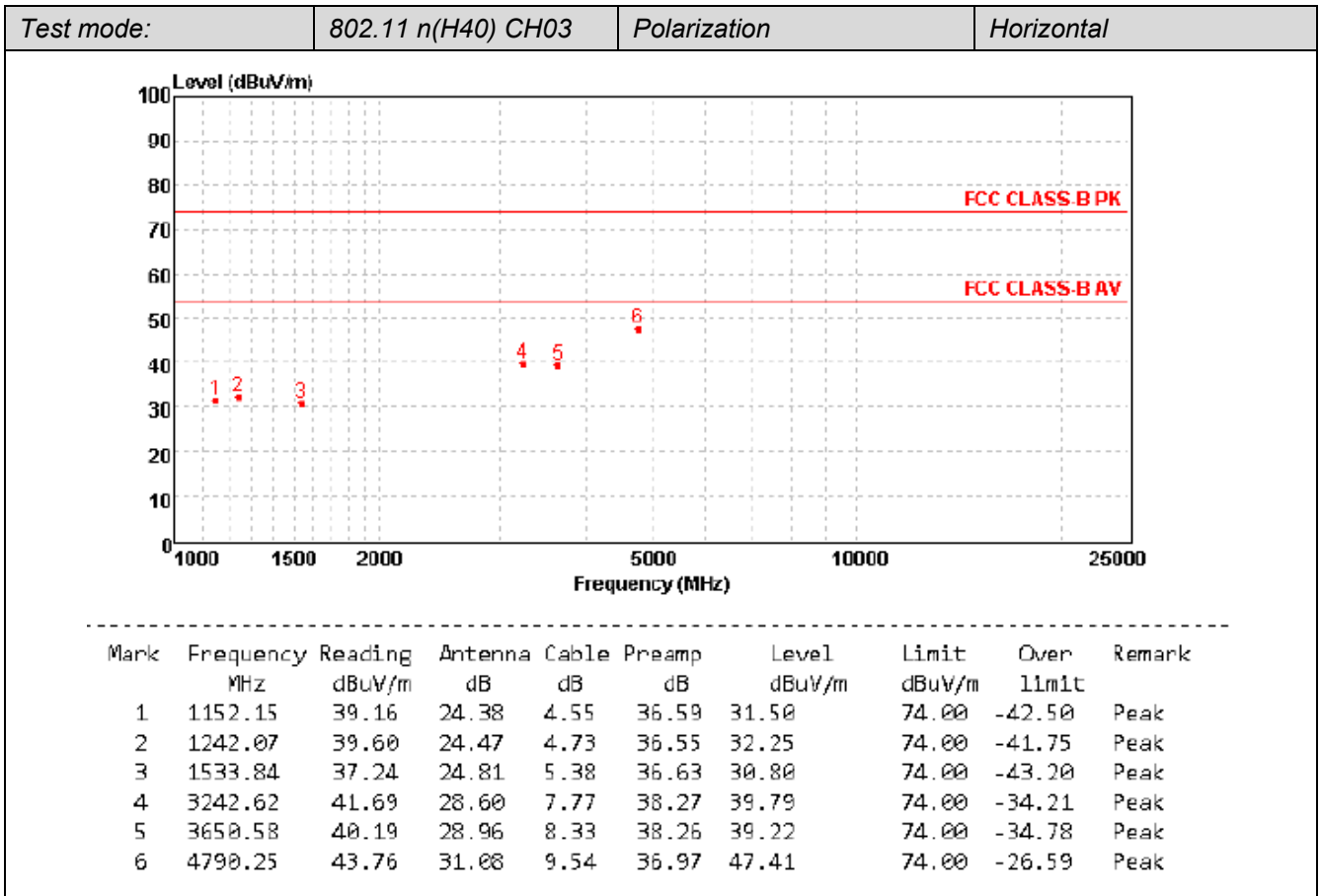
Mark	Frequency MHz	Reading dBUV/m	Antenna dB	Cable dB	Preamp dB	Level dBUV/m	Limit dBUV/m	Over limit	Remark
1	1285.40	38.40	24.51	4.81	36.52	31.20	74.00	-42.80	Peak
2	1762.13	38.49	25.48	5.89	37.06	32.80	74.00	-41.20	Peak
3	3589.07	42.27	28.85	8.25	38.29	41.08	74.00	-32.92	Peak
4	4056.06	39.31	29.64	8.82	37.98	39.79	74.00	-34.21	Peak
5	4779.68	44.88	31.07	9.53	36.99	48.49	74.00	-25.51	Peak
6	6510.30	34.43	35.10	11.19	35.34	45.38	74.00	-28.62	Peak

