



Series Model No.: C7 Ultra

Operation Mode: 802.11a Mode with 5.2G TX CH Low

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
5150	54.19	-2.49	51.7	74	-22.3	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
5150	53.29	-2.49	50.8	74	-23.2	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



Operation Mode: TX CH High with 5.2G

Horizontal

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
5350	53.19	-2.11	51.08	74	-22.92	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
5350	51.04	-2.11	48.93	74	-25.07	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



Series Model No.: S24 Ultra

Operation Mode: 802.11a Mode with 5.2G TX CH Low

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
5150	53.29	-2.49	50.8	74	-23.2	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
5150	51.47	-2.49	48.98	74	-25.02	peak
5150	/	-2.49	/	54	/	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



Operation Mode: TX CH High with 5.2G

Horizontal

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
5350	53.26	-2.11	51.15	74	-22.85	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
5350	51.44	-2.11	49.33	74	-24.67	peak
5350	/	-2.11	/	54	/	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Remark:

1. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.
2. In restricted bands of operation, the spurious emissions below the permissible value more than 2 0dB.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

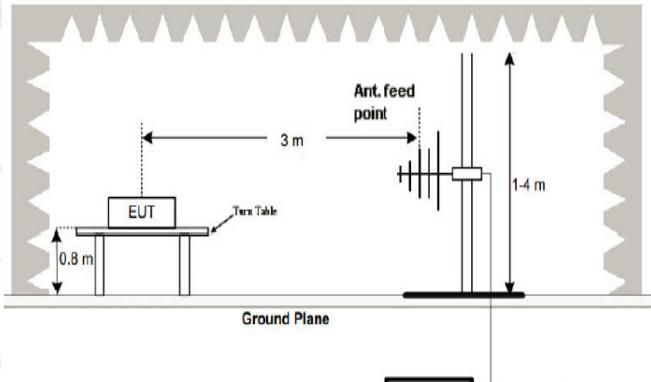
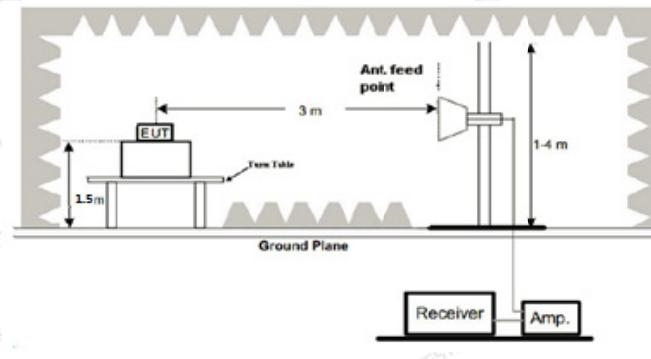


## 4.7. Spurious Emission

### 4.7.1.1. Test Specification

<b>Test Requirement:</b>	FCC CFR47 Part 15 Section 15.407																																	
<b>Test Method:</b>	KDB 789033 D02 v02r01																																	
<b>Frequency Range:</b>	9kHz to 40GHz																																	
<b>Measurement Distance:</b>	3 m																																	
<b>Antenna Polarization:</b>	Horizontal & Vertical																																	
<b>Operation mode:</b>	Transmitting mode with modulation																																	
<b>Receiver Setup:</b>	<table border="1"> <thead> <tr> <th>Frequency</th> <th>Detector</th> <th>RBW</th> <th>VBW</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>9kHz- 150kHz</td> <td>Quasi-peak</td> <td>200Hz</td> <td>1kHz</td> <td>Quasi-peak Value</td> </tr> <tr> <td>150kHz- 30MHz</td> <td>Quasi-peak</td> <td>9kHz</td> <td>30kHz</td> <td>Quasi-peak Value</td> </tr> <tr> <td>30MHz-1GHz</td> <td>Quasi-peak</td> <td>120KHz</td> <td>300KHz</td> <td>Quasi-peak Value</td> </tr> <tr> <td rowspan="2">Above 1GHz</td><td>Peak</td> <td>1MHz</td> <td>3MHz</td> <td>Peak Value</td> </tr> <tr> <td>Peak</td> <td>1MHz</td> <td>10Hz</td> <td>Average Value</td> </tr> </tbody> </table>					Frequency	Detector	RBW	VBW	Remark	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value	150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value	Above 1GHz	Peak	1MHz	3MHz	Peak Value	Peak	1MHz	10Hz	Average Value
Frequency	Detector	RBW	VBW	Remark																														
9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value																														
150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value																														
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value																														
Above 1GHz	Peak	1MHz	3MHz	Peak Value																														
	Peak	1MHz	10Hz	Average Value																														
<b>Limit:</b>	<p>(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.</p> <p>(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</p> <p>The limit of frequency below 1GHz and which fall in restricted bands should complies 15.209.</p>																																	
<b>Test setup:</b>	<p>For radiated emissions below 30MHz</p>																																	



	<p><b>30MHz to 1GHz</b></p>  <p><b>Above 1GHz</b></p> 
<b>Test Procedure:</b>	<ol style="list-style-type: none"><li>1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li><li>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.</li><li>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.</li><li>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 and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.</li><li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li></ol>



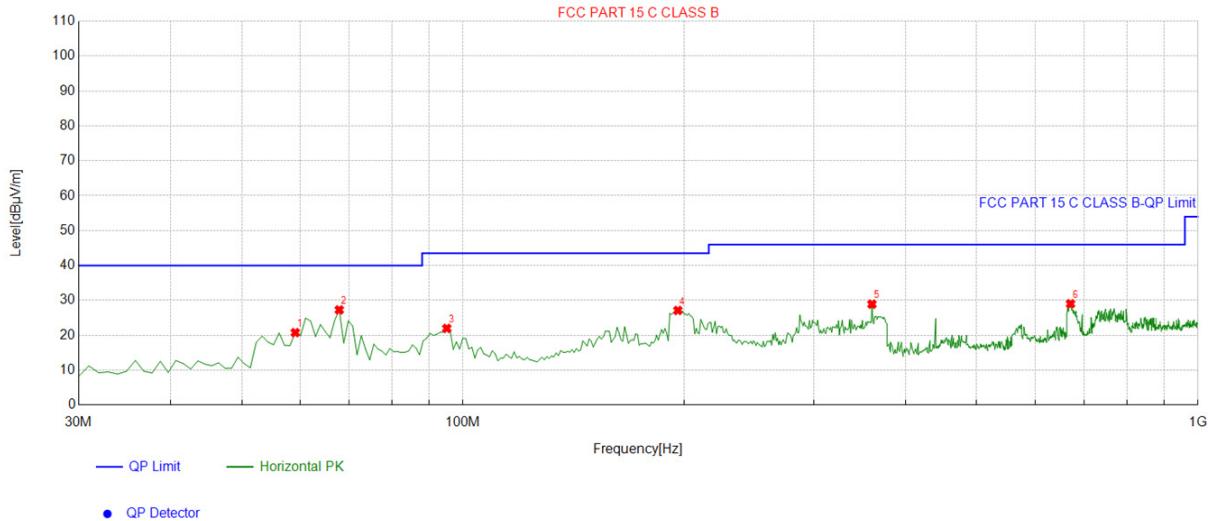
	6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
<b>Test results:</b>	PASS



#### 4.7.2. Test Data

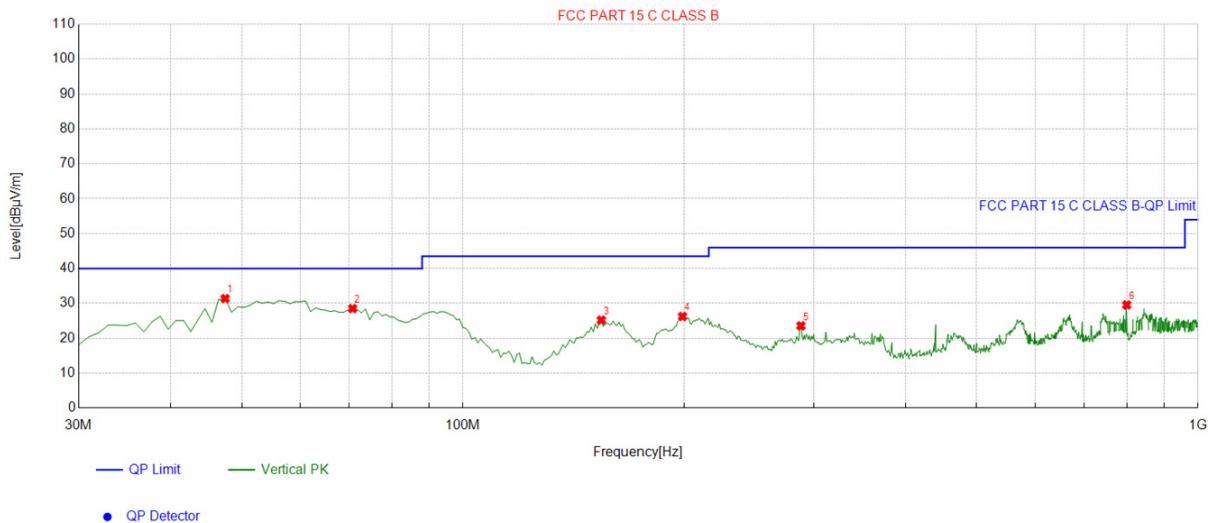
All the test modes completed for test. only the worst result of (802.11a at 5180MHz)  
was reported  
Below 1GHz

Test Model No.: S25 Ultra  
Horizontal



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	59.129129	-13.54	34.30	20.76	40.00	19.24	100	49	Horizontal
2	67.867868	-16.02	43.29	27.27	40.00	12.73	100	66	Horizontal
3	95.055055	-15.40	37.37	21.97	43.50	21.53	100	338	Horizontal
4	196.03603	-14.99	42.11	27.12	43.50	16.38	100	87	Horizontal
5	360.13013	-9.86	38.77	28.91	46.00	17.09	100	274	Horizontal
6	670.84084	-4.44	33.46	29.02	46.00	16.98	100	130	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

**Vertical**

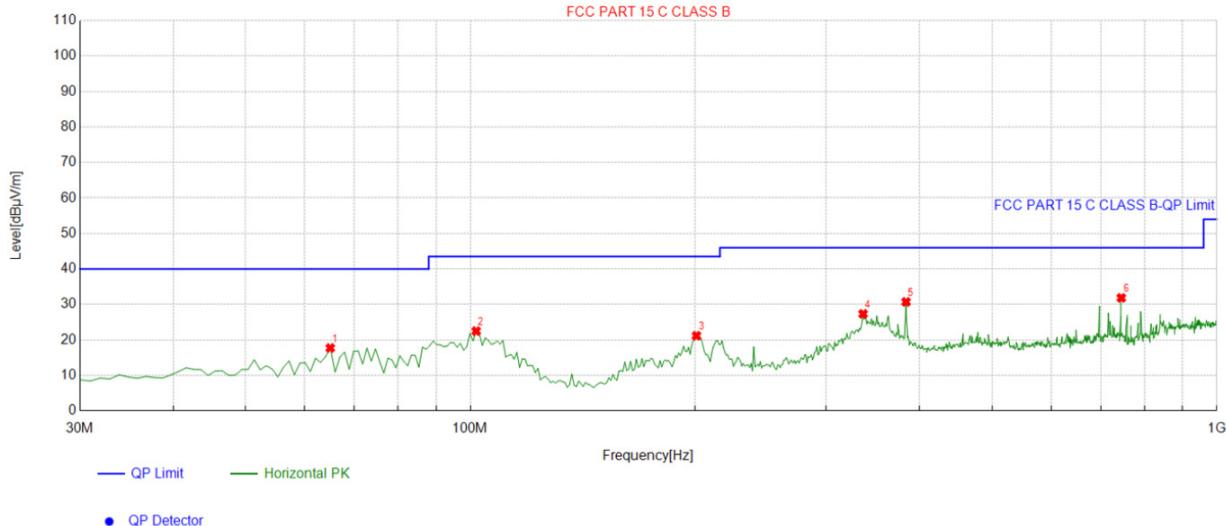
Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	47.477477	-13.86	45.24	31.38	40.00	8.62	100	156	Vertical
2	70.780781	-16.89	45.40	28.51	40.00	11.49	100	351	Vertical
3	154.28428	-17.76	42.96	25.20	43.50	18.30	100	16	Vertical
4	198.94894	-14.75	40.99	26.24	43.50	17.26	100	10	Vertical
5	288.27827	-12.19	35.76	23.57	46.00	22.43	100	124	Vertical
6	799.97998	-3.01	32.56	29.55	46.00	16.45	100	203	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



## Series Model No.: X24 Ultra

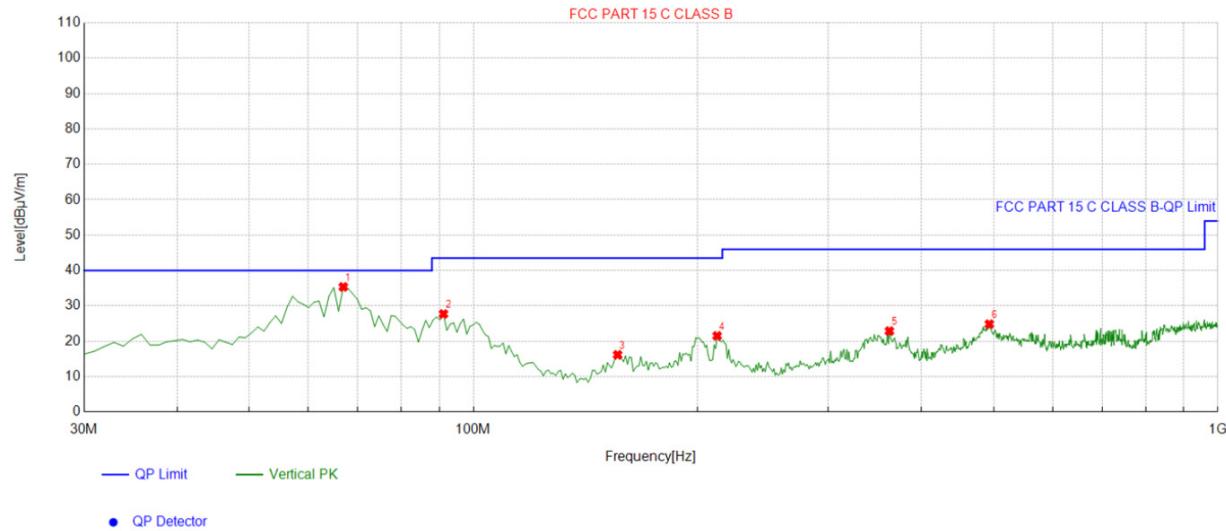
## Horizontal



## Suspected List

NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	64.954955	-15.33	33.06	17.73	40.00	22.27	100	150	Horizontal
2	101.85185	-14.86	37.34	22.48	43.50	21.02	100	11	Horizontal
3	200.89089	-15.16	36.34	21.18	43.50	22.32	100	118	Horizontal
4	335.85585	-10.57	37.89	27.32	46.00	18.68	100	71	Horizontal
5	383.43343	-9.11	39.83	30.72	46.00	15.28	100	232	Horizontal
6	744.63463	-3.42	35.27	31.85	46.00	14.15	100	226	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