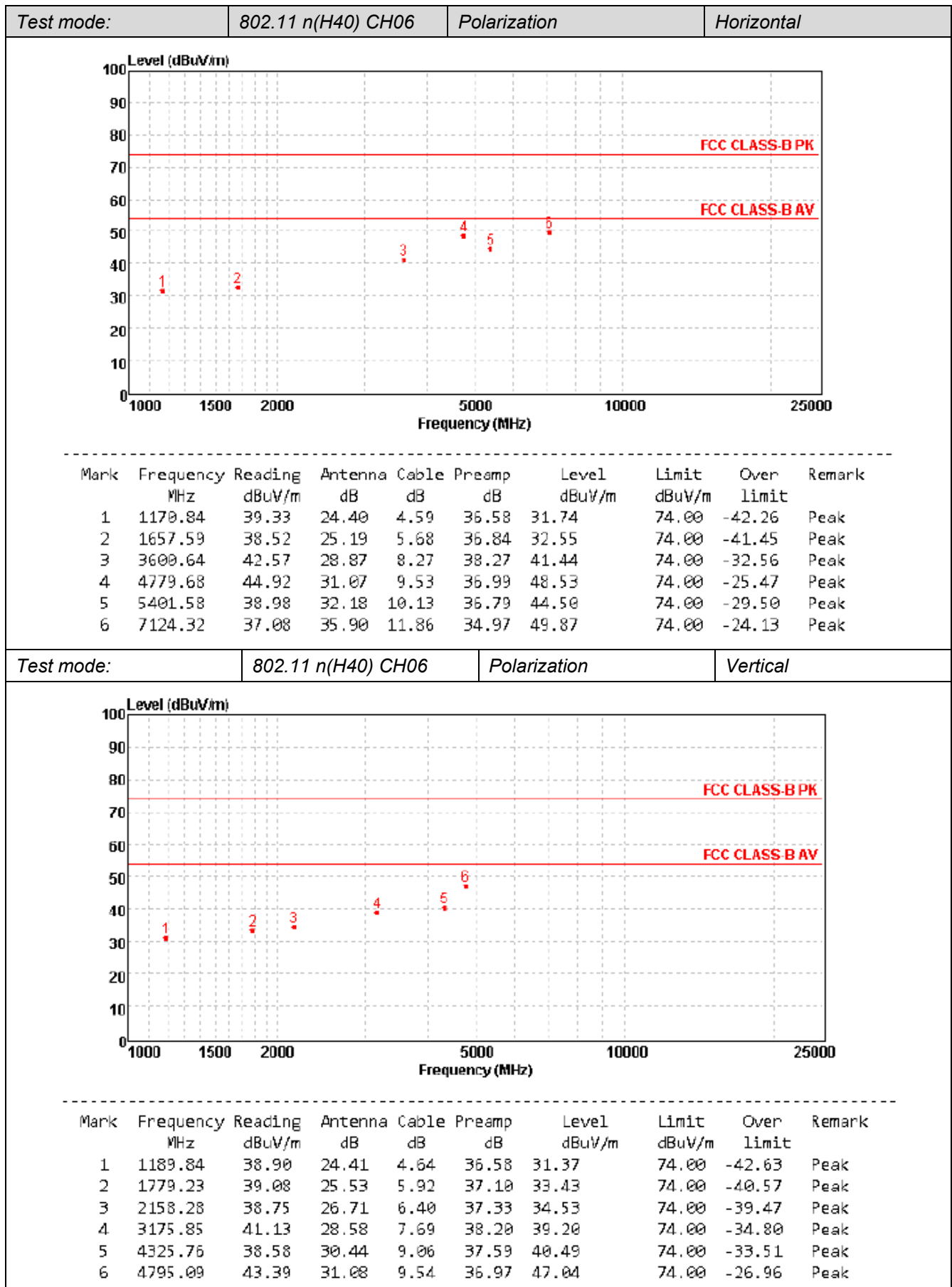
Test mode: 802.11 n(H20) CH11 Polarization Horizontal