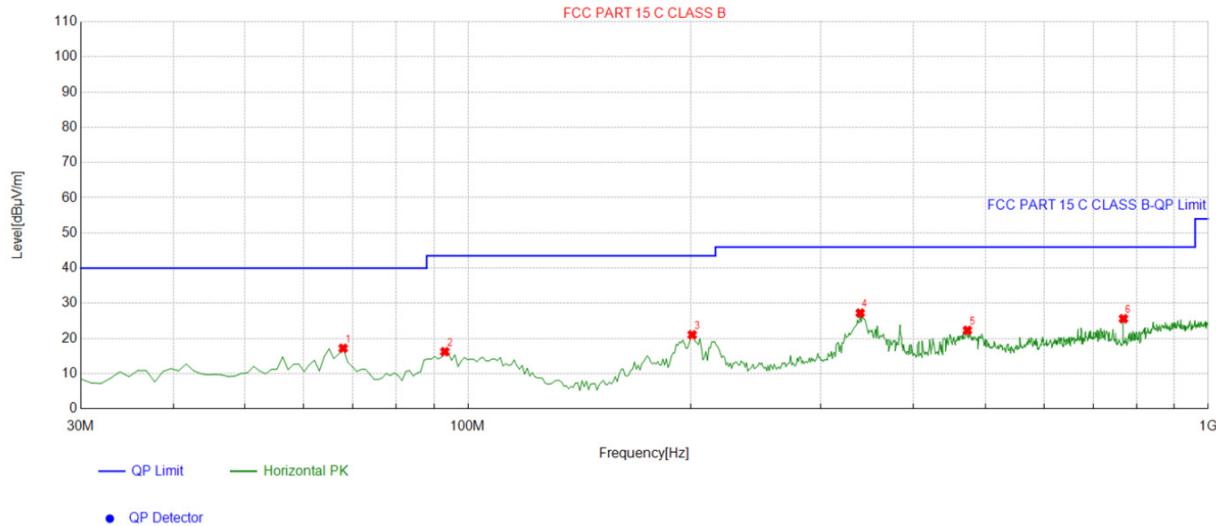
**Vertical**

Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	66.896897	-16.17	51.53	35.36	40.00	4.64	100	304	Vertical
2	91.171171	-16.91	44.62	27.71	43.50	15.79	100	237	Vertical
3	156.22622	-17.78	33.94	16.16	43.50	27.34	100	59	Vertical
4	212.54254	-14.82	36.34	21.52	43.50	21.98	100	36	Vertical
5	362.07207	-9.74	32.61	22.87	46.00	23.13	100	14	Vertical
6	493.15315	-7.86	32.69	24.83	46.00	21.17	100	268	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

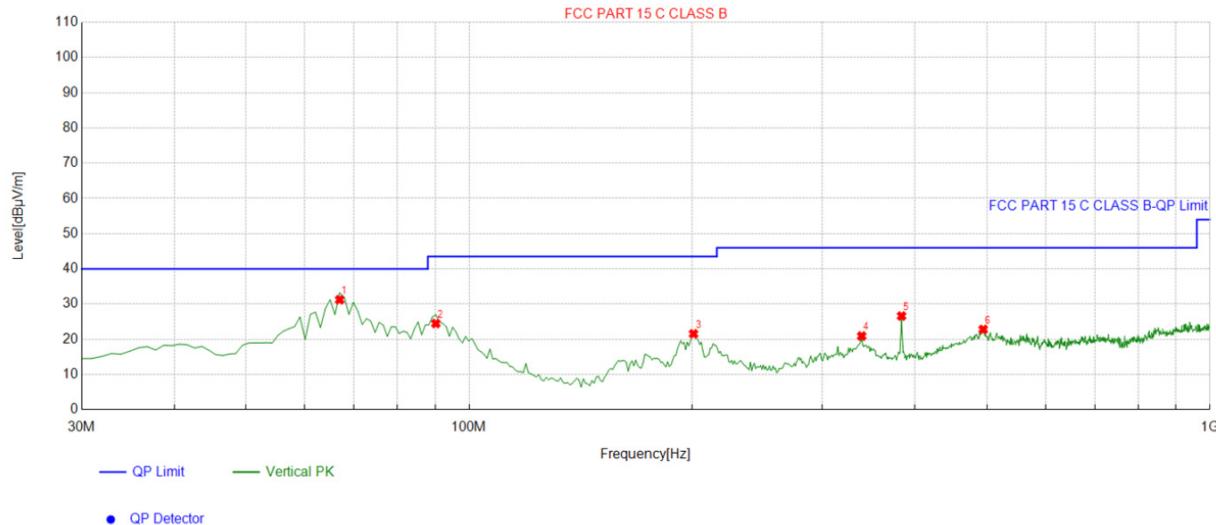


Series Model No.: C24 Ultra

**Horizontal****Suspected List**

NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	67.867868	-16.02	33.24	17.22	40.00	22.78	100	228	Horizontal
2	93.113113	-15.92	32.18	16.26	43.50	27.24	100	327	Horizontal
3	200.89089	-15.16	36.21	21.05	43.50	22.45	100	55	Horizontal
4	338.76876	-10.40	37.62	27.22	46.00	18.78	100	80	Horizontal
5	472.76276	-8.35	30.67	22.32	46.00	23.68	100	142	Horizontal
6	767.93793	-4.54	30.15	25.61	46.00	20.39	100	127	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

**Vertical**

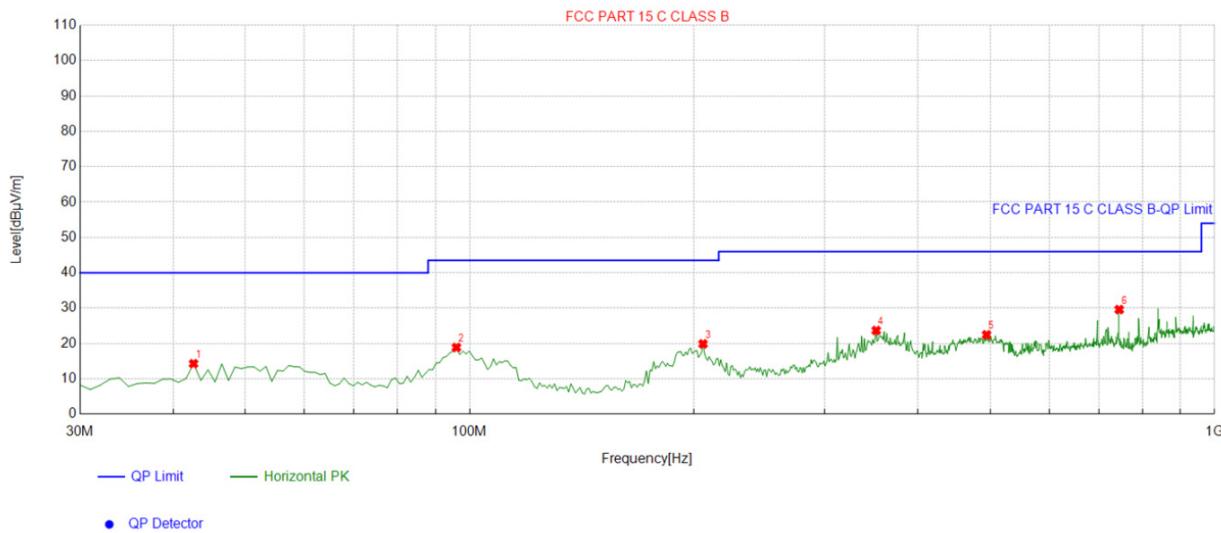
Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	66.896897	-16.17	47.40	31.23	40.00	8.77	100	340	Vertical
2	90.2002	-16.68	41.15	24.47	43.50	19.03	100	252	Vertical
3	200.89089	-15.16	36.72	21.56	43.50	21.94	100	7	Vertical
4	338.76876	-10.40	31.32	20.92	46.00	25.08	100	7	Vertical
5	383.43343	-9.11	35.71	26.60	46.00	19.40	100	15	Vertical
6	494.12412	-7.84	30.64	22.80	46.00	23.20	100	245	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



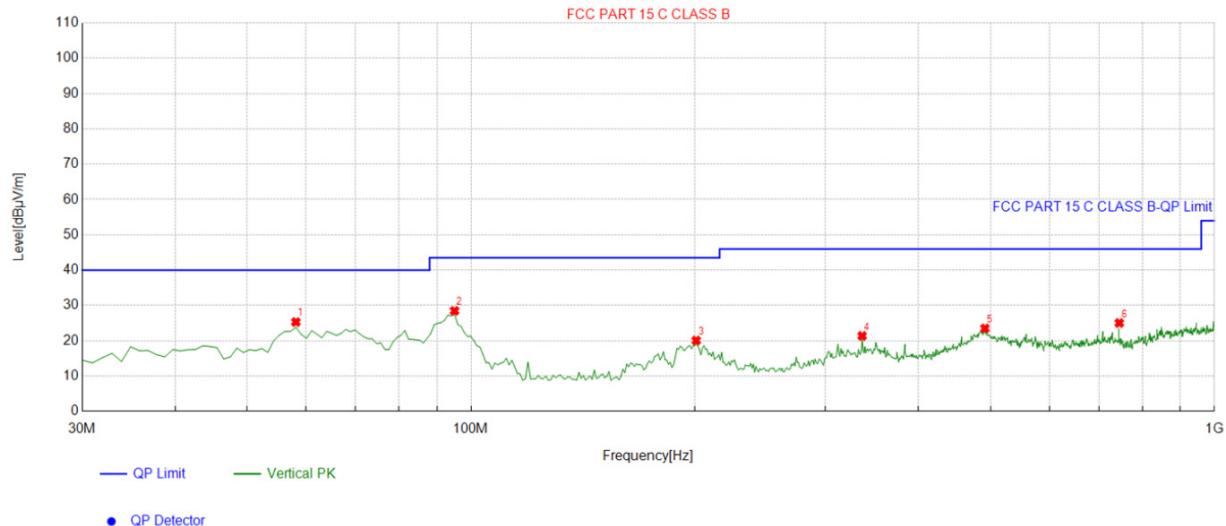
Series Model No.: C25

## Horizontal



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	42.622623	-13.31	27.59	14.28	40.00	25.72	100	309	Horizontal
2	96.026026	-15.55	34.41	18.86	43.50	24.64	100	354	Horizontal
3	205.74574	-15.25	35.13	19.88	43.50	23.62	100	89	Horizontal
4	351.39139	-10.10	33.77	23.67	46.00	22.33	100	265	Horizontal
5	494.12412	-7.84	30.28	22.44	46.00	23.56	100	137	Horizontal
6	744.63463	-3.42	33.00	29.58	46.00	16.42	100	69	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

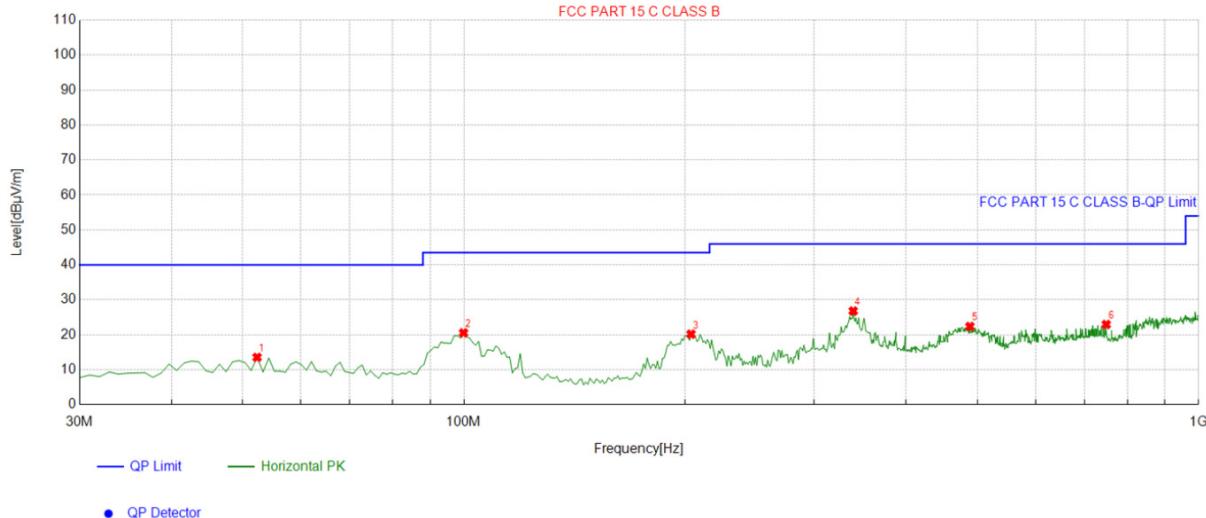
**Vertical**

Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	58.158158	-14.00	39.29	25.29	40.00	14.71	100	77	Vertical
2	95.055055	-15.40	43.86	28.46	43.50	15.04	100	217	Vertical
3	200.89089	-15.16	35.23	20.07	43.50	23.43	100	0	Vertical
4	335.85585	-10.57	31.94	21.37	46.00	24.63	100	42	Vertical
5	491.21121	-7.88	31.37	23.49	46.00	22.51	100	320	Vertical
6	744.63463	-3.42	28.44	25.02	46.00	20.98	100	91	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

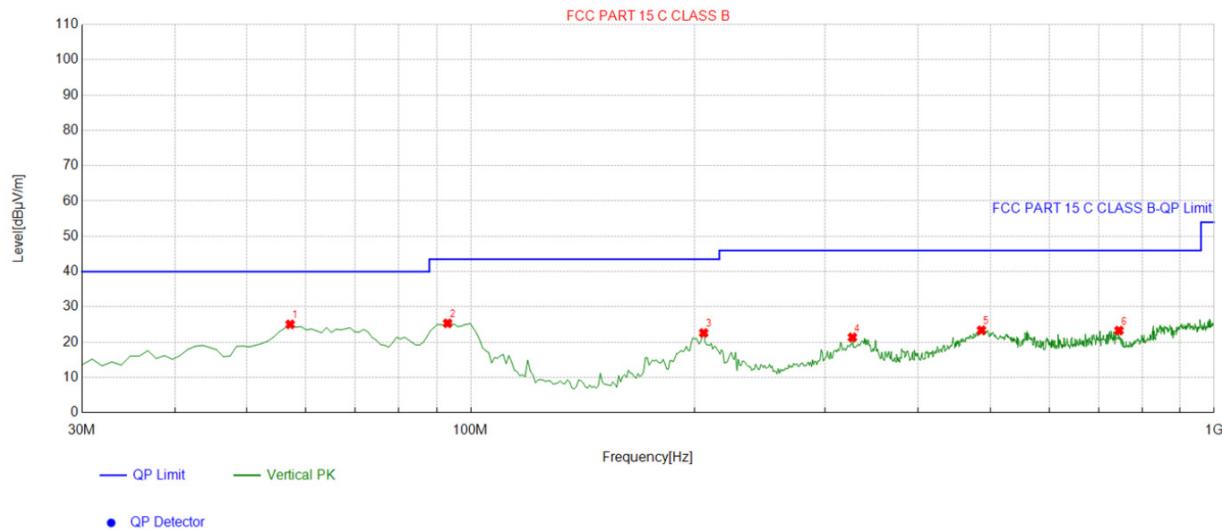


Series Model No.: I15 Ultra

**Horizontal****Suspected List**

NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	52.332332	-13.35	26.89	13.54	40.00	26.46	100	197	Horizontal
2	99.90991	-14.70	35.25	20.55	43.50	22.95	100	2	Horizontal
3	203.80380	-15.27	35.45	20.18	43.50	23.32	100	49	Horizontal
4	338.76876	-10.40	37.19	26.79	46.00	19.21	100	75	Horizontal
5	488.29829	-7.91	30.28	22.37	46.00	23.63	100	127	Horizontal
6	748.51851	-3.66	26.60	22.94	46.00	23.06	100	239	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