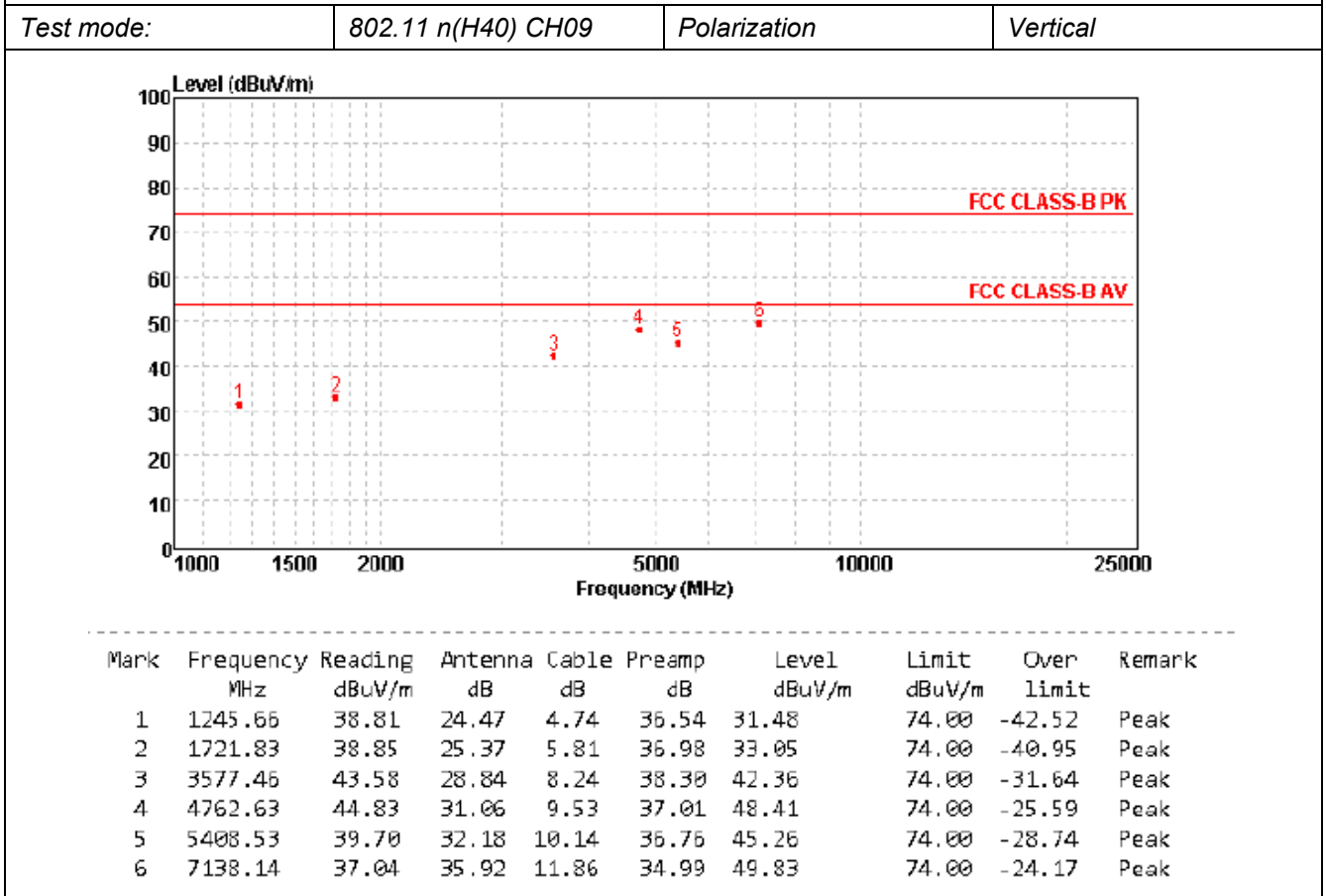
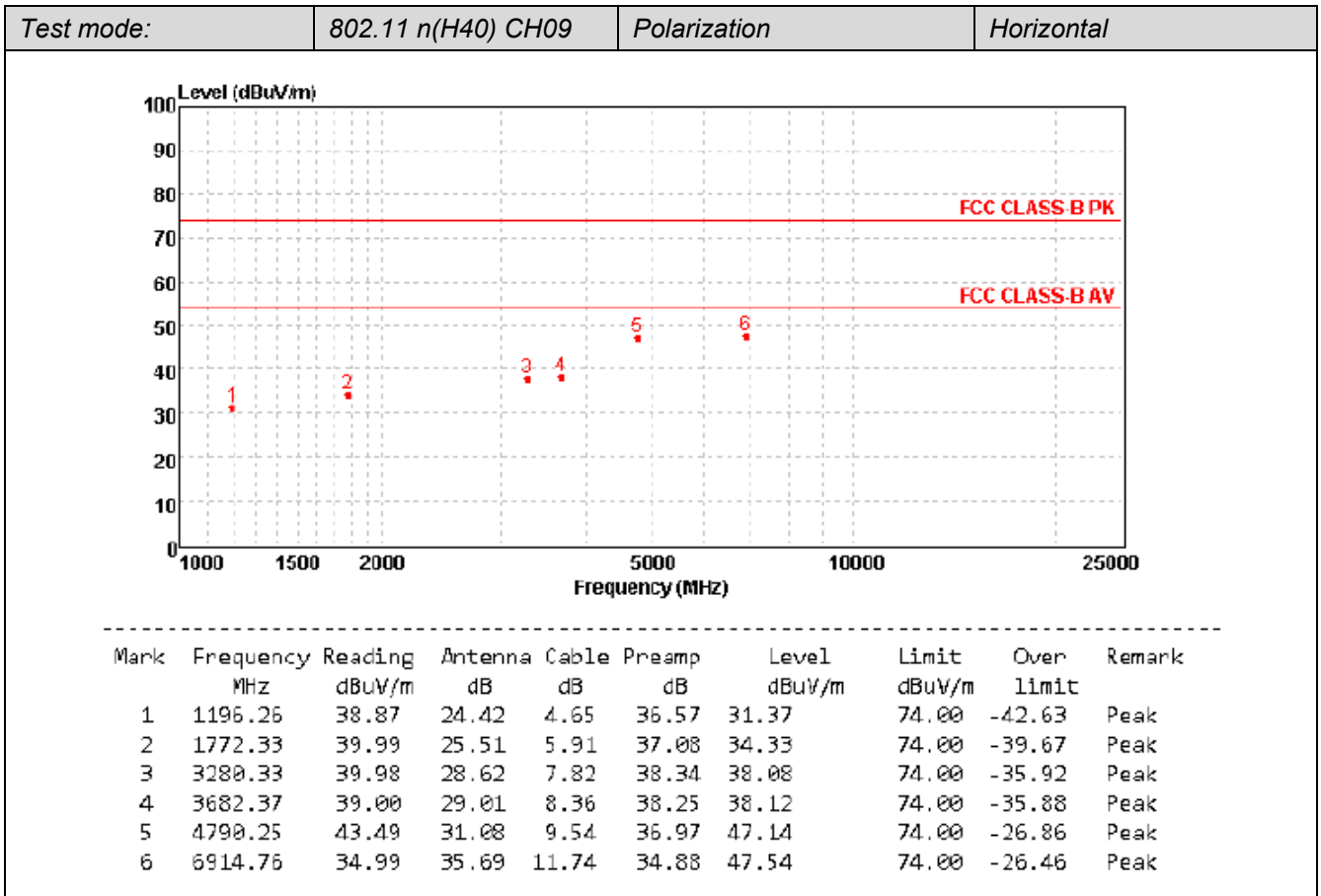


Mark	Frequency MHz	Reading dBUV/m	Antenna dB	Cable dB	Preamp dB	Level dBUV/m	Limit dBUV/m	Over limit	Remark
1	1236.70	38.41	24.46	4.72	36.55	31.04	74.00	-42.96	Peak
2	1756.47	39.05	25.47	5.88	37.05	33.35	74.00	-40.65	Peak
3	3075.25	41.19	28.53	7.57	38.22	39.07	74.00	-34.93	Peak
4	4311.86	38.10	30.41	9.05	37.60	39.96	74.00	-34.04	Peak
5	4795.09	43.30	31.08	9.54	36.97	46.95	74.00	-27.05	Peak
6	6573.47	34.48	35.18	11.31	35.35	45.62	74.00	-28.38	Peak









Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The measurement result of peak value is smaller than the AVG Limit, so the AVG value is not show in the test report.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

5. Test Setup Photos of the EUT

Radiated Emission



Conducted Emission (PC Charge)



6. External and Internal Photos of the EUT

Reference to Test Report TRE1611003501

.....End of Report.....