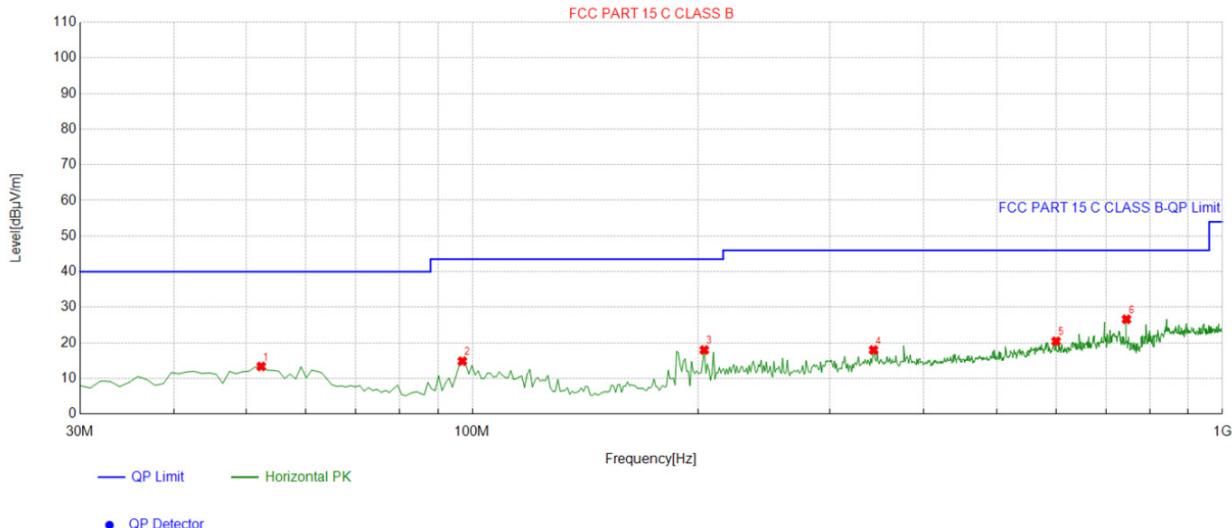
**Vertical**

Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	57.187187	-13.76	38.80	25.04	40.00	14.96	100	357	Vertical
2	93.113113	-15.92	41.26	25.34	43.50	18.16	100	250	Vertical
3	205.74574	-15.25	37.87	22.62	43.50	20.88	100	15	Vertical
4	326.14614	-10.98	32.35	21.37	46.00	24.63	100	354	Vertical
5	486.35635	-7.92	31.31	23.39	46.00	22.61	100	293	Vertical
6	744.63463	-3.42	26.72	23.30	46.00	22.70	100	340	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

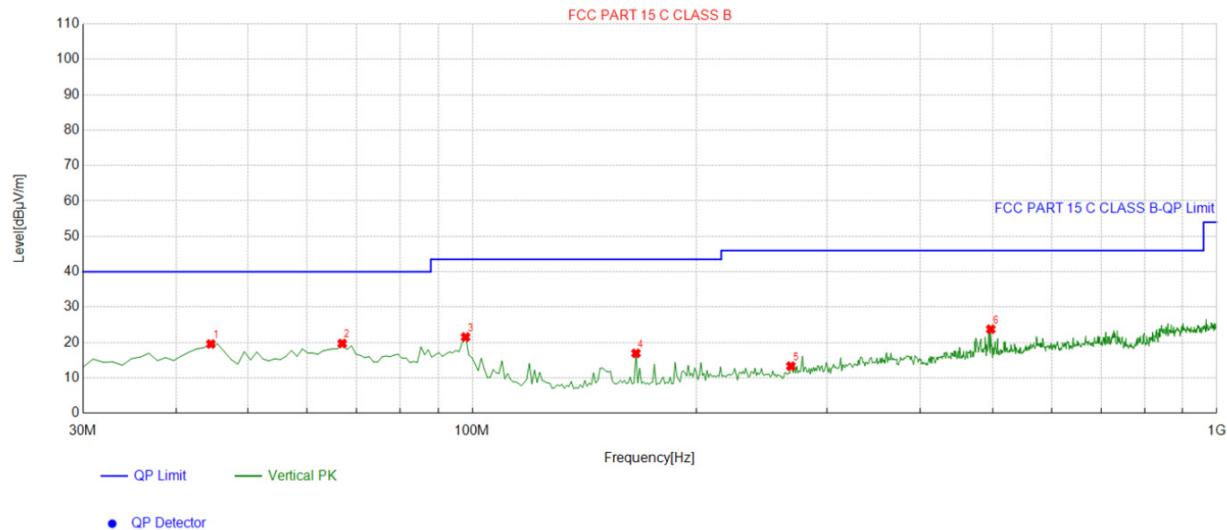


Series Model No.: C7 Ultra

**Horizontal****Suspected List**

NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	52.332332	-13.35	26.73	13.38	40.00	26.62	100	350	Horizontal
2	96.996997	-14.95	29.81	14.86	43.50	28.64	100	1	Horizontal
3	203.80380	-15.27	33.28	18.01	43.50	25.49	100	52	Horizontal
4	342.65265	-10.22	28.22	18.00	46.00	28.00	100	274	Horizontal
5	599.95996	-5.33	25.78	20.45	46.00	25.55	100	70	Horizontal
6	744.63463	-3.42	30.03	26.61	46.00	19.39	100	303	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

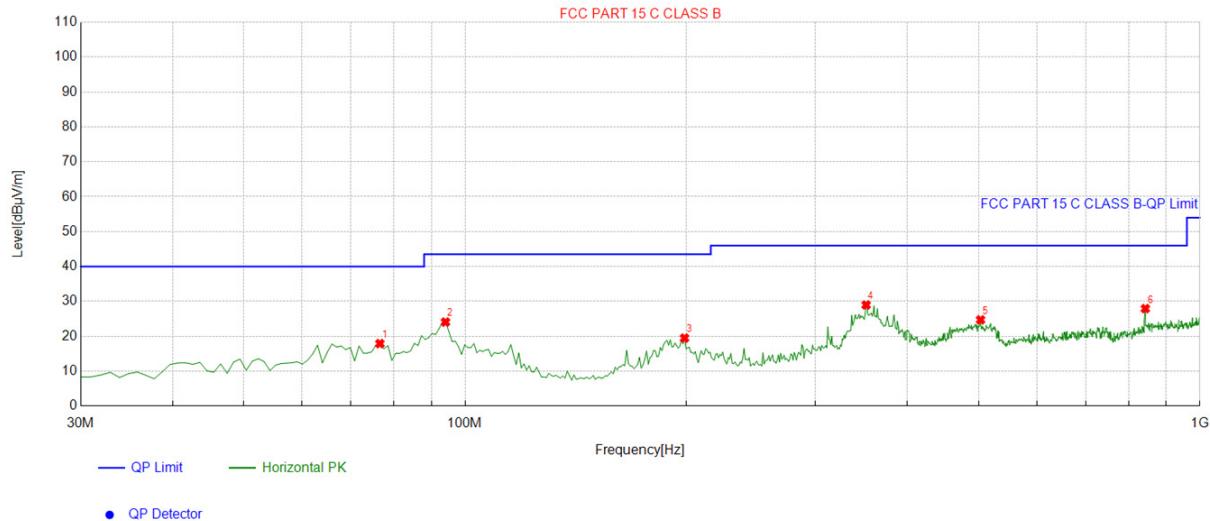
**Vertical**

Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	44.564565	-13.72	33.30	19.58	40.00	20.42	100	128	Vertical
2	66.896897	-16.17	35.89	19.72	40.00	20.28	100	219	Vertical
3	97.967968	-15.12	36.66	21.54	43.50	21.96	100	219	Vertical
4	165.93593	-17.41	34.36	16.95	43.50	26.55	100	358	Vertical
5	267.88788	-12.76	26.08	13.32	46.00	32.68	100	252	Vertical
6	497.03703	-7.97	31.72	23.75	46.00	22.25	100	238	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

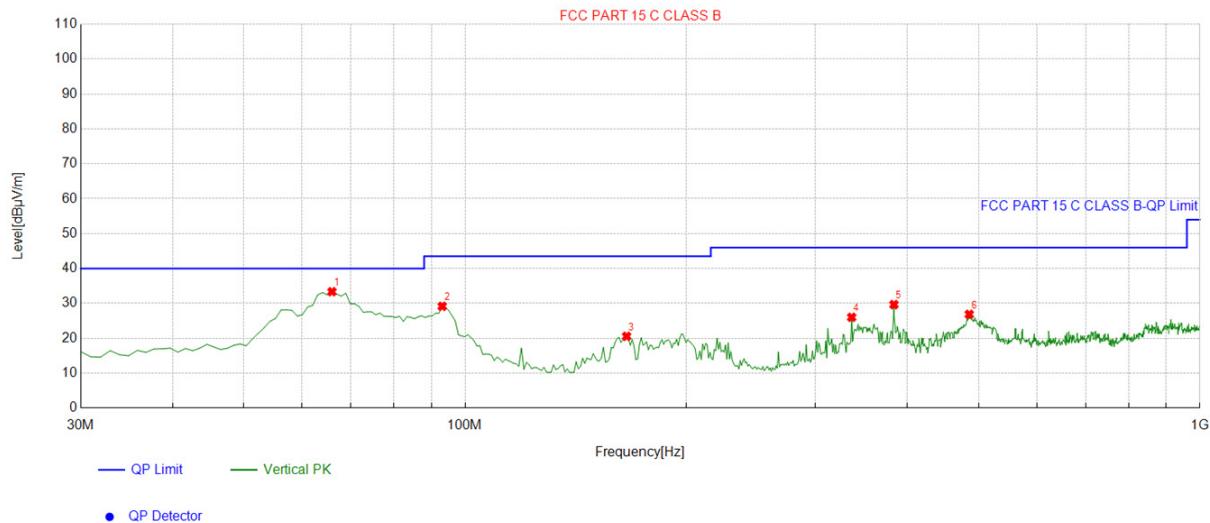


Series Model No.: S24 Ultra

**Horizontal****Suspected List**

NO.	Freq. [MHz]	Factor [dB]	Reading [dB $\mu$ V/m]	Level [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	76.606607	-17.96	35.85	17.89	40.00	22.11	100	29	Horizontal
2	94.084084	-15.78	39.85	24.07	43.50	19.43	100	2	Horizontal
3	198.94894	-14.75	34.23	19.48	43.50	24.02	100	84	Horizontal
4	351.39139	-10.10	39.07	28.97	46.00	17.03	100	78	Horizontal
5	502.86286	-8.20	32.91	24.71	46.00	21.29	100	121	Horizontal
6	842.70270	-1.79	29.72	27.93	46.00	18.07	100	55	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

**Vertical**

Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	65.925926	-15.95	49.30	33.35	40.00	6.65	100	317	Vertical
2	93.113113	-15.92	45.08	29.16	43.50	14.34	100	239	Vertical
3	165.93593	-17.41	37.97	20.56	43.50	22.94	100	17	Vertical
4	335.85585	-10.57	36.58	26.01	46.00	19.99	100	40	Vertical
5	383.43343	-9.11	38.76	29.65	46.00	16.35	100	185	Vertical
6	485.38538	-7.93	34.79	26.86	46.00	19.14	100	297	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

### Harmonics and Spurious Emissions

#### Frequency Range (9kHz-30MHz)

Frequency (MHz)	Level@3m (dBμV/m)	Limit@3m (dBμV/m)
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**Note:** 1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor.

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement.

**Above 1GHz**

LOW CH 36 (802.11 a Mode with 5.2G)/5180

Horizontal:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	55.95	-4.59	51.36	74	-22.64	peak
3647	44.74	-4.59	40.15	54	-13.85	AVG
10360	52.55	3.74	56.29	74	-17.71	peak
10360	41.42	3.74	45.16	54	-8.84	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	54.73	-4.59	50.14	74	-23.86	peak
3647	42.49	-4.59	37.9	54	-16.1	AVG
10360	51.92	3.74	55.66	74	-18.34	peak
10360	40.23	3.74	43.97	54	-10.03	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



MID CH40 (802.11 a Mode with 5.2G)/5200

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	55.84	-4.59	51.25	74	-22.75	peak
3647	44.52	-4.59	39.93	54	-14.07	AVG
10400	53.25	3.74	56.99	74	-17.01	peak
10400	42.02	3.74	45.76	54	-8.24	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.97	-4.59	50.38	74	-23.62	peak
3647	45.16	-4.59	40.57	54	-13.43	AVG
10400	51.36	3.74	55.1	74	-18.9	peak
10400	41.21	3.74	44.95	54	-9.05	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



HIGH CH 48 (802.11a Mode with 5.2G)/5240

Horizontal:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	55.43	-4.59	50.84	74	-23.16	peak
3647	44.26	-4.59	39.67	54	-14.33	AVG
10480	52.29	3.75	56.04	74	-17.96	peak
10480	41.05	3.75	44.8	54	-9.2	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	53.78	-4.59	49.19	74	-24.81	peak
3647	42.35	-4.59	37.76	54	-16.24	AVG
10480	51.15	3.75	54.9	74	-19.1	peak
10480	40.17	3.75	43.92	54	-10.08	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Remark:

- (1) Measuring frequencies from 1 GHz to the 40 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency.
- (3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) The emissions are attenuated more than 20dB below the permissible limits are not recorded in the report.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dB $\mu$ V/m(PK Value) < 93.98(AV Limit), at harmonic 53.20 dB $\mu$ V/m(PK Value) < 54 dB $\mu$ V/m(AV Limit), the Average Detected not need to completed.
- (7) All the test modes completed for test. only the worst result of Mode 1(802.11a Mode )



Series Model No.: X24 Ultra

LOW CH 36 (802.11 a Mode with 5.2G)/5180

Horizontal:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	53.32	-4.59	48.73	74	-25.27	peak
3647	43.01	-4.59	38.42	54	-15.58	AVG
10360	50.29	3.74	54.03	74	-19.97	peak
10360	39.47	3.74	43.21	54	-10.79	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	53.39	-4.59	48.8	74	-25.2	peak
3647	41.77	-4.59	37.18	54	-16.82	AVG
10360	51.78	3.74	55.52	74	-18.48	peak
10360	40.4	3.74	44.14	54	-9.86	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



MID CH40 (802.11 a Mode with 5.2G)/5200

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	53.17	-4.59	48.58	74	-25.42	peak
3647	42.37	-4.59	37.78	54	-16.22	AVG
10400	51.55	3.74	55.29	74	-18.71	peak
10400	39.28	3.74	43.02	54	-10.98	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.91	-4.59	50.32	74	-23.68	peak
3647	42.56	-4.59	37.97	54	-16.03	AVG
10400	49.87	3.74	53.61	74	-20.39	peak
10400	40.62	3.74	44.36	54	-9.64	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



HIGH CH 48 (802.11a Mode with 5.2G)/5240

Horizontal:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	53.02	-4.59	48.43	74	-25.57	peak
3647	43.5	-4.59	38.91	54	-15.09	AVG
10480	52.12	3.75	55.87	74	-18.13	peak
10480	41.35	3.75	45.1	54	-8.9	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	54.43	-4.59	49.84	74	-24.16	peak
3647	43.41	-4.59	38.82	54	-15.18	AVG
10480	49.89	3.75	53.64	74	-20.36	peak
10480	39.97	3.75	43.72	54	-10.28	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Remark:

- (1) Measuring frequencies from 1 GHz to the 40 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency.
- (3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) The emissions are attenuated more than 20dB below the permissible limits are not recorded in the report.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dB $\mu$ V/m(PK Value) < 93.98(AV Limit), at harmonic 53.20 dB $\mu$ V/m(PK Value) < 54 dB $\mu$ V/m(AV Limit), the Average Detected not need to completed.
- (7) All the test modes completed for test. only the worst result of Mode 1(802.11a Mode )



Series Model No.: C24 Ultra

LOW CH 36 (802.11 a Mode with 5.2G)/5180

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.55	-4.59	49.96	74	-24.04	peak
3647	44.59	-4.59	40	54	-14	AVG
10360	49.67	3.74	53.41	74	-20.59	peak
10360	40.57	3.74	44.31	54	-9.69	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.14	-4.59	49.55	74	-24.45	peak
3647	42.09	-4.59	37.5	54	-16.5	AVG
10360	52.02	3.74	55.76	74	-18.24	peak
10360	39.77	3.74	43.51	54	-10.49	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



MID CH40 (802.11 a Mode with 5.2G)/5200

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	53.08	-4.59	48.49	74	-25.51	peak
3647	42.79	-4.59	38.2	54	-15.8	AVG
10400	50.72	3.74	54.46	74	-19.54	peak
10400	39.44	3.74	43.18	54	-10.82	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.57	-4.59	49.98	74	-24.02	peak
3647	44.69	-4.59	40.1	54	-13.9	AVG
10400	51.26	3.74	55	74	-19	peak
10400	38.57	3.74	42.31	54	-11.69	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



## HIGH CH 48 (802.11a Mode with 5.2G)/5240

Horizontal:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	54.26	-4.59	49.67	74	-24.33	peak
3647	43.66	-4.59	39.07	54	-14.93	AVG
10480	51.48	3.75	55.23	74	-18.77	peak
10480	40.22	3.75	43.97	54	-10.03	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	53.44	-4.59	48.85	74	-25.15	peak
3647	42.18	-4.59	37.59	54	-16.41	AVG
10480	48.66	3.75	52.41	74	-21.59	peak
10480	38.42	3.75	42.17	54	-11.83	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

## Remark:

- (1) Measuring frequencies from 1 GHz to the 40 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency.
- (3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) The emissions are attenuated more than 20dB below the permissible limits are not recorded in the report.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dB $\mu$ V/m(PK Value) < 93.98(AV Limit), at harmonic 53.20 dB $\mu$ V/m(PK Value) < 54 dB $\mu$ V/m(AV Limit), the Average Detected not need to completed.
- (7) All the test modes completed for test. only the worst result of Mode 1(802.11a Mode )



Series Model No.: C25

LOW CH 36 (802.11 a Mode with 5.2G)/5180

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	55.61	-4.59	51.02	74	-22.98	peak
3647	43.35	-4.59	38.76	54	-15.24	AVG
10360	50.95	3.74	54.69	74	-19.31	peak
10360	40	3.74	43.74	54	-10.26	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	53.76	-4.59	49.17	74	-24.83	peak
3647	41.79	-4.59	37.2	54	-16.8	AVG
10360	49.93	3.74	53.67	74	-20.33	peak
10360	40.06	3.74	43.8	54	-10.2	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



MID CH40 (802.11 a Mode with 5.2G)/5200

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.24	-4.59	49.65	74	-24.35	peak
3647	42.81	-4.59	38.22	54	-15.78	AVG
10400	50.93	3.74	54.67	74	-19.33	peak
10400	38.91	3.74	42.65	54	-11.35	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	55.92	-4.59	51.33	74	-22.67	peak
3647	42.34	-4.59	37.75	54	-16.25	AVG
10400	50.58	3.74	54.32	74	-19.68	peak
10400	38.86	3.74	42.6	54	-11.4	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



## HIGH CH 48 (802.11a Mode with 5.2G)/5240

Horizontal:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	54.93	-4.59	50.34	74	-23.66	peak
3647	43.61	-4.59	39.02	54	-14.98	AVG
10480	51.67	3.75	55.42	74	-18.58	peak
10480	39.63	3.75	43.38	54	-10.62	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	53.81	-4.59	49.22	74	-24.78	peak
3647	44.37	-4.59	39.78	54	-14.22	AVG
10480	51.68	3.75	55.43	74	-18.57	peak
10480	41.14	3.75	44.89	54	-9.11	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

## Remark:

- (1) Measuring frequencies from 1 GHz to the 40 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency.
- (3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) The emissions are attenuated more than 20dB below the permissible limits are not recorded in the report.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dB $\mu$ V/m(PK Value) < 93.98(AV Limit), at harmonic 53.20 dB $\mu$ V/m(PK Value) < 54 dB $\mu$ V/m(AV Limit), the Average Detected not need to completed.
- (7) All the test modes completed for test. only the worst result of Mode 1(802.11a Mode )



Series Model No.: I15 Ultra

LOW CH 36 (802.11 a Mode with 5.2G)/5180

Horizontal:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	53.02	-4.59	48.43	74	-25.57	peak
3647	43.66	-4.59	39.07	54	-14.93	AVG
10360	50	3.74	53.74	74	-20.26	peak
10360	38.44	3.74	42.18	54	-11.82	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	53	-4.59	48.41	74	-25.59	peak
3647	44.08	-4.59	39.49	54	-14.51	AVG
10360	52.43	3.74	56.17	74	-17.83	peak
10360	41.12	3.74	44.86	54	-9.14	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



MID CH40 (802.11 a Mode with 5.2G)/5200

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.93	-4.59	50.34	74	-23.66	peak
3647	43.05	-4.59	38.46	54	-15.54	AVG
10400	50.21	3.74	53.95	74	-20.05	peak
10400	40.65	3.74	44.39	54	-9.61	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	53.2	-4.59	48.61	74	-25.39	peak
3647	43.95	-4.59	39.36	54	-14.64	AVG
10400	51.82	3.74	55.56	74	-18.44	peak
10400	38.8	3.74	42.54	54	-11.46	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



## HIGH CH 48 (802.11a Mode with 5.2G)/5240

Horizontal:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	53.77	-4.59	49.18	74	-24.82	peak
3647	44.52	-4.59	39.93	54	-14.07	AVG
10480	51.17	3.75	54.92	74	-19.08	peak
10480	40.08	3.75	43.83	54	-10.17	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	55.18	-4.59	50.59	74	-23.41	peak
3647	42.87	-4.59	38.28	54	-15.72	AVG
10480	51.66	3.75	55.41	74	-18.59	peak
10480	40.66	3.75	44.41	54	-9.59	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

## Remark:

- (1) Measuring frequencies from 1 GHz to the 40 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency.
- (3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) The emissions are attenuated more than 20dB below the permissible limits are not recorded in the report.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dB $\mu$ V/m(PK Value) < 93.98(AV Limit), at harmonic 53.20 dB $\mu$ V/m(PK Value) < 54 dB $\mu$ V/m(AV Limit), the Average Detected not need to completed.
- (7) All the test modes completed for test. only the worst result of Mode 1(802.11a Mode )



Series Model No.: C7 Ultra

LOW CH 36 (802.11 a Mode with 5.2G)/5180

Horizontal:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	54.17	-4.59	49.58	74	-24.42	peak
3647	43.73	-4.59	39.14	54	-14.86	AVG
10360	51.08	3.74	54.82	74	-19.18	peak
10360	40.52	3.74	44.26	54	-9.74	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	55.15	-4.59	50.56	74	-23.44	peak
3647	44.34	-4.59	39.75	54	-14.25	AVG
10360	50.7	3.74	54.44	74	-19.56	peak
10360	38.77	3.74	42.51	54	-11.49	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



MID CH40 (802.11 a Mode with 5.2G)/5200

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.08	-4.59	49.49	74	-24.51	peak
3647	42.84	-4.59	38.25	54	-15.75	AVG
10400	51.29	3.74	55.03	74	-18.97	peak
10400	38.54	3.74	42.28	54	-11.72	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	55.64	-4.59	51.05	74	-22.95	peak
3647	42.75	-4.59	38.16	54	-15.84	AVG
10400	50.39	3.74	54.13	74	-19.87	peak
10400	38.56	3.74	42.3	54	-11.7	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



## HIGH CH 48 (802.11a Mode with 5.2G)/5240

Horizontal:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	55.16	-4.59	50.57	74	-23.43	peak
3647	44.02	-4.59	39.43	54	-14.57	AVG
10480	50.64	3.75	54.39	74	-19.61	peak
10480	40.45	3.75	44.2	54	-9.8	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	53.26	-4.59	48.67	74	-25.33	peak
3647	42.88	-4.59	38.29	54	-15.71	AVG
10480	50.94	3.75	54.69	74	-19.31	peak
10480	41.13	3.75	44.88	54	-9.12	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

## Remark:

- (1) Measuring frequencies from 1 GHz to the 40 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency.
- (3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) The emissions are attenuated more than 20dB below the permissible limits are not recorded in the report.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dB $\mu$ V/m(PK Value) < 93.98(AV Limit), at harmonic 53.20 dB $\mu$ V/m(PK Value) < 54 dB $\mu$ V/m(AV Limit), the Average Detected not need to completed.
- (7) All the test modes completed for test. only the worst result of Mode 1(802.11a Mode )



Series Model No.: S24 Ultra

LOW CH 36 (802.11 a Mode with 5.2G)/5180

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.16	-4.59	49.57	74	-24.43	peak
3647	44.31	-4.59	39.72	54	-14.28	AVG
10360	51.84	3.74	55.58	74	-18.42	peak
10360	39.26	3.74	43	54	-11	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.19	-4.59	49.6	74	-24.4	peak
3647	43.65	-4.59	39.06	54	-14.94	AVG
10360	50.57	3.74	54.31	74	-19.69	peak
10360	40.59	3.74	44.33	54	-9.67	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



MID CH40 (802.11 a Mode with 5.2G)/5200

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.58	-4.59	49.99	74	-24.01	peak
3647	43.91	-4.59	39.32	54	-14.68	AVG
10400	51.66	3.74	55.4	74	-18.6	peak
10400	38.63	3.74	42.37	54	-11.63	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dB $\mu$ V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	
3647	54.59	-4.59	50	74	-24	peak
3647	41.96	-4.59	37.37	54	-16.63	AVG
10400	51.78	3.74	55.52	74	-18.48	peak
10400	38.72	3.74	42.46	54	-11.54	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



## HIGH CH 48 (802.11a Mode with 5.2G)/5240

Horizontal:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	54.95	-4.59	50.36	74	-23.64	peak
3647	41.99	-4.59	37.4	54	-16.6	AVG
10480	50.59	3.75	54.34	74	-19.66	peak
10480	40.49	3.75	44.24	54	-9.76	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

Vertical:

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type
3647	53.81	-4.59	49.22	74	-24.78	peak
3647	43.82	-4.59	39.23	54	-14.77	AVG
10480	50.4	3.75	54.15	74	-19.85	peak
10480	39.58	3.75	43.33	54	-10.67	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

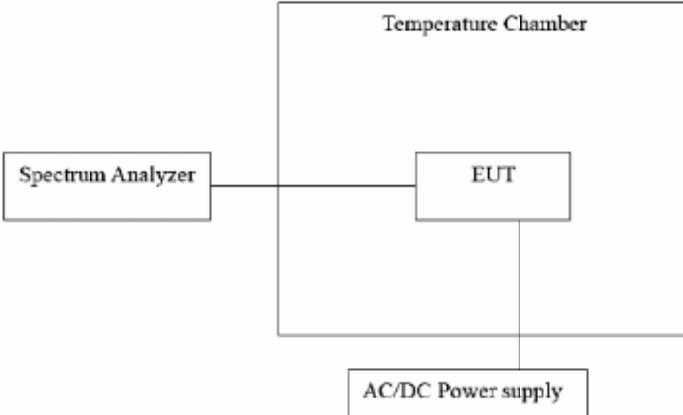
## Remark:

- (1) Measuring frequencies from 1 GHz to the 40 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency.
- (3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4) The emissions are attenuated more than 20dB below the permissible limits are not recorded in the report.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dB $\mu$ V/m(PK Value) < 93.98(AV Limit), at harmonic 53.20 dB $\mu$ V/m(PK Value) < 54 dB $\mu$ V/m(AV Limit), the Average Detected not need to completed.
- (7) All the test modes completed for test. only the worst result of Mode 1(802.11a Mode )



## 4.8. Frequency Stability Measurement

### 4.8.1. Test Specification

<b>Test Requirement:</b>	FCC Part15 Section 15.407(g)
<b>Test Method:</b>	ANSI C63.10: 2013
<b>Limit:</b>	The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of 0 degrees to 35 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.
<b>Test Setup:</b>	
<b>Test Procedure:</b>	The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
<b>Test Result:</b>	PASS
<b>Remark:</b>	N/A

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

**Test Result as follows:**

Mode	Voltage (V)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
5.2G Band	4.25V	5179.992	-8	5239.982	-18
	5.0V	5180.014	14	5240.011	11
	5.75V	5180.009	9	5239.987	-13

Mode	Temperature (°C)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
5.2G Band	-30	5179.979	-21	5239.992	-8
	-20	5180.016	16	5240.006	6
	-10	5179.966	-34	5239.967	-33
	0	5180.012	12	5239.979	-21
	10	5179.981	-19	5239.985	-15
	20	5179.977	-23	5240.016	16
	30	5180.013	13	5239.981	-19
	40	5179.969	-31	5239.962	-38
	50	5179.971	-29	5240.011	11



## 4.9. Antenna Requirement

### Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

### Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

### Antenna Connected Construction

The antenna used in this product is a FPC Antenna, need professional installation, not easy to remove. It conforms to the standard requirements. The directional gains of antenna used for transmitting is 1.2dBi.

#### WIFI Antenna



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